BALANCING THE BLENDED VALUE PROPOSITION OF SUSTAINABILITY ENTREPRENEURSHIP

An exploratory case study of the relationship between institutions and sustainability entrepreneurship in the Tanzanian solar power industry.

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ABSTRACT

This paper combines institutional and sustainability entrepreneurship literature in order to investigate the role of institutions for entrepreneurship ventures in the solar power industry in Tanzania. The goal is to understand how the complex relationship between the institutional environment and the ventures constrains or enables the activities of the entrepreneurship ventures towards balancing social, environmental and financial values, and thus their assumed contributions to sustainable development as described in the sustainability entrepreneurship literature. Based on critical realist philosophical assumptions, the study takes an exploratory approach to a multiple case study of five ventures operating with a blended value proposition incorporating social, environmental and financial values. The analysis compares and contrasts the institutional influences on the ventures, by applying a theoretical framework developed by combining institutional and sustainability entrepreneurship literature. It also identifies areas where the ventures influence institutions to make them more supportive.

The results of the study show a complex relationship between institutions and entrepreneurial ventures. Two ventures were found to operate with a blended value proposition integrated into their organizational design similar to what is described as 'whole enterprise design' in the sustainability entrepreneurship literature. Three ventures were found to operate with a blended value proposition but not integrating all three value objectives equally into their organizational design. The study identifies both constraining and enabling mechanisms in the relationship between institutions and ventures, however the ventures described their institutional environment as overall supportive, with synergies found between institutions and operating with both social, environmental and financial objectives. Institutional voids were identified that constrained activity, but the ventures were found to adapt to these, fill them and even use them as opportunity. The study thus contributes to sustainability literature with a new perspective from a developing country context with findings that show that institutional environment is important to the way entrepreneurship ventures operate with sustainability value objectives, and that entrepreneurship under the right conditions can contribute to institutional and societal transformations.

1 INTRODUCTION

While the concept of sustainable development was developed some 30 years ago, it is no less relevant to the development agenda today. The concept of sustainable development combines the imperatives of economic and social development with economic growth, with a view of managing the resources available today in a sustainable manner so that they are also available for future generations (Parrish, 2010). Particularly the objectives of environmental sustainability has been described as competing with the interest of sustaining economic growth. This argument is based on the way that economic growth has been achieved in developed countries at the cost of natural resources (Hall, Daneke, & Lenox, 2010). With the desire to allow developing countries to grow along the same line without compromising the natural environment, sustainable development offers a framework for thinking about development while placing social and environmental objectives on the same footing as economic (ibid.).

Despite persistent efforts by development practitioners and policy makers and significant progress achieved during the previous decades, there is still a long way to go towards reaching the overarching development goals of ridding the world of poverty, hunger and conflict in a sustainable manner. The development community has yet failed to achieve equitable growth in many least developed countries (LDCs). In such countries, where persistent levels of poverty are associated with high population growth and depleting natural resources, achieving sustainability is a challenge (Khavul & Bruton, 2013). It is obvious today, that a significant transformation of the way the economic system works in terms of production and consumption patterns needs to occur to achieve a development that is sustainable in developed as well as developing countries (Hall, Daneke, & Lenox, 2010).

A substantial challenge in this context is how to manage the continually increasing growth in global energy demand in a sustainable manner. Supply of energy and electricity is essential for development, and population growth and increasing electrification will increase the demand for energy supply significantly in the decades to come (World Energy Council, 2013). Despite the recent stagnation in global economic

growth, energy consumption has continued to increase, and much of this increase has taken place in developing countries.

An example of such a country is Tanzania, where energy demand is growing significantly due to economic and population growth. Tanzania is among the poorest countries in the world with a large rural population and high levels of population growth (WB, 2014). It is estimated that approximately 90% of the energy consumption in the country relies on biomass, primarily for domestic use (Reegle, 2014). When it comes to electricity supply, the government is struggling to keep up with demand, and is additionally challenged by persistent droughts, which compromises both the supply of potable water and electricity generated through hydropower. Developing renewable energy sources is essential if the growth in demand is not to be met by an increase in fossil fuel generation. In order to meet energy demands and support sustainability, the Government of Tanzania (GoT) has attempted to promote and support entrepreneurship in renewable energy industries (MEM, 2003). Particularly the solar power industry has become an important private sector dominated industry with a role towards sustainable development in the country.

The attempt of the GoT to support entrepreneurship and the private sector in order to meet the objectives of sustainable development and economic growth is in line with a shift in focus in the development community from top-down planning and structural reforms to focus on inclusivity and bottom-up thinking (McMullen, 2011). Such thinking has been part of new development discourses favoring private sector development, new partnerships between private, public or so-called 'third-sector' actors, and base of the pyramid (BoP) thinking focusing on the poorest segments of developing countries as consumers. In this context, the role of entrepreneurship as driver of economic growth has increasingly become the focus of development practitioners and researchers alike. Recognizing that established businesses are not able to drive the transformation towards sustainability due to competitive pressures and corporate inertia, entrepreneurship has become the 'panacea' towards this transformation (Hall, Daneke, & Lenox, 2010).

In parallel, new types of entrepreneurship has emerged, blurring sector boundaries by mixing for-profit with not-for-profit organizational elements (Dees, 1998). In the context of sustainable development, the

focus has been on such entrepreneurial ventures with social and environmental values integrated into their venture, and such ventures have been referred to as sustainability-driven entrepreneurship ventures or simply sustainability entrepreneurship ventures as they will be referred to in this paper (Parrish, 2010).

The role of entrepreneurship in sustainable development is, however, not well known, and only sparse research and literature exists within the subject of sustainability entrepreneurship (Dean & McMullen, 2007). Without proper research, there is a risk that the discourse developing in the area is overly optimistic about the capability of entrepreneurship to lead the drive towards sustainable development (Hall, Daneke, & Lenox, 2010). With the focus on entrepreneurship as driver of growth and sustainability in developing countries such as Tanzania, an even more important gap in the literature relates to the lack of academic literature focusing on the role of sustainability entrepreneurship in developing countries.

Considering these gaps in the literature, the fact that entrepreneurship is considered a 'panacea' towards sustainable development and that this forms the basis of development intervention and policy appears problematic in light of the absence of substantial empirical research as a foundation for how supporting intervention should appropriately be formulated and conducted. The scant empirical evidence in the area, particularly in developing country contexts, means that there is little knowledge developed as to *how* sustainability entrepreneurship ventures operate, *what* constrains and enables their activities, and *whether* in fact they engage constructively in processes that drives sustainable development, upon which to base policies and intervention.

In order to mitigate this knowledge gap, this study will provide an empirical exploration of sustainability entrepreneurship in a developing country context. It will focus on the first two questions posed above. Firstly, how sustainability entrepreneurship ventures operate in the context of the Tanzanian solar power industry. It will explore whether and how they work with a blended value proposition, meaning that they strive to simultaneously achieve social, environmental and financial objectives as would be expected to align with the priorities of sustainable development and contribute to the goal of increasing access to energy in a sustainable way.

In developing country contexts, institutional environment is typically highlighted as essential when it comes to the functioning of the market and the prevalence of entrepreneurship (Amine & Staub, 2009). It has been described how institutional voids in developing countries can both constrain and enable business activity (Khanna & Palepu, 2010). Knowledge is therefore needed to establish whether entrepreneurship can actually fulfill the expected role of driving sustainable development within the relevant institutional context. This relates to the second question posed above concerning what constrains and enables the activities of sustainability entrepreneurship ventures. In order to explore this in the Tanzanian context, this study will perform an institutional analysis of selected case ventures in the context of the solar power industry in Tanzania. The final question of whether and how sustainability entrepreneurship actually contributes to sustainable development is not included in the scope of this study.

1.1 Research Question

In summary, this study will explore how the institutional environment for sustainability entrepreneurial activity in the Tanzanian solar power industry influences the way they incorporate and balance social, environmental and financial objectives. It will furthermore contribute to gaps in the sustainability entrepreneurship literature where sustainability entrepreneurship is being promoted as a 'panacea' towards sustainable development without the necessary empirical evidence for their role in this process. The study will provide such an empirical exploration of sustainability entrepreneurship in the Tanzanian institutional context. The research question guiding this study is as follows:

> **How does the institutional context for sustainability entrepreneurship ventures in the Tanzanian solar power industry influence their blended value proposition?**

In order to answer this question, the study will, employing a critical realist philosophy of science, conduct a multiple case study of sustainability entrepreneurship ventures by way of applying institutional theory to analyze how the institutional environment influences how the ventures integrate a blended value proposition into their organizational design.

The paper is structured as follows: The next chapter will review the literature in the field of entrepreneurship, sustainable development, and sustainability entrepreneurship. The third chapter will present the theoretical framework for analysis of the data collected for the study. The fourth chapter will present the methodological and philosophical considerations underpinning the data collection and analysis process. The fifth chapter will provide a presentation of the background for the data collected and present the case organizations. In the sixth chapter, the analysis of the collected data is presented, the findings of which will be discussed in the seventh chapter. The eighth and final chapter will present the conclusions of the study.

2 LITERATURE REVIEW

This chapter will outline and discuss the literature in the field of entrepreneurship and the recent subfield of sustainability entrepreneurship to define the concepts and position the study within the current body of literature. It will furthermore discuss the relevance of studying the institutional environment for sustainability entrepreneurship in a developing country context.

2.1 Entrepreneurship

The concept of entrepreneurship has a long history of capturing the interest of researchers, particularly within economic theory, as it plays an important role in the capitalist market system as a major agent of change (Shane & Venkataraman, 2000). The concept of entrepreneurship has traditionally been defined in various different ways, since its relevance as a subject of study spans across different disciplines, including economics, development studies, business studies, and political science (Naudé, 2008). In order to position the approach to entrepreneurship used in this study, the following section will outline the concept of entrepreneurship in terms of the dominating schools of thought in the field.

Entrepreneurship is typically approached from three different angles: the economic approach, the entrepreneurial personality approach, and the socio-behavioral approach (Deakins & Freel, 2009). In

respect to studies of entrepreneurship in developing countries and transition economies, another angle has been to study entrepreneurship from an institutional view (Sautet, 2005).

2.1.1 The economic approach

The economic approach defines entrepreneurship in terms of the role played by the entrepreneur within the economy as an agent of change; a driver of economic development. The entrepreneur was originally identified within the French school of economics, most notably by Jean Baptiste Say, who conceptualized the entrepreneur as someone who shifts economic resources from unproductive areas of the economy into areas of productivity and through this process creates value (Dees, 1998). His work was followed up in the Austrian school of economics by Kirzner and Schumpeter, who each have left a significant mark on how entrepreneurship is conceptualized within economics today. Kirzner identifies the entrepreneur as an individual who is alert to opportunities for exchange, and operates as an intermediary in this exchange (Deakins & Freel, 2009). Opportunities arise out of imperfect knowledge in the market, where the entrepreneur possesses unique knowledge enabling identification of the opportunity (ibid.). Schumpeter conceptualized entrepreneurs as change agents, who reallocate resources in the economy as a response to disequilibria in the market due to constant changes, and thereby drive the creative-destructive process of capitalism (Dees, 1998). To Schumpeter, the entrepreneur is someone special – an innovator (Deakins & Freel, 2009). Expanding on the traditions developed by these early thinkers, Knight added the element of uncertainty, arguing that opportunity arises from the uncertainty surrounding change. Uncertainty occurs when the probability of an outcome cannot be calculated, and the entrepreneur is someone willing to bear the risk of such a situation with potential profit as the reward (ibid.).

Other approaches within recent economic entrepreneurship thinking has focused on opportunities and resources. According to Casson, the entrepreneur possesses special attributes that enables him/her to make judgments about the allocation or organization of resources (ibid.). The entrepreneur needs to have access to resources to engage in entrepreneurial activity, and a lack of this can thus be a barrier to entrepreneurship. Access to appropriate resources depends on the local environment and economy (ibid.). In a similar vein,

Drucker theorized that entrepreneurs do not necessarily create change, but see the opportunities present in change and gather the resources necessary to pursue them (Dees, 1998). Possession of resources is not necessary, but the ability of the entrepreneur to mobilize appropriate resources to be able to pursue the opportunity is key. The existence of opportunities must be combined with the identification and exploitation by entrepreneurs, in order to create entrepreneurial value, and for entrepreneurs to fulfil their role as driving force in the economy.

2.1.2 The entrepreneurial personality approach

The second approach to entrepreneurship is concerned with identifying the defining characteristics setting entrepreneurs apart from other people. Some of the special characteristics identified includes optimism, tolerance for risk and ambiguity, and resourcefulness; what Naudé (2008) refers to as 'entrepreneurial ability'. There is disagreement in the literature regarding whether these entrepreneurial characteristics are innate or circumstantial. In equilibrium economic models, opportunities are seen as equally available to all economic actors, and the reason why some pursue these opportunities, while others do not, is due to differences in personality attributes (Shane & Venkataraman, 2000). In this perspective, there is thus a finite number of entrepreneurs in a given market. This position has been widely criticized, as it has been difficult for researchers to identify particular personality traits across the population of entrepreneurs. Additionally, the approach typically ignores factors in the surrounding environment with potential influence on the occurrence of entrepreneurship, how entrepreneurial opportunities are identified, evaluated and pursued (Deakins & Freel, 2009).

2.1.3 The socio-behavioral approach

The third approach, the socio-behavioral approach, is concerned with precisely the influence of contextual factors on entrepreneurship (ibid.). The approach developed in order to answer questions about why entrepreneurship appears at higher rates in some countries and cultures compared to others. The approach focuses on how entrepreneurship is embedded in society as opposed to only in the market, and is particularly concerned with what cultural aspects might influence the prevalence of entrepreneurship. Empirical studies

have uncovered complex factors working as enablers or hindrances to entrepreneurship in different countries or cultures, where for example the role of social capital and tolerance of failure in a culture have been found to influence entrepreneurial activity (ibid.).

2.1.4 The institutional view of entrepreneurship

Related to the socio-behavioral approach, the institutional approach also recognizes that entrepreneurship is embedded in society, in this case with a focus on how the institutional environment influences entrepreneurial activity.

The institutional approach developed to examine how and why economies have performed differently through time (North, 1990), which is particularly relevant when examining the trouble of some developing countries in achieving sustained economic growth. For this purpose, researchers have looked at the differences in institutions between such economies and those of successful developers such as the Asian Tiger economies (Peng, 2003). Institutions are defined as "the rules of the game in a society or, more formally, are the humanly devised constraints that shape human interaction" (North, 1990, p. 3). The basic precondition of institutional theory in business literature is that differences in institutions between countries influence the strategic choices available to businesses to successfully navigate that market (Peng, 2002). These institutions can be formal or informal, referring to rules of the game that are created and enforced through official or unofficial channels, respectively (North, 1990). In developing countries, where formal institutional settings tend to be weak, informal institutions often take on a more prevalent role to guide interactions in the market (Peng, 2002). It has been argued that the particular institutional setting present in developing countries might require a completely different set of business strategies and approaches to doing business, which might be why western attempts to transfer business practices and include developing economies into the global market has often proven problematic (Khanna & Palepu, 1999). Western business theory prefers single maximization strategy focusing on the business' core competency and predicts that conglomerates operating in multiple disassociated areas would not be able to attain competitive advantage in the market. Conversely, literature applying institutional theory have found conglomerate strategy, or

other strategies tailored to the particular institutional setting in a given country, to be a suitable strategic approach, as they can fill institutional voids through their business activities and in this way gain competitive advantage (Khanna & Palepu, 2010). Clearly, institutions have an important role in the general functioning of markets, and thus also for how entrepreneurial opportunities are formed, and how entrepreneurs can organize their activities to exploit them. This role is evident in McMullen's (2011) discussion of development entrepreneurship, where the institutional environment in developing countries are seen as flawed by government failures, and this is the underlying reason for why sustainable development or even economic growth is not achieved. He argues that the transformation of these flawed institutions to become more conducive to sustainable development can in turn be produced by entrepreneurial action.

There are several approaches to investigating differences in entrepreneurial activity across countries and how the embeddedness of entrepreneurship in society influences entrepreneurial activity; for example by looking at socio-behavioral aspects, as outlined above. This study will, however, apply the institutional view, as it provides a framework for identifying the 'rules of the game', both formal and informal, for entrepreneurship in a given local context. It is a broad framework suitable for identifying factors in the local environment that interacts with entrepreneurship in an enabling or constraining way. Investigating sustainability entrepreneurship in Tanzania through that lens can provide answers to the questions raised above, namely whether the balancing of the blended value proposition of sustainability entrepreneurship is an appropriate strategy in the Tanzanian context. This study thus employs an institutional view of entrepreneurship; however, the definition of entrepreneurship employed in the study also draws on the economic perspectives. The study does not focus on the entrepreneur as an individual, and is therefore not concerned with his/her individual qualities. Rather, it focuses on the entrepreneurial venture, based on the assumption from economic theory of its role as driver of economic development.

It sees the entrepreneurial venture as being founded to pursue the opportunities arising out of change, with the entrepreneur gathering the resources necessary to pursue the opportunity. In this perspective, the

entrepreneur is seen as an innovator and a risk-taker, one who initiates and facilitates adjustment to change in the market, and through this activity creates value. This idea of entrepreneurship is not contingent of the entrepreneurial venture being driven by a profit motive, as the opportunity discovered and pursued, and the value created, might well be socially or environmentally relevant rather than purely financial. This is useful in the context of sustainability entrepreneurship where a profit motive might not be present or is not necessarily the dominant motivational factor. Based on this definition, the institutional context is relevant both in relation to how and which opportunities are created, identified and pursued, and how entrepreneurial ventures can operate with a blended value proposition.

2.2 Sustainable Development

It is widely recognized that today's business practices are unsustainable, contributing to an overexploitation of natural resources (Parrish, 2010; Hall, Daneke, & Lenox, 2010). This has led to the idea of sustainable business practices gaining traction within business and development studies, and the concept of sustainable development has become the preferred vehicle through which both the poor societies in developing countries should grow and catch up, and the developed world should move forward.

The concept of sustainable development was defined in the Brundtland Report to the United Nations Conference on the Human Environment as follows: "Sustainable development is development that meets the needs of the present generation without compromising the ability of future generations to meet their own needs" (WCED, 1987, p. 43). Although criticized as an oxymoron lacking of practical applicability, the concept is still relevant today in confronting the persisting challenges of the global market (Sneddon, Howarth, & Norgaard, 2006). Sustainable development has spurred the development of new discourses within multiple disciplines, such as the green economy, which was a central theme in the Rio +20 Conference, and green growth strategies, which have become central in policy making for developing and developed countries alike.

2.2.1 Sustainable development and renewable energy

As part of the development agenda, a focus on sustainable energy has become central, with researchers and development practitioners recognizing it as a key priority to achieving sustainable development. This priority builds on the notion that access to energy is necessary for increasing prosperity among the poorest countries in the world, and that in developing countries energy practices, particularly among the poorest, are unsustainable and unhealthy (SE4ALL, 2014). The environmental aspect of the issue is that there is an increasing need for energy in developing countries due to population growth and increasing prosperity, which takes a toll on the natural environment due to unsustainable practices (Groh, 2013). The social aspect of the issue relates to the negative health implications of using traditional cooking methods, additionally, access to electricity has been shown to be essential for achieving proper education and for a vibrant business community (Akpan, Essien, & Isihak, 2013). Furthermore, Groh (2013) introduces the concept of the energy poverty penalty, building on the concept of the poverty penalty central to BoP thinking, stating that the poorest part of the population typically pays a poverty premium for basic services. This is also the case when it comes to energy due to remoteness from distribution systems and low adaptation to people's needs as a result of a perceived lack in purchasing power (ibid.). In this context, solar power has become a popular solution to increase electricity access in developing countries, due to its characteristics suitable to the needs of the poorest segments for basic access and as back up in grid-connected areas. It has low investment costs compared to grid connectivity or other types of mini-grid renewable power solutions, making it suitable for entrepreneurial activity. With a focus on sustainable development, the solar power industry is thus particularly relevant to investigate as an outset for the study.

2.2.2 Sustainable development in business studies

Within business studies, sustainable development has also become an influential concept, and as the role of business in the degradation of the environment has come under scrutiny by both the public and by policymakers, most larger businesses today have implemented sustainability programs and corporate social responsibility reporting (Hall, Daneke, & Lenox, 2010). So far, the goal has mainly been to reduce the

harmful impacts of businesses and the financial returns for implementing such 'green' or sustainable initiatives have been promoted as the 'business case' for corporate sustainability (ibid.). However simply reducing the harmful impact of business practices is not sufficient to achieve sustainable development, (ibid.).

The inability of large corporations to serve as vehicles of sustainable development is attributed to their exposure to competitive pressures in their industry, inflexible corporate structures and corporate inertia (York & Venkataraman, 2010). Focusing on the role of business in sustainable development has therefore shifted towards new types of business practices and ways of organizing in the private sector or across sectors. In development studies, different streams of literature have emerged focusing on bottom up development intervention, inclusivity and empowerment of local actors and communities. Entrepreneurship literature is an example of this, focusing on the role of entrepreneurship in driving the transformation towards sustainable development. The main interest is no longer in reducing the harm done by businesses, but in the good they can do by transforming the market by employing more sustainable business practices (Parrish, 2010). Where the relationship between economic growth and the environment has traditionally been seen as a zero-sum game, with the environment as the ultimate loser, York & Venkataraman (2010) argues that entrepreneurship might be ideally positioned to take advantage of the opportunities environmental degradation presents and tackle the underlying issues causing it.

When it comes to the role of entrepreneurship, as with regular business, the focus has been on the business case; how entrepreneurs with a profit-seeking motive could also contribute to sustainable solutions, thus creating win-win situations (Parrish, 2010). Base of the Pyramid literature as pioneered by C. K. Prahalad, was developed along this line of thinking, arguing that there is potential for profit by serving the poor (Prahalad & Hall, 2002). In this perspective, creating products and innovations that matches the needs of the poor, will have the benefit of increasing social wellbeing and prosperity by providing access to products that the poor would otherwise pay overprice for due to the poverty penalty. This stream of literature has spurred a range of literature focusing on how to bring innovations and products to this segment, and it has

been argued that it is key to root such products in the local networks and business eco-systems in order to successfully have an impact, thus applying a bottom-up approach (Khavul & Bruton, 2013). However, when entrepreneurship is increasingly seen as a 'panacea' for social and environmental concerns (Hall, Daneke, & Lenox, 2010), it is also necessary to study entrepreneurs motivated by other things such as social or environmental goals, to get a comprehensive picture of their contributions (Parrish, 2010). There is a large degree of uncertainty regarding entrepreneurship's role in the domain of sustainable development, this will be discussed further in the next section.

2.3 Sustainability Entrepreneurship

2.3.1 Defining the fields of entrepreneurship

Under the general subset of entrepreneurship, a number of distinctive fields of study have emerged to investigate the role of entrepreneurship in achieving social aims and in solving some of the persisting issues faced by society, such as poverty, social exclusion, climate change and environmental degradation, in addition to contributing to economic growth. This trend is spurred by the belief that entrepreneurship might be the answer to society's pressing social and environmental issues, while recognizing that the field has not been sufficiently studied to make such claims (Thompson, Kiefer, & York, 2011). These fields include development entrepreneurship, eco-preneurship and social, environmental and sustainability entrepreneurship, of which social entrepreneurship is perhaps the most established, with the others are still in their infancy when it comes to empirical research and theory building (ibid.). In this paper, the interest is in sustainability entrepreneurship, as this emerges as the response to reach sustainable development. The distinctions between the fields are blurry, their research overlaps in many ways, and this review of the literature will therefore include research and theory from the other fields, as they shed light on areas relevant to the study, which have not yet been studied in relation to sustainability entrepreneurship.

A major academic challenge has been how to define the new types of entrepreneurship as distinct from each other and from traditional entrepreneurship. One of the key differences is in terms of the opportunities pursued by these kinds of entrepreneurs as opposed to traditional entrepreneurs. As described above,

entrepreneurial opportunities stem from changes in the market that create information asymmetries, enabling market actors to develop or identify and pursue an opportunity and create entrepreneurial value. In the context of sustainability entrepreneurship, it is argued that the market failures that cause economic development to negatively impact on the environment and cause social disparities, present opportunities that entrepreneurs are uniquely positioned to tackle (Dean & McMullen, 2007). Socially or environmentally relevant market failures are inherently uncertain in nature, and require innovation in both products, processes and ways of organizing (York & Venkataraman, 2010). The characteristics of the opportunities present in socio-environmentally relevant market failures thus matches the entrepreneurial forte of allocating resources to respond to uncertain circumstances to create cost-effective solutions (Dean & McMullen, 2007). By responding to such opportunities, entrepreneurs introduce disruptive innovation in practices, products, or organizational forms, presenting a more sustainable alternative to those of incumbents (Hockerts & Wüstenhagen, 2010). If such innovations are superior and cost-effective, incumbents will crowd in, eventually transforming the industry to eliminate the market failure responsible for the negative socio-environmental impact (Hockerts, 2010). In this way, sustainability entrepreneurs obtain an important transformative role towards tackling pressing socio-environmental problems.

2.3.2 The blended value proposition

Besides differences in the type of opportunities pursued, entrepreneurship literature also distinguishes between traditional entrepreneurship and these alternative types of entrepreneurship in terms of the value creation purpose of the entrepreneurial venture. When defined in terms of this, the venture is placed on a continuum with purely philanthropic ventures at one extreme and purely profit oriented ventures at the other, with all blended value proposition ventures being located somewhere in between. In this context, the blended value proposition means ventures that pursue other objectives such as social and environmental together with financial ones.

What, then, are the distinguishing features of sustainability entrepreneurship compared to other types of blended value entrepreneurship? In this connection, sustainability entrepreneurship is distinctive in that it

simultaneously aims to achieve social, environmental and financial objectives, and this pursuit is incorporated into the organizational design so that the employment of resources and organizing of activities are designed to balance this triple value proposition (Thompson, Kiefer, & York, 2011). The focus on a blended value proposition stems from management literature within corporate sustainability with a focus on the impact of business practices on the environment, and within corporate social responsibility with a focus on the impact of business practices on society. The concept of corporate sustainability was initially seen as an expansion of the traditional managerial focus on economic sustainability, with the purpose of maximizing shareholder value, to also include social and environmental sustainability, so-called triple bottom line thinking (Dyllick & Hockerts, 2002). Both the social and environmental responsibilities of firms were initially advocated on the basis of the 'business case', that minimizing the harmful socio-environmental effects of business practices would result in a win-win situation – with possible gains for both shareholders and society (Young & Tilley, 2006). In order to reach the goal of sustainable development, simply reducing the negative effects of business practices was quickly deemed insufficient for businesses to become truly sustainable (ibid.). It has been argued that businesses need to move a step further to achieve this potential, to move towards integrated business models with financial, social and environmental missions combined under one sustainability objective (Parrish, 2010). Accordingly, sustainability entrepreneurship is distinctive from the other fields of entrepreneurship in the integrated manner in which sustainability entrepreneurship ventures organize their activities around the blended value proposition including both financial, social and environmental objectives (Young & Tilley, 2006).

2.3.3 Balancing the blended value proposition

The ability of entrepreneurs to balance a blended value proposition is disputed in the literature. According to Pirson (2012) and Hockerts (2010), pursuing such a triangular value maximization strategy will lead to mission drift, where one of the values takes primacy over the others, and the entrepreneurial venture will either drift towards traditional entrepreneurship or pure philanthropy. In contrast, Young and Tilley (2006) and Parrish (2010) argue that balancing the triple value maximization strategy is precisely what constitutes

successful sustainability entrepreneurship and that this can be achieved by implementing certain operational principles. According to them, sustainability entrepreneurship ventures organize their activities around the premise of maximizing all three values, what Thompson et al. (2011) calls 'whole enterprise design'.

The literature highlights a number of factors that can potentially influence balancing of the blended value proposition, e.g. organizational design and strategizing, market structure in the industry or institutional environment (Hockerts, 2010; Pirson, 2012).

The argumentations for the likelihood of mission drift when pursuing blended value maximization strategies primarily take point of departure in the struggles between financial value maximization versus the social and/or environmental objectives. According to Hockerts (2010), this happens because of mechanisms in the market, which follow disequilibria materializing as the entrepreneurial venture first enters with a novel value proposition. As the incumbents react and adapt to the disruption caused by the entrepreneur, equilibrium is restored in the industry, and the entrepreneurship venture will have to adjust to losing its initial advantage by either pursuing a financial or a social/environmental maximization strategy (ibid.). In a similar vein, Pirson (2012) argues that blended value creation is often unrealistic, as the desire to create a broad impact within the social/environmental mission will necessitate employing traditional business measures to have sufficient financial capabilities. Such pressures will either lead to the venture pursuing traditional profit-maximization strategies and thus compromise the social/environmental mission, or withdraw entirely from using business practices to avoid corrupting the social/environmental mission by including financial interests (ibid.).

Both these arguments take point of departure in an assumption that the entrepreneurial venture operate under influence of western market mechanisms and institutions, dominated by traditional western management philosophy, which dictates that single value maximization should be pursued to create maximum benefits to society as well as to the business through competitive advantage (ibid.).

In contrast, the triple value maximization strategy perspective assumes that having the organizational set-up centered around the pursuit of maximizing all three values simultaneously is the recipe for a successful sustainable entrepreneurial venture, and is the way that entrepreneurship ventures can actually fulfill their role towards the social and environmental objectives of sustainable development (Parrish, 2010).

As previously mentioned, the blended value proposition have primarily been researched in a western market context. Since the focus of this paper is on the role of entrepreneurship in sustainable development, it is interesting to investigate whether the same pressures are relevant in a developing country setting, and whether and how the local institutional environment influences the value proposition of sustainability entrepreneurship ventures.

3 THEORETICAL FRAMEWORK

This chapter outlines the institutional perspective employed in this paper, and develops a theoretical framework for analysis of the interactions between the blended value proposition of sustainability entrepreneurship ventures and institutions in the Tanzanian context.

For this purpose, it is useful to first outline and define the various theoretical concepts to be included in the framework.

As described above, entrepreneurship studies can focus on different levels of analysis ranging from the entrepreneur as an individual over the entrepreneurial venture to the transformative role of entrepreneurship on industries, market or society. In this paper, while recognizing the transformative role of sustainability entrepreneurship as a vehicle towards sustainable development, the attention is directed towards the balancing of the blended value proposition within the entrepreneurial venture. The focus is thus on the entrepreneurial venture as an organization, and the organizational design which is structured around the blended value proposition. In virtue of the definition of sustainability entrepreneurship outlined above, the three value creation purposes of environmental, social and financial objectives are expected to be pursued simultaneously. It is the interaction between this blended value proposition, embedded in the organizational

design, and the institutional environment that will serve as the analytical nexus in this paper, which will be investigated in the case organizations based on the accounts provided by the entrepreneurs, who will serve as the units of analysis.

In order to analyze the interactions between the institutional environment and the entrepreneurial organizations, the theoretical framework will thus consist of the two main entities:

- The value proposition of the entrepreneurial venture.
- The institutional environment surrounding it and of which it is part.

Each of these will be discussed in further detail below.

3.1 Value Proposition

Seeing that this study set out to investigate how the sustainability entrepreneurship ventures balance a blended value proposition and how it is integrated into their organizational design, it is important to first establish the blended value proposition and organizational design as analytical concepts.

Organizational design can be defined as the implementation of three interlocking elements, which together makes up a business venture (Lasserre, 2007):

- Organizational structure: the formal, directly observable set up of the organization. This includes the assignment of roles, responsibilities and power, the choice of physical premises for the organization, and strategic choices about products/services, suppliers, and distribution system.
- Organizational processes: these are informed by the strategic choices about how the business is run, including how decisions are made, resource allocation, policies, sanctions and controls, and performance evaluation processes.
- Organizational culture: the shared values and dominant logic that informs the behavior of the members of the organization and shapes what kind of behavior is rewarded or sanctioned.

The choices made regarding the three elements of the organizational design are based on the overall business strategy. The business strategy is typically defined as a set of fundamental choices regarding the long-term objectives of the organization regarding the value proposition towards its stakeholders (ibid.).

The organizational design can therefore be seen as the organizational framework put in place in order to follow the business strategy and reach the long-term objectives of the organization.

In order to establish and analyze the features of the value proposition in the case studies, it is therefore necessary to investigate how it is integrated in the three elements of organizational design.

In traditional business studies, the value proposition of an organization is defined as the choice of value attributes, the choice of customer segments and the choice of standardization of the product/service offered, where value attributes refer to the elements of the product/service that the customers value (ibid.). For the purpose of the analysis in this paper, a broader definition is chosen to account for the particular characteristics of sustainability entrepreneurship and analyze how the sustainability elements are balanced. Accordingly, the concept of value proposition employed in this paper, refers to the choices made, informed by the overall objectives and purpose of the organization, regarding the value attributes. Here, the value attributes are divided into the three elements of sustainability, in order to enable an analysis of how the social, environmental and financial elements are valued. The value attributes are the values that the ventures aim to present to their stakeholders and can therefore be seen as their value objectives. It will therefore be investigated how the ventures intend to create social, environmental and financial value through their organizational design, identifying these value objectives in their organizational structure, processes and culture.

The blended value proposition as integrated in the organizational design can be visualized as follows:

Figure 3-1: Value proposition framework

In practice, the value proposition of the cases studied in this paper will therefore be analyzed taking point of departure in the organizational design:

3.1.1 Organizational structure

The organizational structure is examined in order to analyze whether and how each of the value objectives are represented in the formal set-up of the organization. This includes examining whether and how social, environmental and financial values are represented in the choice of products/services, the objectives and purpose of the organization, the customer segments targeted, and choice of supplier and distribution system. Social values can for example be expressed in the choice of consumer segment to target, if the objective of targeting this segment is to provide particular products that will increase the customers' social wellbeing. Similarly, environmental values can be expressed with motivation of introducing solar powered products to reduce reliance on fossil fuels and introduce a 'greener' alternative.

3.1.2 Organizational processes

Organizational processes are examined in order to analyze whether and how the three value objectives influence how the business is run. This analysis can uncover whether social, environmental and financial concerns are included in the operational activities of the organization, for example in the way resources are

prioritized and allocated, how decisions are made, how conditions for employees are conceived, and other operational processes in place. These processes can be investigated in terms of how the ventures employ their resources in relation to their social, environmental and financial objectives, whether they experience that they have to make trade-offs or that there are synergies between the objectives.

3.1.3 Organizational culture

Organizational culture is not directly observable and cannot necessarily be defined in concrete terms. The analysis will attempt to establish how the social, environmental and financial objectives influence the organizational culture by way of investigating whether and how they influence what goals, policies, sanctions and performance evaluators are implemented to guide behavior within the organization. This can for example be expressed in the way that employees talk about the three values in relation to their day-to-day operations and work routines.

3.2 Institutions

It has been discussed in the previous chapter how institutions matter in terms of the appropriate strategic choices available to firms in a given context. In order to analyze the role of institutions in sustainability entrepreneurship ventures' ability to balance the blended value proposition, it is necessary to first discuss how institutions matter; the interplay between institutional and organizational processes. The analytical perspectives developed by Scott in 'Institutions and Organizations' (2001) will be used as basis for the institutional analysis conducted in this study. A number of different frameworks exist for institutional analysis, for example North (1990), and Aoki (2001), both focusing on institutions and economic performance, and Peng (2002), focusing on business strategy. The benefit of Scott's analytical framework is that his institutional perspectives are discussed in relation to organizations and organizational processes and is thus suitable for an analysis of how institutions and organizations interact.

According to Scott (2001), institutions guide human interaction by providing guidelines and resources as well as constraints to behavior. They both arise, are modified and preserved in human interaction, and

although Scott sees them as processes rather than static elements of society, they are resistant to change, which gives them the power to guide behavior and provides predictability to what to expect from other people's behavior. This also gives the researcher the opportunity to identify institutional elements and characteristics, as they become observable in the behavior of informants or can be interpreted from their account of their actions and motivations.

The relationship between institutional and organizational processes can be analyzed at different levels: world system, society, organizational field, organizational population, organization and organizational subsystem (Scott, 2001). The relevant levels for the purpose of this study are the organizational field, the organizational population and the organization. These have in the data collection and analysis process been identified as the levels at which institutional and organizational processes interact and are influenced by each other. The organizational field serves as context for the case study, and is identified as entrepreneurship in the Tanzanian context. The organizational population comprises sustainability entrepreneurship. Finally, the organizational level is where institutions directly influence the sustainability entrepreneurship ventures.

Scott defines three pillars as the building blocks of institutional processes, moving from the explicitly, legally enforced, to the taken for granted: regulative institutions, normative institutions and cultural-cognitive institutions.

3.2.1 Regulative institutions

A defining feature of the regulative pillar is coercive power, which is used to establish and enforce rules in order to influence behavior. These rules can be formal or informal, and in order for them to successfully influence behavior, they must be perceived as legitimate by the constituents; therefore this pillar must be supported by normative institutions and not by force and power alone (ibid.). Examples of regulative institutions are political structures, such as legislation, which create and put in place mechanisms to enforce laws in order to guide behavior.

In the context of sustainability entrepreneurship in Tanzania it is therefore interesting to uncover, on the various levels of analysis outlined above, how the regulative institutions influence, constrain and enable the activity of entrepreneurship ventures operating within the field of sustainability.

Identifying and analyzing the relevant institutions can be done by locating the specific public laws, programs, or agencies operating within the entrepreneurial field, the sustainability entrepreneurship population or with direct impact on the organization, to which the entrepreneurs ascribe importance or which through their accounts can be seen to guide their behavior. This will give an insight into features of the regulative framework in which the entrepreneurs operate and how it might influence the value proposition of the case organizations. It will additionally uncover how the entrepreneurs themselves interact with and influence the regulative institutions to make them more conducive to their activities.

3.2.2 Normative institutions

Normative institutions regulate behavior through a system of norms and values, which create a notion of what is legitimate in given situations; they determine what different people perceive as appropriate behavior for certain people in certain situations (Scott, 2001). In this way, it constrains and enables behavior by determining what is considered legitimate in a given context. According to Scott (2001), values are defined as what is perceived as preferred or desirable, and forms a construct of standards to which behavior can be assessed. Norms determine how things should be done; it specifies the acceptable behavior to reach the valued goals (ibid.).

The behavior of organizations is regulated by normative institutions in the same way, guided by the norms and values of individuals internal and external to the organization. Normative institutions influence organizational behavior by constituting the legitimate behavior in the given context through values and norms systems present at both the field-, population-, and organizational level of analysis. The practical translation of this for the purpose of the analysis in this study is outlined as follows:

At the entrepreneurial level, it provides a normative framework for being an entrepreneur, how entrepreneurial behavior is valued and what is considered legitimate entrepreneurial behavior.

At the population level, the concept of sustainability is influenced by the value that is prescribed to sustainability or to organizations being sustainable, and the perception of what constitutes legitimate sustainable behavior.

At the organizational level, normative institutions influence behavior by both creating a framework for how certain organizational goals and missions are valued, and by creating expectations to how a sustainability venture should behave. Normative institutions also create conceptions of what constitutes acceptable behavior among employees, customers and other stakeholders to the organization.

As normative institutions are not constant, established entities, but subject to constant transformation as discussed above, uncovering how normative institutions influence behavior of sustainability entrepreneurs at the various levels, will in practice be analyzed based on the testimonies of the entrepreneurs gathered in the case interviews. Through this, it will also be analyzed whether and how the entrepreneurs themselves seek to change their surrounding norms and values systems for their entrepreneurial purposes.

3.2.3 Cultural-cognitive institutions

The third and final institutional pillar of the framework model is the cultural-cognitive. Scott (2001) defines cultural-cognitive institutions as the shared conceptions of the nature of social reality, which constitutes the frames through which meaning is made. It describes the influence of institutions on individual thought processes, but is inherently a social concept, as it refers to how socially created spheres of meaning are translated into individual perceptions of reality (ibid.). It is because of this exchange mechanism between external cultural frameworks influencing internal perceptions of the world, which in turn perpetuates the cultural framework, that the pillar is identified as the *cultural*-cognitive. Cultural-cognitive institutions are resistant to change and changes incrementally through the meeting with conflicting perceptions of social reality.

It is difficult to establish a framework for how to analyze the influence of cultural-cognitive institutions on the behavior of organizations, as it has to do with extracting how culturally and socially defined meaning structures shape the internal meaning creation of the entrepreneur and other stakeholders. For the purpose of the analysis in this paper, it is interesting to attempt to determine the context specific factors, such as cultural traits, that make it more or less attractive to become an entrepreneur, that shape the internal perceptions of sustainability, and that shape the thought patterns behind organizational design, which might differ from the sustainability entrepreneurship literature specific to western cultural settings.

The three categories outlined above are theoretical constructs, which when applied to dynamic concepts such as human behavior can potentially simplify the derived explanations. Institutional influences do not necessarily conform to a single category, and the categories are mutually dependent with mechanisms in one influencing aspects of the other. A theme articulated by an entrepreneur in the interviews, might be influenced by a combination of the three institutions, and will therefore in the analysis be discussed from these different perspectives. Particularly normative and cultural-cognitive institutional influences may be difficult to separate, as norms and values systems are shaped by shared cultural-cognitive meaning patterns. On the other hand, they are useful categories for analysis, as the differentiation allows for a better understanding of the underlying assumptions, mechanisms and indicators of different institutional processes/manifestations.

3.2.4 Legitimacy

Institutions influence organizations through legitimacy. Scott defines legitimacy as "a generalized perception or assumption that the actions of an entity is desirable, proper, or appropriate within some socially constructed system of norms, values, beliefs and definitions." (Scott, 2001, p. 47). In order to thrive, organizations need to be perceived as legitimate by their stakeholders, and each of the three institutional pillars provide a different base of legitimacy for an organization (ibid.). The institutional rules that confer legitimacy to organizations are, as described above, dynamic: they at the same time constrain behavior and are modified by it; they guide the behavior of social entities, while these entities at the same time maintain

and transform them. Legitimacy is thus not a constant, but changes over time, and what is considered legitimate organizational behavior therefore changes too. When analyzing institutions and legitimacy in relation to organizations, it is thus necessary to not see them as separate, external forces shaping organizations, but instead as mutually influencing processes.

3.3 Theoretical Framework

The framework below has been developed based on the operationalization of the theoretical concepts outlined above by way of combining Scott's institutional framework with the value proposition framework.

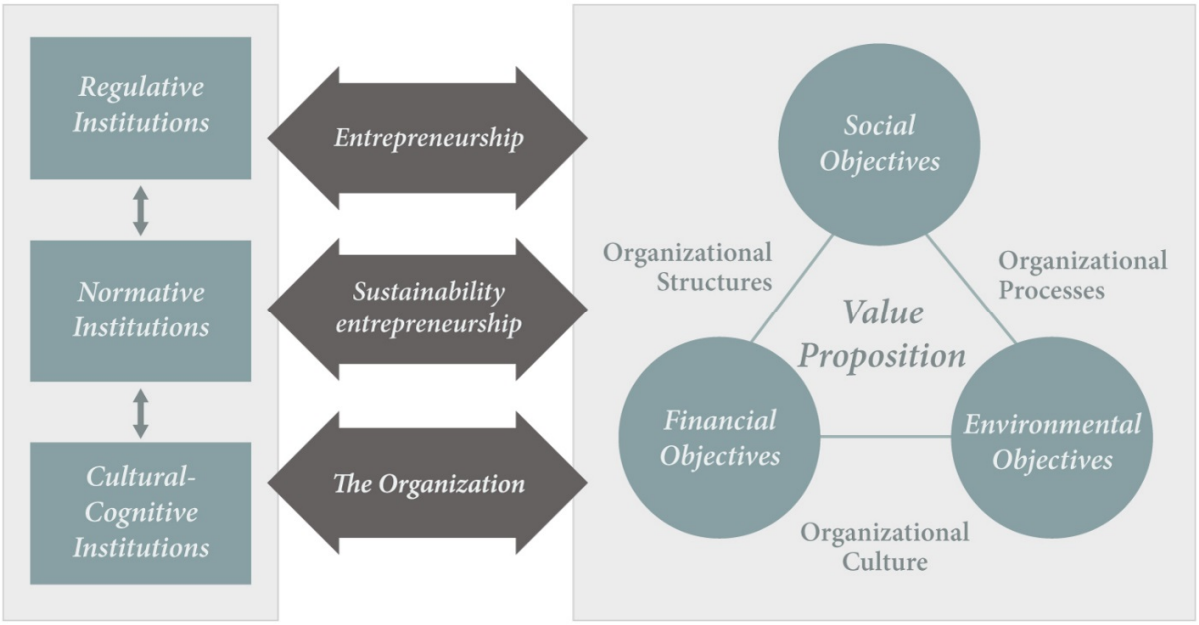

Figure 3-2: Theoretical framework

The interaction between institutions and organizations is analyzed through how the three pillars of institutions confer legitimacy to the organizations on the field-, population- and organizational level. The arrows point both ways to illustrate that organizations are not powerless to institutional pressures or processes, but can also employ strategies to influence the institutions and what is considered legitimate.

4 METHODOLOGY

This chapter outlines the methodology for the research conducted in this study. The methodology comprises all considerations regarding the purpose of the research, how to go about conducting the research, and the philosophical assumptions that goes into the design of the research to most appropriately answer the research question. The methodology is thus defined by the nature of the research problem (Ghauri, 2004).

4.1 Research Purpose

The aim of the study is to explore how the institutional context for sustainability entrepreneurship ventures in Tanzania influence their blended value proposition. As established in the literature review, there is little literature available when it comes to sustainability entrepreneurship, and even less in a developing country context such as Tanzania. When available literature is limited and the field of study is less well defined, an exploratory approach is particularly suitable (Ghauri, 2004). The lack of knowledge and theory in the field is not suitable to creating and testing of hypotheses, hence this study applies an exploratory approach to investigate how applying and combining concepts from the literature can create explanations for the mutual influences between sustainability entrepreneurship and institutions in the particular context.

A qualitative methodological approach to research is useful when engaging in exploratory research (Cresswell, 2003), and is useful for this study, as the purpose is to find in-depth explanations for the particular behavior of entrepreneurship ventures in their institutional context. Qualitative, exploratory research is not suitable for creating empirically generalizable propositions, but this study aims instead to explore in depth the particular social phenomenon to try to come up with specific explanations, which can contribute to the sustainability literature. Qualitative research is suitable for combining theoretical perspectives to see if the combination can adequately explain the situation (Ghauri, 2004), which is exactly what this study is aiming to do by combining institutional theory and available literature within sustainability entrepreneurship to answer the research problem.

The important variables were not known prior to the data collection, and the data collected in order to gain the appropriate in-depth understanding are the unique perspectives and experiences of the entrepreneurs, which must be interpreted qualitatively in order to generate the explanations that the study aims to create.

4.2 Philosophy of Science

Philosophical assumptions guide research in terms of ontological perceptions of what constitutes reality and epistemological perceptions of how to properly access this reality and create knowledge about it. Such assumptions will guide the type of research problem identified, the methodologies applied, and the knowledge claims that can be made on this background (Cresswell, 2003).

The philosophical assumptions applied in this study is guided by a critical realist philosophy of science. In social science, critical realism presents itself as an alternative to the traditional spectrum of positivism and interpretivism/social constructionism, by proposing a way to combine a modified positivistic notion of an observable 'truth' with the notion that an interpretive understanding of meaning is necessary to understand social phenomena (Sayer, 2000).

The study applies the critical realist assumption that the world exists independently of our knowledge about it, and that our knowledge of the world is shaped by the discourses we operate within. We can therefore not expect to create true knowledge, as the knowledge we create is transitive and dependent on the context in which it is created (Sayer, 2000). Although critical realism is compatible with a range of research methods, it implies that the methodological choices should be dependent on the nature of the object of study and what the researcher is interested in uncovering about it (Easton, 2010). The following sections will outline the critical realist ontological and epistemological assumptions, relate them to the study, and discuss how the critical realist view of causality is relevant to the explanations developed in this study.

The ontological position of critical realism distinguishes between the real, the actual and the empirical (Sayer, 2000). The real is whatever exists in the natural or social world and can be identified as the entities that make up the world. In this study, such entities can be identified as sustainability entrepreneurship

ventures and the institutions that they are embedded in. Entities have certain structures and powers, and what happens when these are activated is referred to as the actual (ibid.). Referring to the theoretical framework outlined in the chapter above, the utilization of institutional theory corresponds with this in that all social entities have structures and powers to influence each other. Roles and identities of social entities are internally related, so that what one person or organization can do depends on their relation to others. The powers they can draw upon depend partly on their relationship with one another and partly on relevant parts of their context (ibid.). In the terminology of critical realism, it is the structures and powers of the organizational and institutional entities and the events that come out of their contingent relationships that is explored in this study. In this connection, institutions are identified as entities rather than contextual factors, as it is assumed that their powers and structures are activated in relation to the entrepreneurial ventures, and that this causes certain outcomes by influencing behavior in a certain way. Critical realism distinguishes between contingent and necessary relations, with the latter being between entities where the existence or definition of one is dependent on the other (Easton, 2010). The relations between organizations and institutions are seen as contingent as one does not depend on the other, but they may influence one another through their relations. This relationship is exactly what this study will attempt to analyze when looking at how institutions shape the value proposition of entrepreneurial ventures, and when looking at how the entrepreneurs themselves have power to actively engage with institutions to transform and modify them. The analysis and observations made by researchers of the real and the actual occurs in the empirical domain (Sayer, 2000). The empirical domain is thus where knowledge is created through a process of interpretation, and is thus where epistemological assumptions are necessary to consider.

Epistemologically, the critical realist perception of knowledge is divided in to the transitive and intransitive dimension (ibid.). The stratified, three-layered ontology constitutes the intransitive dimension of knowledge, the world that exists independently of our knowledge of it, which we are aiming to analyze and generate explanations about in the transitive dimension (Van de Ven, 2007). This view of the social world as external from our knowledge of it, continually changing due to the interrelationships between the social

entities inhabiting it, poses implications for the reliability of the conclusions of a study in the critical realist view. There is an implicit acceptance that the explanations arrived at will not necessarily remain accurate over time, as the subjects of study, the institutions and the entrepreneurial ventures, change over time due to their interactions.

It also has implications for how causality is viewed and can be used to create explanations. In positivistic research, the aim is to establish causal regularities that can be generalized to a wider population. This implies a closed system and not the open system in the critical realist ontology, where social entities have the capacity to learn and change behavior, and where causal processes are therefore expected to produce different results in different contexts (Sayer, 2000). It would thus be expected that institutions differ between different cultural contexts, and that the value proposition of sustainability entrepreneurs in say Europe, will be different from the ones included in this study, as they are embedded in a different institutional context. In critical realism, the quest is therefore to produce explanations for specific situations rather than identify regularities. Explanation depends on identifying causal mechanisms and how they work, and discovering if they have been activated and under what conditions (ibid.). This process can be visualized as follows:

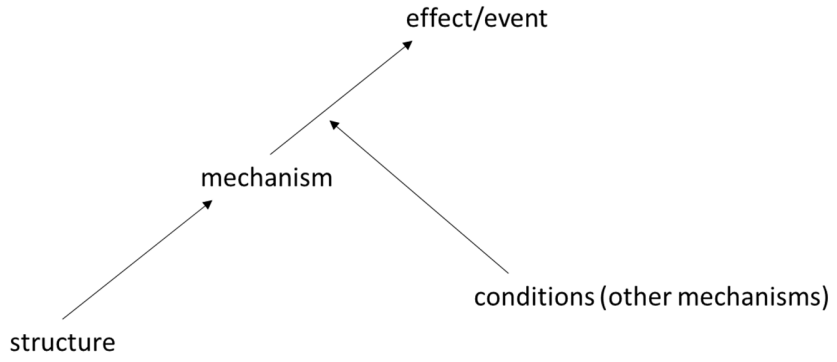

Figure 4-1: Critical realist view of causation (Sayer, 2000)

Applying this view of causality to the theoretical framework, the relevant institutions and the entrepreneurial ventures can be identified as the structures (entities), with their interaction through the activation of their different powers being the mechanism that causes an effect/event. This process is what

this paper is interested in uncovering. In this study, other relevant conditions/mechanisms have been purposefully ignored, despite perhaps having influencing effects on the value proposition of sustainability entrepreneurs, in order to more clearly focus on the role of institutions.

4.3 Research Design

The following section will discuss the overall methodologies, which have been chosen for the research conducted in this study in line with the purpose and the philosophical assumptions to answer the research question.

An important methodological consideration is how the research handles the relationship between theory and data. This is important in order to establish how the research will contribute to the existing literature and what kind of data should be collected and analyzed, and how. A typical distinction is between an inductive and a deductive approach to research, where inductive is used to describe research with a starting point in data and deductive describes research with a starting point in theory and literature (Gibbs, 2007). With an exploratory purpose for the research, it is necessary to immerse oneself in the data and be open to the findings emerging from it. However, as the research is not performed in a vacuum and the researcher cannot be completely free from preconceptions about the area of inquiry, it is also necessary to root the research in available literature in the field of study. This also enables the establishment of a relevant research problem, avoiding repetition of research already conducted, and identification of holes in the literature where the research will be able to contribute with new knowledge.

This means that the approach to data and theory is seen as more fluent than in the inductive/deductive dichotomy, with a starting point in the literature but still driven by the data collected. Entrepreneurship literature was reviewed in order to establish the existing knowledge in the field of sustainability entrepreneurship and root the research problem therein. Based on this, the research problem was formulated in order to attempt to contribute to the literature. In order to establish a framework for analyzing the particular Tanzanian context, it was chosen to analyze the institutional environment based on institutional

analysis theory. The starting point for the analysis was thus driven by concepts from the relevant theory and literature condensed into the theoretical framework, however in order to adhere to the exploratory purpose, the analysis continually moves back and forth between the data collected and the theoretical framework in order to be open to new findings materializing in the data.

In order to establish a framework for approaching the data, a case study methodology has been selected. A case study approach is suitable in qualitative, exploratory studies where the objective is to understand a phenomenon in depth (Ghauri, 2004). The strength of a case study is that the researcher can combine theoretical frameworks and different data sources to try to thoroughly understand and explain a situation in its context (ibid.), corresponding with the purpose for this study, which is to create an in-depth understanding of sustainability ventures in their institutional context.

The unit of analysis for the study is the entrepreneur or employees within the case ventures. The units of analysis are embedded in the cases selected for the study; the case organizations, and this study thus applies a multiple case study methodology. The appropriate number of cases for a research study is decided by the research problem; the logic behind selecting multiple cases is to study the same questions in a number of cases and compare them to draw conclusions (Ghauri, 2004). This study applies a multiple case study of five entrepreneurship ventures, in order to study the behavior of each venture as part of their individual context as embedded in the wider institutional context of the Tanzanian solar power industry. The critical realist model of causality predicts that different conditions and mechanisms can influence the outcomes of the interactions between institutions and ventures, and it is therefore relevant to examine more than one organization to see how there might be differences and similarities in how institutions influence them individually. The individual accounts create the opportunity to compare and contrast between the cases in order to draw conclusions relevant to the broader institutional context in which they are embedded, and to identify similarities and differences in how it influences their behavior. The analysis is based on units of analysis from each case to establish a comprehensive view of the complexities involved in the interaction

between institutions and sustainability ventures, by way of drawing on interpretations of the behavior of multiple ventures.

The key constraint for case study research from a positivistic standpoint is lack of statistical representativeness (Easton, 2010), however we are not looking for representativeness or generalizations, but to provide specific explanations for the particular subject and context, and to draw the various elements of the theoretical framework together to create in-depth understanding.

4.4 Data Collection and Analysis

4.4.1 Selection of cases

Tanzania was selected arbitrarily to serve as the geographical location for the research as an example of a developing country context for the case study. Tanzania was selected due to reasons of practicality, as I had previous experience from and knowledge of the energy sector in the country and contacts to use as access points to the industry. The empirical research was collected over a two-week period in June 2014. Tanzania is an interesting country to serve as context for the case study, as it qualifies as a LDC located in Sub-Saharan Africa, which has as of yet not managed to catch up in economic growth and development, despite absence of conflict and a political will towards supporting and encouraging entrepreneurship and private sector development. It is interesting to investigate how this political will resounds in the institutional environment for entrepreneurs in the solar power industry. Furthermore, Tanzania has the convenience of having a large part of its population speaking English fluently, which meant that interviews could be conducted without translation. All interviews were conducted within organizations based in the capital, Dar Es Salaam, however, most of the case organizations were present in numerous locations throughout the country, and it was therefore decided to use Tanzania as the geographical reference in the research problem.

In order to locate organizations that live up to the sustainability entrepreneurship label, the definition of sustainability applied in this paper has served as frame of reference. This means that initial research on the cases conveyed that environmental, social as well as financial concerns were each part of the value

proposition of the entrepreneurial venture. Before conducting the actual interviews, this selection process was based on the following assumptions. In order to narrow the field of possible case businesses, the solar industry was selected due to its role in sustainable development by providing 'green' energy alternatives appropriate also for BoP segments. It is assumed that, by the very nature of this industry, the environmental criterion is fulfilled, as the products or services provided are generally considered 'green' and thus environmentally friendly as compared to other types of energy sources. Furthermore, due to the role that energy, and access to electricity in particular, has in the development process of a country, providing energy alternatives suitable to rural and poorer population segments, it was considered likely that the ventures had social objectives. The businesses' websites, if available, were also examined, and all selected cases were found to articulate social and environmental objectives through this platform. Finally, all of the case organizations selected operated as normal businesses, or were engaged in traditional business activities to satisfy the financial criterion.

No requirements to size or age of the business was imposed; however, it was assumed that the businesses targeted are relatively established and successful, as they were registered on industry websites and all had their own website.

With the field limited to entrepreneurial ventures operating in the Tanzanian solar power industry, a small sample of ventures was identified and contacted and the following interviews were conducted:

	Company name	Description of business	Informants	Length of interview	Founding year	No. of employees
1.	Anverson Solar	Solar power products retailer	Two brothers and co-owners of the business	42 minutes	2008	10
2.	SolarWave Tz Ltd	Solar technology (solar powered water systems)	Sales and marketing manager	31 minutes	2011	5+
3.	Rex Energy	Solar Power products retailer & installations	Managing director, owner	45 minutes	2000	50+
4.	Arti Energy & Arti Africa	Arti Energy: solar power products and cooking stoves	Three informants: the executive director & owner,	1 hour 16 minutes	2006	8

		retailer, Arti Africa: renewable energy and development projects	the program officer for Arti Africa and a sales officer.			
5.	Voltzon	Solar Power products retailer & installations	Sales executive	30 minutes	2008	10

Eight companies were contacted, of which six interviews with six different case organizations were achieved. One organization was excluded during the data analysis process due to it differing substantially from the other ventures. The excluded business was an engineering company, which had had very limited activity in the solar power industry. The sample thus consists of five entrepreneurial ventures.

4.4.2 Collection of data

The purpose of the data collection was to gain insight into the perceptions and experiences of people within the entrepreneurial ventures, and through interpretation of that data, to identify the relevant institutions and their relationship to the value proposition of the organization. It was selected to collect this data through semi-structured interviews, where a list of questions is developed to guide the interview but questions are open for the informant to be able to develop and elaborate on themes unanticipated by the interviewer (Easterby-Smith, Thorpe, & Jackson, 2008). The interviews were conducted in a semi-structured manner in order to achieve a comprehensive picture of the organization and its environment based on the pre-determined theoretical concepts, while at the same time leaving room to pursue relevant topics arising in the interview situation.

An interview guide was developed with relevant questions taking point of departure in the theoretical framework. The interview guide is attached in Appendix 2, and the full interview transcripts are attached in Appendix 3 to this paper. The interviews were conducted to enable an uncovering of the regulative, normative, and cultural-cognitive institutions and how they influence the behavior of the ventures in terms of constraining and enabling mechanisms, particularly with reference to the value proposition. When it comes to regulative institutions, questions focused on the policy framework with impact on the activities

of the ventures, for example regarding entrepreneurship and energy policy. For the normative regulations, questions focused on uncovering the perceived values of customers regarding energy services and solar products, and the objectives and purposes of the venture to establish how the entrepreneurs themselves perceive and value their social, environmental and financial contributions and how they organize their activities to pursue them. Finally, it was difficult to develop particular questions regarding cultural-cognitive institutions, as these are intangible in nature and it is difficult to predict which underlying frames of meaning that shape the perceptions of the entrepreneurs and thus which questions are relevant to reveal them. This was considered in the interpretation of the interviews to see whether any shared meaning patterns were uncovered that guide the behavior of the entrepreneurship ventures.

The main source of data for the analysis is thus the interviews, but all additional available data about the business ventures was considered, such as brochures and websites, in order to triangulate the findings by adding data where I, as an interviewer, did not influence the data collected. It was attempted to attain further information about the ventures, such as financial statements or other company manuals or documentation, however this was not achieved, perhaps due lack of trust in a researcher coming from a foreign context or simply that such information did not exist or was available for disclosure. In three out of the five ventures, a founding member was interviewed and in the remaining two, a representative of the venture was interviewed. It was attempted to get interviews with several members/employees of the ventures, however this was only possible in two ventures. For the purpose of simplicity, the informants are referred to as 'entrepreneur' in the analysis section of the paper, and it should be kept in mind that this refers to all informants, not only those that have actually founded the ventures. Reference to the ventures in the analysis will be according to the numbers assigned in the schedule above.

The interviews where all taped and transcribed, and notes were taken during and after the interviews to account for the surroundings and contexts of the interviews and emphasize important aspects for the data analysis process. A summary of these and an introduction to the five entrepreneurial ventures is presented in the Context chapter of this paper.

4.4.3 Data analysis

As mentioned above, the analysis of the data was conducted in a manner moving back and forth between the theory and data in order to link the research to the established literature while being open to findings arising from the data. The analysis was conducted with a view to expanding the data through interpretation, which enables the creation of rich descriptions, identification of central themes and patterns and the creation of explanations of causal mechanisms (Gibbs, 2007). The first step was to divide the data into codes and establish central themes. Practically, this was done by identifying passages in the transcripts exemplifying the same descriptive or theoretical idea (Gibbs, 2007). The coding was based on the categories and concepts outlined in the theoretical framework, such as the three institutional pillars and the three sustainability values, and was as such concept driven. However, during this process also new concepts and themes were identified in the data, which were in turn reflected in the operationalization of the theoretical framework. The data analysis process was thus performed in an iterative process, moving back and forth between data and theoretical concepts. A schedule outlining the coding process is attached in Appendix 1 to this paper. The information collected was used to describe the case businesses and the overall industry background in which they operate. The final step was the analytical interpretation of the relevant passages, combining and comparing between the cases through the use of the theoretical framework in order to establish the causal linkages between the ventures, the institutions and their value propositions.

4.5 Validity and Reliability

The validity and reliability of a research study refers to the appropriateness and quality of the chosen literature, methods and theory in answering the research problem (Easterby-Smith, Thorpe, & Jackson, 2008). This is dependent on the philosophical assumptions and methodological approach to the study, as validity and reliability means something different when conducting quantitative research looking for empirical generalizability as compared to conducting qualitative research looking for in-depth understanding of specific social phenomena.

Assessing the validity of qualitative research has to do with the study's ability to apply appropriate methods to gain access to the experiences of research subjects and sufficient in-depth data. Similarly, reliability of qualitative research has to do with applying the appropriate analytical tools to interpret and make sense of the data collected in a way that can clearly be reflected in the actual data (ibid.).

Following the critical realist philosophical assumptions, it is accepted that because the world is distinct from our knowledge of it, and our knowledge is shaped by the discourses we operate in, we must also accept that the knowledge claims and explanations this study arrives at are shaped by the context in which the study is made, by the experience of the researcher, and that this knowledge is as such only applicable in the context in which it is created (Sayer, 2000). This does not make the explanations created in this study invalid, it just means that the validity of the findings is contingent on contextual factors, which also serves as premise for the methodology chosen and the knowledge claims made.

An important consideration when conducting research is how the interviewer and the context of the interviews influence the data gathered. When conducting case study research it is necessary for the researcher to apply reflexivity to the data collection and analysis process. As this study was not looking to produce 'objective' facts, but instead acknowledged that all knowledge created is guided by the available discourse, these discourses should be considered in the analytical process. However, under the framework of critical realism, the opinion of the researcher is not considered likely to have a significant influence on the subject studied (ibid.).

In the particular interview situations under this study, open question were used as a means to avoid imposing the researcher's own frame of reference on the informant. As the study aims to investigate the value proposition from the perspective of the entrepreneur, it was avoided to plant the idea of 'sustainability', 'social', 'financial' and 'environmental' values in the interview. However, I was of the clear impression that coming from a European university automatically influenced the informants to emphasize social and particularly environmental values more than they might have otherwise, which might influence the representation of the value propositions of the entrepreneurial ventures.

In order to increase reliability of a qualitative research study, it is necessary to create a transparent research process, and demonstrate the methods used to collect and analyze the data, and the assumptions behind the process. Accordingly, in this study the methodology section together with access to the data collected, enables other researchers to have full insight into the data, the premises on which it was collected and how conclusions were arrived at based on the analysis process. Please refer to the coding schedule, interview guide, and full interview transcripts attached in Appendices 1, 2, and 3 respectively.

4.6 Ethics

When conducting empirical research, the researcher always has ethical responsibilities towards the research institution it represents, the research subjects and the public. The researcher is responsible for protecting the interests of informants, representing their views and experiences accurately and generally avoid creating biased research results to provide particular results or conclusions (Easterby-Smith, Thorpe, & Jackson, 2008).

In order to protect the interests of the informants for this research, all informants were informed of the context, subject and purpose of the research to ensure transparency. Permissions were given for taping the interviews by all informants, and none requested anonymity. Furthermore, the analytical tools and process have been applied with a view to ensure that the data gathered is truthfully represented and that the conclusions and explanations are properly grounded in the data. Finally, the particular context of the research was considered in order to establish whether the research might be problematic for the informants, however the subject did not appear to be of a particular controversial or sensitive nature and none of the informants expressed concern in this regard.

When conducting research in a developing country context, there are particular ethical considerations that may be relevant to consider. Power gradients between researcher and informants is an issue to consider, as this might influence levels of trust and what information is considered appropriate to share between the parties of the interview or introduce a perception of coercion (Scheyvens, Nowak, & Scheyvens, 2003).

However, with the researcher being a student as in the case of this paper, this issue might not be very pertinent, while my European background may influence how certain subjects are emphasized as discussed above.

Another issue is that due to cultural and contextual differences between researcher and informants, it can be difficult to create informed consent to participate in the research. This is an important ethical issue in fieldwork research, and it was attempted to create a full understanding among the informants about the research, its uses and distribution. However, with the difference in frames of references between researcher and informants, it is difficult to be certain that informants actually have an accurate perception to base their consent on. Finally, an important ethical consideration relates to the reciprocity of the research, ensuring that not only the researcher, but also the informants who donate their time and insights, will gain something from it (ibid.). In one interview, it was expressed that they had participated in a number of research studies, but that they had never actually seen the result of these. The findings of this study will therefore be fed back to the participants to ensure their experience of being included in the process. This is also important for of ensuring a positive attitude towards researchers that are perceived as 'outsiders' for future research.

5 CONTEXT OF DATA

5.1 Tanzanian Background

This section will briefly introduce the context of the case study, by way of describing the relevant characteristics of the economic and demographic situation in Tanzania and give an introduction to the current state of the energy industry as a context to the solar power industry.

Tanzania is classified by the World Bank as a low-income economy[1], and despite sustained economic growth of between 6 and 7 percent during the last 10 years, the country still ranks 159th out of 187 on the

[1] low-income economies are defined as those with a GNI per capita, calculated using the World Bank Atlas method, of $1,045 or less in 2013, (WB, Data: Country and Lending Groups, 2014).

Human Development Index[2] (UNDP, 2014; GoT, 2014). A former German and later British colony, what is now mainland Tanzania became independent in 1961, and under the leadership of President Julius Nyerere, the mainland and the Sultanate of Zanzibar united to become the United Republic of Tanzania in 1964 (Mwasalwiba, Dahles, & Wakkee, 2012). President Nyerere introduced a socialist policy framework encouraging strong family ties and government-owned, community-based ventures over private entrepreneurship. This tradition still influences the business environment today, despite 20 years of liberal economic policies being introduced since the first multi-party elections in 1992 (ibid.).

Tanzania is characterized by a large rural population, heavily dependent on agriculture; of the country's just under 50 million inhabitants, approximately 75 percent are employed in agriculture, which accounts for more than one quarter of the GDP (GoT, 2014). The majority of the population is engaged in subsistence farming, while other notable economic activities include mining, transport, communication, manufacturing and construction, electricity and gas (MEM, 2003; GoT, 2014).

5.1.1 The energy industry

The energy industry in Tanzania is characterized by a persistent, rapid growth in demand due to population growth and sustained GDP growth (GoT, 2014). Approximately 85 percent of the country's energy consumption is located in rural areas (MEM, 2003). Biomass-based fuels account for about 90 percent of the energy consumption, while petroleum accounts for around 8 percent, electricity 1.2 percent, and coal, solar and wind for less than 1 percent (MEM, 2003).

Electricity coverage from the national grid is centered around the larger cities, and distribution to rural areas is sparse. The country has a monopoly situation where parastatal utility TANESCO is responsible for electricity generation, transmission and distribution (TANESCO, 2014). The company has a history of financial problems due to the large investments needed to develop the national electricity grid and keep up with generation demand, and continuously relies on government funding. A number of donor-financed

[2] The Human Development Index measures the development of countries on a number of parameters such as health, education and standard of living as an alternative to economic growth alone (UNDP, 2014).

transmission projects are currently under construction to broaden the transmission system in rural areas and connect with neighboring countries' grids (TANESCO, 2014). Electricity generation is mainly based on hydropower plants, with thermal based plants available for peak loads, which has rendered the national grid very unstable and electricity supply is vulnerable to droughts (MEM, 2003). This has become increasingly problematic in recent years, and concern for the impact of climate change has solidified the need for TANESCO to diversify its electricity production, and for the Ministry of Energy and Mining to develop new solutions to meet the electricity demand. Similarly, it is clear that the reliance on biomass-based fuels for domestic energy consumption is straining the natural environment in the country, on top of the known negative health impacts of biomass-based cooking stoves in households (MEM, 2003).

Despite continuous efforts to expand the electricity grid, the access to electricity from the national grid is estimated (from official sources) at around 21 percent, with a rate of only 7 percent in rural areas (WB, 2014). However, the estimations by the informants in this study put the number even lower, down to 12 percent. Development of the energy and electricity sector is therefore a high priority for the development efforts of both donor organizations present in the country and of the GoT (WB, 2014; MEM, 2003).

5.1.2 The solar power industry and its policy framework

Expanding access to electricity is important for sustainable development for a number of reasons. Access to electricity has been found to be an important enabler for business development (Akpan, Essien, & Isihak, 2013). Eliminating the necessity of walking long distances to collect water through installation of electrical water pumps in rural communities frees up time for productive activities and attending school. There are also health related reasons such as local storage of medicines and vaccinations that need cooling, and electrical water purification systems to avoid water carried diseases. In this connection, solar power plays an important role. Solar power is a convenient method to make electricity available in remote areas without grid connection, both as larger solar installations for businesses or communities or as small solar powered products for the individual consumer. Additionally, it presents a convenient and more environmentally

friendly alternative to the diesel-powered generators typically used as back up during power outages in the grid connected areas.

The current policy framework for the industry consists, among others, of the National Energy Policy (NEP) from 2003 and the Rural Energy Act from 2005. The NEP promotes the provision of electricity through renewable energy sources, solar power among others, as a means to achieve sustainable development (MEM, 2003). The Rural Energy Act establishes a rural energy board, agency and fund to support the development of energy projects in rural areas of the country (REA, 2005). A critical piece of regulation for the industry is the Tanzanian VAT act. Effective in 2005, it was amended to the Tanzanian VAT act that solar energy system components are exempt from duties and taxes (TRA, 2004). For entrepreneurs in general, the GoT has also worked to improve the environment, and introduced initiatives to encourage entrepreneurship and creation and development of small businesses. The financial sector has been improved, in order to ease access to start-up capital, entrepreneurship education and vocational training has been introduced in universities, the taxation regime has been improved, among other initiatives (Mwasalwiba, Dahles, & Wakkee, 2012). However, despite these improvements, Tanzania ranks 145 out of 189 on the World Bank's Ease of Doing Business Index, which measures the conduciveness of the regulative environment towards starting and operating a local firm (World Bank Group, 2013). Additionally, Tanzania ranks 111 out of 175 on the Corruption Perceptions Index (Transparancy International, 2014), indicating that despite the improvements to the regulatory environment there are still significant obstacles to doing business in the country.

5.2 Presentation of Cases

Individuals from the five entrepreneurship ventures were interviewed as a basis for the empirical evidence used in this study. A brief introduction to each venture is provided below.

5.2.1 Anverson Solar

Anverson Solar is a small retailer located in the center of Dar Es Salaam. The business was founded in 2008, and employs 10 people. It imports solar panels from China and USA, which they then sell from their shop to private customers or distribute to other customers from their storage room behind the shop. While the premises look small, they are, according to their own testimony, one of the largest importers of solar panels and equipment in the country. The business is owned by two brothers of Indian descent, both university educated in India. The brothers got the inspiration for entering into the solar industry from experiences during their studies in India, and came back to Tanzania to open their business when the industry was still young and consumer awareness low. Today, their business is thriving despite heavy competition from other similar small shops in the area, and they are considering expanding their operations, perhaps even by starting their own local manufacturing facility. From Anverson the two founders and owners of the venture was interviewed, these will be referenced in the analysis as entrepreneur 1A and 1B, respectively.

5.2.2 SolarWave Tanzania Ltd

SolarWave Tz is a subsidiary of the Swedish company SolarWave AB established in 2011. The Tanzanian office is located in the Western part of Dar Es Salaam, an office building housing several other renewable energy businesses. The office has a small showroom, where products are displayed, these consists mainly of solar powered water purification and desalination systems, but also small solar powered lighting systems. The equipment is designed and produced by the mother company, and imported before it is distributed to their locations and activities around the country. Despite being a commercial company selling to private customers and businesses, SolarWave also engage in social projects in collaboration with NGOs or local community groups. The business is looking to expand its activities, but is dependent on partnerships to accomplish this, as target customers are typically poorer communities unable to sponsor the systems themselves. They have also implemented projects through lease and repayment systems to overcome this issue. They are potentially interested in opening an assembly plant locally, which could serve as a base for

expanding to neighboring countries such as Kenya and Uganda. From SolarWave, the sales and marketing manager was interviewed, this interview will be referenced as entrepreneur 2 in the analysis.

5.2.3 Rex Energy

Rex Energy is a larger solar equipment retailer, selling and installing primarily photovoltaic solar panels to private customers, businesses or government agencies, but also selling smaller solar powered products such as lamps and chargers. Rex Energy (officially Rex Investments Ltd) was founded in 2000, as one of the first businesses in the solar power industry in the country. They are located in their own building in the middle of Dar Es Salaam, with a large showroom and offices in the back. Rex Energy is a recognized company, also among the other businesses interviewed, and appears to be one of the largest of its kind in the country, employing more than 50 people. The chief executive and founder is a Tanzanian entrepreneur, electrical engineer of profession. The company has five offices distributed to cover the entire country, and imports the products from China to distribute them through these offices as well as through the main office. The business is thriving, and they have ambitious plans for international expansion, preferably to cover all of Africa, but firstly to the neighboring countries. Plans to establish own manufacturing facilities were also mentioned in the interview. The major hurdle to implement these plans is for the company to get the proper capital to finance the investments, and they are therefore looking for private equity partners. From Rex Energy, the founder and chief executive was interviewed, and will be referenced as entrepreneur 3 in the analysis.

5.2.4 Arti Energy (& Arti Africa)

Arti Energy is a retailer of solar powered lamps and chargers as well as of clean cooking stoves, briquettes and briquette makers. Arti consists of the commercial company Arti Energy and the non-profit Arti Africa. The two are separate entities, but the boundaries between them are blurry with activities and employees of one supporting those of the other. The organization was founded in 2006 by two Tanzanian co-founders, and currently has a permanent staff of eight employees. Arti is located in the outskirts of the city, accessible via a main road and a small dirt road. There is a small showroom and facilities for repairs and making

briquettes outside, and business offices inside. Arti energy imports Australian and American products, produced in China and Kenya respectively, and sells through its vendors located all around the country. Arti Africa has programs in a large number of locations around the country, where it for example supplies cooking stoves to schools, or sets up small charcoal briquette producers to supply their energy efficient cooking stoves. These programs are typically conducted in collaboration with NGOs or community groups, and the activities of Arti Africa are financed through grants received from e.g. the World Bank and various national development aid programs. Arti has struggled to grow incrementally to the size it has today, and is aiming to expand activities even further to scale up its social impact. From Arti, the Executive Director and co-founder was interviewed together with the program officer of Arti Africa. Additionally, introduction was given to the products by a sales employee. These will be referenced in the analysis as 4A, 4B and 4C, respectively.

5.2.5 Voltzon

Voltzon sells and installs a particular brand of solar systems imported from the Netherlands, working out of its office in Dar Es Salaam. The company is located in one of the wealthier parts of the city, and shares its premises with an organization also involved in solar power. The company's founder and director is Dutch and started the business in Tanzania in 2008 after working there for a number of years. The company has grown to have 10 permanent employees today. Voltzon is primarily engaged in larger turnkey installations, targeting businesses such as hotels and lodges, larger houses and institutions such as schools or dispensaries. From Voltzon, the sales executive was interviewed, and will be referenced as entrepreneur 5 in the analysis.

6 ANALYSIS

In this chapter, the analysis of the empirical data will be presented following the logic of the theoretical framework. Accordingly, the regulative, normative and cultural-cognitive institutions will be analyzed in relation to their interrelationship with the case organizations, through the intermediary levels at which the

institutions influence the organizations: entrepreneurship, sustainability entrepreneurship, and the organization. Based on this, an analysis of the blended value proposition as rooted in the organizational design will be presented in juxtaposition with the literature reviewed.

6.1 Regulative Institutions

Regulative institutions were identified at the level of entrepreneurship through liberalization of economic policies, at the level of sustainability entrepreneurship through specific policies introduced to support development of renewable energy, and finally, on the level of the organization through attempted improvements to the financial sector.

6.1.1 Level of entrepreneurship: Liberalization of economic policy

For the past 20 years, the GoT has liberalized the previously state-dominated Tanzanian economy, and introduced numerous policies to support the development of a vibrant private sector to spur economic growth (Mwasalwiba, Dahles, & Wakkee, 2012). Liberalization of the economy has influenced the behavior of entrepreneurs in two important ways. Firstly, it has opened up the economy to the global market, which means that entrepreneurs have been able to create ties to other countries to develop their entrepreneurial activities. Secondly, it has lowered barriers to imports making it easier for entrepreneurs to enter new markets by importing products from abroad.

Since the 19th century, there has been a population of people with Indian origin in Tanzania, who have traditionally been active traders and owns many private businesses. Recently, as the GoT has liberalized the country, there has been an influx of immigrants from other parts of Asia and the Middle East, particularly from China (ibid.). These communities have created an international network through their family or business ties with their countries of origin. Such networks played a central role in the development of four out of the five case ventures, indicating that these policies have been successful in enabling entrepreneurial activity.

Two of the case organizations (1 and 4) were founded by entrepreneurs with Indian ties, having studied in India and brought back inspiration and ideas, which formed the point of departure for their business ventures. As articulated by one entrepreneur: "*where I studied there was a solar water heater. So whenever I used to see the solar water system, I used to think that whenever I go to my country I have to do something with solar. When I came here, the solar was like clicking you know? It was something emerging and very few people were in that business"* (1B). Two ventures were embedded in a European network, venture 2 were founded as a subsidiary of a European company, and venture 5 was founded by a Dutch entrepreneur, selling solar panels supplied by a Dutch company. The presence of such companies indicates that the opening up of the economy has meant that foreign firms are taking the opportunity to enter the market. Finally, entrepreneur 3 repeatedly mentioned his international ambitions for his company, and had already employed several foreigners in key positions in order to pursue this ambition. His views expressed a perception of the Tanzanian economy in a regional and even global context, as he talked about the importance of attracting foreign skills, partnering with foreign firms and expanding the business regionally. The fact that all ventures were somehow embedded in, or oriented towards international networks indicates that the liberalization policies have achieved in creating an open economy, which has been conducive to the activities of the entrepreneurship ventures.

The liberalization of the economy has also reduced the barriers for exporting and importing products with conflicting outcomes for the entrepreneurs in the solar industry. Particularly relevant for the solar power industry is the large inflow of cheap Chinese products into the country. On the one hand, it was highlighted by several entrepreneurs that the possibility of importing cheaper products had driven the prices down in the industry and making the products available to a substantially larger customer base, which in turn, while deflating profits, had increased business for the entrepreneurs overall. On the other hand, the ease with which products can be imported has led to a large number of new solar retailers entering the market. While this is not problematic in itself, it has had negative indirect effects on the entrepreneurship ventures. Building on the three types of entrepreneurship originally developed by Baumol, Sautet (2005) describes

how formal institutions can provide incentives for people to engage in productive, evasive or socially destructive entrepreneurial activities. Socially destructive entrepreneurship is described as institutions creating incentives for people to exploit formal rules by predating over those who engage in productive entrepreneurship (Sautet, 2005). In the context of this study, there appeared to be an incentive for entrepreneurs to enter the market and import cheap, often poor-quality or counterfeit products, which is a lucrative business due to the current demand in the market and the tax exemption on solar products. In the words of one entrepreneur: "*we have a lot of fake items of course coming into the market, very cheap things, and they end up killing the solar business*" (5). According to the entrepreneurs, they experienced a big challenge in the industry with such entrepreneurship hurting the reputation of the entire industry because of declining customer trust. The issue of trust and legitimacy while being impacted by changes in the regulative sector is rooted in the cultural-cognitive and normative institutions and will therefore be discussed further in the analysis of these institutions.

The availability of cheap imports also affected local manufacturing through its influence on the entrepreneurs. All except one venture articulated a desire to open a local manufacturing plant. However, the entrepreneurs did not believe that a Tanzanian plant would be able to compete with the price of the Chinese modules, which acted as a deterrent for them to pursue this prospect. Entrepreneur 1A explained how this influenced the plans of venture 1 at least in the short term: "*And maybe after some time, we can also have our own manufacturing plant. Of course that's a very long way, because Chinese modules are very difficult to compete with in the prices part, so…"*

6.1.2 Level of sustainability entrepreneurship: Energy policy and tax regime

As outlined above, the GoT has introduced a number of initiatives and policies to support renewable energy, e.g. within the frameworks of the NEP and the Rural Energy Act. Most important, according to the entrepreneurs, is the revision to the tax regime exempting solar system components from VAT and duties. This policy framework has created an advantage for the solar industry and an opportunity for sustainability entrepreneurship.

In all interviews, the general business environment and the support received from the GoT was spoken about positively. However, a few alluded to the fact that the clearing process for imports can be cumbersome, which was detrimental to their activities, and that the regulative system is still rather bureaucratic. In addition, it was mentioned by one entrepreneur that it would be risky to engage in the development of a manufacturing plant due to changes in the government. Overall, the impression was positive, however, and the entrepreneurs expressed that they had received support from ministries, government organizations and business organizations. In the words of one entrepreneur: "*All through we have got very good support, model support, from the government. Like the Tanzanian Commission for Science and Technology, worked with people who organized the first conference to launch us into Tanzania. Starts from there, and they introduced us to the Ministry of Natural Resources who then gave us space for demonstrating these products and getting to Dar Es Salaam international trade fare, so we have always had that kind of support from the government departments*" (4A).

To meet the energy goals set out in the NEP "to ensure the availability of reliable and affordable energy supplies and their use in a rational and sustainable manner in order to support national development goals" (MEM, 2003, p. 7); the GoT appears to be attempting to create the most conducive framework for renewable energy entrepreneurs to step in and assist in providing this service. This was also the impression expressed by one entrepreneur: "*Renewable energy is well backed up by the government. Because the government has seen that it is very difficult to run the national grid all around because the initial investment is huge*" (3). The drive for these institutional changes has come from the GoT, but the entrepreneurs themselves have engaged actively with the regulative institutions to transform them to better encompass and support their needs through lobbying the government and by forming a business association to be able to further their cause collectively. One entrepreneur, for example, mentioned how he had participated in the lobbying effort for the tax exemption on solar products. Several entrepreneurs mentioned their business association, TAREA, as being an important part of the business environment, supporting them individually and representing their interests collectively. In this way, the entrepreneurs have played a part in the institutional

transformation by participating in creating the opportunity for sustainability entrepreneurship in the market and a conducive regulatory environment for pursuing it.

An example of how the ventures worked with the regulatory institutions is the initiative described by venture 4, who had initiated what they called the MP program, where they asked the Members of Parliament to allocate part of their constituency budget to installation of solar lights in schools and dispensaries. If they agreed, the venture would research the need in the particular constituency and make a proposal on behalf of the MP to the Rural Energy Agency to provide the funding. In that way, they had succeeded in achieving projects in nine constituencies.

6.1.3 Level of the organization: Policy framework for financial services

As in many developing countries, Tanzania has traditionally struggled with a weak financial sector. As part of creating a suitable environment for entrepreneurial activity, the GoT has also taken steps to improve this sector, which has led to an expansion and improvement in available financial services, and an array of micro-finance institutions has emerged to cater to small businesses and start-ups (Mwasalwiba, Dahles, & Wakkee, 2012).

The availability of financing for new start-ups has been found to have a significant impact on entrepreneurial activity in a given location (Amine & Staub, 2009; Kuzilwa, 2005). With a weak financial sector, it is difficult for entrepreneurs in Tanzania to rely on credit from formal sources to fund their start-up; it thus influences and potentially constrains entrepreneurial activity at the level of the organization. Most of the entrepreneurs interviewed had experienced difficulty gathering the necessary capital for their start-up, and therefore their business grew very slowly to begin with and they were unable to scale up their activities as quickly as they might have otherwise. Several had to rely on their families or on grants from donors to gather the necessary capital. The struggle to get sufficient financing was expressed by one entrepreneur: "*we officially started in 2007, and we had no grants, no funding, no nothing it was just ourselves. Then we got our first grant in 2011, so four years was like we were, we literally, sometimes I*

had to borrow money from my wife" (1A). This indicates that the regulatory system has not entirely succeeded in creating an enabling environment for entrepreneurship in the financial sector.

Some of the entrepreneurs, who wished to scale their activities and perhaps even expand internationally, expressed that they had trouble locating appropriate investments to grow their business. According to Kuzilwa (2005), the need for credit increases with firm growth, and lack of, or difficult access to financing has been found to hinder firm growth in a market. Particularly entrepreneur 3 expressed that he was looking for equity investors, because he did not trust credit from commercial banks. He expressed this through the following analogy: "*capital from the banks, mostly the commercial banks … it is like giving someone an umbrella when there is clouds towards raining, when it starts raining, you call back your umbrella*" (3). Specifically, he was looking for foreign investors, as the appropriate local investors with the international knowledge required for international expansion were difficult to find. In a developing economy, it is problematic if successful entrepreneurial ventures find themselves to be unable to grow, as the emphasis on entrepreneurship in development relies on them to grow and expand to contribute to economic growth and employment.

Two of the ventures had developed strategies to overcome this issue by relying on different sources of capital. Here, donor organizations and NGOs have played an important role as regulatory institutions in the financial sector, with the ability to influence behavior through the access to financing. Venture 2 worked with NGOs and community groups in order to secure financing for their activities in rural areas of the country. Venture 4 had been working with grants from donor organizations and had been successful in obtaining quite a few grants within the past three years, which had enabled them to grow to have a substantial reach throughout the country. This indicates that the increased focus on renewable energy as an important priority on the agenda of donor organizations has had a positive impact on the activities of the sustainability entrepreneurship ventures. Both when it comes to access to financing, which enables entrepreneurial activities, but also by guiding behavior of entrepreneurship ventures in the direction of development objectives such as 'green' energy, which must be adhered to in order to obtain grants.

6.2 Normative Institutions

Normative institutions was found to influence the behavior of the ventures on the level of entrepreneurship in the way that norms and values surrounding entrepreneurship has changed. On the level of sustainability entrepreneurship behavior was influenced through the awareness and legitimacy surrounding the industry, and on the level of the organization through the values attached to solar products by customers and other external stakeholders.

6.2.1 Level of entrepreneurship: Legitimacy of entrepreneurship

At the level of entrepreneurship, normative institutions were found to influence the entrepreneurial ventures through the values attached to being an entrepreneur and the normative framework surrounding entrepreneurship, which together constitutes the perceived legitimacy of entrepreneurship.

The GoT has attempted to influence the perceptions and values attached to entrepreneurship in the population from the negative perceptions developed during the socialist era, where entrepreneurship and private sector activities were viewed negatively and as detrimental to the common good (Mwasalwiba, Dahles, & Wakkee, 2012). In order to increase the prevalence of productive entrepreneurship, it would be important to normalize the entrepreneurial activity as part of the business sector and to ensure that positive values are attached to entrepreneurship. In this way, the regulative institutions are closely connected to the normative, as regulative activities seeks to influence and transform normative frameworks.

In the way that the entrepreneurs talked about entrepreneurship and their choice and aspirations towards entrepreneurship, it appears that a change has in fact occurred and that at least in some circles, entrepreneurship is viewed positively both in terms of the values attached to it as an employment option and in relation to the value it generates for society. When talking about his ambitions for starting his own business in the future, entrepreneur 5 explained how he had started working for the venture in order to gain insights into the industry to be able to achieve this goal. When asked whether entrepreneurship is something that people in Tanzania aspire towards, most entrepreneurs answered that this was indeed the case, and that

people in general perceived themselves as entrepreneurial. A lot of the entrepreneurial activity was described as needs-based, petty businesses: "*it is so hard to get a job that so many people are forced to be self-employed. Some are really, really,* [entrepreneurial] *but for many they do not really have a choice, some become very successful, and some… you know you see all these petty businesses*" (4B). It was furthermore described how new businesses typically just copy existing ones, indicating that a lot of the entrepreneurship occurring in the country does not live up to the sense of innovativeness in the Schumpeterian entrepreneurial description. It is difficult to establish whether this kind of entrepreneurship is positive for the values attached to entrepreneurship among the public, as on one hand it can be expected to normalize the relationship to becoming an entrepreneur. On the other hand, there is a big step from petty businesses in the informal sector to establishing businesses with growth potential which can contribute to developing the formal private sector. Additionally, some of this entrepreneurial activity was, as described above, seen as destructive, which is something that might have the opposite effect and create negative connotations to entrepreneurship.

6.2.2 Level of sustainability entrepreneurship: Awareness & legitimacy of the industry

The values and norms surrounding the solar power industry in the population appears to be undergoing changes. These changes are related to the changes in regulatory institutions, where the GoT, NGOs and other organizations are attempting to spread knowledge about environmental concerns and encourage action towards the sustainable development ideals. One entrepreneur noted, for example, when talking about whether people buy the solar powered products because of environmental concerns, that people are increasingly being educated about it, and that particularly children knows about environmental issues because they are introduced to it in school. In addition, activities of the entrepreneurial ventures are contributing to this shift in awareness. They are attempting to spread awareness of the benefits of using solar energy for the environment and for health-related reasons, presumably to create positive attitudes towards their products to give further incentives to why people should prefer solar products, in order to broaden or solidify their demand. When explaining the functionality of their cooking stoves one

entrepreneur thus explained: "*We are trying to explain to them how this thing works, how it can help in the society, so to avoid the destruction of the environment. Something like that. So they are trying to change somebody from this point to this point, it is not easy so it goes slowly*" (4C). Another articulated the changing environment as follows: "*At the moment people really know, like people really understand there is the sun, and people need to utilize it. So, you even find people who have electricity, people who are connected to electricity already, but they are still interested in solar. So people are really changing, because they know the solar is there, the sun is there, we have to utilize it*" (5).

Despite this perceived growing awareness, the entrepreneurs emphasized that the practical applicability of their products was still valued highest by their customers, with basic amenities prioritized over broader, more intangible environmental and social benefits. This was articulated by one entrepreneur: "*I think, in terms of awareness, as compared to Europe, Africa is not there yet. You know, in terms of awareness about the environment and things like that, and taking care of it, we are not there yet. I mean, it is something we know, we are taught you should not throw plastic … but we do not think about it. It is not, I mean, it is very different from Europe. It is not something that we think about, and not necessarily because we do not want to, but I think you realize that in Africa there are competing priorities – it is about am I going to be able to eat, you know*" (2).

A change in awareness will in turn change what constitutes legitimate behavior in the industry and thus influence the behavior of the ventures. It does, however, appear that the drive towards social and environmental objectives in the ventures are primarily motivated by the entrepreneurs themselves and by the regulative action in the formal institutions such as government agencies, NGOs or development organizations through the benefits from adhering to the principles promoted by them.

Through the awareness building, the entrepreneurial ventures thus influence the normative institutions with the added effects of developing their sustainability entrepreneurship opportunity and create demand for their products. Numerous initiatives were mentioned through which they engaged in such activity, from regular marketing and trade fares to innovative programs involving different stakeholders in the sales

process. Venture 2 was thus developing CSR programs for European companies and was looking to engage local companies as well to broaden the market for their products. In the same vein, venture 4 was partnering with a range of different types of partners, from NGOs to private businesses and government agencies such as with their MP program as described above.

6.2.3 Level of the organization: How values of customers and other external stakeholders influence the values of the ventures

The entrepreneurs' perception of their target costumer segments' norms and values will influence how they conceive of their value proposition towards them. Despite the perception that attitudes are changing as discussed above, all five entrepreneurs agreed that solar powered products are purchased by customers primarily to satisfy an immediate, practical need. "*Someone who need to buy a lantern or a torch, it is because you want to run away from the capex of kerosene. I think that is an obvious answer. They are buying it because they need the service for their immediate demand*" (3).

Of central importance to the entrepreneurs in their relationship with customers, was expressed to be that the products and distribution system were designed to fit the characteristics and needs of the customers. This was expressed by one entrepreneur: "*Because some of them can afford the whole system, all of the quality products, but most of them cannot afford it. So we have to check how they can afford it. So we have to bring products according to them.*" (1A). This related mostly to the practical applicability and affordability of the products to end-consumers, which all of the entrepreneurs viewed as important. This also influenced how they conceived of their social objectives – to provide power, clean cooking stoves or clean water to people who would not otherwise have access, that these things were delivered in a manner suitable and affordable, and that they were of a quality and or implemented in a way to ensure durability.

This internalization of the perceived norms and values of customers also influenced the environmental values of the ventures, as these were not perceived to be important to customers. This was reflected in three of the ventures, which did not give the same priority to environmental issues as they did social and financial objectives. The remaining two ventures gave priority to all three objectives, and these were the ones

focusing on both customers but also other partners and intermediaries, such as NGOs, donor organizations or European companies for the CSR program. For such intermediaries in the sales process, value attributes are different. Here, the entrepreneurs emphasized that both social and environmental objectives were typically prioritized, and the ventures who relied on collaborations with such agencies were therefore themselves more articulate when it came to environmental and social values of their entrepreneurial venture and shaped their activities to fit their partners' priorities.

6.3 Cultural-Cognitive Institutions

Cultural-cognitive institutions emerged with influence on the activities of the entrepreneurial ventures: on the level of entrepreneurship, through the shared perception of entrepreneurship as a viable career choice, on the level of sustainability entrepreneurship, through the level of trust connected to the industry, and on the level of the organization, through the role of strong social ties.

6.3.1 Level of entrepreneurship: Entrepreneurship as a viable career choice

Cultural-cognitive frameworks shape individuals' perception of social reality, and can thus influence how people makes sense of entrepreneurship, and whether it constitutes a viable career choice. As mentioned above, the GoT has actively worked to encourage and install the positive impression of entrepreneurship in the minds of their constituents. However, the cultural understanding of whether starting a business is a desirable career choice is difficult to change through regulative institutions. This theme is influenced by all three institutional categories, as there needs to be an understanding of entrepreneurial behavior as being legitimate which depends on normative frames, in order to successfully transform the attitude through regulative institutions. This normative frame is in turn shaped by cultural-cognitive shared understandings. It is particularly relevant to discuss entrepreneurship in terms of cultural-cognitive institutions in the context of this study, as the normative frames are shaped by a shared understanding embedded in the historical, and thus cultural, background of the country. Traditionally, entrepreneurship and private sector activity has not been viewed positively due to the socialist history of the country, which actively discouraged such activity (Mwasalwiba, Dahles, & Wakkee, 2012). This tradition has not been part of the culture among the Asian

communities in the country in the same way, which means that this group has traditionally sat on a large part of the private sector (ibid.). Two of the ventures in this study was started by Tanzanians with Indian ties and two was started by Europeans. The attitude towards entrepreneurship in the country does seem to be changing, however, especially in the younger generations. The entrepreneurs all expressed that people in Tanzania are quite entrepreneurial in general, and that there are plenty of opportunities to pursue. While there are a group of successful entrepreneurial ventures, there was a perceived lack of entrepreneurial spirit and innovativeness, as expressed by one entrepreneur 4A: "*People still want to be in the traditional line of products, they don't think different. That is the whole problem. If you drive by and see there is a hardware store, and there is a hardware store, and there is a hardware store, and another hardware store. So, somehow I think that is missing in the people in Tanzania, they do not know how to think out of the box*".

6.3.2 Level of sustainability entrepreneurship: Cognitive frameworks of trust

Trust in solar powered products and the perceived legitimacy of the entrepreneurial venture and its services is an important factor in the successful relationship between the venture and its customers. This builds upon the cognitive frames of trust in the culture, and how this is transferred onto the industry. Spreading the word of the beneficial attributes of the products is one way the ventures are attempting to improve this relation. However, the legitimacy of the industry and the trust in their products are being compromised by the above-mentioned new businesses delivering sub-standard services and products.

The entrepreneurs used different strategies to build legitimacy around their products: "*What we realized when we first started was not that people do not know about solar lights in the villages, or they don't have the money. They just do not have the confidence. Because before us, there was a lot of traders that brought in some stupid products from China, people that invested their money in that, two months, three months, six months, and the product just dies out. So, to build that confidence, we are using the traditional distribution set-up, we do not go to the villages to sell the light, the retailer in the village will sell the light. So people know, if the light breaks, I can go back to my retailer*" (4A). Most of the ventures had such locally rooted distribution systems, where they relied on established businesses with local legitimacy to sell their

products. Some would train these retailers in repairs of the products, and have warranties on the products so that people would experience duration and after-purchase service arrangements. A few of the ventures worked with local community groups, such as women and youth groups, in order to create a local ownership of the project or product, and thereby create legitimacy and increase trust. "…*what we do is that when we go into a community we do not go in as us, we will take an existing women's group, or an existing youth group and give it to them as a business. So that they [are] actually selling the water at a very cheap price, you know, then they get support for a while, but then after that they actually have some money – they get an income, but then they also have an incentive to actually maintain the system*" (2). It thus appears that trust is important for the activities of the entrepreneurship ventures, but that it mostly exists in close relations, for example between members of the community. This might in turn be influenced by regulative institutions, where in countries with strong formal institutions to support the business environment and regulative the behavior of businesses, people are more likely to trust businesses as they are protected by consumer rights and can take action if these are violated. In developing countries such as Tanzania, where such regulations might not exist or be strongly enforced, trust is built differently shaping the behavior of the case ventures, who steps in and adapts to the institutional void by providing the service and localizing the points of contact.

6.3.3 Level of the organization: Strong social ties

In developing countries such as Tanzania, formal institutions are not always developed to the point of providing suitable business environment (Khanna & Palepu, 1999). As mentioned above, this can potentially enable incentive systems for entrepreneurial activities resulting in evasive or destructive entrepreneurship. The feeling of an insufficient formal institutional system was articulated by entrepreneur 1B: "*The only thing I can say is, the difference between Denmark and here. Denmark is a systemized country, and everything is systematic, here there is no system."* This meant that the businesses operating in that environment would have to organize their activities differently to manage this environment: "*It is different from European style, because you know European... you know the thing is you have a very good*

infrastructure, you have a very composed type of business, you know? And here, the system is different. You cannot expect that type of thing here, because here, the way we work is different" (1B).

It has been outlined above how the presence of certain institutional voids has constrained the activities of the ventures. It has been identified in other developing country contexts how institutional voids are typically filled with informal normative or cultural-cognitive institutions (Khanna & Palepu, 1999). In Tanzania, part of the cultural heritage from the socialist history is the concept of Ujamaa, which emphasizes the concept of family-hood or community and collectivity, and was promoted as part of the socialist political agenda as an alternative to entrepreneurship and private sector (Mwasalwiba, Dahles, & Wakkee, 2012). This indicates that strong social ties and networks are an engrained part of the cultural fabric of the country. In this study, it was also seen how the entrepreneurs relied on such social structures, when sufficient resources and support was not available for their entrepreneurial activities. As mentioned above, several of the entrepreneurs relied on their families for start-up capital. Furthermore, business partners and other resources for the entrepreneurial process was found through social networks. Had it not been for support from the family, one entrepreneur said, it would have been very difficult for them to have succeeded in their entrepreneurial activity. In this way, the strong social ties can be seen to have been enabling to the entrepreneurial behavior of the ventures. Furthermore, being used to navigate a less than systemized environment might mean that operating with untraditional business models such as a blended value proposition might be natural to the ventures.

6.4 Summary

	Regulative Institutions	**Normative Institutions**	**Cultural-cognitive Institutions**
Entrepreneurship	Liberalization of economic policy framework	Legitimacy of entrepreneurship	Entrepreneurship as viable career choice
Sustainability Entrepreneurship	Energy policy and tax regime	Awareness and legitimacy of the industry	Cognitive frameworks of trust

Organization	Policy framework for financial services	How values of customers and other external stakeholders influence the values of the ventures	Strong social ties

Table 6-1: Summary of analytical categories

6.5 The Blended Value Proposition

The strength of sustainability entrepreneurship ventures as vehicles towards sustainable development is, according to the literature, their ability to balance the blended value proposition to simultaneously pursue social, environmental and financial objectives.

The sections above have gone through the features of the institutional environment in Tanzania and how it influences the entrepreneurship ventures at the levels of entrepreneurship, sustainability entrepreneurship and the organization. In this section, the discussion is taken a step further to see how these interactions influence the value propositions of the ventures and how it is integrated into the organizational design of the ventures.

6.5.1 Organizational design

1. Business structure

When asked about the central purpose of their entrepreneurial venture, all entrepreneurs presented a purpose guided by social objectives. Such a purpose could for example be: "*the main objective of the company was to narrow the gap between the access to electricity to the majority of Tanzanians*" (3) or: "*basically, our aim is to increase access to safe drinking water and of course promote use of green energy*" (2). Another said "*of course the central purpose will be to change the life of these people. Because for them, you know, for us it is normal, electricity, we are dealing with it every day. And you know for them even a small bulb is a very big thing. So at least all of them should have at least a lighting or something like that*" (1A). However when discussing the purpose further, they would also emphasize that they are first of all a commercial business, with a priority of making profits. Some expressed profits as a central goal in itself,

while some recognized that running a profitable business would be essential to achieving their desired impact.

Achieving environmental objectives was valued differently between the ventures. For venture 4, it was specified that social, financial and environmental objectives weighed equally. The two ventures with European ties (2 & 5) also expressed environmental values. The remaining two ventures (1 & 3) both stated that environmental concerns were prioritized last as compared to financial and social. They did not appear to see environmental issues as a pertinent priority compared to social issues, in line with the perceived values of their customers.

Ventures 2 and 4 had different social aspects built into their distribution systems; these were also the ones with a more social and environmental purpose orientation. Both had installed different methods to reach remote, rural areas of the country, to target those with no electricity access or difficult access to clean water supplies. They would also use innovative business models to make their products more affordable, by distributing through community groups or NGOs, which could also work to empower these groups as part of their community. This was mirrored in the segmentation approach of the ventures, with all ventures targeting broadly, having products to suit all ranges of private consumers and businesses or other organizations. Again, ventures 2 and 4 expressed a more strategic needs-based approach, attempting to specifically reach poorer rural communities and employed programs designed to achieve this.

When it comes to the selection of products, being it solar powered lights, water pumps or purification systems, or clean cooking stoves, they can be seen to inherently have environmental and social qualities. Whether the entrepreneurship venture had gone into this industry due to a desire to provide customers with these qualities, or for more commercial reasons motivated by the attractive demand in the market, differed between the ventures. Ventures 2 and 4 focused on products specifically developed to fit the demand characteristic and achieve social and environmental objectives. Venture 2 specialized in solar powered water purification systems tailored to meet the needs of people with no access to grid electricity or clean water, and venture 4 provided clean cooking stoves tailored to match the needs of households, conforming

to traditional cooking methods, but reducing consumption of firewood and smoke pollution. These ventures operated with a specific target of identifying appropriate products to meet social or environmental objectives, as expressed by one entrepreneur: "*The mission is basically to identify appropriate, good quality, affordable renewable energy products, wherever they may be made in the world, and to try and bring them into the Tanzanian market*" (4A).

The three other ventures that imported and sold more standard solar products, also emphasized their products' social and environmental qualities, for example the benefit to people to have access to light in the evening for reading, and providing a cheaper alternative to the continuous expenses to kerosene. This corresponds with the social aspect in BoP thinking, that simply providing the underserved base of the pyramid consumers with appropriate products that meets their needs, is a social project, which contributes to development and social wellbeing.

2. Business processes

The use and prioritization of resources according to social, environmental and financial values also differed between the ventures. The two ventures with the more balanced values expressed in their purpose, and with innovative products adapted to social and environmental needs, also prioritized resources differently and employed more flexible and innovative processes to achieve their objectives. Both venture 2 and 4 combined resources of external stakeholders such as NGOs, donor organizations or community groups in order to pursue their goals. This was done for example by entering into partnerships with local community groups to act as ambassadors, work as lease operators, and ensure durability of the project over the long term; an approach utilized by both ventures. Another strategy was to align priorities with potential partners and donors in order to be viable for grants to use to implement social projects, which might not be financially viable for the venture otherwise. These strategies were employed to both be able to reach social and financial objectives, but also to increase business opportunities in the BoP market. In this way, the two ventures combined traditional business operations with not-for-profit methodologies in order to simultaneously achieve the three sustainability values. The other three ventures appeared to be working

with more traditional business models. Even though they were found to integrate social and to a lesser extent environmental objectives into the choice of products and target segments, this was not seen reflected in the processes installed to the same extent as in venture 2 and 4. The entrepreneurs seemed to apply the social and environmental objectives more in the sense that they were a logic outcome of their business activities – that BoP consumers constitutes a good business opportunity, and that pursuing this opportunity has positive effects on the customers and the environment.

3. Business culture:

The business cultures of the ventures are difficult to assess based on a single interview within the organization, however there seemed to be cultural differences between the more commercially oriented ventures (venture 1, 3 and 5) and the ones with a mixed orientation (venture 2 and 4). The latter had a more flexible system in place, with room for experimentation in the business model and strategies, and appeared to, at least partially, rely on more patient capital in order not to compromise the blended value orientations. As one entrepreneur stated when asked whether they experienced problems earning profit while still maintaining their environmental and social purposes: "*I guess it depends on how fast you want to get how rich. We are very patient. We take it as it comes*" (4A). A similar opinion was expressed by entrepreneur 2 when asked the same question: "*the need out there is obvious, it is a very social need, but we also want to make a profit, but sometimes, you know, it is very overwhelming even to us. Such that you might have to reduce prices, reduce and reduce … but we are hoping that now that we are looking for developmental partners, and people who really want to give out the system, actually to donate them, that actually this could change"*. In an attempt to satisfy both the social need and the commercial orientation, the venture thus attempted to find new solutions that might work for both objectives. Ventures 1, 3 and 5 operated in a more traditional business culture, when seen from a western management perspective. The language utilized appeared to be more commercially oriented and it seemed that while these ventures integrated social and environmental objectives, the business processes and culture were not necessarily structured around an equal maximization of all three values.

6.5.2 Synergies between the sustainability value proposition and the institutional environment

Based on the discussions above, there appears to be a certain level of synergy between pursuing the three value objectives in the solar industry in the Tanzanian institutional context. Firstly, the value objectives are in line with the objectives of the government's, donor organizations' and many development NGOs' pursuits towards sustainable development and rural electrification. Such alignment in priorities makes it easier for ventures to collaborate with these organizations, achieve support and create mutually beneficial projects or policy frameworks. This was something that all ventures benefited from to a certain degree, through the beneficial regulatory environment and the changing awareness and values, but which was particularly important for those relying on partnerships.

Secondly, there seem to be synergies between achieving the social objective of reaching poor BoP customer segments, which is possible due to the tax exemption and competitive pressure that has driven prices down in the industry making products more affordable, and achieving financial gain for the entrepreneurs. The financial benefit was in that respect referred to by the entrepreneurs as an overall increase in their business due to the resulting increased awareness and broadened demand in the market, which more than makes up for their smaller profit margins. Finally, using innovative business models to purposefully supply this otherwise underserved BoP segment, had the beneficial effect for the ventures that they were then able to target customer segments otherwise unavailable to them. It thus seems that the institutional environment enables behavior and potentially creates opportunities particularly suitable for ventures operating with social, environmental and financial values.

Despite these synergies, there are also factors in the institutional environment that are constraining to the behavior of the ventures. The industry, and thus indirectly the ventures, is suffering under a legitimacy problem. Apparently, it is easy for 'unserious' businesses, presumably mostly petty businesses in the informal sector, to import sub-standard products that destroys the trust of consumers in the market of solar products. When people have had negative experiences with a product, mistrust is easily transferred to the entire industry and is hard to reverse. However, as predicted by Scott's (2001) institutional framework,

organizations are an active part of the institutional setting, and can engage with the institutions to transform them. This was precisely what the entrepreneurial ventures did, they were trying to raise awareness and reinstall legitimacy in solar products through marketing efforts, through their distribution systems or their work within local communities. It appears that trust is rooted locally, and the ventures adapted to this by localizing their customer relations in order to improve trust and legitimacy of their operations. This effort was in turn supported by the continuous efforts by the GoT and other stakeholders to promote renewable energy initiatives in line with the objective of sustainable development.

As discussed above, the ventures had very different approaches to their value propositions and how these were integrated into the elements of their organizational design. Out of the five, ventures 2 and 4 appeared to apply a balanced approach, using different methods and applying a flexible business model to pursue all three values simultaneously. Based on their statements of their motivation and of the struggles they had encountered, it seems that they entered into the business with the determination of balancing the blended value proposition, and then encountered aspects of the regulative institutions that were conducive to this, e.g. through the alignment of priorities with government policies, NGOs and donor organizations. When encountering constraining factors, they employed their own agency and flexible business models to navigate without compromising their objectives.

The other three ventures, although also operating with a blended value proposition, appeared to be working with a more traditional commercially oriented organizational design. They did have clear social values, and also articulated environmental values, but these were not integrated into the organizational design in the way that sustainability entrepreneurship literature describes sustainability entrepreneurship ventures should in order to contribute to the transformation of the economy towards sustainability. The social aspect seemed to be a very natural part of their business - it seems that a BoP-like thinking is naturally a part of the entrepreneurs' mindset, as they consider the poorest segments to be regular customers while still believing that serving this market segment makes a difference to their social wellbeing. In order to both achieve their social objectives and expand their market base, it was found to be important for the ventures to adapt their

products and processes to the customers. This is in line with the arguments of Khavul & Bruton (2013), that in order to achieve success in providing new types of products and innovations to serve the poor and ensure that these products achieves the intended impact on the long term, it is necessary to root them in the characteristics of local customers, networks and business ecosystems.

7 DISCUSSION

This chapter will discuss the central findings of the analysis in relation to the established literature in the field of sustainability entrepreneurship and in relation to the relevance of applying an institutional analysis. It will furthermore discuss the validity and reliability of the framework and methods used to arrive at these findings and the limitations to the study.

The objective of the study was to investigate how the institutional environment in the Tanzanian solar power industry influences the value proposition of sustainability entrepreneurship ventures.

The institutional context and its relationship with the entrepreneurial ventures embedded therein was found to influence how the entrepreneurs perceive of and organize their business and value proposition. The results of the study has unveiled the complexities of the relationship between institutions and entrepreneurial ventures, both within the institutional environment where different aspects were found to influence and transform each other and between the ventures where not all operated with a blended value proposition in the same way. Two ventures were found to operate with a blended value proposition integrated into their organizational design similar to what is described as 'whole enterprise design' in the sustainability entrepreneurship literature (Thompson, Kiefer, & York, 2011). Three ventures were found to operate with a blended value proposition but not balancing each value objective equally in their organizational design.

The study has identified both constraining and enabling mechanisms in the relationship between institutions and ventures, however the ventures described their institutional environment as overall supportive, with synergies found between institutions and operating with both social, environmental and financial objectives.

This means that there exist an opportunity for entrepreneurship in the solar power industry, which is particularly suitable for ventures operating with a blended value proposition. Institutional voids were identified that constrained activity, but the ventures were found to use these as opportunities for entrepreneurial activity and adapt their operations to fill them. Additionally, the entrepreneurs were found to exert their influence on the institutions, for example by lobbying the government, which had led to the tax exemption on solar powered products.

7.1 Significance of Findings of the Institutional Analysis in the Context of Sustainability Entrepreneurship Literature

Applying an institutional analysis to sustainability entrepreneurship has provided an interesting insight into the much debated balancing of values, discussed in sustainability entrepreneurship, social entrepreneurship, and environmental entrepreneurship literature alike. The findings of the analysis did not reveal the struggles of balancing the blended value proposition as predicted in the entrepreneurship literature where social and environmental objectives are expected to be contradicting to financial objectives (Hockerts, 2010; Pirson, 2012; Thompson, Kiefer, & York, 2011). Only venture 2 described having experienced conflicts between their social and financial objectives and had employed different strategies to manage this conflict. In fact, the two ventures employing the triple value maximization strategy both appeared to employ organizational design principles to ensure that all three objectives were pursued simultaneously so as not to drift towards one of the missions. This corresponds with the concept of 'whole enterprise design' expected of successful sustainability entrepreneurship in the strain of sustainability entrepreneurship literature optimistic about the role of entrepreneurship in sustainable development (Dean & McMullen, 2007; Parrish, 2010; Young & Tilley, 2006). The findings of the institutional analysis indicates that this might be explained by the fact that there were synergies between the values of the ventures and those of partners and stakeholders on whose resources they relied, and that the priorities were in line with those promoted through the regulative institutions. All ventures thus described the regulative institutions as supportive, which might be surprising in light of what would be expected in a developing country context such as the Tanzanian. This positivity

might be influenced by the entrepreneurs wanting to portray their country and industry in a positive light; however the findings indicate that it may also be explained by the particular industry setting, which is prioritized by the GoT and thus operate under favorable conditions. This finding must also be seen in the light of the fact that the ventures interviewed appeared to be larger ventures and quite successful, which might provide an overly positive view of the institutions. I might have also been interesting to interview smaller, less successful ventures in the industry to see whether they share the same values and whether there are ventures struggling to enter the market with different attitudes towards the institutional environment.

In line with what is predicted by Scott's institutional theory, the entrepreneurs were also found to exert their influence to transform the institutional environment, in all three institutional categories, to make it conducive to their business objectives.

The analysis furthermore found that the relative absence of the struggles in balancing values could be explained by the fact that the ventures operate in a developing country context. This supports the institutional literature about business strategy in developing countries, which argues that different environment and weak institutions in developing countries calls for different strategic approaches than in western business settings and that indeed businesses in developing countries are likely to find opportunities and step in to fill institutional gaps through their activities (Peng, 2002; Khanna & Palepu, 2010). The entrepreneurial opportunity for sustainability entrepreneurship in the solar power industry was found to be shaped by the regulatory environment and influenced by the activities of the entrepreneurs themselves, and by the gaps in the provision of basic services such as water and electricity, which created a market for the entrepreneurs to step in and fill this gap. The absence of strong formal institutions in the business environment may thus make it easier to operate organizations that do not conform to traditional perceptions of what constitutes a business, and that the ventures were perhaps used to navigate a less structured environment making it easier to maneuver a different organizational form mixing for-profit with not-for-profit objectives. It seemed that normative and regulative institutions enabled the ventures' social

engagement, and that social objectives were a natural part of the entrepreneurial mindset for all five ventures.

It was found that the regulative institutions and the action by the entrepreneurship ventures had created an entrepreneurial opportunity particularly conducive to ventures operating with a blended value proposition, which can be seen as enabling to the role of entrepreneurship towards sustainable development. The study thus confirms the institutional entrepreneurship and development entrepreneurship literature of for example Dean and McMullen (2007) and McMullen (2011) arguing that institutions influence how entrepreneurship contributes to sustainable development and that entrepreneurship has a role in shaping markets and institutions towards sustainable development objectives.

The analysis uncovered synergies between the institutional environment and the blended value proposition; however, the institutional environment also constrained the sustainability ventures, for example through regulative gaps leading to trouble with accessing financing and mistrust in the industry. It was found that the most important thing for all the ventures was that their value proposition and products were embedded in and adapted to the needs and preferences of their customers in order to counter this mistrust and create legitimacy for their business. In the context of the solar power industry, the inherent social purpose of providing electricity or other basic services to those that do not have access, was a driving force emphasized by all ventures. They furthermore emphasized the strength of solar products as being easily developed and modified to fit with the particular conditions and needs of all members of society. This kind of customer orientation and perception of the social good in treating the poorest segments as consumers and providing them with affordable products to meet their demand, is in line with BoP literature, where business ventures are seen to contribute to the social good by providing suitable products to BoP consumers caught in the poverty penalty trap. It confirms the findings by Khavul & Bruton (2013), arguing that introducing sustainability innovations in developing countries must be embedded in local customer preferences, networks and ecosystems to become successful.

7.2 Discussion of the Theoretical Framework

The components of the theoretical framework was developed with a view to explore concepts from the literature through a combination of Scott's institutional analysis and the elements of a sustainability value proposition as found in the sustainability entrepreneurship literature. This combination was suitable to investigate how sustainability entrepreneurship works in a developing country context, as it enabled the researcher to focus on how the institutional structures influence the operations of the case ventures. The framework was expanded with themes found in the data, to enable a detailed investigation of the interfaces between the institutional context and the ventures through an iterative analytic process between the data and the theory. The approach suited the exploratory purpose, as the institutional theoretical framework provided categories to guide the direction of the questions asked in the interviews, while being open to be filled with themes found in the coding and analysis process. This was the case for the levels at which Scott predicts that institutions influence organizations, where the relevant levels identified in the coding process were found to be entrepreneurship (the organizational field), sustainability entrepreneurship (the organizational population) and the organization, which were then integrated into the framework. Similarly, the regulative, normative and cultural-cognitive categories provided useful frames to guide attention and interview questions to focus on relevant elements of the institutional environment, while the themes within these frames emerged out of the data collected as summarized in Table 6.1. The framework for the organizational design and value proposition of the ventures provided a more defined set of frames for looking at the value proposition, due to the interest in investigation this particular aspect of the ventures. Despite this defined framework, an interesting variety was uncovered between the ways the ventures integrated the values into their organizational design. The complexity of the framework with the different groups of categories embedded in a network of contingent relationships as illustrated by the arrows was essential to uncover the dynamics of the two-way influences between institutions and entrepreneurial ventures. This complexity made it possible to identify how the categories are interconnected and how changes in one influences the others, which then translates into a complex and continually changing

relationship with the organizations. This complexity had the limitation that it was difficult to separate and assign influences and themes into one category and to navigate the framework to create clear-cut conclusions.

The choice of applying institutional theory means that the exploration of the Tanzanian context focused on the institutional environment, and thus other potentially relevant contextual factors influencing the value propositions of the ventures were not considered. Institutional analysis was chosen, however, to focus the research on certain elements of the context to ensure depth, and also due to the literature highlighting that the institutional environment is particularly interesting to investigate in relation to strategy in developing countries.

7.3 Discussion of Philosophy and Methodology

The choice of applying institutional analysis corresponded with the philosophical assumptions underpinning the study. The critical realist ontological assumptions regarding the role of structures and entities and their powers, and the view of causality, was reflected in the way the institutional analysis was approached and the derived findings. The contingent relationship between the institutions and the entrepreneurial ventures was explored to uncover how the activation of powers of the entities influenced the underlying structures, the institutions, which in turn were found to influence the behavior of the ventures. Through these mechanisms, different explanations and causalities were identified causing the ventures to act and organize in two loosely defined primary directions. This can be illustrated in the causality framework, modified to fit the findings as follows:

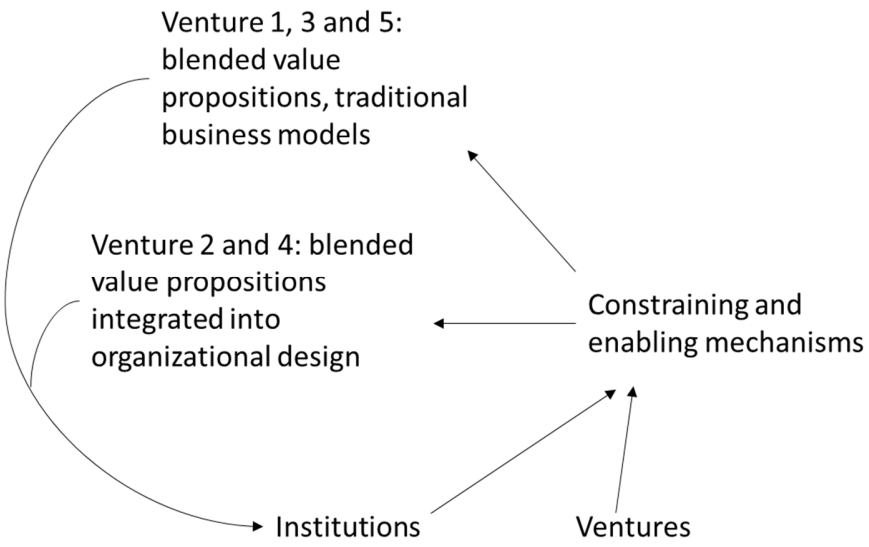

Figure 7-1: Causation patterns of findings

The power and structures of the ventures and institutions are activated through their interaction in constraining and enabling mechanisms, with two types of blended value proposition entrepreneurship emerging. These in turn influence the institutional environment, and in line with Scott's description of institutions continually changing, these interactions can be seen as circular, continually influencing each other.

The knowledge presented of these events are based on interpretations of the data collected, and thus say something about the specific institutional context and organizations investigated, which cannot necessarily be applied to other contexts, but provide explanations about the mechanisms at play which are relevant contributions to the existing literature as discussed above. In this way, the philosophy and theory complimented the exploratory case study methodology, which enabled an in depth investigation of the maneuvering of the entrepreneurial ventures and how this was influenced by institutions from the point of view of the entrepreneurs. The presentation of the analysis was structured with a view to present a transparent application of methodology, presentation of data, and application of theoretical framework to ensure a clear representation of the research process and how the findings were reached in order to ensure reliability of the conclusions reached.

The study explored the influence of institutions from the point of view of the entrepreneurs themselves, as they are the ones who build the organizational design and develop the direction of the organization and the value proposition integrated therein. Interviews can, however, be less than optimal for getting a comprehensive picture of institutions, particularly of the normative and cultural-cognitive institutions, as these are often taken for granted or underlying structures that are hard for the entrepreneurs to articulate. It might have provided interesting insights to have made observations of the operations of the ventures over a period of time to be able to create a more comprehensive interpretation of the influences of these institutions. For further nuance in the elements of all three institutional categories, it would have been relevant to have collected accounts of the institutional environment from informants from e.g. the relevant government agencies or from customers of the ventures to get a better insight into these institutions. However for the sake of limiting the scope of the study, the focus was confined to the perspectives of the entrepreneurs.

Applying a multiple case study methodology was performed to investigate a complex subject in depth from multiple angles. An important limitation to the application of this methodology in this study is that it was not possible to include multiple perspectives from each case. This has implications for the validity of the study, while not making the interpretations of the accounts less valid, it has limited the comprehensiveness of the explanations the study was able to make. Additionally, it was not possible to interview the owner of all ventures, and thus the motivation for starting the particular organization and employing the particular value proposition might not have been known or represented by the views of the employees interviewed. This is connected with the problem of not being in close geographical proximity to the research subjects, where availability of informants in the time span allocated for collecting data is essential. This also means that increased difficulty was experienced in reconnecting with the informants to follow up on interesting themes emerging in the data.

8 CONCLUSION

This study set out to explore the research question*: How does the institutional context for sustainability entrepreneurship ventures in the Tanzanian solar power industry influence their blended value proposition?*

Based on the lack of knowledge in the field, this study took an exploratory approach to investigating the relationship between the institutional environment and sustainability entrepreneurship ventures in the Tanzanian solar power industry. The institutions were found to influence the sustainability ventures in a variety of ways. Additionally, the entrepreneurs themselves were found to exert influence to transform the institutions in all three institutional categories.

Regulative institutions were found to be perceived as overall supportive by the entrepreneurs as a number of initiatives and policies had been introduced to support entrepreneurship in general and renewable energy businesses in particular. The entrepreneurs had participated in this transformation of the regulative institutions through lobbying activity and through their business organization. Constraining factors were also identified, as improvements in the policy framework had failed to properly regulate imports into the industry and provide a suitable financial sector framework.

Normative institutions were found to influence the entrepreneurship ventures through the norms and values of consumers, and it was found that environmental issues were not perceived to be an important priority of consumers as compared to practical applicability and social values, despite a changing awareness in the area. The entrepreneurial ventures themselves participated in driving changes in the value frames by raising awareness of the qualities of their products regarding practical, social and environmental characteristics. Norms and value frameworks were also seen to influence how the entrepreneurs themselves conceived of the values attached to entrepreneurship and sustainability, and thus the way they incorporated this into their organization.

Cultural-cognitive institutions were found to influence the ventures through shared frames of meaning along the line of the increasingly accepted career choice of entrepreneurship, the way the ventures built trust around their business and the way they relied on social networks when formal institutions provided insufficient support. The ventures in turn attempted to influence the institutional environment, particularly by localized initiatives to build trust and legitimacy around their business, products and industry.

Based on these institutional influences, two overall ways of integrating the blended value proposition took form in the five ventures. Two ventures were found to operate with what the literature would describe as a triple value maximization strategy or a 'whole enterprise design', organized in a way to maximize all three values. The remaining three ventures, while also operating with a blended value proposition, operated with a more traditional way of doing business, where primarily the social objectives and to a lesser extent also the environmental objectives were seen as natural side effects of their business operations.

The study found that the institutional influences are complex and interrelated between the categories, and certain constraining and enabling elements were identified to influence the behavior of the ventures. Synergies were found between operating with a blended value proposition and the institutional environment. The GoT's lacking ability to provide basic services such as clean water and electricity to all constituents and its and other stakeholders' desire to promote sustainable development means that a favorable environment had been created with particular opportunities for sustainability entrepreneurship. Synergies existed for operating with social objectives, because of the large BoP consumer base and the possibility of importing and developing products particularly suited the needs of this segment. Thus social and financial values were not perceived as at odds, but rather as complimentary objectives. Synergies also existed for the ventures maximizing all three values, as this meant an alignment in priorities with potential partners and supportive institutions, whose resources they were then able to draw upon in their business model. However, these two ventures also described having encountered relatively more constrains to their operations than the other three ventures.

By combining institutional theory with sustainability entrepreneurship literature and applying this framework to analyze the empirical data collected about the five entrepreneurship ventures, the findings of this study confirmed the entrepreneurship and business strategy literature that argues that institutional environment influences what is considered proper business behavior in developing country contexts. They furthermore support and adds to the literature that describes entrepreneurship as an important driver of institutional transformation, which is reflected in the way the study found the entrepreneurs influencing the institutional environment.

8.1 Perspectives

The findings of the research conducted in this study has implications for both practice and theory.

To tackle the challenge of the increasing global demand for energy, sustainability entrepreneurship might well be part of the solution. To create the proper incentives and environment to promote sustainability entrepreneurial activity, the institutional environment must be conducive. Identifying institutional factors, which constrain or enable activity is a good starting point to see whether entrepreneurship ventures contribute to sustainable development, and under which conditions they are able to do so. In the context of this study, for example, several of the ventures were interested in developing new partnerships, with investors, with partner donors or NGOs or with foreign businesses, but had trouble locating such partners. Developing proper market institutions to enable such partnerships and facilitate business networks might be an effective way to improve the environment for these ventures. It also appeared that the ventures operating with a triple value maximization strategy had experienced relatively more constrains in the regulative environment, indicating that truly operating with an organizational design with integrated blended value proposition may encounter difficulties. Seeing that the activities of such sustainability entrepreneurship is conducive to the government's development objectives, the particular needs and environment suitable to this kind of entrepreneurship should perhaps be emphasized in future regulative actions. It might for example be reasonable to initiate programs to spread the knowledge of different types of blended value entrepreneurship, for example in the entrepreneurship studies at universities, but also

within supportive business institutions, for example by creating a more suitable financial environment for businesses applying untraditional business models.

Based on the findings in this study, a number of themes have emerged with relevance for future research. This study has focused on the value proposition and ability of ventures in balancing it in existing, relatively successful organizations in the Tanzanian solar power industry. To get a more complete picture of the institutional environment for sustainability entrepreneurship in the country, it would be interesting to also look as less successful entrepreneurs, which would potentially uncover whether there are aspects of the institutional environment that hinders sustainability entrepreneurship venture development, which has been overlooked due to the focus on relatively successful ventures. Additionally, interesting perspectives might be created by investigating sustainability entrepreneurship in other industries than the solar, as it appears that this sector has particularly advantageous regulative institutional conditions e.g. through the tax exemption.

Finally, this study has been concerned with the conditions for how sustainability entrepreneurship can successfully thrive in a developing country context, with the assumption that their activities and objectives do in fact reflect a positive impact on society, contributing to sustainable development. In order to substantiate this, it is necessary to investigate whether these social and environmental objectives are in fact mirrored in their interfaces with society and stakeholders along the value chain, for example whether their products, which are typically produced in China are sustainably produced and transported and what happens to the products when they stop working. It would be interesting to see whether their social commitment is also reflected in the way that employees are treated, and finally, to investigate the actual impact of solar products in alleviating the energy poverty penalty, reducing greenhouse gas emissions and limiting deforestation.

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10 APPENDICES

Appendix 1: Coding Schedule

Topic in Data	Description	Theoretical category	Interpretation of behavior outcome
Low quality products and 'unserious' businesses entering the market. Increasing competition and inability for local manufacturing to compete with Chinese modules.	Opening market has led to entrepreneurial opportunity, weak regulation has enabled destructive entrepreneurship.	Regulatory institution	Constraining activity due to bad reputation of industry and inability to create local manufacturing. Enabling activity due to larger demand.
Inspiration for entrepreneurial activity from abroad, desire to expand activities internationally.	International orientation of businesses, both when it comes to start-up and future ambitions.	Regulatory institution	Enabling to activities due to knowledge and resources sharing.
Support received from business organization, governments, and in some cases from NGOs and donor organizations.	Tax exemption and improvements to policy environment has created a supportive environment in the industry.	Regulatory institution	The alignment with the solar power industry and government, NGO and donor objectives enables activity.
Trouble with financing start-up, reliance on money from social networks, reluctance in relying on banks for capital injections. Financing received from donors and NGOs.	Despite the GoT's effort to improve financial sector, it is still not utilized by the entrepreneurs. Some rely on partnerships in order to finance activities towards social and environmental objectives.	Regulatory institution	The financial sector is not appropriate to the needs of the entrepreneurship ventures, an institutional void that they fill through relying on informal sector or by relying on other partners for resources.
Desire to create own employment. People in Tanzania consider themselves entrepreneurial and want to start own businesses, but are not considered very innovative.	There is entrepreneurial spirit in the country, but a lot of it happens in the informal sector and is petty businesses.	Normative institution	Enabling for entrepreneurial activity that there is a positive perception of entrepreneurship, but constraining to sustainability entrepreneurship if most of the resulting activity is not formal, as is seen with the destructive entrepreneurship in the solar business.

People are being educated about the environment in schools, and the ventures are trying to educate people how their products contributes to this. However competing priorities, practical aspects are more important than environmental.	Changing awareness towards environmental and social benefits of solar power products. But the reason people buys the products are for practical reasons.	Normative institution	Legitimacy of the industry influenced by opinion of customers and stakeholders, regulative and entrepreneurial action is influencing the perceptions providing legitimacy. That practical aspects are important is enabling to the ventures, as the products are available or easily adaptable to customer needs.
Customers values practical aspects of products, while donors and NGOs values social and environmental. Some ventures balances all three values, some don't think environment is an important priority.	The values of stakeholders influences the value proposition of the ventures towards the customers and thus how the venture operates.	Normative institution	Some ventures are more focused on the values of their direct customers, while others rely on partnerships and align values with these.
Desire to start own business to become self-employed. Most entrepreneurs wants to be in traditional industries.	Entrepreneurial culture, but lack of innovativeness in products and business models.	Cultural-cognitive institution	Enabling to activity that culture has changed from negative to positive meaning of entrepreneurship.
People had bad experiences with products, and therefore no confidence in the industry. The ventures sold products through local distributions systems so customers would know where to turn with problems.	In order to build trust and legitimacy in the industry and products, the ventures localized their distribution systems and trained local distributors to repair products and train people in their uses.	Cultural-cognitive institution	Constraining with lack of trust due to regulative institutional void. The ventures fills this void by adapting to informal trust systems by using a suitable business model.
No structured system for business as in Europe. Relies instead on family and social network to start business.	Weak regulative institutions makes the ventures rely on other things, such as social networks to maneuver.	Cultural-cognitive institution	Social ties enables activity by making it possible for the ventures to navigate institutional voids. This also potentially makes them more agile in applying blended value proposition.

Appendix 2: Interview Guide

Organizational Design

Tell me about your business.

- Why/how did you start it?
- Who owns the business?
- How many employees are there?
- How is the business structured?
- Do you have suppliers?
- Describe your distribution system.
- How was financing secured for the start-up?
- What other resources did you rely on?
- Which goals do you have for your business in the short/medium/long term?
- What kind of strategies are employed in the short/medium/long term to reach these goals?
- How do you prioritize the goals?
- Where do you see your company in 5 or 10 years?

Value Proposition

What is your product/service and why was this chosen?

What is the central mission and purpose of the business?

- What is your most important achievement so far, and what do you hope to achieve in the future?

What do you understand by the terms sustainability and sustainability entrepreneurship, and how does this apply to your business?

- Was concerns about the environment or social welfare part of the decision to start the business/choice of product/service? Is it important to how the business is run?
- Is sustainability important to the business/the way the business is run?
- Is it important that the business earns a profit?
- How is the financial goals weighed/managed against the environmental/social goals.
- Have you ever experiences conflicts between the financial and the social/environmental purposes, and if so, how where these conflicts managed/resolved?

Who do you see as the central stakeholders/beneficiaries of the business? (who benefits from the business operations and the products/services?)

- How are the interests of these stakeholders managed?

- Do you (also) think about sustainability in your supply chain?
- Do you attempt to measure your social/environmental impact, and if so, how?

Institutions

Describe the energy industry in Tanzania.

- How important is renewable energy in the industry?
- Is it easy getting the employees you need with the right skills?

How would you describe the environment for entrepreneurship in Tanzania?

- Is it easy becoming an entrepreneur?
- What does being entrepreneurial mean to you?
- Is it desirable/does it give status to be an entrepreneur?

Who are your customers? Do you sell (primarily) to businesses/public organizations/private customers?

- How do you attract customers & manage your relationship with them?

Did the business (owner) receive any help in the start-up, and if so, by whom?

Did the business (owner) meet any barriers in the start-up? If so, which and how did they influence the business?

Have you encountered any particular incentives or barriers to operate in the sustainability business as compared to traditional energy provision? If so, which and how did they affect the business?

Do you think it is better or easier to have a renewable energy/sustainable product/service as compared to traditional energy products/services? Why, why not.

Regulative institutions

Have your business encountered any regulatory barriers to operation? If so, which and how did they influence the business?

Have your business received any support from governmental/non-governmental organisations? If so, which and how did it influence the business?

Are there any specific laws or programs which influence your business, and if so, which & how?

Normative institutions

Why did you choose a 'green' product/service?

Why do people choose your products/services?

How does your business attract customers compared to traditional energy providers?

Do customers prefer socially/environmentally friendly products/services over traditional ones? Why, why not?

Do you feel that sustainable businesses are valued higher than traditional businesses in society in general? Why, why not?

Cultural-Cognitive institutions

(to entrepreneur/employee)

Why did you decide to start a business? And how did you come up with the idea for this product/service? /how did you come to work for this business?

What did you do before this (previous experience, educational background)?

Do you know other entrepreneurs or other people working within energy/sustainability?

What did your friends/family/surroundings think about you starting the business/becoming employed by the business? Where you encouraged/discouraged, by whom and why?

What are the differences between starting a 'green' business compared to a traditional one?/did the 'green' profile of the business influence your decision to work here?

What do you think makes people choose sustainable products/services?

Appendix 3: Interview Transcripts

10.1 Interview 1

Anverson Solar, June 16th 2014

1A: Murtaza M. Ayubali

1B: Abdul Tajeb

INT: interviewer: Ida Kirstein

NOTES: Small shop located at a roundabout in the middle of the city centre. The area is very busy with lots of people, and crowded with small shops with a counter towards the street and a small back room and storage room in the back. Shelves filled with solar lamps, panels and LED lights from different brands. Co-owner Abdul Tajeb sits at a desk in the back, his brother and co-owner Murtaza M. Ayubali with whom I have made the appointment joins in during the interview. In the front of the store, 2-3 employees are busy attending to customers, and packing up orders.

INT: So I would like you to tell me a little bit about the business and what you do.

1A: We got into the solar business, yeah? So we have started since 2008, now it's almost like six to seven years, the market actually is growing. As you now most part of Tanzania, 70 to 80 percent don't have access to electricity. So the business I think is going good. But there is a lot of competition right now. Lots of competition, because you know, when we started we were the only one, now almost there a 30-40 shops, so many shops.

INT: Okay. And how come you decided to start this kind of business?

1A: Actually, you know, we have many shops here, we have three shops we own, so we wanted to start something new, so we thought…actually at that time solar was not that much, and the market was not that much, so we were just trying and buying locally from here, and now it's going good right now. Now we're importing so..

INT: Okay, and how I the business owned, who owns the business?

1A: Uhh, it's a sole proprietary business.

INT: and how many employees do you have?

1A: uhh.. Right now we have … [counts] ten employees.

INT: okay, that a lot ☺

1A: Actually, we have a ?? at the back, so some of them are working at the back, so..

INT: Okay, and ehh, how do you get your supplies?

1A: We're importing from China. Uhm, some of them also from Taiwan, a mix of them, but most of them from China.

INT: And, how about your distribution, you sell it through this shop?

1A: Yeah, we are selling … right now we have only one branch, which is where we are, so we are selling from here.

INT: okay, you are thinking about…

1A: yeah of course, but then you know we need manpower and everything, so… right now, we can't manage also here, so maybe in the future.

INT: And how did you finance the start-up?

1A: Actually, we have uhh.. always struggle, we were buying locally, slowly we started to importing, and now .. no one has actually helped us .. of course my father had the boosting, but, yeah.

INT: okay, so you relied on family…

1A: on our own internal capital, yeah.

INT: And what are your goals for..

1A: of course as I said we want to open branches if possible in all the regions .. all the 27 regions which are in Tanzania, if possible yeah. And maybe after some time, we can also have our own manufacturing plant. Of course that's a very long way, because Chinese modules are very difficult compete with in the prices part, soo.. yeah, but of course it will be a good idea to have our own plant also. Maybe in the future.

INT: Okay,

1A: Not only in the solar batteries, because there are so many thing we could..

INT: so in five or ten years, what do you think the company will be like?

1A: hmm, five or ten years… maybe after ten years we can have our own manufacturing plant. Five years, yeah.. yeah maybe after ten years.

INT: so, what kind of product do you sell?

1A: Okay, we … actually we sell photovoltaic products, all of them, we have solar modules, we have solar batteries, solar charge controllers, we have inverters, LED bulbs, almost all of them, almost, starting all the ranges, and then we have solar lanterns, we have these phone chargers also, which someone can charge their phone, because actually this is our main part, our main business depends on these phone chargers. It is a very small thing, but it's very important. Everyone needs to charge their own phone.

INT: So it's through solar..

1A: yes, because with this you don't need an inverter, I think you understand yeah? So you don't need an inverter, straight from the battery they can charge their phone. So the cost of the inverter can go out, and instead they can buy this product. And solar lanterns, some of them have charging options also phone charging options also, so they can charge their phone easily. And also for reading light, this one is for solar reading light, if you know about it, it's a very famous product actually, in the whole East Africa actually. They use it.. especially the school children use it to study. So especially for this product…

INT: Very good, and ehm, and why did you choose the solar industry?

1A: Actually, you know, the market for solar is very high right now. And if you see, the normal, also the grid power, there is a lot of shortages in it. Right now, the rationing is not that much, but sometimes you can go almost a whole day with no electricity. And this is the case in Dar es Salaam, you can.. imagine how it would be in other areas. In the rural areas.

INT: And what would you say is your central mission or purpose with the business?

1A: Of course the central purpose will be to… to change the life of these people. Because ehh for them, you know, for us it's normal .. electricity, like we're dealing with it every day. And you know for them even a small bulb is a very big thing. So at least all of them should have at least a lighting or something like that. Because they are almost spending how much for 15 to 20000 per month on kerosene just to light up the rooms .. everyone at least can have some of the solar lights, it will be much cheaper for them.

INT: Because they don't have to buy any fuel..

1A: yeah because, these expenses.. like you know its from here we can talk a lot.. for them, when we go out to the villages and I've visited myself some of them, the light …

[1B joins in]

INT: So what do you think is the most important achievement with your business so far?

1A: Achievement… we can say that ehm, up to now, most of the system that we've supplied, all of them are running nicely. The supply the domestic systems is 7 to 8000 systems. Which all of them are.. more small problems are there, but almost all of them are working nicely. Yeah, the complaints are .. there are some ups and downs .. this one is not working but we can manage it..

INT: Okay, so when you started this business, did you think about the environment or about social welfare or what did you…

1A: Actually the main part was social welfare. The environment, of course, but then .. actually we are not now polluting the environment. It's not us who are polluting the environment. I think it's other countries who are polluting, so for us to take for the environment is not, because we are not manufacturing I mean industrial country or something like that, compared to other countries. So for us, the main reason is the social. Not the pollution part. Of course that is the second part, we have to after some time but, like as you know, we are not the ones who are polluting the environment.

INT: So in the way that you run this business, how do you factor this social welfare in?

1A: social welfare, a least by providing proper products to the people and everything, we're at least giving them god quality products, so that once they use it they can use it for two to three years, after that we replace some of the batteries and some of the appliances, so at least we are giving them good products, and this… almost all the products we have sold up to now, we haven't got any complaints, so we are giving them good quality products.

INT: and how about the business part of it, do you consider it important gaining a profit?

1A: as I told you, the business is going up, because the energy demands are up, everyone needs energy. Even now, the population is increasing. So.. everyone needs power, so the business is increasing. Therefore the competition is also very high, we have a lot of competitors here..

INT: which is starting up recently..

1A: yeah, because you know, if there is competition there is, then you can see there is a market.. if there is one or two, then there is nothing, ..

INT: And so do you ever experience any conflicts between your social purposes and your financial purposes?

1A: social purpose and financial purpose.. yeah of course because you know, we are trying to give them a whole system. Now, most of them cannot actually afford some of the products. If we have expensive product they cannot afford it. Then let me just give you one part of it just connect some of the components together.

So the financial purpose is there actually. Because some of them can afford the whole system, all of the quality products but, most of them cannot afford it. So we have to check how, we have to check how they can afford it. So we have to bring products according to them. Financial purpose is there, because some of the products which we sell, we know that this one is mid-range product, but we have no other option than to give them that…

1B: before the financial factor was more, but now the financial factor is reduced, because now the prices are 20-40 percent less, so now because of that reason the market has gone up, and they can afford it, and now the market is good. Before, solar was not normal because of the price, now the price is.. especially the photovoltaic, when we started 7 years ago, we used to sell 1 watt for 6000 shillings, now the same watt we are selling to 2000..

INT: okay so that's good for the people..

1B: Good for the people because it is cheap. For … they can buy system, for .. they can use phone charger, before that was not possible. Before, just to charge a phone and light, was around 400000..

INT: So what does that mean for your business?

1B: For our business it is good, our profit has gone down, but overall the business has gone up, because of the awareness. If you buy one cheaper system the neighbor will ask you where have you got this, and he will buy from us, then it goes because overall price is cheap.

1A: it's simple, when the price goes down, the market goes up.

1B: Before that was not possible, before there was only 4-5 companies in Tanzania that were supplying, the price was very, very high, but now, there are lot of activities, there are lot of people working in this business, and because of that awareness has grown, because of this the customer base has also grown. So that is a good thing … very good thing.

INT: Okay, so can you describe the energy industry in Tanzania?

1B: Our energy industry – that is main grid – it is not that effective. Because only 10-12 percent of people are accessible to our main grid, 10-12 percent.

1A: there are different data, some say 70 some say 80 percent, so actually it is very difficult to say, but according to us at least 80 percent won't have access to power, so they need other sources, like kerosene or solar now is coming up so.. especially now for domestic, so if you want to… if you have a house, you want to connect to normal grid supply, so the starting price for it is around 500.000 shilling, just to connect to the grid, because they have to bring the transformer cables and everything – so for 500.000 they can get a

very small, nice system, so for them it is ok, better option. Nd you know that depends on availability also, because in some cases they have to pay the ?? and the ?? can go very much higher. So like almost all the East Africa, especially Tanzania, the demand is high. Not only solar, whatever energy is available.

INT: So renewable energy, why is that important then, is that because the main grid is not available?

1A: Yes, the main grid is not available. If it were accessible to everyone, why would someone go for it, unless the mission is something else. Actually you know, this market in Tanzania is different from other countries. Other countries are going for renewable energy because they don't have other supplies, like they'll see that after some time the coal and the oil will decline. But for us, we have not seen that other electricity, our country does not have electricity. So we, first we want to see where is the electricity, so our goal is to have electricity first. It's different from other countries, where you are having a larger mission, where we want to save that part so we can use it for something else and this we can use with the solar power – we are not experimenting anything, we are just in the trial phase. You can ehh, first world countries they can experiment, we cannot because we don't have electricity, you get my point yeah?

INT: and how about skilled employees, is it easy to get?

1A: Actually, as far as skilled employees is concerned, we don't have actually solar or PV technicians here. Most of them are either electricians, some of them have electronics, we don't have actually skilled photovoltaic technicians or something, maybe we'll be having it very soon. Most part of us don't have it. So very difficult for us to.. actually even .. the main problem we are having, we can sell a very nice system to them, but some don't connect properly, hey use undersize cables or something like that, thay can after sometime they'll tell me that this is not working. It's very, very important with skilled employees.

INT: so what, do you train them?

1A: No, we are not providing any training, and the bad part is that our university, the University of Dar es Salaam, which is the main university, does not have any course on this, no course. Only course is at the vocational education training over here. It is a very basic course, but at least they are having it. But there is not actually a degree of photovoltaic or something if you want to become a photovoltaic engineer, there is no degree in Tanzania. I don't know about the other countries, I mean Kenya or Uganda, I'm not sure about that, but in Tanzania there is no… actually such course where someone can go exactly and get a degree.

INT: So how about entrepreneurship here in Tanzania, how is the environment for it?

1B: for solar business?

INT: Just in general..

1B: There are a lot of opportunities. Because our country is not industrial, the only major problem is power, power is very expensive, there are a lot of factors… I mean the hindrance to the business is there is no industries, but overall, there are a lot of opportunities.

INT: And how about if you want to become an entrepreneur, is it easy?

1B: Nothing is easy. Nothing is easy. You have to stick according to the particular business. But it is not impossible. You can say, it is not easy and it is not hard. If you have a good willpower you can manage.

INT: And then for you to become an entrepreneur, what kind of barriers did you encounter to open a business?

1B: You now here in our country.. people are not serious. We do not have that much education and skill, If I want to open a solar factory in Tanzania, the main problem is power. Our power is very expensive. Relatively because it is a third world country, power is very expensive. Plus our labor, we don't have that quality labor as Kenya. In Kenya you can find good labor, here the problem is labor. Labor is not serious, because of that the cost goes very high. So if you put industry here, you have to think sometimes, because better to import from China – then to put a factory here, but otherwise if you have, if you know all the ups and downs in the government you will be influenced very differently, you can manage it's not that it is impossible, it is managable, but it's a risk.

INT: it's a risk especially with the employees..?

1B: The problem is, you see we have to hire experts from other countries, because our own labor is not that much strong, they are not serious, I'm not saying they're all are not serious, but the overall is.. I mean the skill is not there.

INT: Okay, and so how about with the regulatory system, is it difficult to open a business?

1B: No, if the investment is there, the capability, it's not difficult. If you can overcome those factors, then it is possible. Because as I said, there are a lot of opportunities, lot of opportunities.

INT: So how about you, when you opened the business, did you receive any support from any organizations or?

1B: No … when we started the business the price was very high. In the solar business. And the reason we started, you know there was some attraction to solar, because my profession, I'm a microbiologist, but just where I studied there was a solar water heater. So whenever I used to see the solar water system, I used to think that whenever I go to my country I have to do something with solar. When I came here, the solar was like clicking you know? It was something emerging and very few people were in that business. So we

started and it was just going, because at the same time the price falling, when we started, so it clicked very easy. So the major hindrance actually, the main question becomes the premises, to hire a premises, because this is a very big area, the roads are, you can see the roads are not good, but according to this city, this is one of the biggest areas, and the price to hire in this area is very high, so to open for a new commerce, to start a business, the main thing is capital. If you don't have capital you cannot survive, the main thing is capital. We didn't have that much support from the outside, but because we had some family support, I mean we have other sources, so that was one thing that made it easy for us to start a business. But otherwise if I just say if I just .. it is difficult.

INT: okay, so do you think if you are in the renewable energy business than if you're in a more traditional business, to get support for..

1B: Support I don't know who supports… I mean there is no support. The only support is banks, I mean if you take a loan, but according to our religion we are not allowed to pay interests to the bank, because our religion does not.. so for us that option is not there. So we cannot take a loan from the bank and then pay interest or something, for us, that option is not there, so those kind of support are not there for us. Maybe if we had support from a grant or something, then we can install systems to regions which are poor, I mean there are a lot of people, if you get support, good support, if you get a certain grant, this much amount, and we're told that for this amount you go and install, then we can do it easy.

INT: Have you experienced that?

1B: Yeah, we got one or two companies, I think it's USA company [name??] Solar something, but that was just a mini one, most projects are big contracts, are taken by the big companies in Tanzania, that is .. Ensol, there is a company called Ensol, Rex, those are people who are in installation, actually we are not in installation, our main is to supply people, who are already in the installing process. So we don't get into installing, but if we get an opportunity like we get.. we can do it, but our main focus is not that, our main focus is to provide people with the goods and to those who are already installing, we supply to most companies in Tanzania. We are supplier not installer, we want to go into installation process, just not to contradict, we have so many customers to supply, we do not have time to installation.

INT: So you sell mostly to private persons or to businesses?

1B: We sell from all grades, we sell from the biggest companies in Tanzania to the end user, a farmer can come now, and we can directly supply to him at a very good, reasonable price. So we supply to anyone, because we have.. I mean we have products of all the ranges I mean we have the best quality products, we have cheap products, but which are economically good, because some, maybe you can not afford a label,

this is not a label, but what are working, you see, this is a Morningstar controller, it's a very famous controller, maybe you heard of the brand Morningstar, in solar business this a very famous brand, Morningstar. This is expensive, because it's a USA product, this is a Chinese product, the price is half, but the quality.. this is working – this is working. But for big companies we cannot supply this [the cheap model], they do not accept. But a farmer will take this [the cheap model] but will not take this [the expensive model]. So there's a difference.

INT: So how do you attract customers compared to your competition?

1B: We have not gone into a lot of marketing, because we have a good distribution already. And people trust us because we are honest in business. I mean, we give them the products, and tell them, look, this price it is this quality, and this is the Morningstar, this is Suntech, they know. In that case, we are already recognizable internally in Tanzania, maybe I don't know our image outside, I don't know how you contacted me, because of internet maybe, we have put our name into internet, I mean as a company, but ehhh.. I don't know our image outside, when you saw here, what did you feel, may I ask you..

INT: I thought, not many solar companies have their own web pages here, so I thought that you might be a bigger company, or someone who is more established maybe?

1B: And when you, after seeing, how do you feel, I mean..

INT: It's difficult because.. It's very different from Europe..

1B: It's different from European style, because you know European.. you know the thing is you have a very good infrastructure, you have a very composed type of business, you know? And here, the system is different. You cannot expect that type of thing here, because here, the way we work is different. But yeah, there are some companies which are purely company ??, like if you go to Rex energy and Ensol, they are companies where the focus is only on tenders, so that is a different kind of business, our business is to target directly to people. So we are a little different.

INT: it seems like you have a lot of business going on..

1B: yeah, our business as I say, we have good distribution. And because of our price, I – I don't think ehm.. very few can match our quality and price, because we are one of the biggest importers in Tanzania. Our image outside may not be that big, because we are not marketing. But internally, but we are not doing that much to make others know.. you understand what I'm saying.

INT: Okay, so uhmm..

1B: And what is your aim actually… I mean from where .. so what is your target what is your goal?

INT: I am trying to see what your kind of.. renewable energy businesses..

1B: And you are from Denmark?

INT: Yes.

1B: okay, so after collecting this data, where will this data go, I mean, are you a student?

INT: I am a student, yes, it's gonna go into a big thesis that I'm writing..

1B: So you have travelled from Denmark to Tanzania just for a school, college project..

INT: well, I'm also here because the place where I work have some business here in Tanzania, so I have a few meetings, but mainly for this, yeah, to do some research.

1B: And how is solar growing in Denmark?

INT: It's.. We don't have the big solar potential that you have here, we have more wind power, which is also starting up here a little. But for solar we have lot of businesses and we have lots of.. but it's mostly on rooftops and stuff, so for private use.

1B: And the price is higher? Or the price is okay?

INT: I think the price is okay, because there are some government subsidies, so if people want to buy it, because it is renewable..

1B: The only thing I can say is, the difference between Denmark and here.. Denmark is a systemized country, and everything is systematic, here there is no system. If you want to buy solar, there is no subsidy from the government, there is nothing like that, yeah, no, one thing the government has done good is there is no duty and VAT on solar panels. So that maximum people can afford, the product is cheap, and maximum people can afford it. But it is one thing, otherwise there is no particular system as in Denmark, that government gives a subsidy or this and this, the system is not there.

INT: But howcome then do you think people choose to buy these kind of things, compared to..

1B: Because there is the problem with electricity in our country. If you go 50 kilometers outside of Dar es Salaam, you will find no electricity. If you go, this is a main city, if you just go 50 kilometers interior, you will find there is no electricity. Because access to the main grid is only 10-12 percent.

INT: People usually use kerosene lamps, so wh do you think people want to switch to something like this?

1B: Because you see, now, as I said, the price has gone down, for solar, and many people are getting to know that there is something called solar. Three to four years before, that awareness was not there. Now

that awareness is there, because many people have come into this industry, so, if there are many people into this business, the awareness grows. If you buy one solar lantern, you are in a remote area, then if you have a bulb or a phone charger, then you'll never, he will ask you, he will be curious. 4C that way the business goes, and I think now is a turning point for our country. Because now the price is good. Because of that, now people are.. people want to know something which is different from kerosene, because kerosene is expensive. Everyday 300 shilling.. around one dollar, less than one dollar, just to spend on kerosene, it is too much for our country, because our country is not that rich. And people are not rich. And you may find a lot of circulation here, but in rural areas there is lot of poverty.

INT: So, I would just like to finish by asking a few questions about why you decided to start a business, ..

1B: I see, the attraction with the start-up, well you see when I was studying and there was a solar water heater, so when you go on the terrace, you find only one solar water heater. That is in India. So I decided when I go after studying, when I go home to Tanzania I have to do something in solar. At that time, solar was like emerging, you know, the price was very high, a few companies, people didn't know that much about solar. When we started, and at the same time the prices started to going down, so the prices started declining and the business started growing, and we also started growing..

INT: so it was a good time to start..

1B: it was very good time for us to start that business. And we are still growing.

INT: and what was you're.. you came directly from your studies to start this business?

1B: No, actually I worked for, after my graduation I directly came here, I worked for 10 months in one of the pharmaceutical companies, I mean I was testing the medicin if it was fit for human consumption or not, after that, I directly started this business.

INT: So do you know any other people who have their own businesses, in this industry?

1B: Well, a lot of companies, if you go on the internet there is a company called Ensol, if you want small businesses there are a lot of them, if you go this way [points] there are around 30 shops, small shops, but if you want something that is more recognized, I mean, corporate type, there is a company called Rex energy, there's Ensol, and ehh, Helvetic Solar, yeah, these are companies which are known, but smaller companies there a too many. Now you can find 100.

INT: Yeah, I noticed a few just by coming here..

1B: If you go this way, there are around 40 or 50.

INT: so what about in your family, or your friends, what did they think about you starting this business?

1B: As I said at that time, they were just hearing something solar, but there was not much interest, but now, people are curious, because now they know something solar is more, at that time it was not famous, maybe they were just thinking okay, maybe we can get something of it, but we didn't realize it would grow so much. Now when we've come after seven years, I think this was the best decision we made, to go into this business.

INT: at the right time..

1B: Yeah, at the right time.

INT: so asked also your brother, whether your purpose, whether it's social or environmental or financial, what do you think is the most important?

1B: You see, every business, financing is a must, you cannot do something just for social or the environment. First thing is financing, I think that is the basic for everyone. Social – yeah. Social is very important, because even at that time, even now, people are not aware still of this thing. We have lots of power problems. And environment, is also there, because there is a lot of pollution, not .. in our country okay, you can say pollution is there, but compared to other countries, our pollution is not that much. But the main thing is, you know, we are not, our country is not accessible to energy. So we need solar. So environment I don't think is that much, but social I think is, because we don't have electricity, solar and wind and other options, are only options which can compensate our main grid. So I think social is more, environment is not that much, but social and financial is much more.

INT: So in my thesis I'm operating with the term sustainable, is that something that's important here, or what do you think?

1B: the term sustainable. Yeah sustainable energy is important, because this is solar is itself a sustainable energy.

INT: but that's not the most important thing for you, it's more about.. to have a business, and be able to sell good products to..

1B: yeah, sustainable means, you see, the reason why there is a domestic, you see for example in your country you cannot find a shop like this that supplies solar directly to a farmer. Because, it is already a rich country. Here, it is a different scenario. Because, we have no electricity if you go 50 kilometers out of Dar es Salaam, there is no electricity, so you need an environment that supplies directly to people, for example imagine if you are living in a world where you don't have electricity. So just imagine, you are not from

Denmark, then how will you feel, if you don't have electricity at home, can you live one or two days without electricity, is it possible.

INT: probably difficult..

1B: yeah, diffidult, so if..

1A: more difficult, once you get used to something..

1B: so we are living here in town, if we don't have electricity for three hours, we can go mad, you see, so those people who don't have electricity, if you give them just one bulb, or to charge a phone is a big thing for them, we are selling something that is.. you see.. social. Environment comes after that.

INT: Okay, so I think I have everything I need, so is there anything you want to know?

1B: so after this collecting data you will make a thesis, you will just go an African country..

INT: it's gonna be in the Tanzanian context.

1B: So how will Tanzania benefit from this thing?

INT: it's still just a thesis study, but maybe it can be used in a bigger research context.

1B: Maybe you can focus on places where there is no water, you can make solar pump systems, maybe in the future, because the main problem is here water and electricity, so anyone, our hospitals, there is no electricity, there is no water, so if such a project comes, where there is, you know, you can make a project, where solar water pumps, solar fridges, I mean if there is a hospital or clinic in a remote area. And you want to store medicins, how will you store those medicins, because there is no electricity, so you need solar fridges, you need solar pumps, solar water heaters, I mean, those are things, if you can come up to install, because we don' have that much technical, we have technic, but you see, capabilities are important, and people living here they cannot afford, so, if maybe you can, a country like USA or the Netherlands, Denmark, which are.. which have the capabilities to support those countries which are financially down, things like this, and I think it will be a great help for them.. for the remote people.. like hospital and all those things.. it will be good for them. I mean, I don't know but the remote areas.. because there is no electricity, how can they get clean water. We are used to it, but they just take it directly from the well and drink it.

10.2 Interview 2

Solarwave Tz Ltd, June 19th 2014

2: Maureen Ndekana

INT: interviewer: Ida Kirstein

NOTES: Solarwave Tz is a Tanzanian subsidiary of the Swedish company Solarwave, a cleantech company which implements water purification and desalination programmes by use of their solar power technology. The office in Ubungo Plaza is nice and well-organized with a display of their products. I am greeted by their sales and marketing manager, who is happy to answer questions.

INT: So I would like you to tell me a little bit about the business and what you do.

2: So we are called Solarwave Tanzania Limited, Solarwave Tanzania Limited is a subsidiary of Solarwave AB, which is a Swedish based company, based in Stockholm. Ahh.. Our business is divided into different segments: a commercial in that we sell products, and ehh, we also support cooperates in doing CSR, so we manage CSR projects for different cooperates, mostly in Europe and right now we are looking for some local cooperates as well to partner with. We also work with developmental organisations, and I'll just clarify that a little bit, ahh, so basically what we deal with is green energy in terms of solar power, we have tailormade home solar systems, we are not really, we don't really go very deep into solar power, so we have one particular tailormade home solar system, it's called PB1000, it's 1000 watts, it's a 1000 watt system, so basically you know if you have a home and you don't have power, or you need back-up, it is a suitable system for that. Our major business is in water purification, so we have solar powered water purification systems, so hence the name, hence the name solarwave. I know people automatically assume that we just do like green energy and solar power, but it is solar powered water purification systems, and the reason why is because, I mean, in Africa mostly the problem with water is in rural areas, and rural areas are mostly away from the grid, so yeah, so then we decided to make something that can be powered by solar, so basically, you know that's our core business. Yes. So like I said, we have a commercial, ehmm.. we have a commercial part, where we actually sell this product, and then we offer this product as products for CSR, so there are people, who buy them, and then donate them to schools or hospitals or villages and communities, you know out there in the rural areas, and then we manage these projects for them in two or three years, and then they sponsor this project and things like that, they pay for the maintenance of the machines, for spare parts, and things like that. They pay for awareness, creation, you know, yeah, and of course clean water goes hand in hand with several other things like, you know, washing your hands, it doesn't make sense if you drink clean water and then you don't wash your hands after you know, being to the latrine. So of course we try and incorporate all of those small things as well. Yes. And we also work with developmental organizations like NGOs, ??, water sanitation and health, and you know instead of, because most of them right now ehm.. provide… for example this chemical it's like chlorine, for purifying

the water, so we are trying to introduce something that's chemical free, you know, smell free, because normally when they do that there is a lot of stigma in terms of people saying, no it smells bad, it smells like bleach and things like that, so they are not using it. So we are providing them with this as an alternative. Yeah, so basically that's in general, that's how we work, and I think it's important to mention other water purification. We do UV water purification, so it's double filtration system, along with UV lamp to kill all the bacteria and we also do desalination, because we realize some of the areas along the coast… So if you are talking about providing clean and safe drinking water, you know, the UV will kill the bacteria, but then if it's saline, then no one is gonna drink it. Yeah, so we do desalination as well.

INT: okay, and so that works with solar power, how does that work?

2: ahh, basically, it's a normal, you know, desalination system, but then we have a solar plant beside that, so we provide it along with the solar plant, yeah. Yeah, so, you know, a solar panel, then a power box which has an inverter, and a control charger, to change the current.. the current from DC to AC, and then it powers the system. Yes.

INT: So it's mostly through the NGOs and then is it a community project, or?

2: yes, it could be anything, if it's through an NGO or through a cooperate, normally it's a community, because we have systems, because you know, for 5000 liters an hour, and a normal person drinks, say, three, three and a half liters of water, okay maybe it's very hot in Tanzania, so let's make it four, but if you have 5000 liters an hour, that's a lot of water. A lot of drinking water, so it means, you know, you can give it to a whole village. And I think for NGOs, this is very good, because per person, it becomes just very few cents of a dollar. Yeah, less than a cent of a dollar, basically, cost per person. Yeah, so it can be that, or it can be, you know, a bank waiting to, you know, they dug up a hole, because you know the water system here is crazy, it's not, it's not consistent, it's not reliable, yeah, so you know it can be a company or a bank, mostly, you know, banks are the ones who have big buildings, and many people in their.. in terms of staff, so they have a borehole and then it's saline, and they want to use it, and they don't want, because you know saline water, after some time your pipes get messed up and things like that, yeah, so then they want to pass their water through a desalination system before supplying it to.. yeah, or ehmm.. like bank of Tanzania who bought a system last year, they wanted to use it to power their AC, they have a very big building, one of the largest buildings in Dar Es Salaam, yeah, and they have, you know, like airconditioning system, and airconditioning system uses very specific water, it shouldn't have saline, it shouldn't have calcium carbonates, which is hardness, so then we supplied that. So it could be, you know, it anything, it could be a small school, because we have really small systems, it could be an individual, you know, who wants a

system in their house, they don't want to buy water anymore, they don't want to boil water anymore, you know, yeah so it could be anything.

INT: how old is the company?

2: we are three years old now.

INT: so what it's the subsidiary of a Swedish company..

2: yeah, it's a subsidiary of a Swedish company, maybe I'll give you some of our brochures.

INT: do you have like 10-15 minutes, because I have a little questionnaire, that I would like to ask you.

2: yeah that's fine.

INT: I would like to ask a few questions about how your company relates to sustainability..

2: before you start, I would just like to warn you, I'm not technical, you know, in renewable energy, so there might be some questions I might not be able to answer.. but go ahead.

INT: It's not really technical questions… So how is the ownership structure, is it fully owned Swedish subsidiary?

2: It's fully owned, yeah, it's fully owned by Solarwave AB, yeah, we are basically a marketing branch.

INT: so you work with businesses, NGOs and the private buyers..

2: yes.

INT: okay, and do you know why the Swedish company decided to start up this division here in Tanzania, do they have other in Africa?

2: Yes, they do. We are in Nigeria and Uganda, yes.

INT: okay, and it's mainly for business purposes, or is it mainly for developmental purposes or?

2: well, I think it's a little bit of both. But, I mean, it's important to note that Solarwave AB is a commercial company, our business is to make a profit, that's what we want to do, but of course, I mean, the fact that we have partners, who don't have interest in making a profit, their sole interest is in making development, and promoting green energy, and things like that. So yeah, but our business is.. we're in the business for making profits [laughs].

INT: okay, and can you tell me what is the central mission or the central purpose of the business?

2: basically, our aim is to increase access to safe drinking water and of course promote use of green energy. Yes. Or use of solar power.

INT: and how big is the business here in Tanzania? Is there a lot of demand?

2: yes, quite some demand. I would say a lot, I mean, a lot of demand compared to the machines we are actually selling, there's a lot of demand. And the difference is because of price. Because it is not everybody who needs this system who can necessarily afford it. Yeah, so that is where our developmental partners come in, but again there is only so much they can do, they can't give it to everybody, but yes, the demand it's a lot, it's almost overwhelming, yeah.

INT: okay, so it's a good business for you here..?

2: I agree, I mean, yeah, I think so, I think it is [laughs].

INT: and how about sustainability is that a part of the mission or..?

2: yes. It's a big part of, I mean, especially when it comes to our projects, it's a very big part of what we do, and I think it's also one of our biggest concerns. You know, in terms of… after the donor.. or you know the cooperate, is done with all that, maybe they were supporting it for three years, then what? But it's definitely something we're also very concerned about as a company. So what we do is that when we go into a community we don't o in as us, we'll take an existing women's group, or an existing youth group, and give this to them as a business. Yeah, so that they actually selling the water at a very cheap price, you know, but then they get support for a while, but then after that, they actually have some money – they get an income, but then they also have an incentive to actually maintain the system. Yes.

INT: so there is definitely a social aspect to it.

2: yes there is a social aspect to it.

INT: and what about environmental, is that important?

2: oh yes. I mean, it's one of our key… ehmm.. I mean, when you look at this product, maybe I'll just explain a little bit… in rural Tanzania, to purify your water you need to boil it. People don't have gas stoves. I mean, a few have, a few elite people in the rural areas, they use a charcoal stove, but, like 85 percent use a three stone firewood stove. I dunno if you've seen how that looks like..

INT: I haven't seen it, no.

2: I think I have a picture somewhere, maybe I'll find it after we're done. 4C it's a three stone firewood stove, it's basically just three stones, one, two, three, then you put your saucepan or whatever onto the

stones, and then you have your firewood, and then you light it, so in terms of energy it is a lot of wastage, in terms of, you know, the amount of wood, that someone actually needs, to bring that water to boil, is massive. So there is a lot of wastage going on as well. You know, it's not an efficient way to do anything, this three stone firewood, yeah. But that's what 85 percent of them use. So you can imagine the amount of wood harvest that goes on. And you know what happens with wood harvest, and, you know, and the ozone, and the climate change, so, environment is one of our biggest, I think, yeah, yeah, one of our biggest motivators, and one of the biggest motivators for this product. Apart from providing clean water, and you know, technical health, you know, people are getting sick, it's the fact that if someone gives out a system, and a thousand families now don't have to boil their water, they can collect it directly and drink it, then we are saving that much firewood per day. So then what are we doing in one year – our system is, you know, can stay up to ten years, they are very, yeah 10-20 years, they are very robust systems. So in 20 years, how much.. you know, how many carbon points.. and you know, yeah, environment is very big for us, it's huge.

INT: so you measure this?

2: yes, we measure, we do. We do measure.

INT: so… and I assume, since it's a Swedish company, the technology which has been developed…

2: it's Swedish technology, yes.

INT: do you import the products, or is it..

2: we import the products, sometimes we import the parts, and assemble, when it's, you know, some of the larger systems, but the small systems a plug and play, we import them as they are.

INT: and so just briefly about the industry here, how is the competition in this industry?

2: uhmm.. for our particular, you know.. in terms of solar powered purification systems, we are the only ones in Tanzania. You know, we are basically the only ones in East Africa, but in terms of water purification systems, there are other players in the market, you know, there are Indian companies, there are Chinese companies, there is ?? which is a very strong player, they've been here for very long, they've been here in East Africa for almost 10-15 years, yeah.

INT: so what about the goals for growth for the subsidiary here in Tanzania?

2: I know definitely, I mean like any other, profit.. like any other commercial institute, we would definitely like to grow in terms of turn over, and the amount of money we make, and commercially, we'd like to grow commercially, but apart from that, I think one of our major goals, you know in the next three years, is that

we would like to have an assembly plant in Tanzania, yes, yes, and also to grow in other parts of East Africa, you know, so assemble in Tanzania, and then distribute to Uganda and Kenya.

INT: and what do you think is the major barriers to reaching these goals?

2: ehmm.. I definitely think.. one of our biggest barriers, commercially, in terms of, you know, finally being able to set up… I think the business environment is okay, but it's just like I mentioned earlier, the fact that people who need this, cannot necessarily afford it.

INT: and about regulatory barriers, are there any laws or programs that help a business like this, or may be a barrier to it?

2: I mean dealing with renewable energy I think in Africa, is most probably the best business, because most people, who do business in Africa, especially, you know, most foreign investors complain about high taxes and things like that, but if you.. if your equipment is solar powered, you don't pay tax, so really, I think that's really supportive, and then the organizations like ehmm.. how do they call it, the Renewable Energy Association, TAREA, that supports, you know, us a lot as well, yes, yes, so I think the environment is.. regulatory-wise, the environment is very good, a lot of support from the ministry, because the need is a bit obvious, at least that's something that's a bit unique about the business that Solarwave does, is that the need is obvious even to the ministry. So a lot of support from there as well, and government support and things like that. [phone rings, answers briefly]

INT: so do you think that people, or, you know, customers prefer the renewable energy over traditional energy sources?

2: I think they do. I feel they do, because I mean, you know, 50 percent of the clients that walk in here actually want, you know, a back-up system, they already have normal on the grid energy, but they want a back-up system because it's not reliable. You know, but when you have solar energy then it's always there when you need it. Yeah, and we have an abundance of sun, so it's not a problem [laughs].

INT: and so do you think that's also a concern for the environment, or do you think it's mainly just because the national grid is unreliable, or?

2: Honestly? It's about the national grid. Yeah. I think, in terms of awareness, as compared to Europe, Africa is not there yet. You know, in terms of awareness about the environment, and things like that, and taking care of it, we are not there yet. I mean it's something we know, we are taught you shouldn't throw plastic, you shouldn't.. but we don't think about it. Yeah. It's not, I mean, it's very different from Europe. Yeah, it's not something that we think about, and not necessarily because we don't want to, but I think you realize that in Africa there are competing priorities – it's about am I gonna be able to eat, you know. Ehm..

I have to walk ten kilometers to go to the well to get water, so… people, yeah, yeah I hope you understand… so our customers mostly it's really about, you know, it's not convenient and I need to have electricity all the time. Yeah. But of course there are a few people who come, and they're like okay fine, the environment, but very few, I'd say maybe I've met two since we started yeah.

INT: and how about in the business, do you think that the environmental or social are competing sometimes with your profit goals?

2: definitely. Definitely. I mean because, this is the.. like I said, the need is out there it's obvious, it's a very social need, but we also want to make a profit, but sometimes, you know, it's very overwhelming even to us. Such that, you know, you might have to reduce prices, reduce and reduce, such that, you know, okay fine, this school really needs it, and if it get it, the community can access water and things like that, the kids can take some drinking water back home, you know, they're talking about.. during rainy season we have about, just up to 25 percent attendance because our kids are sick. So because of thet you have to really reduce the price. Yeah. But we are hoping that now that we are looking for developmental partners, and people who really want to give out the system, actually to donate them, that actually this could change.

INT: and so how do you try to work around it?

2: well, ehmm.. so far, what we have done, is that we try and give it out, and then have them pay over a period of time. Yeah. So we don't demand all the money at once, we have them pay over a period of time. And we are now piloting a lease system, where we give the system to a school, and then they give us a certain amount of money each month.

INT: and that's working well?

2: it is, yeah, it is.

INT: and then if I can ask you, howcome you decided to start working for this company?

2: ehmm.. I would say, I mean, I'm from the commercial sector, you know, that's my history, like previously. But ehhmm. The social aspect really pulled me, as well as the environmental aspect as well. I really liked, you know, the idea, and the fact that they wanted to integrate solar into this, and make it accessible, and having grown up, you know, in a rural setting, I understand how much of a burden this is, to women and to the environment as well in terms of the firewood, you know, and yeah, I mean basically. So, it was the social aspect, but the environmental aspect as well.

INT: So I think that's basically it..

10.3 Interview 3

Rex Energy, June 19th 2014

3: Francis Kibhisa

INT: interviewer: Ida Kirstein

NOTES: Rex Energy is located in the center of the city in their own building. It's a large space with a showroom in the front, and offices in the back. The manager of the company, interviewee Francis Kibhasa, had requested the interview questions in advance, and was well prepared for the interview. He was, however, a bit suspicious about me taping the interview, but agreed.

INT: So I would like you to tell me a little bit about the business and what you do.

3: Rex Energy is part of Rex Investment Limited, that was founded 14 years back, the main objective of the company was to narrow the gap between the access of electricity to the majority of Tanzanians. As you might be aware that about… between I'll say 86 between 86 to 90 percent of the majority of Tanzanians does not have access to electricity as you know, especially the lack of power, that's the first of all, it is a huge market for energy entrepreneurs. If you look at the.. the statistics shows that Tanzania has an access about 14 percent, but I wouldn't say it's more than that, it's an average of 14 percent. The people say it's between 12 and 15 percent, but to be precise let's say it's 15 percent, it's ehh.. general does not have access to electricity. And ehh.. the only easy access to energy is solar power. Then we set up a company for the past 14 years to try first of all, to create our own employment. Create our own employment, second to create or narrow the gap of access to electricity. Three, the issue of environmental and renewable issue, that was absolutely a push behind… of course when we started, we started a small.. a small enterprise. I and my fellow engineer John, I'm actually the founder and the chief executive of the company, and I thought I should invite my fellow engineer to join. Later, we found the demand was bigger than we thought. Obviously it drives the business to grow… we set up a financial department, set up market and sales, of course set up a operational and technical department so that we can deliver the services we wanted to. We moved from being a small and technical company to a commercial driven company that focus on delivering the services. You know how demanding it is, when you have to set up a company, of course we set up an office and to set up an environment where you can say, where people can come.. this is the place where you can find all relevant... Okay that's how, of course that's of now, if you look at ehh.. we're almost operating through the country, we've got about four big offices, in the northern zone, which has been there in Arusha for the past 5 years, we have a branch, in Mwanza, which is at Lake Victoria, we have at Lake Tanganika, which services the western zone of Tanzania, of course we have southern highland, which is a branch

servicing the south and central part of the.. that's how we are outside. When it comes on the organizational structure, we have a board of directors in terms of, because we have grown in such a way that we need it, so we have a board of directors, which has got seven board members, we have five are non-executive and two are executives. This is how we do it. Well it has got people from all angles, that is from the financial institutions, to help us to deal with the financial matters, we've got people from the legal matters, that support us from the government institutions, then from the background of market and sales, and ourselves are technical background, and that's how the board is set up. Of course, the ??, when it comes to the management level, we… are the local company that have actually employed people from all around outside, to get a certain standard of.. a certain skill-set. Like now, our financial manager is from the Philippines, our product manager is from China, and ?? is from Netherland. Then when we have to decide.. because we wanted to acquire skill and knowledge from all around, of course, I believe, investing in human resource and.. that's the setup, we have well-trained engineers from the local institutions, and the marketing type from the telecom industry, they are here to support our business. I think that's the general I would say, the company, Rex Energy as of now.

And.. what's our mission, setting up a company, our mission is to.. I mean ehh.. to be the hub of energy in Africa. What do I mean by saying hub of energy solutions, is… when you think of solar or renewable energy has to think of Rex. Why do I say so? Because, we are trying to develop solutions that suits rural settlers, solution for urban guys, solution for being a corporate entity, think of any… whoever who need power have to think of it. We're developing projects and at the same times developing retail services, that's how we see it. I've seen it now in Eastern Tanzania, East Africa, and Africa as a whole, most of the people who does solar, they do it by the way, like a small shop, or small person, for us here at Rex we se it that's not the way, we take it as a serious business and as a commercial entity, we're trying to drive it in a way that whoever comes can be attracted even to invest, as of now, we are actually seriously looking for partners, investors, either in terms of equity investors or in terms of ehh.. in terms of strategic partners, that's how we're set. We're not set in something small… as we speak, this was belonged to the government, and now, the building belongs to Rex Energy, this is Rex energy house. And yes also, we're trying take it to where you can find all types of solar energy solutions. I would say, think of selling solutions, project development, having research and development, training guys, coming up with a way that if you need some kind of services, here we have one.. a one-stop center for renewable solutions, and that's it.

I would say simply… for business environment when you look at Tanzania as a whole, the potential is huge, because.. specific in energy, the government supports a lot, if you look at the… they have actually waived, or exempted tax, all taxes related to solar equipment, of course, I was one among the people who participated in lobbying the government, but it's not a matter of lobby, but the government is willing to do,

the pull is supportive. Ehm.. look at ehh.. the renewable energy industry. Renewable energy is well backed up by the government. Because the government has seen that it is very difficult to run national grid all around because of.. initial investment is huge. But solar is a tailormade kind of solution, where you can actually.. someone need a lantern can actually, if you go to the village you can actually come up with a solution that suits those guys. Look at ehh.. if you go to a hotel the big solar water heaters we will actually give them solar water heaters, and a few lights. If you go to the village, maybe somebody who cannot afford to pay the light, television and who only can afford a lantern like you've seen, our small solar mobile of two lights. Of course we're developing a lot of, we're striving to developing a lot of solutions, that most of the people can afford. But.. affordable solutions, that does not attract the … capex. I guess you now, we try to work out those capex kind of initial investments..

Anyway, when it comes.. is it easy to get employees with the right skills.. I think about it like this. If you are able to pay, why not.. if you're getting a simple shop like you've seen someone has got a corner.. will not even dare to invite you. The way I see you is like a potential future candidate in this company. [laughs]. It's a matter of you coming here, you deliver a service, and you get what you have delivered. It's not like you come here to.. I mean for us, that's what our way of doing. We employ people from all levels, because we.. they come and we give them task to do, or deliverables. We don't see challenge, because now our market is open, we can employ from abroad, we can employ from like Tanzanians who have been abroad, we call them back, like I said, the people from Phillipines now, the people from Netherland, the people from China, people from Zimbabwe. Tanzanians were not trained, it used to be that, but I don't think even now it is, of course, now we've got quite a number of well-trained guy and we got weaker people who are not well trained, but we don't employ weaker guys, why should we? Why should we? Because we recruit globally. When it come on.. I think that's what I can say… Let me hear from you.

INT: well, you said that you were looking for investors, what kind of investors are you thinking about?

3: Well, I would say when you look at.. we're expanding our business. From the local to an international. We need people who can actually take our business to the next level. Look at the suppliers. That's important strategic investors that can actually supply goods in a long term at a good price, of course we are looking for a competitive.. it's not like getting money from the bank, it is quite.. equity investors. We need to take this company to the next level, we can actually list it in a public market. We need people to inject funds into the business.. long-term investors, not short-term investors or financial institutions, because already, we've gone beyond the normal operation.

INT: and the suppliers.. do you produce anything yourselves or is it imported?

3: Well, as of now, we have some manufacturers like most of us business-guys have got in Asia, particularly China, we design our own product, and then they make them in China.

INT: so you have your own subsidiary there?

3: Not really, I think let me tell you, even guys.. companies from Europe, they do not have their subsidiary in China, they'd rather have subcontractor, so a Chinese company working for their business, and what they do, they send out their engineers, to control the quality and discuss… even China has grown into a level where they can control the quality themselves depending on how much do you pay them … yeah, we work with some strategic partners in China who develop our product. That's why when you get you r own branded.. it came from a factory. But our own design.

INT: and then you mentioned that you started this business, because of environmental concerns, because of social concerns, and then of course you have a commercial business as well, so how do you weigh these different.. different goals?

3: ☺ I think you quoted me well, the first and foremost goal was to create my own employment. The way we're moving we found that okay, we're saving the environment. We are saving the nation, which does not have reliable access of electricity. I think that's how we came up, but most important was to create our own employment. Because you know, employment is very challenged.. of course I was very ambitious from the beginning, I didn't want to do a small thing, I thought I should set up something, at least I can.. that can actually fulfil my ambition, of course creating employment to the others. We started two, now we are more than 50 people, and we have employed even foreigners. Then it's not only setting up a small thing, but we work with your family, or your child, or your uncle, so it's now… an institution, that has got mad skilled people coming. And I'm sure that's why you say.. you know, it looks like you have something, it's not like the other ones we visited. You witnessed yourself, setting up my own structure.

INT: has it been difficult?

3: ☺ I don't call it difficult, I call it has it been challenging ☺ Well, we have not done the… whatever we've done, it's actually been pre-planned. If you plan, of course challenge, and success, it's all how you plan. But the most important, you don't shy back. You want to run out of whatever goal.. feel shy or feel.. it has been challenging, but only since we've got mad skills, we sit down, we discuss, and we see a way out.

INT: and can I ask you, what your background is, before you started this business?

3: ☺ How do you find, I mean what have you learned from our discussion☺

INT: Engineer?

3: Yes, my background is as electrical engineer.. yeah.

INT: and so you wanted to start on your own. Why do you think that is?

3: [Long pause] well, I usually read a lot of books. And I inspired those guys especially, the guy who has made things to change, like big business guys like Bill Gates, I like my friend, I know you don't like him, the American guy, very arrogant ☺ sometimes.. he is ehh 'Think Big' you know who is that? Ehh… Donald Trump. Yes. His books, and that because they inspire me, and those kind of things. And of course, the most important, as I tell you when I started, of course the challenge of employment has started all around the world. We thought we should.. I should come up with some kind of innovation, and fill the gap, and I'm encouraging whoever who can setup something – let it be done. And ehh, the challenge is always there, but the challenge differs from Europe to Africa, and even Europe to Europe, country to country, and then as well in Tanzania, and in from place to place. Challenge is always there, it's part of life, and we're here to meet them.

INT: and about the customers you have, do you sell mostly to businesses, to private people, or government institutions?

3: well.. we'll set up, I mean our sales and distribution are close to all walks of people, so, and… we have solutions as well for corporate, for rural, for private sector, depending on our demand, we don't choose. Because, the power demand either you are corporate, you're an individual… at the end of the day you need power. That's how we.. we have all ranges of solar or solar cell solutions.

INT: yeah, we could see out there [in the showroom] you have the small lamps, and the big water heaters and everything..

3: yes, and solar water pump, and small lantern, torches, mobile kits.. yeah.

INT: so howcome you chose the renewable compared to another.. or the traditional.. you said that this is what everybody can use..?

3: I think again, to be specific, is initial capital is not as big as going in to conventional.. you need to set up a small mini-grid, that is from either the river, or the lake, you need a quite substantial set-up for a turbine, and you need a lot of skills, you need a lot of procedures to set up to manage issues, and so forth and so forth. For solar, if you have a knowledge and skill, you can even sell you skill, you can by a small thing and sell it, you know. The capital was one amount of the challenge, even skill, and you could not, it is not easy to sell the conversion of power. If you're not a giant consultancy company, or a giant company. Venturing into solar it was easier for us.

INT: so you, as an entrepreneur, do you think it's something that people aspire to be here in this country in general? To have their own business, and have their own employment?

3: ☺ you told me you have gone to a business school..

INT: that's right..

3: the same question I'll come back to.. As I told you my background, I'm a purely technical person, I've been to a secondary technical school, my A-level went with a technical school, I went to a technical college school to acquire my engineering skill, I think sometimes, it's not because you gone to a specific discipline of studies. There is inborn and there is the skills that has been imposed to somebody. And some guys go to school because a friend or a relative or a parent has actually been director, when I was young man, a young boy, I thought of going to a school, of going to a technical school, I'd go to work in a national utility company. But, I woul… I have never thought of that, I decided to do business, of course, coming to your question, do I think ??, well, opportunity and ..tation are there, if they wish to do they're welcome, but it depend what sort of set-up or business they want to do. When we started, we were one of the first Tanzanians to set up business and there was a lot of things to do. Raising awareness, education, training people to understand what solar can do, but now, you walk few meters, you find shop, that means the awareness creation, demand has been created, now it's a point to come and take this ☺

INT: and so you say that the awareness has increased now, do you think..

3: the support of the government is there, the …

INT: so among the regular person out on the street, so do you think they will buy your products because it's good for the environment, or because they need the energy?

3: ☺ the answer is simple, we people have been ehh, in a… to a certain level maybe education or in an environment.. be enlightened about the environmental issues that wasn't care about the environment, but someone who need to buy lantern or a torch, it's because you want to run away from capex of kerosene. I think that's an obvious answer. They're buying it because they need the service for their immediate demand, there are children they are the ones who knows about the environmental issues, you know. They are buying it because they want the service for their house. It's not like Europe, where you find in Denmark, there is zero house who does not have electricity, I was there… in Switzerland I think I went, even Norway, when I told people that about ten to fifteen percent of people doesn't have electricity.. 'are you coming from a cave!' ☺ anyway, yeah.

INT: so it's a basic demand.. I was thinking Rex investments do they invest in similar projects like this energy project or is it very different?

3: Well lets specifically about renewable energy, then that will be the second when you come to invest… anyway, we generally invest in various places, energy, real estate, development, and… in any other potential business.

INT: and so, since you sell to everybody who needs or wants a product like yours, do you find it.. I mean if people are very poor, do you have any specific programmes or do you sell to NGOs or development projects, or something like that?

3: If I understood your question, I wouldn't call people very poor, I would call.. can people afford the solution that we're selling. That's why once, when we are entering into our showroom you can see a range of products, we've come up with a solution where – a diplomatic person from Denmark would buy ??of solar type, and someone from rural can buy lantern, we have a range from 1000 dollars to a few shillings of Tanzanian.. I think if you are a business person, your work is to come up, I think you're going to a business school, to come up with a solution that is affordable, and that's how the Chinese overthrown us, most of you guys, you're so busy making the.. what's the very expensive car from Italy.. the Ferraris, Lamborghinis, and the other one from Germany what's that..

INT: they have the Audis and the Mercedes..

3: yeah, they came up, they are 1.3 billion people, in Europe you are half a billion people, they cannot make a solution, people call it poor quality product, but at the end of the day, they raised up, and to a level where now everybody is hearing about their economy ☺ even ourselves we have come… ehmm, we have solutions that suits every level of affordability.

INT: and you said you have four different, you said you are present in four different places in the country, is that apart from here? How is your reach then, is it.. do you sell out of shops, or do you have a wider distribution system?

3: well, I think that's a very technical and very fundamental into our business ☺ well, our commercial guy would be able to tell, but at the end of the days it's the shareholders. We want the numbers to be.. we want the result, but how they do it ☺ we want target to be met☺

INT: and so about your international expansion, so you're looking for capital in order to expand your business.. and what's your goal, you want to be present in all of Africa.. or maybe on the short term, what do you think..

3: first of all, we would like to leave the company a legacy, the company that stay today, tomorrow, and the day after, and ehh.. we're not only focusing to the local market of Tanzania , of course, we'll make sure that Tanzania's market is well serviced, and deliverables is made standard, you from Sweden or from

Denmark, when you come here, you get the same that's more or less the same, of course to have that level we need to invest into the capital, substantial capital, and that capital as a fuel of the business. ?? capital is always, especially competitive capital. What I mean competitive capital, capital which does not give us a pressure. You see, the capital from the banks, mostly the commercial banks, it's like, I always give this terminology, it's like giving someone an umbrella when there's clouds towards raining, when it starts raining, you call back your umbrella. What do you expect ☺ now we need an umbrella that stays from the beginning of the clouds, to the end of the raining season. A long term, under competitive capital. And ehh. Most.. capital that can actually be injected into the business, in terms of capital, in terms of human resources, in terms of ehh.. intellectual capital, in terms of experience of course.. in terms of ehh.. setting up ehh.. a proper way of doing business, an international way of doing business. Of course, while you can attract I would say the right candidate, to the right positions, I'm sure you be very happy to hear that my commercial director for Rex energy is a Swedish guy, who have two years… five years he's been working for bank of America, now he's my commercial, he's my human resources director, you see.. there's no risk to working with Rex ☺ because when you tell someone these are all locals, … community. We're looking for investors in order to stabilize our business, to be stable, to be sustainable, a continuation to stay there. Again, to have experience, international experience, because we've never been working in ??. Again, to find that last, and make the business be stable. Of course, attract the right skillset into the organization.

INT: So I think you have answered all my questions..

3: Have I been quite useful for you?

INT: definitely..

3: ☺ because you send me, and I said can you give me guidance..

INT: but it's very interesting to hear how you set up the business, and what you think about.. how you will reach your goals, in the future, and everything.. you sound, it's very ambitious, but it sounds like you have a very planned approach..

3: yeah, I would actually like to emphasize to advise you my fellow business guys, it's better to set up a business that stay today and tomorrow, and the only way to do that is to have the right personnel, into the company. And that is the only.. the right medicine to cure the business challenges. Otherwise, we will be having an ad hoc solution to a problem that solution has not yet been found. I have actually experienced quite a good challenges, before we employed the right skillsets, we had actually always been curing our problem with like a temporary solution. But now, of course we.. it doesn't mean that we've totally cured, but again, you need an international experience in terms of expanding business, to a big picture, that's why

you look for investors, that has gone beyond the borders, and have mastered to do that, of course, networking and experience a market, like market share, because at the end of the day, all business is a market. If you don't have customers, your business is nothing. And of course, at the end of the day you have to make profit ☺

INT: is that, when you started, there wasn't much of a solar industry here yet, how did you raise the awareness, and create.. did you create the market? Or.. was that easy?

3: well, there was a challenge, because we had to use a lot of money for TV advertising, newspapers, seminars, training, because we were the first, local Tanzanians to set up, the first company in Tanzania. Of course at that time, even ourselves, we had no muscles in terms of financial muscles. We tried, of course again, when there's no competition.. it's not very expensive to put awareness, because everybody, even if you had is not attractive enough, they would be attracted to here. Again, you attract the mass, I think that is the… we used billboard, we used radio, all the television media, radio medias newspapers.. of course later, as market grows, the other people see the potentials in the market, nowadays there is a lot of young, they call themselves young billionaires in solar ☺ but for us, we keep investing in the right kind of people, and we keep investing in the business, and to attract more.. of course, it's not every investors who will be welcome, but there will be a lot of.. a screening, before approval. Otherwise, you're most welcome, if you feel Rex is a part of, once you complete your research, come and stay. Ehhh.. work for Rex! The future is bright. ☺

… pause in tape.. after being told that the purpose of the study is investigation of social/environmental and financial aspects..

3: of course, to support environmental issues, we actually support. Of course the challenge I see, is there's a lot of poor products being imported in Tanzania, or in the African market, but actually at the end of the day the issue of environmental won't be supported, that means, if you import… ?.. of you buy a lantern and you can't actually use it in six months, what do you expect. We need somebody, to purchase a lantern for five dollars, at least stay with him six months or a year, but I have seen especially the people around where Anverson is, is a big challenge. It's a big challenge. And people goes into the business without a real real meaning… they're just going there to make money. Today selling shades, tomorrow selling shoes, you know, no professionalism. This is the challenge we see. People selling, they want to make money and go, but for Rex, that's not my way of doing.

INT: but that's maybe also why you're so successful? Because you have the focus on quality?

3: yeah, we're focused, I'm focused, and actually I'm focused on the quality of the product, I'm not focused on .. I'm here to stay.

10.4 Interview 4

Arti Energy/Arti Africa, June 20th 2014

4A: Nakichet W. Potnis (Executive Director)

4B: Manon Lelievre (Program Officer)

4C: Sales officer

INT: interviewer: Ida Kirstein

NOTES: Arti Energy and Arti Africa are part of the same organization, but separate entities. One (Arti Energy) is the commercial solar lights and cooking stove business, and the other (Arti Africa) is the non-profit spreading clean cooking stoves and solar powered lighting solutions to households around the country. The activities performed by the two organizations are designed to back each other up. Arti is located in the outskirts of the city, in an area next to one of the busy main roads in and out of the city, on a small dirt road in a housing area. The premises are small, with a small showroom outside, next to a small workshop, and the offices located inside. All in all, around 10 employees were spotted during our visit. We were met by the two interviewees in their office, and were given a thorough introduction to all the products by a sales person in the showroom, before the actual interview.

INT: So maybe you can tell us a little bit about this institute or..

4A: okay, in this office, there is basically two organizations. One is calles the Appropriate Rural Technologies Institute of Tanzania, what is called Arti Tz, and the other organization is called Arti Energy Limited. Now Arti Tz is a non-profit organization and Arti Energy is the commercial face of Arti. Activities that Arti Tanzania does is basically training people on charcoal production, training people on using of solar lights, and then the commercial activity that is required as a follow up to that project, is what Arti Energy does. Like providing the solar lights, manufacturing the charcoal briquettes, buying the charcoal from the people who've been trained, that's what Arti Energy does. So that's basically two organizations within the same office, and they back each other's activities.

INT: okay, so the financing from the commercial branch goes into the not-for profit, or how does that work?

4A: the financing for the Arti Tanzania, basically comes from grants, from whoever is willing to give us grants, and Arti Energy is financed by the directors themselves. So far what has been happening is any profits generated by Arti Energy have been put back into the business, basically to grow the numbers. We

don't have any loans or anything, for Arti Energy, it's just.. you keep turning over the money, and increasing our capacities.

INT: Okay, and how does then… so the employees for Arti… so it's separated with the employees or do you work on both different projects?

4A: ehh.. It's a very blurred line.. it's a very blurred line. Okay, Manon, she is for Arti Tanzania. But the others, they work on wherever required. But legally and technically, they're all employees of Arti Energy. Because Arti Tanzania doesn't really need employees as such, it is a project based activity. Once we get a project, then we need the people. If we don't have a project, then we don't need the people.

INT: and how, is it easy to get the grants to.. for the projects for Arti Tanzania?

4A: no, it's a lot of hard work.

4B: For us it's like we know what we want and we know what is our aim, so we only are looking for grants that matches our requirements. So it's not often that you find any proposal that matches our aims and how we want to develop our organization, so..

4A: and it also works the other way around, where, the people who want to give the grants, they also have some specific fields, or specific areas, or specific objectives, so if we fall into those objectives, then we can apply for the grants.

INT: and who would typically be.. NGOs or governmental organizations, or who would typically be receive grants from?

4A: We got our first grant from the World Bank, and that was in 2010, 2011, and we got the second grant.. the first grant was for a charcoal project, the second grant again was from the World Bank, but for the solar project. Then, we right now have a grant from what is called the EEP, the Energy and Environment Partnership, which is basically a partnership between the Austrian Aid, UK Aid, and ehh.. Ministry of Foreign Affairs of Finland. Then we have another grant which is called the Nordic Climate Facility. So we these are basically not NGOs, but you can say Donor Organizations.

INT: And what kind of products do you have in the commercial part of the business?

4A: okay, for that what I can do is let me take you out to our showroom, and the girl will explain to you all the products, and then maybe we'll come back.

(Moves outside)

4C: Okay, here we have different kinds of products, first of all, we have this solar product, we call it ??, so the company is from the USA..

INT: so it's a lamp?

4C: yeah, it's a lamp, which has three lights, depends on how you want to use it. Others they use it, especially students, for reading, also you can use it as a lamp for domestic use, also, it can be used maybe if the electricity is not working…

Detailed technical description of all the products in the showroom follows. Summary and interesting quotes included below:

They have a number of different kinds of solar powered lamps ranging from small reading lamps to larger installations with 4 separate lamps for larger houses or schools. All charged with photovoltaic solar panels. All the products are imported American or Australian products to insure top quality and with 1 or 2 years warranty. The small lamps start at 20.000 shillings, medium ones with 2 lights for 130.000 shillings, and the biggest ones 'village kits' with 4 lights, battery and security lights with sensors sold for 435.000 shillings.

The small lamps are primarily bought by small rural households where there is no electricity, who can't afford the bigger models. The small lamps have option for charging of phones, which gives them great functionality for households with no other access to electricity. The larger ones are sold to schools, businesses or more prosperous families with bigger houses, to use when there are power outages, or if located in areas with no grid connection. These are more often sold in the city.

After describing all the solar products:

4C: do you have any questions so far?

INT: Do you help people install them or do they install them themselves?

4C: No, what we do.. others they prefer to do it themselves, we just tell them how to do it, and they go do it with instructions. Others they... we have engineers here, so they go together and fix it there.

INT: and you sell it from here?

4C: ehh.. this is not, this is just the showroom, but we are selling different process, and we are having markets here in Dar es Salaam and in other regions, we are trying to sell in other regions, and also we are having this festivals, where we sell, maybe.. trade fares and we are bringing our products and selling there. Here is just for those who are passing by and saying oh, I like this.. then they can buy it.

Goes on to explaining all the cooking stoves related products. There are small household cooking stoves and bigger industrial sized to use for example in schools. The stoves are charcoal fired, produced in good quality materials. They also sell finished charcoal, and smaller and larger machines to produce charcoal for own use or for selling.

The first small stove is their most popular product, American design produced in Kenya, called envirofit. Compared to traditional cooking methods/stoves in the country, this one is designed to retain heat in order to use the cooking fuel more efficiently and reduce cooking time and thereby. It is priced at 55.000 shillings with a 5 year warranty. According to her, the best product and very popular particularly in the city, where charcoal is available for fuel. In the villages another small stove is more popular, as it fires wood.

The small woodfired stove is also made to use the cooking fuel efficiently, with just a small amount of wood necessary "this is made to reduce the destruction of environment, especially we are talking about trees.. as you can see, first of all, it uses few woods, and second reason it reduce the smoke almost like 75 percent, compared to those they use the villagers, you can see just putting something, just the woods and start using it, but here you reduce it almost like 75 percent, this one you can put even inside, not outside, to fear that smoke will bring you pollution. Yeah. You can use it even inside. This one, we are selling it at 50.000 shillings.. "

Tells more about the product's features..

INT: so they are popular in the villages?

4C: yeah.. they are popular, but not most. We are trying to explain to them how this thing works, how it can help in the society, so to avoid the destruction of the environment.. something like that, so they are trying to change somebody from this point to this point, it's not easy, so it goes slowly. But most of them, they are buying it, but those who cannot afford, they're just saying ok… but they are buying it, they are buying it.

Goes on to explain the next product.

The next one is also a small wood fired stove, it is an improved version of the traditional way of cooking in the villages to use the wood more efficiently, reducing use of wood and smoke output. This is the cheapest one, selling at 35.000 shilling.

The last one is the large institutional stove, particularly used in the schools that makes porridge in the mornings. Large stove with large pot, and wood fired. This one has a chimney, to direct smoke out of the building. Also uses few woods "to maintain the environment". Costs 2.4 million shillings.

She then shows the charcoal briquettes, how they are made, and what products can be used in the production. They can be made with waste from agriculture, and wood waste, and many other kinds of waste materials, it is burned, and mixed with a binder such as flour, and is then shaped with some kind of machine, for example a small hand operated one, which they also sell for 150.00 shilling. They also sell an automated electric one for 850.000 shillings.

They are sold to small businesses, "if you can invest more, you can produce more". The charcoal burns at higher heat and longer than wood. The charcoal is sold from the showroom for 1000 shillings for 1.5 kg, up to 15.000 shillings for 25 kg.

She finishes the presentation, and we walk back to the office to continue the interview.

INT: so you import all these, it's from Australia and America we were told.

4A: Yes Australian and American products, the Australians they produce the lights in China, the manufacturing is set up in China. The American company, they have a production unit in Nairobi.

INT: and so it seems to be a pretty good price..

4A: Yes.

INT: so you can make a profit on that?

4A: Oh yeah,

INT: so it's because they produce it cheaply I suppose…

4A: for the cookstoves, there is a carbon financing aspect to it, which is why.

INT: so you calculate how much you reduce the carbon…

4A: yes, well, that's still being negotiated, but we should get 5 dollars per stove per year.

INT: and how do you then distribute these things, she told us that you sell it around the country?

4A: We have ehhh… distributors or wholesalers. They have this network of retailers, so that's how it's spread across the country. That's one. Secondary, we have different, let's say.. methods of getting it to the people, we work very closely with savings groups, we work closely with a lot of womens groups, we have a project together with Care International. Care wants to create about 1200 women entrepreneurs working with renewable energy products.

INT: so how is this received, the products, how are they received by the users?

4A: very well. Very, very well. Right now, we are out of all cookstoves, we're almost finishing the lights, trucks should be leaving from the border this afternoon, so hopefully tomorrow we'll have lots of stuff again.

INT: and so is that you think because it is more effective, or because it's better for the…

4A: they are all good products. Very, very good products, but we started selling the cookstoves last year about this time. We were selling about 3-4-500 per month, now the numbers have gone up about 3000 or 4000 per month.

INT: okay, so there's a big demand?

4A: yeah. Very big demand. We initially though that at 55000 shillings, who would really buy a cookstove? But it was proven wrong.

INT: so do.. if people can't afford them right away, do you have some kind of arrangements that they can pay over time or?

4A: no. That's.. the system that most retailers have with their customers, we don't get into that.

INT: and… so I'm thinking about the.. because I've heard that many different NGOs and companies are trying to bring these better cooking stoves, that it's a big problem that people don't know how to use them or they'd rather use the traditional methods of cooking, but you haven't had that problem?

4A: No. because… we go out there and train people. We train the wholesaler, we train retailers, we have this method of having road shows, we actually demonstrations, a whole bunch of people can see the demonstrations..

4B: you see, this product is also very, very good and very efficient, so people they see this very fast, and then they just use it, because they save so much charcoal. I go out conducting a survey, like Jacklyn who talked to you, she said like probably 80 (?) percent they are satisfied.

INT: and she said it reduces also the smoke..

4B: Especially for the wood stove..

INT: so people are aware that there's a health benefit as well?

4A: yes.

INT: okay, so what do you think is sort of your, I mean you have the two different divisions, but what's the central mission or purpose that you have?

4A: We… The mission basically is to identify appropriate, good quality affordable renewable energy products, wherever they may be made in the world, and to try and bring them into the Tanzanian market.

INT: so you have a definite environmental and a social purpose?

4A: yeah, definitely.

INT: and then also you have the business part of it… and is that mainly to support the other two purposes, or is it.. or do you weigh them all equally?

4A: they are all weighed equally according to us. There is one thing that we've learned over the years, is that… if people are not making money or profit, there is no sustainability. It has to be a profit oriented business, otherwise it just dies.

INT: So have you experienced that there has been a problem to earn the profit while still maintaining the environmental and the social purpose?

4A: I guess it depends on how fast you wanna get how rich. ☺ We're very patient. We take it as it comes.

INT: so you don't compromise?

4A: no.

INT: And so I just wanted to also ask a little bit about the general energy industry here in Tanzania, you say there is a big demand for the products..

4A: yes.

INT: and that's because the traditional kinds of energy sources are not sufficient or?

4A: the traditional energy sources will continue. Like charcoal is a traditional energy, so. It will continue to be used, while it's being used, the prices of the charcoal are going higher and higher. So if somebody comes up to the store like we have, that reduces your consumption by more than 50 percent, then naturally people are going to go towards it. Charcoal and everything else is going higher, but salaries are remaining just where they are.

INT: and how about for the solar products?

4A: the solar products… people are getting slightly affluent in Tanzania especially with the globalization, multinational companies coming in to Tanzania, so the middle class is building up. Now this middle class now has access to home financing, they have access to loans, so they are building, and the power supply company unfortunately is not able to either provide power, to some of those areas, or, the cost of getting

power from the closest point to the house you're living in is very, very exotic. So then, this middle class starts buying the solar. At the village levels, we're replacing candles or kerosene lamps so… that demand is also there. And what we realized when we first started, was not that people don't know about solar lights in the villages, or they don't have the money… they just don't have the confidence. Because before us, there was a lot of other traders that brought in some stupid products from China, people that invested their money in that, 2 months, 3 months, 6 months, and the product just dies out. So, to build that confidence, we're using the traditional distribution set-up, we don't go to the villages and sell the light, the retailer in the village will sell the light. So people know, if the light breaks, I can go back to my retailer. It's not a fly by night thing, that somebody comes with a truck parked at a tree.

INT: okay, so you're experiencing that people have more confidence now..

4A: yes. And then we also make sure that every wholesaler for the lights, at least three to four of his people are trained in first aid. They are trained to open up the light, to find the problem, fix it, then it doesn't have to come back all the way to Dar Es Salaam. So the service factor is also very important.

4B: they have built us a very good reputation from other solar lights suppliers. We work also with microfinance institutions, to try to reach out to even more customers, and we have some center here where they can do also major repairs…

INT: and maybe I can ask about who started this organization?

4A: it was Dennis and me, we started, we met in 2006, I explained to Dennis, this was something I wanted to do. My background was basically from the business background, I used to work at an organization down the road, for 13 years, and then I got fed up. I went back to India, and I met (someone) from Arti in India. I saw what he was doing with biogas, with charcoal, I thought this is a very idea for Tanzania. I came back, I had no idea how to set up a, whether this should be an NGO whether it should be a for profit, I'm asking around, I came across Dennis, said okay, let's give it a try. So we started off in Dennis' house, three streets down the road… it's getting bigger.. ☺

INT: and has it been a difficult journey to get from there to here?

4A: very difficult. When we started we officially started in 2007, and we had no grants, no funding, no nothing it was just ourselves. Then we got our first grant in 2011, so four years was like we were, we literally, sometimes I had to borrow money from my wife ☺

INT: but… perseverance, so you persevered, and… what about, did you encounter any specific barriers, or did you get any help from any, apart from the grants of course, but..

4A: We.. all through, we've got very good support, model support, from the government. Like the Tanzanian commission for Science and Technology, work with people who organize the first conference to launch us into Tanzania. Starts from there, and they introduced us to the ministry of natural resources, who then gave us space for demonstrating these products and getting to Dar Es Salaam international trade fare, so that kind of support we've always had from the government departments.

INT: and that's because, is that because it's a social project..

4A: yes.

INT: or because it's renewable energy…

4A: it's renewable energy, it's creating employment, reducing deforestation.

4B: there is so many impacts that they really appreciate because it's rare to be able to kind of combine, all these aspects..

4A: it's getting (a positive..) for women, it got a gender aspect to it as well..

INT: so you touch on many different things that are priorities for..

4A: for any developing country… or for any donor also.

INT: yes. So you said you were fed up with what you were working with before, which was more commercial?

4A: I was employed as a market development manager for a multi product company, you tend to get tired of working for somebody else.

INT: so you wanted to start your own? Do you think that's something many people wants to do here in this country?

4A: Yes.

INT: people are entrepreneurial…

4A: yes. At least they think they're entrepreneurial..

4B: yeah, but on the other hand the employment.. it's so hard to get a job that so many people are forced to be self-employed. Some are really, really, but for many they don't really have a choice, some become very successful, and some.. you know you see all these petty businesses..

INT: And do you think people think that it's better to be in this kind of business, than in the traditional business, I mean regarding the environmental and the social, is that something that's..

4A: mm… People still want to be in the traditional line of products, they don't think different. That's the whole problem. If you drive by and see there's a hardware store, and there's a hardware store, and there's a hardware store, and another hardware store. So… somehow I think that is missing in the people in Tanzania, they don't know how to think out of the box.

INT: I'm a bit interested in the whole.. how come you chose to do this, the renewable energy and have this social purpose.

4A: Number one, nobody else was doing it, that was number one. Or even if everybody else was doing this, this was very very different from what everybody else was doing in Tanzania. We had started off, with a biogas system, which was an urban solution, ??, we built about 2-300 of them in Tanzania so far. But then that's too much of hard work, too much follow up, so that slowly went onto the back burner, and the solar lights and the cookstoves kind of replaced them. So, we were doing something very very unique and different. So that kind of gave us that added advantage of..

INT: and what did your family think of this, you said you had to borrow money and were they supportive of?

4A: absolutely. To the end.

INT: and then after, are there any other companies like this now, or has anybody followed your example?

4A: not with the kind of mix that we have, but the.. they focus on solar lights and only a certain type of solar light, like Delight (?), Delight has an agent here. They had started on their own, but then they found it was easier to have an agent, than to have their own offices, and then there's Solaraid (?) that's also only solar, otherwise I don't think there's anybody who's really the way we are.

INT: we haven't met anyone ☺

4A: And I don't know if she told you about the charcoal project that we are doing?

INT: yeah, the production of charcoal..

4A: making charcoal.. that's what Manu's, that's her department.

INT: okay, so that's one of the donor funded projects…

4B: Yeah, exactly, it's like ehh… for us it's not only distributing it's the whole production process, we are also supporting and trying to develop, so this one still needs some ?? before it can reach a commercial level,

and also it's something very new, so we are getting some support from the Energy and Environment Partnership, as well as other kind of facility, so basically, what the project is about is that we have a factory where we produce charcoal briquettes from agricultural waste, so we train farmers in the village to carbonize their biomass, and what is available around them, then we buy it from them, the factory buy the charred powder, the carbonized biomass we call charred powder, so we buy it from the farmers, and then there's the whole production process, buying and packaging, and then we commercialize the briquettes here in Dar Es Salaam. So at the moment, Arti Energy is the one who is marketing the briquettes, in partnership with Bagamoyo (?) briquette company, which is the factory now. The factory is like, is based on a community based enterprise, whereby Arti Energy Limited owns 60 percent of the shares, the manager owns 10 percent, and the villagers own 30 percent, so once profit starts to be made then the..

4A: the producers will benefit 30 percent of the profit generated by the production.

INT: and this is something you want to copy elsewhere?

4B: yeah, eventually the idea would be to have different production sites, and then have maybe a company heading, like overhead, which now is responsible for commercialization and marketing, so that's the idea..

4A: there are different production units, owned by different groups of people, and then you have an umbrella organization that is buying all the production and distributing it.

INT: okay…

4A: who else have you been interviewing?

INT: We have been talking to quite a bit of different solar companies, from the very small ones, that just sell from the small shops, most of it imported from China, and we've been talking to some bigger ones as well and foreign owned, but there's lots of people doing just the solar in a commercial way, so it's been interesting to hear about how else to structure a business.

4A: there are different models of getting solar lights out, we have different programs, we have what is called and MP program, the member of parliament program. So we approached all the members of parliament, and request them that part of their constituency budget they should allocate to installation of solar lights, in schools and dispensaries. If they really do that, then we send out a team, we do a survey of how many schools, how many hospitals, and then arrive at a figure, that for so many schools we need so many sets of 5 watt power packs, then later the proposal on behalf of the member of parliament and take it to the Rural Energy Agency. For the funding. And then the REA pays us, and then we go an install it, and come back, so it's… so far, we've done about 9 for 9 different members of parliament. And we have… we got social responsibility kind of thing. There are a lot of European and American companies buying materials in

Tanzania, the cocoa for example, so.. we meet up with them, we say under your CSR maybe we can distribute solar lights into the farmers where you're buying from. So one of the programs, that's what we call the solar ambassador program, so every 6 months or so, we select 5 schools, where the top 5 girls and the top 5 boys they all get one firefly (lamp) for doing well in school, al the teachers houses get a power pack with two lights, then they're all trained in how to use the lights and how to repair the lights, they're given (tools), so they become the ambassadors for solar lights in their communities.

INT: so in many ways you create your own market..

4A: yes

INT: you have to be inventive in order to..

4A/4B: yeah ☺

INT: so if you don't have any questions for us?

4A: let us know when you are at the end of your research and what the outcomes are.

(Shows us a map of their distributors across Tanzania, they have many, covering most of the country, also the rural areas. But he holds that there is a lot more still to be done, points out areas, where they are not present.

INT: so do you have problems getting your stuff transported?

4A: not anymore.

Shows us their service center..

INT: so this is where you repair..

4A: yes… all of our engineers have been trained by the manufacturer.

INT: okay, so you send them to the manufacturer?

4A: no, they come here and do the training.

INT: so is it easy to get the qualified employees? You have good engineers and?

4A: we generally get people from ?? they come to us for internship, and if we see somebody has a spark in them, we just keep them on.)

10.5 Interview 5

Voltzon, June 20th 2014

5: Evans Kakai (Sales Executive)

INT: interviewer: Ida Kirstein55555

NOTES: Voltzon is a solar retailer located in a building shared with another solar company in the richer part of the town, near the area where the expats usually hang out. We are met by the sales executive after having a correspondence with the Dutch owner who is out of town. They have a few offices on the second floor, with approximately 5 employees present. The sales executive is a young man.

INT: So maybe you can tell us a little bit about what you do here?

5: Voltzon limited is a renewable energy and solar company, whereby we do sales of solar equipment, solar products like inverters, charge controllers, batteries, we also do installations, like make installations. Yeah. The company was started like in 2008, and yeah.

INT: and here you are☺

5: and here we are.

INT: so who started the company?

5: The company was started by Mr Pepijn Steemers, the one man you started talking to, yeah.

INT: okay, and he, is he here from Tanzania?

5: no, he is from Holland, yeah he is Dutch.

INT: but it's not part of a foreign company? It started up here?

5: yes. It's a private company started here.

INT: and you are the sales executive, I can see.

5: yes, sometimes sales, sometimes logistics.

INT: so how many employees are you here?

5: we have 8 employees, yes, permanent employees.

INT: and you sell and install solar equipment?

5: yes.

INT: all different kinds of products?

5: yes, we are distributors of ?? energy products, only, so mainly we deal in ?? products, from Holland, and that's the brand that we deal in. yeah, that's the only brand we sell.

INT: okay, and who is your customers, you sell to businesses or you sell to private persons?

5: All, because, we are distributors we are like, we only import everything from our on product, and from there we have dealers, from all over Tanzania, and also private people, who come in, like we have people who come and buy..

INT: okay so everyone, and do you also sell to maybe NGOs or government organizations?

5: yes, it depends, if the government people come in and maybe government organizations, and they would like to install solar, we do sell them the products, or if they want us to install, we do that.

INT: so how is the market for your products? Is it growing, is it good business?

5: it is, I won't complain, it is, but like you know the solar market is big now. So there is so many companies there's a lot of competition, but, at the end of the day, it's about quality, and we're here to provide people with quality, and for those people who know it, they come to us, so we're happy for that.

INT: so it's just that one dutch company you buy your products from?

5: yes. Yeah, its ??. It's from Holland.

INT: do you do big solar installations, or is it mainly smaller?

5: smaller, this is the book from ?? from Holland, so they show the big installations they've been doing. But from here, we have done big installations, like last year we had a big installation of 30KV, but yeah, that was one of the biggest installations we have.

INT: So what is the goals you have, what do you want to achieve in the future with the company?

5: that one I won't answer, directly, I will leave it to the director,

INT: but of course you would like to maybe grow or..

5: yeah, that's the plan, yeah, where we were last year, is not where we are this year, we make growing plans every year, we need to grow, that's one of my plans, but I'm sure the director also has his plans. I'm just a sales person..

INT: and so you say there is a lot of competition, is that also, so you separate with quality you said, you have superior quality to your competition?

5: No, I believe each and every company has quality, but what I say is we have to be unique, we have to provide good services, we have to be number one in everything, so.. to get that customer you eed to have a lot of things and we try to avoid those things there, so yeah.

INT: and how about, now, I know you're the sales person, but do you have any idea of whether the environment, is that a big part of why you're doing this business, or are you trying, I know there is a big energy shortage here in the country, so are you trying to bridge that gap or what do you think about that?

5: for my part, I think people… at the moment people really know like, people really understand like there's the sun, and people need to utilize it. So, you even find people who have electricity, people who are connected to electricity already, but they are still interested in solar. So, people are really changing, because they know solar is there, sun is there, we have to utilize it so..

INT: so you think the people who buys your products are also concerned about the environment?

5: yeah, yeah, partly they are, but taking into consideration like there is no stable power also, there's no like good connection of power from the grid, yeah, people go for solar.

INT: and how about the general energy industry, we just talked about it's unstable, can you say anything else about the energy industry in general?

5: I cannot, because I've just been few years like in the energy industry, and I have not much detailed information about, yeah so I don't rather..

INT: but in the rural areas there's a big demand for the..

5, oh yeah, always.

INT: so you sell mostly in the rural areas? Or also here in the city?

5: all, I would say all. Yeah. I would say like in the city center, like in the cities, where there is already electricity, people would go for back-up system. Like, only.. a back-up system whereby when the main power is off, the back-up takes over. But in rural areas, someone will just install a full solar system.

INT: And so these distributors you have, do they sell other stuff, or do they just sell your products?

5: we just get distributors to sell our products, but those distributors, the dealers, they also sell other products. So just, we get them to sell our products, but they mostly, sell other products also.

INT: and that's small shops..

5: small shops, yeah, in major cities, like Arusha, like Mwanza, there's some big shops there also, because we can't just, from Dar Es Salaam here, we can't reach like to all people of Tanzania, so we need to have people, in most areas, so that people from there can ..

INT: do you know how many distributors you have around the country? Many?

5: kind of, yeah…

INT: And then, if I may ask, why did you choose to come work for this company?

5: I started working with ehh.. I started working with a company that was dealing with small solar lights, that was back in 2008.. 2008-2009, and I had some basic information about solar so I had to move from, when this company started, I had to just increase from smaller lights and to build this company, but that's the main idea.. since I had most of my background was like based on solar, and I had to just move to something in the same industry, but bigger in a different way, from small lights to bigger systems now. Yes.

INT: and your background, you're an engineer, or?

5: no, I'm just IT..

INT: and how come you started working in the solar business, was it just an opportunity, or did you want to work here because it is an environmental organization..?

5: no, as I told you, I started working in this other company that was dealing in smaller solar lights, and, my intentions also like to go into solar in the future, like to become an entrepreneur in the solar business, that's why I want to take some time, see how the market goes, and start my business in the future.

INT: so you want to maybe start your own business..

5: yeah, that's my aim.

INT: and do you think that is something that many people want to start their own business here in Tanzania.. are people very entrepreneurial in general?

5: yeah. Most people are. Most people are.

INT: it's better to work, to have your own business than to work for someone else?

5: ehm.. that's a personal, like.. yeah, that's a personal decision really. For me, I would just, I'd say I wanna work up to a certain time, and maybe go into my business at a certain time. Yeah, so it's a personal decision.

INT: so about this solar business, how is the environment for this, is it easy, are there any regulatory, or is it an easy environment to do business in? in the solar industry…

5: ehm… yeah, the environment is always sometimes hard, we have a lot of eh.. we have a lot of fake items of course coming into the market, very cheap things, and they end up killing the solar business, because sometimes, when.. like, when someone buys something that's not good quality, after sometime the solar light is not working, and it would make some people, like they would complain at the end, solar is not working, and it is really difficult to convince them to buy solar. So it's one of the things. Also, the other problem is maybe with the government, like there's no straight like, sometimes there's no straight clearing, like getting this cleared from the ports.. sometimes it takes a long time, you have to complain a lot of times, you have to… some items are not solar, some items are not.. so, sometimes it takes time.

INT: but the solar, as far as I understand, is exempt from taxes.

5: it is.

INT: so then they have to see what is solar, and what is not solar..

5: yes. Yeah, sometimes it takes time.. and sometimes, yeah…

INT: but how about, is there any particular support for companies like this, because it is renewable energy..?

5: yeah. We have an organization like, not sure if you have heard about it.. TREA, it's an organization of Tanzanian solar business, like, people, and they have been trying a lot. They have been trying a lot, like working with business people, like everyone who's in the solar business, and also the government. They try like to make everything easy, yeah.

INT: what did you call it?

5: just like that.. Tanzanian rural energy agency.

INT: you said it was sometimes hard to convince people that solar power works. Do you do anything to tell that it's the right thing to use?

5: no. someone buys a solar light, and you tell them like… maybe buys a solar light that's not gonna work for the next for only like, it only works for two days, and when we can see that. So for the same customer, to have the same customer buy the same light again, it's difficult, because they are just like solar is not working.

INT: so how do you market your products – it's up to the distributors to market?

5: yeah, distributers do it, also we do some training also we do some training to our dealers, we also visit our dealers, we do visit our dealers every time, yeah, talk to them and.. we also… we have also some trade fares, that are organized sometimes, and these fares we have some samples that we give to people.

INT: okay, and do you also have service and repairs if something breaks?

5: yes. We have.

INT: is that here in Dar Es Salaam?

5: yes. Yeah, like, most of our products are like two years, we have a two years warranty, and for customers who have a problem, they just contact us, and we have them here, we repair it, and send it back. We have the workshop right here, service center.

INT: I was wondering, the other company sunny money [other company in the building] is that the same, or part of the same?

5: no, it's different, we are two different companies. They deal in smaller lights, small solar lights, we do in big solar systems.

INT: so you are more house installations..

5: yes.

INT: is it owned by the same?

5: no. two different, yeah. We just share this building.

INT: your sign wasn't out on the gate, so I just saw something with solar..

INT: and so you have been here with the company almost from the beginning?

5: ehh.. not, like, I started with the company like 2 years ago..

INT: ahh okay, and they started in 2008 you said..

5: yeah..

INT: and so do you know whether it has been difficult for them as foreigners to start up here?

5: mmm, I think that's a question you want to ask..

INT: okay..