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Modeling longevity in local economic development initiatives by involving local parties: Empirical data from Singkwang (Kalimantan, Indonesia)

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Abstract

Local economic development (LED) initiatives are a promising approach towards local capacity development as they base strategy and execution upon endogenous variables. Furthermore, LED programs incorporate the local community both as subjects and participants. Frequently initiated by the local government, it is upon those stakeholders of the local community to take over the program and thereby allow its longevity. Employing the Double Triangle in the Triple Helix Model in the background of a case study from Singkawang, Indonesia, this study advances the understanding of how to create LED initiatives to allow for stronger incorporation of local stakeholders and thus increase endurance of achieved results. By applying the model to the agricultural LED initiative in Singkawang, the stakeholders local governmental institutions, local leaders, local farmers, and local (social) entrepreneurs are identified and their interactions analyzed. Based on this analysis, the model is extended by a fourth, moderating relationship of local governmental institutions upon the interactions of local leaders and local (social) entrepreneurs. Lastly, four recommendations for future programs are proposed: 1) Awareness of the newly identified relationship should lead to its incorporation in the first phases of project setup; 2) Local leaders should be identified early and their trust in the outcomes be consolidated; 3) Early incorporation of multiple local (social) entrepreneurs should nurture their commitment, and 4) Dependency on the government should be reduced by shifting responsibility from people to agencies and by centralizing LED budgets.

Keywords: Local Economy, Local Stakeholders, Economic Development, REDS, Triple Helix Model

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1. Introduction

In Indonesia, the government has taken the role of stressing the importance of initiatives in the agricultural sector in the past decades. As stipulated by advocates of a supply driven approach, these programs tackle the problem by going to the farmer level in terms of seeds, irrigation, or education (Sulaiman and Hall, 2002). However, what many of these programs fall short off is creating demand for participation by the local community, most notably the farmers. Yet, especially for the longevity of governmentally induced programs is the active support of the local community of crucial importance (Uphoff, 1992). Getting the buy-in of the local community can not only improve the sustainability of the implemented initiatives but also result in an increased robustness of the program against external influences (Reed et al., 2006). Yet, while its benefits can be extensive, the process of winning over and continuously engaging the community is largely under-researched. Therefore, in our research we want to focus on the local actors and their interaction in the process of Local Economic Development.

1.1. Longevity, local economic development and interactions between local actors

Since the days of Smith and Ricardo the role of agriculture in economic development has been a topic of intensive research. Similarly, governments and nongovernmental institutions stress the importance of the tertiary sector on poverty alleviation, community empowerment, and sustainable economic development. Coherently, programs are initiated to empower farmers, increase output, and thereby elevate whole regions. Yet while there exists wide acceptance of the importance of agriculture, scholars still reason weather supply or demand driven approaches are the tool of choice to help the farmers and the local community (Birner and Anderson, 2009). However this is most of the time with the main focus from help that is coming from outside the region and if the support stops most of the time the local developments are sooner or later also at the end.

In this research we want to focus on the endogenous factors, so inside the region, by focusing on the local actors and how this can be related to the longevity of local economic development. The model for regional economic development in poor, rural areas of Stimson et al. (2009) is employed as it has its focus on endogenous variables. To further assess the role of the local actors and their relations we will use the double triangle in the triple helix model of Pennink (2014). This model has the interactions between the three actors, local governmental institutions, local social entrepreneurs, and local leaders at its heart. The focus on the local community is furthermore in line with recommendations of the World Bank to initiate local economic development programs that aim to improve the economic future of the whole region (www.worldbank.org). As Swinborn (2006) defines it: “The purpose of LED is to build up the economic capacity of a local area to improve its economic future and the quality of life for all. 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.”

The interactions of these actors will be assessed in this paper by a case study of a LED program, (2010) in Singkawang, Indonesia and more recent field work in 2014. As with most LED programs the project was initiated by the government. It aims at increasing the output of corn for livestock and showed special

consideration for the importance and inclusion of local actors such as farmers groups. Similar programs were set up all over Indonesia by creating a regional economic development support (REDS) team which each aim to foster one region by one product. These products are chosen based on their potential for national and international markets and next to increased output aim to distribute knowledge, create local networks, and enhance overall capacity of the region. The program in Singkawang was especially suitable for this research based on the high involvement of the local sector and its predominant focus on small scale farmers.

By analyzing and assessing the case of Singkawang in the light of Stimson's model for regional economic development and Pennink's double triangle in the triple helix, the focus will be on creating the necessary interactions between the involved local actors. Eventually, the research aims to give policy recommendations that allow for the incorporation of the other local actors by actions done as early as in the design phase of the program. This should facilitate longevity, thus endurance or resistance of the program to persist longer than solely the phase of active governmental interaction and in this way Local Economic Development can be stimulated much longer than just the initial activities

In the remainder of this study an investigation of existent literature will precede an analysis of the case in Singkawang. During the literature review, the current state of Indonesian economic development with special consideration of the role of agriculture will first be shortly introduced, followed by an investigation of the societal concept of social capital and its influence on actor-interaction, finalized by conceptualizing the variables of this research. A section introducing the methodology employed in this study is succeeded by the results section. At the end of the study, we will come back on the role of the local actors and we will include them more explicit in the model for Local Economic Development.

2. Local economic development in the literature

2.1. Indonesian economic development as the context of regional or local economic development

The recent history of Indonesian economic development is to large parts portrayed by decentralization and regional integration. Starting in 2001, the role in development of 480 district-level authorities was strengthened by delegating further administrative, fiscal, and political control to regional governments. At the same time the central government remained in charge of overall developmental planning. As also portrayed in the case of the REDS team in Singkawang, economic development initiatives are thus stimulated by the central government but executed at the local level. Further strengthening of the local level appears reasonable as the dual authorities increase ambiguity and may discourage investment (Brodjonegoro, 2004). As of now, the ambiguity introduced by the shared authority can furthermore infer with the execution and longevity of developmental initiatives. It is therefore crucial to develop a fundamentally-based understanding of interactions at the local level both for properly conducting and for anchoring a sustainable initiative.

Regarding regional integration were exports of goods to neighboring regions increasing proportionally stronger than to other parts of the world. While overall exports also increased strongly did especially the

exports to East Asia from 1985 to 2006 more than double, from 18.5% to 37.3%, and those to ASEAN countries even increased more than fourfold, from 1.9% to 9.1% (Fung et al., 2010). Alongside the rise in exports augmented the importance of goods with export potential. Hereby did the share of intermediate goods increase stronger than for finished goods. Strengthening those parts of the agricultural sector with export potential, as recommended by the World Bank approach to local economic development (LED) and introduced by the REDS programs, is thus in line with current Indonesian economic development. Crucial becomes understanding the local endogenous factors that determine a regions productive core competency in order to foster the right resources.

Focusing on the agricultural sector in development initiatives is not only important to raise the export potential of a region but can moreover enact a part in poverty reduction and social development. Poverty and income inequality in Indonesia display a strong dichotomy between urban and rural areas. In turn, growing the agricultural sector by 1 percent reduces the head count ratio for poverty by 2.97 percent. This is 27 times the potential of poverty reduction in the Indonesian manufacturing sector (Suselo and Tarsidin, 2008). Having the strong dichotomy of urban and rural areas as well as the Indonesian infrastructural problems in mind, assessing the interactions of local governmental institutions and rural farmers can shed new light on sustained economic growth. Integral parts are the identification and convincement of rural farmers by city-based governmental institutions.

2.2. Social capital and LED

Achieving the buy-in of rural stakeholders might depend on factors such as trust and information-transfer. Following theories on the development of human societies, the quality of social networks can be analyzed in the form of social capital. Woolcock (1998) defines social capital as 'the information, trust, and norms of reciprocity inherent in one's social network'. Strong social capital, reflected in the relationships of social actors, is furthermore an enabler of collective action (Coleman, 1988). Thus, social capital can be regarded as an antecedent of strong network formation in local economic development programs and should therefore be assessed for the case of the REDS program.

The importance for the development of the aforementioned concept has long been noted in academic literature yet its role in developmental initiatives has been secondary at most (Putnam, 1993). It should be noted that while social capital can be an important factor similar to human capital in elevating regional output, too much social capital can increase stasis (Woolcock and Narayan, 2000). For social capital to function as an enabler for overcoming static developmental dilemmas, Woolcock (1998) stresses the importance of both intra-community ties and extra-community networks on the micro as well as well-functioning state-society relations and institutional coherence, competence, and capacity on the macro level. Only one of the two variables on each level does not suffice, as in the case of South Asia with strong integration without linkages. Analysis of social capital will thus keep their distinctions in mind, with the first two being predominantly important in the bottom-up approaches of LED (Simmel, 1971) and the two later ones in the initiator driven top-down aspects of the respective program.

Assuming social capital being inherent in the region and local actors taking the initiative, this should facilitate for what Birkhölzer (2005) terms 'development from within'. Such a development is characterized by local people initializing developmental endeavors. 'Development from within' is contrasted with 'development from above', guided by the national government, 'development from outside' initiated by private investment, and 'wait and see', a scenario dominated by fatalism. Especially important in this form of development is the notion of collective action of all local stakeholders while at the same time considering the role of initiators and executor. This highlights the importance of designing developmental programs in a manner that facilitates the early buy-in of all other stakeholders in order to sustain efforts and outcomes.

2.3. Modeling local influences on LED

For the analysis of the interactions between the local stakeholders two related models will be used. The model for economic development of poor, rural areas of Stimson et al. (2009) focuses on endogenous variables. Starting with this model, the role of its intervening variables will be further investigated by making use of the double triangle in the triple helix model of Pennink (2012). In a final step this model will be analyzed for appropriateness in the given background of this case study and aligned if necessary.

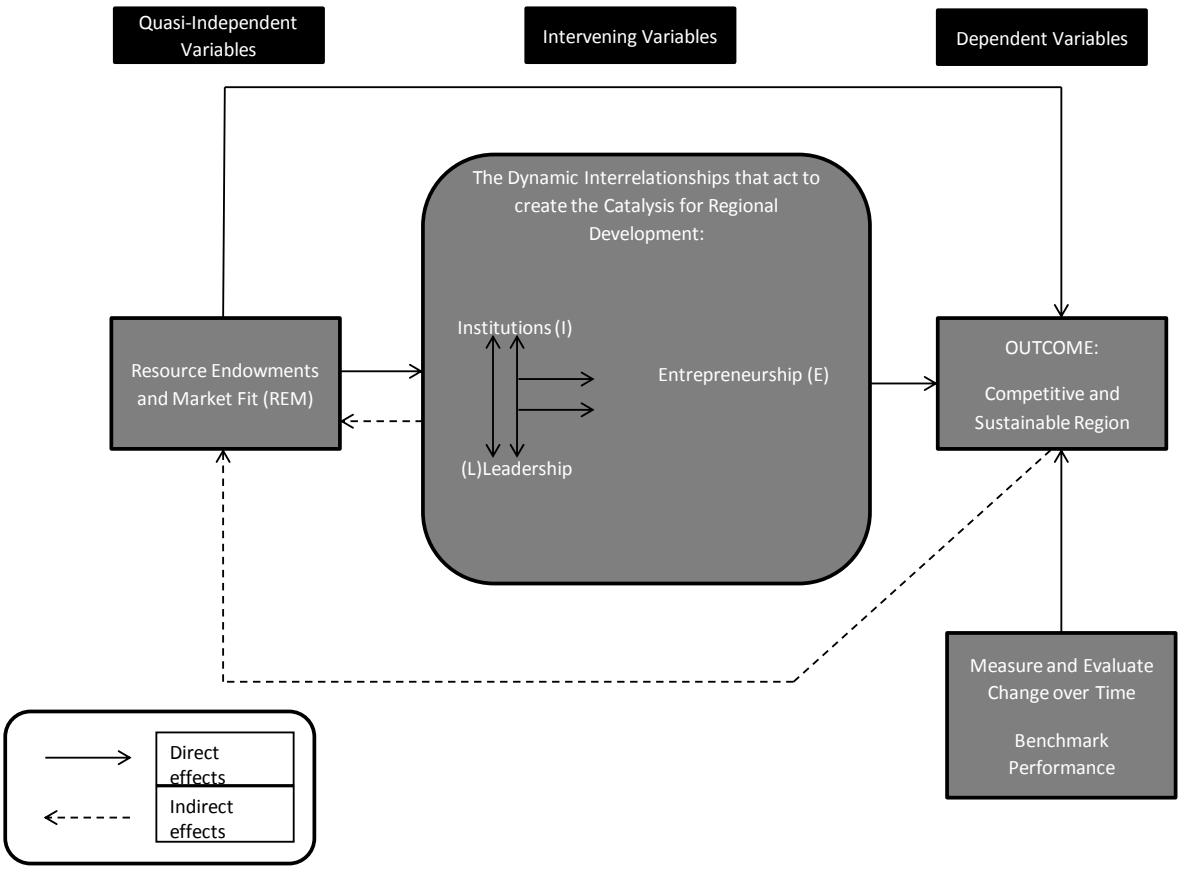

Figure 1. Regional Economic Development Model by Stimson et al. (2009)

The model of Stimson et al. focuses on endogenous variables and offers a causal modeling of the factors crucial to regional economic development and growth. It starts with the notion of factor endowments and market conditions which are given in a certain region, denoted as quasi-independent variables. While these can only indirectly be influenced by the entrepreneurial capacity of a region, they are the crucial starting point for growth and economic performance. The intervening variables central to the model are acting in an interrelated manner which can create catalysis for regional development. The endogenous factor underlying these dimensions mirror skills and knowledge of the community as well as the institutional performance. As factors, these are denoted as the closely related variables institutions and entrepreneurship. Institutional performance constitutes governmental performance as well as educational performance. Alongside leadership, regardless whether by individuals, groups or the society as a whole, those variables allow the formation of entrepreneurship capacity and eventually entrepreneurial activity. Stimson notices the importance of human coordination and interaction for combing the catalytic capacity of the three intervening variables. Combined, these variables can create a sustainable, competitive entrepreneurial region. The model is depicted in Figure 1.

As previously noted, Stimson identifies human coordination as a crucial step for transforming the entrepreneurial potential of a region by the mean of the three factors presented. In earlier models, he places human coordination as a variable in-between intervening variables and dependant variables. It is constituted of co-management, cooperatives, and cooperations. Yet in this research, the focus lies on the intervening variables themselves and particularly the human coordination required between them. The interaction between the actors of the intervening variables was modeled by Pennink (2012). Furthermore, in line with this research, the model subjoins the local level to the formerly regional model.

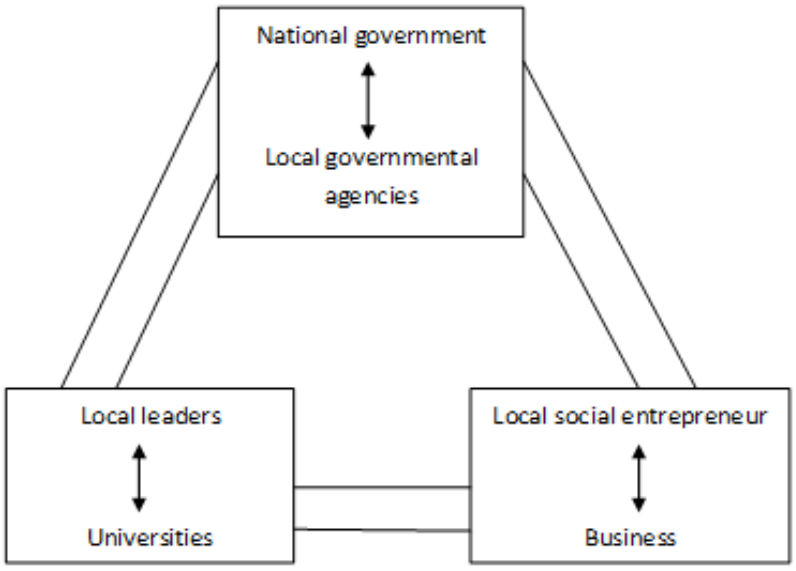

Figure 2. The double triangle in the Triple Helix model

As mentioned, this research will focus on the intervening variables of Stimson's model as depicted in the double helix of the double triangle model of Pennink (2012) (Figure 2). Regarding this model in context of Stimson's larger model, quasi-independent variables would be constituted of local capacity; namely the quality of the local community, as measurable by social capital, and the characteristics of the resources for producing a product, in line with the 'one region, one product' approach (Pennink, 2014). However, the focus of the model is on the intervening variables. The model starts with the idea of the triple helix as developed by Etkowitz and Leydesdorff (1995). Herein, they regard national governments, business, and universities as the intervening units of knowledge based economic development on a national level. Pennink is bringing their model to the local level and acts hereby in accordance with the model of Stimson. The role of leadership gets displayed in the importance of local leaders in place of universities on the national level. The role of institutions moves to local governmental agencies, however the interaction with the national level remains intact. Entrepreneurship gets extended as the private sector of the national level is augmented by local social entrepreneurship. Both, the national and local level as well as the three intervening variables are intervened in a reciprocal manner.

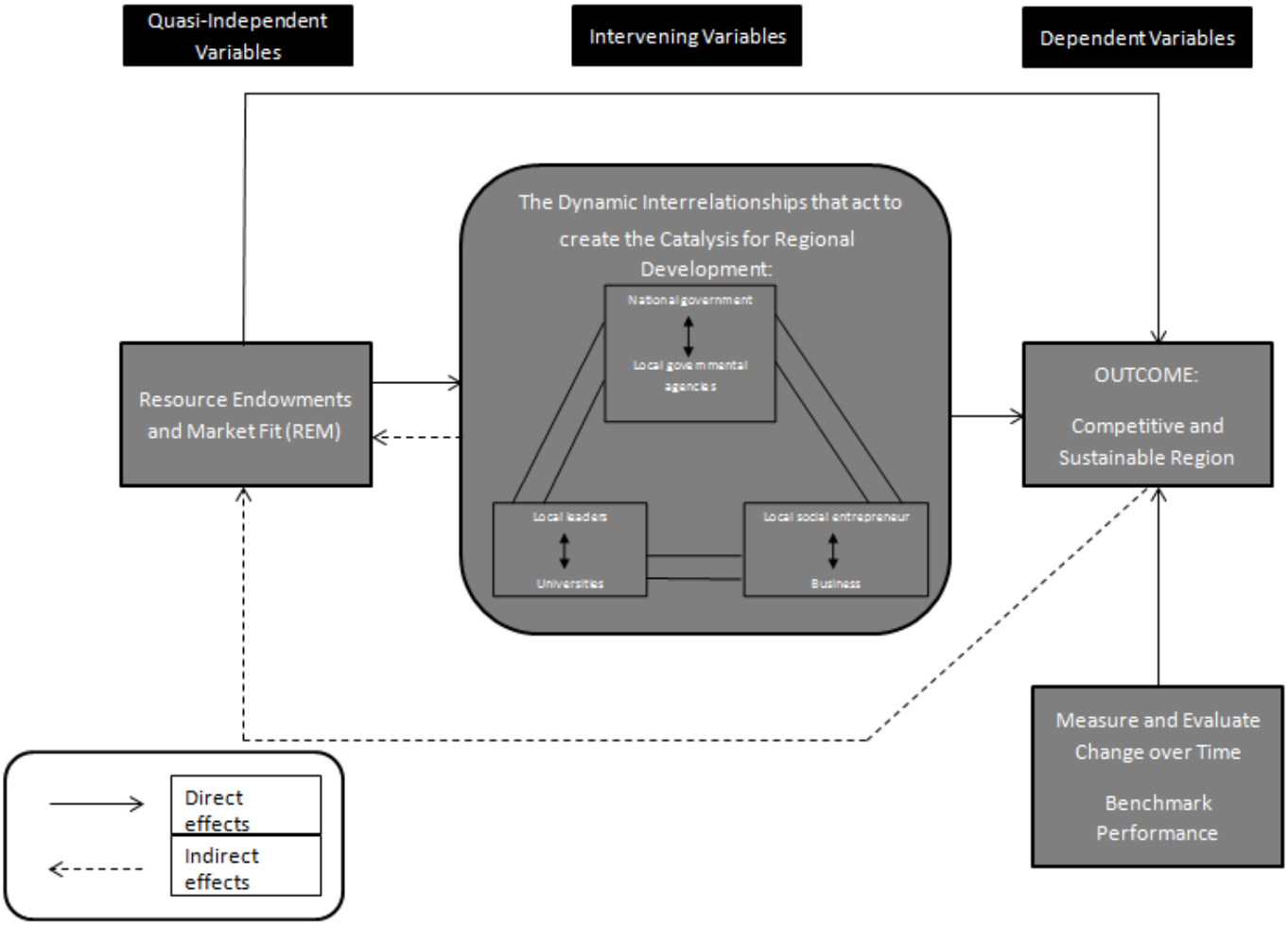

Figure 3. LED-Stakeholders within the Model of Regional Economic Development

Applying this model to the context of our study it appears to display most of the important stakeholders of the REDS program in Singkawang. As noted by Birkholzer, the actors of the development from within are included. The government as the initiator is displayed both on the national and the local level. The role of local champions such as the creators of famer groups and cooperatives can be found as local leaders, their interaction with universities allows knowledge diffusion on agricultural methods. Lastly, business is positioned on the national and local social entrepreneurs on the local level. Yet, social entrepreneurship is manifested mainly in the local leaders. However, the role of the local private sector is apparent in a multifaceted manner. The corn farmers themselves, their mainly local buyers, and supporting and related industries play a crucial role. Therefore, for our analysis the social aspect of the local entrepreneurs will be set aside. Combining these two models results in the following model for local stakeholders in the setting of the model of regional economic development (Figure 3).

As displayed in the previous sections, the role of Indonesian economic development has shifted towards the local level and the respective decision makers. Agriculture has already and is continuing to play an important role in developmental programs. The successfulness of local economic development at this level is highly dependent upon endogenous variables as introduced by Stimson. Among the most prevailing are the actors that can be found at the local level. These actors reach beyond the farmers. Pennink introduces in his triple helix model local governmental agencies, local (social) entrepreneurs and local leaders. Their interactions and the endurance thereof in turn highly depend upon the existence of social capital, another endogenous variable. Bringing these aspects together when analyzing the case from Singkawang, this research aims to derive recommendations on how to identify and incorporate these stakeholders and by doing so enhance the prospects of longevity of a developmental program.

3. Research methodology

For analyzing the interrelationships between the actors of the helix model, a case study approach was utilized. This is based on the understanding that a case study approach proves especially useful when analyzing “how” and “why” questions (Meredith, 2998). This feature of case study research is even strengthened when the concepts under investigation are ill-defined due to a lack of previous literature (Eisenhardt, 1989) and if the phenomena itself has yet been under-researched in the academic literature (Yin, 2008). As a representative case the REDS team in Singkawang was chosen.

3.1. Case selection

For selection, the approach suggested by Yin (2008) was followed by orienting the unit of analysis on the research question. The choice for this particular case was derived as most team members of the original REDS team were accessible, the case was placed in an agricultural setting with high priority to the development of farmer groups, and it had been analyzed for social capital as well as team performance and potential intervening factors already in 2010 by de Vries. Having access to the team members furthermore allowed for a constructivist approach in which researchers and participants collaborate by in-depth

interviews that not only inform the research about the action but also facilitate understanding the action in depth (Spiggle, 1994). Units of analysis were both the organizations, the people involved in the project, as well as the key stakeholders for the double helix. The case study thus followed an embedded approach. The study period in Kalimantan Barat was from the 06th until the 24th of January 2014.

3.2. Data collection and analysis

Data was gathered by conducting interviews with the team members and main stakeholders. Interviews were attended by either one or two researchers and either done individually or as group interviews with the chance of sending follow up questions via mail to all interviewees. In total, 16 people were interviewed, six of which individually and ten as part of group interviews. When necessary, a translator or a guide was present. The interviews followed a semi-structured question based interview guide with mostly open questions. However, in order to facilitate investigating topics that potentially naturally emerged during the interview, some deviations from the interview guide were possible. The recorded interviews were later transcribed and analyzed by making use of the analyze software Atlas.ti and theoretical coding. In total, 54 pages of transcribed interviews were produced. For theoretical coding, grounded theory approach was followed. Hereby were the transcribed interviews first coded and emerging codes later categorized. Following Eisenhardt's (1989) approach to data analysis it was tried to look beyond initial impressions after having familiarized with the data by employing an iterative, inductive process typical to grounded theory. Before the analysis of the interrelationships, the project as a whole was evaluated in order to take influences of the projects successfulness into account. Especially for the evaluation of the project, secondary data from the government regarding agricultural output was taken into account, as also proposed by Yin (2008).

3.3. Validity and reliability issues

Making use of the previous work of Pennink (2012, 2014) on LED in Indonesia and his corresponding helix model will serve as a template for this study. By utilizing this theory as a template will analytic generalization be increased. Construct validity, here defined as having identified the correct measures for the studied concepts, will be increased by the number of informants and a review of the findings of the study by the key informants. This was conducted by contrasting preliminary findings with the interviewee's experience from similar LED projects, namely LED-initiatives in collaboration with the German Federal Enterprise for International Cooperation (GIZ) in Singkawang, and a REDS-program for pepper in the Pontianak region. Internal validity is of less importance as this research is dealing with an exploratory in contrast to an explanatory case study (Yin, 2008). External validity, the correct definition of the domain to which our results can be generalized, is increased by the early incorporation of theory in the design phase, most importantly by Pennink on similar case studies. Finally, reliability, defined as a demonstration that the operations can be replicated with similar results, is increased by the case study protocol and case study database, both of which can be found in the appendix.

3.4. Limitations

The usage of previous research on the topic as a template was employed in order to increase analytic generalization. Furthermore, during the interviews were previous findings compared to experience of the interviewees with other LED-initiatives. However, as a single case study, generalization to cases outside of the setting of the initiative or even outside of the region of Kalimantan Barat cannot be assured. The resulting model is applicable to the case but might have to be adapted to non-agricultural initiatives, i.e. the role of local farmers as stakeholders. Besides, while being oriented on previous research, the case study was exploratory in nature. This kind of research gives room to interpretation by the researcher and can thus be biased. The interviewees' answers might furthermore be biased as translation problems can have occurred and thus could have lowered the amount of information the interviewees initially intended to give. Another bias might result from the fact that the majority of the interviewees had a governmental background.

4. The REDS program in 2010 in Singkawang and field research in 2014

The work of the REDS team in Singkawang will serve as the case for analyzing the interactions between the social actors that eventually allow for longevity of a local developmental program. The program will therefore in the following be assessed before being further analyzed with regard to stakeholder interactions and intervening factors.

As depicted in the definition of Swinburn, which is also used by the Worldbank, LED projects aim to improve the economic outlook of a region and the quality of life of its inhabitants by a collective effort of the public, non-governmental, and private sector. This also holds true for the case study of the REDS team in Singkawang. In the following their activities and achievements will briefly be described before regarding the project in the light of the models of Stimson and Pennink.

The REDS team in Singkawang was started in light of the Indonesian LED policy of 'one region, one product' in 2010. At that time it was comprised of eighth team members, five of which were from local governmental institutions, one from the university in Pontianak, one member was a representative of the local Chamber of Commerce & Industry (Kadin), and one a potential investor of the private sector. This composition follows the general structure of multi-disciplinary teams as developed by the Neso in Jakarta, the Bappenas, the Bandung Institute of Technology, and the University of Groningen. All team members were chosen by the national planning authority based on their experience and current position and received distinguished tasks in the REDS team. The composition of the team itself already depicts structures of the multi-sectorial nature of LED programs. The asset of such a diverse team lies in the multifaceted tasks and knowledge that have to be brought into the project, both organizationally and technically.

Subsequently, the team was trained in Indonesia and Groningen, the Netherlands. A research proposal was developed, selecting promising products of the region, in case of Singkawang corn for livestock. Training focused on equipping the team with the necessary skills and tools to achieve sustainable growth for their target product. In the Netherlands, an action plan and a SWOT analysis were developed that denoted the plan, the budget and its sub-steps until the end of 2014 and served throughout the period as an orientation for team members and stakeholders. Other aspects of training included quality management, the relationship

between government and entrepreneurship, attracting direct investment, and the identification of important stakeholders. One year after the training and three month before the implementation of the program, the action plan was presented to and discussed by the previously detected stakeholders.

As of the beginning of 2014, the action plan is still in place and the members of the REDS team are still aware of their functions. However, many members were effectively more involved in the implementation phase and are now relying on the local institutions carrying out the tasks depicted by the action plan. The action plan outlines two strategies; 'Strategy 1: The government helps to the farmers to fulfill market demand' and 'Strategy 2: To enhance planting intensity to get market demand'.

The first strategy is divided in six phases, with most of the budget allocated to technical assistance, followed by farmer group capacity building and a corn demonstration plot. As with the first three points, monitoring and evaluation is carried out throughout the five year period. The final points of socialization of REDS with stakeholders and the formation of farmer Cooperation take place only in the first two years. Strategy 2 includes seven phases, most budget being allocated to the support of organic fertilizer and the development of farm roads. Starting in 2012, the development of an irrigation system is further stressed. The remaining points are seed support, machinery support, the strengthening of farmer's capital, and monitoring the availability and fair distribution of fertilizers.

5. Empirical results: Four years after the REDS program

In the following, the results based on the coding of the transcribed interviews are presented. In order to accurately embed reported stakeholder interactions of the local community and potential improvements thereof in future policies, the first part will shortly assess the general results of the program. Next, intervening factors that are potentially also embedded in the region with a possible influence upon community involvement, are analyzed. Of those, special attention will be paid to the aforementioned concept of social capital. Subsequently, results referring to stakeholder interaction on the local level are presented. Finally, these results in light of the achievements of the program are employed to revise the model of Pennink and thereby derive policy recommendations for future local developmental programs.

5.1. Results of the REDS program

Making use of the data from the agricultural office of Singkawang, it appears that the output of corn did not improve significantly in the period of the action plan. As displayed in Table 1, initial increases in the planted area and total output of corn for livestock soon stopped and even reversed.

Over the same period of time, demand did not change. Apparently, the region is still only able to provide 2.5% of the market demand of corn for livestock, largely created by poultry farms. Yet, as also can be seen from the preceding two years and by comparison to other agricultural commodities, fluctuation is a common state and thus analyzing only the output might fall short on assessing the results of the program. It is a common feature for LED-programs that output only constitutes one goal, next to local capacity development,

encouragement of entrepreneurial activity, and the revitalization of reprudctive capacity by re-establishing local economic cycles (Douthwaite, 1996). In effect, while an increase of output to serve market demand was the ultimate goal, the action plan incorporated several other steps that would both benefit corn farmers and might even be transferable to other settings.

Table 1. Data on corn production, 2008-2013

	2008	2009	2010	2011	2012	2013 (Jan-Nov)
Planted area (Ha)	805	678	573	888	627	457
Output (Ton)	2,669	2,870	2,398	2,471	1,693	932
Yield (Kw/Ha)	52.33	52.38	50.28	49.03	49.49	49.59

As explained in the case description, the action plan consisted of two strategies. The first one focused on fulfilling market demand by governmental help to farmers, the second one on creating further demand by enhanced planting intensity. For the first strategy, a crucial phase was the development of two farmer groups. This goal was achieved, yet it should be noted that these groups were already existent beforehand and mainly received further support. Part of this was to provide technical assistance to the farmers. This was done and carried out successfully by the extension office of the agricultural office. In total, about 400 farmers benefited from this training, which furthermore constituted one of the most important interactions between farmers and local government.

Strategy 2 aimed at creating further demand by improved planting intensity. The provision of fertilizers and seeds was again carried out by the extension office. Yet, over the period of the action plan the quality of the provided seeds decreased. This might explain the reduction in yield per hectare. On the upper hand, the local infrastructure at the fields benefited from the building of a bridge, while the farmers were provided with machinery such as a corn dryer, a separator, and a presser. Additional assistance was given to the enhancement of the irrigation system, yet irrigation still constitutes a source of concern.

Overall, it can be said that while the output did not increase, most intermediate goals of the action plan were realized. The reason behind the lack of output might thus be found in overly optimistic estimates, the interference by some endogenous variables, or other influencing factors. In order to fully understand the local situation, this will further be analyzed in the next section.

5.2. Social capital and the local community

While most steps of the two strategies of the action plan were implemented, the output did not develop as intended. A possible explanation would be a lack of social capital. The importance of social capital has been pointed out in the previous sections, thus its presence in the setting of the case should be assessed.

The most important antecedent for social capital is trust. Trust in the local community is reported to be high. This is especially true for intra-community ties such as the farmer groups. In the case of the farmer groups, ethnical, cultural, and amicable ties are more pivotal than the abstract concept of partnership in a farmer group; cooperations are historically perceived with suspicion. The state-society relations in terms of trust between government and farmers are also mutually on a high level, which might partially result from a dependence of the farmers on certain governmental aid. However, the government understands itself mainly as a motivator and enabler rather than an aid-donator. Frequent interaction, especially with the agricultural office maintains this relationship. Also in-between different local governmental institutions frequent interaction can allow for cross-departmental trust and cooperation, as it is the case in the REDS team. However, extra-community networks appear rather limited, as in the case of the weak interaction of famers and private sector. Yet, when keeping these boundaries of endogenous social capital in mind, its overall presence in the setting of Singkawang appears sufficient.

Strengthening farmer groups as a mean to reach the farmers efficiently was a crucial phase of the action plan. Two of these groups for corn for livestock are now well-developed. They understand themselves rather as a group of friends then as a cooperative. Together, prices are set, seeds, fertilizer and machinery are acquired, and loans are allocated. Both of the farmer groups depend on the local leader who is creating and coordinating the group, and who is also in charge of interacting with members of the extra-community network. Through this community leader, interaction with the local governmental institutions is working well and over the course of the action plan, the groups experienced steady growth.

5.3. Influencing factors on LED-initiative

As neither the absence of social capital, nor weakly established farmer groups could explain the results in output, the reasons have to lie beyond the societal level. In effect, there are a number of factors that have an effect upon the outcome of the project.

For governmental institutions, limited budget, frequent change of office, as well as the interrelated absence of consistent policies for agricultural development hinders the potential impact of LED-initiatives like the REDS program in Singkawang. Furthermore, given the inter-departmental nature of a LED-program, commitment of all partners is not assurable. Commitment has also proven problematic with the inclusion of the private sector. In case of active plantation, land rights have to be granted, yet these legal issues could not always be assured. As purchaser, private sector parties often require reliability of frequent high-quality output, however the local farmers found it difficult to fulfill and agree to contractual assurances. The fear of price pressure by long-term partners alongside the impact of corn pest, lack of infrastructure, irrigation, and low efficiency on small fields reduced the farmer's ability to increase their output. All of these factors decreased the farmer's willingness to commit and invest in corn for livestock. In turn, many small farmers switched to more stable cash crops while larger plantations were often transformed into palm oil plantations. In one case when a local leader decided to plant agarwood and palm oil in place of corn some local farmers of his group followed suit.

Taken together, these factors can explain the reduction in overall field size and output, even though the steps of the action plan were fulfilled. It appears that while some influencing factors were not possible to take into consideration before the start of the project, the task of the team can still be considered as largely satisfied. When analyzing how to increase the longevity of the program by improved involvement of local actors, stakeholder interaction is again a factor that is hard to control and should thus be critically analyzed.

5.4. Stakeholder interaction

The interaction between the local actors in Singkawang is largely either initiated or at least facilitated by the local governmental institutions. This is especially true for the REDS program in which the local government also acts as the initiator. The local agencies regard the consolidation of local stakeholders as well as the information transfer as their responsibility. Informing about the project is mainly achieved by means of stakeholder meetings at the beginning of the project. Later on, it is the agricultural office that maintains the contact with the farmers. The local leaders of the farmer groups are again acting as the connecting nods between governmental institutions and the farmers. For the local farmers, the uncertainty of not reaching someone at the agencies lessens their willingness to come to the offices themselves. Existing contacts of the local farmers with private sector partners and middle-men, often numerous and small-scale, remain intact. Yet, the creation of collaboration with large scale private sector partners again requires intense involvement of the local government. This is also resulting from the distrust of farmers about the intentions of large scale private sector partners, especially with regard to price pressure and price volatility alongside binding contracts. Large private sector partners can act as buyers, suppliers of fertilizer, or both for farmers. Governmentally encouraged, subsidized fertilizer can help create bonding. Besides, the REDS team also planned involving private sector partners as large scale farmers. Here again, the governmental members of the REDS team were central to ensure the commitment of the investors as well as ensuring non-impairment with legal issues, i.e. with regard to land rights. Albeit their efforts, this did not succeed with two potential investors for the aforementioned reasons. Yet, it can still be noted that in the case of private sector investors, interaction with the government appears crucial to facilitate investment.

Having examined the situation in Singkawang, the distinctive role of local governmental agencies for all stakeholder interactions becomes apparent. The local institutions not only are the driving force in their mutual relationships with local actors but moreover facilitate linkage between the other stakeholders. Furthermore, a comparably important role for the farmers are the local leaders as the connecting nod with the government. In the following, the implications of the analysis of the case of Singkawang will be assessed with regard to the models of Stimson and Pennink. Ultimately, derived policy recommendations with regard to longevity by improved stakeholder integration will be proposed.

6. Model developments: including the local actors

The analysis of stakeholder interaction in order to foster local actor integration in developmental programs was started by introducing the models of Stimson and Pennink. While Stimson's model focuses on endogenous variables, Pennink's model considers the local actors, as they might be represented in Stimson's

model as intervening variables. Having assessed the REDS program in Singkawang as a characteristic LED-initiative, the results will now be contrasted with the two models.

The regional economic development model by Stimson starts with the notion of resource endowments and market fit. As it has been demonstrated by the case of Singkawang, resource endowments comprise more than the classical factors of production, especially when regarding the local level. Here, as depicted in the model of Stimson, considering local capacity appears crucial, foremost by means of social capital in case of stakeholder interaction. Somewhat between quasi-independent and intervening variables are regionally or nationally set developmental policies. The consistency of those policies can have a considerable impact upon local institutional resources, budget, and ultimately robustness of developmental programs. By implication, those policies can thus have far reaching consequences for the crucial force of local governmental integration. Market fit depends on local supply capacity and the demand of the region. All of these factors can be considered as indicators for the proper nesting of the triple helix within the model of Stimson, as depicted by figure 5.Regarding interaction, these factors are highly influenced by the local actors and their respective concerns. These concerns include a purchaser's need for granted quality and quantity of output and the farmers' fear of price pressure and volatility.

The local actors as intervening variables are resembled in Pennink's model of the double triangle in the triple helix model. It resembles the local governmental agencies, local (social) entrepreneurs, and local leaders as the direct stakeholders on the local level. Furthermore, they are connected to higher order stakeholders who in turn are connected by the second triangle. Those actors are the national government, business, and universities. Before using this model for integrating the local actors and thus improving longevity of the program, does the case of Singkawang impose some alterations.

The original model differentiates between local and regional actors for the two triangles. Yet, when assessing the interactions between stakeholders, the inner layer becomes the most prevailing actors, the same as specified in the original model. However, contrary to the segmentation on a geographical directive, the second triangle should be based on less directly involved stakeholders who are closely connected to the respective actors of the inner triangle. While this does not change the model itself, differentiating on an interactional directive supports stakeholder identification in case specific application. This is indicated in the model by a dashed line, similar to the model of Stimson. Accordingly, positioning in the outer layer is based on a lower degree of project involvement which can but must not result from further geographical dispersion. Geographical dispersion as a cause for lower involvement is the case for local governmental institutions and respective national or regional governments. Local (social) entrepreneurs act as the connecting nod to less involved businesses and the private sector in general. Local leaders in LED-initiatives are first and foremost the heads of the farmer groups. However, on their second layer, being less involved while geographically as proximate, are the local farmers. Universities did not interact through local leaders but rather by means of the local governmental institutions. They can thus be regarded as part of the wider national or regional governmental institutions. This change places further emphasize on the interactions within the three parts of the triple helix. Besides, as the case of Singkawang strongly indicates, the model should be extended by a fourth relationship. The local governmental institutions do not only act directly with the local stakeholders, but also facilitate interaction between them. The government thus adopts a mediating relationship upon

their interactions. The new model based on Pennink (2012) and extended by the fourth relationship, a focus on interactions between the respective inner and outer stakeholders, and a differentiation of inner and outer layer based on interaction rather than geography, is depicted on the following page. Next to it, an incorporation into the model of Stimson et al. (2009) results in the depicted model for the interactions of the stakeholders of LED-initiatives in the context of regional endogenous variables.

Having established a model that displays the interactions among local stakeholders of a LED-initiative, the findings of the case study can now be used to derive recommendations for the incorporation of the stakeholders as early as in the developmental phase of the action plan. Ultimately, this is believed to foster robustness and longevity of the outcomes of a developmental program that can stimulate Local Economic Development

The case of Singkawang has demonstrated the importance of endogenous variables and their influence upon the project. As they can strongly impact the success of a LED-initiative, resource endowments and market fit have to be thoroughly analyzed in order to assure both fit and local capacity for the development of a certain commodity. Next to the classical factors of production, adequate and well-developed transportation and technological infrastructure, social capital, and continuity of developmental policies for respective commodities indicate a strong fit of region and product. This in turn can lessen interruptions of stakeholder interactions during the implementation of the action plan. The assessment of market fit should not only be based on supply and demand, but also include stakeholder-dependant relevant information such as the capacity for reliable and consistent output and a low degree of price volatility.

Market fit foremost depends on demand by the private sector and on the local producers, in the case of Singkawang the local farmers. However, the case of Singkawang has also demonstrated the moderating influence of local governmental institutions on this relationship. As the government also customarily takes on the role of the initiator it can foster establishing this relationship as early as possible in the LED-initiative. This can be already during the development of the action plan by having representatives of both actors involved. This was tried in Singkawang as an entrepreneur was included in the REDS team. However, a lack of commitment of the investor nullified his impact and bequeathed a vacuum in the stakeholder formation. Therefore, either should multiple entrepreneurs already in the planning phase be included, or a representative body that has to be strongly committed, potentially the chamber of commerce. This early involvement can in turn increase involvement as stakeholder undergo several psychological processes of creating resistant commitment (Iwasaki and Havitz, 1998). The same holds true for local leaders as the wish for earlier involvement was even directly brought forward by the leader of a farmer group. Their importance cannot be stressed enough and those stakeholders are thus a necessity for most LED-initiatives. The development of a REDS program should therefore start with the identification of these local leaders as they do not only function as the connecting nod with the government but also with the local farmers as a whole. Their commitment to a program which increases local farmers' well-being is normally high, yet their concern is the local community and not the initiative. Their considerable influence upon the farmers can therefore result in a whole farmer group switching its commodity if the head of the group leads by example. In this case, early involvement would rather be benefitting trust in the results of the initiative than commitment to the plan.

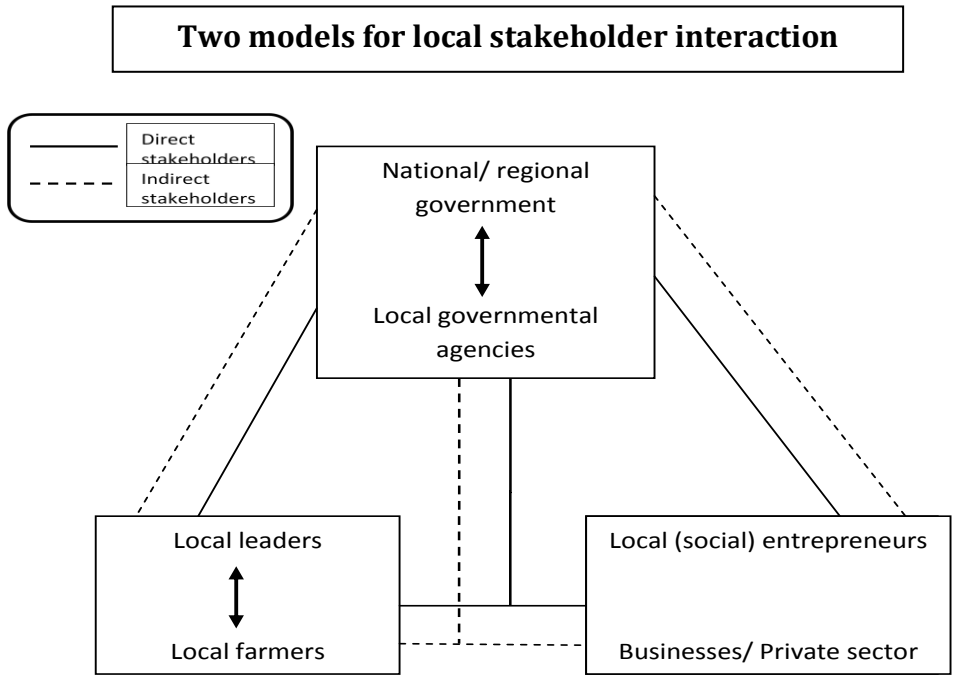

Figure 4. The Double Triangle in the Triple Helix Model for Stakeholder Interaction

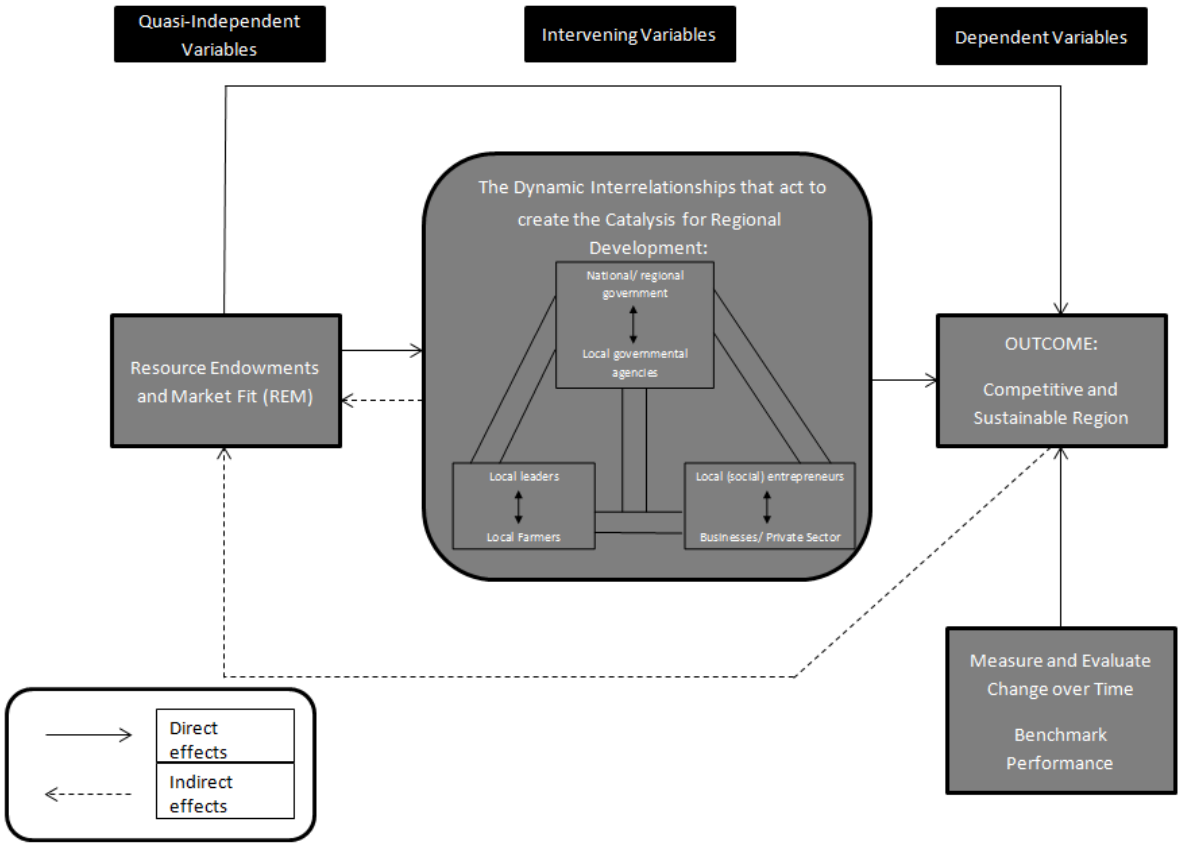

Figure 5. LED-Stakeholder Interaction within the Model of Regional Economic Development

As noted, the predominant role for all stakeholder interaction is occupied by the local governmental institutions. While this conveys much leverage to the party initiating the initiative, it also holds risks for the interactions as a whole. In effect, local governmental agencies are vulnerable to resources, budget, policies, and tenure of key personnel.

All of this can result in considerable interferences on the relationship creation within the triple helix. Resources and budget depend at least partially on the higher level regional or national government. Robustness can and was here created by integrating the planned budget of several LED-initiatives. Policies can barely be influenced while also depending on tenure of higher-level decision-makers. So far, acknowledging the positive influence of consistent developmental policies can be a good start. As the end of tenure of key personal potentially impacts developmental programs as well, overall responsibilities should shift from people to agencies as a whole. A good example is the work of the agricultural extension office. As in the case of Singkawang, large parts of dependency on key personal, most noteworthy members of the REDS team, was terminated with the implementation of the action plan. This reduced the impact of officials' change of position. While these last-named propositions take place within the local and regional government, the increase of local leaders trust in the outcomes of the LED initiative and the accelerated commitment by a larger number of local (social) entrepreneurs can shift some responsibility and hence dependency towards the other stakeholders.

Based on the case study of the LED-initiative in Singkawang, a model for the interactions of local stakeholders was created based on Pennink's double triangle in the triple helix model. This model was used to derive recommendations for stronger integration of the local actors. The importance of suitable endogenous variables was demonstrated, as was the importance of the interaction within the three aspects of the helix. While dependency on institutional budget and people should be reduced, the early incorporation of the inner stakeholders of the other two aspects of the triple helix was highlighted. This is especially important because of the strong moderating impact of local governmental institutions on interactions between farmers and the private sector. Creating early-on the trust of local leaders in the outcomes as well as the commitment of local (social) entrepreneurs for the initiative can strengthen their integration. In turn, this reduced dependency can ensure longevity of the program even if governmental institutions have to scale back their commitment.

7. Conclusion

This paper started with the notion of the importance of local agricultural development, especially in the case of Indonesia. A promising, and by the World Bank encouraged approach are local economic development (LED) initiatives which aim to develop one region by one product. A common way to create such a LED-program is by the establishment of a regional economic development support (REDS) team. This applies to the case of Singkawang, where ultimately the production of corn for livestock should be improved. As a typical case, this program was chosen for closer analysis. Central to LED-initiatives are the local actors. However, while the potential impact of LED programs, as well as the identification of local stakeholders, is well-established, not much research has been done on the interactions of the local stakeholders. However,

this is especially important when considering that the longevity of the outcomes of a LED-initiative highly depend on the integration of the local actors in the program. By utilizing the double triangle in the triple helix model of Pennink (2012), the case was thus analyzed

Literature review consolidated the central role local agricultural development has to play for the economy of Indonesia. The importance of societal influences on such a development, most noteworthy by means of social capital, was emphasized and transferring it to the background of Singkawang illustrated its applicability to the case. Next to social capital, other endogenous factors can impose influences on the actors of a LED-initiative, as demonstrated by Stimson et al.'s Regional Economic Development Model. Central to it are the local actors who are further assessed in Pennink (2012)'s double triangle in the triple helix model. The case of Singkawang was subsequently analyzed on the interactions of the local actors by utilizing these two models. An assessment of the case revealed that while the corn production was not sustainably increased, all phases of the action plan of the REDS team were largely fulfilled. The low output of corn for livestock is rather attributable to influencing factors, such as endogenous factors, market fit, low involvement of the private sector, and inconsistency in planted crops. Assessing the interactions of local actors, the presence of social capital was confirmed and the predominant role of the governmental institutions was indicated. This led to some alterations of Pennink's model. Instead of dividing the two triangles on a geographical dimension, an interactional division appears more appropriate for understanding local stakeholder interactions. This eventuated in universities being replaced by local farmers, besides establishing a moderating relationship from government on the interactions of local farmers and private sector. Based on this adapted model and best practices as well as shortcomings of the case in Singkawang, the following policy recommendations for the creation of LED-initiatives could be derived as an answer to the initial research question:

1. The importance of local governmental institutions on the relationship between farmers and private sector should be noticed and incorporated in the first phases of the action plan.
2. Local farmers can best be reached by local leaders. These have to be identified early, as well as their trust in the outcomes consolidated by incorporating their input in the project setup.
3. Low commitment by private sector partners increases vulnerability of the whole program. Therefore, instead of relying on only one investor, multiple local (social) entrepreneurs should be integrated in the project and their commitment be nurtured as early as possible.
4. Dependency on the government can be reduced by shifting responsibility early from people to agencies and centralizing LED budgets. This can also decrease vulnerability to inconsistent regional policies.

Taken together, these propositions can help further integrating the local actors of the triple helix model and thereby increase the longevity of the outcomes of LED-initiatives as vulnerability decreases. Future research might make use of these findings and assess whether they apply to different settings as well. Furthermore, drawing on the presented findings researchers might advance assessing the multiple endogenous factors that are indicated to have an influence upon stakeholder interaction and integration. This could further aid in assessing the local capacity for the development of a given commodity.

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