Aalto-yliopisto
Kauppakorkeakoulu

Internationalization of Finnish renewable energy SMEs to Africa: Challenges and suggestions from the support network

Creative Sustainability -maisteriohjelma

Maisterin tutkinnon tutkielma

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2014

Johtamisen laitos
Aalto-yliopisto
Kauppakorkeakoulu

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Abstract of master's thesis

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Title of thesis Internationalization of Finnish renewable energy SMEs to Africa

Degree Master of Science in Economics and Business Administration

Degree programme MSc Degree Programme in Creative Sustainability

Thesis advisor(s) Raimo Lovio

Year of approval 2014 **Number of pages** 97 **Language** English

Abstract

Even though climate change mitigation in developing countries is a well-recognized need, it is not easy for Finnish renewable energy companies to gain access to the markets. Small and medium sized enterprises (SMEs) that aim to bring their renewable energy products to African markets, face a variety of different challenges. This thesis examines and categorizes some of those challenges as well introduces suggestions on what could be done to overcome them.

The literary review of this thesis examines three themes: African markets, SME internationalization and renewable energy. Networking was found to be an important element of all the theoretical paradigms and thus became the fourth, underlying, theme for the study. A framework of challenges was further derived from the literature review. In this framework, the challenges were divided into internal and external ones. The current paradigm suggests that external challenges are more influential into the internationalization process of renewable energy SMEs to Africa.

The empirical part of the study suggests that the challenges experienced in Finland are in accordance to those presented in global literature. The most pressing issues seem to be related to financing and networking. Networking is used by SMEs to tackle the challenges arising from their limited resources. Finnish companies saw challenges in both, domestic and target markets. The domestic need was to find a suitable SME or large company to partner with in order to share the risk of internationalization. The target markets seemed to offer high risk and low quality partnerships and required presence on the market to work well.

Governmental organizations were seen to have a large role in enabling the SMEs to grow. Governmental organizations should perform both, supporter and regulator tasks successfully in order to help SMEs to tackle the challenges of internationalization. The SMEs suggested that governmental support tools would focus less on information providing and sharing and more towards direct contacting of customers. Because of the limited resources of the SMEs, they need to turn business operations into profits quite quickly. This has been a major hindrance in, for example, connecting with non-market actors. Even though development aid organizations and NGOs might contribute to an easier market entry, SMEs didn't want to spend too much time on creating and nurturing this relationship when the paybacks are uncertain.

Keywords renewable energy, SME, internationalization, Africa, support networks

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Abstract of master's thesis

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Työn nimi Suomalaisten uusiutuvan energian pk-yritysten kansainvälistyminen Afrikkaan

Tutkinto Kauppatieteiden Maisteri

Koulutusohjelma Creative Sustainability

Työn ohjaaja(t) Raimo Lovio

Hyväksymisvuosi 2014 **Sivumäärä** 97 **Kieli** englanti

Tiivistelmä

Vaikka tarve ilmastonmuutosta ehkäiseville teknologioille kehitysmaissa on paljon julkisuutta saanut ilmiö, suomalaisten pk-yritysten nousu globaaleille markkinoille on vielä lapsenkengissään. Uusiutuvan energian pk-yritykset, jotka tähtävät kansainvälistymiseen Afrikan markkinoille, kohtaavat monia haasteita. Tämän työn lähtökohtana on ymmärtää ja luokitella näitä haasteita ja esitellä ratkaisuehdotuksia.

Kirjallisuuskatsaus luo pohjan ilmiön ymmärtämiselle jaottelemalla sen kolmeen teemaan: Afrikan markkinoiden rakenne ja erityispiirteet, pk-yritysten kansainvälistyminen ja uusiutuva energia. Verkostoituminen ja kumppanuudet olivat tärkeässä roolissa kaikkia teemoja koskevassa kirjallisuudessa. Näin ollen se otettiin neljänneksi, halkileikkaavaksi, teemaksi

Kirjallisuuskatsauksessa luotu viitekehys jaottelee haasteet sisäisiin ja ulkoisiin haasteisiin. Empiirinen tutkimus vahvisti, että ulkoisilla haasteilla ja etenkin valtiollisten organisaatioiden toiminnalla on suuri merkitys pk-yritysten menestykseen. Tärkeimmiksi teemoiksi nousivat rahoitus ja verkostoituminen. Kerätyt haasteet ja ratkaisuehdotukset useimmiten keskittyivät näiden teemojen ympärille, joko suoraan tai välillisesti.

Verkostoitumisen merkitys korostuu pk-yrityksillä, jotka voivat käyttää verkostojaan täydentämään esimerkiksi informatiivisia tai resurssi-puutteitaan. Verkostojen luominen sekä kotimaassa että kohdemaassa koettiin yhdeksi suurimmista haasteista. Kotimaan vaikeudet liittyivät sopivan partneriyrityksen täydentämiseen sekä siihen, että isoimpia yrityksiä oli vaikea saada motivoitua yhteistyöhön. Kohdemarkkinoilla uusien verkostojen luominen vaatisi läsnäoloa ja paikallisten toimijoiden tuntemusta. Kirjallisuuskatsauksessa esille noussut partneroituminen ei-kaupallisten toimijoiden kanssa koettiin hitaaksi ja resursseja hukkaavaksi.

Kuten myös kirjallisuuskatsaus korosti, valtiollisten organisaatioiden merkitystä. Valtiollisten organisaatioiden vastuun koettiin ulottuvan paitsi toimivat regulatorisen ympäristön luomiseen, myös suoriin toimiin pk-yritysten kansainvälistymisen tukemiseksi ja rahoittamiseksi. Suurimpana ongelmakohtana koettiinkin rahoituksen saaminen edullisin ehdoin. Pk-yritykset kokivat, että nykyiset valtion tuki-instrumentit keskittyvät liiaksi tiedon välittämiseen kohdemarkkinoista. Sen sijan toivottiin tukimuotoja, jotka johtaisivat suoraan liiketoiminnan kasvuun.

Avainsanat uusiutuva energia, pk-yritys, kansainvälistyminen, verkostot

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1 INTRODUCTION

The purpose of this research is to provide new ideas for the many actors and organizations that work with supporting SMEs in internationalization to Africa, including the SMEs themselves. This research aims at building further understanding on the complex, inter-related challenges that SMEs face in their process of internationalizing to African markets. Furthermore, the collection of suggestions to overcome these challenges will deepen the understanding on the role each actor can play in overcoming these challenges. The perspective is limited to Finnish SMEs and Finnish system of support for the SME internationalization, but the results are hoped to provide new ideas to other locations as well.

Africa is growing fast. In recent years, the economic growth in Africa has exceeded the average global growth of 3%. The growth has been especially rapid in Sub-Saharan Africa where the countries reached an average of 5% annual growth. In West and East Africa, this growth has been even greater, reaching over 6%(AEO, 2014) This growth has to some extent also been channeled to the consumers and the relative amount of "middle class" people has been on the rise, currently being an average of 34% of the population (AfDB, 2011). This projects a great potential for those who are capable to tap into this rising market.

For Finland, it is crucial to quickly deepen the trade relationships to African economies. The strong presence of other OECD countries and the rising level of interest from emerging countries suggest that the level of competition is rising. For example, in years 2003-2008 African trade to Asia has grown by almost 30 percent a year (Moyo, 2009). Therefore, Finland needs to establish it's position on the market and find the niches and ways of cooperation to best use its competitive advantages. In the words of one of the interviewees for this research: "Africa is rising, whether we are part of it or not!"

With the ever rising over usage of natural resources, it's necessary to ask: What are the environmental and societal costs of rising of income levels in African economies? By creating deeper and better business partnerships with African economies, Finland can be a part of steering the growth mechanisms to a more sustainable direction. As the legislation and public control of many developing states is still weak, the international partners need to act in a

highly ethical and responsible manner. With the track record of low corruption rates and rising interest on sustainability related matters (UN News Centre, 2013), Finland offers a responsible choice for African organizations looking for partners.

Renewable technologies in particular can help to solve some of the biggest issues of this era. Lack of reliable energy sources has severe effects on the global poor. Health problems occur because of the use of unsafe energy sources, for example kerosene lighting is known to cause severe health effects (Mills, 2012). Also, lack of access to reliable energy sources limits the possibilities for income generating activities and is especially damaging for girls and women. (AGECC, 2010).

Lack of access to reliable energy also contributes to another global challenge. An estimate of 60% of the greenhouse gas emissions is caused by the current energy system. To reach the climate goals, there needs to be a global shift to less carbon intensive technologies. With estimations of the world economy doubling in the next twenty years, this shift is especially critical in areas with the largest economic growth. (AGECC, 2010). Africa is on the focus point of fighting climate change since Africans are also most affected by the negative impacts. Rain fed agriculture is vulnerable to changes in the weather and floods in the southern part of the continent threat the livelihoods of many. (Karekezi & Kithyoma, 2003). Since the traditional road of economic growth through fossil fuel powered industrial growth is no longer an option, a new road to prosperity needs to be found through leapfrogging into the latest energy solutions.

The further focus on SMEs and renewable energy can be reasoned with the significance of SMEs to the Finnish economy and the growth of renewables globally and in Finland. In 2013, 99.8% of the Finnish companies were SMEs (Findikaattori, 2013). SMEs employ 64% of all the private sector employees and they account for 53% of the total turnover within the country. Furthermore, Finland is the third largest user of renewable energy in EU with 34.3% of the energy coming from renewable sources. (Yle Uutiset, 2014). Renewable energy thus represents a vital part of Finnish economy.

As the first point of contact with Finland and Africa has traditionally been development aid (Ministry for Foreign Affairs, 2010), also the trade to Africa has to large extent been subjected to developmental goals. This can also be seen as a part of global trend of combining

development aid with business development (Willans et al., 2011). This cannot be overlooked. The history reflects also to this study in consideration of development aid relationships as an opportunity to build trade relationships on. Support of SME trade to African developing countries can be seen as both, rational enhancing of competitive position of Finland in global trade and as a form of showing global responsibility and a new form of development aid.

AGECC (2010) Advisory Board for the UN Secretary General lists recommendations for achieving energy sustainable future. The role of private sector is listed as one of the key solutions. The national and international mechanisms should support the private sector's capabilities through financing and public-private cooperation. Private sector investment needs to grow especially in ensuring equal global energy accessibility (IEA, 2011, pg. 3). This requires the above-mentioned public-private collaboration and removing of barriers. Public sector support is needed especially when commercial case is marginal, for example in some low-income segments and rural areas.

1.1 Research Objectives

The goal of this study is to explore and categorize the different challenges that Finnish renewable energy SMEs face in entering markets in Africa and suggestions to overcome them. Method for this is to build a map of relevant actors and to interview representatives of them. The research questions are:

1. What are the biggest challenges for a Finnish renewable energy SME to enter African markets?
2. What can be done to overcome these challenges?

In order to ask these questions from all the relevant actors within the sector, a map of actors needs to be drawn. Therefore, an underlying research question is included: Who are the relevant actors within SME internationalization field in Finland? This framework of actors is introduced in separate chapter, preceding the actual findings.

1.2 Data collection methods

This research uses literary sources as a background setting for the empirical part. Literature is collected from various kinds of sources. Scientific journals, publications by inter-

governmental organizations and governmental reports are used in order to create a versatile theoretical background.

The empirical part of this research was conducted by interviews and one observation event. The interviews were conducted with varying type of actors within Finnish network of SME internationalization support. Support organizations included public organizations, private trade associations and educational institutions with projects supporting private sector and an expert on innovation politics.

The conducted interviews provided rich material for the empirical part. They also helped in shaping the map of network for the case study part. The case material was collected from also other sources like websites and publications by network actor organizations.

1.3 Defining the key concepts

In this sub-chapter, the key concepts are defined. The scope and meaning in which these concepts are used is also outlined.

Renewable energy

There are some irregularities in the definition of what is renewable and what is not. For example, Oxford dictionary defines renewable energy as "Energy from a source that is not depleted when used, such as wind or solar power" (Oxford dictionary, 2014). This definition rules out biomass since it is depleted by its usage.

Another definition is that the source of the energy is replaced by natural process is a cycle time that is lesser or equal to that in which it's consumed (Nordic Folkescenter, 2014). This definition includes some of the biomass also. Of course there are ongoing debates on whether some forms of biomass truly replace themselves in the same time or not.
In this study, a definition by European Commission is adapted. Renewables thus include wind, solar, hydroelectric and tidal power as well as geothermal energy and biomass. (European Commission, 2014).

Africa

Africa is a continent with extreme variations from one country to another. The average estimations within all the countries only give a very general idea on where the continent is heading. West and east Africa have been the most rapidly growing areas. Economic growth in these areas was more than 6% in year 2013 (AEO, 2014). Because the empirical market specific information for this thesis was gathered from people with experiences from Sub-Saharan Africa. This is taken as a geographical focus for this thesis.

For the data collection from literature, focus on Sub-Saharan Africa seems reasonable. Many of the large data providers like The World Bank, categorize their data to North and Sub-Saharan Africa. The cultural and historical backgrounds of these areas differ remarkably. Also, the current situations in the light of statistics differ enough to make this distinction. For example, the recent economic growth has focused mainly on Sub-Saharan Africa (AEO, 2014). Of course, Sub-Saharan Africa is also a large region with large geographical variations. A lot more specific level is needed to understand and explain the markets.

Three of the interviewees for this study have expertise largely on the West African market. In cases in which the opinion is based solely on certain territory and not on multiple locations, the distinction is clearly marked in the text. In some cases, the applicability of the local experience to larger region is reasoned.

BoP

The theory of bottom-of-the pyramid (BoP) markets was first made famous by an article by Prahalad and Hart (2002) and further elaborated in Prahalad's famous book “Fortune at the bottom of the pyramid”. The name refers to the huge untapped market of the global poor. The idea is that companies can do good by acting on their self interest. By developing and selling products to BoP markets, they help to alleviate poverty and raise consumers' standard of living. Nevertheless, this requires re-designing the existing business models to fit the context and the real needs of the target consumers. A new business logic will be required to make the operations both profitable and beneficial.

According to the BoP theory, companies should engage with consumers with multiple ways. BoP consumers are not only target customers but also source of innovation and producers and distributors. By engaging the target market more deeply into their operations, a beneficial

cost-ratio can be achieved and poverty can be alleviated more efficiently. This requires learning and evolving capabilities from the mother organization: they have to be willing to modify their business models and products to match the real needs of BoP market. (Prahalad, 2002).

BoP markets are often compared to the other end of the spectrum: top-of-the-pyramid (ToP) markets. These markets include the top of the socio-economic pyramid, often located in the global North. The markets are characterized by well-established institutions and higher purchase power of the consumers.

Even though BoP theory is mainly aimed at large, multinational companies and B2C markets, it offers a very good description on the challenges of the market environment, where economy is not as institutionalized as in the global North.

SME

Researchers have generally concluded that SME's are important for the economic growth, innovation, employment and wealth creation of a country (Sandberg, 2013). EU law defines small and medium-sized enterprises according to the number of their employees and either by their turnover or by balance sheet total. SME's have less than 250 employees and a turnover of less than € 50 million or balance sheet total as less than € 43 million. This categorization can be further divided into small companies, that employ less than 50 people and micro entities who employ less than 10 people. (European Comission, 2003).

Most of the SMEs in Finland are micro enterprises that employ less than 10 people. The second largest segment is small enterprises, employing less than 50 people. (Ministry of Trade and Industry, 2000) Both of the interviewed SMEs belong to the small enterprise group. Therefore the focus of this study will be on the small and micro enterprises. In these groups, the challenges of SMEs, like lack of resources and lack of liquid capital, are even more highlighted. The term SME will still be used, taking account the fact that some of the SMEs can be quite large and might not face the same problems as the micro and small enterprises.

Technology Transfer (TT)

The products of the renewable technology companies in Finland are quite often high technology solutions. This sets some requirements of the internationalization process.

Technology transfer paradigm assesses the challenges and special requirements of internationalization from the technology point of view. Transferring a technology to a new context requires a lot more than just physical distribution of a product. This is an important aspect to consider to any internationalizing company with high technology products.

Although there is no clear definition of what technology transfer (TT) is, it can be defined as a process of transferring soft and hard technologies into a new context. This involves the transfer of money, knowledge and goods from one actor to another. Technology has traditionally been interpreted just as a commodity, but the modern, broader view differentiates hard and soft technologies. Soft technologies are for example behavioral or social patterns. It is generally agreed that successful technology transfer includes learning process of the new users. The transferee needs to understand and utilize the technology. In a successful TT process, the users will choose the technology, modify it to the local conditions and even be able to sell the technology forward with further modifications. (IPCC, 2000).

The meaning and value of technologies is defined by the user groups. (Bawakyillenuo, 2012). This is the approach taken in this study. The consideration of market environment at large: political, institutional and cultural, is assumed to have a great effect on the success of the TT process.

1.4 Structure of the thesis

The research will start off with a literary review in Chapter 2. The purpose of this review is to provide reader with a general understanding on the research background on which this study is built. Comprehensive understanding is built around the themes of renewable energy, SME internationalization and African market environment. A special attention is granted to the junctions of these themes. For example, instead of describing African market environment at large, the research focuses on describing renewable energy in Africa and SME internationalization to Africa. At the end of this chapter, there is a short summary on the chapter and a theoretical framework is created.

Methodological choices will be introduced in Chapter 3. The purpose of this chapter is to clarify the methodological choices and to describe the practicalities of conducting this research. The chapter begins with description of the research process and then moves on to

describe the data collection and data analysis processes in more detail. At the end of the chapter, the limitations of the research are assessed.

Chapter 4 combines theory and empirical research for a case study to create a geographic context for this thesis. In the first part of the research, the general themes of this thesis are brought into Finnish context: African trade and relations, renewable energy and SME internationalization support in Finland are all described. The chapter explains the systems in place in Finland for supporting SME internationalization to Africa. The network of actors is introduced and the role of each actor is described. The purpose of this chapter is to introduce to the reader the relevant actors within the field.

The findings chapter, Chapter 5, describes the results of the data collection phase. The chapter is in two parts: First, the challenges of Finnish renewable energy SME internationalization to Africa are introduced and then the suggestions to overcome the challenges. This chapters aims to only introduce the results of the interviews without going deeper to the analysis part.

After this, the discussion chapter, Chapter 6, will include discussion and suggestions for future research. The results of the data collection will be analyzed according to the type of interviewee and also according to the importance of the subject. This means that the most popular suggestions are given higher value.

Chapter 7, conclusion, will summarize the findings and form a conclusion on the answers to the research questions. The chapter will start by assessing the research questions and then move on to summarize the findings and discussions chapters.

2 LITERATURE REVIEW

This study touches upon several themes: renewable energy, African market potential and SME internationalization theory. Each of these themes is introduced shortly within this literature review. Most attention is granted to the areas where two of the themes combine. During the research, a fourth theme emerged. Networks were seen as important feature in all areas of literature. Therefore, the role of networks is examined in all parts of this literature research. See Figure 1 for mapping of the themes of this literature review.

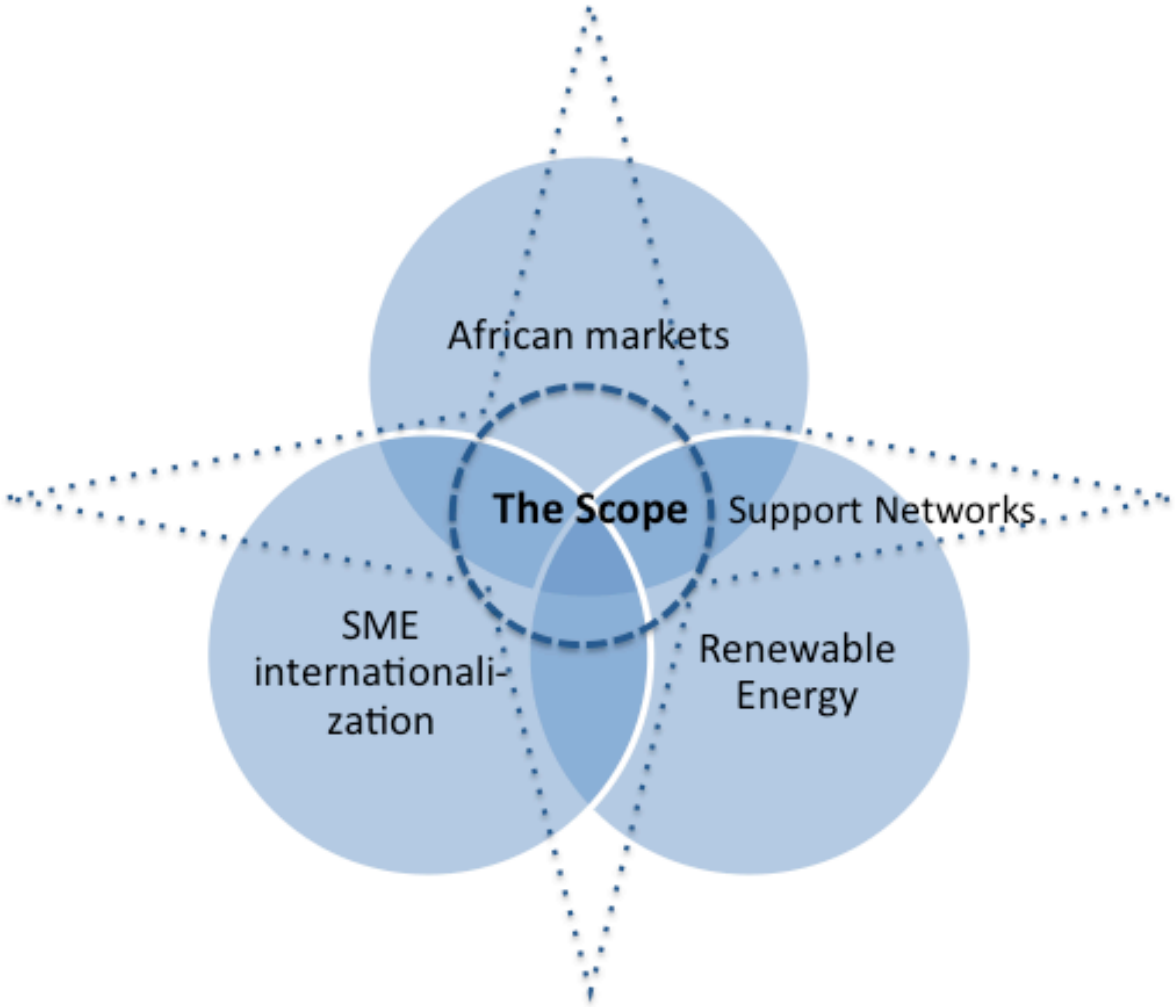

Figure 1 - The scope of literature review

By combining the three areas of interest, three junctions are formed: 1. What is the market potential for renewable energy in Africa? 2. What are the special features of renewable energy SME internationalization? 3. How are SMEs able to internationalize to Africa? These are the

questions that this literature review aims to shed light on. By understanding each of these junctions, assumptions can be made on the middle part of the figure where all these themes combine. This framework of renewable energy SME internationalization to Africa will act as a base for the empirical part of the study.

Figure 2 depicts the theoretical lenses through which each of the junctions is described. These themes are assessed in two sub-chapters. First one focuses on the African markets and renewable energy in Africa. The second sub-chapter focuses on SME internationalization literature.

	African markets	**Renewable Energy**	**SME internationalization**
African markets	Attractiveness, Role of development aid, BoP	Renewable energy in Africa, Technology Transfer	SME networks and barriers to market entry to developing countries
Renewable Energy	Renewable energy in Africa	Benefits of RE globally and on target market	Technology Transfer
SME internationalization	SME networks and barriers to market entry to developing countries	Technology Transfer	SME internationalization networks and barriers

Table 1 - Theoretical coverage of literature review

In the first sub-chapter, African markets are described with describing the attractiveness, role of development aid and BoP theory. Then, the potential of renewable energy is described with focus on its implications in Africa. After this, the special features of renewable energy company internationalization are examined through the technology transfer theory.

In the second sub-chapter, literature on SME internationalization is introduced. The barriers and supporting networks of the process are the sub-themes in this chapter. Only little theory

was found on SME internationalization to Africa or to a BoP market context. SME chapter is nevertheless focused down on African perspective wherever possible.

After these two chapters introducing relevant literature, a concluding chapter on the literature review brings together the main theoretical traits. The background questions concerning the junctions of the three theoretical themes are answered and a theoretical framework is provided as a background for the empirical part.

2.1 African markets

This chapter starts with reasoning the business potential in African markets. After this, the role of development aid in African economies is assessed. This is due to its significance to many of the African economies and the aid-driven history of Finland-Africa relationships. Developmental projects need to be considered also because the line between development cooperation and business support has been blurred.

After this, the BoP theory is introduced with focus on the applicability of the theory into the scope of this study. In the next chapters, the focus will shift on the renewable energy sector. Renewable energy situation in Africa is introduced with an emphasis on the potential of the solutions to the users and the businesses. Technology transfer framework is used to describe the process and network of entering foreign market with technological products.

2.1.1 Attractiveness of African markets

Due to its recent economic growth, Sub-Saharan Africa has increased attractiveness as a partnering opportunity and target market. Most of the African economies have been growing rapidly in recent years. Compared to the global economic growth rate of about 3%, whole of Africa grew at about 4% and Sub-Saharan Africa by about 5% in 2013. The growth is projected to be highest in East and West Africa: in 2013 the growth rates in these areas exceeded 6%. (AEO, 2014)

Forming new business relationship is also in the best interest of many African states. African Economic Outlook 2014 report focuses on the need for African economies to become better

integrated into global value chains. This is seen as a vital component in poverty mitigation and income generation. Foreign direct investment (FDI) levels are expected to reach a record of USD 80 million at 2014. Manufacturing and services are expected to raise their share among the continent's greenfield projects. Nevertheless, many of the African economies are still highly dependent on extraction industries, especially oil and gas industries play a significant role. This causes problems especially for countries that have highly concentrated economies, leaving them in the mercy of global price changes of their main export raw materials. (AEO, 2014) This also highlights the importance of SMEs. In order to expand from the traditional large industries, African states have been starting to look into small business development and development of trade in non-traditional sectors.

Emerging economies such as China and India have been raising their engagement in Africa. China was the third largest investor in Africa, right after EU and the USA. Chinese investments in Africa alone, nearly doubled in years 2005-2006. The emerging countries like India and China also have a very visible position within developmental aid sector. There is a clear gap to the philosophy of OECD countries. Whereas OECD countries stress developmental preconditions, the new emerging investors have chosen a non-interfering policy to Africa's internal affairs. (Ministry of Foreign Affairs, 2010).

The amount of FDI to Africa has been on a steady rise. Excluding North Africa, the growth has been fastest in South and West. East and Central Africa are lagging behind in the incoming FDI numbers. (UNCTAD, 2014). The FDI flows to Africa are highly focused on certain countries. South Africa (USD 6.4 billion), Nigeria (USD 6.3 billion), Mozambique (USD 4.7 billion), Morocco (USD 4.3 billion), Ghana (USD 3.3 billion) and Sudan (USD 2.9 billion) were the largest recipients of FDI. Together, they attracted the same amount of FDI as the rest of the 48 countries altogether. The main sources of FDI to Africa are OECD countries (especially, UK, USA and France), China, South Africa and Malaysia. Overall, the significance of BRICS countries in greenfield projects seems to be on the rise. The greenfield projects in Africa are more diversified and smaller than before. (AEO, 2014).

The attractiveness of African countries as a target market has also been rising together with the population growth and increasing income level in some countries. In 2011, middle class was estimated to account for 34% of African population (AfDB, 2011). Altogether, African population is estimated to double by 2050 and the degree of urbanization is expected to rise to

54% from current 40%. (UN DESA, 2011) The megatrends of rising income level and urbanization create new demand and open new possibilities also for foreign companies to tap into the rising income level of Africans. There will be rising demand for a variety of different kinds of products that weren't affordable before. Also, the urbanization of people will mean that they are more easily reachable and their lifestyles create new kinds of needs.

Despite the large growth of potential, the wealth is not equally distributed. Sub-Saharan Africa has the highest extreme poverty rate in the world: nearly 50% of the population lives on less than USD 1 a day. Despite the impressive growth rates, the wealth has failed to distribute equally. In 2010, six out of ten of the globally most unequal income countries were in Sub-Saharan Africa. (African Development Bank Group, 2012). The majority of the poor consists of the young. An average of 72% of the youth in Africa lives with less than USD 2 a day. The problem is most severe with young women and rural youth. (African Development Bank Group, 2012)

2.1.2 Significance and trends of development aid in Africa

Development aid was chosen as one of the lenses to African economies because Finnish-African history has been dominated by development aid linkages. Another reason for choosing development aid as one of the lenses is the blurring of the line between development aid and trade support. Scholars in both, SME internationalization studies and developmental cooperation studies have started to approve business as a tool for spreading development related products and vice versa, developmental organizations as a tool to reduce risks in developing markets. This phenomenon is introduced later on in this chapter.

Sub-Saharan Africa received about 35% of the global official development aid. This meant USD 51 per capita. Compared to Middle East and North Africa USD 41, Latin America and Caribbean USD 17 or the global average of USD 19, Sub-Saharan Africa seems to be a major recipient of aid. (World Bank Group, 2014).

In the last decade, global north has lost its grip as the undisputed leader in origin of development funds. Emerging countries, especially China, have established strong presence in the development aid world. The country has had over 1,700 projects in 50 African countries between years 2000 and 2011. Despite the previous misconceptions about China getting

control over the natural resources, some experts state that China-Africa relationship is more about soft power. There doesn't seem to be a single aim but rather all development programs have their own agendas. (The Guardian, 2014).

There seems to be a rising interest in combining development assistance with trade. World Trade Organization (WTO) lead initiative, Aid for Trade, encourages all WTO member countries to target their development funds to promoting trade. Aid for Trade ideology has always been a part of development aid but has risen rapidly since 2005. The member states commit to removing the barriers of connecting developing country to global trade. (World Trade Organization, 2014). The shift to trade related aid seems to still be popular: Also the theme for African Economic Outlook 2014 (joint publication of UN, AfDB and OECD) was connecting African companies into global value chains.

Aid for Trade identifies the biggest obstacles for developing country participation to global trade. The barriers are collected from both, public and private sector actors. The private sector actors also include developing country companies as well as large international companies. The results vary from one type of actor to another. Both, donor and partner public sector lists inadequate infrastructure as the most pressing issue. The second most important is limited access to finance. In the private sector, lead firms listed transport costs as the biggest barrier whereas developing country companies listed access to finance. The second most important barrier was customs procedures to the lead firms and transport to the developing country partners. (OECD-WTO, 2013).

Although the ultimate goal of Aid for Trade is to reduce the poverty, the success of the projects is measured in trade related variables. Aid for Trade works for example with removing trade related barriers and increasing export and import activity. Therefore, the effectiveness of a program can be directly measured in increase of trade activity in a certain area. This is recognized as a challenge. Some evidence nevertheless suggests that Sub-Saharan Africa is one of the areas most likely to benefit from aid for trade approach. (OECD-WTO, 2013).

There is an ongoing debate on whether development aid truly results in poverty reduction. Some authors also argue that aid is harmful and disruptive for the recipient economies (see for example “Dead Aid” by Dambisa Moyo). This debate is out of the scope of this study. Also

the possible negative effects of Aid for Trade approach are acknowledged but not further assessed.

2.1.3 Business environment in BoP theory

Whereas development aid mindsets have changed into more business oriented ones, also the business world has taken steps into incorporating socially beneficial goals into their agendas. Most recent big phenomenon in this sense is the rise of bottom-of-the-pyramid (BoP) ideology.

Although the bottom-of-the-pyramid market theory was developed for consumer markets, not all of the SMEs have consumer customers and some might even target the high earning segments of the society. BoP theory is still estimated to be to large extent fitting to describe the features of a society where a majority of the inhabitants fit into the definition of BoP. Also, some of the SMEs target BoP sector either directly or as end-users.

Bottom-of-the-pyramid means the market of about 4 million consumers that live under the poverty line. (Prahalad, 2004) Although there has been some discussion on the actual USD per day limit for the market and other limits to BoP definition, it can be stated that BoP markets constitute of the majority of global population (approximately 4 billion people). In this study, BoP markets are defined according to London and Hart (2011, p. 9) definition. They define the characteristics of BoP market as following:

- Occupants are often heterogeneous across multiple dimensions.
- They usually earn per capita income equivalent to USD 3,000 per year, or less.
- Local enterprises are not always well integrated into the formal global economy.
- These enterprises may operate primarily in the informal economy (i.e., black or gray market).

Even though there is a somewhat clear-cut definition to BoP term, it is crucial to keep in mind that poverty is always a localized phenomenon. The solutions developed for BoP market have often failed to scale up because of the lack of considerations for this. Therefore, considering the contextual differences such as history, politics, religion and economic situation is vital to the success of any attempts on scaling up operations at BoP market. (Calton et al., 2013). The

businesses involved with BoP sector thus have to find ways to collect information on the local markets. This can be a hard task if the markets are far or hard to access.

The knowledge gap between the mother organization and the target market circumstances can take a lot of time and investment to fill. (Prahalad, 2002). Due to this lack of knowledge and limited experiences from the markets, even after a decade of discussion about BoP markets, businesses have not yet realized the full potential. This holds especially true in African BoP markets from where there is virtually no information available on key consumer behavior issues and marketing strategies. (Chikweche & Fletcher, 2012). Some researchers suggest that this knowledge gap can be filled with networks. (Khanna and Palepu, 2013). Networks within BoP context will be further described in the next sub-chapter.

Knowledge and adjusting to the local markets is key to success also according to Prahalad (2005). He emphasizes that businesses have to adjust the product selection and business model to the needs of the target market. Prahalad lists 12 principles for innovations that will help companies succeed in BoP context. For the purpose of this study, two main categories of principles are formed from this listing: product related qualities and business environment related qualities.

1. Product related qualities
    - *Price performance:* the products need to be affordable without compromising the quality.
    - The *scalability* of products needs to be good yet also they need to be flexible to *localization*.
    - Products need to *emerge* with the existing practices and technologies. This allows gradual change and better acceptance.
    - *Resource efficiency*: products need to use minimal resources and produce minimum amount of waste.
    - *Design* of the products is important, function and form need to be actively localized to the target market
    - There's a need for *service and process* innovation in addition to product innovation: A full package needs to be designed. This may take use of the existing infrastructure or create a need to develop a new one.

- Rapid *updates to product features* and functions may be necessary

2. Business environment related qualities
    - The *human capital* is largely unskilled or semi-skilled. This needs to be taken into account.
    - *Customer education* is important even though traditional media may not be available for this purpose.
    - *Environmental conditions* need to be taken into account: infrastructure, water supply, power supply etc.
    - Illiteracy and variations in *languages* need to be taken into account
    - Urban and rural markets may not be easy to reach

To fit the description of BoP requirements into the scope of this study, the list of requirements for companies operating in BoP environment can be seen as challenges that new entrants need to assess when entering the market. The product related requirements can be seen as internal challenges whereas the business environment related requirements can be considered as external challenges. To add to the list of barriers, gaining local knowledge is one of the big requirements for succeeding in BoP context. Without knowledge on the local markets, products and business processes cannot be adapted to them.

The traditional laws of market entry don't apply in BoP context. Before considering the market entry strategy, the markets have to first be created. In ToP context, there are consumers with plenty of resources and usually a lot of information on the behavior of target groups. In BoP context, this is not the case. Markets need to be first created through finding out the way for customers to be able to afford the product and creating the need for a product that they haven't purchased before. (Calton et al., 2013)

2.1.3.1 Building networks at BoP

BoP literature often emphasizes the need to build networks around the company in order to ensure the success and sustainability of the business. Prahalad (2005, pg. 60) states: “The need for building an ecosystem for wealth creation and social development at the BOP is obvious”. By building an ecosystem, he means connecting with a network of business and non-market actors. In BoP theory, the need to connect also with non-traditional actors is emphasized (London & Hart, 2004).

The partnerships at BoP market are characterized by the presence of non-market actors and by the dual nature of this relationship. This means that the collaboration has both social and commercial goals and that the two parties are involved in many different stages. (Reficco & Marquez, 2012). The non-market actors typically include local NGOs, community groups, university and state laboratories. In a case study by Willans, Christiansen and Munro about solar energy dissemination in Sierra Leone, the role of NGOs was to help to gap the risks in business environment. For example, gaining the trust of the community will be easy if NGO introduces the products instead of the company. Companies have their business management skills to offer for more effective dissemination of products.

In Africa, NGO sector has traditionally worked separately from private sector. The role of non-profit sector has been to vocalize the criticism on private sector actors. This categorization has been changing in recent years. Non-profit organizations can form synergic alliances with private sector companies to achieve their societal goals. Thus, the role of non-profit sector would be to recognize the "service and trade gaps" and facilitate private sector actors to fill these. (Willans et al., 2011).

Nevertheless, creating networks that include both private and public sector actors can prove to be challenging for the organizations involved. The collaborations require a change in mindsets of the leaders of both non-market and private organizations. There has been a lack of trust between the different kinds of organizations: global corporations fear meddling NGOs and many governments fear meddling and loss of sovereignty from both, private and NGO sector. (Calton et al., 2013) Austin (2000) states that the reasons for companies to engage with NGOs are mostly philanthropic.

A study by Reficco and Márquez (2012) found out that inclusive networks can be extremely helpful for a company seeking to enter new markets. Even though these networks take more time to build and enforce, they create irreplaceable synergies for the members of the network. BoP networks replaced the intermediary organizations that ToP markets use to gap institutional voids. This is in line by the theory of Khanna and Palepu (2013) that suggests that companies can use institutional voids as a source of their competitive advantage. By gapping the voids, companies can gain first-mover advantage and competitive advantage in markets that competitors hesitate to enter.

2.1.3.2 Limitations in BoP paradigm

Despite the popularity of BoP paradigm, there is a growing amount of researchers pointing out the issues embedded into the theory. Firstly, the BoP theory has generally been criticized for its focus on MNC's. Some of the content of the theory is not applicable for SME context because of the resources that are needed in order to implement the strategies.

Some of the researchers pose an ethical critique on making money on the poor. As the global poor are the most vulnerable group, leaving them at the mercy of market economy rules can pose serious problems to the long-term poverty alleviation agenda (Reficco & Márquez, 2012). When MNCs target BoP markets they have the responsibility to operate in a way that supports human rights via capabilities empowerment. Some critics of the BoP proposition argue that the BoP market could be better served by local, small companies than large MNC's (Karnani, 2007). Overall, since the customer protection laws and institutions in most BoP locations are inadequate, the company should take extra care in order not to exploit their target market (Landrum, 2007).

The issue of MNC focus doesn't pose a serious threat to this research, since BoP is only used to describe the business environment for many locations in Africa. The vulnerability of target group is a more serious matter within the scope of this research. There are risks of unethical behavior and taking advantage of the poor, but these are matters that each SME has to consider within their own operation scope.

2.1.4 Renewable energy in Africa

Global investments in renewable energy saw a great rise from USD 46 billion in 2004 to USD 162 billion in 2009 (UNEP, 2010). Half of these investments were into wind technologies and approximately one quarter to solar technologies. Geographically, the countries with more active support policies tend to do better in amount of investments. For example within Europe, UK and Spain make the most investments. Chinese investments are also on the rise. (Basse-Mama et al. 2013). This global activity signals also tightening of competition within the sector.

Reliable energy sources are the key to reducing economic and social inequalities in local and global scale. Nevertheless, the access to electricity is highly polarized between continents,

countries and urban and rural locations. Due to the rapid growth in both population and economies, the need to expand energy production is urgent. The GDP of Africa is predicted to be three folded by 2030 and this growth needs to be fueled by sustainable energy sources. (IRENA, 2013).

The traditional energy source for households in Africa is biomass. This includes all organic based material that is burned in its unprocessed form (for example wood, charcoal, animal waste and agricultural residues). The burning weakens the quality of indoor air and is the major reason for respiratory illnesses in Sub-Saharan African highlands. Charcoal industry also causes deforestation in the surroundings of major cities such as Lusaka and Dar es Salaam. (Karekezi & Kithyoma, 2003). The traditional source of lighting is kerosene lighting which is connected to respiratory illnesses and other health problems. (Willans et al., 2011).

According to IEA statistics from year 2009, there are still about 1.3 billion people that lack access to electricity; in Africa alone, this amount is 587 million. The electrification rate is at the lowest in Sub-Saharan Africa. This indicates that the need and the potential for renewable energy solutions is the greatest in rural Sub-Saharan Africa.

The difference between rural and urban population electrification rate underline the need for decentralized solutions. The gap between urban and rural population is vast: urban population in Sub-Saharan Africa has 59.9% electrification rate whereas only 14.2% of rural population have access to electricity. (IEA, 2009). Renewable energy provides the best option for the areas where connecting to the main grid is not affordable. Even though the policy makers have traditionally seen urban areas as engines for growth, electrification of rural areas is the key issue to enable equal opportunities. (Willans et al., 2011).

Although the energy availability and potential varies greatly between different countries and regions, almost all areas in Sub-Saharan Africa have great potential for some form of renewable energy. In International Renewable Agency's report (2013), almost half of African states are told to have undertaken national renewable energy assessments for one or more resource. Solar and wind assessments have been made in 21 countries, biomass in 14 and geothermal energy assessments are undergoing in seven countries.

Despite the economic and environmental benefits of renewable energy in remote off-grid and mini-grid solutions, financing for power plants is still harder to get than for fossil fuel plants. This is partly due to the lack of knowledge on the finance sector and the high initial costs of building a plant. The economic benefits will only realize itself in the longer time perspective. To undertake projects, investors and developers need a predictable business environment. (IRENA, 2013).

The solar endowment in Sub-Saharan Africa is twice as large as in Europe, which is currently the largest market for solar energy systems. Solar power is seen as the potential leapfrog technology. Nevertheless, this growth has not realized yet. This is to large extent due to the lack of private sector actors that would enable the distribution and availability of products. The high perceived risks on the African markets hinder the entrance of new actors. Whereas the non-profit sector has focused on the project based work for spreading the solar technologies rather than creating the conditions for widespread dissemination. (Willans et al., 20011).

Moreover, only less than 7% of Africa's hydro energy potential is being harnessed. Hydropower plants are considered an environmental friendly option with no emissions. Yet, the initial costs of setting up hydro plants are great. Drought is a risk for the long-term production of hydro energy. Also, large scale hydro plants can cause environmental damages like loss of living habitat, changes in water quality and siltation. These risks are not common with small scale hydro plants, which are therefore considered more environmentally friendly. (Karekezi & Kithyoma, 2003).

Geothermal energy also offers great potential for many African countries. Geothermal energy plants take less space than other energy facilities (12% to 30% of other renewable plants) and produce near zero emissions with modern technology plants. Africa has potential to produce more than 9,000 MW of energy from geothermal sources. (Karekezi & Kithyoma, 2003).

Sugar is major agricultural export for many Sub-Saharan countries like Malawi, Zimbabwe and Madagascar. The by-product of sugar industry is bagasse, which can be used as material for biofuel production. Research shows that sugar production facilities could significantly increase their energy production with small investments on technology. (Karekezi & Kithyoma, 2003). Moreover, this would help to create new revenue streams and therefore

make the business more profitable. For example, the facilities could sell the excess energy into the national grid. (IRENA, 2013).

The most attractive locations for wind energy is at the north and south of the continent. South Africa has been named as the country with most wind energy potential in Sub-Saharan Africa. By global comparison, wind potential in Africa is low. The wind speeds are on average lower than on other continents. This has resulted in low number of wind energy projects. (Karekezi & Kithyoma, 2003).

2.1.4.1 Barriers for renewable energy dissemination in Africa

Karekezi and Kithyoma (2003) list barriers for renewable energy technology (RET) dissemination in Africa. They categorize three most important groups of barriers and give suggestions on how to overcome them:

1. *Policy and legal barriers.*

Most governments don't have effective programs for supporting RETs. Therefore, most of the RET projects need to operate on *ad hoc* principle, separate from public master plans or support. The absence of governmental policies on RETs has in some cases resulted in lost of interest from international organizations, offering their support. There has traditionally been very little expenditure allocated to medium and small scale RETs compared to the conventional energy sector.
Policy and legal barriers can best be affected through changing the mindsets of senior decision makers. Highlighting the economic gains of shifting into RETs is the most effective message to the policy makers.

2. *Technical barriers.*

Recruiting technically capable staff has proven to be a challenge in RET dissemination. Governments and ministries suffer from a lack of personnel qualified in RETs. Technologies like solar PV and wind turbines are fairly complex and the low local technical knowledge may partly explain the low dissemination level of these technologies. Also, since the dissemination often involves work force from outside the dissemination area, the departure of outsiders may leave the projects unintended and lead to the demise of the RET projects.
The technology transfer process should be more carefully planned. The applicability of selected RET to the existing local industries should be planned. The country should favor

technologies that use mostly locally produced components, thus making them less expensive. High technology systems are less favorable because of the hardships of organizing local maintenance. Mechanical and thermal/heat technologies should be favored because of the low requirement of technological knowledge. Capacity should be built with development of educational institutes and incorporating RET knowledge into other related fields such as public sector actors.

3. *Financial barriers.*

Finance has been identified as the most relevant constraint for new renewable energy projects. More specifically, long-term and low-cost funding is often not available. The challenge of financing RET projects is often left to the private sector.

Most advanced technological RETs are not affordable to the majority of African population. Because of this, financing from end users is also problematic. Especially systems with expensive imported components, majority of the population may be unable to purchase the product.

Finance issues for RETs should be solved through efficient governmental policies that include specialized funds and credit schemes. Evidence shows that most RETs can become financially independent after the initial phases. Micro-finance and clean development mechanism (allows industrialized countries to meet emission targets through investing in sustainable products) can also provide funding opportunities for RET projects.

2.1.4.2 Technology Transfer

The need for energy solutions can to some extent be filled with technology transfer. Technology transfer has been recognized as an important tool for promoting sustainable development goals by UN and is also mentioned in Kyoto protocol (IPCC, 2000). TT is especially important in climate change mitigation. The environmentally sounder technologies (ESTs) can be defined as technologies that provide a better alternative for existing practice. This can mean for example more resource efficiency, better recycling or promotion of environmentally friendly behavior. Many of the new ESTs are developed elsewhere than where the real need for the technology is. The transfer of ESTs into developing countries is especially crucial because of the rapid economic growth, which should be fueled by environmentally sustainable production. (IPCC, 2000).

There are several actors and motivations within technology transfer network. Government policies have a strong influence on the diffusion of ESTs. Multinational corporations are efficient creators and distributors of technologies. Nevertheless, in some cases the self interest of these corporations can slow down realizing the full potential of innovations, resulting in less than optimal solution for the receiving community. (IPCC,2000). In this study, an underlying assumption is made that the benefit of the customers and benefit of the company correlate positively. There are several reasons for this. According to BoP theory, even if companies act in self interest, they can do it in a way that produces good for the target market as well. The products are renewable energy solutions that benefit the long term environment of the customers and also are often more affordable than their predecessors. Inclusive business theory, embedded in the BoP context suggests that there could be even employment through micro business opportunities for the local community.

In IPCC (2000) listing, all the actors involved in technology transfer process are introduced. See the following figure depicting all the different actors involved in TT process.

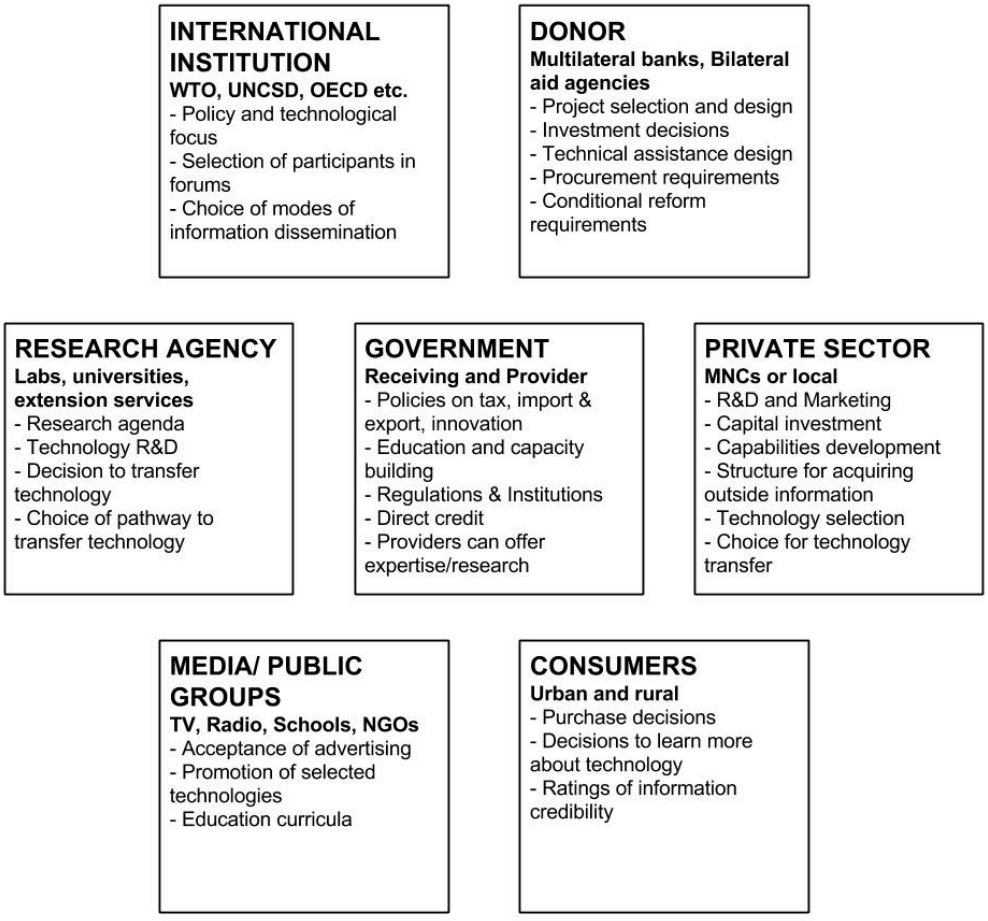

Figure 2 – The Technology Transfer network. Adapted from IPCC (2000)

The IPCC provides a clear overview on the different roles involved in technology transfer process. Nevertheless, some scholars have different emphasis on the role of NGOs for example. In IPCC (2000) listing, the role of NGOs is compared to the role of media and schools. NGOs are seen as providers of information and educators. In other studies, the role of NGOs is seen in a much larger scope. NGOs can gap the risks in business environment and help build trust between private companies and the local community. (Willans et al., 2011).

The role of NGOs is seen as particularly meaningful in transferring technology to BoP markets. NGO can help technology company to manage the risks related to the business environment. Because the technologies might be unfamiliar to the community and the consumers tend to be risk averse, the market entry will be slow and risky without any help from local institutions. Even though NGOs and businesses have different goals, the results of collaboration can be mutually satisfactory. (Willans et al., 2011).

2.2 Internationalization of SMEs

The purpose of this chapter is to provide an overall understanding on the challenges and possibilities of SME internationalization. The material is to large extent collected from OECD studies that are based on interviews to SMEs and their support network. A practical approach is emphasized and theoretical evaluations are kept light.

The theoretical paradigm on internationalization is largely focused on three strains of theory: the stage theory, the network theory and the born global approach. (Hynes, 2010) There's a consensus among researchers that networks are especially vital for the SME internationalization process (Sandberg, 2011, pg. 107). Resource sharing and learning through the networks can provide tools for SMEs to overcome the internal and external barriers described in later chapters (Rutashobya & Jaensson, 2004). In later sub-chapters, network theory is chosen for closer examination because of the SME focus of this study.

2.2.1 Barriers to SME internationalization

Barriers to SME internationalization can be either internal or stemming from the business environment. Internal barriers include for example company's own capabilities, financing and resources. (Fliess & Busquets, 2006). For example, SMEs can lack experience in exporting, managing and marketing skills or command of foreign language. They can also have a great

psychic distance to the market. This means that they perceive the risks related to the market environment to be great. (Moini, 1997)

External barriers include for example trade tariffs and national support programs. SMEs without exportation experience seem to emphasize internal barriers whereas SMEs with some experience were more concerned on the external barriers. This suggests a learning process for internationalizing SMEs. Once the inner obstacles are somewhat managed, the firm can start paying attention to the obstacles stemming from the environment also. (Fliess & Busquets, 2006).

Overall, SMEs are more vulnerable to external barriers than large companies because they have fewer resources to deal with the external barriers. Large companies can leverage internationalization risk in several ways. For example, risk can be managed by diversifying operations, creating economies of scale or by lobbying. (Fliess & Busquets, 2006; European Comission, 2010).

For the purposes of this study, several recent studies were combined to form an extensive theoretical base for the empirical part of this study. In following figure, the most common internal and external barriers are classified and introduced. The list is based on an OECD-APEC survey (2006), OECD (2006) research data, Fliess & Busquets (2006) and Leonidou (2004) categorization of barriers for SME internationalization.

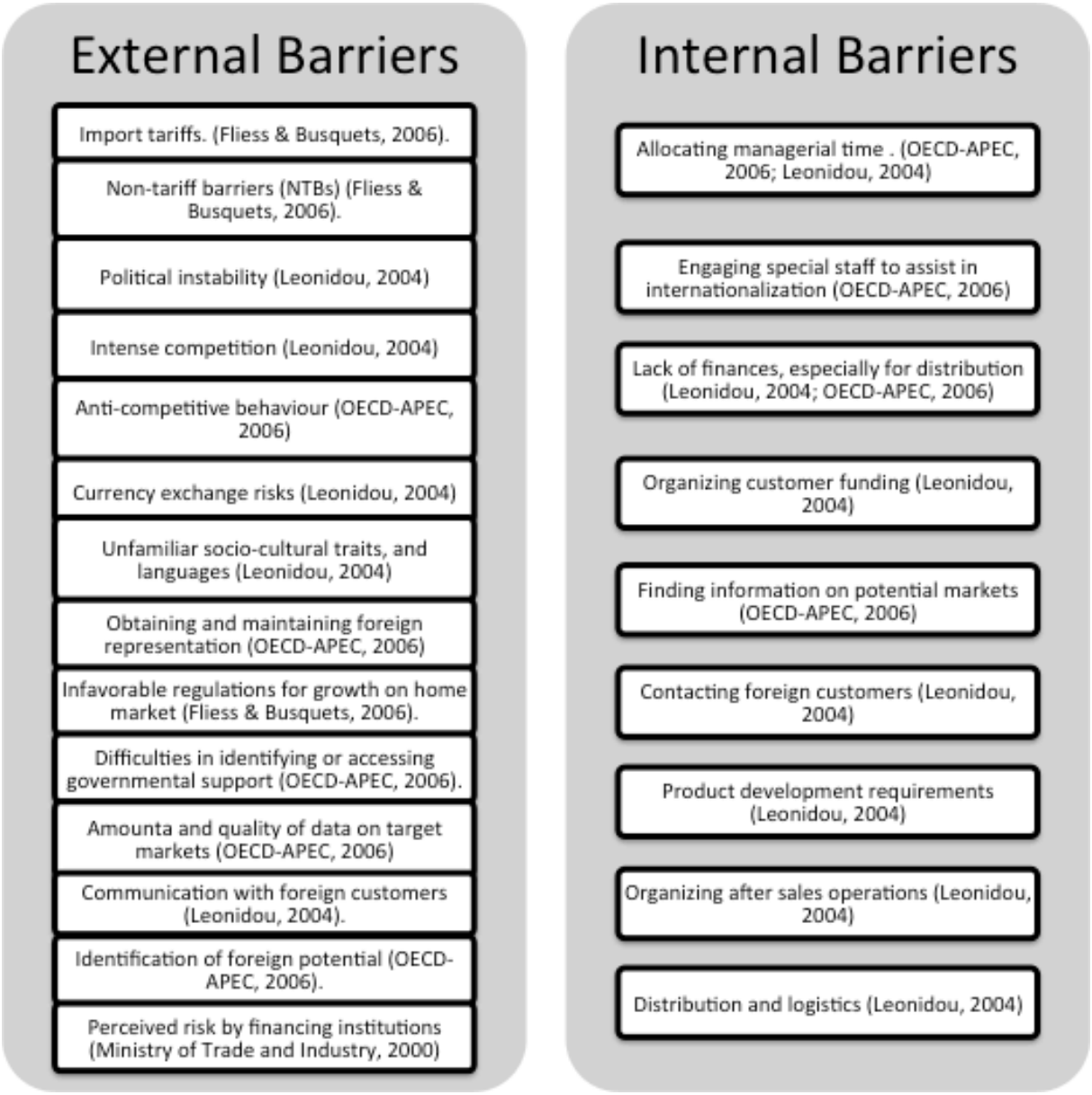

Figure 3 Internal and external barriers for SME internationalization

A later OECD (2009) study identified four main barriers. The main barriers were access to financial resources, identifying business opportunities, identifying and analyzing target markets and inability to contact potential foreign customers. Lack of managerial time was assessed as a fifth factor that largely affects the four main barriers.

The main barriers for internationalization have an element of perception to them. What is seen as the most important challenges, depends on who is giving the answer. This was proved in OECD-APEC (2007) survey rankings, where the results varied according to whether it was

provided by a governmental actor or SME. For example, whereas the SMEs ranked lack of working capital as the number one barrier for internationalization, it was listed as second in the governmental listing. Also, inadequate quantity or untrained personal was seen as the largest barrier by governmental actors and it was number 7 in the importance ranking of SMEs. This implies that the opinions about SME barriers to internationalization are dependent on the role of the actor within the SME support network. See the following listing for survey results categorized by type of actor.

Table 1. Barriers ranked by SMEs using the top ten ranking method

Rank – Weighted factor	Description of barrier
1	Shortage of working capital to finance exports
2	Identifying foreign business opportunities
3	Limited information to locate/analyse markets
4	Inability to contact potential overseas customers
5	Obtaining reliable foreign representation
6	Lack of managerial time to deal with internationalisation
7	Inadequate quantity of and/or untrained personnel for internationalisation
8	Difficulty in matching competitors' prices
9	Lack of home government assistance/incentives
10	Excessive transportation costs

Source: OECD-APEC 2007

Table 2. Barriers ranked by Member Economies using the top ten ranking method

Rank – Weighted factor	Description of barrier
1	Inadequate quantity of and/or untrained personnel for internationalisation
2	Shortage of working capital to finance exports
3	Limited information to locate/analyse markets
4	Identifying foreign business opportunities
5	Lack of managerial time to deal with internationalisation
6	Inability to contact potential overseas customers
7	Developing new products for foreign markets
8	Unfamiliar foreign business practices
9	Unfamiliar exporting procedures/paperwork
10	Meeting export product quality/standards/ specifications.

Source: OECD-APEC 2007

Table 2 - Barriers by SMEs and member economies. (OECD-APEC, 2007)

As shown in this figure, some challenges are found equally important by both type of actors. For example, finances and limited information were among the top 3 challenges of both. This adds an element of objectivity to the results. It can be assumed that the challenges that all participants found important are real and not dependent on the position or role of the actor.

2.2.2 Support networks for SME internationalization

This sub-chapter looks at the SME internationalization process through network theory. First, the concept of network is introduced. Sandberg's entry node theory (2013) is chosen as a framework to describe internationalization of SMEs through network paradigm.

Network theory looks at the company internationalization process as establishing, developing and maintaining of customer-supplier and other networks in a foreign country. The way in which the networks are internationalized is called the “entry node” of a company. This term originates from the “entry mode” discussion that emphasizes the organizational structure and level of investment to a new market. Once the importance of networks for SMEs was discovered, an alternative term was developed to better describe the strategy and focus points of SME internationalization. Since networks are of great importance to SME business operations, the network paradigm was merged also to the “entry mode” paradigm, transforming it to “entry node”. (Sandberg, 2013).

Sandberg (2013) describes four different kinds of entry nodes. The nodes vary according to the level of commitment and therefore also the level of knowledge sharing. The more trust and resources a company invests in a relationship, the more committed they are. Trust and commitment are essential for building networks as they spur interaction and therefore also knowledge accumulation. The first node is using a domestic intermediary to connect with foreign customer. This node requires the least level of commitment. In the second node, the company uses foreign intermediary to connect with foreign customer. The third node is direct relationship to foreign customer. This allows close relationship and direct learning. The last entry node is presence on the market. In this node, the company fosters direct relationship with the customer through presence via owning a business unit in the market. This node

enables the most direct and efficient learning process and creates most commitment on the market.

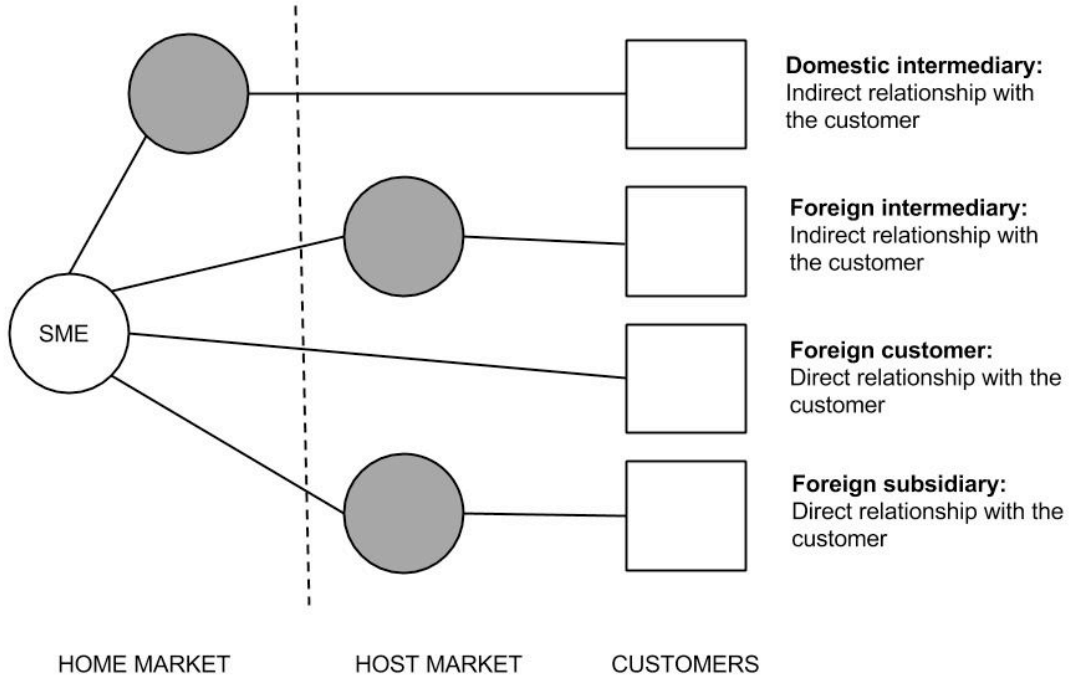

Figure 4 - Market entry nodes. Adapted from Sandberg (2013)

Sandberg's research doesn't differentiate SMEs from larger companies. A SME focused OECD (2007) study therefore offers to some extent contrary results to Sandberg's research. According to it, SMEs can best internationalize through becoming a part of a global value chain of a large MNC. Compared to direct investment, a less risky way is to gradually internationalize through gradual learning process. SMEs can thus benefit from knowledge spillovers, efficiency gains and upgraded human and technological capital through cooperation with upstream and downstream partners. Also, the opening up of new niches in the global market can provide SMEs with good opportunities to rapidly gain a market position. (OECD, 2007)

In addition to traditional supplier-customer model of supply chain, network theory offers a wider view on the various partnerships a company might have. The partnerships include not

only the commercial agreements but also collaboration with non-market actors. Reficco and Marquez (2009) studied the role these non-market actors play and noted that for the sake of analysis, the partners could be divided into two groups: regulators and supporters. Whereas the supporters offered input for starting projects (for example capital, knowledge, connections) the regulators focused on creating the regulative framework. These organizations could involve for example government agencies, trade unions or consumer associations that take part in creating the "rules of the game". Regulators were found to be especially important in BOP context.

OECD (2009) study lists three actors that were seen to be especially helpful in SME internationalization: collaboration with home government, international organization programs and business or trade associations. Out of these three, especially home government was seen to have multiple different roles and responsibilities. Applying from Reficco and Marquez (2009), these responsibilities can be divided into regulator and supporter functions:

1. *Regulator tasks*

   In addition to taking care of reducing the internal tariffs and NTB (non-tariff barriers) for trade, regulator tasks include international negotiations with multilateral or bilateral partners to reduce barriers of trade. (Fliess & Busquets, 2006; OECD-APEC, 2006). Government can also take a more pro-active role by collecting and publishing trade information or acting as a trade advocate for certain company or sector. Governments should also aim at including SMEs into making process of new trade policies. (OECD-APEC, 2006).

2. *Supporter tasks*

   Direct funding services should be made available for SMEs, because they are many times underserved by the traditional funding channels like banks (Ministry of Trade and Industry, 2010). There are many ways to do this. For example, export credit guarantees; pre-shipment financing and working capital augmenting facilities are all a way for governments to support SME internationalization financially. (OECD, 2009).

There are also many international initiatives to support SME growth. Through multilateral programs, such as World Tr@de Net, SMEs can enhance their capabilities to deal with trade barriers. Because of the nature of these programs is usually informational, they are not capable of removing trade barriers but rather help out in networking and knowledge

developing of the SME. These kinds of programs are especially helpful to SMEs exporting to developing countries. (Fliess & Busquets, 2006).

The third type of actor to support SME internationalization is business and trade association. These associations give SMEs leverage to negotiate with different actors. The agendas and member qualifications of these associations vary, which affects the suitability for each individual SME purposes. For example, grouping with large companies can offer visibility and greater leverage. But there are dangers with forming an association with larger companies also. The large companies may have more influence to the association decisions and promote policies that are against the needs of an SME. SMEs can also form associations with purely SME members. These organizations cater more precisely to SME needs but might have too narrow views to global trade. Also, having competing firms within the organization may cause difficulties. (Fliess & Busquets, 2006).

Cluster associations and other forms of partnerships between SMEs and between SMEs and large companies should be encouraged by the government. Some governments have been successful in adopting these policies and found new leverage to internationalization through these. (OECD-APEC, 2006)

Private sector -led programs for SME internationalization are often not given the attention they deserve. Organized private sector, such as the Chamber of Commerce network, can provide to be helpful in designing SME support systems. This type of relationships have proved to be successful in Finland. The relationship of the state and Finpro, a private organization has been benchmarked as an example of well working public-private collaboration. (OECD, 2009)

Overall, a lot of synergy effects could be attained with better collaboration between different types of actors within the SME support network. Best policy practices could be diffused collated and published in common forums. For example, many internationalization support providing organizations (government initiated, private sector) could benefit more from closer relationship to supra national organizations, such as UN, World Bank or European Commission. The synergies could be found in for example educating sufficient amount of people on expertise on SME internationalization, providing legal documentation to international partnerships or assisting SMEs to gain access to suitable financial instruments. A

common forum would enable more efficient communication and getting more out of the private sector actors. (OECD-APEC, 2006; OECD, 2009)

2.3 Summary of the literature and theoretical framework for the study

This literature chapter aimed to create an overview on the past research and theory field of development aid, BoP theory, renewable energy dissemination, technology transfer and SME internationalization barriers and networks. Thus a broader understanding on the field of this study is created. In the beginning of this literature review chapter, a framework for the theoretical setting was depicted.

In the beginning of this chapter, three questions were posed. The previous chapters provided some answers to these questions. A short conclusion on the most important points is provided in the following:

1. *What is the potential for RE in African markets?*
   Africa has a large potential for all kinds of RE solutions. Because of the population growth and the growth of many economies, there will be a need to fulfill the energy needs in a sustainable fashion. Also, large part of the current population is also out of energy.
   All forms of RE have good locations for new plants. Wind energy is the most challenging but even for that, south and north Africa have enough strong winds. Some researchers suggest that most mechanical and less high technology solutions would work best in a business environment where education level is low. Others suggest that by applying most modern solution with appropriate education, the continent can leapfrog more efficiently into modern energy solutions.

2. *What are the special features of renewable energy SME internationalization?*
   SMEs face many barriers in their attempts to internationalize. Compared to large companies, SMEs are more vulnerable to external barriers. In addition, many internal barriers such as lack of working capital can cause difficulties in internationalization process.
   According to the technology transfer paradigm, transferring technologies into foreign markets includes a lot more than just the physical logistics. Sustainable solutions can

only be achieved if a technology is carefully planted into the local lifestyles. The key is to make the user population have a sense of ownership and see the benefits of the technology.

There is a wide network of actors involved in the technology transfer process but most commonly, the role of governments is seen as crucial. Institutional environment of the receiving country and the support received from domestic government play an important role. This is partly due to the cost structure of many CC mitigating technologies that require high initial input and have long payback times.

3. *How are SMEs able to internationalize to Africa?*

   Networks are especially important for SMEs. Multiple traits of theory have their own frameworks for the networks and barriers of the RE SME internationalization to Africa. By combining these frameworks, a theoretical setting for the empirical part of this study is created. Support networks can be divided into two according to their purpose: supporters and regulators. Regulators were found to be especially important in BoP context.

   Moreover, even though SMEs are more vulnerable to external barriers, BoP environment also offers a challenging environment for any company. The institutional voids and the risks related to the business environment need to be tackled in order to make a successful market entry. The tools to do this remain in networks of the SME. In BoP environment, non-market actors are estimated to have a lot to give. Collaborative relationships with NGOs can help companies in gaining knowledge on their target market and trust and commitment from the community. Inclusive networks are also suggested to work for this.

In many of the sources, categorization to internal and external was done by identifying internal and external processes for the SME. For example, In Leonidou's (2004) study, distribution and logistics are listed as internal challenges because they are part of the internal operations of the SME. Nevertheless, for the purposes of this study, it is suggested that the dividing to external and internal challenges should be done differently. The internal/external nature of a challenge should be determined by the amount of control the SME has over the issue. For example, in distribution and logistics, there would be both internal and external elements. Internal element would be the capability of the company to create distribution chains and external elements could involve the barriers arising from the target market

Therefore, a modified framework is suggested with the emphasis on the dual nature of each of the challenges. The challenges in the following figure are categorized according to whether SME has high control of the issue or whether the control mainly lies within the external environment and other organizations.

BARRIER	INTERNAL	EXTERNAL
Allocating human resources to plan and implement internationalization	Allocating managerial time, hiring special staff	Availability of capable staff
Finances	Low resources. No knowledge or interest in finding public support program. Need for funding for customers, logistics and working capital.	Not suitable forms of public finance available. Financing institutions might perceive the risks to be too great.
Informational constraints	Identifying and analyzing potential markets.	Poor quality and low availability of target market data. Need for customer education.
Product related costraints	Price. Scalability. Cost of materials and resource efficiency. Service and process innovation Applicability of product design to the market environment (for example, is it too hard to use, is it affordable?)	Difficulties in building suitable ecosystem for the product (for example maintenance and customer service).
Distribution & Logistics	Difficulties in gaining reliable foreign presentation. Infamiliarity with distribution channels and unability to reach them.	Difficulties in gaining reliable foreign presentation. Cost of transportation. No warehouses in the target market. Reachability of rural and some urban markets.
Target market environment	Not enough knowledge. Lack of resources to deal with challenges.	Political, legal and institutional environment. Infrastructure. Tariffs and NTBs. Compeition and anti-competitive practises. Gaining reliable foreign representation. Currency risks. Government has little knowledge on RETs.
Domestic market	Identifying public support programs. Unwillingness to participate.	No suitable support systems available. Unfavorable rules for growth. Government has little knowledge on SME internationalization.
Connecting with customers	Finding and connecting to potential customers	

Table 3 - Challenges for RE SME internationalization

Suggestions to overcome barriers were most commonly connected to the network of support around the SME. Therefore a network combining all the different traits of theory is created:

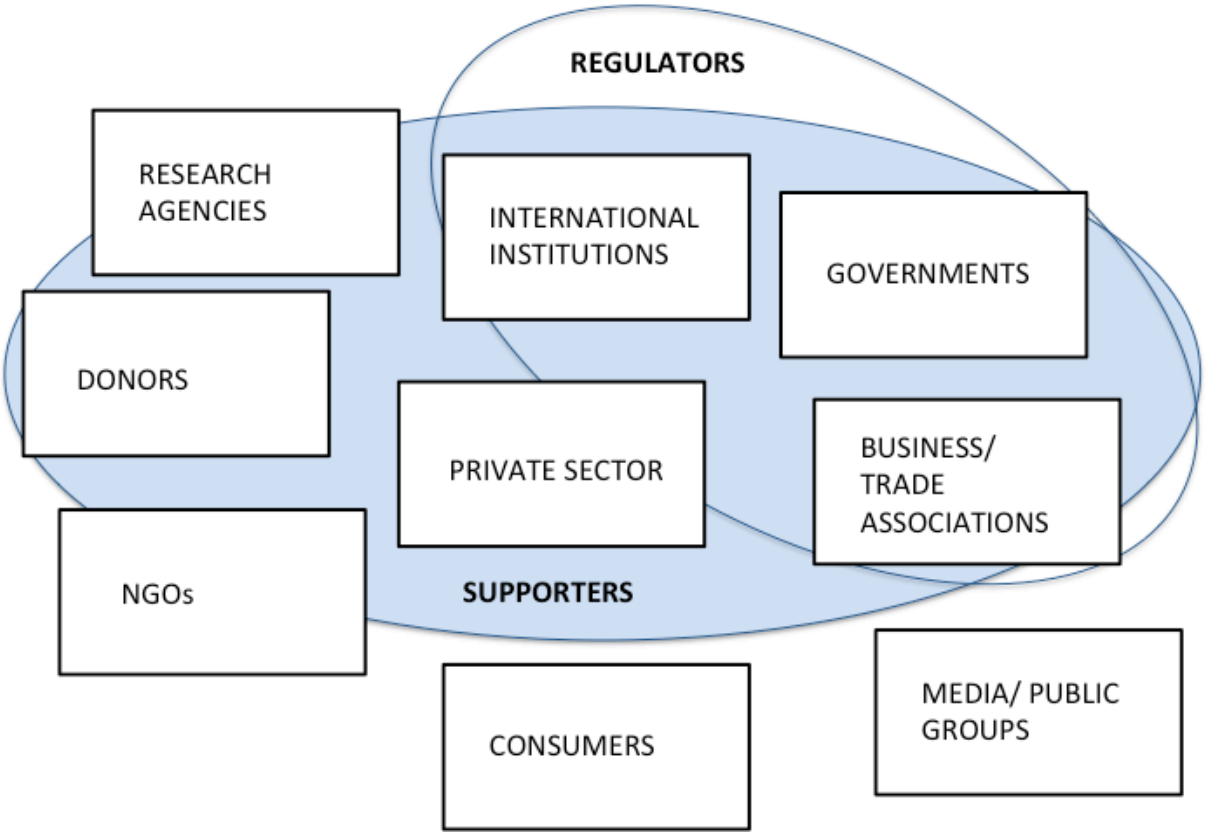

Figure 5 - Network of support for SME internationalization to Africa

This figure is based on the Technology Transfer network of actors. The framework of Reficco and Marquez (2012) about the supporters and regulators in the BoP context is added. Some additional changes are made into the TT framework. NGOs are taken out of the media box and placed as a separate group of actors, because their role can involve a lot of other things also than just modifying public opinions. (Reficco & Marquez, 2012; Willans et al., 2011).

3 METHODOLOGY

This study is a qualitative research that aims to explore the challenges of Finnish renewable energy SME internationalization to African countries and seek solutions to these challenges. The qualitative nature of this thesis shows in the way the research questions are asked. According to Denzil and Lincoln (2000), qualitative research asks open-ended questions with a goal of making sense or interpreting phenomena in terms of the meanings people bring to them. This is reflected in the goal of this study. By using method mix of interviews and observation, an image is created on the challenges and suggestions of the interviewees.

This study uses a mix of multiple different methods. Because each qualitative practice is believed to make world visible in a different way, many researchers tend to use more than one interpretive practice in one study (Denzin & Lincoln, 2000). Firstly, case study approach is taken to describe the system of Finland in SME internationalization support. The case study includes literary sources as well as empirical data from the interviews. Secondly, qualitative interviews were chosen to describe the system from the inside and to collect data about the research questions. Insights to the research questions were also collected through an observation event.

3.1 Research design

The goal of this study is to explore and categorize the different challenges that Finnish renewable energy SMEs face in entering markets in Africa and suggestions to overcome them. The research questions therefore are: 1. What are the biggest challenges for Finnish renewable energy SMEs to internationalize to African countries? 2. What can be done to overcome these barriers? The purpose of these questions is to describe and categorize the existing struggle and also provide insights on how to overcome the barriers. Because of the purpose of this research and the nature of the research questions, this research was designed to be qualitative.

Interviews were chosen as a research method because they allow a narrative feedback from the interviewee, thus providing a richer insight into the area of interest. Interview as a research method also made it possible for the researcher to state open-ended questions that allows the interviewees to bring out topics that they find relevant.

In order to get a full image on the issues of SME internationalization, an underlying research on the relevant actors in the support network needed to be done. Therefore, a methodological research question was: Who are the relevant actors in the Finnish renewable energy SME internationalization to Africa –support network? The research happened on two levels at the same time: the methodological question was clarified while the actual two research questions were described.

3.2 Research process

This subchapter explains the methodological and data analysis choices made in this research. The goal of this chapter is to describe the practical process of making this study and to open up the reasoning behind the data analysis decisions.

Alasuutari (1999) claims that the reality of qualitative research is often poorly reflected in the methodology books. Whereas the reality is often full of dead ends and changes in direction, the theory of research process seems to follow a certain linear pattern. This dilemma was also present in this study process. For example, because the research question was modified in the middle of the research process, several meetings were required with the original SME. Outlining the scope of the research required extra meetings.

The research process involved multiple phases at the same time. The different strains of research were dependent on each other and therefore affected each other's results. At the last months of the research process, two more interviews were added to the research to deepen the understanding on two of the most important suggestions to overcome the barriers. See the following figure on the research process.

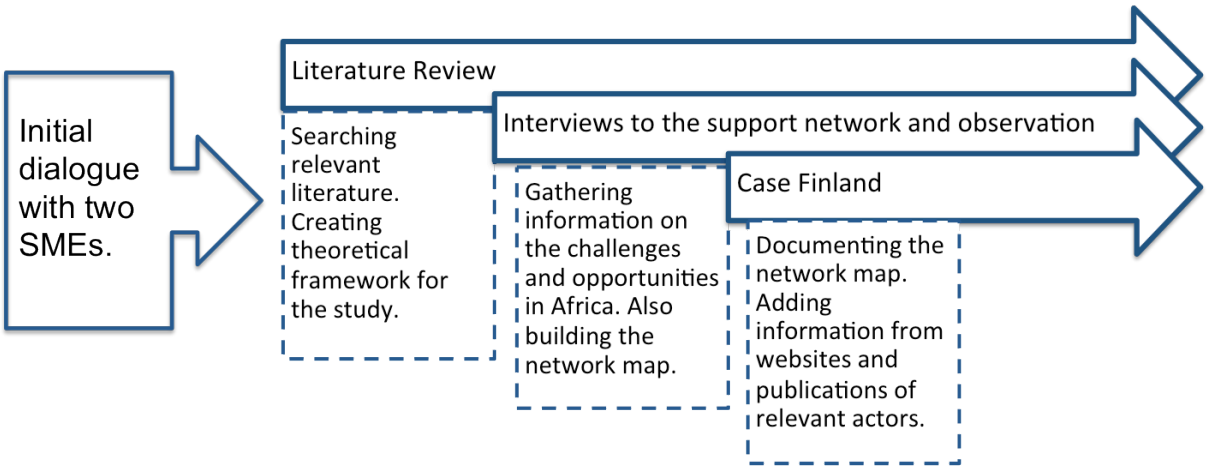

Figure 6 - The research process

The research process started with initial interviews with two SMEs. The initial idea was to take the point of view of the interviewed SMEs and collect challenges and suggestions to overcome the challenges. The aim of the thesis was to provide helpful information and suggestions to renewable energy SMEs aiming to internationalize to African market. As the interviews proceeded, the complexity of the challenges became evident. It seemed to be not only up to the SMEs and what they should do in order to internationalize but many other actors have important roles to play. Therefore, the research grew to include interviewees from support organizations and even from non-market sector.

The case study on Finland's network of support required more research than what could be collected through the interviews. Network was also built on publications and listings provided by actors in the network. Some additional research was done on these actors to decide whether they are relevant enough to be interviewed on the barriers and suggestions also.

3.3 Data Collection

Collecting the data was a gradual process. Information about new possible interviewees was collected during the interview process. Therefore, the sample size and scope wasn't defined in the beginning of the research process. Rather new possibilities and doors opened up as the data collection process went on. New names and new topics to cover in interviews were received in the previous ones. The network for the case study of Finnish network of support was built at the same time as the answers were collected about the challenges and suggestions.

In addition to the interviews, the network map was built through publications and web-pages of organizations. Whenever an actor was mentioned, their role was further researched through reading related articles and web publications. Also observation was used in the "Africa Sense Making Workshop". The information about the challenges of SMEs in internationalizing to Africa was collected through interviewing representatives of different actors within the support network.

3.3.1 Qualitative interviews

Altogether 12 different actors were interviewed. Three of these were renewable energy SMEs, four were governmental support organizations, one coordinator of university-private sector partnerships, a chamber of commerce representative, an expert on innovation politics, a researcher on NGO-private sector collaboration and a representative of development aid organization. The interviewees are introduced in a following listing.

Organization	Main themes in the interview	Interview date	Duration	Geographical expertise
SME 1	Challenges in market entry to Africa and networks to overcome them.	18.12.2013 28.10.2013 20.1.2014	1h 20min 1h 1h	Sub-Saharan Africa
SME 2	Challenges in market entry to Africa and networks to overcome them.	28.10.2013	1h	Africa
SME 3	Challenges in market entry to Africa and networks to overcome them.	21.5.2014	1h	Sub-Saharan Africa
Support Organization 1	Organizing the public sector support to SME internationalization to developing countries. Politics of development aid.	18.6.2014	1h	Developing countries
Support Organization 2	Finnish support for market entry to developing countries. Challenges for SMEs.	9.6.2014	50 min	Developing countries
Support Organization 3	Features of West African markets. Challenges of market entry.	25.4.2014	45 min	West-Africa
Support Organization 4	Solar Energy in Finland. Global competition in solar energy.	28.11.2013	30 min	Finland
Support Organization 5	Market conditions in West-Africa. Networking and clustering.	20.1.2014	1 h	West-Africa
Support Organization 6	Market conditions in West-Africa. Challenges on market entry.	20.1.2013	1h	West-Africa
Support Organization 7	Politics of Finnish support system. Market conditions in Africa.	18.6.2014	1h	Sub-Saharan Africa
Researcher	NGO-private sector cooperation. Politics of NGO sector.	4.12.2013	1h 15 min	-
NGO representative	NGO-private sector cooperation. Supply chains of aid.	19.12.2013	1h	-

Table 4 - Interviews

The interviews were constructed in a semi-structured manner. Some general questions were prepared in order to keep the discussion focused on the theme but to large extent the interviewees were allowed free description on areas they found relevant. The set of general questions can be seen at Appendix 1. The general questions are slightly modified to the expertise field of each sector: 1. SMEs 2. Support organizations 3. NGO-related actors.

Open-ended questions were chosen because of the nature of the research questions. The goal of this thesis was to find out the opinions of actors in the network about the challenges and suggestions to overcome them. The guidance of the researcher was therefore kept minimal. Curran and Blackburn (2001) describe the open-ended interview process as challenging, because the answers are hard to predict and yet the interview is supposed to follow a certain theme.

A voice recorder was used in all interviews except three. Two of these didn't grant permission and one was held in a location where recording was impossible. The interviews, which did not have voice recordings, were recorded through making notes throughout the interview. Of course, the data collected by this method is not as rich as the data collected by recording. This might affect the results of the study by under-emphasizing those opinions that were not recorded.

The set of questions varied from one interviewee to another according to their expertise. The theme of the interview was kept the same; in all interviews, the topic of the thesis was explained in the start to set the theme and limits to the discussion. Nevertheless, in some of the interviews (especially NGO related) the interviewee stated that his/her knowledge on the subject was not sufficient. In this case, the interview was redirected to a topic more close to their specialization: for example the supply chains and procurement of renewable energy solutions in development aid.

3.3.2 Observation of group discussion

The dynamics of group situations are completely different from one-to-one interviews. In group meetings, the members of the group concentrate on the things they have in common and use each others' opinions to argue and form new statements. (Alasuutari, 1999) Therefore, the research can greatly benefit of adding a group discussion to the data.

In addition to interviews, there was an opportunity to attend a workshop on the challenges of Finnish companies to internationalize to Africa. This opportunity was used to observe the group discussion of many of the actors in the network. The participants of the workshop were not limited to renewable energy sector but many of the support same support network actors were present in the event. Sustainability and energy needs were also part of the discussion. The seminar was called “Africa Sense Making” and took place in Helsinki in 27.5.2014. The

workshop was organized by Tekes and involved a variety of different actors: large companies, SMEs, ministry representatives, governmental and private support organizations and research institutes.

The workshop was used as an opportunity to verify the results of the interviews and to create new perspective on the network of actors. The event turned out to verify the results of the interviews and deepen the understanding especially in the financing issues. The workshop was not recorded but notes were taken throughout the event.

3.3.3 Case study as a description of Finnish context

The case study method was applied to bringing the theory of renewable energy SME internationalization to Africa into the level of Finnish support systems. The case study method is used to describe and understand the current state of Finland in a global setting of renewable SME internationalization to Africa.

Yin (2003) states that case studies are a preferred strategy for "how" and "why" questions. It is suitable for studies, where investigator has little control over events and when the focus is on contemporary and real life phenomena. These qualities describe the case study of Finnish support networks well. The focus is on describing the current situation and the relevant network of actors. Also, the research question is also explanatory, because it does not only aim at creating the map of network but also at explaining the role of each actor within. This creates the "how" question that requires a case study approach.

The methodology for the case study combines study of literary sources and material from the interviews. The literary sources included publications from relevant organizations, listings of part takers in relevant seminars (for example, listings of African Sense Making workshop participants) and background literature from Chapter 2.

Of all the actors in listings, publications and interviews, it was hard to decide which ones are relevant and which ones are not. Three principles were applied in this analysis. Firstly, the actors brought up by the SMEs as relevant for their internationalization were all included in the network. Secondly, the size of the actor was considered: nation-wide organizations and programs are included whereas organizations focused on developing a region were not

included. Thirdly, the relevance of the actor to the renewable energy internationalization was valued. This included the evaluation of the scope of their activities. If the organization was involved in two or more of the strategic areas: renewable energy, SME internationalization or internationalization to Africa, it was included in the network.

3.4 Data Analysis

The interview data analysis started by listening the recordings. Nevertheless, three of the interviews and the observation event were not recorded. In these cases, the analysis process started out by reading through the notes from the interviews. After this, the main topics of the interview were summarized. By this stage, data perceived to be completely irrelevant for the scope of this study was left out.

The main themes were coded from the summarized interviews. The coding of research data is always a subjective act (Saldana, 2009). Embracing this subjectivity, the data was coded to fit the framework of this study. The answers were categorized in three: 1. Description and evaluation of the Finnish SME support network 2. Challenges and barriers for entering Sub-Saharan African markets 3. Suggestions to overcome these challenges. The data in category 1 was used to construct the Case Finland –part of the study and also to seek new interviewees. The data in categories 2 and 3 is listed in the Chapter 5, Findings. The data that didn't fit any of these categories was left out.

The two occasions of dropping out data contribute to the limitations of this study. Because of the subjective nature of data coding, it is possible that some valuable insights were missed. Answers meant to contribute to a certain theme might not be understood in a right way and could thus be disregarded as not important data.

All the coded data is analyzed according to the frequency in which it came up in the interviews. As OECD (2009) study suggested, what is experienced as the most important challenge depends on the type of actor being asked. For this reason, all coded data is also earmarked to the type of actor that presented it. In cases where there seems to be correlation between the type of actor and a certain kind of answer, it is brought up in the text and a suitable explanation speculated.

3.5 Limitations

As this study was conducted with a small sample size of Finnish SMEs, the results need to be confirmed in further studies. The sample of SMEs was not created in a structured way but rather by using existing links and connections. Therefore, the sample does not truly represent Finnish renewable SME sector as a whole.

Two of the three selected SMEs are within solar energy business and one in hybrid energy solutions, which includes also solar energy. They therefore do not present the Finnish renewable energy sector as a whole. The largest sector of Finnish renewable energy is biomass, but this sector is only present in one of the SMEs as a part of their product.

The three SMEs, although they are all from renewable energy sector, represent totally different business models. Whereas one of the SMEs has a product targeted on consumers, two focuses on larger projects and often has B2B customers or public sector clients. The two companies are therefore looking for different kinds of partners in African markets. The challenges and methods for reaching out to these partners therefore can be very different.

As already opened up in Chapter 1, definition of Africa as a target area, Sub-Saharan Africa is chosen as a focus for this study. There are doubts whether Sub-Saharan Africa is a sensible geographical focus. Since all of the economies in Sub-Saharan Africa (except for South Africa according to some sources) can be defined as developing economies, they are assumed to share some of the same challenges for trade: underdeveloped legal systems, lack of institutional support, lack of market data etc. The local and areal differences are nevertheless great, especially between countries with stable and unstable political situation.

This is dealt with in this study by listing the geographical experience of each interviewee so that it becomes apparent on which areas the information is gathered from. Those interviewees with experiences from multiple regions of Sub-Saharan Africa, are listed under a general title of “Sub-Saharan Africa”. Still, the empirical experiences of Finnish actors do not represent the whole region in an equal way. It was not taken into consideration when collecting the market environment experiences that all the different parts of Sub-Saharan Africa should be presented. Therefore, the results will not be applicable to all locations in Sub-Saharan Africa. This limitation is dealt with by making it as transparent as possible, from which location the

experiences originate from. This is made by mentioning the geographical expertise of each interviewee and by assessing the location inside the analysis whenever possible.

In the case study of Finnish support network, it was critical to decide which actors within the network are relevant enough to be included in the network. These choices were made subjectively and therefore some actors that should have been included are not. For some other SMEs than the ones interviewed, some other organizations or programs may have provided a lot of help in internationalization but because they were not involved in the small sample size of SMEs, they are not included in the actor network either.

4 CASE FINLAND

This chapter aims to bring the frameworks created in Chapter 2 into the national level of Finland. The data is partly from literature and partly from the interview results.

This chapter is divided into two sub-chapters. The first one will describe the development aid and trade between Finland and African economies. The second will focus on describing the network of support for renewable energy internationalization to African countries.

4.1 Development aid and trade between Finland and Africa

The relationships between Finland and Africa have in the past been dictated by development cooperation. According to Foreign Ministry report from 2010, development cooperation still "will be the most important direct point of contact" (pg. 6) between Finland and Africa.

According to an interview with support organization 1, a lot of Finnish development funds are channeled through multilateral agreements, for example by targeting them to UN-organizations or to World Bank. Finland also has some partner countries that have been selected for long-term partnership. This partnership is bilateral, direct relationship between two governments and allows deeper and more lasting perspective to development. The long-term partnership countries for Finnish development aid are: Mozambique, Tanzania, Ethiopia, Zambia, Nepal, Kenya and Vietnam. Five of the seven cooperation partners are located in Sub-Saharan Africa. The biggest recipients of Finnish development funding were also mostly located in Sub-Saharan Africa: 6 out of 10. All of the Sub-Saharan African long-term partner countries are also on the top 10 list of biggest recipients of Finnish development aid. Official development aid is monitored by OECD organization Development Assistance Committee (DAC) (Ministry for Foreign Affairs, 2014c).

This doesn't mean that the relationships between Finland and Sub-Saharan Africa are exclusively non-commercial. Businesses have an important role also in development cooperation. Involving the private sector into the development aid is recommended, because they are believed to have the leverage and the means to implement changes in a short period of time. Therefore, some business activities are funded with development collaboration funds. A new program and fund to foster private sector participation to development innovation is currently under development (Ministry for Foreign Affairs, 2014a).

The trade between Finland and Sub-Saharan Africa has been marginal. In January-April 2014, Sub-Saharan Africa accounted for 0.9% of the total imports to Finland and 1.8% of the total value of exports. (Tulli,2014). The percentage of trade to African countries in Finland has not grown much in the past 10 years. Figure 1 shows the minor changes in the amount of trade (exports and imports) with Africa from year 2004 to early 2014. This following figure shows the import and export from Sub-Saharan Africa as a percentage of trade in total.

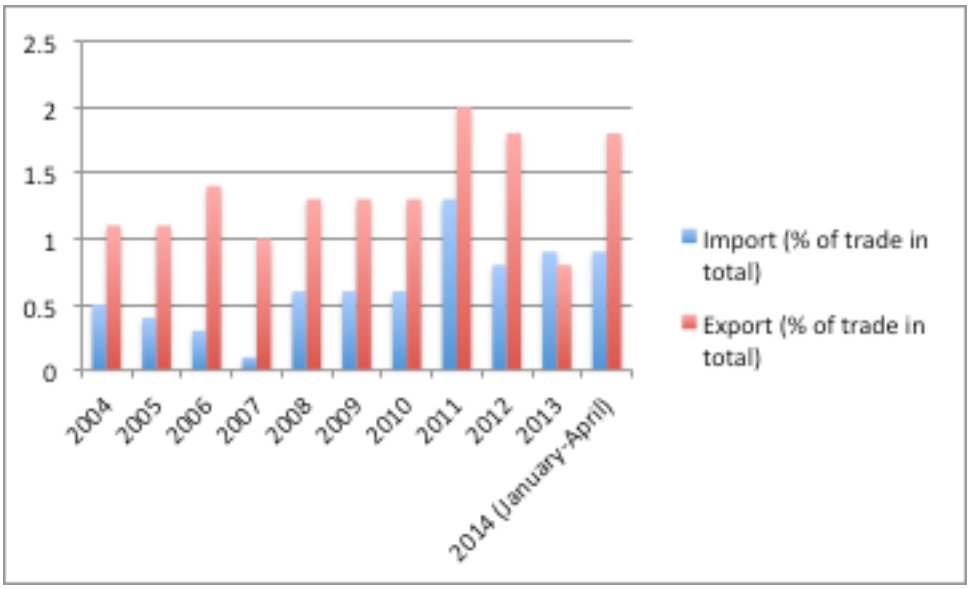

Figure 7 - The trade between Finland and Sub-Saharan Africa

The figure shows that the amount of trade between Finland and Africa is still at a relatively low level. There has not been any substantial growth in the last 10 years. This suggests that while African economies have been growing, Finland hasn't been part of this growth.

The trade between Finland and Africa has largely been focused on South Africa. From years 2004 to early 2014, South Africa was among the top three biggest export and import partners every year. Democratic Repulic of Congo has also remained in the top three biggest importers every year. (Tulli, 2014).

4.2 Internationalization of Finnish RE companies to Africa

REAfrika research process by VTT explored the possibilities of Finnish renewable energy companies to internationalize to East and South Africa. The results of the project largely

focused on connecting with the networks in the target market. Therefore, this study sets apart from the VTT report by focusing on the domestic networks and structures of support for the SMEs. VTT is the national technical research center of Finland.

The geographic scope of VTT project was East and South Africa whereas the data for this thesis is largely collected from West Africa. However, the results of VTT studys' list of challenges seems quite similar to the list of challenges constructed from experiences from West Africa. Therefore, it is suggested in this thesis that the REAfrika suggestions can also be applied to the scope of this study. REAfrika also included two non-SME actors in their study but nevertheless focused much on the challenges of SMEs.

A report by Jansson and Ryynänen (2013) suggests that the challenges of Finnish SME internationalization can be overcome by connecting with local actors on the target market. Local users and investors need proof before investing into renewable technologies.

Connecting with a larger company was found out to be extremely beneficial for a SME. Through connecting with a multi-national, SMEs gain access to knowledge and networks that are beneficial in new market entry. In return, large companies can gain innovation and dynamic solution supply through partnership with SME.

REAfrika project identified five key needs from the participating companies.
1. Finding partners
2. Market Information
3. Networking
4. Funding
5. Risk Management

Jansson and Ryynänen (2013) recognize that there are many means available to fill the information gap, but the difficulty lies within transforming information into impact.

The five key-needs identified by Jansson and Ryynänen are almost similar the main findings of earlier, international studies. OECD (2009) study lists five main barriers for internationalization as access to financial resources, identifying business opportunities, identifying and analyzing target markets, inability to contact potential foreign customers and lack of managerial time. Assuming that identifying and analyzing target market is included in

market information, all other barriers can be found in the REAfrika project, except lack of managerial time. Thus, the challenges of Finnish SMEs seem to be in line with the global challenges SMEs face. However, risk management is not highlighted in international studies.

The conclusions of REAfrika project include a suggestion that Finnish SMEs should focus on off-grid and small-scale systems. Finding a niche in special needs (like telecom industry) can provide suitable opportunities for Finnish SMEs.

4.3 Finnish networks of support for SME internationalization to Africa

The public sector network for SME support in Finland is quite extensive. There are organizations that help SMEs with different kinds of challenges. The ones related to internationalization to Sub-Saharan Africa are presented in the following. Each actor has their own set of requirements for funding. For example, Finnpartnership only funds projects that foster collaboration beyond basic exportation.

Finland has created some unique forms for supporting SME internationalization. The partnership between Finpro and the Ministry of Trade and Industry is set as an example of well functioning public-private partnership in an OECD (2009) study.

4.3.1 Description of network actors

In this chapter an overview is given on the networks of support that are specific for Finland. International organizations are described only according to their relations to Finnish actors.

The Ministry of Foreign Affairs

The Ministry of Foreign Affairs of Finland is responsible for the development cooperation of Finland. In private sector related development cooperation, it offers three financial support instruments that help the internationalization of Finnish companies: Finnfund, Finnpartnership and concessional credits. Moreover, there is a specialized organization that focuses on market entry barriers. Private sector can report about barriers related to market entry to a certain country. This tool is available to companies of all size.

Concessional credits mean that exportation of products to developing countries is supported by subsidizing the granted export credit with interest paid from the Finnish Government's development cooperation funds. The credit is thus interest free for the borrower. Nevertheless,

this tool is currently under development and therefore no new concessional credits are currently granted. Finnfund is an organization that grants long term financing for responsible companies operating in developing countries. (Ministry for Foreign Affairs, 2014b). Finnpartnership will be introduced in the following chapter.

Ministry for Foreign Affairs of Finland is also active on international level by f.ex. funding of different programs like EEP. EEP is a partnership that promotes renewable energies and energy efficiency in East and South Africa. EEP aims at producing energy services for the poor while combating climate change (EEP, 2014).

Finnpartnership

Finnpartnership helps both Finnish and foreign companies in identifying new possibilities for mutually beneficial partnerships. Finnpartnership offers three types of services: 1. Matchmaking 2. Business partnership support facility 3. Advisory Services throughout a products lifespan (Ministry of Foreign Affairs, 2014b). Because the funding for organization comes from development cooperation funds, all the supported business operations need to have an augmented positive impact on the development of partnering country. The requirement for all business projects is that they are beneficial to the developing country economy also. The developmental effects of funded and supported projects are measured and reported in Finnpartnership reports. Finnpartnership is part of the Team Finland Network.

In 2012, 18% of the funding of Finnpartnership was channeled to Africa. The biggest recipient by far was Asia with 66% of the funding. The average size of supported project has been decreasing in recent years. The average size of a project in Africa was EUR 34 727 in year 2012. The granted amount varied form EUR 1800 to 133 000. Although the larger companies tend to receive the larger grants, the financial support is mostly granted to SME's. SME's receive the support for 88% of all the project grants. (Finnpartnership, 2013)

The Ministry of Employment and the Economy

The Ministry of Employment and Economy is responsible for the entrepreneurial and innovation environment in Finland. The ministry also takes part in development cooperation. The funding for development collaboration projects comes from the ministry of foreign affairs. Organizations like Finnfund and Finpro are supported by the Ministry of Employment and the Economy. Ministry of Employment and the Economy also has some instruments of its

own that are not directly related to development aid and not funded by the Foreign Ministry but can still be used as tools to help SME's internationalize to developing countries. Tekes works under the coordination and is funded by the Ministry of Employment and the Economy. Also VTT and GTK have been actively involved in developing country business projects. VTT is a non-profit organization that provides technology research services. GTK is a provider of geological research information. Both these agencies work under the Ministry of Employment and the Economy and they have been involved in projects researching and enhancing the technological and environmental conditions in development aid projects. Ministry of Employment and the Economy is also involved in the Europeanwide initiative, ERAfrica project, to promote Europe-Africa cooperation and technological development. (Työ- ja Elinkeinoministeriö, 2013)

Finpro

Finpro is a private organization that aims at growing the competitiveness of Finland. This is done by supporting Finnish SME internationalization, increasing foreign investments in Finland and by supporting tourism. Finpro has 57 offices in 40 different countries. Finpro also manages different national programs like Cleantech Finland and Future Learning Finland. (Finpro, 2014).

Finpro organizes Export Partner Groups that aim to create groups of 4-6 companies with complementing products of internationalization strategies. The groups are collaborative programs that aid the companies in launching their export activities and building sales and marketing channels. Mutual learning and cost effectiveness are some of the benefits for the participating companies.

The organization went through changes in summer-fall 2014 that resulted in making many of the services free for SMEs. Because the empirical material for this study is collected before the changes were launched, the new service concepts are not taken into account.

ELY-centers

ELY-centers provide SMEs with education, training and grants. Grants are often channeled from international programs such as the Entrepreneurship Europe Program, which is a EU wide initiative to support the growth in SME companies. (Ministry of Trade and Industry,

2000). The ELY-center in Varsinais-Suomi region is specialized in supporting SME internationalization through the Enterprise Europe Network program.

ELY centers are administered by Ministry of Trade and Industry, Ministry of Agriculture and Forestry and Ministry of Labour. (Ministry of Trade and Industry, 2000, pg. 29).

Tekes

Tekes is the Finnish Funding Agency for Innovation. They offer technology, industry and growth funding to companies, public research institutions and some private members of third sector. The goal of the funding is to promote innovative practices, internationalization and global competitiveness of Finnish clusters. This is done by direct funding tools to organizations or by investments in special funds that share some of the goals of Tekes. (Tekes, 2014).

Funding for companies must be for these purposes:
1. Networked research funded partly by companies or other actors benefiting from the research
2. Research aiming at new innovative business activities
3. Strategic research for future needs
4. Funding for high-level researchers coming to Finland from abroad
(Tekes, 2014)

Tekes has outlined three strategic areas that they focus their support on: Natural resources and sustainable economy, intelligent living environment and vitality of people.

SMEs are at the focus of Tekes. The main target group of the organization is SMEs looking to internationalize through innovation. More than one third of the available direct funding is directed to SMEs. In addition, these SMEs receive funding from the specialized programs and funds that are supported by Tekes. (Tekes, 2014). One example of such was the Groove program, which ended at 2013.

Groove

Groove is a special program by Tekes. The goal of the program is to support the business development of Finnish renewable energy companies. The program is directed to SMEs but larger corporations are encouraged to participate as drivers of networks.

Groove started in 2010 and will finish at the end of 2014. The program offers funding for SMEs and research organizations and coaching services for SMEs. In addition, the program organizes seminars, workshops, mapping of domestic and foreign potential, networking trips and internationalization consultancy services. SMEs can apply for funding for projects concerning internationalization, business model development, development of capabilities or the products or innovation commercialization. (Tekes, 2014b). For example, REAfrika research by VTT was funded by Tekes.

Team Finland

Team Finland is a network of actors, who aim at promoting the interests of Finland in foreign countries. The "Team Finland" brand acts as an umbrella term for existing public organizations thus simplifying the communication and the mission of its members. The heart of the network consists of three Ministeries: Ministry of Foreign Affairs, Ministry of Education and Culture and Ministry of Employment and Economy. (Team Finland, 2014).

Team Finland provides a channel for private enterprises and other organizations to communicate with publicly funded organizations in a more unified manner. Also, a longer time perspective is encouraged by the long-term goals that stretch across government terms. (Team Finland, 2014).

Chambers of Commerce and Finnish embassies

Chambers of commerce and Finnish embassies were mentioned as good sources of local information. Each of the Finnish embassies have a Team Finland presentative that is specialized in assisting Finnish companies. Chambers of Commerce were seen as good source of basic information about the target market and the business culture. Neither of these actors were seen useful in connecting with potential customers or researching deeper on certain industries or potential partners.

International Organizations

EU remains as the single most important framework provider for Finnish Africa policies. Finnish institutions can receive funding and support from EU wide initiatives. For example, Enterprise Europe Network channels support through Varsinais-Suomi ELY-centre. Nevertheless, the Nordic countries also have a significant role as a reference group for Finnish trade in Africa. Nordic country collaboration shows in for example Nordic defense administration to develop African crisis management capabilities. (Ministry for Foreign Affairs, 2010)

Finland is part of the African Partnership Forum (APF), an organization set up to support G8 Africa initiatives. (Ministry for Foreign Affairs, 2010)

4.3.2 Evaluation of the network

Jansson and Ryynänen (2013) emphasize the synergies between different actors of the network. According to them, collaboration is needed between home and target market governmental organizations, private sector and research organizations.

Also, the different types of actors should gain synergy advantages from collaboration with each other. This is in line with the OECD-APEC,(2006) and OECD (2009) studies that promote the collaboration of actors on national, supra-national and private sector level. The synergies could be found in for example educating sufficient amount of people on expertise on SME internationalization, providing legal documentation to international partnerships or assisting SMEs to gain access to suitable financial instruments. A common forum would enable more efficient communication and getting more out of the private sector actors. (OECD-APEC, 2006; OECD, 2009) Adding the international element from Jansson and Ryynänen's (2013) research, the best option would be an international common platform for research organizations, government organizations and private sector. The outcomes of such platform would be to faster networking, learning and business execution. This kind of collaboration should be started by combining research with private sector market entry.

5 FINDINGS

This chapter will describe the results of the interviews and the observation. The results are organized categorically, which makes it easier for the reader to see the main groups of challenges and suggestions that came up. Within each categorization, it is explained how many of the interviewees brought it up.

The interviewees are coded according to the type of actor they represent. There will be three groups: 1. SMEs (including the three SMEs) 2. Supporters (including public organizations, private trade organizations, private consultants and educational institutes) 3. NGO experts (representative of an NGO and expert on NGO-private relationships).

In the first part of this Findings section, the challenges that came up in the interviews are introduced as well as evaluated by the frequency they came up with and also by the significance given by the interviewees. In the second part, the suggestions to overcome these challenges are evaluated by the same measurements.

There's no doubt that the potential of African markets has been noticed. All interviewees agreed that the significance of Africa as a target market has risen in recent years. They believed that African economies will rise in the coming years and that Finland needs to find a way to tap into this development or risk losing global competitiveness. There's enough demand in all sectors, but competition can also be fierce in some locations. Competition can be beaten by developing a unique offer, adjusted to the specific needs of the location. Understanding the market and connecting with potential customers were seen as keys to success.

5.1 Challenges

All of the interviewees were given the chance to freely name the biggest challenges for renewable energy SME internationalization into African countries. In this subchapter, all the challenges that came up are presented. The following figure summarizes the challenges that came up in the empirical part. The figure is applied from the literature part with two categories added: business culture and risk management.

BARRIER	INTERNAL	EXTERNAL
Allocating human resources to plan and implement internationalization	Allocating managerial time.	
Finances	Low resources. Need for funding for customers, logistics and working capital.	Not suitable forms of public finance available. High recuirements for funding.
Informational constraints	Not enough managerial time to find out about target market.	Poor quality and low availability of target market data. Need for customer education.
Product related costraints	Designing full service packages	Making customers understand the value of service and after-sales.
Distribution & Logistics	Difficulties in gaining reliable foreign presentation. Infamiliarity with distribution channels and unability to reach them.	Difficulties in gaining reliable foreign presentation. Cost of transportation. Reachability of rural and some urban markets.
Target market environment	Not enough knowledge.	Infrastructure. Tariffs and NTBs. Gaining reliable foreign representation.
Domestic market	Identifying public support programs.	Lack of domestic demand. Public support & funding systems.
Connecting with customers	Finding and connecting to potential customers. Creating trust.	Support for finding customers.
Risk taking ability	Low risk taking ability	Lack of partners for risk sharing: need for clustering and risk financing.
Business culture	Adapting and understanding local culture	Applicability to Finnish business culture. F.ex. Things take time.

Table 5 - Summary of empirical challenges for RE SME internationalization

5.1.1 Finding financing for internationalization

Financing was named as one of the main issues in all interviews. Also the Africa Sense Making Workshop focused largely on finding finances for the internationalization. Many African countries are very expensive for a SME to enter. The additional costs arise for

example from transport, customs and filling the gaps of the target market business environment.

Three of the interviewees were concerned on the Finnish public sector funding system for SME internationalization According to them the system is not up to the international standards. This can cause drawbacks in global competition for projects. Countries with better funding have a competitive advantage when they can offer the customer financial reliability.

The channels for SME support are spread into different government organizations, all with their own agenda. A single SME might get funding from many different organizations and sometimes the funding channels are overlapping: for example, Tekes and Finnpartnership could fund same kind of consultancy help.

The background for some of the problems within public financing may lay in the political structures. Some of the support for SMEs comes from development cooperation funds, which leads to having to follow certain rules in funding operations. It is illegal to use the development funds to promote the interest of a certain private actor. One of the support organization representatives argued that this is taken too literally and the thinking of government officials is still focused on traditional models of development aid. Because of this, the systems of support for businesses remain inefficient. The project results are not measured in trade growth but rather according to developmental results. All actions by the SME need to be reasoned in developmental measures. This method is contradictory to the Aid for Trade principles, where successful trade relationships are considered as developmental outcome.

The Ministry of Foreign Affairs channels some of its development funds to promoting business between Finland and developing countries. The funds are channeled through three tools: Finnpartnership, Finnfund and concessional credits. Funding from Finnfund is unachievable to the most of SMEs because of the scale demand of the funded projects. For example, Finnfund covers credit from EUR 1 to 10 million. This loan can cover up to a third of the whole investment of the project, which means that the minimum total cost of a project has to be at least EUR 3 million. (Finnfund, 2014).

A need for replacing option for concessional credits was brought out in Africa Sense Making Workshop. Concessional credits were needed to fill the gap of financing for the customer. This reduces the risk of the Finnish company as well because they can be more certain that the customer is able to fund the project. One of the SMEs stated that client funding is one of the key in order to get offers for projects. Discontinuing concessional credits thus weakened the position of Finnish companies, with expensive products and need for client funding.

Tekes has more flexibility in their funding options, but still problem arises with SMEs with expensive products. Most of Tekes's funding options are tied to the assets of the company. The enterprise should posses a certain percentage of the needed funds to be qualified for the loan. The strict requirements for investing capital caused issues especially for one of the SMEs. Because their products demand high initial investments and expensive prototypes, they couldn't access any form of funding from Finland.

Finpro, a public private cooperation, was estimated to be too expensive by all SMEs. The commercial return on their consultancy services was not sufficient to cover the costs. Although the organization has developed itself to a more SME friendly decision, the resources of all public actors should be focused to speed up internationalization of SMEs.

The form of available funding was also criticized. Although there are grants and project funding available, direct capital funding for the companies is not available. Even Finnpartnership cannot give this type of funding but rather has to coordinate the funds to a third party (f. ex. Hiring consultants) or to a certain project. This is due to the development aid source of Finnpartnership's funds: The funds cannot be targeted to benefit a company as such but need to have developmental, measurable effect.

If the public sector financing institutions fail, there are a variety of international sources and local sources in the target market that can be used. Local funding options are mostly not very appealing alternatives for SMEs, because of the high costs for the funds.

5.1.2 Lack of managerial time

All SMEs mentioned the lack of time as one of the constraints in market entry to Africa. Researching the market information and forming connections would take a lot more time than they have. Lack of managerial time is an underlying constraint to other barriers. For example,

with more time on their hands, SMEs could find more suitable forms of financing or connect with partners in domestic and foreign market.
Especially many of the challenges arising from market conditions in African countries could benefit from more managerial time. With more time on their hands, companies could learn about the local market environment and connect with local partners and customers. Both informational and cultural constraints could be effectively diminished with more managerial time.

5.1.3 Lack of risk taking ability

Although the market conditions can be quite challenging in many African states, four representatives of support organizations consider the lack of risk taking to be a bigger challenge for the internationalization of Finnish SMEs. Partly due to the simplified image provided by the media, the market entry risks are perceived to be far greater in Africa than they actually are. It seems that the interviewees with most practical experience of African markets perceive the risks to be lesser than the interviewees with less experience. None of the SMEs named lack of risk taking ability as one of the challenges of entering African markets.

There are also countering opinions on the risk taking ability. One SME suggested that the lacking market information could lead to false hope for the SMEs. Because of the incomplete data, the companies might not be prepared to meet all the challenges that arise from the business environment. A typical example of this could be the commission to retailers, which can be significantly larger than companies initially estimate.

5.1.4 Home market demand

With renewable energy solutions, Finland has traditionally been strong in bio-energy sector. Other fields like solar energy can suffer from the lack of domestic demand. Large natural forests create good basis for bio-energy development whereas the weaker sunlight exposure may result in consumers choosing other options. This has been one of the major drawbacks for solar energy development in Finland. Finland however has high skilled professional in some niche areas of solar energy systems. Specialization for example in solar panel materials has opened ways to global value chains for some companies.

Domestic demand is vital for the growth of an SME. Without reference projects, it's hard to gain a foothold in international markets.

One interviewee took an example of feed-in-tariffs in Germany that have provided larger domestic demand and therefore reference projects and financial security for the local companies. Geographically Germany is not so far from Finland. Nearly the same solar energy levels could be achievable here. According to the interviewee, the biggest difference lies in public support.

5.1.5 Connecting with retailers and clients

According to all SMEs, it's very challenging to find a capable and reliable business partners from many African countries. New contacts were gained through international fairs and informal relationships for example. Personal connections and coincidental encounters had a big role in many of the stories by the SMEs. Nevertheless, even if potential partners and distributors could relatively easily be found, it takes time and effort to find out whether they are actually capable or committed. This is noted in the public support systems and Finnpartnership's matchmaking service aims to assist in this issue.

Even if a SME would succeed in finding an agent or a retailer, the partners can have a lot of products from competitors also. In this case, it is often questionable whether they will truly promote the interests of the SME or not. Some agents have also been known to take competitive products to their selections just to lower the competition for their existing partner. A committed agent, retailer or other partner from a developing country is often not up to the standards of a Finnish company. This might be due to the lack of education in the background of the partners.

Customers on the lower income levels of African markets can often be very price sensitive. This adds requirements to the marketing and product development. The quality of the product needs to be communicated well in order to gain trust of the customer segments. Connecting with customers from different cultural background can be challenging. The key to understanding the customers and building the bond of trust with them was seen in presence. Being present in the market either yourself or through a capable business partner was experienced essential by all SMEs.

All SMEs seem to agree on that the first priority in entering African markets is to find a customer. Because of the relatively low financial flexibility of the SMEs, the investments

made in market entry need to start producing profit soon. One SME described this situation: "There is no point trying to gain a lot of market information if you don't have a client there."

5.1.6 Lacking capabilities of local distributors and staff

Deriving from the experiences of one support system representative and one SME in Nigeria, the local business partners may have very little international purchasing experience. As a result of this, price often becomes a dominant factor. There is little experience in negotiating maintenance agreements or insurance or education for the use of technology. However, there are signs that this is changing and that some actors have grown tired on the poor quality products with recycling issues. This is good news for Finnish companies whose competitive advantage often lies within quality and service.

Another support organization pointed out the need for education in entering new markets. The local staff often needs extensive education to be able to meet the quality needs. Quite often small enterprises cannot afford to hire an education professional but rather take care of the education of the staff themselves. This increases the expenses for the company to set up operations in the developing market.

5.1.7 Finding partners in companies and non-market actors

Gaining access to the supply chains of multinational corporations (MNC) has proved to be challenging for all SMEs. All the larger companies have their existing network of suppliers and they are reluctant to bring in a new player unless there are clear benefits to be achieved. Moreover, large companies tend to favor companies with the same country of origin. Thus, the best chance for Finnish businesses would be to find a Finnish multinational company. The options for finding partners like this are limited in a small economy like Finland. There are not that many large international companies to choose from and the companies usually already have either a competing product or a well-established supplier. Connecting with a MNC is thus a preferred but hard to achieve option for SMEs. One of the interviewed SMEs had found a partner with complimentary product in another Finnish SME while another was currently still looking into connecting with a MNC.

Connecting with another Finnish SME would seem like a viable option. However, this would require finding another company with perfectly complimentary products to avoid competition. Nevertheless, there are limited amount of SMEs in the Finnish markets and there might not be suitable products available for maximal synergy effects.

Partnerships can be formed also with nonmarket actors. One of the interviewed SMEs was involved in a project with an educational facility. The program set the product to a larger context and used the products in a complete service package. After a successful completion of a project, they nevertheless struggled to find a suitable owner for the service concept they developed. The short-term commitment from project-based work seemed to form an issue for involved SMEs. The problem lies in transforming a successful project into business opportunities for the involved companies. The continuation of a project is only secured if a suitable owner can be identified. In this case, the service package was too large to be incorporated into the business practices of the SME.

Some international organizations offer help to SMEs within the scope of their programs. These programs are often informational by nature. (Fliess & Busquets, 2006). All of the SMEs stated that although market knowledge is helpful, there is no point using too many resources in it. The priority should be in making a sale and connecting with customers. This controversy could explain the low participation rate of SMEs in support programs. (European Comission, 2010). Because lack of managerial time is a challenge in SMEs, they are not likely to use this scarce resource on gaining information that is not directly transferable to business profits.

5.1.8 Market Information

According to one of the SMEs, there's very little information available on the real market conditions in different African economies. Even if some information could be found, it's usually of poor quality and cannot be taken as fully reliable. The available information services are often quite expensive. The country profiles and connecting services of Finpro have been unaffordable for a SME. Moreover, the benefits from these programs have often been well behind the costs.

Media also plays an important role as a source of information. All interviewees with experience on African markets agreed that the image provided in Finnish media about Africa does is not sufficient. Hardly any news represents modern Africa with possibilities. The news is largely connected to crisis situations and development aid topics. There is a need to portrait modern Africa with rising middle class. The lacking and one-sided information in media has two folded consequences: Firstly, the SMEs are not prone to choose Africa for business

location and secondly, if they decide to internationalize there, the risks are greater because of the faulty or lacking expectations.

5.1.9 Business Culture

Two of the support organization representatives underlined the significance of cultural understanding in making business with a distant country. According to her, Finnish companies tend to have common mistakes in the way they do business.

For example, Finnish companies tend to be too modest and too soft compared to their competitors. Forming personal connections, giving gifts and visiting families is not common in Finland but highly evaluated in West-African markets. Finnish companies lack the knowledge of local business practices and therefore may loose potential customers. Finnish companies often expect things to happen in the same way as in here. Things over in West-Africa take time.

Three interviewees highlighted the importance of trust in forming business relations. It could be hard for a local businessman to understand the business practices of a Finnish company and it might be hard to find common rules for cooperation. One SME described this problemacy: "Nigeria is as far from us as we are from them. They trust us just as much as we trust them."

All the interviewees agreed that the cultural differences will not prevent forming mutually beneficial business relationships. Both parties can learn from each others' way of doing business and find a common ground.

5.1.10 Product related requirements

One support organization representative stated that foreign companies in West-African countries seem to be lacking in sufficient post-marketing systems. Customers are offered products that have no system for maintenance or no recycling plan. Sustainability of the products and the impacts to the local community and environment are not sufficiently considered. A complete package of after-sales services like maintenance and customer support could also become a source of competitive advantage for many of the Finnish SMEs.

"Made in EU" seems to carry some brand prestige to some customers. Many clients are tired of the poor quality that they get from some suppliers. This has been noted by all of the

interviewed SMEs. Even though Finland wouldn't have any brand equity as a country of origin, there is potential in competing with premium quality image. This nevertheless requires establishing good relationships to local clients and trust.

The price of the product can be too expensive for some customers. This is related to the target customer segment. Since there is demand also for premium quality products, price wasn't experienced as a big constraint by any of the interviewees. The high price should be explained with a higher quality. The problem thus lies with communicating the quality of the product effectively. Since Finnish systems often can't compete with prices, the customers need to be reasoned how the higher price is reflected in the quality of the product.

One of the SMEs explained that the problem with their pricing is the high initial costs of their systems. Their energy systems are cheaper than the traditional diesel generators in the long run. Although the initial price was high, in a couple years of time, the investment had paid back its price. Therefore, the product price was not an issue in long-term but required nevertheless high initial input.

5.1.11 Issues related to target market environment

There are many risk factors related to the market conditions in African markets. The market conditions are especially crucial for SMEs who don't have the resources to overcome many of them. There is large variation between countries and areas. The challenges in this chapter are mostly from experiences in West-African states: Ghana and Nigeria. It is assumed in this study that many other African states share the same underlying features, for example poor infrastructure or inefficient education system, and thus share the same challenges.

Most common market environment related challenges named were poor infrastructure and lack of capable work force. Underdeveloped legislation, lack of institutions and expensive customs and tariffs and competition were also raised as problematic issues.

One SME explained that physical logistics and building of distribution chains has been one of the main barriers in many African states. The existing infrastructure can often be of poor quality and product delivery would become too expensive for an SME. This has lead to searching for partnerships to overcome the distribution issue. Finding local retailers that

would take care of the distribution or finding a MNC partner with existing linkages were suggested solutions for these.

Competition can also be fierce depending on the country and location. Following the rise of income levels in many African countries, many multinational companies have decided to strengthen their foothold in the continent. One support organization representative stated that once a country has gained a foothold in a certain market, it is easier for other companies from the same country to follow and strengthen the relationship. For example, Ghana has a strong presence of German and Turkish companies, which has opened doors for even more companies from Germany and Turkey. However, all of the interviewees agreed that there is so much market potential in the rise of income in African countries that there is room for more companies. The strategy can thus either be to compete in the same states where there are a lot of other foreign companies or to find uncharted opportunities in new markets. There are challenges in both options. The markets with more competition tend to have more established systems for distribution and business support whereas in less competitive markets there's potential for first mover advantages.

Since many of the African states lack the mindset of environmental friendliness and the legislation to promote green solutions, renewable energy doesn't have the same echo as in western countries. The competitive edge has to be created otherwise. Instead of building the brand on green values, economic benefit and quality should be at the frontier of all communication. All the interviewees with experience on African markets agreed on this. This mindset was also predicted to slowly change. Especially in places where ecological damage is visible, more and more consideration is given to the sustainability matters.

5.2 Suggestions to overcome challenges

This sub-chapter collects all the suggestions and ideas that came up during the interviews.

5.2.1 Improving public funding

Currently there are many channels through which SMEs can get public funding for their internationalization. This can lead to overlapping use of resource and confusion from the SMEs. A simplified solution would make it easier and more time efficient for SMEs to apply for the right kind of funding. Team Finland was set up to support the idea of more simplified and cross-institutional communication.

One interviewee suggested that all support activities from various public organizations should be concentrated under Tekes. This would simplify the structure and remove the overlapping of support systems.

A popular suggestion among the interviewees was transforming the There should be start-up like capital funding available for starting ventures in developing countries. Not just grants and project based funding. This would allow longer time perspective and more control to the SME. This particular suggestion came up in two interviews.

5.2.2 Clustering

In this study, "clustering" is used to describe all the activities that bring together companies from the same field to reach a common goal. Thus, clustering is not limited to official cluster associations or even to the same geographic area.

All the interviewees agreed that clustering and entering a market in bigger groups is a good way to share risk. By going in groups companies can build complete solution packages for customers and share the financial burden of business entry. The best solution for a small company would be to find a steering company, a company that has already established it's presence in the market and has a complimentary product. Through this company, the SME could gain valuable market information and financial resources to establish themselves on the market.

In the interviews, four different options were named for forming the cluster: 1. Official associations like Cleantech Finland or Lähienergialiitto 2. Projects from educational institutes like Connect Africa of Laurea or SunEDU from Metropolia 3. Finpro organizes Export Partner Group activities that bring together companies from the same field 4. Private partnerships with another SME or a larger company

5.2.3 Presence on the market

All the interviewees agreed that the best way to gap the lack of market information, build the trust and to connect with the best available retailers or agents is to be present on the market. Only by being present in the actual target market can truly reliable and meaningful information about the market conditions be collected.

This is in line with the theoretical findings. Sandberg's (2013) research on entry nodes suggests that the larger part of the network is present on the target market, the more commitment there is in the partnership and therefore the trust and effectiveness are increased. The more a company is present in the market themselves, the more they learn and build more efficient relationships with local actors. Two support organization interviewees saw this as one of the biggest obstacles for SME internationalization to Africa. They saw the lack of risk taking ability and commitment from Finnish SMEs as one of the obstacles of getting a foothold in African markets. The presence of the company itself is seen crucial for the learning process and success of the venture. This is in line with Sandberg's (2013) theory of entry nodes and commitment. As presented in the challenges chapter, creating trust and commitment is vital in African markets.

The form of presence and the stage of commitment correlate often with the costs. Using a third party representatives, like the embassies or Finpro, who already have a well established presence on the market may be less costly than establishing a business unit. Nevertheless, according to all of the interviewed SMEs, Finpro matchmaking services are often almost as costly as sending a representative of the company to the field.

5.2.4 Becoming part of a global supply chain

According to three of the interviewees, the best way for a Finnish SME to succeed internationally is to find a lot in global value chain and participate with a narrow specialty. For example, the Finnish solar industry's most successful sectors are inverter and electric grids technology and development of materials for solar panels. One interviewee described supplying products or services for a large multinational company (MNC) that already has established itself on the target market as the safest and most realistic way for a Finnish SME to enter African markets.

This is in line with the strategic focus of one of the SMEs. The company views itself as a manufacturer of portable solar panels. Therefore, it would be highly beneficial to find a MNC that is already present at their target market and can take care of the marketing, delivery and sales to end consumer.

5.2.5 Sharing responsibility with local partners

One support organization representative suggested that it would be beneficial for Finnish companies to let local distributors take care of the marketing. Because the local actors have

the most information about the market conditions and consumer needs in the market, it might be wise to delegate more responsibility to the local actors.

This would mean that the SME would assume the role of a manufacturer, rather that trying to conroll the whole operations. This strategy would better suit companies, with small and simple to use product selection, presented by one of the interviewed SMEs. SMEs that have a more complex and maintenance requiring product, need to take more responsibility on the after sales operations also. Therefore, companies with complex products would need to have a capable and educated local partner who can maintain the quality and reputation of the product. As stated in the challenges chapter, these partners can be quite hard to find in many African economies.

5.2.6 Fostering knowledge sharing

A representative of educational institute suggested that the lack of market information could be helped with more intense knowledge sharing within the support network of the SMEs. The SMEs could gain initial market information from different institutions like Chambers of Commerce, Finnpartnership or Finnish embassies.

It was also suggested that bridging the knowledge the gap can take place in Finland. By bringing more African entrepreneurs and officials to Finland, collaboration ties and learning process can begin already in home country. This could mean for example bringing students, not only to universities but also to ad hoc training programs. This also gives the African actors change to connect to Finland and learn about the local business culture.

5.2.7 Focusing support on customer contacting

The focus of support activities on learning and knowledge sharing is questioned by one of the SMEs. The current support systems are too focused on gathering information about the target market. The interviewee claims that small businesses could benefit more on practical client contacting activities than gathering information on potential markets. The resources could be best use in finding customers on the markets. To some extent it is beneficial to know about the target country but the real learning process starts when you have the contact to the market and receive feedback from your clients.

5.2.8 Using existing development aid channels

According to Ministry of Foreign Affairs of Finland, development aid is still the primary point of contact between Finland and Africa (Ministry of Foreign Affairs, 2010) Using the contacts and information from development aid projects could make sense in SMEs trying to seek channels for market entry.

None of the interviewed SMEs listed development aid channels as a significant source of support for their internationalization to African countries. Collaboration with development aid actors was seen to represent more the corporate responsibility and charity than business opportunity.

However, according to the literature review, non-market actors have a significant role on the BoP markets. NGOs working on the field can help SMEs fill the gaps caused by challenging business environment. (Reficco & Marquez, 2012). Development aid linkages can also provide market potential in the form of demand for products. Development aid organizations could thus be seen as potential target customers.

One of the interviewees suggested that there could be a lot of potential in supplying for global intergovernmental organizations such as World Bank. An interview with a representative of Finnish NGO revealed that the networked structure within NGO field can also provide large potential for private sector. Each sector of development aid (for example education) has cluster meetings with global participants. Information about new products is spread worldwide and further implemented in various projects within different aid organizations. These cluster meetings could act as a cost effective and efficient marketing channel even for SMEs. There are examples of companies who specialize in development aid products.

Collaborating with private sector would also be beneficial for the goals of development aid organizations. An interview with a NGO expert revealed that also Finnish NGO sector is slowly turning more acceptant on the collaboration. The growth has been slow but steady for many years. A lot of works remain to be done both within the NGOs and in the businesses.

In accordance with the statement of Calton et al. (2013), there is a gap of trust between NGOs and private sector companies in Finland also. Researcher in NGO sector stated that the expectations from NGOs towards companies and vice versa often fail to meet. The NGOs

operate within their own scope of interest, trying to promote their own goals and many of the people working within these organizations don't have experience from business life, leaving them unable to understand the limitations of profitability to the company. Of course, this varies greatly from one individual to another. Some have more business logic understanding than others. There are also some doubts from the SME sector towards the NGOs. One SME representative evaluated the collaboration with NGOs to be small-scaled and difficult. The NGO partners seemed often to be lacking on understanding of business logic and were mainly focused on promoting their own agenda. NGOs were considered more as goodwill operations than a viable opportunity for business for them. Also, NGOs at the foreign target market often proved to be lacking in skills and in knowledge for being of much help to the company.

Interview with the Finnish NGO revealed that the private sector collaboration and procurement within NGOs can often be underdeveloped. Because the majority of NGOs receive funding from public sources, they also have to follow the public procurement law. This law requires that projects exceeding certain minimum amount will have to be set under a public price bidding. This restricts the possibilities NGOs have in controlling their procurement. Nevertheless, by setting the framework conditions within a price bidding narrow enough to include only a few participants, NGOs are able to control the companies they hope to collaborate with. The NGO representative evaluated that the public procurement law many times creates unnecessary bureaucracy and doesn't secure the fairness in the most effective way. The real fairness of public biddings and the costs to the source organization should be further researched.

In addition to potential customer segment, development aid and NGO sector can offer businesses other kind of advantages. There is a vast storage of information about the target market culture within NGOs that operate on the grass root level in a developing country. The ways in which the companies could harvest and use this information is still largely unexplored. The past attempts into this direction have often failed because of the investment of time and finances that it takes from both parties to establish a relationship. Especially small NGOs often have no paid employees and therefore lack the resources to further research the possibilities of connecting with the private sector.

According to the interviewed expert on innovation politics, the era of traditional development aid is over. The best way to create sustainable change in developing countries is to establish responsible business relationship with them.

One of the interviewees described the philosophy behind helping through business by stating that providing the right tools for the people through responsible trade is the best medicine against poverty. He used the old proverb to highlight this point: “Don't give man a fish. Teach him how to fish. And my view is that there is no need for special teachers. It's enough to make sure that the environment enables learning. Then they will figure out how to feed the village.”

6 DISCUSSION

This chapter combines the results of the Finnish case, literature review and the interviews to form conclusions on the challenges and opportunities of Finnish renewable energy SME internationalization to Africa. The most significant findings of the previous parts of this research are presented in this chapter.

The challenges that came up in the interviews were to large extent similar to those presented in international literature and in the REAfrika project study. REAfrika listed the top five needs as finding partners, market information, networking, funding, and risk management. (Jansson & Ryynänen, 2013). These issues came up also in the interviews as the largest challenges.

It seems like the biggest challenges are interrelated. The need for risk management for example can be dealt with by finding the right networks to share the risk with. Also, funding can be gained by networking with right organizations.

Whereas the literature described clustering and networking as solution to many of the issues, the empirical research revealed that they can pose challenges of their own. Connecting with companies and non-market actors have a lot to offer for SMEs, but finding the right partners can prove to be challenging.

6.1 Role of governmental organizations

Both, domestic and target market governments play an important role on the success of a market entry. The role of the governmental actors is emphasized in renewable energy literature as well as in SME literature. Companies in both these groups seem to be in a vulnerable position in the market and therefore need support from governmental organizations.

One of the most important roles of governments is to act as regulators, who set the common rules for the game. (Reficco and Marquez, 2012). These regulators were found to be especially important in internationalization to BoP markets. The Ministry for Foreign Affairs

of Finland has taken responsibility on many of the regulator tasks. By fostering bilateral and multilateral collaboration with African countries and by actively removing trade barriers, Finnish SME internationalization is indirectly supported. In the interviews, regulator duties were seen more of an issue with the target market governments. Fixing the regulations on tariffs for example, was named as one of the biggest enabling factors by one SME.

However, in the interviews, the supporter tasks of the government came up more often and were more appreciated. The duty of a home-market government was to provide support channels for financing, gathering of market information and partnering. Concrete actions that have a direct effect to business profits were more appreciated than regulator tasks. None of the SMEs mentioned any regulator tasks as a suggestion to overcome the barriers of internationalization. Finnish government offers supporter services through several channels. Governmental actors such as Tekes and Finnpartnership supply the companies with information, financial support and networks to help the internationalization process.

In Karekezi and Kithyoma (2003) list of barriers for RET dissemination in Africa, governments play a vital role in enabling the successful dissemination. They claim that most governments don't have effective programs for supporting RETs and most of the projects thus operate on ad hoc principle. This can be applied to the situation in Finland in a sense that there is yet no single channel for support of RE SME internationalization but all the companies need to gather their own support packages from different support organizations.

Government has also responsibility to provide long-term and low-cost financing for RE projects. (Karekezi & Kithyoma, 2003). This goal has to some extent been met in Finland due to the many options available for financial support. There are many channels available, but the requirements for the use and the scope of the support may limit the accessibility for many SMEs. Also the form of grants and project based funding makes the time sphere of support functions short rather than long.

6.2 Improving public finance system for SME internationalization

Financing the internationalization of Finnish renewable energy SMEs can be quite challenging for many reasons. Financing has been named as one of the most important barriers for renewable energy projects as well as SME internationalization. The role of

government in filling this finance gap is emphasized both in SME and renewable energy related literature.

Financing seems to be challenging globally and Finland makes no exception. There was a consensus among the interviewees that Finnish public support system for internationalization could be better. New funding options were suggested in capital funding instead of grant and project funding. This was predicted to make the time perspective longer and reduce the risk of internationalization as well as give better control for the SMEs. Three interviewees suggested start-up funding system as a model for internationalizing SMEs. Start-up like funding should be available for new international ventures. Another suggestion was to make the funding for SMEs more focused on one organization rather than having multiple public organizations involved.

In renewable energy, long-term and cost-efficient funding for new projects is often not available. Even though governments are named as key actors for the dissemination of the technologies, too often the financing is left to the private sector. This might be due to the lack of knowledge about renewable energy technologies that the risks are often over-estimated. (IRENA, 2013). Also, because of their SME status, some requirements can prove to be too much. For example, requiring traditional, tangible collateral can be difficult for an SME with little tangible assets. (Ministry of Trade and Industry, 2000).

Unlike the traditional energy industry, renewable energy plants have high initial costs but will pay back the investment over time. Because of this, investors and developers need a predictable business environment. (IRENA, 2013). This can prove to be especially tricky in fragile states with unstable political situation or weak economy. Some possibilities to acquire funding are suggested to be in micro finance and clean development mechanisms (Karekezi & Kithyoma, 2003). Financing needs to be considered, not only for the company but in some cases for the customer as well. (Leonidou, 2004).

Concessional credits were found to be a good tool in projects, where the financial stability of the customer is not at the best possible level. One SME described the customer credit schemes as a necessary component of their product. Without it, the customers are not willing to accept the project. The statements about concessional credit schemes supported well the BoP theory

about market creation. In BoP context, it is often vital to organize funding for the customer to secure their purchasing ability and reduce the risk. (Calton et al., 2013)

Public funding system was also criticized for being too focused on traditional development aid. Developmental measures are used in the outcomes of the projects rather than measures of trade. This seems to differ from the current trend of combining development aid and trade. Aid for Trade uses trade outcomes as a measurement on the success of the project. (OECD-WTO, 2013). All of the interviewees agreed that responsible trade is an effective tool to reach developmental targets. Nevertheless, trade outcomes are not used as a measurement on the success of the developmental trade projects. The projects need to have measurable results on the target market immediately.

6.3 Strategies for filling the knowledge gap

The literature emphasizes the challenge of gaining knowledge about markets that are geographically and culturally distant. (Calton et al. 2013, OECD, 2009). Market information was also named as one of the main challenges in both REAfrika project and empirical part of this thesis.

BoP literature emphasizes NGOs and grass-root organization as a way of filling the information gap. Partnership with development aid organizations and NGOs is further examined as an option for partnering in Chapter 6.7.4.

All of the SMEs claimed that the quality of information available is not adequate and that the information services from Finpro are expensive. However, Finpro offers basic market information free of charge. This was not used by any of the SMEs. It seems like the SMEs didn't know that Finpro had this service available but rather had the image of Finpro services as expensive and not worth the investment. Thus, there might be lack of information with the SMEs on the available services.

One of the interviewees mentioned that although gaining market information is important, the emphasis should be on connecting to potential customers. Customer interaction is the best way to get feedback and learn about the market.

All interviewees agreed that presence on the market is necessary in order to truly learn about the market environment. However, establishing themselves on the market is a big investment for a SME and therefore, they felt like they would like to get some more information on the market before making a big decision.

6.4 Product development: core product or full service package

Two lines of solutions about the product development were suggested in the empirical part of the research. First, the best option for market access for Finnish SMEs was seen in focusing on core product and finding a foothold in global value chains. Second, the competitive advantage of Finnish companies could be in offering full package solutions for the customers. Taking care of maintenance, customer service and recycling of the product was seen as a source of competitive advantage.

The product development strategy is dependent on the decisions of partnering. In order to supply full service solutions, the company needs to find partners to take care of all the components locally. This requires finding capable local partners for customer service and maintenance. Also some other functions like educating the customer on the use of the product need to be taken care of. Whereas by focusing on only supplying their core product, they can focus on the role they are most comfortable with.

The interviewed SMEs seem to have taken different approaches in this. One of the SMEs described themselves as “manufacturing company”, indicating that they wish to focus on their core product. Another SME had formed partnership to offer full package solutions. They delivered their physical products with education on how to use them and agreements on the maintenance.

6.5 Connecting with customers

According to BoP theory, connecting with a BoP customer is very different from connecting with a ToP customer. In BoP, there is less or no market information available and often the company has to create a need for the customer to purchase a product that they’ve never had before (Calton et al., 2013).

In the empirical part of this study, two ways of creating the customer need came up. Firstly, trust was estimated to be an important factor in internationalization attempts. It was considered a key enabler for forming sustainable relationships with retailers and customers. Secondly, communicating about the benefits of the product effectively was deemed crucial in order to beat the competition. Since environmental friendliness is not a value for many, emphasizing the long term cost efficiency of renewable energy solutions was deemed to be an efficient strategy.

Even though competitors can many times offer a more affordable product, the Finnish companies could concentrate on communicating the quality and complete package solutions for their products. This is especially challenging since many of the target market retailers don't have professional purchasing education or much of experience. Therefore, they often don't require service packages or education for the products. The Finnish SMEs could benefit from creating a need to the retailers and customers to demand more complete service concepts, which they can provide. See the chapter on product requirements for more examination of this.

One of the interviewed SMEs criticized the lack of services that would truly connect them to potential customers and thus transfer to business opportunities more quickly. Finnpartnership offers matchmaking service connecting developing country actors to Finnish companies. These projects often require more commitment than just exporting in order to reach the requirements for developmental effects that Finnpartnership has.

6.6 Taking the risk or sharing the risk

All interviewees also agreed that in order to truly succeed in the market, presence is necessary. Opinions vary, which form this presence on the market should take. Sandberg (2013) suggests that the best way to create commitment and to learn is to become directly involved with the target market by establishing a subsidiary. Some other research (OECD, 2007) suggests that the best way to SMEs to internationalize is through incorporating themselves to global value chains.

These different strains of opinions were present also in the interviews. Some experts highlighted being present in the market and establishing themselves on the market whereas

others highlighted becoming a part of a global value chain both strains of thought saw their way also as a good learning opportunity for the SME.

None of the interviewed SMEs saw it as a viable option to establish a business unit in the target market from the beginning, two of the support organization representatives stated that it would be the best way to handle internationalization. They commented that Finnish SMEs often lack risk-taking ability and are therefore unable to enter new markets as efficiently as some global competitors.

All of the SMEs and two of support organization representatives stated that rather than taking the risk, the domestic support systems should give SMEs tools to share this risk. Efficient and supportive public funding was seen as one way of sharing the risk. Clustering was agreed by all participants to be an effective way of sharing the risk.

6.7 Options for partnering

There are many stakeholder organizations for the process of renewable energy SME internationalization to Africa. In addition to other companies, SMEs might find it advantageous to partner with research institutes or development aid organizations for example. The opportunity and challenges of partnering with each kind of organization is evaluated in the following sub-chapters.

Finding a partner in a MNC or a Finnish SME was one of the most popular suggestions on how to overcome the barriers for internationalization. Clustering was seen to provide numerous advantages from rise in financial resources to knowledge sharing and access to new networks.

Four options for partnering with a company came up in the interviews: 1. Private partnerships 2. Official cluster associations 3. Export Partner Groups by Finpro 4. Projects from educational institutes. Moreover, the development aid organization partnerships were researched because of the role it has on Finland-Africa relationship and because of the connection of many of governmental support forms to development aid.

None of the SMEs had experience nor plans to participate on Finpro Export Partner Groups because they were deemed too costly and not effective enough.

6.7.1 Large companies or SMEs

There are different preferences when it comes to finding a private sector partner for internationalization. Some actors saw it as a better option to become a part of a global value chain of a large company whereas some others preferred clustering with a smaller company with complementing products.

Finding a suitable partner for either option had proved to be challenging for Finnish SMEs. To avoid competition, the other company should have a complimentary and not overlapping product. This is in accordance with the literature review. Fliess and Busquets (2006) argued that having competing SMEs in the same cluster can be challenging. One SME had succeeded in partnering with another SME and was happy with the results of collaboration. It is also hard to get a foothold in a global value chain of a larger company. Should the company not be Finnish, the suppliers are often sought from the country of origin.

6.7.2 Cluster associations

For those SMEs in search for an official cluster organization, there are some options available. Cleantech Finland is a cluster organization, coordinated by Finpro. Groove also funds some regional development organizations that encourage clustering for example Hermia Oy. Fliess and Busquets (2006) suggest that being a member in such organizations could give SMEs the leverage they need to negotiate with different acotrs. Also, OECD-APEC (2006) research states that governments should support the creation of such clusters. More research is required to find out the true amount of options available and the costs and benefits of attending such associations.

6.7.3 Research institutes

There has been some activity also in educational institutes to form research groups about renewable energy SME internationalization to Africa. At least Metropolia University of Applied Sciences, Laurea University of Applied Sciences and Aalto University have all had a project within the scope of renewable energy SME internationalization to Africa.

The problem within these programs often lies in the continuation of the outcomes. One of the interviewed SMEs had taken part in a successful research program. The continuation and

ownership of the program became an issue after the official part of the research was over. Who would continue developing the concepts and keeping up the contacts that were created in the program.

6.7.4 Development aid organizations and NGOs

Even though many of the literary sources (Willans et al., 2011; Reficco &Marquez, 2012) have emphasized the benefit of connecting with non-market actors, this is not dominant strain of thinking within the Finnish support system for RE SME internationalization to Africa. Although two of the SMEs had experience from working with SMEs, none saw the sector as a priority to achieve competitive advantage.

Partnering with nonmarket actors comes with challenges that were not mentioned in the related literature. BoP literature recognizes the differences in mindsets of different organization (Willans et al., 2011). According to the interviews, there are also other issues related to collaboration between non-market actors and SMEs. For example, even though NGO partnerships would be helpful in gaining knowledge and trust in the BoP context, the need of SMEs to quickly gain customers and start making profits may limit their resources to participate in other forms of partnerships. The financial resources and managerial time will be guided towards customer contacting and sales.

The reason for this could lie in the same strain of thinking that is used to reason why SMEs are not using the support programs of international organizations. Since the international organization programs are mostly informational by nature (Fliess & Busquets, 2006) the SMEs might choose to use their resources rather on activities that have more direct correlation with income. (European Commission, 2010) Although gaining local information is described as an important asset especially in developing markets, it will require time and commitment from both parties. One of the SMEs stated that even though knowledge building is useful, their first priority will be in gaining new customers: “Without a customer, there will be no business. Sure it’s nice to know about the country but that doesn’t lead you far unless you have the customers. Also, there is no better way to gain more information than learning from your customer.” The development aid actors are therefore underused as sources of information.

NGOs can also take a bigger role in helping a product enter the market. NGOs can build trust and commitment from the customers and help to introduce the product. This strategy is not applicable to the selection of SMEs in this thesis. None of the SMEs directed low-income customers directly but were either looking for B2B clients or retailers. Therefore, the NGOs could be less efficient as a connector to these types of customers.

Development aid organizations also present a potential client in themselves. As it was clarified in the interviews, global connectedness of the industry creates great potential in volumes for the supplying SME. This option raised more approval from the interviewed SMEs. There were some concerns from the SME sector. Firstly, the legislation on the purchase activity of these organizations was questioned. Secondly, there were some doubts about the nature of the relationship. One SME was considered that the SME partner would only want their products for charity prices or for free, which would diminish the business case for them.

6.8 Sustainability and responsibility considerations

The ethical basis for this research lies in the assumption that Aid for Trade ideology works and that successful trade relationships between Finnish RE SMEs and African customers or retailers can provide tools to fight climate change and poverty. However, it should not be taken for granted that this is the case.
By choosing the scope to Finnish SMEs, many other options are left out. Moreover, by contributing to the building of competitive advantage of Finnish SMEs, an underlying assumption is made that Finnish companies are better choice than many of the competitors. Even though some of the interviewees had experiences from their customers complaining that there are major issues with products from China and some other countries, this does not mean that this is always the case. More research on the competitors on the target market is needed to form judgments on the responsibility of Finnish actors compared to other foreign actors. Also, even though Finland has strict legislation for the ethical standards for manufacturing, this doesn't mean that the competitors' products would be any less responsible.

Limiting the scope of the research to Finnish SMEs also means that local SMEs on the target market are left out of the scope of the study. As criticized with BoP theory in a larger context also, it can be argued that the needs of BoP markets should not be met by foreign companies

but local SMEs. Local SMEs on the market would be the best engines for growing the know-how and employment in the community and also to promote ownership of the products. (Karnani, 2007) Also, since the poor often are in a vulnerable position because of the lack of consumer protection laws, amongst other systemic weaknesses, high ethical standards are required of the businesses involved in the market. (Landrum, 2007)

Moreover, this study accepts all forms of internationalization from exporting to establishing a subsidiary. Development aid perspectives tend to focus on connecting developing country companies to global value chains (see for example Aid for Trade of AfDB). Supplying to businesses or consumers in developing country has less developmental focus than finding deeper partnerships or suppliers in a developing country. For this reason, Finnpartnership accepts only projects that engage more target market actors than just exports. More research on the developmental effects of just exportation is needed.

7 CONCLUSIONS

In the beginning of this thesis, two research questions were defined: 1. What are the biggest challenges for Finnish renewable energy SMEs to internationalize to Africa? 2. What can be done to overcome these challenges? These questions are answered in more depth in the previous chapters.

Based on the data collected from SMEs and actors in SME support network, there seems to be two major challenges: finance and networking. Networking includes reaching out for local customers and partners as well as finding partners to help gain more information on the market or even to help with financing. Finance is another major problem for SMEs with limited resources. Many of other kinds of challenges were also mentioned in the literature and empirical data but they all seem to be somehow related to these two major issues.

The challenges experienced by Finnish RE SMEs seem to correlate with the international research to large extent. Lack of financing, connecting with retailers and customers, inadequate domestic support structures, physical and cultural distance, allocating managerial time and identifying and analyzing the target market were seen as major challenges. Whereas clustering was seen in the international literature mainly as a tool to overcome challenges, Finnish actors described is also as one of the major challenges. Finding the right partners and connecting with them was seen challenging and in some cases, even impossible. The overall message seemed to be that the SMEs cannot just choose which kind of actor they want to partner with but also have to consider who is interested in partnering with them. Especially in attempts to partner with larger companies, SMEs many times felt that have to fight in order to gain their attention and interest.

Out of all the suggested solutions, improving public funding system and clustering with large company or another SME seemed to be the most popular solutions for tackling the challenges. There was a need for better conditions for loans, customer funding and renewal on the type of funds available. This means that instead of grants and project based funding, the SMEs could receive start-up like funding to enable more control and longer time perspective. Governmental organizations were hoped to share more of the risk of internationalization in form of easier access to funds.

This study combined the literature from RET dissemination, BoP market environment and SME internationalization to create an unique theoretical framework. This theoretical framework aimed to take into account the challenges posed by the firm size, sector and target market. Finally, this theoretical framework was brought into the context of Finland by applying a geographically special research and the empirical findings. Studies from RET dissemination, BoP context and SME internationalization all emphasize the need to network in order to defeat the challenges arising from the target market business environment and the lack of resources for the SME. Also, all these strains of literature emphasize the role of governmental organizations in supporting the growth of business. Governmental organization need to take responsibility on both, supporter and regulator tasks to diminish the barriers for internationalization

All the participating SMEs had different products, which presented different requirements for their strategies and partnerships. Thus, there is no "one solution fits all" business model in entering African markets. There isn't just one right way of succeeding in market entry to Africa but rather several important choices to make. The SMEs have to choose which kind of partnership to seek for: to partner with a big MNC or another SMEs. There are benefits and restrictions to each of these options. The companies can also choose to build a complete service package around their core product or limit their role to be just a technology manufacturer. Depending on their strategy, the companies might also find it worthwhile to partner with a non-market actor: a research institute or a development aid agency. This was described for a challenging process that requires change of mindset for both, the SME as well as the other organization.

Gaining knowledge about the market was deemed important but not as important as gaining customers. The Finnish support system should take this more into consideration and direct more focus on customer identification than creating general knowledge. Presence and direct customer relationship were also seen as the best way of building knowledge and mutual trust. This is also supported in Sandberg's (2013) entry node theory. However, for a SME with little resources, direct market entry is a very risky operation. This risk can be shared through risk investment funding, clustering or creating knowledge about the market beforehand. Some interviewees pointed out that the risk is a natural part of expansion and should be accepted by the SME.

Internationalizing to African markets seems like a long way to go for a Finnish renewable energy SME. Not only is the market geographically and culturally distant, but most small companies do not have the resources to tackle the challenges arising from the distance and from the target market conditions. The best chance for these companies is to find a partner to help them in this. There is a consensus among researchers in many different fields that both the country of origin and the target market governments have an important role in helping out. In this current situation, there were some suggestions towards the Finnish national system of support to develop the support system and especially funding channels.

By gapping the lack of resources, finding the right customers and partners in the target market and gaining knowledge on the target market, SMEs can have access to the huge potential that lays in many African markets. To gain these, they must find a way to connect with the right actors to help them internationalize. It is quite a demanding task, but the potential is also great. One interviewee summarized this in saying: "Africa is growing and we cannot afford to be left out!"

7.1 Future research

There is a need for comparative research on the support system of Finland and another country to see the true effects of national support systems to the competitive capabilities of the companies. The emphasis should be on the national funding schemes for internationalization. A map of all the available informational services would also be beneficial.

The different opportunities for Finnish RE SMEs to cluster should be researched more closely. This thesis offered just a quick glimpse on the different ways and organizations available. Also, comparative analysis on the benefits and costs of each type of clustering would be extremely useful.

Also, more research needs to be done on the benefits and challenges of collaboration with non-market actors. An interview study on SMEs that collaborate with non-market actors could help to document the amount of resources spent on such partnerships and the perceived benefits of the outcomes.

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APPENDIX

Appendix 1: Set of general questions categorized according the interviewee type.

Supporters:
How do you find the state of Finnish business in Africa? Is there potential for more?
Are there specific countries/areas that have the most potential?
What does your organization do to enhance it?
What are the strengths of Finnish companies against global competition?
What are the typical weaknesses for Finnish companies?
What are the biggest barriers for SMEs entering Africa?
How to overcome these barriers?

SMEs
How do you find the state of Finnish business in Africa? Is there potential for more?
What are the specific countries or areas that have the most potential to you?
How has your business engaged in African business?
What is your competitive advantage in African markets?
What are the biggest challenges for you in entering target markets in Africa?
How should these be dealt with?

NGO representatives
What kind of operations does your organization have in Africa? Specifically where?
How does your organization/NGOs generally partner with private sector actors?
Should there be deeper cooperation?
How could this be achieved? (Tytti Nahi: ajan kanssa. Pasi Aaltonen: Yritysten tietoisuutta lisäämällä)