



Lappeenranta University of Technology  
School of Business and Management  
Industrial Engineering and Management

Master's Thesis

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**SELECTING SALES CHANNEL FOR DISTRIBUTION OF  
AGRICULTURAL MACHINERY IN EMERGING MARKETS OF  
WESTERN AFRICA**

Supervisor: Professor Asta Salmi

## TIIVISTELMÄ

**Tekijä:** Juuso raitanen

**Työn nimi:** Jälleenmyyntikanavan valinta kehittyvillä markkinoilla Länsi Afrikassa.

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**Hakusanat:** Kehittyvät markkinat, Länsi-Afrikka, maatalous, myyntikanava, jakeluverkoston laajentaminen

Tämän diplomityön tarkoituksena oli rakentaa kotimaiselle traktoreita valmistamalle yritykselle, Valtralle, selvitys Länsi-Afrikan maatalousmarkkinoiden potentiaalista traktorimyynnin lisäämiseksi. Tätä varten tutustuttiin olemassa oleviin tutkimuksiin sekä toteutettiin empiirinen tutkimus olemassa olevista jälleenmyyntipisteistä Länsi-Afrikassa.

Työ toteutettiin konstruktivisena tutkimuksena, jossa teoretietoa ja tutkimusta käytettiin hyödyksi kvalitatiivisessa tutkimuksessa valittujen case-yritysten kanssa. Teoria-aineisto rajattiin käsittelemään Länsi-Afrikan uusilla markkinoille menoa ja tätä varten tutustuttiin jakelukirjallisuuteen sekä vientioperaatioihin. Tämän lisäksi tarkasteltiin Länsi-Afrikalle erityisiä haasteita sekä mahdollistajia traktorimyynnin kannalta. Työssä esitellään myös Valtran aiempia toimintoja Afrikassa, sekä toimintojen nykytilaa ja kehitystä kohdealueella.

Tutkimuksessa havaittiin, että Länsi-Afrikka on lukuisista sille spesifeistä syistä johtuen yhä haastava markkina-alue. Länsi-Afrikasta löytyy merkittäviä alueellisia eroja esimerkiksi sademäärän sekä viljelysmenetelmien suhteen. On kuitenkin kiistatonta, että maatalous tulee kasvamaan siellä tulevaisuudessa merkittävästi. Työn tulos kuvaa haasteiden sekä mahdollisuuksien kautta potentiaalisimpia alueita myyntikanavan perustamiseen Länsi-Afrikassa sekä valintakriteerejä jälleenmyyjän valintaan. Työ huomioi Länsi-Afrikan ympäristölliset, maantieteelliset sekä erityisesti taloudelliset kriteerit parhaan markkina-alueen sekä yrityksen valitsemiseksi jälleenmyyjäksi.

Työn tuloksena voidaan todeta, että paras valinta myyntikanavaratkaisuksi Länsi-Afrikassa on monialainen yritys, joka on halukas investoimaan ja sitoutumaan maatalousliiketoimintaan. Tällainen monialainen yritys pystyy sopeutumaan Länsi-Afrikan vaihteleviin maatalousmarkkinoihin parhaiten, sillä se voi kohdentaa resurssejaan markkinatilanteen mukaan eri toimialoihin.

## ABSTRACT

**Author:** Juuso Raitanen

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**Keywords:** Emerging markets, West Africa, agriculture, sales channel, expanding distribution

The purpose of this master's thesis was to investigate potential of emerging markets of West Africa for selling agricultural machinery. Master's thesis was made for Finnish tractor manufacturer Valtra, that already has operations in most parts of Africa. Master's thesis was done by using research and findings of West Africa's agriculture and by qualitative research that was done with current West African distributors.

The study was done as constructive research, where theories and finding were used as base for qualitative research with selected distributors in West Africa. Theory was chosen to relate especially to West Africa's emerging markets, West Africa's agriculture and development of agriculture in West Africa. Also barriers and enablers that will affect to sales of machinery were examined. This thesis shows Valtra's current and past operations in West Africa, as well as forecasts for future operations.

Result of this master's thesis was that West Africa is still relatively challenging market for selling agricultural machinery. Still, diversity between West African countries is big and there are numerous differences between countries in West Africa. Nevertheless, agriculture will grow in West Africa tremendously and with that the need of machinery will grow. This study shows what criteria should be met when selecting sales channel and where sales channel should be located in West Africa. Results are based on environmental, geographical and especially on economic criteria to find most suitable area and business partner for distribution.

Results show that company that is in multi-industry business and which is also interested to invest and engage to agricultural industry will be the one to choose especially in West Africa.

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My time and studies in Lappeenranta University of Technology has been challenging and educational, but most of all it has been joyful. Years in LUT has given amazing experiences for me and lot of good, lifetime friends. I want to thank all my friends who has shared these moments with me. Something great is coming to end with this thesis, but I am sure that we have still a lot ahead.

Jyväskylä, 19th February 2017

A handwritten signature in black ink, appearing to read 'Juuso Raitanen', with a stylized, cursive script.

Juuso Raitanen

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**LIST OF SYMBOLS AND ABBREVIATIONS**

CCAA	Competitive Commercial Agriculture for Africa
CVT	Continuous Variable Transmission
EAME	Europe, Africa and Middle-East
ECOWAS	Economic Community of West Africa States
FDI	Foreign Direct Investment
FFS	Farmer Field Schools
GDP	Gross Domestic Production
HP	Horsepower
LCLU	Land-cover and land-use
SSA	Sub-Saharan Africa
TRAMA	Tanzania Tractors Manufacturing Company Ltd.

## 1 INTRODUCTION

West Africa is one of the fastest growing regions of the world and depends heavily on rain-fed agriculture for its food production. Modernization of food production is ongoing process at West Africa, as well as it is in many areas of Africa. According to the World Bank (2013), approximately 60 % of the arable land that is not yet under farming is found from Africa. Still poverty, corruption and diversity are ongoing challenges in West Africa, where development of agriculture is seen as one of the key elements to tackle these problems. Agriculture is seen to bring new jobs and income to West Africa.

Growing population, expanding need of food and self-production in Africa has become an even more discussed topic globally. All this will lead to growing need of farming equipment, when food production is rapidly increasing. This thesis is about expanding sales channel to cover more areas in Africa, especially in West Africans tractor markets where the case company doesn't have good coverage yet.

West Africa is currently in transition process, where economy in many countries is slowly turning to exponential growth. There are areas and countries categorized as emerging markets, where growth is solid and significant in many indicators. In this study West Africa is seen as emerging market, because of wealth, growing employment and growing. One of the goals of almost all of West African countries is to become more self-productive especially in food production. This will lead to growing need of education and knowledge among farmers, more field to be cultivated and more machinery.

Several studies have compared and investigated the growth of agriculture of West Africa, usually based on growing population, self-production and need of more food. Not many of the research has been linked to need of machinery to fulfil

production of food, nether where and when will the most demand of the machinery happen.

We will investigate why one should expand sales to West Africa, what drivers are enabling tractor sales to grow there and what complexity is involved into agricultural business. Thesis aims to show what areas are most suitable and worth of investing and what would be best business partner to choose for distributor in terms of economical and commitment criteria. We will also investigate, whether same structure and choosing criteria can be used as the case company is using in West-Europe, where good distribution networks have been already established.

The reason to choose West African markets for subject of this thesis is the interest from tractor manufacturer point of view. Growing population, growing self-production and funding programs are reasons to invest and spread distribution also to West Africa, when rest of Africa's most potential areas are already covered by the case company. The case company Valtra, Finnish tractor manufacturer, has operations already in 13 countries in Africa, but only in few West African countries.

For research method of this thesis qualitative research and literature review has been selected. Africa's markets and distribution channels are first investigated with help of literature review in this thesis. Theory of emerging markets is used to investigate characteristics of West African agricultural markets. Then empirical research with interviews is executed and results are investigated, are they pointing out same or different outcome.

The case company Valtra has had operations in Africa since the 1980's. Currently Valtra is operating in 13 African countries, but West Africa is not covered with proper distribution network. This is main reason why West Africa has been chosen as the area of this research. West Africa is a huge area by geographically and also in terms of population. This leads straight to huge potential of increasing sales of

agricultural machinery. In West Africa, Valtra has coverage only in three countries: in Ghana, Nigeria and in Senegal.

Valtra distribution in Africa is done by various, distinct companies. There are small family owned companies and huge multi-industry corporations. When performance of these companies varies lot, the case company is evaluating what company profile would be most suitable for enlarging sales with sustainable partnership. This thesis answers to that by presenting sales figures from West Africa and by estimating what are the characteristics of sustainable company with help of literature review and interviews.

### **1.1 Research question, goals and delimitations**

Main goal of this thesis is to show from what area sales channel should be searched from and what kind of business partner should be chosen for distribution. Goal is also to give prediction about market development and to tell what factors are enabling and slowing the growth. Another goal of this thesis is to give holistic view about current conditions in tractor markets in West Africa and forecast what areas would be most suitable for enlarging sales channel.

In order to reach the set goal, four research questions can be formed as shown in table 1. The *first* research question aims to provide holistic answer where the growth happens and what would be ideal business partner that will enable sales now and in future. The *second* research question focuses to characteristics of emerging markets and especially in West Africa. This will be researched mainly with literature review. The *third* research question aims to provide more information why the growth hasn't happened yet and why it will happen in future. The *fourth* research question will help us to understand the characteristics of sales channel selection in West Africa. We will use Germany's annual tractor sales as an example to clarify the complexity, which is involved to finding sustainable distributor at West Africa.

**Table 1.** Research questions and objectives.

<b>Research question</b>	<b>Objective</b>
1. Where one should place sales channel when agriculture in West-Africa will grow rapidly and what would be ideal company to guarantee growth and sustainability?	Identify the potential areas where growth happens and examine characteristics of successful and sustainable distributor in West-Africa
2. What are the characteristics of emerging market, especially in West Africa?	Identify characteristic that are specific for West-Africa
3. What barriers and enablers are currently slowing agricultural growth in West Africa?	Identify barrier and enablers in West-Africa's agricultural industry
4. What factors effect to successful sales channel especially when choosing one?	Examine different factors such location and sustainability of sales channel

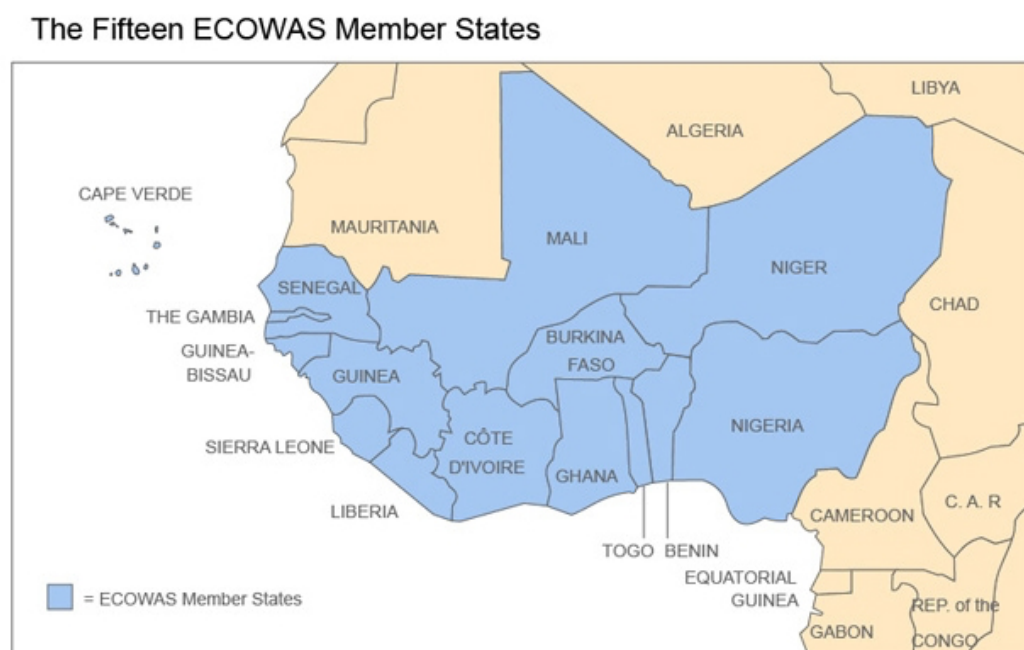
In terms to understand the case company's current situation and past in West Africa, this study provides and includes material about Valtra's operations in West Africa. This is done by including history of Valtra to this study, but also by including product offering and current Valtra distribution to study. As Valtra has two factories, located in Finland and in Brazil, products produced in these both factories will be investigated in this thesis as Valtra products without specifying where they were produced.

Chosen geographical area for this study is relatively large. It includes many countries with big diversity inside countries but also between the different countries. This thesis will focus to West Africa and give holistic view about the chosen area. Results can be used in most of the cases, but because research area is wide, different outcomes may occur in some areas in real life. We will define agricultural markets to focus to tractor industry, but we will also investigate what offering of full fleet (tractors, combine harvester, cultivators, sprayers, sowing machinery and generators) will enable in future.

The research through interviews is mainly collected from four countries at West Africa: Senegal, Nigeria, Angola and Ghana. These countries are used in this research, because these are only countries where Valtra has distribution currently

in West Africa. Also interviews are executed in South-Africa and in Finland to strengthen reliability. Interviews are only executed with people that are related to business of Africa.

In figure 1 is shown delimitation of West Africa as blue countries. In this thesis we will delimit West Africa to include all ECOWAS countries (Economic Community of West Africa States).



**Figure 1.** Delimitation of West Africa (Ferris & Stark 2012).

Perspective of this thesis is taken from tractor manufacturer point of view and only for export markets, where West Africa is the area to be reviewed. Some examples have been taken outside of West Africa in terms to understand better West Africa's business. When some factors related to complexity of tractor markets are hard to define as a figure or number, they will be viewed in perspective that is relevant for those factors.

## 1.2 Structure of the thesis

In addition to introduction, this thesis consists five chapters. Chapter two introduces the methodology that is used for this research. Chapter three constructs the literature review of the study. Chapter three also shows West Africa's agricultural statistics and environmental characteristics. Chapter four introduces Valtra's current and past operations in Africa. Chapter five presents the enablers and benefits why one should import to emerging markets such West Africa. Chapter five also delivers information and criteria about sales channel selection in West Africa. Findings of the study and answers to research questions are presented in results and conclusion in chapter six.

Main aim of chapter is to tell of methodology used in this thesis and to provide information how this thesis has been executed. This chapter will introduce also what research methods has been used and introduce reason why those methods has been chosen. This chapter also discusses briefly about reliability of the results.

Chapter three is related to emerging markets. The main purpose of this chapter is to introduce characteristics of emerging markets and what factors are specific for West Africa. We will first delimit the definition of emerging markets and then focus more deeply what factors are related to sales channel in emerging markets.

Chapter four deepens the understanding of past, current and future situation of agricultural business in West Africa. Chapter three introduces statistics about Africa and West Africa, when chapter four concentrates to deliver information about the case company's operations in Africa's soil.

In chapter five enablers are listed, why one should invest to West Africa. The study includes topics such subsidies, population growth, ECOWAS and machinery development. This chapter includes topics that are seen as positive impact for growth of sales of agricultural machinery such tractors in future. Also selecting the

right sales channel is discussed in chapter five. Conclusions, validity and results, as well as reliability and limitations are discussed in chapter six.



## **2 METHODOLOGY**

This chapter aims at creating an understanding of methodology choices. Chapter also focuses to deliver an overlook of execution of this study. Choosing right methodology was critical for this thesis to success, when outcome of this research should be results that should support and strengthen decision to invest to distribution in West Africa. It included planning, choices and prioritisation when selecting the right approach to be used. Also execution of this study and reliability are shortly introduced.

### **2.1 Research method**

Choosing only literature review would have given a holistic view about agricultural business in West Africa, but it would have been light and unreliable that it could be analysed deep enough to get solid results. There wasn't also few if any study related to only agricultural machinery of West Africa. This would have led to do many conclusions in research, where reliability increases even more.

Quantitative research was excluded in the first steps of the research process, when amount of people involved to agricultural business in the case company is too low to make any reliable analysis or questionnaire. Also using only qualitative analysis such interviews would have given results, where personal opinions of market situations would have had too big distortion to result.

For these reasons, most suitable and relevant method was seen to use both, interviews and literature analysis. By using the unity and differences of results gathered from both methods, a reliability of this thesis was seen highly increasing. Literature review scope was to use mainly study that was done between 2010 and 2016. For literature analysis only recent data related to West African agricultural markets were chosen with only small exceptions. For interviews, most relevant

persons working closely with African agricultural markets were chosen. Interviews were executed by using qualitative research method. Qualitative research focuses on understanding social relations through ones' experience and experiences and reflects more to inductive approach (Bryman & Bell 2011).

Interviews were also selected as one method for this thesis to get most recent and relevant information from West Africa, through small focus group only. Interviews were done to sales and marketing persons in Finland and in South-Africa, where main office of Valtra Africa is located. Also interviews were done with distributors located at West African countries. Interviews were semi-structured, that can be found from appendix. By interviews, we can use views, experiences, beliefs and motivation of individual person. The disadvantage in interview is small amount of data with small group, it is time consuming and accuracy is related to experience of one person only. Interviews were executed by using semi-structured interview, which can be found from attachment 1.

Literature analysis was chosen to another method for this thesis to support the information gained through interviews, but also to bring up new statements. Literature was chosen to be as recent as possible and only few are published before year 2010. Older ones were mostly related to history of Valtra.

Literature used for emerging markets are mainly from Rottig 2016, FTSE 2016, Schoenborn 2006 and from Piotrowicz & Cuthbertson 2015. The similarities and differences between the studies has been analysed in this thesis and the most suitable approach has been built from those authors. These authors have been selected because of similarities in the subject of study, but also because study is mainly related not just to emerging market but also to sales channel.

Adhikari & Beurs (2016) research about land-cover and land-use (LCLU) is used to gather basic information about West Africa's farms. With help of interviews and other research, map of potential areas for future sales channels is build.

Interviews and literature analysis were both selected to this thesis to get comprehensive and proper analysis for sales channel selection. Before research, it was unsure would these two methods give different result for expanding. Anyhow results shows that both methods are giving same result where one should expand and why. When both results are showing same indications, results can be considered more reliable and methods are supporting each other.

In table 2 is presented, what research method is used to answer in what research question. The findings from literature review also works as a basis for interviews and analysis. Meaning of table 2 is to clarify what methodology is used to gather and analyse what topic.

**Table 2.** Usage of research methods.

<b>Literature review</b>	<b>Qualitative content</b>
Emerging markets	Sales Channel differences
Sales channel criteria and location	Barriers and enablers
Barriers and enablers	Valtra's Africa markets
West-Africa agricultural markets	Country specific information
Research questions 1,2,3	Research questions 1,3,4

Table 2 also shows that by using both research methods, interviews and literature review we have gathered more data and wider aspect for this thesis. By using only one method, some research questions would have been let unanswered.

## **2.2 Execution of study and reliability**

In first phase of execution of this thesis literature was specifically chosen to relate to this study. Different literatures where examined and compared and then the most potential and relevant chosen to be part of this study. Second phase included

construction of theory part of this thesis. At that part literature review was highly used and compared to gather theory that is useful and relevant for scope of this thesis and its research questions. After second phase, structured interview was build up with help of Africa related Valtra employees, that are mainly in contact to West Africa countries and has special knowledge about those countries and their business. Also conclusions and data gathered from literature review were used as part of interviews to see if interviews are confirming these theses. Third phase was to execute this semi structured interview with distributors at West Africa and to collect data about answers.

In fourth pace these data gathered from literature review and from interviews were analysed and conclusions were drawn according to unity of both studies. Then these analyses are completed as conclusions in *results and conclusions* chapter.

Factors that are affecting positively to reliability to this thesis are wide use of literature from same field of study, use of locals in interviews to get most relevant data and unity of results from both methods. If both studies are indicating to same conclusion, this has to be seen as raising aspect for reliability of the thesis. The factors affecting negatively to reliability are mostly related to transparency of qualitative interviews, where amount of interviews has been low because of low number of distributors. Qualitative research method is also highly related to persons own opinions and aspect and that's why ones' answer has big impact for outcome. Reliability of this thesis is discussed more in chapter six.

### **3 EMERGING MARKETS IN WEST AFRICA**

In this chapter we will discuss about emerging markets. We will first define the term emerging market and then focus to sales channel and how to choose one in emerging markets. Finally, we will discuss about uncertainty and complexity of emerging markets. Understanding characteristics of emerging markets are highly valuable to determine what aspects are affecting to selection of successful and sustainable sales channel. It is important to understand characteristics of emerging markets to discuss and answer correctly to set research questions of this study.

#### **3.1 Emerging markets definition**

Emerging markets for scientific research and literature is relatively new phenomena. The term emerging markets was first introduced by US investment banker Antoine van Agtmael in 1981 (Rottig 2016; Fornes & Philip 2012). Emerging markets is widely defined in terms of level of wealth and economics, where economies are low to middle per capita income. In 21<sup>st</sup> century definition of emerging markets is related in studies also to rapid pace of economic development and adoption of free market system (Fornes & Philip 2012). FTSE group (2016) has set three phase classification for emerging markets that is based to development levels. These three classifications to emerging markets are advanced emerging, secondary emerging and frontier markets (FTSE 2016; Fornes & Philip 2012).

Common in studies of emerging markets are that it doesn't recognize national borders, they are in permanent transition, high uncertainty and they are complex and diverse (Schoenborn 2006; Rottig 2016; Piotrowicz & Cuthbertson 2015). Most of the studies are delimited to specific countries that has same characteristics for emerging market research. Largest and fastest growing groups with most research are:

- BRIC (Brazil, Russia, India and China)
- BRICET (BRIC + Eastern Europe and Turkey)
- VISTA (Vietnam, Indonesia, South Africa, Turkey, Argentina)
- ASEAN (Indonesia, Malaysia, Philippines, Singapore, Thailand, Brunei Darussalam, Vietnam, Laos, Myanmar and Cambodia)
- Next Eleven (Bangladesh, Egypt, Indonesia, Iran, Mexico, Nigeria, Pakistan, Philippines, South Korea, Turkey and Vietnam)

From these categories, BRIC is getting the most study and research attention (Rottig 2016; Piotrowicz & Cuthbertson 2015). We can also clearly identify, that West African countries are not in any of these groups and not lot of research is done of emerging markets of those. Africa is identified as one of the most recent areas for emerging market research (Rottig 2016).

From these three studies, only Piotrowicz & Cuthbertson (2015) groups West Africa as emerging market, as a part of Sub-Saharan Africa (SSA), where SSA includes all countries located South from Sahara Desert. The diversity in SSA area is huge when it includes countries such South-Africa and Nigeria and also SSA's area and number countries can be seen relatively big. Despite that, there are no research done from SSA emerging markets especially related to agricultural business and West Africa has not been taken as own group of SSA area.

According to literature review, there isn't clear and unambiguous definition for emerging market. In this thesis we will adapt Antoine can Agmael's definition of emerging markets, that focuses to inspection of wealth and economics in chosen countries. We will widen that definition to fit more to agriculturally emerging market by discussing about environment, banking systems, politics, education and corruption. These are the factors that are currently slowing down the agricultural market to grow. By this definition, we can inspect West African countries as emerging markets, despite the fact that FTSE doesn't consider all of West African

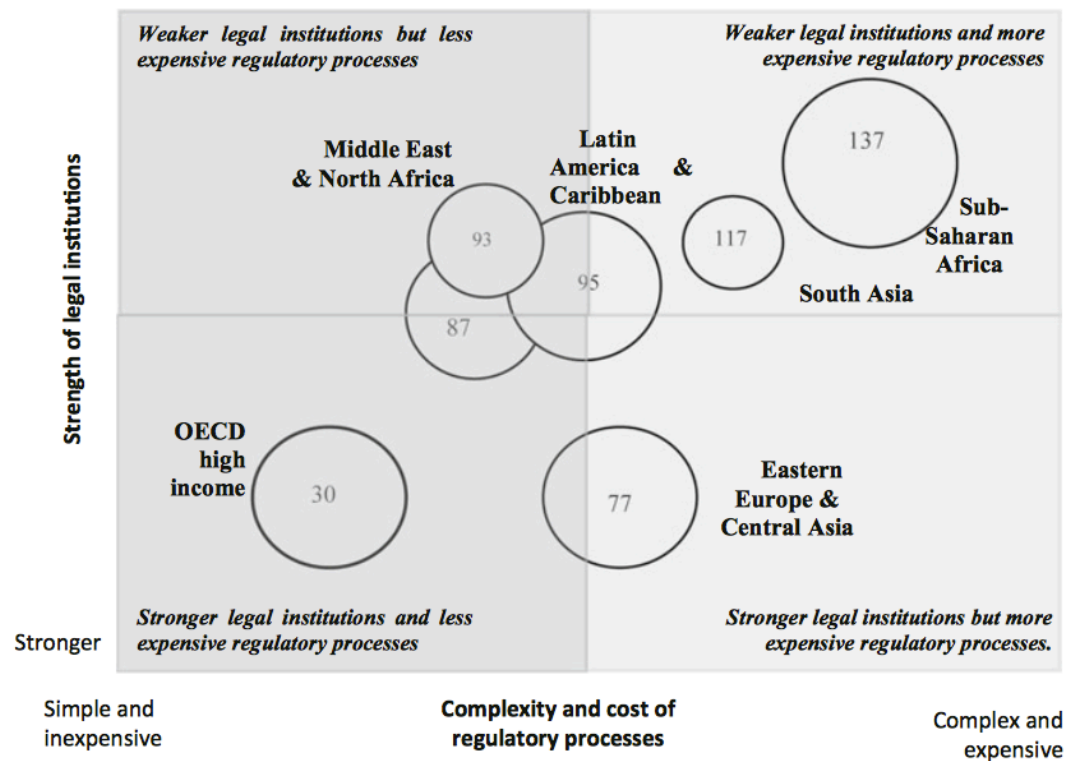
countries as emerging market. FTSE uses more specific definition in country level, where criteria are more complex.

### **3.2 Sales channel characteristics in emerging markets**

In this chapter we will introduce different methods how sales channel should be selected in emerging markets. Valtra and its parent company AGCO has its own methods and process when selection right sales channel plan according to many factors such country. This study will focus more to emerging markets and especially when introducing new product range there. Main purpose of this chapter is to get clear understanding what factors are related in selecting the sales channel and doing business in Africa and more precisely in West Africa.

Common reason for companies to distribute to emerging markets is in pursuit of new revenue opportunities. Company has to choose from internal solution or an external solution. Usual internal solutions to enter to emerging markets are by creating joint ventures with local parties or by FDI (Foreign Direct Investment). External solutions are distributor, dealer or agent. Main differences between these two options are control, reactivity, flexibility and size of investment. (Piotrowicz & Cuthbertson 2015; Malaval et al. 2014)

Studies shows that the main characteristics of trading in Africa are poor infrastructure, weak legal institutions, expensive regulation processes and uncertainty (Parker & Luiz 2015; Lombaerde & Puri 2009). Figure 2 shows how SSA ranks among other areas in terms of 'doing business'.



**Figure 2.** Average ranking on sets of doing business indicators (Lombaerde & Puri 2009).

Shown in figure 2, Sub-Saharan Africa fits to frame with weaker legal institutions and more expensive regulatory processes. In that position, getting credit, protecting investors, enforcing contracts, getting construction permits, electricity, paying taxes and trading across borders are skewed.

### 3.3 Choosing sales channel in emerging markets

Characteristics that affects to choosing the sales channel in emerging markets are market fragmentation, diversity, uneven distribution of commercial buying power and industry clusters. (Kapur, Dawar & Ahuja 2014)

Lombaerde & Puri (2009) have recognized these factors to be critical when selecting sales channel:



- distributors technical know-how
- experience
- solvency
- motivation for product
- geographic coverage
- storage capacity
- after-sales
- customer finance

Lombaerde & Puri (2009) admits that all of these choosing criteria cannot always be used in a given territory. In top of that, Kapur et al. (2014) have recognized that many leading firms are using newest GIS mapping technology to build multidimensional pictures of potential market areas. This makes comparing and mapping of community wealth like hospitals, schools, buildings, bank branches as well as values, attitudes and behaviour.

Adhikari & Beurs (2016) have gathered GIS mapping from West Africans land cover and land use (LCLU). This research is closely related to identifying and choosing right place for sales channel for tractor sales. This research will be presented and discussed with comparison to current Valtra distributors in West Africa at chapter four.

SSA area has its own challenges in top of emerging markets in doing business that varies from country to country. The biggest and most crucial difference is when product is new for market and number of potential distributors is low in big area. Then performance of distributor is in critical phase and more precaution should be used when selecting one.

### **3.4 Emerging market uncertainty and complexity**

In this chapter we will present factors that are affecting to emerging markets of West Africa's uncertainty and complexity. To be specific, this will be executed through agricultural point of view, through factors that are affecting to selling tractors at emerging markets. Some of the topics are affecting to business directly and others indirectly. Some of these topics are quite firm and steady, when some are changing rapidly time after time.

#### **3.4.1 Banking systems in West Africa**

The vast majority of poor people living at rural areas of Sub-Saharan Africa are smallholder farmers. Majority of those farmers are excluded from banking system, because of lack of guarantees. Rate of bank usage at agricultural sector for these farmers is 6 %. (Kendo 2012; Pingali, Schneider & Zurek 2013)

Kendo (2012) has recognized that lack of access to funding and banking system is the major limitation in development of agricultural households. When farmers don't have access to loans, they have turned to use unofficial financing system that practises usury rates. The informal microcredit is granted by someone close to farmer with relatively bad terms with repayment. (Kendo 2012)

Kendo (2012) and Pingali et al. (2013) both recognizes that access to credit is a problem faced by poor people, especially farmers in developing countries such most in West Africa. Both studies also show that big commercial farmers with good liquidity exists but major of farmers are still small.

#### **3.4.2 Funding in West Africa**

Funding is one great opportunity for farmers in West Africa to share costs or risks of buying new equipment. Funding is possible in different levels and from different

sources such government, international communities, donations and projects such development project (Balogun 2011).

According to Jamie Rixton (2016), funds are not allocated to all farmers equally in West Africa. He recognizes that commercial farms are getting big share of funds. Commercial farms usually have big and sustainable farms with good liquidity. They also know the system how to get the funds and they also have access to those funds, which is something not usual small farmers in West Africa have.

According to Kendo (2012), Pingali et al. (2013), Balogun (2011) and Rixton (2016), farmers don't have access to funds and don't have knowledge how to leverage possibilities granted by those. When also loan is not given through banks, development of these small West African farms is slow when farmers cannot use money from outsource, even if they would be capable to decent payback terms.

### **3.4.3 Poverty in West Africa**

When agricultural machinery are relatively expensive products, poverty is one of the characteristics slowing down the sales. "Africa has the highest poverty rate in the world with 47.5 percent of the population living below US \$1.25 a day" (The World Bank 2013). Poverty means inability of an individual to access to basic needs, such clothing, food and shelter. Many scholars have identified poverty as one of the greatest challenges for SSA's economy growth. (Oluwatayo & Ojo 2016; Balogun 2011)

Balogun (2011) shows that poverty is one issue that should be tackled, before agriculture can be sustainable in West Africa. For rural areas, farming is still main source of livelihood and it employs about 78 % percent of Africans extreme poor (Oluwatayo & Ojo 2016).

Poverty is also clearly visible in production figures. Smallholder farmers are providing 80 percent of Africans agricultural output such as wheat, when size of a farm is still less than 2 hectares (Oluwatayo & Ojo 2016). For comparing figure, the average size of a farm in sustainable agricultural country such as United Kingdom is 95 hectares (Eurostat 2013).

Having less land under cultivation means directly less money involved in business. When level of poverty is huge, buying more area under cultivation is definitely harder. There isn't a straight forward answer, how poverty could be tackled in West Africa. Different payment methods are there to help people to get agricultural products, but that won't give us a solution for poverty.

The major success for poverty prevention would be the success of many ongoing operations in West Africa. These ongoing operations are for example increasing self-production, funding and ECOWAS goals such as common currency and free movement of people and goods.

#### **3.4.4 Political and social barriers in West Africa**

“In a number of states, the capacity of the public sector to deliver basic services is exceptionally weak. Citizens do not trust public institutions and service providers, as many of these institutions remain opaque and fail to deliver on basic services” (Odongo, 2015). The governance challenges in West Africa are undisputed. Changing leadership with ongoing elections in some countries are slowing the agricultural industry to grow. What decisions have been now made in behalf of farmers, may be cancelled in the future. Farmers are looking forward for new administration to take the lead in many countries and to fix the problems related to agriculture (Possidonio, 2016).

Government has been changing rapidly in many areas of West Africa and many politicians are known for corruption. Farmers are not investing assets to

agriculture, because they have no knowledge what new rules, laws or guidance will follow with new government decisions. This has been seen as one major issue for farmers not to invest to machinery.

Martikainen (2016) has also recognized some remnants from colonial ages of class distinctions between different races. Some races in West Africa are still to be categorized to lower or higher class than some others. These categories are seen to be vanishing in emerging markets of West Africa and all races are accepted and seen in all positions. (Martikainen, 2016)

### **3.4.5 Corruption in West Africa**

This thesis will identify corruption as one of the major issues that is distorting the business heavily in West Africa. Anyhow this thesis will not focus to corruption deeply, when it's still very overall and regular in many phases and in many levels. AGCO has ongoing anti-corruption policy and Valtra as subsidiary will not take a part to any level of corruption.

Corruption is affecting to tenders, daily agricultural business, funding and policies that are ongoing process in West Africa. In corruption index Finland is in rank 2, when for example Nigeria is in rank 136 out of 167. Senegal and Ghana are in good level with rank 61 (Senegal) and rank 56 (Ghana). (Transparency International, 2016)

### **3.4.6 Education and development in West Africa**

When we discuss about knowledge, we have to focus topic more to knowledge specifically about farming. Knowledge about farming is strongly related also to level of education and development in that specific country. Farmers in Europe and in America have relatively good level of knowledge about farming. This group also exists in West Africa, but number of educated farmers is still minor. Big

commercial farms usually have the knowledge how to utilize equipment and how to use alternative options to maximise the yield from crops. This is done for example with fertilizing and irrigation systems and with crop rotation as a sustainable farming. Still major of farmers in West Africa don't have access to proper education or database about farming with all alternative possibilities that would maximise yield from field.

Reganold & Glover (2016) have recognized the same issues. Farmers in West Africa may not even know that more sophisticated techniques exist. They might need financial and technical help to access to those that they don't have. Researchers has also observed that farmers in West Africa are not using sustainable methods in farming such crop rotations. In many cases, farmers doesn't own the land they are cultivating and that is why they are not investing to long term solutions.

Schoolars Davis et al. (2011) have seen these same issues in East part of Africa, where same problem with lack of knowledge and education of farmers exists. To ramp up the knowledge of farmers, FFS (farmer field schools) program has been established. FFS is using methods of group experiments and discovery based learning exercise to educate farmers. This helps farmers to experience, reflect, and make decisions.

AGCO has its own education system for farmers currently in one location, Zambia. This is called Future Farm. Another Future Farm is currently established to West Africa, more precisely to Senegal. Future Farms will educate farmers how to farm, how to maximise crops but also how to maintain and use machinery with help of technicians. We can state, that education is currently slowing down agriculture heavily in West Africa, but with future investments such Future Farm the level of education will grow.

### **3.5 Development of agriculture in West Africa**

Understanding the amount of machinery sold in West Africa in past and currently are important to successfully answer to thesis research questions. By defining the market potential, one can easily identify the West Africa potential as big export market for machinery such tractors. According to scholars, potential of West Africa's agriculture is undisputed. From multiple indicators we can say that West Africa's markets for agricultural machinery are looking good and very potential for tractor manufacturers (Galvin et al. 2008; Cleene, 2013; Ozainne et al. 2014).

Agriculture in West Africa is at a turning point and need for agricultural machinery will grow rapidly in future. The potential for rising markets can be found for example from increasing population, need for self-production, low utilization of the land, poverty reduction and also from rising foreign direct investments. As Competitive Commercial Agriculture for Africa (CCAA) says, West Africa is "one of the largest underused agricultural land reserves in the world" (Cleene, 2013).

Economic Community of West Africa States (ECOWAS), group of 15 countries, has been helping agricultural growth by demanding better agricultural prices, improving macroeconomics and shaping the policies. 45 % of ECOWAS countries are now urban, compared to 15 years ago when the exact number was 30 % and the number of people moving to cities is growing (ECOWAS 2010). This will appear in future as a new demand on food system. Tractor manufacturers will benefit from this as a new fooding system will demand more, bigger and higher technology tractors to ECOWAS area to satisfy the market (Hollinger & Staatz, 2015).

When we inspect figures and statistical data about West Africa, we can see some good indicators but also very extreme numbers. The population of West Africa, ECOWAS area, is approximately 300 million. Gross Domestic Production (GDP) is 7,1 % with poverty of 50 % and labour of 60 %. Population is expected to double between 2010 and 2050. (Feed the Future, 2010; Unesco, 2011)

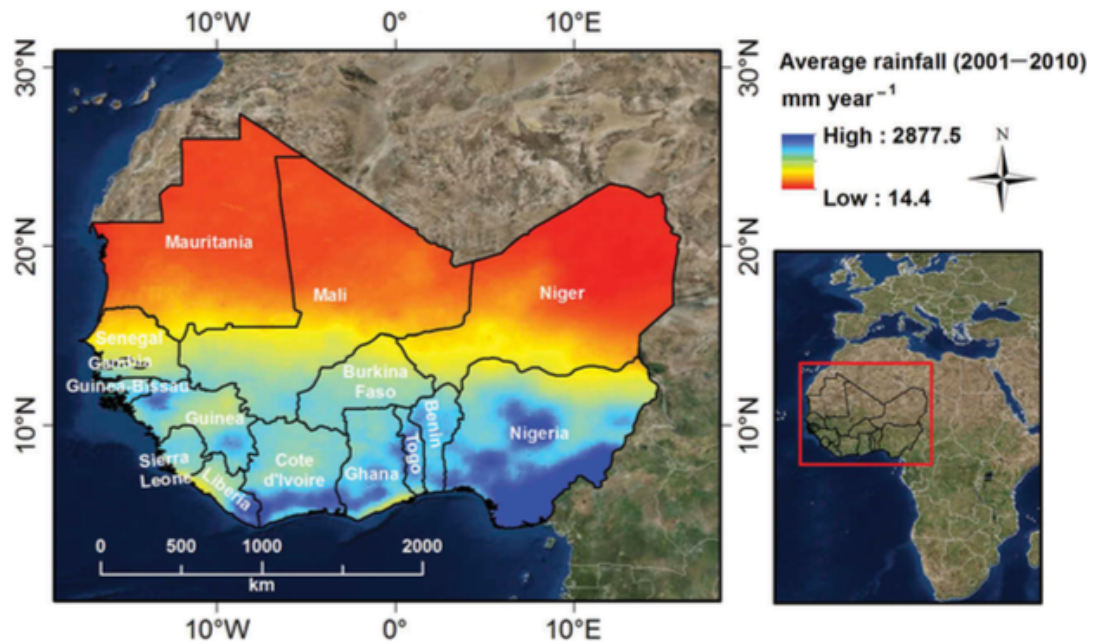
### **3.6 Environment in West Africa**

Environment in West Africa is quite extreme from agricultural point of view. There are areas that are well suitable for farming, but also areas that are not suitable. When we discuss about environment, we need to focus to climate and to area that is surrounding the business such distances, roads and nature.

If we take a look into conditions that are affecting to crop growth, we can point out that in West Africa highly variable climate, diseases, pests, toxic soils and infertile are affecting to yield (Dingkuhna et al., 2006). These are not unique conditions that are only in West Africa, but for sure one or combination of many can easily ruin the crops or make the ground impossible for farming. One that is usually affecting most to crop growth is water.

From the figure 3 we can identify the most suitable areas for farming according to rainfall. The red area is definitely not the most suitable for farming, because rain fall is too small. Farmer can use irrigation systems to irrigate the crops but this means extra investment for machinery and extra cost from water usage. The blue and dark blue areas are the most potential ones from rainfall point of view, if the rain isn't too heavy to ruin the crops. It also depends about what farmer is growing: rice, vegetables and grain need different amount of rain with different growing season.



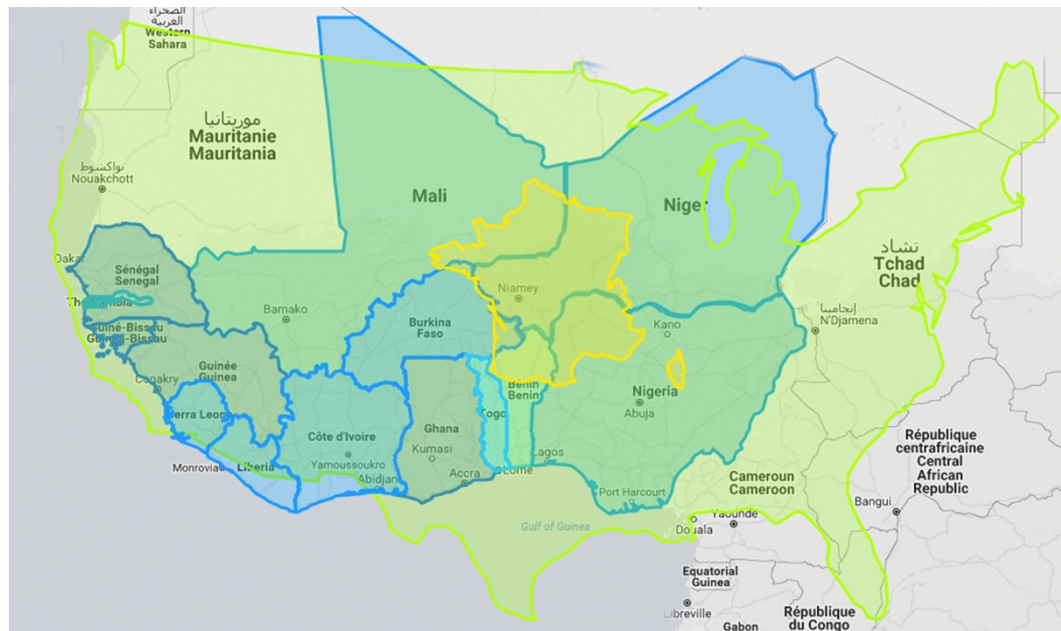


**Figure 3.** Average rainfall in West Africa from 2001 to 2010 (Adhikari & Beurs, 2016).

Importance of rain in West Africa is undisputed for farmers. According to Martikainen (2016), lack of rain has been slowing the sales in past two years. He identifies clearly that rainfall is affecting heavily to selling of machinery. He also clears that most of the biggest farm are using irrigation system to keep field in right moisture.

Rixton (2016) and Martikainen (2016) have noticed that condition of roads is bad. Typically, distances are big and transporting is hard and slow process because of road conditions. They both identify that being close to farmer, from distributor point of view, is a huge benefit.

Figure 4 shows the comparison between France, USA and West Africa to help us to understand the geographical scope of the West Africa. In figure 4 France is marked as yellow, USA as green and West Africa as blue colour. West Africa itself is many times bigger than France, almost as big as USA.

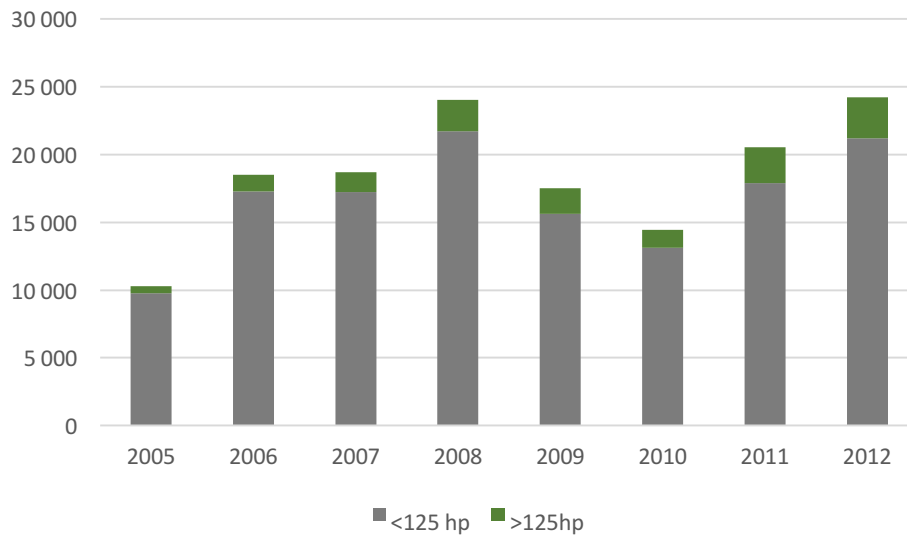


**Figure 4.** West Africa are compared to France and USA (Talmage & Maneice 2012).

### 3.7 Current tractor market in Africa

In this chapter we will introduce figures about current tractor markets in Africa. Statistic are collected from year 2005 until 2012. When West Africa is still new area for Valtra, this chapter will give more comprehensive look of the characteristic of tractor markets in whole Africa. Currently South Africa is having big share of the case company's export share in Africa.

From figure 5 we can see, that from year 2005 until 2012 markets have grown over doubled as big as they were. Especially the development above 125 hp tractors have been growing heavily. This segment, tractors above 125 hp, is really interesting from Valtra point of view where most of the tractors produced are above that HP level. Why statistics only go until 2012, is that tracking from AGCO decreased heavily after that and there haven't been comparable data available after 2012 (Seitz, 2016).



**Figure 5.** Total tractor markets in Africa from between 2005 and 2012 (Valtra Marketing/Sales 2015).

Mechanisation level in agriculture in Africa is still in very low level. We can clearly identify from the data shown in figure 5, that market is relatively low compared to geographic area of Africa. To give relative example from West-Europe, France is selling approximately same amount of tractors per year that the whole Africa is selling. Still the size of France compared to Africa is relatively different and this is also visible in figure 4.

As shown in this chapter, the most important factors for successful and sustainable sales channel in West Africa can be listed as:

- Geographical location
- Experience and access to assets
- Motivation to grow sales
- Conformity to markets

The geographical location is important criteria, when geographical area of West Africa is big and company has to be located next to customers to serve those.

Company's experience about machinery with know-how is also important, to keep the fleet moving in farms. We have recognized that not all can access to assets, but for distributor it is also important to have access to assets and to offer different paying solutions for end customers. Ability to access enough assets will also ensure good stock machinery in distributor. The motivation for growing sales is of course one major characteristic of successful distributor. When agricultural markets are increasing or decreasing, company should be also able to conform to surrounding market situation by getting more resources or by releasing resources such human resources according to need.

## **4 VALTRA'S OPERATIONS IN WEST AFRICA**

Valtra has had operations in Africa since 1980's. This chapter introduces and collects together Valtra's history in Africa with focus especially to West Africa. Valtra's current distribution network with current agricultural product offering through those distributors is also introduced in this chapter. It is important to notice that the case company has been operating quite long in Africa already. This gives competitive advantage in for example brand awareness.

### **4.1 Valtra's history in Africa**

Valtra was still named as Valmet when it started operations at Africa. In 1980, Valmet and Agency FINNIDA established a company named Tanzania Tractors Manufacturing Company Ltd. (Trama) to Tanzania. At the same time, Valmet invested to Sweden owned plant in Kibaha Tanzania that was manufacturing Scania trucks and had a lot of space in production facility. Assembly started at Kibaha plant in 1984 and production reached the peak in 1985, when 720 Valmet 604 tractors were assembled in Kibaha. The collapse of the Berlin Wall in 1989 finally ended the production when all parties changed production from Africa to Eastern Europe. (Niskanen, 2010; Niskanen 2008).

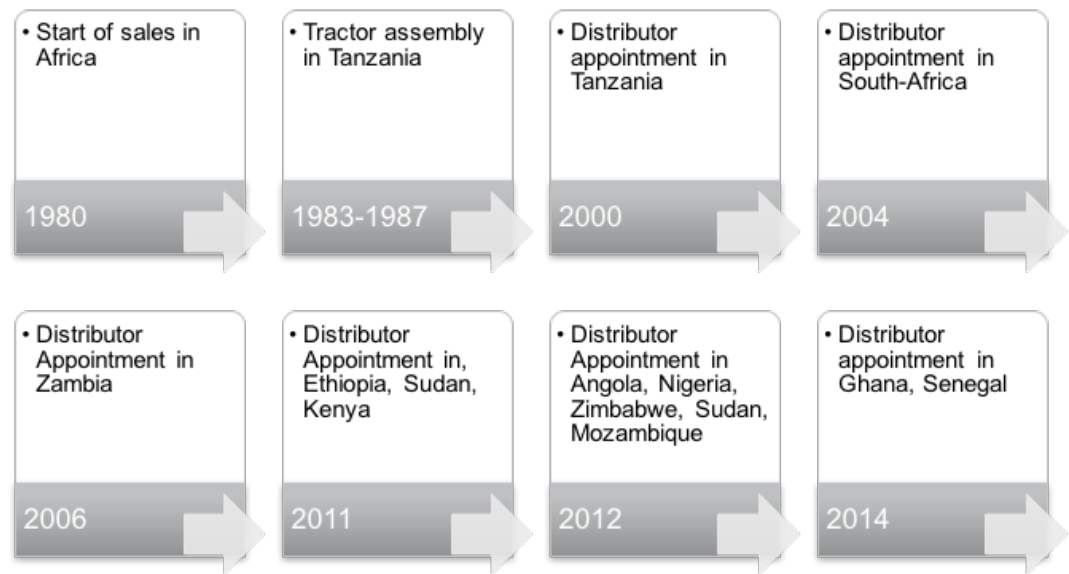
Picture shown in figure 6 is taken from Kibaha truck factory, where Scania invested and where Valmet started to assemble tractors. Almost 2000 Valmet tractors were assembled in Tanzania (Niskanen, 2010; Niskanen 2008).



**Figure 6.** Valmet assembly in Tanzania 1980s (Niskanen, 2010).

The change of name to Valtra took place at 2001. Valtra has a good possibility to answer to increasing demand of tractors in Africa, when Valtra has been operating long in Africa and is known at least in some areas. Valtra, as all of the competitors have seen the increasing demand of tractors to West Africa when production of food is about to increase. But still Valtra saw potential in Africa already 30 years ago, which gives good roots and good knowledge about operating in Africa.

From figure 7 we can see that the first three distributors for Valtra was *Tanzania*, *South-Africa* and *Zambia*. Within five years, Valtra has increased operations to cover 10 more countries. AGCO has established 'Future Farm' development centre for commercial farmers, dealers and distributors to increase sales and knowledge at Africa. Another 'Future Farm' development centre is built to Senegal, which tells that West Africa farming has great potential for growth.



**Figure 7.** Valtra history in Africa from 1980 until today 2016 (Valtra Marketing/Sales 2015).

#### 4.2 Valtra distribution network at West Africa

Valtra has currently sales network in 13 African countries. These countries are Angola, Ethiopia, Ghana, Kenya, Nigeria, Senegal, South-Africa, Sudan North, Sudan South, Tanzania, Uganda and Zambia. In this thesis we will focus to countries Angola, Senegal, Nigeria and Ghana. Angola is also included to research when it's not part of ECOWAS countries but still has Valtra distribution and is close to ECOWAS area. Angola has been also included to part of this research to gather more research data. Figure 8 shows Valtra current distributors in Africa. As figure 9 shows, Valtra has more distribution in South and East of Africa. Existing



**Figure 8.** Valtra distribution in Africa (Valtra Marketing/Sales 2015).

From figure 8 we can easily identify the gap in West Africa. Only three countries have distribution in West Africa at the moment and distribution in those countries isn't yet covering the all areas. The case company has huge interest to cover more parts in West Africa, where markets are predicted to grow.













### 4.3 Valtra product offering in West Africa

When we discuss about the case company Valtra, we must take into account that Valtra is making tractors in two different locations: in Finland and in Brazil. The tractors are both made under name of Valtra, taking into account local market needs. When need in EAME (Europe, Africa and Middle-East) markets is going more to precisions farming and high technology products, the most demanded tractor in South-America is still basic tractor with mechanical gear levers and hydraulics. Also standards for emission levels between Europe and Brazil have huge difference.



From figure 9 we can see the product offering from Valtra to West Africa. Beside of tractors, Valtra also sells combine harvesters, sugar cane harvesters, generators and soil preparation equipment in West Africa. This thesis will focus to tractor business made in both locations Finland and Brazil.

Valtra is selling tractors from 50 hp to 400 hp, as shown in figure 9. There are other products such *harvesting* and *crop care* equipment available at West Africa. The products made in Brazil are in horsepower range between 55 and 215. Products from Finland are between horsepower range 88 and 250 and the biggest, *S-Series* tractor made in France, comes with 400 hp.

HP	Tractors	Harvesting	Crop Care	Others
400 ↑ 200	 <i>S-series</i>		 <i>CH Crop Care</i>	 <i>Sugar Cane</i>
210 ↑ 131	 <i>BM, BH, N, T-series</i>	 <i>Class VI-VIII</i>	 <i>CH Crop Care</i>	 <i>Gensets 60-250 kVA</i>
130 ↑ 81	 <i>Compact, A, N Series</i>	 <i>Class IV</i>	 <i>Small Implements</i>	-
80 ↑ 50	 <i>A-Series (55, 65, 75 HP)</i>	-	 <i>Small Implements</i>	-

**Figure 9.** Valtra product offering to West Africa (Valtra Africa, 2016).

In usual situation tractor is bought according to size of land, implements and farming. Small field with basic implements can manage with basic mechanical

transmission with small amount of horsepower needed. When it comes to big field with big and precise implements, the need from tractor increases. Usually then farmer need more horsepower, CVT (continues variable transmission) transmission, autosteering and display to control ISOBUS implement. West Africa has need for both tractors, basic mechanical ones and high horsepower, technological sophisticated tractors. Still demand for bigger horsepower tractors with higher technology is increasing.

According to interview with Valtra distributor located at Angola, Jose Possidonio (2016), most of the customers wants to buy both products; products made in Finland and products made in Brazil. Martikainen (2016) has made same observation, who clarifies that especially in Angola level of economy is sometimes relatively good and tractors are bought with all possible options included, even when they are not necessarily needed for farmer. He also says that using so called Western Brands in agriculture is more status symbol and honour for some farms in West Africa. By having Western Brands, farm can show that they are in good shape in terms of investing money to business and also for good machinery. Rixton (2016) agrees with these findings and adds that big commercial farms usually need both equipment for farms, the basic mechanical tractors and those with latest technology for most precise tasks in farm.

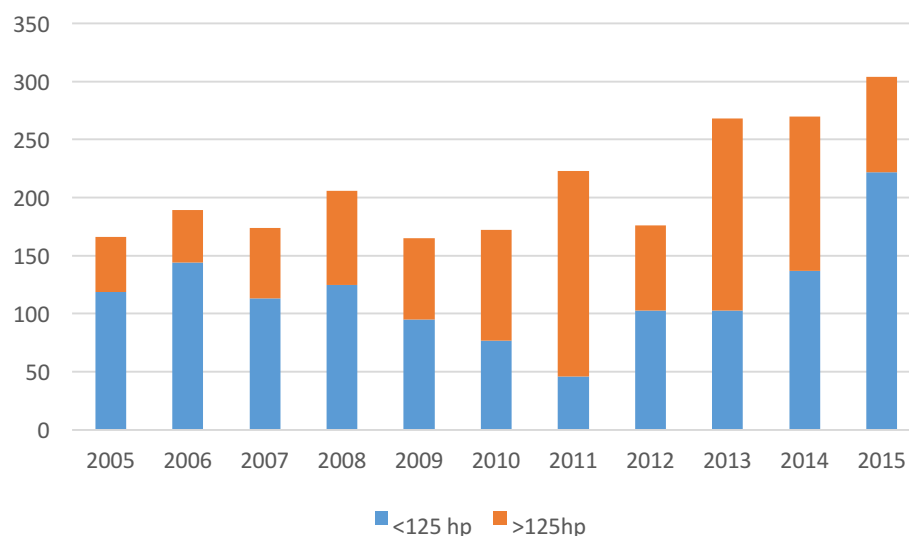
Some species such corn, flowers, cereals or vegetables, may set specific needs for tractor investment. For example, rice, potato, wheat and grape needs own kind of tractor that ensures efficient farming that typically sets own specific needs for a tractor.

This master's thesis won't specific focus into one type of farming method or a one type of tractor. It will focus with comprehensive look and with wide scale to growing demand of usual tractors, that is the most common and mostly used equipment in Farm.

We can summarize that demand in West Africa is increasing in terms of agricultural machinery. From perspective of tractor manufacturing, offering products for all technology and price levels will be big advantage. In case company situation there is also good reputation with long history in Africa on the background. Also experts agree that when one can offer full fleet through one distributor, it is a huge advantage.

#### 4.4 Valtra sales in Africa

In figure 10 is shown Valtra's tractors exported to Africa between 2005 and 2015. We can see clearly, that *Valtra* figures do not fully correlate with number of total market, shown in figure 5. For example, the drop of sales in 2009 hasn't been that big impact for Valtra sales.



**Figure 10.** Valtra tractor markets in Africa from between 2005 and 2015 (Valtra Marketing/Sales 2015).

When Valtra's distribution is not yet covering 100 % of the countries or areas in Africa, the growing has not been as big as it has been in total tractor markets in

Africa. This gives another reason to grow the coverage to new areas such West Africa to have increase sales. Also the trend of growing segment of above 125 HP tractors is interesting from Valtra point of view, where most of products are in this HP category.

## **5 REASONS FOR ENLARGING DISTRIBUTION TO EMERGING MARKETS OF WEST AFRICA AND SELECTING SALES CHANNEL THERE**

Next is introduced factors that are seen as enablers for agricultural growth in West Africans emerging markets and also how need for agricultural machinery will develop. Most of the studies are predicting figures until 2020-2022 and that is the scope that this chapter will target. In this chapter are introduced the topics that will lead to sustainable self-sufficiency in emerging market by growing the fleet of agricultural machinery in West Africa.

### **5.1 Subsidies**

When we discuss about emerging markets in West Africa, getting subsidies to help to build the business, such an investment, are complicated. We can clearly say that subsidies are in critical role in emerging markets especially when end user don't have enough assets to purchase. When end customer doesn't have access to assets to purchase the product, he has to find other method to do the investment. In some cases, this end customer is not purchasing or owning the product, the owner can be party such government, city, group or a leasing company. Then end customer, the user, is paying for use of the product instead of purchasing the whole product. When in emerging markets the end user in many cases don't have the assets for investment, another type of contract for using the product with specific payback methods is more realistic.

As mentioned already, not majority of farmers in West Africa are using the subsidies. According to interviews (Martikainen 2016; Brixton 2016; Possidonio 2016) and studies (Kendo 2012; Balogun 2011), no major of farmers know how to access or use subsidies such funding and donations. As discussed with Rixton

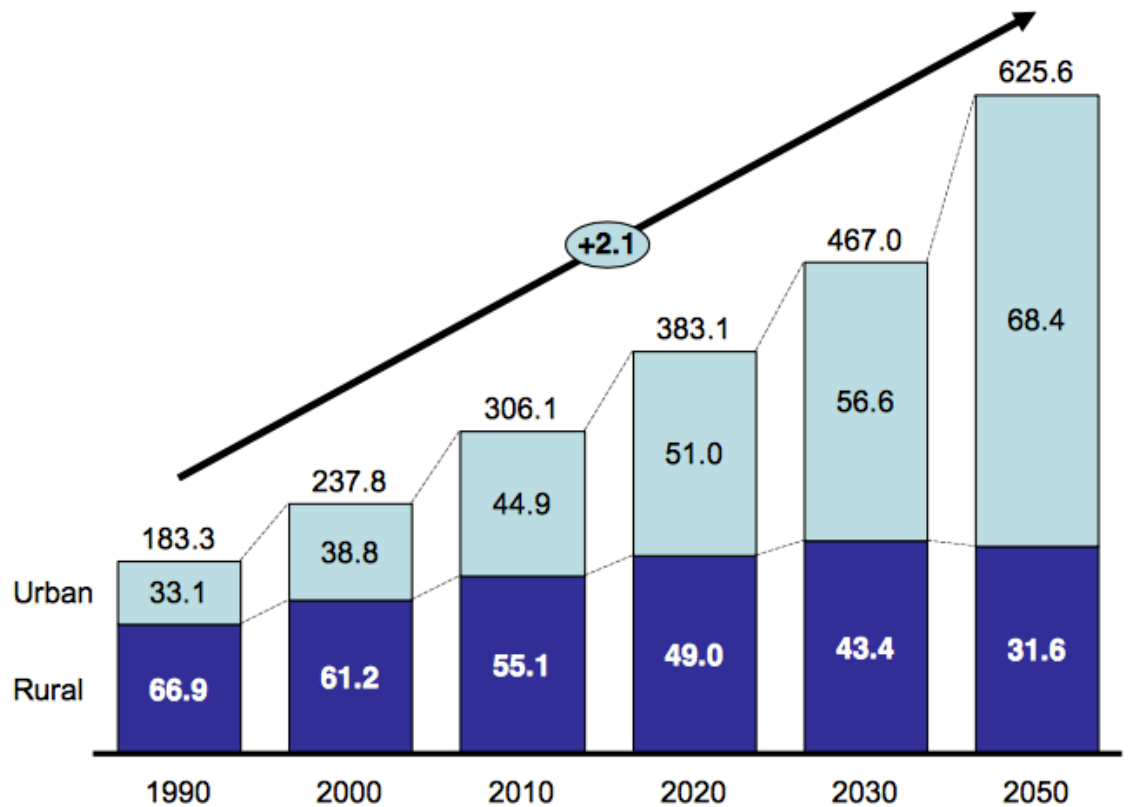
(2016), big commercial farms have the knowledge how to leverage subsidies and they are using those heavily.

Another benefit by subsidies for West African farmers at the moment are subsidies granted by other countries. For example, Brazil is supporting its industry and with help of banks at West Africa giving subsidies and loans to farmers with good terms (Martikainen 2016). These subsidies are controlled by both Brazilian authorities and authorities at banks in West Africa. When usual end user doesn't have enough property to get enough amount of loan, this kind of subsidy with good term in loans payback times and interests are heavily supporting farmers at West Africa.

Subsidies are in critical role for growing the self-sufficiency in emerging market. Instead of sending helpful food packages to critical and suffering areas of emerging markets, supporting locals for self-sufficiency is better for sustainability. Especially emerging market is potential growing area for self-sufficiency, when economy is slowly starting to grow with other indicators at the same time.

## **5.2 Population growth**

One driver for increasing need of agricultural machinery is the population growth in West Africa. As figure 11 indicates, population in West Africa will double from 2010 306,1 million to 2050 625,6 million (Feed the Future 2010; Adhikari & Beurs 2016).



**Figure 11.** West Africa's projected population growth (Feed The Future, 2010).

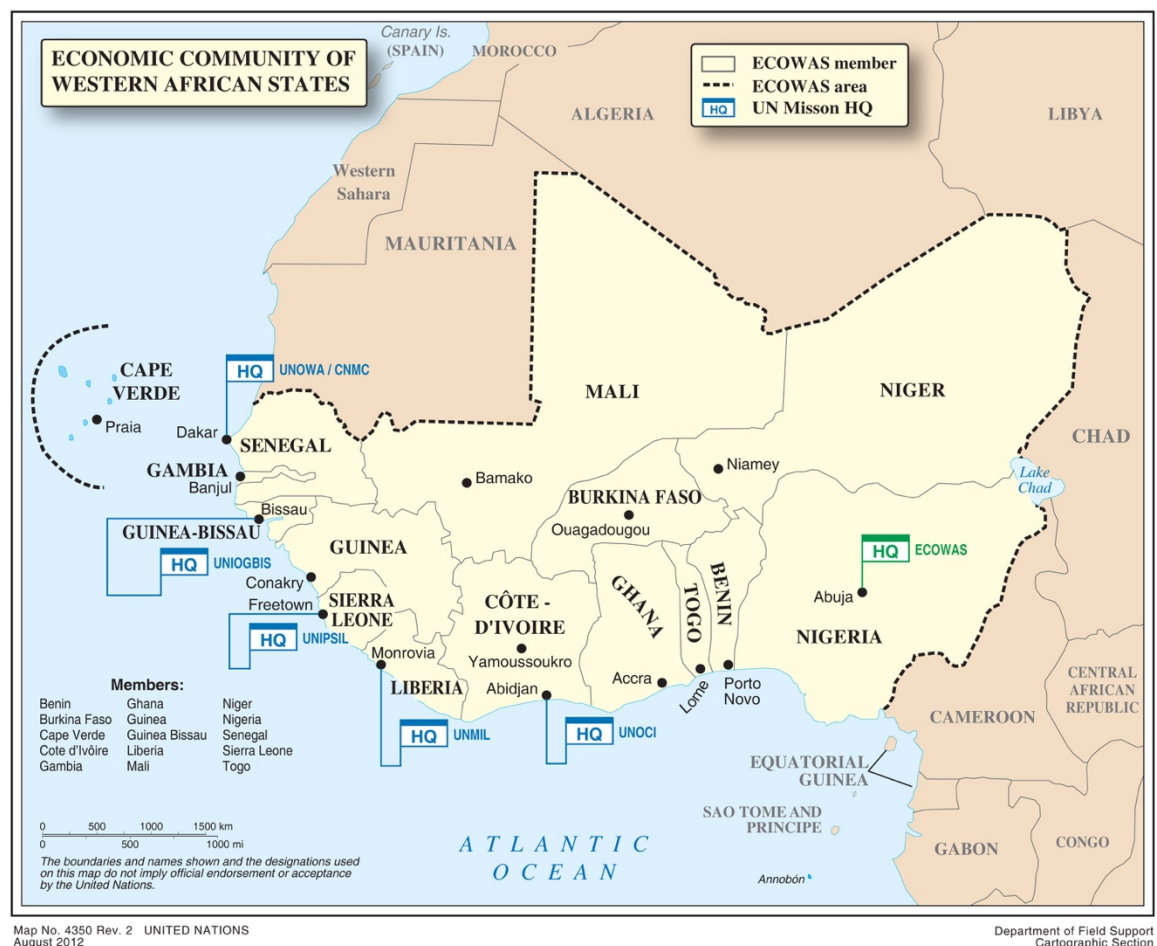
Growing population will affect straight to increase need of food. To answer to increasing demand, more soil has to be adapted under cultivation and more machinery is needed. As this thesis has already stated, there is lot of uncultivated arable land at West Africa available. The real demand at West Africa will be at the machinery side where Valtra already has distribution network. Improving and expanding the distribution network to most potential ECOWAS countries will be the key element to meet the demand.

Equity ratio in agricultural production in West Africa is not in good level. Help coming from other countries to starving areas as food aid has decreased. Aid has transformed more for helping self-sufficiency in areas, so that they could product their own food now and in future. When this is already in bad shape in many areas of West Africa, increasing the self-sufficiency with growing population will lead to

need of lot of agricultural equipment. By looking the growing population from this aspect, need for more machinery is clearly visible.

### 5.3 Economic Community of West Africa States

ECOWAS (Economic Community of West Africa States) today is heavily shaped by its political past. There has been lot of political instability in West Africa, but today all 15 ECOWAS countries has democratically elected governments (ECOWAS Vision 2020). In this chapter, we will discuss more about the future benefits what ECOWAS will bring and how will that affect to tractor sales. All 15 ECOWAS countries are presented at figure 12.



**Figure 12.** Map of ECOWAS member states (United Nations, 2012).



ECOWAS vision is to “create a borderless, peaceful, prosperous and cohesive region, built on good governance and where people have the capacity to access and harness its enormous resources through the creation of opportunities for sustainable development and environmental preservation” (ECOWAS Vision 2020).

ECOWAS target at 2020 is to offer in ECOWAS countries equal principles of democracy, rule of law, education and health, single currency and free movement. It will involve also all stakeholders outside of the government to achieve these goals. (ECOWAS Vision 2020; Lufumba et al. 2016)

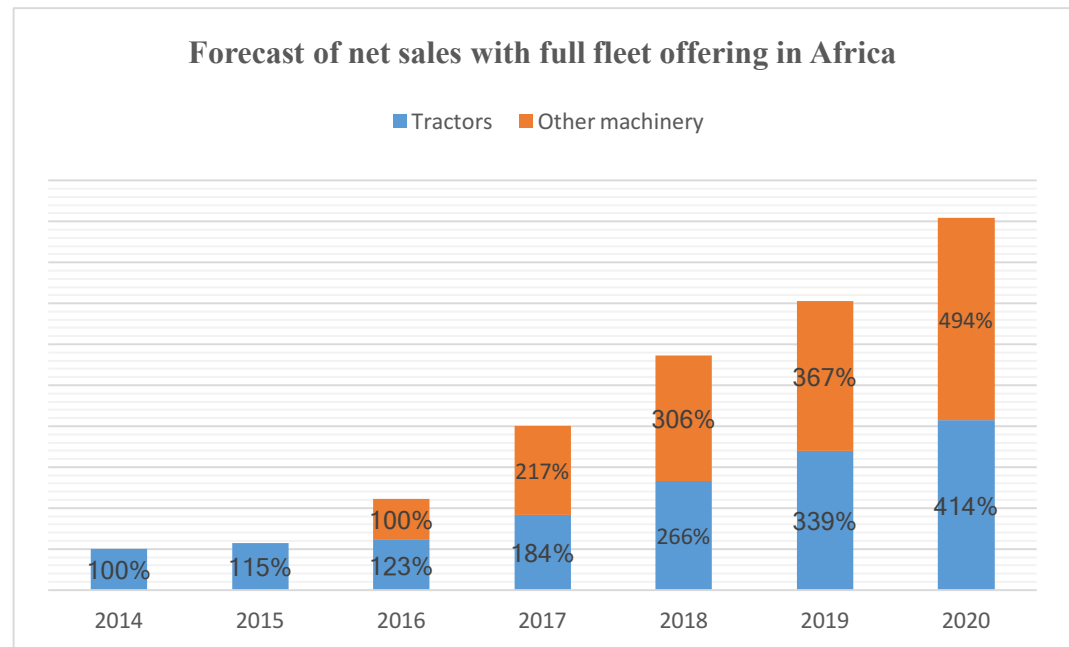
Benefits that ECOWAS will enable for tractor business are easy to identify. If commission of ECOWAS can keep the objectives and targets they have set, ECOWAS with all the benefits such single currency and free movement in member states will have big impact for tractor markets. ECOWAS will help especially farmers but also enable easier distribution and pricing for West Africa markets. Also investment for agricultural machinery, such tractors, will be more affordable for farmers to buy. Also pricing, tolls and selling second hand machines will be easier in future in West Africa countries.

This is definitely interesting from tractor manufacturing point of view. If in 2020 ECOWAS will have all the benefits they are planning to offer, there will be many drivers that are indicating agricultural business and with that tractor sales to grow

#### **5.4 Growing need of machinery**

Need for agricultural machinery will grow heavily in future in West Africa. Forecasting when and where the grow will happen is not straight forward process. As we have already stated, economy is not yet in stable level so that we could predict when and where the grow will happen. For this reason, forecasts done by

researches varies much. Valtra has done its own prediction which is shown in figure 13.



**Figure 13.** Forecast of net sales with full fleet offering in Africa (Valtra Marketing/Sales, 2015).

We can especially identify, that full fleet will offer in future more income than current product offering with tractors only. From figure 13 we can identify, that forecast is showing approximately four times bigger (414 %) net sales in 2020. We can also easily deduce that these both product lines, tractors and other machinery such as sugar harvester will back up sales of each. By offering only one line of products, sales figures wouldn't reach as high numbers. According to Rixton (2016) and Possidonio (2016), customers appreciate that they can buy all machinery and equipment from one place. There are reasons such as distances and business relationships and sustainability, why customers want to purchase products from the same good supplier.

One big benefit for Valtra and Valtra distributors in West Africa is full fleet. Full fleet is typically understood by offering a product range from soil preparation to

harvesting. Typically, full fleet means offering of cultivation equipment, planter, sprayer, tractor and harvester. Full fleet can be recognized also from figure 10.

As said, Valtra is currently from year 2016 offering full fleet at West African distributors. Customers can buy all agricultural machinery from same dealer and use same services such parts for all equipment. Also the brand identity with perfect compatibility is big advantage when offering full fleet. Valtra will answer to increasing demand by offering full fleet through distributors, with Future Farm at Senegal and with increasing support to West Africa sales and marketing.

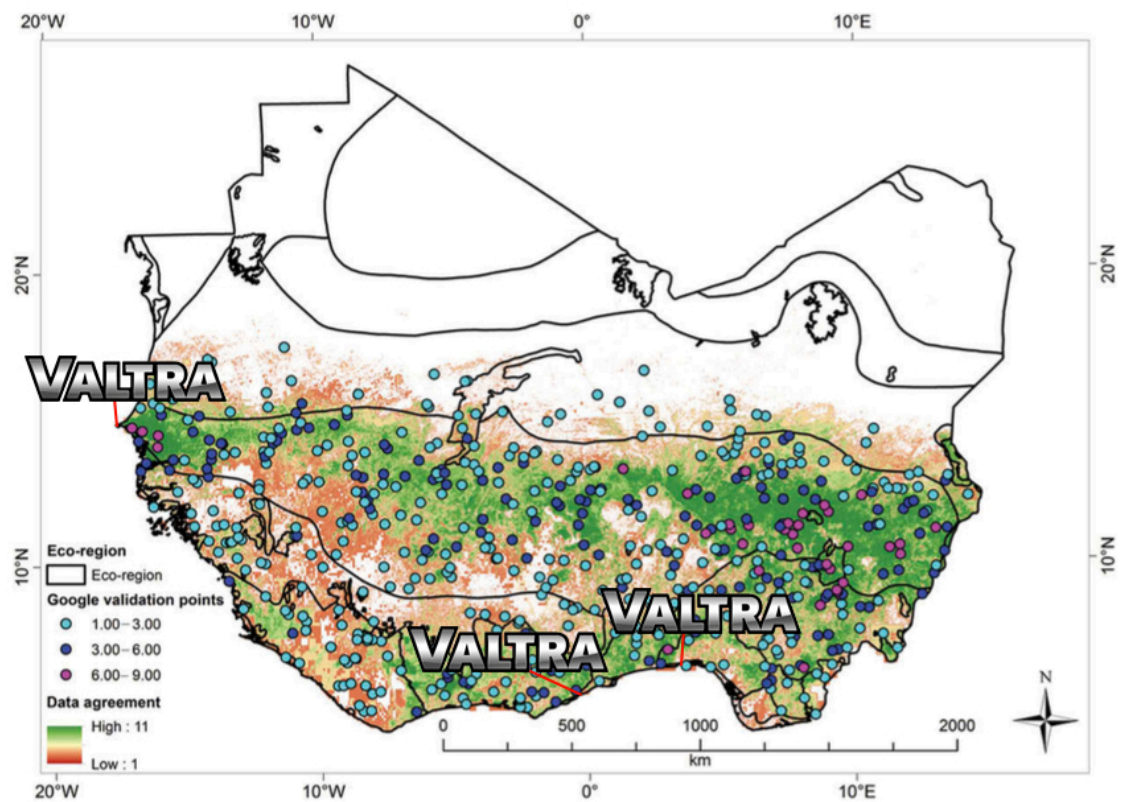
Valtra Finland and Valtra Brazil both also have readiness to deliver systems for upcoming emission needs from tractors. Emission levels are country specific demands that are related to pollution of machinery. The tightest demand is currently in Europe for emission levels, but Africa is in upcoming years moving to more tight emission control. Companies operating in areas such Europe will have benefit when they have already produced a system to answer to need of emission levels. Companies coming from countries such India and China may in some case face problems introducing cost efficient and lasting system to reach emission levels.

## **5.5 Sales channel selection in emerging markets of West Africa**

With help of research and studies already presented, this chapter will introduce the most suitable sales channel for emerging market of West Africa to grow agricultural machinery sales from Valtra point of view. It will include methods how to select correct place for sales channel that is close to customers. We will also discuss briefly about selecting right distributor with competitiveness how to grow the sales in future.

### 5.5.1 Position of sales channel

Researchers Adhikari & Beurs (2016) has done recently really relevant and interesting study by gathering cropland data from satellite picture into big scale. They have used a software to read data from many overlapping satellite pictures and then to recognize either there is field, forest, building or desert at the picture. Data has been collected from West Africa and is shown in big country level picture in figure 14.



**Figure 14.** Croplands at West Africa transformed from satellite pictures (Adhikari & Beurs 2016).

For use this research, two pictures have been combined and Valtra distributors have also been included to the same figure 14 to realize how they are currently located against croplands in West Africa. At figure 14, *green area* is considered as cropland

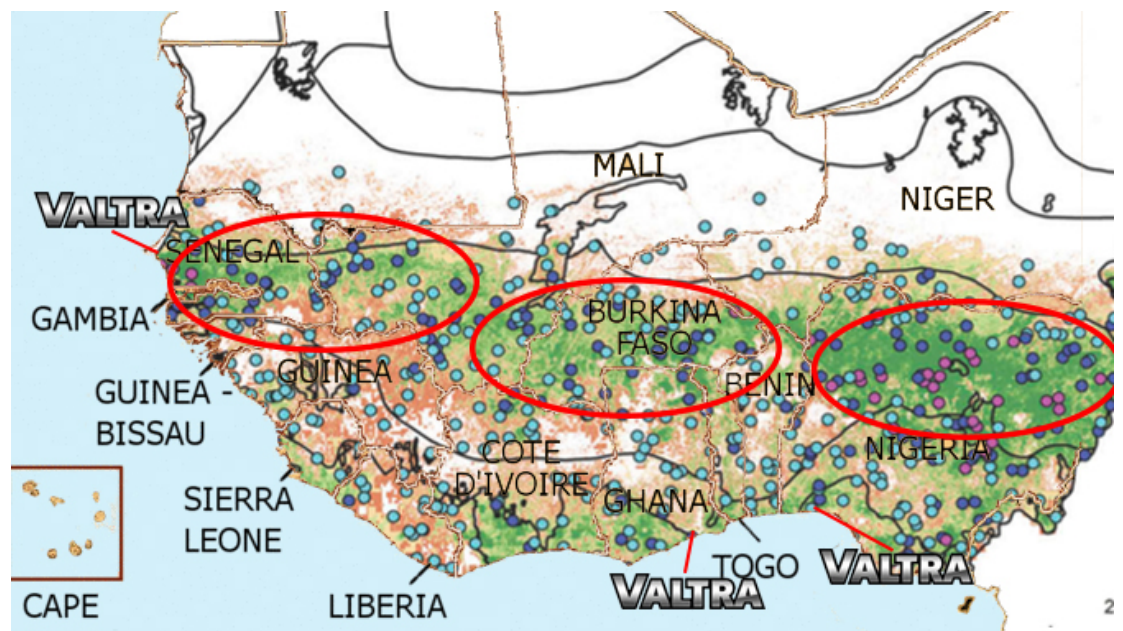
and at green parts data from satellites is most accurate to be recognized as field. This study made by Adhikari & Beurs (2016) doesn't recognize any borders in West Africa and that will be also our systematic overview for selecting right areas for distributor. This approach will consider only the amount of farmers and farms as the right place to have distribution, rather than have distribution in urban areas, where there is no cropland area. We have to expand the view to consider that same place that has distribution, will also have spare parts, support and service available. This is in critical role, when the equipment is sold and after marketing is regularly needed. Then having distribution close to farms and farmers will be most identical spot to have it.

We can clearly identify, that current Valtra distribution at West Africa is too far for markets in many cases. For Senegal in the West of the map, the situation can be considered as the best at the moment. In other case, Ghana and Nigeria are located in big cities but far from farmers. According to Rixton (2016), transportation is usually huge problem in West Africa when roads are in bad condition and distances are relatively long.

Martikainen (2016) has identified same issue, that our Valtra distribution is in some cases too far from customers. For instance, some customers are located 1000 km away from our Nigeria distributor that only office is in Lagos, which is largest city in Nigeria but located South next to sea. Sometimes our distributors take a plane to reach customers to North of Nigeria. Being present in markets in that case is impossible without branches closer to customers.

If we do combination of Adhikari & Beurs (2016) research of croplands, add country borders and Valtra distributors to that, we have a figure such XUZ. From here we can easily identify three clusters, where one should setup distribution or branch to sell agricultural machinery.

From Figure 14 we can also now identify countries that are more favourable than others in terms of selling agricultural machinery. These areas are located below dry areas such as Sahara Desert, but still north from the sea. The reason why there are fields and farms currently in this area, is because of acceptable climate for farming. As this thesis has already stated, farming needs specific circumstances for crop to grow. Figure 15 is pointing out the most suitable areas to establish distribution in terms of cropland areas and suitable climate.



**Figure 15.** Favorable areas to setup distribution for agricultural business in West Africa

These three cluster has been selected according to Adhikari & Beurs (2016) Land-cover and Land-use research, using study from our current Distributors and by knowing the current locations of our distribution. When forming these clusters, the choosing criteria has been:

- distance to customer
- amount of farmers in area
- rainfall in area

Next areas where to establish branch or distribution and service centre should be located inside these three clusters, visible in figure 15.

By serving clients from these three clusters, one can more easily be present for bigger amount of customers. Also response time with spare parts and service will be better, when distributor or service centre is closer to customer's farm. When transportation is difficult and slow, because of bad road conditions, distance is in critical role when buying new equipment or serving the old machinery in West Africa.

### **5.5.2 Selecting right distributor**

Distributors performance is in key role when doing daily sales of agricultural machinery or when there is need to grow the sales. In this chapter we will discuss about topics that will affect to performance of distributor in West Africa. We will focus to those topics that are introduced in this research at chapter 3.3.

Distributors technical know-how is in critical role especially when selling agricultural machinery. Machines are complex products with approximately 4500 parts attached, where almost every machine is different than other with specific options included to that product only. The technical know-how, how the tractor itself functions and where it is most suitable is important. Usually distributor has fleet of tractors that are suitable for specific task and that for distributor has to have knowledge what to sell to who.

Experience how to sell complex products, where not only price is the buying criteria is important. Also experience from the agriculture itself is important, when one can easily recommend products for tasks that are known to salesman. Experience is visible in different levels. It is visible in distributor level, from daily basis to new

unusual situations. It is also visible in salesman performance with also service and aftersales included.

Solvency is one choosing criteria in every area, but especially in West Africa. Solvency is mostly related to expanding the business. For expanding the sales, distributor has to have some level of commitment to invest money for growing. In most cases, solvency has been seen as one of the reasons why sales are not growing (Martikainen, 2016; Lehtikoinen, 2016). Motivation for the product is usually related also to solvency. When one has motivation and future expectations for the product, investing big amount of money from even small liquidity is more common. Instead when motivation for product is low, investing nothing from big liquidity is common.

We have determined already where the geographical place should be in West Africa, but nevertheless importance of geographical coverage is undisputed and from all of the choosing criteria coverage is one of the easiest to measure. Another criterion for distributor are storage capacity and after-sales. Storage capacity affects straight to size of stock and demonstration machinery and after-sales are playing critical role when selling another machine. If feeling and feedback are bad from after-sales, customer usually changes distributor or brand to another. The stock is also related to size of parts available.

When end customer usually doesn't have the assets to purchase machine directly, finance is needed for the purchase. How distributor can offer these finance solutions and how good connection distribution has to banks and financing institution will be in big role especially in West Africa.

When evaluating our current Valtra distributors at West Africa, the best performance has been in those that are international companies that have operations in several West African countries. In usual situation, the company is also selling other than agricultural machinery so that company is not dependent from only one



area of business. These companies have enough liquidity and assets to grow the business and they also have the knowledge about business of West Africa. Distributor has good conditions for distribution with great space for stock machinery and parts. They also have wide network of contacts with good motivation to spread the business. (Lehikoinen, 2016; Possidonio 2016; Rixton 2016).

We have already reviewed total markets in Africa and also the case company's markets in Africa in this thesis. To fully understand the situation in Africa, we have to also investigate this in country level and how it differs from West-Europe's characteristics. In table 3 is comparison between Europe and Africa total tractor markets changes yearly from 2007 until 2012.

**Table 3.** Agricultural machinery market changes yearly in Europe and in Africa (Valtra Marketing/Sales 2015).

European Agricultural Machinery Markets					
% change of market volume compared to previous year					
	2011	2012	2013	2014	2015
European Union	19	7	0	-2	-7
Germany	23	14	3	-1	-10
France	25	16	7	-13	-8
United Kingdom	8	7	-8	5	-8
Italy	8	-7	-14	-2	-4
Poland	3	26	-16	-2	-1
The Netherlands	18	-3	-9	0	-6
Spain	15	-9	4	0	-2
Belgium	28	4	8	-1	-10

West African Agricultural Machinery Markets					
% change of market volume compared to previous year					
	2011	2012	2013	2014	2015
Africa total	42	7	10	-12	-10
Ghana	-5	34	-37	-6	-57
Niger	50	-	-	-74	-81
Nigeria	-21	-9	-45	0	-14
Senegal	525	-42	95	-18	809

Numbers in table 3 are indicating the change compared to last year market. Green colour indicates increase in sold machinery and red indicates decrease in market. From table 3 we can identify, that agricultural machinery markets in *European union* are correlating fell. When total market is increased, which means in table 3 green colour, sales in almost all countries are changing to same direction. Big markets such *Germany* and *France* are affecting to total *European Union* market heavily.

In table 3 we can identify, that changes in all African countries are huge. In *Africa total* market, changes are big put not as big that they are in country level. Market is increasing and decreasing heavily in countries and this will make the biggest difference to distributors performance.

What we can clearly identify, is that one huge problem for distributor in West Africa will be meeting the variable demand, that can be as big as 800 % lower or higher than it has been in previous year. Even when sales figures are low, company has to adapt the surrounding market conditions.

From this statement, we can draw a conclusion that most sustainable distributor in West Africa will be the one, that can easily allocate business such employees and resources so that it can meet the need of high peaks and won't struggle in lower demands. This indicates that distributor in Nigeria should be also involved to other business that such agricultural business in case of sustainable future for business.

If the distributor is only selling agricultural machinery, he has to conform for the highest peak seasons. In the low seasons, for example human resources will take too big share of company's income and company will that how struggle. This isn't the case in most places in Europe, where demand is not changing that much. Like we saw in table 3, in *United Kingdom* the demand is only changing approximately 7 % yearly. The distributor operating in United Kingdom doesn't have to rely that

much to other business forms.

For the example in Nigeria, the optimal distributor in that case would be multi-industry company. When demand is decreasing up to 45 %, multi-industry company can rely to other business segments that he is also operating. That is also how he can conform to highest peaks in demand by allocating resources such human resources based on need of any industry.

### **5.5.3 Competitiveness**

According to Seitz (2016), one problem when choosing and determining the distributor in West Africa is the competitiveness in future. Distributors don't currently have any procedure how expand the business of their size in the coming three, five or ten years. They usually don't also know, what are the expectations and how they can fulfil expectations.

Competitiveness of distributor is easiest to determine by discussing and interviewing the distributor itself. Annual report and reputation itself with expand operations are good base for competitiveness analysis. Distributor has to have straight plan and knowledge how to answer for growing demand or for instability of markets. In best case scenario, distributor is actively and regularly training salesmen and service, when looking for the future about how the competition and markets are evolving and adjusting plans according to that.

When choosing the right sales channel, the competitiveness of distributor will be playing big role in the future. For that reason, it has to be evaluated before choosing one. Good competitiveness will grant great base for expanding the sales. In opposite, bad competitiveness will eliminate the base from business to grow, when the performance of distributor will be poor with bad competitiveness.

## 6 RESULTS AND CONCLUSIONS

In this chapter is introduced results and conclusions of this thesis. The main purpose of this chapter is to answer clearly to research questions and to set goals. We will discuss about current situation in West Africa, but also about future. Size of agricultural markets at emerging market of West Africa is presented here, and conclusions are done either one should invest to West Africa or not. We will also discuss what are the major factors making complexity an uncertainty to agricultural markets, but also what will enable growth in future. Also where to invest and through what sales channel are shown here.

Area of West Africa is huge. It includes huge diversity with great potential of emerging markets. We can clearly identify that emerging markets of West Africa are at the moment facing many problems. These problems related to agriculture can be categorized to money, politics, knowledge and environment. There isn't straight forward process to solve these issues and it is impossible to give any timetable when these problems will be solved. Some of these issues are affecting more to some specific group rather to be holistic for all of the farmers.

This thesis has identified that especially the commercial farms are doing good business by farming, but still major of farmers are small farmers located in rural areas. This would easily end up to conclusion that one should invest to sell to commercial farms, but that is not sustainable solution. The growth and potential is in the small, major amount of farms.

The growth of population and self-production will end up to need of more machinery. These both two factors will increase the mechanisation of farming heavily. There isn't yet potential growth in need of machinery, but one has to build up sales channel to right places to answer to demand when markets are growing. Especially need for above 125 HP tractors has increased in past ten years, and this

segment is one to grow most. Still the major of tractors in near future will be under 125 HP range.

Valtra has been operating in Africa over 35 years from now. There are some tractors still in urban and rural areas working and feedback with brand awareness about Valtra is in good level. From the Valtra distribution network we can clearly identify that West Africa is not yet under coverage of Valtra distributors. We have three distributors at West Africa, located in Ghana, Nigeria and Senegal. These companies and can be used as a good benchmark how business have been growing and what will be the future aspects for growth.

Nevertheless, the distribution network at West Africa is not yet in good level to distribute even now for all of the potential farmers in West Africa. As seen in figure 14, most of the big agricultural areas are located more than 500 kilometres away. This leads to conclusion that sales channel should be expanded to these potential areas, where big amount of farms is located.

Valtra's benefit in West Africa will be the full fleet. Year 2016 has been the first year to offer full fleet through distributors, so there aren't yet statistical figures about sales. There has been great demand in past to get all machinery from same distributor and especially this has led to offering of full fleet. Valtra has all machinery ready designed in Brazil to offer the full fleet, so biggest issues have been training of the machines with branding and marketing.

Education and knowledge is indeed one of the major issues among West African farmers. As shown in this thesis, major of farmers in some cases doesn't know that more sophisticated farming methods exist than doing all by hand. Also the access to knowledge is major slowing factor at the moment. Still situation in future is looking better, groups such ECOWAS and charities outside of Africa are helping people to access to schooling system. What we can clearly note, is that at education is going to better direction. More and more investments have been done lately at

least from AGCO to West Africa. A good example is AGCO's investment to Senegal with Future Farm to educate farmers.

There are more reasons than population growth and self-production, why one should invest to West Africa's agriculture. Subsidies, government and societies are helping farmers to purchase machinery made also outside of Africa. ECOWAS is one of the major players to enable better and more sustainable environment for farmers, where stability of future should be ensured. Some parties are not fully trusting or believing to tight targets of ECOWAS such common currency in West Africa, but still all the projects are more than helping the economy, laws, education and healthcare of ECOWAS party countries. If we compare this to rest of Africa, ECOWAS is enabling really interesting benefits to West Africa countries and that is one of the key reasons to invest there.

When decision about to distribute to West Africa, one has to choose the right sales channel. Not only the location but also performance of distributor will be in key role. According to findings of this thesis, one should find a distributor that has enough capital assets to invest to business and motivation to sell the product and the brand. In this thesis we have found eight important factors, how one should choose the right sales channel in terms of distribution of tractors.

We have noted in this thesis, that agricultural markets are not as stable as they are in Europe. When one has to conform to high and low demand, optimal company to do distribution for the case company would be one, that is operating in multi-industry business. With that company, company's resources could be engaged to agricultural business when there is high demand. When demand is low, resources such human resources could be released to other business forms. Some current distributors are involved for example to mining industry and those companies are more sustainable in long run than ones' that are only involved to agricultural business.

When need for food and self-production is increasing, two major things will determine whether one will have growing tractor sales in that area: environmental factors and proper distribution. If climate is not suitable for farming, there will be no farmers or farms. If there is no distribution, tractors will not find their path to customer's year. Figure 15 shows that there are many suitable countries and areas in terms of farming, when most of farms are located in this area. One has to arrange a working distribution channel close to that area to distribute tractors to farmers. By using areas shown in figure 15, one can minimise the risk of failing with income. In the area farmers will be close, amount of farmers will be big and also environment will be suitable for farming.

Future for agricultural markets in West Africa looks bright. There are some major issues still slowing the growth of business, but there is solution to almost all of these issues. Market will definitely grow with growing population, mechanisation and self-production, but hardest prediction is when and where biggest growth will happen. Growth won't happen at all places at same time, it will more likely happen periodically in different places. Farmers to adapt new machinery will be the ones that can finally access to assets to purchase the product or some other party will allow access to machinery. Distributor has to be located close to farmer, when condition of roads is bad. After sales, service and parts also needs from the distributor to be located close to farmer.

## **6.1 Reliability and validity of the results**

The reliability and limitations of this research depends highly of used research methods. Literature review with statistics collected from the case company can be seen as reliable documents. Literature review reliability increases use of multiple resources or documents and carefully reviewing reliability of research or study. Possible preliminary thinking or stereotypes are noticed when selecting and processing these articles.

According to Bryman & Bell (2011), ways to increase reliability would be to use more researches in the qualitative interviews or increase number of interviews. Either of these successions are not realizable for this thesis. Bryman & Bell (2011) also state, that semi-structured interview enables researches to address topics with good focus. The reliability of this thesis is also increased, when both methods, literature review and qualitative interviews, are indicating towards same conclusion in many areas. The most degrading aspect for reliability of this research is qualitative research with only few interviews involved. That give great value for ones' opinion in interview.

The reliability is also highly dependable about scope of the thesis. When this research gives holistic view about West Africa, it shouldn't be used for specific country only. Purpose of this research is to give guidelines, frames and suggestions in big scale.

Validation of this thesis is highly dependable of scope of the thesis. Validation of this thesis is highly dependable also to current situation and current assumptions in West Africa. The scope is to forecast business development in five-year level. Big changes in West Africa agricultural markets may affect negatively to validation of this thesis. For example, subsidies and policies may have affect for some specific machinery, which will distort the markets.

## **6.2 Limitations and future research opportunities**

This study gives holistic view about current and future situation in West Africa, without going to any specific country level with the given results. It is valid and limited only in big scale, for scope of five-years. When more distribution is established to West Africa, one should do more deep research with more interviews involved.



For future research, study can be also expanded to one specific country with very specific barriers and enablers to investigate agricultural growth in tractors business. Especially when choosing where one should expand the sales in West Africa, this thesis gives a good view where opportunities and conditions are most suitable for growth.

Especially in commercial farms, where amount of machinery is bigger, usually the purchase decision is not made by farmer itself. This gives us also option that instead of having whole sales distribution, where all functions such marketing, sales and spare parts are in same locations, especially sales and marketing could be located elsewhere. The farmer need the spare parts and repair, when purchase maker needs the marketing and sales functions. This could be another area to research, why and where these should be placed.

One opportunity for future research is also to limit tractor horsepower range to some specific level. For example, by setting the line to 100 HP and below models, the competition, products, profit and sales figures will be relatively different in these segments. As this thesis has already noted, majority of farmers in West Africa are small farmers. They usually don't have enough income to grow business, which means buying more field and bigger horsepower tractors. So for future research, one could focus specifically to specific country or to specific tractor horsepower range.

## 7 SUMMARY

The potential of West African agriculture is undisputed. West African markets for agricultural machinery are looking good and very potential for tractor manufacturers with all indicators. The potential for rising markets can be found from increasing population, self-production, low utilization of land, emerging markets and from rising foreign direct investments. Valtra has its history in Africa and the brand awareness in some areas is relatively good. As Competitive Commercial Agriculture for Africa (CCAA) says, this is “one of the largest underused agricultural land reserves in the world” (Cleene, 2013).

Area where to sell and by whom to sell are critical. One has to choose the right party to distribute tractors to right area, where surroundings are acceptable for grow of agricultural products such crops. ECOWAS with all its benefits and goals is pointing great future for farmers and for agricultural machinery manufacturers. Will all goals and projects finish on time or ever, that is still unclear. What is clear is that ECOWAS will strengthen farming in West Africa and farming will grow according to all indicators. Population growth with growing self-production will lead to mechanisation of agriculture in West Africa and that will outcome as need of more agricultural products.

Selling tractors isn't straight forward process, where one can success only by providing machinery in right place and in right time. This thesis doesn't focus to differences between tractors, where one product will be more demanded than other having the biggest market share. After all, finance, product and the sales man are also in critical position when closing the deal. Also performance of distributor with right size of it will be in key role. These must be considered when spreading distribution to cover more areas in West Africa, but before selling anything distribution must be established to right area. One key factor for Valtra in future will be offering of full fleet at West Africa, where one can buy all agricultural machinery from one distributor.

We identified typical complexity and uncertainty, that is related to emerging markets of West Africa. Most of these factors are slowly changing to better direction, but still the change need a lot of time. Emerging markets of West Africa are pacing up the speed of the changes, but not all areas are emerging in such speed as others. Factors such corruption, access to assets, knowledge and poverty are slowing the growth in emerging markets of West Africa.

The right business partner to execute the sales would be the one, that is involved to multi-industry business. The current variance of demand of agricultural machinery in West Africa hard to forecast and hard for company that is only involved to agricultural business.

We have shown in this thesis suitable areas for expanding the distribution in West Africa. According to interviews, rainfall and study about amount of farms, most suitable areas are found North from the sea level, under the Sahara Desert where there still is enough rain. In this area distance to farmer will be relatively short, rainfall good and amount of farms big. There is high probability that in emerging markets of West Africa growth will first happen among these big amount of farmers located in this area, when farmers are mechanizing agriculture and buying bigger horsepower tractors when spreading the business. This is one of the key reasons why one should invest to distribution in that area, when markets in West Africa are starting to grow more heavily.

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## **APPENDIX**

**Attachment 1.** Questionnaire used in semi-structured interview for Valtra sales and marketing persons.

1. How would you describe your current company as Valtra distributor? Is company you are working at doing any other business than Agricultural business?
2. What benefits and disadvantage you have from that business form?
3. What are the issues in past and what are the issues currently slowing down agricultural market in your country? How about the surrounding countries?
4. What are the benefits that will enable agricultural business to grow in your country? How about the surrounding countries?
5. What other machinery are you selling beside Valtra tractors? What machinery one customer is usually buying or what he/she would like to buy from you?
6. What kind of customer is the best, potential and sustainable for your business?
7. What would you change in your business if you could?
8. If we discuss about emerging markets, how potential and important do you see agriculture in future?
9. What is Valtra's brand awareness in your area?