Introducing Management Control in Local Economic Development:

A LED model applied in Kalimantan, Indonesia.

-Master Thesis-

Word count: 26000

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Jan 2013/ July 2013

TABLE OF CONTENT

Acronyms page 5

Figures page 6

Tables page 7

Acknowledgement page 8

Abstract page 9

Introduction
- 1.1 Relevance page 10
- 1.2 Research Question page 11
- 1.3 Overview paper page 12

Literature review
- 2.1 Introduction page 12
- 2.2 Revisions
  - 2.2.1 Knowledge and Cooperation page 14
  - 2.2.2 Cooperative page 15
  - 2.2.3 Sociological perspectives page 15
- 2.3 Levels of economic development
  - 2.3.1 Relevance page 16
  - 2.3.2 Levels of economy page 17
- 2.4 Management Control
  - 2.4.1 Relevance page 18
  - 2.4.2 Forms of Management Control page 19
  - 2.4.3 Management Control and Trust page 20
- 2.5 Confidence
  - 2.5.1 Relevance page 21
  - 2.5.2 Difference Confidence and Trust page 21
  - 2.5.3 Confidence model page 22
- 2.6 Leadership and Entrepreneurship
  - 2.6.1 Relevance page 23
  - 2.6.2 Leadership page 23
  - 2.6.3 Social Entrepreneurship page 24
  - 2.6.4 Summary page 25

Revised model page 26
3.1 Introduction page 26
3.2 National level page 26
3.3 Regional level page 27
3.4 Local level
3.4.1 Quality of Community page 27
3.4.2 Confidence level page 29
3.4.3 Social Entrepreneurship page 29

Conceptual model page 31

Methodology
5.1 Introduction page 32
5.2 Purpose page 32
5.3 Field research page 32
` 5.4 Semi-structured interview subjects page 34
5.5 Data analysis page 34
5.6 Analysis difficulties page 34

Analysis
6.1 Introduction page 36
6.2 Business page 36
6.3 Non-Profit Organizations page 38
6.4 University page 39
6.5 Summary stakeholders page 40
6.6 Field research Buntoi, Pilang and Henda page 41
6.7 Field research Bawan page 43
6.8 Field research Tambak, Hurung and Manen Kaleka page 45
6.9 Overview and combining field researches page 47

Discussion
7.1 Introduction page 52
7.2 Set-up phase page 53
7.3 Management Control page 53
7.4 Trust page 53
7.5 Cooperation page 54
7.6 Confidence page 55
7.7 Leadership and Social Entrepreneurship page 56
7.8 Knowledge Sharing page 56
7.9 Repayment page 57

Final model page 58

Conclusions
9.1 Introduction page 59
9.2 General conclusions page 59
9.3 Conclusions MBD-project page 60

Limitations page 62

Future research page 62

References
12.1 Academic papers page 64
12.2 Interviews page 69
12.3 Internet sources page 71

Appendix page 72

ACRONYMS

BRIC	Brazil, Russia, India, China
CIMTROP	Center for international Cooperation in Sustainable Management of Tropical Peatland, University of Palangka Raya
Et al.	Et alii (Latin), co-workers (English)
E.g.	Exempli gratia (Latin), for example (English)
GDP	Gross Domestic Product
GVC	Global Value Chain
I.e.	Id est (Latin), that is/in other words (English)
ITB	Institut of Technology Bandung
LED	Local Economic Development
MC	Management Control
MNC	Multinational Corporation
NGO	Non-Governmental Organization
RED	Regional Economic Development
ROI	Return on Investment
RP	Rupiah (Indonesian currency)
RuG	Rijksuniversiteit Groningen, University of Groningen

FIGURES

Figure 1	Model of endogenous growth. Stimson, 2009.	Page 14
Figure 2	Trust and Control in Strategic Alliances. Das and Teng, 1998.	Page 22
Figure 3	Model of endogenous growth of LED of less developed regions. Boon, G, 2013.	Page 31
Figure 4a	Overview data collected of all field studies.	Page 47
Figure 4b	Overview data collected of all field studies.	Page 50
Figure 5	Model of endogenous growth of LED less developed regions. Boon, G, 2013.	Page 57
Figure 6	Schematic representation of the biodiesel project using rubber nuts in Kalimantan, Indonesia.	Page 70
Figure 7	Map villages of research around the capital of Central Kalimantan, Palangkaraya.	Page 88

TABLES

Table 1	Interview Kungi, Buntoi.	Page 71
Table 2	Interview Phillipson, Buntoi.	Page 72
Table 3	Interview Pak Ruslan, Buntoi.	Page 74
Table 4	Interview Ganco, Henda.	Page 75
Table 5	Interview rubber farmer, Henda.	Page 75
Table 6	Interview Garum and Agus, Henda.	Page 76
Table 7	Interview Garotak and Mihing, Pilang.	Page 78
Table 8	Interview Idart Labih, Pilang.	Page 79
Table 9	Interview Harun, Bawan.	Page 82
Table 10	Interview rubber farmer, Bawan.	Page 84
Table 11	Interview Heri, Bawan.	Page 85
Table 12	Interview Pah Yuktan Efatar, Hardi and PaMujianto, Tambak.	Page 86
Table 13	Interview Sindem and Herma, Hurung.	Page 87

ACKNOWLEDGEMENT

During the period of writing my thesis I lived for several months in Indonesia.
Since I am extremely thankful for having this great opportunity, I would take this opportunity to thank several people. Firstly, many thanks to Professor B.J. Pennink, for approving and supervising my research. Furthermore, I would like to thank my second supervisor Professor B. Crom for the opportunity and the useful feedback. Moreover, a member of the project Caroline Ponti receives my thanks as well since she helped me in several difficult situations. In the important moments I needed help, she was willing to helping me with the problems I had.

Concerning the research many thanks are given to all the interviewees living in the villages who were extremely kind to welcome me and spend often more than one hour to answer all questions. Next to that, I would like to thank investors, Non-Governmental Organizational members, local Indonesian governments, professor Manurung (Institut of Bandung), Professor Simatuang (Institut of Bandung) and Professor Limin (University of Palangkaray) for all the help I received in the two months researching in Bandung and Palangkaraya. Without them I would not be able to perform research in the same way as it is done right now. Lastly, I would like to give my thanks to my fellow travel partner, Master student and researcher Pieter Bot, who participated in all the interviews together with me. Many thanks for his help and cooperation.

It was a special, unique, beautiful, unforgettable, new, sometimes difficult and great experience for me.

Guus Boon

Bandung, July 2013

ABSTRACT

Decades researchers have been trying to investigate how and what to change in less developed regions to improve the local economic level. However, it seems that theoretical and practical explanations are having a huge gap. This research is trying to fill this gap and is assisting a Mobile Bio Diesel program that is researching the implementation of a mobile unit in the north of Indonesia to improve the Local Economic Development (LED). It can be noticed that many projects failed or stopped after a short period due to unforeseen difficulties. These difficulties were not managed and controlled in the right way, where the whole process was not transparent enough. Knowing this, together with insights from an existing model explaining Regional Economic Development (RED) and academic literature it can be clarified that the following variables Management Control, Transparency and Confidence have not been discussed and researched properly in LED.

In this paper it is suggested that for new LED projects it should be understood if people desire any changes. When interest is there, knowledge, machines and equipment have to be supplied by a cooperative consisting of universities, NGO's, the government or profit companies. Repayment for the assistance should only be performed as returning a part of the extra profit made. In the whole process of implementing mobile diesel machines Management Control, Confidence and Transparency is highly important. Management Control of the cooperation should come from within, in other words self-management, which increases participator's responsibilities. As a result of that, local knowledge will increase and local needs are better served. The process of overseeing the total field is helpful in creating the needed Confidence. Next to that, amongst other things due to corruption, it is essential to increase the Transparency of the cooperation. This will lead to more Confidence as well and attract more parties to invest in a project.

Keywords: Management Control, Confidence, Cooperation, Leadership, Local Economic Development, Bio Diesel, Social Entrepreneurship, Trust, Indonesia.

INTRODUCTION

1.1 Relevance

In the past it is investigated that poverty and the difficultness to get access to energy are major problems in less developed countries (CIMTROP). Kiplahat, Wany and Li (2011) explained in 2011 that access to energy sources is desirable for poverty reduction and sustainable development. The Mobile Bio Diesel project, which was created by six universities from The Netherlands and Indonesia, was set up to improve these major problems in developing countries. It concerns in short (a) new processing unit(s) that could improve the economic level by transforming rubber nuts into biodiesel. One important research of Local Economic Development (LED; World Bank, 2010) was executed by Stimson, Stough and Salazar (2000, 2005 & 2009). They zoomed in on this and explained it as the objective to internalize a process that ensures a competitive and entrepreneurial city that achieves sustainable development. They underlined in their research that the emphasis of local development changed from planning strategies to enhancing local self-help. Subsequently, it was also said that public policy should not be seen as 'a top-down control and command approach, but as a partnership model in which strategies are developed in co-operation with all stakeholders in space' (Capello and Nijkamp, 2010).

In the last couple of years several researchers tried to develop an extended model of Stimson (2009), where in this paper several important contributions are discussed. The main focus of these researchers is on the resources and the market conditions the area needs and the way the development of the region's economy could be introduced.

Despite all this, no researchers using the model of Stimson extensively mentioned the process of Management Control (MC) during a development process and after the start-up of projects. As already mentioned in the beginning, not only researches about LED mostly focuses on western countries, also literature of Management Control is mainly written about these regions, while information about the improvement of less developed areas is scarce.

The process of MC needs to be investigated since it can be noticed that many several projects failed in the past, unforeseen difficulties arose or projects stopped after a short period. Larsson, Vinberg and Wiklund (2007) clarified that a part of the managers believe that people need to be

coerced and controlled to reach organizational objectives; others believe self-control and self-direction is exercised through commitment. Looking at high control, Taylor (2010) mentioned that forced control will reduce goal oriented behavior and the level of trust, which have negative effect on their performance. However, Langfred (2007) explained that employees working in a self-managed environment may have negative outcomes on organizational goals. These major differences found in the literature concerning MC are important to investigate, since it is crucial to understand whether and how to execute control in less developed countries. The results can be used to assist future projects and to examine where and why projects in these areas have failed in the past.

1.2 Research Question

As explained before, the main focus in the today's literature concerning research of economic development and Management Control is on institutions, organizations and people participating in the western world. The western countries are characterized by stable governments, high educated people, multinational enterprises and high quality infrastructure. However, in the last decades there is an increased emphasis on these areas. Nevertheless, one issue they all have in common is to build up economic capacity of areas to change, modernize, develop and improve the economic situation in the future (Stimson, Stough & Salazar, 2005). Moreover, according to the World Bank (2011), there is the belief that in building up economic capacity it also must be able to increase the quality of life for all. Besides that, it was explained that it is a process by which public, business and non-governmental sector partners work collectively to create better conditions for economic growth and employment generation. Therefore, a Management Control function is introduced and the way such a control system should look like. Furthermore, Transparency together with the concept Confidence is introduced among people, groups and institutions. Finally, a revised model for the economic development of regions is given and explained. In this paper the following research question (RQ) is used:

> What sort of Management Control system would be preferable to increase Confidence and Transparency in a Cooperative to improve LED in less developed countries?

1.3 Overview paper

Firstly, an overview of the academic literature concerning the model of Stimson and several revisions are given. After that, Management Control, Trust, Confidence, Leadership and Entrepreneurship are elaborately discussed, followed by a new revised model for the improvement of LED. Subsequently, the research methodology is explained. Additionally, the analysis is described, which is separated in three field studies. At the end of every field research a summary is supplied after which all data can be seen in a clear overview. In the fourth part the results of the investigations are discussed together with the academic literature. This field research led to several adaptions in the revised model for LED, which it shown in the final model of this paper. Finally, in the last part the conclusion is provided together with recommendations and limitations of this study.

LITERATURE REVIEW

2.1 Introduction

Two main streams in the world of the economic growth theories can be found in today's literature, which are 'the new growth theory' and the 'traditional neoclassical economic growth theory.' Since Stimson used the first theory respectively for his model, the second will not be given more attention in this paper. In the new growth theory there is made a distinction between endogenous and exogenous factors. A regional exogenous growth factor could be the introduction of technology for instance. Endogenous is seen as the economic growth that is influenced by using investment resources brought forth by the region's economy itself. Moreover, important influences on endogenous growth conditions can be allocated to governmental agencies, educational institutions, innovative firms and entrepreneurs (Stimson, Stough & Salazar, 2005).

Concerning regional endogenous growth and development there are four applicable variables according to Stimson, Stough and Salazar (2009). Firstly, Resource endowment and Market conditions, which is the availability of resources in the region that is related to performance and economic growth. The options for a local self-employer are highly dependent on resources like human capital, materials, infrastructure and the region's competitive position. When a region has

a market fit, then it may be said that it can compete effectively with others to increase their market share both outside as inside the particular area; however, a region could be successful even with relatively poor resources by strong leadership and effective institutions. To the contrary, poor leadership or ineffective institutions can result in ineffective usage of resources and market opportunities (Stimson, Stough & Salazar, 2005). In other words, favorable endowments on its own cannot be said to be sufficient for growth, which means that Leadership is a very important aspect in LED.

Next to Leadership, it is showed that Entrepreneurship and Institutions are also very important variables, which together lead to the outcome of this model (figure 1) "the degree to which a city or region has achieved competitive performance, entrepreneurship, and sustainable development" (Stimson, Stough & Salazar, 2005). According to Parkinson (1990), leadership may be explained as 'the capacity to create stable and durable mechanisms and alliances that promote economic regeneration and identifies a range of micro-level skills and macro-level resources that can generate that capacity.' In the 2005 paper of Stimson, Stough and Salazar it was explained that Institutions determine rules that assist economic growth; it enacts and interprets policies, and creates or enhances a learning infrastructure, which could reduce transaction costs. Transaction costs can be seen as an expense that results from identifying qualified exchange partners, monitoring performance, negotiating contracts and adapting to changing conditions (Williamson, 1991). Moreover, sustainable development, which is desirable, needs inclusive and flexible Institutions that are focused on value creation for firms and individuals. Finally, Entrepreneurship, according to the same authors, differs in regional development from traditional entrepreneurs in a way that they pursue more goals besides profit, since they are generally more concerned with the development due to the 'feeling' and 'bonding' with the area.

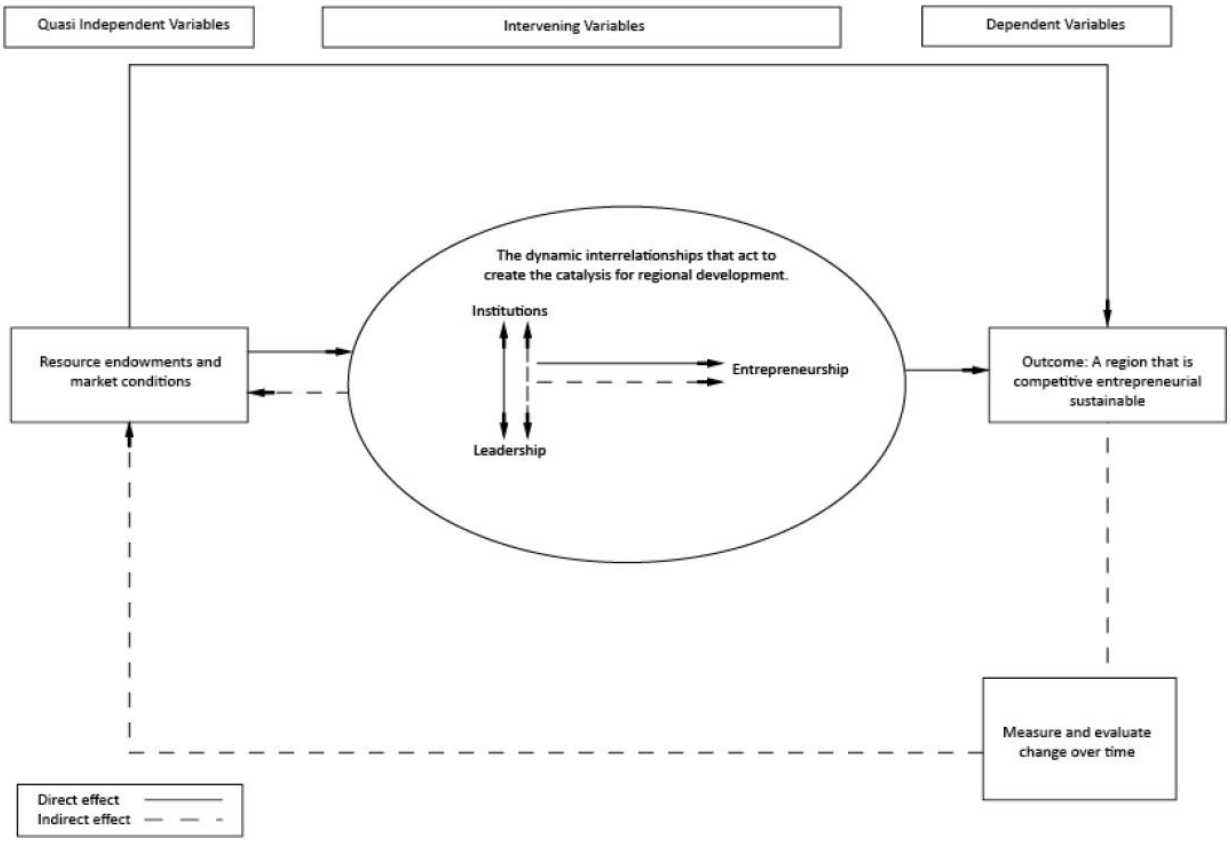

Figure 1: Model of endogenous growth. Stimson, 2009.

2.2 Revisions

In this paragraph, revisions of Stimson's model are discussed, after which explanations are given, which variables are used for the new model and which are extracted due to wrong assumptions.

2.2.1. Knowledge and Cooperation

At first, the variables *training* and *education* in 2011 were proved to assist LED, since it improves cooperation (Vredegoor, 2011). According to Das and Teng (1998) cooperation can be explained as the willingness of partners to pursue mutually compatible interests rather than act opportunistically. While Vredegoor (2011) showed that education and training are important activities influencing the variables *skills* and *knowledge* of people in a cooperative, Stimson, Stough and Salazar believed it was thought to be already available in a region. However, clear evidence can be found that it is influencing the regional development significantly (Smart, 2005).

Uiterkamp (2013) showed the importance of *sharing knowledge* in a cooperative, which take place through long-lasting interpersonal relationships, which contributes to the local development as well.

2.2.2. Cooperative

Furthermore, it was stated that cooperatives should be developed where local managers are able to manage and coordinate themselves and where the local government also participates actively. This so-called self-management is influenced by *leadership* and *incentives* (Vredegoor, 2011). Local leadership must be developed by the community itself by training and education, which eventually can result in the development of the so-called leadership skills among several individuals, as a result of which the cooperative is less dependent on one individual. Moreover, an incentive should be imposed internally to groups and individuals and can be economic, social i.e. political. If the incentive is agreed by the recipient, it can lead to long-term benefits for the region and the cooperative (Pomeroy, 2001). Participation in management increases efficiency, according to Pomeroy (2001) and Viswanathan et al. (2003). In these papers it was shown that self-management is also very important, which increases responsibility, meets local needs better compared to management decisions of random outsiders and will reduce social conflicts. When two individual groups collaborate in a cooperative, they share knowledge and discuss problems they are dealing with (Dooijeweerd, 2012). Furthermore, some LED researchers divide collaboration into formal and informal, where collaboration between the government institutions could be notified as formal, while collaboration between non-governmental groups is seen as informal. However, this is criticized in the next paragraph since a mix between both is preferable in Local Economic Development.

2.2.3. Sociological perspectives

The social perspectives *Social Capital, Social Entrepreneurship* and *Community Empowerment* are proved to increase LED in previous revisions of Stimson's model. Social Capital is explained as the glue that holds the societies together (Seralgedin, 1996). Another researcher explained it as the social infrastructure within communities, common cultural identifications and shared behavioral norms, which facilitates coordination and cooperatives (De Windt, 2011). However, the definitions are criticized to some extent since the important variable trust has been forgotten or denied, while others academics name this as one of the features of an cooperative, which can

improve the efficiency of society, network and facilitating coordination' (Mansuri & Vijayenda, 2004). These features decrease transaction costs and will increase safety among the members, which will eventually lead to more economic wellbeing of this community (Mansuri & Vijayenda, 2004).

Social Entrepreneurship is clarified to improve LED as an individual or a group of individuals who act(s) as social agent(s) using entrepreneurial skills for value creation (Brouard and Larivet, 2010). The main difference between *normal* and *social* entrepreneurs is that 'the social entrepreneur's value proposition targets an underserved, neglected, or highly disadvantaged population that lacks the financial means or political clout to achieve the transformative benefit on its own' (Martin and Osberg, 2007).

Finally, *Community Empowerment* can be explained as the increase of peoples' involvement within communities for economic development of the region (Simon, Stough & Salazar, 2009). In other words, people in poor areas should be more involved and participate more in negotiations, controlling and actions of the community to increase the economic development of that region. Four elements are explained, namely *access to information, accountability, participation* and *local and organizational capacity.* Information should flow in two directions and people should more participate as earlier addressed by giving people more control and authority over resources and decisions, which results in an increase of the usage of local knowledge. Increase people's involvement in more parts of a project will lead the enhancement of their skills and encourage learning concerning long-term development, management, project design and planning necessary for new potential projects in the future (Sesay et al., 2010).

2.3 Levels of economic development

2.3.1. Relevance

Local Economic Development is a process where 'local actors shape and share the future of their territory, which will stimulate and facilitate partnership between local stakeholders' (Pennink, 2012). Cooperation between these local actors is extremely important, where no cooperation of one could be fatal. It can be noticed that all previously discussed models lack explanations about the level of the economy in which it is taking place, while the differences between local, regional and national economy are huge. Firstly, macro-economics is looking at the impacts of the total

national economy by summarizing the GDP, inflation and unemployment (Fofana, Chitiga & Mabugu, 2009). Furthermore, they mention that regional economy is considering the distributional impacts of the prices in the industry and the translation of those impacts into the final. Finally, according to Fofana, Chitiga and Mabugu (2009) the local economic level is looking at the distributional impacts on the real income and the welfare of the households. The impacts of the distribution within the whole society depend on endowment factors and on the consumption patterns, as well as 'their ability to substitute one product for another' (Fofana, Chitiga & Mabugu, 2009). Since the differences are extremely relevant, it is tried to connect these levels with LED.

2.3.2 Levels of economy

Firstly, Pennink (2013) showed that local, regional and national economic levels operate both individually and cooperatively, as a result of which there are different impacts on the developmental outcome. The national level consists of G*overnment, Universities* and *Business*. When the level of performance increases, the national gross domestic product will rise as well. Regional level consists of *Leadership, Entrepreneurship* and *Institutions* that together have impact on the competition of the region.
Finally, the local level is discussed. In this level it starts with the quality of the local community together with the characteristics of the resources for producing. It has influence on the quality of life of local people and a possible Return on Investment (ROI). In the next paragraph several assumptions are contradicted and changed for improving the new model.

To repeat shortly, Stimson's model and important revisions are discussed and economic levels are explained. Nevertheless, still important issues are forgotten and wrong assumptions have been made in previous articles. In the following paragraphs new subjects are introduced, supported by academic literature and clear thinking, after which a revised model is shown. Firstly, Management Control, Transparency and Confidence are explained after which the differences between Leadership and Entrepreneurship are discussed. To research differences between these two factors is important since researchers often assume that leadership is part of and thus having influence on entrepreneurship instead of a dynamic or even independent relationship, which is sometimes expected. Finally, it is shown that most articles do not make a

good distinction between the economic levels in which it is operating and therefore three different levels are introduced in the model.

2.4 Management Control

2.4.1.Relevance

In the literature it is stated the control in cooperatives should often be executed by a government department or other formal institutions (Dooijeweerd, 2011). However, this is criticized, since it was explicitly mentioned that the control in less developed areas should be in hands of the community itself. In this community people receive more control and authority over resources and decisions through Community Empowerment (CE), which increase local knowledge (De Windt, 2011). Through CE people should be more involved with the negotiations, controlling and actions of the community (Simon, Stough and Salazar, 2009). This increased involvement should lead to more transparency, since people have an increased knowledge of the practices. Nowadays organizations try to increase the transparency of management in order to improve productivity and continuous improvement (e.g.,Hood and Heald, 2006; Bennis, Goleman, and O'Toole, 2008; Berstein, 2012). Transparency, or in other words accurate observation, is focusing on activities, routines, behaviors, performance and output, which is the foundation of learning and operational control. Deming explained in a 1986 paper that learning and operational control are seen as the key components of productivity. Besides CE and transparency also Social Capital, as previously discussed, is able to improve the efficiency of a community, through trust and facilitated coordinated action. This facilitated coordinated action can be stated as the planning and coordinating of what to do and how to act, but not as the Management Control of the operations (De Windt, 2011).

Firstly, more paradoxical assumptions concerning informal and formal Management Control can be found. Archer and Otley already clarified in 1991 that a mix of formal and informal MC is preferable for an organization. Furthermore, in the literature the importance of transparency in management is noticed, which increase knowledge through Knowledge Sharing and facilitated coordinated action. However, literature about the way MC should be implemented and how it should look like in LED is still lacking. The importance of Management Control is showed by many researchers in academic articles. Firstly, Merchant and van der Stede (2007) explained that Management Control includes all devices or systems managers use "to ensure that the behaviors and decisions of their employees are consistent with the organization's objectives and

strategies." Anthony (1965) mentioned MC as "the process by which it is ensured that resources are obtained and used effectively and efficiently in the accomplishment of the organization's objectives." Therefore, MC should be seen as a continual process which serves the community or organization in the best way as possible. Looking at MC it can often be separated in different forms.

2.4.2. Forms of Management Control

Firstly, Ouchi (1979) argued that there are two possibilities people can be effectively controlled, either selecting people who fit its needs exactly or people who do not exactly fit its needs and go to the expense of putting in place a managerial system to instruct, and monitor them. Others elaborated on the two types of control *influencing* and *correcting*. These definitions can be explained respectively as preventing violations or mistakes and preventing failure or damages. Influencing Management Control can work without intervention and could be seen as monitoring, which was also mentioned by Ouchi (1979). In other words, a person should know that the controller or inspector is watching, which will probably increase the productivity. Correction control is explained as repairing and correcting through advises and new instructions (Castelfranchi & Falcone, 2000). Therefore, two different Management Control actions are taken out:

- Aimed at ascertaining whether another action has been successfully executed or if a given state of the world has been realized or maintained (influencing)
- Aimed at dealing with the possible deviations and unforeseen events in order to positively cope with them (intervention/correction).

Having showed the importance of MC together with the fact that important issues concerning this subject are still missing in the literature of LED it is found necessary to research this in order to fill the still existing gap.

Subsequently, besides facilitated action as part of Social Capital, trust is also noticed to be of huge importance for the development of less developed regions. Due to its importance it is elaborately researched in the next paragraph.

2.4.3. Management Control and Trust

In contrast to MC, trust is explained very in-depth by most researchers in LED. Trust lead to better relationships and more cooperation, leading to more safety within, better economic and social well-being of the community and lowers transaction costs (Falk and Guenther, 1999). However, the connection between trust and control is totally left out of all the investigations. Some argue when there is control there is no trust, and vice versa (Castelfranchi & Falcone, 2000). Other say that trust is needed to have a good relation; MC is needed to have a transparent way of working together (Das & Teng, 1998). They add to this that 'putting control and guaranties is trust-building; it produces a sufficient trust, when trust in someone else's willingness and competence would not be enough.' Mayer et al. (1995) explained trust as "the willingness of a party to be vulnerable to the actions of another party based on the expectation that the other party will perform a particular action important to the trustor, irrespective of the ability to monitor or control that other party. It is possible to believe that when someone is being controlled, the person could assume not to be trusted. Besides that, if a person does not have enough trust it will increase control (Castelfranchi & Falcone, 2000). Nonetheless, much is written in academic literature about trust and control as opposites, it cannot be ignored that it also complements, creates, increases and completes each other. Where Castelfranchi and Falcone (2000) looked at Management Control as 'antagonistic to strict trust' and explained that control produces trust it is impossible to see both definitions only separately and not see it as constantly intertwined. It is a utopia to believe that trust can be sufficient for sustainable development in developing areas.

Nevertheless, the negative literate about control 'killing' trust does not come out of the blue. It was researched what possible reasons there are to make such an assumption. Firstly, control is often seen as top-down, which assumes that at the top controllers are not controlled anymore. However, this comment neglects that MC in these areas should not be seen as a top-down process. Besides that, it is shown in the literature that the relationship between the controlee and the controller in LED should be more dialectic, according to Castelfranchi and Falcone (2000). Uiterkamp mentioned in 2013 that 'hierarchical relations in daily communication negatively affect knowledge sharing and cooperation.' Secondly, it is possible that control will not increase performance and productivity, but even the opposite. Finally, 'trying to reinforce willingness and

commitment, control can disturb it because of reactance or rebellion or because of delegation conflicts' (Castelfranchi & Falcone, 1997).

Having explained that a sufficient Management Control-element is missing, that transparency improves collaboration between groups and that trust and control cannot be seen solely as opposites, I continue with the term *confidence* since it is stated that before entering in a partnership or cooperation sufficient confidence should exist among participators (Das and Teng, 1998).

2.5 Confidence

2.5.1. Relevance

Despite the fact that confidence is needed before a partnership can succeed confidence has not been mentioned ones by researchers like Stimson (2005, 2006, and 2009), Dooijeweerd (2012), Vredegoor (2011), De Windt (2011), Uiterkamp (2013), Pennink (2013) and Castelfranci and Falcone (1997). It is interesting to notice that this is neglected in these studies, since it is proved that confidence is of major relevance in a development phase (Das and Teng, 1998). Confidence should be understood as a perceived level of certainty that a member or partner will chase mutual interests, instead of acting opportunistically (Das and Teng (1998). They continue with the statement that this level of confidence comes from the sources control and trust, which both are already explained elaborately.

2.5.2. Difference Confidence and Trust

Confidence differs from trust in the sense that trust is believed to be a part of confidence. According to several researchers (Ring & Van de Ven, 1992; Das & Teng, 1998), trust is seen as the degree to which someone holds positive attitudes toward a partner's goodwill and reliability in risky situations, where confidence in a cooperative is a perceived certainty that the other will act in a responsive way. Therefore, the main difference between both is that trust refers to the expectations about positive motives, while confidence refers to the certainty about the behaviors of the cooperative.

2.5.3. Confidence model

Cooperation or partnership remains an interesting topic, since people, organizations and firms always naturally seek to maximize their own interests, but in a community or partnership a balance should be found between this cooperation and competition (Teece, 1992). After further investigating the 1998 paper of Das and Teng it became clear that a partnership is doomed to fail by lack of confidence; it is even essential. As previously mentioned that trust and control are the two key sources of confidence (figure 2: 3a, 3b) I elaborate more on the connection between these concepts. Merchant (1984) defined good control as an informed person that can be sufficiently confident that no unpleasant surprises will occur. The mechanisms for control are used to achieve a satisfactory level of control, goals become more predictable and expectations could be checked (Das and Teng, 1998). Moreover, mechanisms are useful to routinize activities or to stimulate non-routine activities, like learning and innovation (Sitkin, Sutcliffe and Schroeder, 1994). Trust is, according to Das and Teng (1998), a positive attitude regarding each other's reliability, which will develop over time. In other words, people, groups or organizations never fully trust each other directly; time is needed to increase trust during cooperation. Therefore, before great trust exists, some control mechanisms are needed (line 2a, figure 2). When trust has been created then control mechanisms could be decreased, which automatically means that the level of control is affected (line 2b, figure 2). Both concluded that trust and control could explain confidence insufficiently by itself and therefore it should be seen as dynamic. Therefore, since they influence confidence together, it means that the two aspects contribute to the total level of confidence in partner cooperation of a community-based region (figure 2). The lines 1a and 1b in figure two speaks for it since building trust automatically affect the level of trust and control mechanisms automatically influence the level of control.

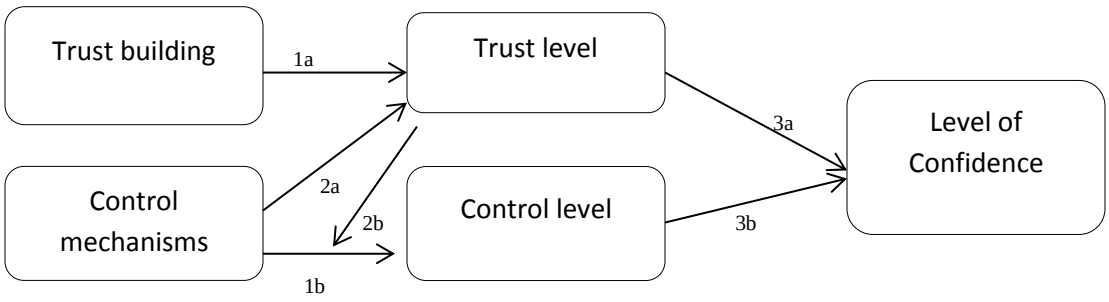

Figure 2: Trust and Control in Strategic Alliances. Das and Teng, 1998.

2.6 Leadership and Entrepreneurship

2.6.1. Relevance

After the introduction of the combination between trust and control leading to confidence in a cooperation, a second neglected issue is discussed, namely the difference between Leadership and Entrepreneurship. The independence of these two issues is important for LED, because managing the control of a process demands a good leader in whom people believe, but entrepreneurial skills are needed as well to fulfill all necessary tasks in the best way as possible. In papers mentioned before using it is often assumed that Entrepreneurship is affected by Leadership and that they are positively related. However, is it possible that these variables correlate to some extent, but that they differ more than people expect? Even without verifying it with facts it might be said that a person with high leadership skills could not be a great entrepreneur at all. It is possible that someone could lead others in a perfect way by being completely accepted by them, but that the skills for leading a group are not well developed. If it is assumed by researchers that good leadership automatically means good entrepreneurship, it could lead to unexpected and undesirable outcomes. Social Entrepreneurship was introduced in a LED model, which was explained as an individual or group using their entrepreneurial skills for value creation that targets an underserved population that lacks the necessary financials or political help to improve the region. However, for this *Social* entrepreneurship De Windt (2011) copied Stimson's model (2009), while no further research was executed. Since this part of Entrepreneurship suits less developed region better, in this paper I continue to use this definition To research this issue together with Leadership further in-depth both concepts are separately defined by looking back at the written literature.

2.6.2 Leadership

As previously showed, Leadership was defined by Stimson (2009) as 'the capacity to create stable and durable mechanisms and alliances that promote economic regeneration and identifies a range of micro-level skills and macro-level resources that can generate that capacity.' Vredegoor (2011) and Dooijeweerd (2012) mentioned that it must be seen as local leadership and that it together with incentives influence community-based management. This local community leadership is developed by training and education. Finally, both addressed that self-management is also very important in a community to reduce social conflicts, in other words to be your own

leader. However, in order to make a complete model for the whole process of Local Economic Development, Leadership is needed in every level of the economy for a project to succeed. Therefore, it is researched how leadership differs in the three earlier mentioned levels of economy.

2.6.3. Social Entrepreneurship

Social entrepreneurs have a major influence on realizing a social enterprise. These so-called enterprises 'have the potential to harness creativity, efficiency, and viability of commercial means in service of social ends such as improving human and environmental welfare' (Smith, Besharov, Wessels & Chertok, 2012). Tracey and Phillips (2007) explained Social Entrepreneurship as one part of many species of entrepreneurs, people who show commitment to social change. Howorth, Smith and Parkinson (2012) mention about Social Entrepreneurship that it can be seen as the potential 'solution' to social exclusion, by which it helps developing sustainable communities. It is interesting to notice after reading their 2012 paper *Social Learning and Social Entrepreneurship Education* that social entrepreneurs having a background in communities and having experience in the social development of less developed countries have relatively less developed management and entrepreneurial skills. These less developed skills could result in conflicts with their own social values. Nevertheless, those areas need to be managed to become sustainable. The key issues for the increase of sustainability in social communities require entrepreneurial and management skills, like for instance idea generation, ensuring profits for reinvestment, obtaining funding streams, efficient management of resources, opportunity seeking, understanding of business models and knowledge of routes to the market. Furthermore, it was declared that an important characteristic of social entrepreneurs is the lack of autonomy compared to commercial entrepreneurs. The motivation of the social entrepreneurs could decline due to influences to satisfy governing bodies and funders instead of focusing solely on their personal interests. The most important factor is highlighted by the social theory of learning, which means that the learning of entrepreneurial and management skills for social entrepreneurs increases by participation and membership recognition from other community members; therefore, it can be said that participation and Knowledge Sharing are essential for the learning process. According to Smith, Besharove, Wessels and Chertok (2012), after having created a social enterprise, two important issues are faced. At first, the business plan and the company's or regions social mission should be committed and secondly, conflicts between

parties have to be effectively managed. They also clarified that the three most important interrelated skills needed by managers are *Acceptance, Differentiating* and *Integrating*. Acceptance is seen as the acknowledgement of a manager to notice that there are often competing demands between two or more groups within an organization or region and next to that the ability to learn the way to deal with this. Subsequently, Differentiation focuses on highlighting the values of all different alternatives and it takes care of the fact that one alternative can dominate another. A major issue for a manager concerning Differentiating is the recognition of both social and commercial demands. Finally, Integration is the seeking for synergies among different alternatives in order to create a possible new creative solution. This is useful to challenges of overcoming difficult conflicts; however, it depends heavily on effective Differentiation. Suedfeld (1992) said that Integration can help social entrepreneurs address the challenges to overcome intractable conflicts between social and commercial sides. To identify such integrative options complex thinking is required, which can be developed through two specific skills. According to Suedfeld (1992) these skills are called interpersonal and decision-making. Interpersonal skills build openness, trust and cultural sensitivity, which is important because those can help to create a learning environment. Such an environment should lead to more collaboration between members of an organization with conflicting values and goals. After this collaboration decision-making skills enable managers to look for and investigate synergies instead of solutions.

2.6.4 Summary

In conclusion, Entrepreneurship in LED projects should be seen and named Social Entrepreneurship. This way of looking at Social Entrepreneurship and Leadership does overlap to some extent, since social entrepreneurs and leaders should know where the conflicts are between groups and the way to solve it. Moreover, both deal with mechanisms and alliances for the promotion of economic regeneration and they should be able to see the right micro-level skills and macro-level resources. However, a good leader has the ability to persuade people to act in a certain way to collaborate, even in times where people lack faith or interest, while a good social entrepreneur knows how and what should be improved, through the three previously mentioned characteristics, but it is not a guarantee for persuading the people.
On the other hand it is possible that a good leader could not have the Acceptability, Differentiation and Integrating skills required to be a great social entrepreneur as well. Both

skills affect the Management Control process, since the better the Social Entrepreneurship skills the more qualitative control mechanisms are created. However, sometimes it could be that the right methods receive obstructions by employees who do not like change for instance. In these times a fine leader is needed to persuade those, before the process can start. Now the time has come to bring up my own model based on all the previous arguments.

REVISED MODEL

3.1. Introduction

The new model (figure 3) is introduced as a tool that assists Local Economic Development in less developed regions. Based on the previous literature described in this paper new insights for this improved conceptual model were noticed. Firstly, as already noticed it is uncertain if most models focus on the local, regional or national level of the economy. These levels of the economy are used in order to design a better theoretical and practical theory. As addressed, the differences are of substantial importance, which makes it necessary to separate a new model in three levels.

3.2. National Level

The national level concerns in previous literature the continuous interrelationship between Universities, Business and the Government (Pennink, 2013). However, the concept of business could be too vague. According to the Oxford dictionary of English, 'Business' means 'trade considered in terms of its volume or profitability' and a 'commercial house or firm.' Therefore, I propose to extract this concept into profit and non-profit organizations (NPO's), since it can easily be understood that both parties have often completely different interests. Non-profit organizations are characterized 'by their dependence on public donations, government funding and fees' (Arshad et. al., 2012). Looking at profit organizations, it can be concluded that the main goal of these companies is making profit, maximize shareholder value or simply just to stay alive. This is the reason to continue with Government, Non-profit-organizations, Profit-organizations and Universities. The national level chain starts with the quality of the national situation, where subsequently the four parties cooperate, which in its turn influence partly the Local Economic Development. The outcome GDP on the national level described previously

used in previous models (Pennink, 2013) can be a very dangerous approach, since it could also mean that the richest people became richer and the income level of the major group 'the poor' remained the same, not even mentioning the possibility of decreasing (Manurung, field study). Since this research concerns the economic development of less developed regions, the first steps often have to be taken by the government or companies, influenced and helped by universities. This is the reason that the outcome of the layer is 'the quality of the start of the process of LED.'

3.3 Regional level

After investigating the regional level there was no reason to change the quasi-independent variable, wherefore I remain defining it as 'the quality of the region's situation.' From this quality, it moves through a process of Institutions, Leadership and Social Entrepreneurship. Previously it was explained that Social Entrepreneurship is used since it better fits less developed areas. The collaboration between the three variables determine the quality of the distribution of the project, as it was shown in the literature that regional economy is considering distributional impacts of prices in an industry.

3.5 Local Level

Subsequently, no reason was found to change the next quasi-independent variable of the local level, as a result of which it will be explained as 'the availability of resource, like human capital, materials and infrastructure and market conditions.' The first adaption can be found in the intervening variable, which I describe as 'the quality of the community.'

3.5.1. Quality of Community

The word community is used since the World Bank (2010) sees community-driven development as 'a mechanism for enhancing sustainability, improving efficiency and effectiveness, allowing poverty reduction efforts to be taken to scale, making development more inclusive, empowering poor people, building social capital, strengthening governance, and completing market and public sector activities.' The community-based development refers to projects in which a community has direct control over the key decisions of a project, including management of investment funds (Mansuri and Vijayendra, 2004). According to Mansuri and Vijayendra (2004), this Community-based development could be achieved by reducing information problems, expanding available resources to the poor and strengthening the civic capacities of the community by nurturing organizations that represent it. These are mainly the reasons why the

Independent Variables (IV) *information available*, *accountability* and *participation* are introduced. The influence of these three IV's was previously discussed in the model of De Windt (2011) as a part of Community Empowerment. Information has to flow in two directions, in other words exchanging information among all participators for a better accountability and people should increase their participation by having more Management Control and authority. The reason that *information available* and *accountability* are separated from *participation* is that participation, according to the literature, results in an increase in local knowledge. Increase people's involvement will improve their skills and encourage learning; the other two variables influence the whole community. The fact that participation will increase skills and encourage learning is absolutely an improvement for the region. Besides that, by giving people more control over management decisions, people are probably willing to increase their effort in the project. This issue is backed up by an article of Uiterkamp and Pennink (2012), in which it was explained that the participation of people in groups with interpersonal relationships, both formally and informally, will lead to more Knowledge Sharing. Therefore, the variable in the quality of the community has slightly been changed into 'Level of skills and (local) Knowledge Sharing in the community.'

Moreover, it was explained by Mansuri and Vijayendra (2004) that *Community-Based Development* creates agency, self-control and a voice for poor people acting in that community. This could be done, they explain, by improving the allocation of development funds, improving the targeting of poverty programs, making government more responsive, improve the delivery of public goods and services, and strengthen the capabilities of the citizenry to undertake self-initiated development activities.' Olson (1973) and Hardin (1982) already tried to clarify the effects of collective action. They argued that without coercion or some other special control device 'rational self-interested individuals will not act to achieve their common or group interests.' In other words, it may be concluded that people will not fully participate in a community without some form of rules, fines or reward. Participation can be seen as the cornerstone of Community-based development with active involvement of the members with the design of the project and the implementation (Mansuri and Vijayendra, 2004). Moreover, local knowledge is the key resource to use for the decision-making process of a project and the participation of members lead to better designs, more cost-effective and on time delivery of the inputs, more benefits and less corruption.

3.5.2. Confidence level

Furthermore, a very important contribution is the introduction of a second intervening variable, namely *confidence level.* It is added because the quality of the community is extremely important, but without trust and control no confidence exists. To recall the literature, confidence is essential for a partnership that confidence exists between partners. Besides that, De Windt (2011) found positive relationships between *trust* and *political involvement* and *community involvement,* which explain the fact that the quality of the community itself influences indirectly the level of confidence. Moreover, it was stated that it is essential for a partnership that confidence exists between partners; it is assumed that this matter should be essential in all levels of the society. Therefore, there should also be sufficient confidence in cooperation between all parties operating in the national and regional level in order to succeed. In the model this process of control and trust leading to confidence it completely shown in the local level, but in the regional and national level it was clarified with the circle where all arrows flow into. From the level of confidence a line is drawn back to participation, since control, trust and confidence require participation to achieve an improved 'community-based region that is competitive entrepreneurial sustainable.'

3.5.3. Social Entrepreneurship

Finally, Social Entrepreneurship was already used by De Windt (2011), as previously explained; however, no further research was performed on this variable as a result of which the definitions of Stimson's model were copied without clear explanations. As explained earlier, Acceptance is seen as the acknowledgement of a manager to notice and to understand that there are often competing demands between two or more groups within any kind of organization or region. This is very useful in a community, since often competing demands occur. Furthermore, Differentiation is looking at the values of all different alternatives, which results most of the time in the best alternative for the community as a whole. Finally, Integration is the seeking for synergies among different alternatives in order to create a possible new creative solution that could even lead to a better result for this community. In conclusion, the Quality of the Community, concerning the way member groups collaborate with each other and in particular the skills of the manager and, has influence on the acceptance-level, the differentiation-level and definitely on the level of integrating competing demands. Subsequently, Social Entrepreneurship has influence on confidence in the community, since it has direct impact on the level of trust in

each other for further collaboration. As already previously mentioned, there is not directly complete trust between people or between groups. Social Entrepreneurship will increase trust through continues collaboration between parties, but not overnight. Therefore, control systems are needed, as can be seen in figure 2. There are two outcomes, where one is the *quality of life of all participants operating in the community*. Secondly, since it is assumed that profit organizations mainly cooperate to receive a *return on investment*, some of the outcomes could flow back to these investors.

CONCEPTUAL MODEL

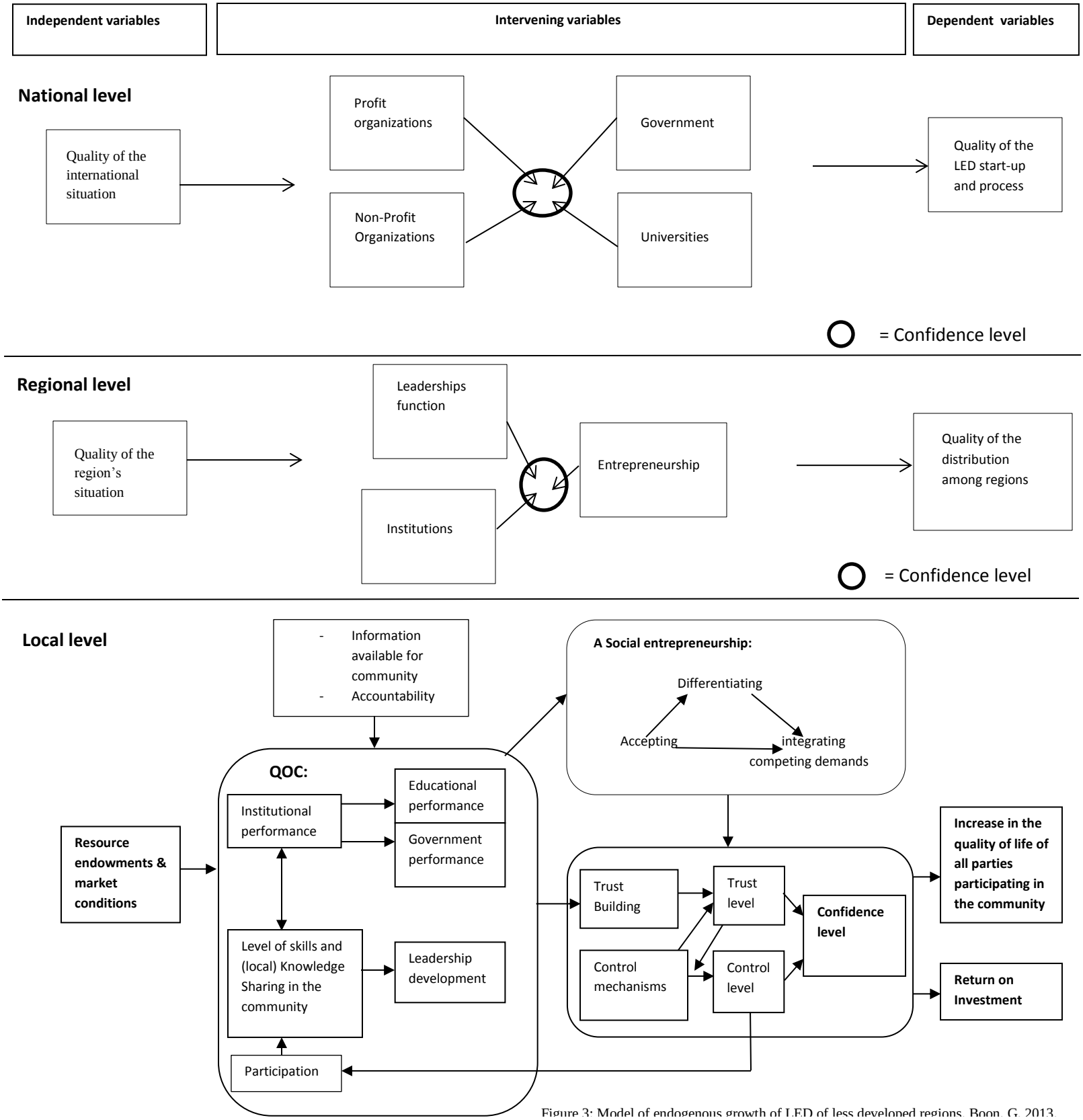

Figure 3: Model of endogenous growth of LED of less developed regions. Boon, G. 2013.

METHODOLOGY

5.1 Introduction

This paper is written as a part of the Mobile Biodiesel Project, which is set up by the Universities of Groningen (University of Groningen), Wageningen (University of Wageningen) and Twente (University of Twente), all located in the Netherlands, in collaboration with three Indonesian Universities from Jakarta (Gadja Mada University), Bandung (Technology Institute of Bandung) and Palangkaraya (University of Palangkaraya). It mainly focuses on Local Economic Development of the 'ex-mega rice project' located in Kalimantan. This project was set up by the Indonesian government in 1996 where one million hectares of forest was destroyed in order to start developing rice fields to decrease the food shortage. Due to the lack of knowledge and the increased damage of the environment the project stopped a few years later, having left a huge area of destroyed land. Basically, the underlying idea behind the project is, like the name already predicts, the introduction of Mobile Bio Diesel (MBD) processing units in which nuts of rubber plants can be transformed into biodiesel (Appendix A).

5.2 Purpose

In short, the biodiesel project concerns a mobile decentralized solution where the processing units will be brought to the villages instead of one centralized position. It needs to be investigated how the project can be most-efficient. The first option considers a mobile truck driving to all villages with the MBD-unit, which assumes a time-consuming decentralized system. Secondly, a less decentralized system can be chosen, where the MBD-unit is located on several strategic positions in Kalimantan where people from remote villages have to reach themselves. In this paper the research is narrowed down to a situation where an optimal solution has been found in which the project is more profitable. Therefore, considering the project as cost-efficient, this paper elaborates the focus on issues concerning the Control and Leadership of the MBD-project where there is an optimal Cooperation of different parties, Transparency, Trust and Confidence.

5.3 Field research

Eisenhardt and Graebner mentioned in their article in 2006 that the aim of a particular research strategy is to be able to create new theory supported by evidence obtained from multiple researches. In this paper seven field researches are executed in the north of Indonesia, namely

Buntoi, Pilang, Henda, Bawan, Hurung, Tambak and Manen Kaleka all located in the ex-mega rice project area (Appendix G). Semi-structured interviews with six stakeholders were used to collect data that are or could be involved in the project. Therefore, before researching the regions, stakeholders influencing the LED from outside are investigated in order to conclude which villages to visit and with whom to speak in-depth. Firstly, two CEO's were spoken to, after which two employees of Non-Governmental Organizations were questioned. Finally, conversations were held with a professor from the University of Bandung and a professor of the University of Palangkaraya. These stakeholders were seen as important due to the experience in the country and region, the knowledge of LED, their experience of working with these particular villages and the connections they have with local village leaders. This was necessary, since without permission it was quite impossible to enter areas to perform research. During the research nine local government employees, four rubber farmers and seven rubber traders (middle men) were interviewed. These respondents were chosen due to their possible influence in LED projects. Firstly, farmers are important since they are the majority of the local population who are crucial for the start and the continuous process of LED. Furthermore, middle men are useful in this research since they are involved in the transportation of products in the area. Besides that, they are the link between farmers and the market. Finally, village leaders were important respondents since they form the local government, the highest institutional level in the villages and are the connection between outsiders and the village members.

Research starts with observing the area after which theory will emerge from the collected data. Through entering a research open-minded without premade thoughts it could result in totally new insights, which enhance understanding and a practical map for necessary action (Eisenhardt and Graebner, 2006). Furthermore, Thomas (2006) explained that the biggest challenge of data collected from interviews is limiting bias. Due to major difficulties of almost all respondents with speaking any other language than their native language, the interviews were conducted with a translator, who was continually joining the field research. This translator speaks Indonesian (Bahasa Indonesia) and English fluently, which helps assistsing in minimizing interpretation difficulties and possible mistakes. It was proved in previous literature that the language used in interviews can influence the responses of participants to questions (Harzing, 2004). Moreover, it is researched that people being interviewed respond 'in the frame of the mind of the culture that is associated with the language of the questions (Ralston et al., 2011). These were all reasons to

decide to use a translator. The respondent's answers were noted down, after which they were reported in a clear overview. Interviews lasted between 25 and 75 minutes. Overall the total time of this research in Indonesia was 12 weeks. So, in this research semi-structured interview forms were used as data collection tools. Through this way of asking questions and responding to their answers is it possible to know and to determine people's experiences, ideas, attitudes, intentions, mental perceptions, comments and their reactions (Kol, 2012). Evidently, before preparing the interview questions, broad literature research had to be conducted on the Local Economic Development topic and other topics being interesting for this research. Prior to executing the interviews the questions were researched by two academics of the Institut of Technology Bandung (Manurung & Simaputang). Together with their advice and the knowledge built up from the literature it was decided to separate the questions into seven main subjects.

5.4 Semi-structured interview subjects:

- Control
- Trust
- Cooperation
- Leadership and Social Entrepreneurship
- Investment
- Repayment
- Knowledge Sharing

All seven subjects will be used in order to describe the analyses of the field studies in a structured way. After that, a clear overview can be found in figure 4a and 4b of all subjects combined with important answers of stakeholders and interviewees from villages.

5.5 Data analysis

In this study the reasoning analysis is used, in which themes are chosen after which data are summarized and arranged. Furthermore, definitions are given, after which findings are interpreted (Kol, 2012). The validity of these particular kinds of qualitative studies depends on the researcher's objective or subjective attitude to findings (Kirk & Miller, 1988). In this 1988 paper it was stated that the validity is influenced by the academic environment in which the

research was performed, the convenience of the findings and the clear way of presenting all findings and phenomena. Therefore, during the interviews the seven main semi-structured interview subjects where used as the core of the research. However, since a semi-structured interview was used, no questions have been designed in advance of the investigations.
All answers were written down, after which a transcription was made several hours later. These transcriptions can be found in Appendix B1-B12. Finally, to improve the solidity of this research, the categories that were examined were checked afterwards by the same academics, who are all experts for over ten years in executing qualitative studies.

5.6 Analysis difficulties

After having created the subjects for the semi-structured interviews, it should also be clarified that several difficulties need to be noticed. It had to be taken into account that even with a translator it could still be hard for farmers without any kind of knowledge and education to clearly explain and show what the goal of the project is and how we would like to accomplish this. During the set-up of a new project in a different country people who research should train themselves by learning to what extent people differ in the way they give answers to questions. In the first weeks of staying in Indonesia already much was learnt about the way many Indonesian people responded to simple and difficult questions and demands. Through in-depth conversations with professors of the Institut of Technology Bandung and through living for a certain time in this culture, already some differences can be found. It was stated by both professors that especially people in the North (Kalimantan) are very short-term focused, living from day-to-day. Subsequently, in the Indonesian culture the preservation of their "face" is extremely important which indicates a short-term focus as well. This makes it more difficult to convince them to change some habits to increase wealth in the future. Due to the still present corruption in the country the trust in institutions is extremely low. This is an interesting fact, which could impact the way people trust researchers as well. Finally, through personal experiences it should be explained that Indonesian people are extremely polite, which could lead to the wrong assumptions. When people are being asked something they do not (quite) understand, often they ‘pretend’ they do and answer with yes or no. This is due to the politeness for not showing the questioner that the questions were not well enough understood. For this reason, as previously mentioned, a translator was used.

ANALYSIS

6.1 Introduction

In the analysis all interviews and data are shown, discussed and explained, which have impact on the seven subjects for the semi-structured interviews. As described in the methodology external stakeholders were interviewed, which consist of investors, NGO employees, government and professors. The data of these stakeholders are described in paragraph 6.2, 6.3, 6.4 and 6.5. Later on, farmers, middle men and village leaders were spoken to. The complete data analyses from the interviews can be found in the Appendix B-H; however, this section is narrowed down to data concerning the seven main subjects. The reason for choosing these six stakeholders is that they are all operating on the local level. As was already explained in the literature, it is important to first start with external stakeholders before researching the villages in-depth.

This part is separated in three field studies, where one study consists of several interviewees located in the same area. Firstly, villages located under (downstream) Palangkaraya were investigated, after which a region situated up north (upstream) was researched. Finally, several remote villages were visited in Kalimantan in order to search for differences between remote and easy accessible areas. All data are used together with previous literature to research if and to what extent the new model (figure 3) should be adapted, changed and improved. The final results can be seen in the final model on page 57 (figure 5), which is the model for LED projects in less developed regions. Therefore, the stakeholders will be discussed first after which the analysis of the villages are described.

6.2. Business

The first day two investors in Palangkaraya (Appendix G) were interviewed. Firstly, Dowson-Collins, a British private investor living and working for over 25 years in Indonesia mentioned that it would not be tolerated by the leader of a village to enter without having made an appointment up front. To be able to get in contact with inhabitants of a village, someone from the city in whom they trust should clarify that the visitors are acquaintances. This fact itself decreased the total amount of options for selecting areas to research. Furthermore, concerning new projects she elaborated that convincing the village leader is necessary in order to reach the people living there: '*if there is an agreement with the leader, there is an agreement with the whole village.'* This assumes that a leader of a village is an essential connection between outside

parties and the people living in the village. Moreover, it was stated that the more relationships are built with important decision makers, the higher the chances become to successfully start a project without governmental problems. The structure in Central Kalimantan, the province in which Palangkaraya is located, was seen as very hierarchical with many layers.
The second investor having interviewed was Thomas Brönniman, a Swiss architect leading a construction company for over 20 years. Similar statements were noticed by both investors concerning the important role the government has in times of new projects. It was commented that often he had to deal with the still present corruption, which almost led to the bankruptcy of the organization. It seems that every foreign investor should have an Indonesian partner before it is being able to perform any legal business. This construction does not immediately means that the MC is in hands of the other party; however, any illegal actions of that specific partner could harm the name of the business, even lead to expensive fines as a consequence. The result of this insecurity is that people prefer finding someone they completely trust before signing the collaboration contract. Looking at the corruption index (CPI, 2013), Indonesia ranked 118 out of 174 countries, where one is the country with the lowest and 174 the highest corruption rate. However, new constructions have been found to reduce and limit possibilities for corruption:
'Multinationals often control insecurities easily by large contracts through cooperation of more parties, which protect them from illegal actions of single parties.'
This assumes that cooperation between several parties decrease the chance for corruption by for instance local governmental institutions.

Currently he is assisting local development of regions by bringing techniques, machines and knowledge to an area in the heart of Borneo. As an example of a failed LED project, it was mentioned that in the past remote villages were supplied with high-tech solar systems, which resulted in sufficient electricity for all their day-to-day practices. One year later, however, systems where not used anymore because of the lack of maintenance. Besides the lack of maintenance, Brönniman (own field research) believes that this failure resulted due to the unavailability of knowledge, funds and their mindset: *"We can bring technology to the people, but what we actually need to achieve is a change in the mindset."*
In other words, people should, besides supplying techniques, share the knowledge that is needed for a long period and try to achieve to change the mindset about these techniques and this

knowledge. The goal can be considered as accomplished when the local people really believe in the system and that they know how to maintain and use it in a sufficient way.

6.3 Non-profit organizations

Subsequently, Emanuel Migo, working at an NGO for reducing greenhouse gases and Martin Holland, employees of a NGO called 'The Heart of Borneo," were questioned. At first interesting comments were made concerning the start-up phase of previous projects. Holland clarified that foreigners entering a less developed region often do not realize how people think and what is important to them: *"When a person or organization starts a project, first the community should be taken into account after which it should be mapped. Consider how people think and feel, what drives them, what is important to them, what they earn nowadays and if they want to increase their income at all. There is not a strict format for this, just show real interest in the community, show that the project is not to make profit but to help them."*

Projects set ups by outsiders could also fail due to uncertainties about important and often forgotten conflicts in Kalimantan. For instance, the uncertainty about the map of Kalimantan, Migo clarified. "*This huge problem is not commonly known, but the fact is that different groups 'own' the same parts of this region in Indonesia. Besides that, different opinions concerning the development plan of an area is a huge problem. The Ministry of Forestry for example wants to safe the forest, while the Department of Mining wishes to burn down the land in order to start mining productions*." In other words, even high layers of the government have different opinions, which could cause major problems for setting up projects.

Holland elaborated on these governmental uncertainties that it will be very useful to build up relationships with important people and parties in all levels. Similarities can be noticed between this statement and comments from both investors. People working in the higher levels of the government could support projects with approving permits and support with economic funds. However, it was elaborated that people sometimes believe that convincing higher levels is sufficient to start projects; however, with this attitude projects are doomed to fail: *"With respect, people who often want to help, mainly look at the economic level. If you want to work with a community to improve their lives you should understand them and build a relationship.*

Sometimes villages do not want economic assistance, just healthcare and educational improvement. In these areas it is almost impossible to reach them and be successful."
Furthermore, MC was seen as an extremely important issue, since it is showed in the literature. Before that, projects failed within a year due to corruption, lack of knowledge, cooperation or interest. This corruption should be abandoned by improved MC and transparency of the whole process and practices: *"Dumping the project doesn't work. At first it seems to be successful, but one year later it is not used anymore or used completely different. If the set-up is long-term, more ethical and transparent there is a greater chance of success. Outsiders should not take a patriarchal way of implementing a business, but should help a community to find their own success. Just explaining what to do, give them money, equipment or machines is just a joke."*
In order to find their own success, it was stated that knowledge should be shared and pilots should be set-up to increase trust. This sharing knowledge should be executed by external parties, through pilots for a long period: *"People should receive real demonstrations and most importantly, people working on the pilot should function as your peers. This means that these farmers are doing the talking for you, since long-term trust already exists between these farmers.*"

6.4 University

Most people living in the north of Indonesia are far more obstructive and anxious about foreigners than the rest of the country. The 'first see then believe mentality' (Manurung, own field research) fits totally in the way of thinking Central Kalimantan's inhabitants. Manurung, an Indonesian professor, explained his vision about improving this part of the country: *"Together with the right equipment the fields will be more efficiently and effectively cultivated which results in better products and more income. This technology and increased knowledge sharing is necessary, since nowadays farmers do not use the land efficiently and they cannot afford new machines and techniques due to lack of income and savings."*

A second professor mentioned to be skeptic concerning new projects like the MBD-project (Limin, own field research). Firstly, the total process should be proved to be effective before discussing any logistics and cooperation with the farmers itself. After that, the processing unit has to produce sufficient oil to be able to convince people in the future. Furthermore, there has to

be a market for the product being produced, since farmers would never start cultivating something without knowing that it will be sold onto the market. This remark was made due to the insecure demand of bio-fuel in this area of Indonesia, since most machines, motorbikes and cars are not (yet) able to use this kind of input. When these issues are solved then the farmers can be persuaded to collaborate in a so-called cooperative, where Knowledge Sharing, techniques and machinery will help the farmers to produce more efficiently: "*Cooperation is a better solution, which can be seen as a transparent group with different stakeholders. The university, head of the villages and region, business and farmers should work together in this cooperation where there is transparent control and trust among all parties.'* (Limin, own field research).

The bio-diesel units should be located, according to this professor, on strategically locations between districts, whereto the 'collectors' should transport all rubber seed, after which most transformed bio-diesel will be transferred back to the farmers and a small part should be paid back to investors. A reason for this opinion is the economy of scale of the collector in contrast to both the mobile truck and farmers. Furthermore, the project was compared to a company, where a board, consisting of a few persons, controls each other in order to protect the company: '*The control should always be in the hands of a group consisting of various people from different directions, in order to prevent corruption and increase social protection.'* (Limin, own field research).

6.5 Summary stakeholders

In order to summarize this paragraph the seven main subjects are taken into account. At first, it was often mentioned that the MC of processes is executed by the Village leaders. Nevertheless, it may be said that the majority of the interviewees were in favor of a system where a cooperative controls and leads the project. Due to the ongoing corruption, people's trust decreases or remains low when one group or person is controlling and where transparency is often lacking. Besides that, it was added that beforehand it should be investigated whether people are waiting for change or that they believe it to be unnecessary. If the latter is the fact, it should not be tried to control them, since this could lead to negative effects. The cooperative should consist of several parties, like universities, government representatives, village representatives, investors and sometimes NGO's. If there is a transparent environment trust will increase among them, of

which the cooperative will benefit. Moreover, the project should be proved to be effective, which will attract investors. By setting up pilots nearby villages, after investors have been found, the farmers who are positive to change should be persuaded. Finally, it can be summarized that farmers should be assisted with equipment, machines and knowledge on the long-term after which farmers can increase efficiency and effectiveness. Due to the assistance farmers can increase their knowledge and generate more income, of which a part should be repaid to the investors.

Together with data and the people that were interviewed seven villages have been chosen to research. As in the methodology was explained, the seven villages are Buntoi, Pilang, Henda, Bawan, Hurung, Tambak and Manen Kaleka, all located in the ex-mega rice project area (Appendix I).

6.6 Field research Buntoi, Pilang and Henda (upstream Palangkaraya, Appendix G)

Buntoi could be seen as the most important rubber manufacturing city located under Palangkaraya, where both Pilang and Henda are substantially small villages nearby. After the rubber is collected by farmers, it is brought to a middle man (Tumbang Kungi in Buntoi). This middle man collects rubber from the whole area, after which once a week it is picked up by one person, named Philipson. It is interesting to notice that farmers sell their rubber on credit to the middle man, who in his turn only repays when money of the superior has been collected. Great trust exists between all three parties due to the strong familiar connections between them. The control of this process can be seen as *'the social pressure of people around you'* (Philipson, own field research), which means that due to the strong connections no strict MC mechanisms are needed. Philipson mentioned the lack of knowledge in surrounding areas, which often results in major differences in quality of rubber. However, changing their way of processing and cultivating is seen as almost impossible. Often, it is tried to explain the people what and why to change, but it seems they are not interested in change, more income, better practices, better quality and more efficient processing. A common response for not changing this is that their family always acted in this way and that they are not thinking about changing those practices. Looking at his company, it can definitely be concluded that Philipson is a great entrepreneur, but it seems he lacks leadership skills to pursue people to change and sharing knowledge in the right

way. The production chain consists of only three layers, but this 'cooperation' seems to lack transparency. Farmers from Buntoi, Pilang and Henda spoken to, did not seem to know at all what the income of Philipson would be and Kungi explained that his superior approximately earns the same as middle men, which was certainly not the case. However, Philipson bears the risk, since it was clarified that he is the only person investing in rubber before knowing for what price it will be sold.

A slightly different process was found during an interview with rubber farmer Labih. He sells the produced rubber to a middle man on credit. When the middle man collected all rubber the load is being transferred to Banjarmasin (harbor of Kalimantan). After the transfer, people count the rubber in the city after they call the farmer to tell that the delivery has arrived. After that, Labih collects cash in Banjarmasin. Concerning the trust of the middle man for giving away the rubber without strict guarantees he explained that the collaboration between them already lasts for over fifteen years. It started after checking the middle man at the office of the village leader. This point is an enormous important factor since trust comes from the blessing of the village head. Through background checks by this leader any problems from the past could be found. If the trust is low, it seems too difficult to go into business: "*When the leader does not trust someone it is undoubtedly that this person can lead a business around here"* (Labih, own field research).

Summary field research 1:

In order to summarize this paragraph the seven main subjects are taken into account. At first, Control and Leadership is to some extent in hands of a single village leader, since for farmers his influence is seen as decisive for any collaboration with middle men. A small cooperation was noticed since middle men sometimes operate as the representative for several farmers. It can be summarized that in the discussed villages great trust exists between parties; nevertheless, it lacks transparency. As it was explained, they have never received the right knowledge from external parties, but on the other hand it was believed that it would not succeed due to ongoing familiar practices that farmers will never change. Concerning the new project it was stated that before considering cooperating all necessary information should be supplied to the people. Control should be in hands of several parties in which people trust. Finally, repayment should be seen as a part of the extra production, since people already have problems to make ends meet.

6.7 Field research Bawan (Downstream Palangkaraya, Appendix G)

Bawan may be seen as one of the important rubber villages up north Palangkaraya. In this village the rubber is collected by farmers, after which it is sold to the middle man (Harun). The middle man of the rubber value chain receives all rubber in his shop by truck or by boat located in the center of the village near the river, where the transaction is performed immediately. Some collectors collect rubber from farmers, which indicate an extra party in the value chain of rubber in some cases. After it is collected, it is send by truck to Tangkiling, the biggest city in the region to a so-called "foreign company." Not knowing the name of the company after a partnership for over ten years indicated a non-personal relationship. Nonetheless, great trust exists between the farmers and the middle man because of familiar connections, which is the main reason not to change the middle man: "B*ecause I am family I give them the best price, so it does not make sense to change the middle man, they trust me and I trust them. We do not really need something to control us or the system'* (Harun, own field research).

Furthermore, it was stated that the 'traditional' farmers never change the way of producing and operating due to family traditional practices. Some have the understanding that too many trees decreases the quality of the rubber, but some farmers nearby simply do not want to learn it. The village leader mentioned next to that a project set up by the government to improve the economic development in the village: *"The government has a project nearby, which everybody in the village knows about. The way of producing rubber is completely different, since fewer trees are used on one hectare while more rubber is being produced. Even when the government shows that more can be produced with fewer trees, some farmers still believe that more trees mean more rubber, you can just not enter their mind."*

This project is interesting to look into, since it is tried to set-up a project to increase the knowledge of people by 'Knowledge Sharing' and to ask for repayment after extra profit has been made. At first, farmers borrow land for free, after which theoretical classes should be taken and governmental rule should be followed. After the production and selling taxes have to be paid to the government. It was noticed that many people do not pay tax, since it is already found too difficult to fulfill their daily needs. However, if a farmer does not follow the rules the land will be taken away. MC is executed by government representatives and the knowledge is shared by people from universities, companies and the government.

Finally, the leadership of a new potential project was discussed. If a new project could become reality, a leader should be chosen on an event, where at the same time all information about a project is supplied: "*During this event, also someone of the project itself should be present to answer questions of farmers and people who do not like change. This could be helpful since the first reaction of people concerning new projects is that a company enters the area to make profit instead of helping the inhabitants'* (Heri, own field research). This indicates that projects are desired but the necessary information should be supplied to the community to increase their feelings to participate.

S*ummary field research 2:*

At last, all data discussed above combined with the seven semi-structured interview subjects to create a clear overview. Firstly, the leader was one elected person who makes all important decisions. Besides that, strong family relations were seen as a substitute for Control, since the members completely trust each other. A future cooperative for a new project should start by explaining the project, showing the machine, explaining the processes and sharing all necessary knowledge. This indicates that the investment should be made before having guarantees that the village members will cooperate. For the new project a different leader should be pointed, which will be a person that is trusted by most people. As was shown, the government already tried to set up a project where they shared knowledge with the farmers; however, many were seen as stubborn. Due to strong family traditions it is often impossible to reach their minds. Considering repayment it was told that they would only consider participating when a part of the extra profit made should be returned.

6.8 Field research Tambak, Hurung and Manen Kaleka (Remote villages, Appendix G)

Furthermore, it was decided to research besides the relatively developed areas less developed and remote villages. Firstly, Pah Yuktan Efatar, the head of the Tambak, rubber farmer Hardi and PaMujianto, secretary officer, were interviewed together. Nowadays, all rubber is being collected by a middle man by boat once or twice a month: "*There are no specific agreements about the time and date of the collection, so the collector comes when he has time. When the collector arrives, farmers can choose to sell their rubber for a certain price"* (Efatar).

Looking at the price of rubber they just accept the price that is being given by the collectors, since no other options are available for them: *"most people are so poor; they are not going to discuss the price, because we fear that he will not come by next time. There is no need to trust him"* (Hardi, own field research).
Moreover, the government comes to Tambak once a year to share knowledge; however, due to the sub-district leader they are not educated about producing better rubber, but they are being taught how to improve the production of rice. The village leader explained that it is not possible for them to produce rice due to the conditions of the ground, but it seems that the government does not pay attention to that important issue: *"The government does not care whether we produce rice or rubber. When we try to explain them that we produce rubber and search for gold, they respond that we should try the rice production again. We have been trying to develop rice fields, but the last three years it failed completely"* (PaMujianto). It seems that there are development projects available to increase knowledge for the farmers, but the knowledge program lack efficiency, quality and transparency.

Finally, the MBD project seemed to interest them, because nowadays they do not use the rubber seeds. However, people should receive the right knowledge from people working on this project. Through collaborative working together with a good leader of a project the village would consider cooperating.

Hurung was the most remote village that has been researched for this paper. It was said that the leader of the village Sindem was elected by the villagers, which means that every final decision had to be approved by him. The transport company cannot reach the village in certain periods of the year during the rainy season. In those times the rubber transport is done partially by the farmers themselves or is managed by the village leader in order to be cost-efficient. So, it could be noticed that the control is totally in hands of one elected man who has the trust of most people around him. The transparency is higher compared to other villages since he negotiate the right price with the transport company, which results in one price for all farmers: "*This sort of small cooperation creates trust"* (Sindem, own field research). Considering the project, likewise almost all farmers, village leaders and middle man they reacted positive after explaining the MBD project. Nevertheless, since the village never got any form of knowledge assistance of government- or NGO institutions. Sindem could not tell how people would react to such a

system. At first, people from the project should in collaboration with Sindem explain the whole process to the people and discuss how income cost reductive it would be.

Summary field research 2:

At last, the data collected from these three remote villages are combined with the seven semi-structured interview subjects to create a clear overview. The leader of remote villages is likewise previous villages, one elected person who controls all important processes and decisions. However, due to the remoteness of these villages the leader also operates as the collector in times of inaccessibility which may be seen as a small cooperation. Trust is seen as an unnecessary issue to discuss since there are most of the time no other options to choose from. Due to fear people obey to all prices, without even discussing. For a new project the investment should always come completely from outsiders due to the lack of funds. Furthermore, they hoped for different and more effective ways of sharing knowledge from the government or for instance universities, since nowadays the government does not listen to the demands of the inhabitants. If the right knowledge and equipment is supplied, people will start to collect the seeds and repay an amount that is a part of the extra profit made.

6.9 Overview and combining field studies:

After having clarified all data received from the investigated villages, the data are summarized in a structured manner while taking into account the seven important subjects. All results can be seen in a clear overview shown is figure 4a and 4b. Firstly, the result concerning Control, Leadership and Cooperative showed many similarities between field researchers, which indicate a transparent control system where several parties collaborate. All respondent favored such a system since corruption is still present in every societal layer. Firstly, in a cooperative, companies, universities, governmental institutions and village leaders should participate and lead a project together. This cooperative is seen by respondents as the ideal leader for a project, where Limin used the board of a company as an illustration. Many comparisons concerning Leadership can be found were is was often states that trust and transparency is essential for the correct leadership. A small difference was found in the second field research where not the village leader should participate, but a special elected village representative who can focus completely on the project. Furthermore, contradictions were found concerning the way of controlling people,

since several interviewees explained that if the village leader decides to participate, everybody living in the village will join. However, Holland and Brönniman (own field research) explicitly mentioned that some people do not want to change, even when the controller has decided for the village. Therefore it was said to first research the people's attitude concerning new projects or changing processes. Through a transparent and self-influencing cooperative the trust will increase among members.

By elaborating on Trust it can be noticed that besides a cooperative also family relations are seen as extremely important. For this reason it is often quite difficult to enter a village as an outsider, which was mentioned by all respondents. However, several differences were found between field researches. At first, Manurung (own field research) clarified that by creating a transparent cooperative trust is created, but Limin (own field research) explained that a new project should first show positive results to the local people, before even discussing cooperation. Holland (own field research) even contradicted this opinion since it was explained due to the corruption the level of trust is low, which means that first relationships have to be built before even showing or discussing the project.

If a project will start, knowledge should be shared with all participators, especially with the farmers. Several small dissimilarities can be seen concerning the way of sharing the important know-how, where the most of them explained that supplying the knowledge and equipment is sufficient; however, Holland and Brönniman (own field research) emphasized on this that by 'just' supplying a project will not be successful. As it was seen in the past that projects failed within a year, they said that changing the mindset is important supported by knowledge and equipment. So both groups mention the importance of Knowledge Sharing, but one group sees sharing the knowledge as sufficient while the other group explains the importance of changing the way of thinking as well together with supplying knowledge.
Finally, the least differences were found concerning Investment and Repayment. Since people from villages often do not trust outsider or have sufficient funds, it was mentioned by all that investments should be made by externals without guaranteeing any repayment. This repayment, which was also mentioned by all respondents, should be seen as a part of extra profits made due to the assisted help of knowledge and equipment. All results can be seen in a clear overview of all field researches shown is figure 4a and 4b.

	Investor 1: Dowson-Collins	Investor 2: Brönniman	NGO: Holland	University 1: Manurung	University 2: Limin
Control	Control of villages in hand of one village leader.	Control in hands of people which are trustful; however, that is difficult to be certain of in the beginning.	People should be controlled, but only those that are ready to change. Otherwise control will lead to negative effects.	Control in hands of the village leader (elected).	Control should be transparent and should be shared between Universities, companies, government and village leaders.
Trust	Very important before talking business with village leaders.	Trust, which is both very important and very difficult to find, is needed to be able to succeed.	To work with a community people should try to understand locals and try to build a relationship. The government is hard to trust, but a positive relationship with them is necessary.	Through transparency within cooperation building trust.	A new project should be proved to be effective before trust can exist between groups. Trust is seen as low in these villages partly due to corruption
Cooperation	There are many different leaders for several levels. The more approvals the more chance of success.	The government should be included, since their approval is extremely important. However, transparency is needed due to the corruption.	Between several parties. Before starting, relationships should be built to increase trust.	Cooperation between several groups. (Universities, Investors, NGO's, Government)	Cooperation could only work when there is real evidence to show that the project will be succesful. Cooperation should exist between universities, government, NGO's and villages (village leader or project leader)
Leadership	'Agreement with the leader results in an agreement with the village.'	In the hands of the farmers, but outsiders should supply assistance.	Everything takes longer; leading the set-up is long-term and more ethical. Outsiders should not take a patriarchal way of implementing a business, but should a community find their own success.	Cooperation is both leader and entrepreneur.	Cooperation should lead the project, but transparency is essential. Due to the present corruption trust is low. For this reason leadership should be in hands of several parties.
Investment	External companies, but an Indonesian partner is needed which an investor has to trust first.	Difficult, due to the present corruption foreign companies/investors do not enter or leave Indonesia.	Investments should come from outsiders. However, dumping the project does not work. At first it works, but one year later it is not used anymore or used completely different.	Comes from external parties or from inside the cooperation	When the project is proved to be effective, investors are not hard to find. Investments should come from companies that are persuades by for instance universities.
Knowledge Sharing	-	"We can bring technology to the people, but what we actually need to achieve is a change in the mindset"	Just explaining what to do, give them money, equipment or machines is just a joke .Long-term knowledge sharing is necessary.	Through supplying knowledge by Universities together with machines and equipment.	Increase knowledge sharing through assistance of the government, NGO's and Universities.

Repayment by farmers	-	Farmers will never pay upfront. Any other solution is preferable.	Part of extra profit made due to increased output or profit.	It could only work when the farmers do not have to invest at first, otherwise they will not cooperate. Part of profit made through received help.	It could only work when the farmers do not have to invest at first, otherwise they will not cooperate. Part of profit made through received help.

Figure 4a: over view data collected

	Field research 2: Buntoi, Pilang and Henda	Field research 3: Bawan	Field research 4: Tambak, Hurung and Manen Kalekar
Control	Often in hands of the elected village leader. The new project should have a new different elected leader who is living in the village as well. Control should be transparent and several different parties should participate.	No need for control according to the people in Bawan since the strong familiar relationships is sufficient.	One village leader has control over most decisions. Besides that, it was noticed that the leader also controls the transport in certain periods in the rubber value chain.
Trust	Great trust exists between collaborating parties often due to familiar relations or due to the approval of the village leader.	The middle man said that due to family relationships the best price is received for all. Therefore, they trust each other. No need for control systems.	Most people are so poor; they are not going to discuss the price, because of fear that the collector will not come again. There is no need to trust him. The village leader has to be trusted to be elected by the people.
Cooperation	To some extent a cooperative already exist; however, it could be seen that it lacks transparency. In a new cooperation several different groups should collaborate, like universities, investors and a new project leader .	The family can be seen as a cooperative, where there is mutual trust and transparency. The latter can be contradicted, due to the differences in data received from the people.	Since people are often forced to cooperate due to low demand of their rubber it cannot be seen as a cooperative. People always sell to the middle man often for a price too low considering other less remote villages. Only when the middle man cannot reach the villages a small cooperation is set up to decrease transport costs to transfer the rubber themselves (overall still more expensive compared to selling directly to middle men),
Leadership	"When the leader does not trust someone it is undoubtedly that this person can lead a business around here." For a new project a leader should be chosen different from the village leader, since this is more independent.	One man is the village leader who makes all important decisions. Strong family relations can be seen as the Leadership structure where an older and wiser man makes decisions for the younger people. For the new project a different leader should be pointed, which will be a person that is trusted by most people.	As mentioned above, one elected leader in these remote villages can be seen as decision maker, controller and middle man.
Investment	Investors. NGO's and universities should assist in setting up the project since farmers will not invest anything. If the investment is there farmers will start to consider participating.	Not many ideas were given concerning investments. It was told that the machine should be shown to the people before collaboration, which indicates that outside investors should first invest before knowing if villages work will use it.	The village was not able to invest anything into a new project, which assumes that any investment should come from the outside.
Knowledge Sharing	Before considering cooperating, all necessary information should be supplied to the people.	The government has a project nearby to show how to increase rubber production on the same land. However, even when it shows that more can be produced with fewer trees, some still believe that more trees mean more rubber, you can just not enter their mind.	Development projects are available to increase knowledge, but the knowledge program lack efficiency, quality, clearness and transparency. For a new project outsiders should first invest what the people want to and can cultivate in the area. For a MBD project first all important information should be given to the people and for a long time, not just during the first phase
Repayment by farmers	Together with help from outside investors and universities it will be worth considering setting up a project where investors will receive a part of the profit made as Return on Investment.	Receive help from the government after which taxes will be paid. Until now this is not usual, which is a reason for the government to increase support. For possible external investors repayment will be executed in the same way as taxes, but then as a Return on Investment.	It was concluded that any possible repayment of the project should come from additional profit made. This is not a result of low trust, but simply the unavailability of funds to invest or repay anything.

Figure 4b: over view data collected

DISCUSSION

7.1 Introduction

After having clarified the necessary literature together with the field studies, it can be stated that relatively strong and convincing results and insights have been presented. In this part the literature review is tried to be connected with the findings of the studies, which result in conclusions helpful for future research and even more important new and already started Local Economic Development projects in less developed countries. Moreover, it is tried to fill the still existing gap between practice and theory concerning Local Economic Development. Firstly, I start discussing an issue which has been discussed sufficiently in the literature and which was not used as one of the seven main subjects. This is decided since after researching the villages the start-up phase can be seen as crucial.

7.2 Set-up phase

As explained in the literature, in the western world there is this unconscious believe to know how business works and how to set up a project in the best way anywhere around the world. People in Indonesia often have different believes and goals than those who try to help them. In some cases there not even looking for economic development, but is their main goal improving healthcare and education first, before even considering cooperating economically. Therefore, it can be stated that in the previous model and literature one mayor issue is forgotten before starting a project, namely the 'desire for change.' It seems impossible to start a project in less developed regions when there is no compassion of local people to change the way of producing, manufacturing or controlling. Looking at the farmers near Bawan they were not interested in tapping rubber in a different way. Even when the village leader and middle man tried to explain them that changing will result in more rubber, it was seen that more rubber does not seems to interest them. This issue is very important to consider, since not taking advice from respectable people from the village automatically means that listening to outsiders is ruled out. Therefore, a new variable can be noticed in figure 5, the final model, where 'desire for change' is included. Looking at academic articles, it is often said that less developed regions should be modernized and changed to improve the economic situation sustainably. Another misperception can be found in the fact that a less developed region should become more competitive and entrepreneurial to achieve sustainable change. The road to entrepreneurialism and competitiveness though seems to

connect more to the theoretical concept instead of explaining how it should be practically implemented and solved. In order to start connecting the literature with the empirical results from the field study the important factors Management Control and Trust are discussed first.

7.3 Management Control

In the literature it is explained that MC includes all devices or systems managers use to ensure that the behaviors and decisions of their employees are consistent with the organization's objectives and strategies. Furthermore, it is seen as the process by which it is ensured that resources are obtained and used effectively and efficiently in the accomplishment of the organization's objectives. Looking at MC in LED, it is noticed that the implementation of the concept 'enhancing regional self-help' by Stimson in 2009 instead of planning strategies is definitely an improvement for future LED projects, since it can be concluded that top-down planning does not suit less developed regions. People in the researched regions often do not trust outsiders, since it is believed that people never help without an egoistic, self-fulfilling and economic reason. To change the mindset of people where outsiders at first are seen as intruders is extremely difficult to achieve. Holland (own field research) elaborated on this matter that before there is the desire to introduce a project; people should try to understand the inhabitants and their desires before starting to implement any form of control. After the start of the project, it is interesting to notice that the first signs of success are seen quite fast, which is an indicator for some that the project is in a positive cycle. However, the contrary can often be seen several months later. For instance, when a project is dumped, in other words setting up without the necessary time taken for implementing and understanding, it can often be concluded that one year later it failed due to corruption, lack of knowledge or insufficient interest of the local community. The MC of projects in these areas is significantly different since '*everything takes longer, where the project does not seem to be successful in the short term, but eventually it become more ethical and more efficient, which lead to a greater chance of success. By not taking the patriarchal approach of control, the community can find their own success*.' This relates well to what Pomeroy (2001) and Viswanathan (2003) concluded, namely that self-management is very important, which increases responsibilities and meets the local needs better, compared to management decisions of random outsiders.

7.4 Trust

Besides the understanding of the people it was also said that: *'before starting a new project, at first a relationship should be built with the community,'* which results in increased trust. Furthermore, a great contribution for future LED projects is the fact that people in Indonesia, especially farmers, have the 'first see than believe' mentality. This assumption was made by professors, farmers, middle man, village leaders, entrepreneurs and NGO employees all spoken to in the last period. Trust, which is seen by researchers as part of Social Capital of a community and the glue that holds it together (De Windt, 2011; Seralgedin, 1996), leads to better relationships and more cooperation, more safety, better economic and social well-being of the community lower transaction costs (Falk & Guenther, 1999) and a positive attitude regarding each other's reliability. Since this positive cycle will develop over time (Das & Teng, 1998), it may be said that it is one of the most important factors to focus on for eventual success. This importance is shared by interviewees, as distrust between people never lead to any form of collaboration. For instance, it was explained that '*when the leader does not trust someone it is undoubtedly that this person can lead a business around here'* (Labih, own field research). Moreover, where Dowson-Collins (own field research) clarified that researching areas is only possible with permission of a local influential person from the main city in the region and where Holland explained the lack of trust of outsiders due to the present corruption, it may be noticed that the process before introducing a new project should not be underestimated. When a base of trust exists and '*when there is an agreement with the leader, there is an agreement with the whole village'* (Dowson-Collins); however, no success of the project is guaranteed. Many ideas have been passed concerning the way of working to the goal of economic development in the area, where cooperation between several stakeholders prevailed.

7.5 Cooperation

In the literature, it was said that trust between people is created through the transparency of the cooperation, which assumes less possibilities for corruption; increased trust on its own lead to better relationships and more cooperation. The term cooperation was explained as improving the efficiency of society by facilitated coordinated action (De Windt, 2012), where local managers are able to manage themselves and where the local government also participates actively (Vredegoor, 2011) and that in such a cooperation individuals are stimulated to get more involved (Dooijeweerd, 2012). A cooperative is seen a better solution, as a transparent group consisting of

several stakeholders. These stakeholders were clarified as *universities, head of the villages and region, business and farmers'* (Limin, own field research). However, before entering in such a partnership or cooperation sufficient confidence is essential among participators (Das and Teng, 1998). These authors explain confidence as a perceived level of certainty that a member or partner will chase mutually compatible interests, where Teece (1992) mentioned that in a partnership a balance should be found between cooperation and competition, since people often chase their own interests as well. It is interesting to research this topic, since contradictions can be found between theory and practice concerning trust and control.

7.6 Confidence

Having discussed the concepts Trust and MC individually, it is now explained dynamically. In several academic papers it could be seen that where is control there is no trust, and vice versa. However, Castelfranchi and Falcone (2000) add to that that if a person does not have enough trust, it will increase control; putting control and guaranties results in trust-building. Nevertheless, after the field investigations, it can be discussed whether all these statements fit Indonesian Local Economic Development and more broadly speaking if it can be connected to LED in general. It seems that trust is needed before cooperation can be discussed, but control is needed in a cooperative to sustain that specific trust. Next to that, the control should be transparent as many interviewees wished for. Professors, NGO employees and people from all layers in the villages all mentioned that a potential new project should be 'real' transparent for the whole community in order to have sustainable success. As the often discussed corruption is still present in Indonesia it may be said that Control, Trust, and Transparency is needed for improving the level of confidence in the cooperation. With this information form theory and practice, the model of Das and Teng from 1998 can be revised to some extent. It can be stated that the level of MC influences the level of Trust; however, the influence is not the other way around, since the dimensions of Management Control should be decided and clarified beforehand. Besides that, control should be transparent whereby all participants can believe in a cooperative where corruption is excluded as much as possible. Transparency, in other words 'accurate observation,' of the cooperation's control leads to more trust, after which the levels of trust and control influence the level of confidence dynamically. The implementation of Transparency in the new model can be seen in figure 5. Besides that, the changed connections between Management Control and Trust are shown in the same model. It should be addressed

that the control of the cooperation should come from within, in other words self-management, which increases the amount of responsibilities for participators. As a result of that, local knowledge will increase and the local needs are better served. Therefore, the cooperation should be led by leaders and entrepreneurs from both outside stakeholders and insiders.

7.7 Leadership and Social Entrepreneurship

The correct Leadership and Social Entrepreneurship are needed for successful projects. As can be seen in previous parts it is stated that both are influencing each other to some extent but are definitely not only positively or negatively related. As was described that some important people in villages were fine entrepreneurs, they lacked any knowledge and skills to pursue and convince people to change the way of processing. Both are influenced by the level of self-management of control in the cooperation, in other words the more participation of people the more their social entrepreneurial and leadership skills will develop. The elaborately discussed Social Entrepreneurship consists of Differentiation, Acceptance and Integrating. To recall shortly, a social entrepreneur differs to a 'normal' entrepreneur in a way that the person shows commitment to social change, sustainable communities and social development; however, often lack to some extent entrepreneurial and leadership skills. Smith and Parkinson explained in their 2012 paper that these skills can develop through participation and membership recognition within the community. It concerns interpersonal skills, which build trust, and decision-making skills that lead to better solutions.

7.8 Knowledge Sharing

So far, Management Control, Trust, Confidence, Transparency, Cooperation, Leadership, Entrepreneurship and Social Entrepreneurship has been discussed. Still, Knowledge Sharing, Investments and Repayment have to be clarified. Starting with knowledge, it can be stated that explaining what to do together with additional machines and equipment is simply not enough. '*We can bring technology to the people, but what we actually need to achieve is a change in the mindset'* (Brönniman, own field research) clearly identified mistakes made in the past. Mistakes were was also noticed during several interviews with farmers, middle men and village leaders, who explained the way governmental departments failed in assisting local development. Inhabitants of Tambak mentioned they were taught to produce rice more efficiently, while the fields surrounding the village were not suitable for this ironically. Furthermore, farmers in

Buntoi were explained how to use a special device to increase production twice as fast, after which the products were not able to be used due to environmental rules. It is hard to understand how this inefficient way of Knowledge Sharing can still be seen every year, but it shows the still present unclear and inefficient practices at the highest levels of institutions. An important way of transferring knowledge is showing positive results. For instance, the farmers in Bawan are slowly starting to understand the impact of more efficient and effective cultivating land, because of the pilots set up by the government, together with free land, free education and free equipment and machines. Through this pilot mentioned above, several farmers have increased their monthly income, which will eventually be told to other farmers. This extremely slow process with pilots and other farmers telling the results instead of outside 'intruders,' is the way of starting a project. In order to use this, free land repayments have to be made in the future, which will lead to the next point in this discussion.

7.9 Repayment

The government of Indonesia started the project mentioned above to increase tax payments, however in a more generalized way it can be said that repaying a part of the extra profit made by the project should be repaid to the investors. Almost all interviewees explained that asking farmers to invest beforehand or asking for a strict percentage of the total income is a utopia, since farmers would never risk losing more than what they currently possess. A part of the extra profit made due to the project seems the only repayment construction possible in these uncertain, often corrupt parts of the world.

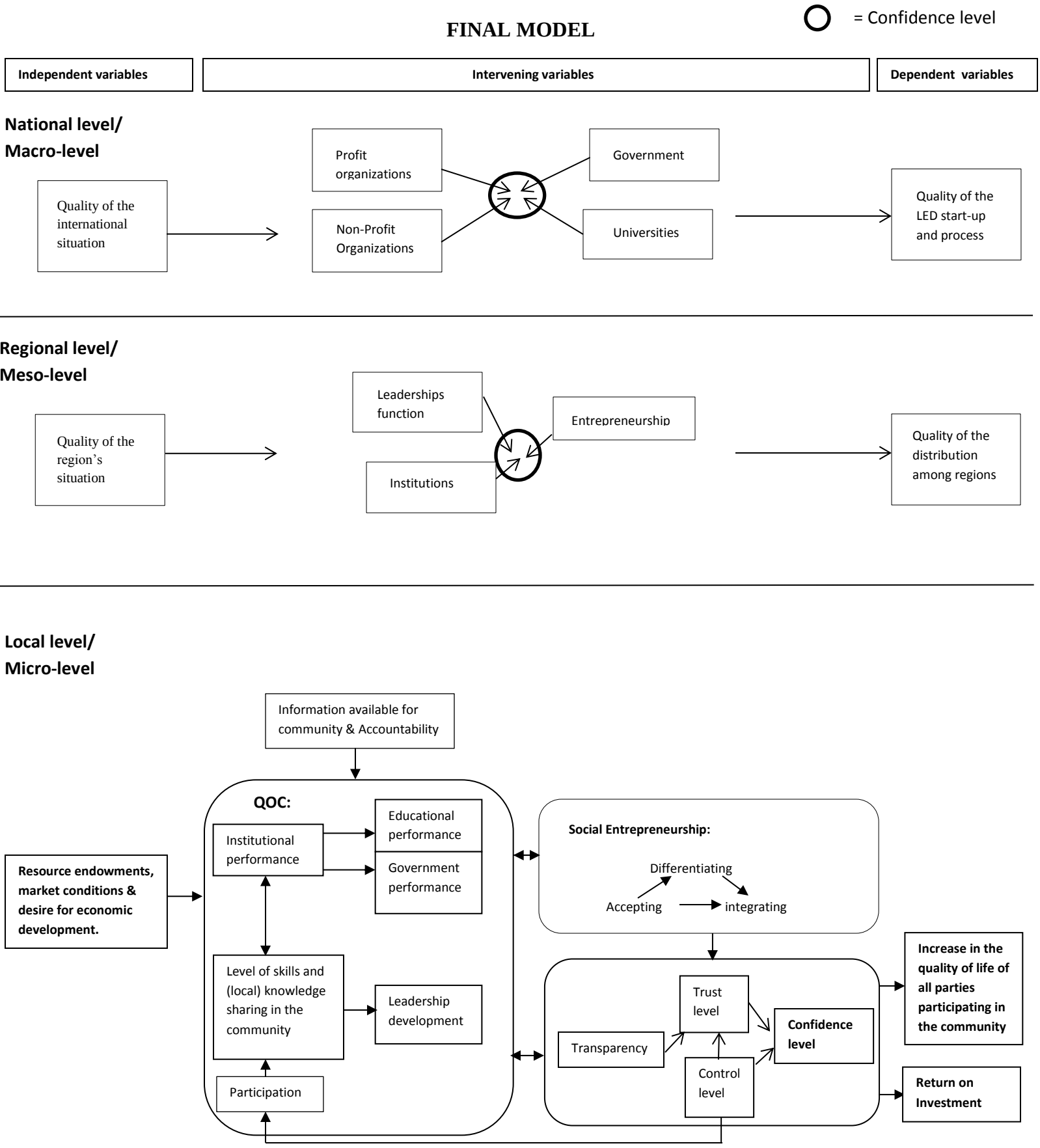

Figure 5: Model of endogenous growth of LED of less developed regions. Boon, G, 2013.

CONCLUSIONS

9.1 Introduction

The previous part focused on combining and discussing the literature together with the analysis of the field research executed in. Subsequently, several adjustments were explained after which the final model was showed and clarified. In this section I make concluding remarks about all theoretical and empirical insights given in this paper. After these conclusions, practical recommendations are given for future research, practitioners and parties involved in LED projects. Finally, practical advices are provided for the Mobile Biodiesel Project. After the conclusion, limitations of this paper and suggestions for future research are given.

9.2 General conclusions

Before being able to improve and controlling regions, investigators should try to understand local people in-depth. When change is desired for LED and resources and market conditions are present, a project could be set up. At national and regional level having good contacts can be very helpful for necessary permits, funds and contacts. Having good contacts in the top of the country often results in approvals of people working at the regional levels. In contrary, lacking good contact often results in long delays or even obstructions. At the national level the parties Business, Institutions, Universities and NGO's need to cooperate to increase potential economic development. The representatives in this level of institutions are often responsible for permits, local infrastructure and the police in that area. It does not need more clarifications why 'forgetting' to build up relationships here could be disastrous. It could be concluded that the effort putting in a new project before even starting is a time-consuming process, where patience and respect is essential.

Management Control and Transparency in the process of economic development in a less developed region is introduced since many researchers never mentioned these variables in-depth. The knowledge for understanding that these phenomena are very important arose through past literature, in-depth interviews and empirical data, where it is concluded that without one of them LED in relatively corrupt nations is hard, if not impossible. The total quality of the LED is heavily influenced by the levels of Transparency, Trust and Management Control, which lead to Confidence. To recall, this level of confidence is important in all three levels of the economy.

Next to Confidence, it is concluded that participation of all parties is extremely important for LED in less developed regions, which increases local knowledge through experience and shard knowledge. As a result of this increase knowledge sharing, the government and educational performance and leadership development are influenced positively. The control should be overlooked by different parties, but in particular a Social Entrepreneur. Social Entrepreneurship is concluded to be positively connected to the community and overall Confidence through Differentiation-, Acceptation- and Integrating skills.

Finally, all three pillars, Quality of Community, Social Entrepreneurship and Confidence Level, influence the desired outcome 'the quality of life of all parties participating in the community.' Besides that, it is concluded that a part of increased profit will be repaid to investors of the project, in other words Return on Investment.

9.3 Conclusions MBD-project

Firstly, it is concluded that many researchers forget that investigating the desire of people to change is an important first issue, what are their demands and how do they prefer cooperation. Therefore, in-depth interviews should be taken with the local people and pilots should be set-up, where through practical facts can be shown to the people. The market conditions are often in fine conditions, at least sufficient for projects to succeed. Nevertheless, it is concluded that only a few villages where ready for change. Therefore, researchers of the project should first find these villages, which can function as a starting point for convincing other often stubborn villages nearby to participate as well. Farmers working in the project could join during conversations with other working to increase trustfulness. Together with pilot programs real results can be shown to them, which they believe more than words and data. A MBD-unit should be manufactured to show the process of transforming rubber seeds into bio-diesel to the people, after which it will be less difficult to persuade them to cooperate and to start collecting seeds on time and as much as possible. At the same time, before starting this project, information should be given to institutions at all levels of the economy in order to find contacts and funds receive permits and improve communications with the often difficult and closed system that still characterizes Indonesia. Subsequently, knowledge, accountability and information should be supplied to the locals to increase understanding, bonding to the project and knowledge of machines, harvesting, equipment and cultivating.

The cooperation of the MBP should be transparent, with clear control of management. Trust has already been created to some extent before starting the project, but it can be increased to a higher level due to transparent control, an open and clear environment and by increased participation of the people. The project should be led from within by a Social Entrepreneur, who knows the people and knows how to solve social problems through the three previously mentioned characteristics of this intervening variable. A continuous and dynamic process can lead to LED, but people should keep assistance all the time to prevent a failure of this still promising project. The way of transporting the machine from villages is not seen as feasible, mainly due to the accessibility and the size of many villages, which is expected, not be cost-efficient. It is concluded that many villages have already created useful systems themselves where people collect a product from the farmers, after which it is brought to a collection place. This way of collecting differs between villages, where for instance in Buntoi this system is controlled through family connections, or as I would call it 'Social Control'; however, other villages have external collectors where the payment is done immediately. Their systems could be used as well for this project; however the amount of bio-diesel should be controlled. With this statement I mean that farmers should know approximately how many liter they could expect to get in return to discourage unfaithful middle men where no social control exists. These expectations could be learned through the right education given by independent parties, like universities. Finally, the repayment for using the MBD-unit should be discussed between the investor and the farmers using it. Through mediation and negotiations agreements have to be made, where hopefully a win-win situation is created.

LIMITATIONS

According to the literature several limitations for field studies are given, which are explained first in this part, after which several limitations particularly for this thesis are discussed. Firstly, often field studies are criticized for being too subjective. However, the contrary can also be stated since investigators are constantly physically close to the project, which results in objective and primary data; it depends on the honesty of the researcher whether the data received is processed objectively. Besides that, it may be said that well-conducted field studies in practice often result in substantially objective theory building.

Subsequently, the lack of internal validity is also mentioned regularly as a negative issue for field-studies, because of the investigator bias. This specific bias is important to consider, since it can influence the way information and data are observed, reported and concluded. This limitation was tried to restrict by starting researching plants and questioning people in the area of Bandung, which increased my knowledge of the project and the quality of questioning. Besides that, the research was performed constantly with a fellow master student, which increases the validity of this paper to some extent. Thomas mentioned in 2006 that a field-study is impossible to replicate; however, due to iterative coding, which states that continually repeating and comparing data together, it is concluded that subjectively is extracted to a certain amount.

Furthermore, Thomas (2006) clarified that conducting this form of research limits the opportunity to generalize, which is called external validity. However, as a contradiction respond it is argued that supplementing new field studies improve the quality of emergent theory substantially (Eisenhardt and Graebner, 2007). Next to that, they explained multiple researches increases their building significantly, since it can be seen as more generalizable and testable than a single-field study. For this reason several studies are researched with different characteristics in different area.

FUTURE RESEARCH:

For future research I have several suggestions. It starts with replicating this field research to some extent, which improves the external and internal validity of this research. If possible, the same villages or villages in the same area should be investigated all cultivating rubber for rubber trees. Furthermore, people need to know the exact data of the MBD-unit. After five years since the start of this promising project, still many and at the same time very important data are unclear. For instance, the amount of seeds that is coming from one tree is still not known. Besides that, theoretical information is available about the amount of bio-diesel being pressed out of one seed; however practical information is yet unavailable. For this reason in this paper it is tried to collect practical information, which is not very helpful for this research, but could add to the knowledge for future investigations.

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12.2 Interviews

Business:

Lorna Dowson-Collins, Partner Director at Kalimantan Tour Destinations. Jln RTA Milono KM 1.5. Palangkaraya 73221. P.O. BOX 71. Tel: +62 536 32 22099. Kalimantantours@gmail.com.

Robert Brönniman, Owner wood factory. Palangkaraya, Kalimantan.

Non-profit organizations:

Emanuel Migo, Communications and Stakeholder Engagement Officer at REDD+, Palangkaraya.

Martin Holland, project leader for the NGO Hart of Borneo, with a sub-department located in Palangkaraya, Kalimantan.

Government:

Administration office Pilang, Mihing

Administration office Tambak, PaMujianto

Village leader Bawan, Heri

Village leader Buntoi, Philipson.

Village leader Henda, Ganco.

Village leader Hurung, Sindem

Village leader Tambak, Efatar

Village leader Subang, Unknown

Village leader Sumedang Utara, Unknown

Yayat Budianto, employee of Bapeda, administration office of the government department Kalimantan. (CINTOP)

Professors:
Prof. Robert Manurung, Professor Chemistry Institut Technologi Bandung.

Prof. Togar Simatupang, Professor Supply Chain Management and Vice-Dean Institut Technologi Bandung.

Prof. Suedo Limin. University of Palangkaraya.

Rubber farmers
Bawan, Unknown

Buntoi, Pak Ruslan

Henda, Agnus

Henda, Unknown

Middle men rubber production

Bawan, Harun

Buntoi, Ganco

Henda, Garum

Hurung, Herma

Pilang, Garotak

Pilang, Labih

Tambak, Hardi

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APPENDIX

A. Value Chain Biodiesel from rubber seeds

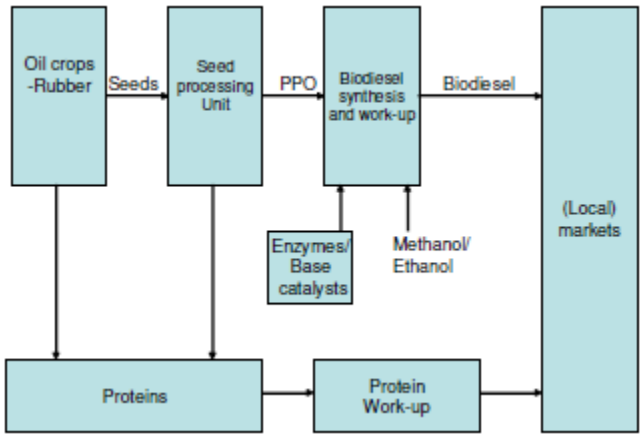

Figure 6: Schematic representation of the biodiesel project using rubber nuts in Kalimantan, Indonesia.

B.1 Buntoi

Name: Kungi

Function: Middle man rubber value chain Buntoi

Kungi clarified to be the middle man between the farmers working in the village and the 'big boss' as he mentioned his superior Philipson. Farmers transfer all the collected rubber to Kungi, after which all received rubber is kept in a small lake nearby. Once a week Philipson buy up all rubber from Kungi and from his twelve 'colleagues' operating in the same business but in different areas. Approximately 20 000 Kg is collected weekly, which is transferred to Palangkaraya or Banjarmasin (two largest cities in Central Kalimantan), depending on which city offers the best price. Interesting to notice was the fact that farmers sell their rubber on credit to the middle man, who in his turn repays every participant after he received money from his superior. Great trust exists between all three parties due to the strong familiar connections between them.

Place	Buntoi
Inhabitants	1000
Date	20-05-2013
Function	Middle man / collector

Time interview	65 minutes
Additional income	Shop
Name	Tumbang Kungi
Hectares per family	1-2
Amount of families	5
Buys-in rubber	6500 - 7500 Rupiah – 50 Kg
Sells rubber	11000 Rupiah – 45 Kg
Kg. sold to superior	1500 KG
Production per hectare	30-50 KG (15 in rain season)
Trees per hectare	1000
Usage of rubber seeds	Used for new rubber plants
Amount of seed drops a year	1 time during October

Table 1: Interview Kungi, Buntoi.

B.2 Buntoi

Name: Philipson

Function: Head rubber value chain Buntoi

Subsequently, there was the possibility to interview the most important man of that area, namely the previously mentioned Philipson, living in the center of Buntoi. It was stated that rubber is collected once or twice a week by boats and trucks, depending on the time and transport costs. He refused to give estimation about the selling price to the city; however, many factors influence this number he explained. Major differences in quality between families and villages can be found due to the lack of knowledge and willingness to change processes and practices. He continued with mentioning that the farmers in the village of Kungi are the hardest people to pursue. Planting around 1000 plants per hectare seems to be bad for the quality; a preferable amount of 450 trees per hectare was given. The problem concerning pursuing them is not being interested in change, more income, better practices, better quality and more efficient processing. Common responses for not changing this is that their family in the past did the same and that this the way they will always do it.

Place	Buntoi
Date	20-05-2013

Function	Head buy-in rubber Buntoi
Time interview	75 minutes
Additional income	-
Name	Mr. Phillipson
Hectares per family	1-2
Amount of middle men	12
Buys-in rubber	10000 - 11000 Rupiah – 15000 - 25000 Kg per week
Sells rubber	Refused answer – 25000 Kg
Production per hectare	30-50 KG
Trees per hectare	450-1000
Purpose of seeds	Pick up some for planting
Amount of seed drops a year	1 time during September
Amount of seeds per tree	500

Table 2: Interview Phillipson, Buntoi.

B.3 Buntoi

Name: Pak Ruslan

Function: Farmer Buntoi

Concerning the education it was stated that the village has a primary and middle school but no high school, which is located 10 km outside the village. He explained that he planted fewer trees on one hectare with neatly organized trees because it is easier to collect rubber and nuts. These nuts should be collected fast, certainly within a week, to prevent rotting of being eaten by animals. One major problem he mentioned concerned floods of water in the village, which makes it often too hard to collect any rubber, let be collect seeds. For this reason sometimes practices are changed to fishing, but that is less profitable. Pak Ruslan continued stating that the government together with UNPAR assisted in equipment and knowledge, which implies how to use an certain equipment called “Injector” that is used by the farmers to stimulate the bleeding process of rubber trees from six to hours. Ironically, farmers had to return all used equipment with which they have been working that particular day, due to communication problems between governmental departments. Since it not allowed using equipment in that area of Kalimantan, as a result of protection laws, the training was concluded as useless by Ruslan.

Place	Buntoi
Inhabitants	2000
Date	28-05-2013
Name	Pak Ruslan
Function	Farmer
Time interview	75 minutes
Additional income	Shop
Hectares for rubber Buntoi	1000
Hectares farmer	1,5
Sells rubber	7500 RP. per kilo
Help of governmental departments	Once per year to increase productivity rubber trees
Production per hectare	50 kg.
Trees per hectare	500
Usage of rubber seeds	Sells to government (20000 nuts per year)
Amount of seed drops a year	1
Amount of seeds per tree	500-600
Help Government	Once a year

Table 3: Interview Pak Ruslan, Buntoi.

C.1 Henda

Name: Ganco

Function: Village leader

At first, the education in the village was discussed. On average it may be concluded to have a very low education level, where people going to high schools should be seen as exceptional let be going to universities. Rubber is the most produced good in the village, after that rice and small fruits, often when the climate is not right for rubber production. The village leader also functions as the middle men of one area in the village, where 5000 kg is collected every week from six families living nearby. Sometimes he sells to a different middle man, but once every three months his collection is brought by truck to Banjarmasin. Due to the constantly changing rubber price, which is connected to the Dollar Ganco explained, the income is always uncertain

to some extent. Having tried to explain the project, it was hard for him to understand. This resulted in unclear answers, whereby they will not be mentioned further.

Place	Henda
Date	28-05-2013
Function	Village leader
Time interview	70 minutes
Additional income	Middle man
Name	Ganco
Habitants	800
Hectares per family	1-2
Buy from farmers	7000 RP. per kilo
Sells rubber	9000 RP. per kilo
Costs truck per delivery	800 000 RP.
Production per hectare	20 kg per day
Trees per hectare	400
Purpose for the seeds	Sold or been eaten by animals
Amount of seed drops a year	Once
Month of seed drop	Uncertain
Amount of seeds per tree	1000

Table 4: Interview Ganco, Henda.

C.2 Henda

Name: Unknown

Function: Rubber farmer

Moreover, Henda was researched, a very small place between Palangkaraya and Buntoi. The farmer that was spoken to was one of the suppliers of the middle man Kungi. Since producing rubber is their additional income next to a shop they own, the production every week is relatively low.

Place	Henda, Palangkaraya
Date	20-05-2013

Function	Farmer Rubber
Time interview	20 minutes
Additional income	Shop
Name	-
Hectares	2
Sells to middle men	Tumbang Kungi
Sells rubber	7500 Rupiah – 15 Kg per wee
Production per hectare	15 Kg (one hectare in use)
Trees per hectare	400
Purpose for the seeds	Do not pick up the seeds
Amount of seed drops a year	1 time during July and August
Amount of seeds per tree	150

Table 5: Interview, Henda.

C.3 Henda

Names: Garum and Agus

Functions: Middle man (Garum) and farmer

Both were interviewed at the same time, where it was explained at first that the production in the area of rubber is quite low, due to a forest fire and bad economical returns. They sell most of their nuts, besides planting new rubber trees, to the government for new projects in the country which they called 'nursery'. There seems to be differences between nuts of good and bad nuts as the farmer explained. If a nut sinks into the water it could be stated as good quality while the ones staying on top of the water are not of the best quality. A reason could be the quality of the tree or the fact that nuts have been lying on the ground too long, *"you have to collect them within one week, otherwise they will rotten or be eaten by squirrels or mice'.*

The middle man continued clarifying that all middle men in Hendu do not work together but travel at the same time as a 'colonne' to Banjarmasin. Using a boat for transfer would take several days, which is not considered as an option. Concerning the MBD project both were interested, but he suggested to have several meeting with all interested people from the village to hear and listen what they think and have to say about it.

Place	Hendu
Inhabitants	1000
Date	28-05-2013
Education level	Low
Governmental help	Once a year
Function	Middle man and farmer
Time interview	55 minutes
Additional income	Shop
Name	Garum and Agus
Hectares farmer	1
Buys-in rubber (middle man)	7000 RP per kilo
Sells rubber (middle man)	10 000 RP per kilo
Kg. sold to superior	2000 kg per week
Production per hectare (farmer)	50 kilo
Trees per hectare	800
Usage of rubber seeds	Sell to government
Amount of seed drops a year	2 times
Months of seeds drops	Augustus and October
Amount of seeds per tree	500

Table 6: Interview Garum and Angus, Hendu.

D.1 Pilang

Names: Garotak and Mihing

Function: Middle man (Garotak) and the secretary

At the same time a middle man and a representative of the secretary office was questioned. People in the village mainly cultivate rubber (75 per cent), some harvest fruit and gold as well or receive some additional income from fishing. In total 300 farmers produce rubber, which is collected by eight middle men who all have a part of the village for themselves. This means that no competition exists since the collectors all have the same price. After the collection, there is contact with three different fabrics in Banjarmasin to research which of them offers the best price. The education level is substantially low, since most of them only had primary school.

Some of them will go to high school, but people going to university are scarce. It was clarified that no government department has offered help once in the past. Some NGO's offered help a few times, like WWF, Hart of Borneo and Redd+, but this did not lead to major improvements yet. Interesting comments could be noticed during the discussion about how to control the MBD project. Mihing explained that farmers do not care about appointments or the machine. Besides that, he mentioned: "*They will use it, but only when they feel a connection with it. If a foreigner comes by with the truck I believe some will be afraid and do not trust it completely. The machines should be installed at the middle men, since this is often a central location and a man that people trust. On that location also outsiders could be present to assist people with information about the project, machine and process.* After that, it was said that people trying to start a project should always come to the village leader of to the secretary office first to explain everything and teach more about the machine and the process. When they have faith in something new, middle men would be informed, after which farmers could slowly be told what to do. Finally, he commented that through the trust and faith of the people leading the village is a good way of reaching the people who should collect the nuts.

Place	Pilang
Inhabitants	1500
Date	28-05-2013
Function	Middle man and representative secretary office
Time interview	90 minutes
Additional income	Fishing, gold and fruit
Names	Garotak and Mihing
Hectares per family	2
Amount of families in village	300
Buys-in rubber	8000 per kilo (middle man)
Sells rubber	10 000-11000 per kilo
Production per hectare	40 – 50 kilo
Trees per hectare	500
Usage of rubber seeds	Rotting

Amount of seed drops a year	2 times
Amount of seeds per tree	900 good tree – 100 bad tree
Months of dropping	April and October
Poss. use of biodiesel	Boat

Table 7: Interview Garotak and Mihing, Pilang.

D.2 Pilang

Name: Idart Labih

Function: Middle man rubber value chain

Subsequently, Pilang was investigated. The man, named Idart Labih, was both a rubber farmer, the owner of a shop and the middle man for projects of the government concerning transferring young rubber trees from this area to the north of Kalimantan. It starts with selling all rubber to a middle man on credit who drives by with a truck after having contact by phone. When the middle man collected all rubber the load will be transferred to Bessimassi. After the transfer, the people counting the rubber in the city call the farmer to tell that the delivery has been collected and counted, after which the farmer may collect the amount by cash or by cheque. Subsequently, the cheque could be exchanged to cash in Palangkaraya. Concerning the trust of the middle man for giving away the rubber without strict guarantees he explained that the collaboration between them already lasts for over fifteen years. It started after a check of Labih of the middle man at the office of the leader of the village. This point is an enormous important contribution since it was clarified that trust comes from the blessing of the head of an area. Through background checks by this leader, he added, any problems from the past could be found. When the leader does not trust someone to some extent it is undoubtedly that that person can lead a business in this area he commented.

Place	Pilang
Date	20-05-2013
Function	Rubber Farmer
Time interview	60 minutes
Additional income	Shop, government project
Name	Idart Labih
Hectares	2 used, 5 in total

Sell to middle man	Name unknown
Sell rubber	7000 Rupiah
Amount rubber sold	60 Kg. per week
Production per hectare	30 Kg.
Government project	500 Rupiah per tree 10 000 per year of which he produced 4000 himself.
Trees per hectare	400
Amount of seed drops a year	1 time in August / September
Amount of seeds per tree	-
Purpose of seeds	Sell or plant new trees

Table 8: Interview Idart Labih, Pilang.

E.1 Bawan

Name: Harun

Function: Middle man

During the field research up north Palangkaraya at first the middle man of the rubber value chain was questioned. The business was started years ago, because he believed that due to his business the people in his village would benefit from it. The farmers in the village bring the rubber to his main shop by truck or by boat (remote villages) located in the center of the village near the river. Harun weights the total amount, after which the transaction is performed immediately, nowadays between 8000 and 9000 Rupiah per kilo. Once a month the whole inventory is send by truck to Tangkiling, the biggest city in the region to a so-called "foreign company." Since he still does not know the name of the company after a partnership for over ten years indicated a non-personal relationship. Normally, every day 50 farmers bring around two or three kilo rubber to Harun; however, the price is too low, which results in a production stop and a change to gold production. The village consists of 1005 inhabitants, who all could be seen as his family. This is one of the reasons he does not fear competition, in other words a new middle man entering the business, since nobody would abandon him. Besides that, he explained *'because I am family I give them the best price, so it does not make sense to change the middle man, they trust me and I trust them*' which indicates an unchangeable situation. He continued with explaining this time of the year rubber production can be hardly be profitable enough to full daily needs. This has been the

main reason for people to *"to change their jobs to gold mining in Bawan,"* It was also clarified that the 'traditional' farmers never change the way of producing and operating, since it is a family business. Some people have 700 trees, however often farmers with 1000 trees can be noticed. Harun has the knowledge, he said, to understand that to many trees decreases the quality of the rubber, but some farmers nearby simply do not want to learn or know it. Considering the level of knowledge Harun added to that:

"The government has a project nearby, which everybody in the village knows about. The way of producing rubber is completely different, since fewer trees are used on one hectare while more rubber is being produced. Even when the government shows that more can be produced with fewer trees, some farmers still believe that more trees mean more rubber, you can just not enter their mind."

Place	Bawan
Date	24-05-2013
Time interview	85 minutes
Additional income	Shop (groceries and motors)
Name	Harun
Function	Middle Man
Value chain rubber	Farmers - Middle man – City
Amount of rubber farmers	50
Hectares per family	2
Amount of middle men	2
Buys-in rubber	8000-9000 Kg. per week.
Sells rubber	Unclear, 'the price of the day'
Farmers payment	Immediately
Production per hectare	Normally 100, now17-30 KG
Additional income farmers	Gold mining
Trees per hectare	800
Purpose of seeds	30 seeds for new plantation
Amount of seed drops a year	June-October

Amount of seeds per tree	200

Table 9: Interview Harun, Bawan.

E.2 Bawan

Name: Unknown

Function: Rubber Farmer

An extremely poor farmer was questioned between near Bawan, supplying a middle man of the rubber value chain once or twice a month. This middle man picks it up without announcing his visit, after which the total collected rubber is brought to Bawan. The farmer explained that normal man could collect 15 kilo rubber per day, but he is currently not being able to collect more than three kilo. This has a huge impact on the income of his family, since the price for rubber is only 7000 Rupiah. Without showing the man details that a middle man in Bawan collects rubber for 8 to 9 thousand Rupiah per kilo, he was asked how he could know if that price is the right one. The farmer answered to that: "*In the past it was ten thousand, today it is seven. I am unhappy about it, but what can I do? I have to live, eat and supply my family and therefore I just have to accept what the collector is giving me. I am not talking about trust, just about no other options, because if I would decline his offer no other middle man will pick up my rubber; let one paying a higher price for it."* Furthermore, he mentioned to cooperate with the MBD project for sure, but doubted if this project could really work out. Bringing the seeds to another place is certainly not an option for him, because the business man in the city are all *'liars'* concerning any repayment. Before he hands over the seeds to someone operating the machine or to someone collecting all the seeds, he has to now exactly the amount of diesel he will get in return, so nobody can *'steal'* a part of his oil. He added to that *"they should share knowledge with us, explaining everything about the machine and the amount of oil coming out. When we start to work together liars does not have the opportunity anymore to steal from us."*

Place	Bawan
Date	24-05-2013
Time interview	35 minutes
Additional income	-
Name	Unknown

Function	Rubber Farmer
Value chain rubber	Farmers - Middle man – City
Hectares	1,5
Sells rubber	7500 Rupiah per kilo
Farmers payment	Immediately
Production per hectare	3 Kg. per hectare
Trees per hectare	400
Purpose of seeds	Throwing away
Amount of seeds per tree	400

Table 10: Interview local rubber farmer, Bawan.

E.3 Bawan

Name: Heri

Function: Village leader

The research continued with questioning Heri, the village's leader of Bawan. He mentioned that most people from Bawan changed their main income driver from rubber to gold due to the bad economic conditions of rubber. The selling price fluctuates too often and the prices are currently extremely low, which assumes an uncertain and low income. He continued explaining the help the village receives from the government: *"We receive all kind of help, for instance medical assistance and knowledge, improved equipment and training for the fire department and agriculture improvement. In the region the government has started a rubber project, which is set up for the improvement of life of the people in the village, increasing the quality of the rubber and educate the farmers for more efficient and effective producing."* It was told that one hectare will not have more than 400 trees and between them fruit will be cultivated. Farmers from Bawan and nearby could apply for land, often one or two hectares, which can be loaned for free. In return they have to follow theoretical classes, follow the rules of the government and pay taxes. The last demand, taxes, is an interesting subject, since it was told that in Indonesia not many people pay their taxes, since it is not possible for them to fulfill their daily needs and repay the government. Due to this project, the government believes that the people earn enough to fulfill both obligations within three years. However, if a farmers does not follow the 'rubber rules' the land will be taken away and will be given to other farmers. Finally, the new project

was discussed. If a new project could be reality, a leader should be chosen who not the leader of the village is. This election will take place in place near the house of Heri, where people come together to discuss and vote. '*During this event, also someone of the project itself should be present to answer questions of farmers and people who do not like change, because the first reaction of people concerning new projects is that a company enters the area to just make profit instead of helping the inhabitants.'*

Place	Bawan
Date	24-05-2013
Time interview	85 minutes
Additional income	Shop (groceries and motors)
Name	Heri
Function	Village Leader Bawan
Value chain rubber	Farmers - Middle man – City
Amount of inhabitants	1005
Amount of rubber farmers	60
Hectares per family	2
Amount of middle men	two in the whole city
Production per hectare	Normally 100, today 30 KG
Additional income farmers	Gold mining
Trees per hectare	800
Purpose of seeds	Unknown
Time of seed drops a year	Unknown
Amount of seeds per tree	More than 100

Table 11: Interview Heri, Bawan.

F.1 Tambak

This village is visited since it is substantially remote from the only road in the region. After leaving the road, firstly, a path had to be crossed with whole and self-made bridges for more than 30 minutes. After that, a boat had to be taken for approximately 15 minutes to reach this small village consisting of 312 people. Pah Yuktan Efatar, the head of the Village, rubber farmer Hardi and PaMujianto, secretary officer, were interviewed together. Firstly, it was discussed that the

market of rubber is extremely bad, which a reason for many to change jobs to gold is mining. However, a completely change to gold is not an option because "*Gold mining is not forever, rubber is."* The rain and rubber market price are important factors on the amount of days per year working with rubber or with gold, Hardi clarified. Nowadays, all rubber is being collected by a middle man by boat once or twice a month. After he paid the farmers, he brings it to Tangkiling. *"There are no specific agreements about the time and date of the collection, so the collector comes when he has time"* Efatar mentioned. "*When he arrives I walk by or call all farmers to see if they have rubber for sale, after which the choice to go to the harbor and sell it is theirs"* he added. This village also has just to accept the price that is being given by the collectors, since no other options are available for them. Hardi said *"most people are so poor; they are not going to discuss the price, because we fear that he will not come by next time. There is no need to trust him."*

Moreover, the government comes to Tambak once a year to increase the knowledge of people in order to generate a higher income. However, due to the sub-district leader they are not educated about producing better rubber, but they are being taught how to improve the production of rice. The village leader explained that it is not possible for us producing rice due to the conditions of the ground; however, it seems that the government does not pay attention to that important issue "The government does not care whether we produce rice or rubber. When we try to explain them that we produce rubber and search for gold, they respond that we should try the rice production again. We have been trying to develop rice fields, but the last three years it failed completely. Finally, the MBD project seemed to interest them, because they do not use the rubber seeds for anything. However, as was heard many times before, people should the right knowledge from people working on this project.

Place	Tambak
Date	24-05-2013
Time interview	105 minutes
Additional income	Gold
Names	Efatar, Hardi and PaMujianto
Functions	Village leader, farmer and Secretary office employee

Value chain rubber	Farmers - Collector – City
Inhabitants	312
Hectares per family	3
Amount of middle men	1
Amount of collections	Once or twice a month
Sells rubber	7000 Rupiah per kilo
Farmers payment	Immediately
Production per hectare	15 kilo
Additional income farmers	Gold mining
Trees per hectare	700-1000
Purpose of seeds	Waste
Months of seeds drop	July-September
Amount of seeds per tree	200

Table 12: Interview Pah Yuktan Efatar, Hardi and PaMujianto, Tambak.

F.2 Hurung

The second remote village visited was Hurung, thirty minutes off road from the main road, is a city mainly producing rubber. However, in bad economic times all production is switched to gold. It was explained that the leader of the village Sindem was elected by the villagers, which implies that every final decision is taken by him personally. Next to that, he is the middle man between a truck taking the rubber and the farmers. However, a major difference is that no extra income is created through this service, since he found it part of his job. The transport company cannot reach the village in certain periods of the year, due to the water level during the wet rainy season. In those times the farmers transport the rubber themselves to the nearest village where the truck is waiting, which means that the amount of diesel usage increases as well. To minimize this amount the village leader tries to manage this process as good as possible. So, in could be noticed that the control is totally in hands of one elected man who has the trust of most people around him. The transparency is higher compared to other villages since one man discusses the right price with the transport company, which results in one price for all farmers, while the leader's income does not increase. '*This sort of small cooperation creates trust'*, Sindem mentioned. Considering the project, likewise almost all farmers, village leaders and middle man they reacted positive after explaining the MBD project. Nevertheless, since they village never

got any form of knowledge assistance by the government or NGO Sindem could not tell how people would react to such a system. At first, people from the project should in collaboration with Sindem explain the whole process to the people and discuss how income cost reductive it would be.

Place	Hurung
Date	31-05-2013
Time interview	110 minutes
Additional income	-
Names	Sindem and Herma
Functions	Village leader and Middle man (Herma)
Value chain rubber	Farmers – Collector – City
Inhabitants	334
Education level	All to Primary school and High school
Total hectares village	80
Hectares per family	1-5 (25 families)
Amount of middle men	2
Amount of collections	Once per month
Farmer sell rubber	7000 Rupiah per kilo
Collector sells	9000 Rupiah per kilo
Farmers payment	Immediately
Production per hectare	5-8 kilo (young trees)
Additional income farmers	Gold mining
Trees per hectare	450
Purpose of seeds	Waste
Months of seeds drop	Augustus-September
Amount of seeds per tree	150
Assistance government/NGO	Never

Table 13: Interview Sindem and Herma in Hurung.

G. Map of Central Kalimantan, the researched villages.

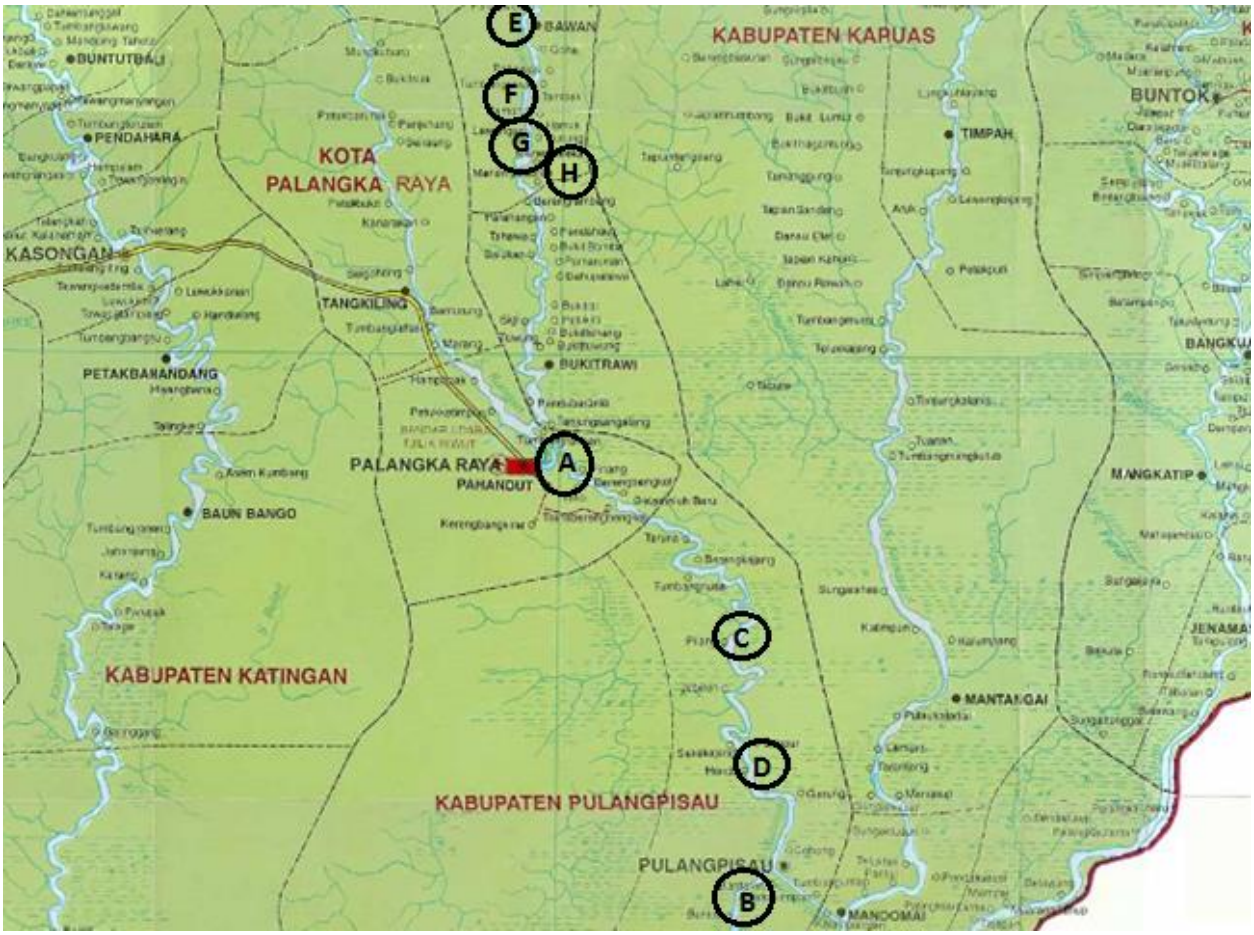

Figure 7. Map villages of research around the capital of Central Kalimantan, Palangkaraya.

A = Palangkaraya

B = Buntoi

C= Pilang

D= Henda

E= Bawan

F= Tambak

G= Hurung

H= Manen Kalekar