

INCLUDING CAPABILITIES OF LOCAL ACTORS IN REGIONAL ECONOMIC DEVELOPMENT

Empirical results of local seaweed industries in Sulawesi

Mark T.J. Vredegoor

University of Groningen
markvredegoor@hotmail.com

Bartjan J.W. Pennink

University of Groningen
b.j.w.pennink@rug.nl

Stimson, et al. (2009) developed one of the most relevant and well known model for Regional Economic Development. This model covers the most important factors related to economic development question. However, this model excludes the social components of development. Local community should be included in terms of the development of a region. This paper introduced to the Stimson model "Skills" and "Knowledge" at the individual level for local actors indicating the capabilities at the individual level and introduced "Human Coordination" for the capabilities at the collective level. In our empirical research we looked at the Indonesian seaweed market with a specific focus on the region of Baubau. This region was chosen because there are hardly any economic developments. Furthermore this study focuses on the poorer community who are trying to improve their situation by the cultivation of Seaweed. Eighteen local informants was interviewed besides additional interviews of informants from educational and governmental institutions in the cities of Jakarta, Bandung and Yogyakarta. The informants selected had a direct or indirect relationship with the region of Baubau. With the support of the empirical data from this region we can confirm that it is worthwhile to include the local community in the model for regional economic development. The newly added variables: at the individual level; Skills and Knowledge and at the level of the collective: Human Coordination was supported by the empirical material. It is an indication that including the new variables can give regional economic an extra dimension. In this way we think that it becomes more explicit that "endogenous" means that the people, or variables closely related to them, should be more explicitly included in models trying to capture Regional Economic Development or rephrased as Local Economic Development

Abstract



Keywords: Regional and endogenous development; Fisheries and seaweed industries; Indonesia; Sulawesi; Community-based management, Local community.

We start with a description of Regional Economic Development in which external and internal factors were both included. Later on the focus became more

and more directed to the internal, endogenous factors and external factors were excluded. In almost all of these models, the local actors are still not part of the process of development and

it looks like that they are confronted with factors in the way it looks like top down effects. In this article, we want to include the actors more explicitly by paying attention to the capabilities of the people living in a region. Later, we will work this out on the individual level and on the collective level. In this way, we hope that our model will add to the discussions in the field of regional economic development.

Based on a literature review we worked this out by introducing at the individual level for local actors “Skills” and “Knowledge” indicating the capabilities at the individual level and at the level of the collective we added for the capabilities “Human Coordination”. With the help of these new variables we revised the model of Stimson et al. (2009) into a new one.

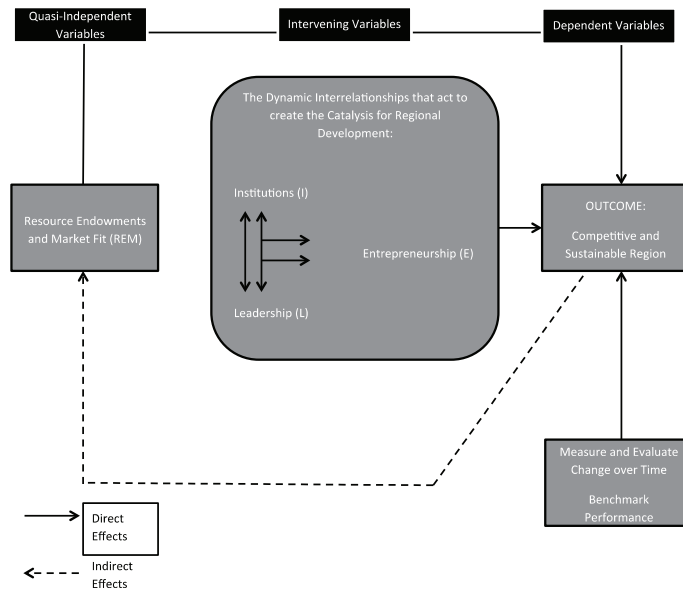
In the second part of this research, all of these relevant factors were empirically investigated in looking at the Indonesian seaweed market with a specific focus on the region of Baubau, Sulawesi, a province in Indonesia. For the empirical component of this research, semi-structured interviews in two regions of Sulawesi were used for the main data collection and besides that interviews with educational and governmental institutions were also conducted. We went to BauBau and Wakatobi and visited four villages. In these villages we interviewed 18 respondents and besides that we also interviewed people from educational and governmental institutions in the cities of Jakarta, Bandung and Yogyakarta. The people that were interviewed had a direct or indirect relationship with the region of Baubau

With the support of the empirical data from this region we can confirm that it makes sense to include the local community in the model for regional economic development. We will make clear the role of the local community of the investigated area with the help of our model and that it might be an indication that including the new factors can give regional economic (rephrased in *Local Economic Development*) an extra dimension.

LITERATURE REVIEW

Endogenous factors in regional economic development.

Stimson et al. (2009), as reflecting in the best way the main stream of thinking in this field at the moment, mention that there are two different streams of theory that characterize today’s literature on economic growth theory. The first stream is the *traditional neoclassical economic growth theory*, which is primarily based on the basic factors of production, specifically, the capital stock and the labor force. Other important aspects are internal growth, export base and economies of scale. In other words, this entails the quantitative aspects regarding economic growth. The second stream is the *new growth theory*, which makes a distinction between endogenous and exogenous factors. The term endogenous implies that economic growth is influenced by the use of ‘investment resources’ generated by the economy itself, in contradiction to the reference made to exogenous factors. They build with this characterization on the work of Birkholzer (2005) and the World Bank (Swinborn et al., 2006). Also according to Stimson et al. (2009), institutional and organizational structures play an important role



Source: Stimson, et al. (2009)

Figure 1. Endogenous variables and Regional Economic Development

in the development of endogenous growth conditions. Three main actors in that development of human resources are: (1) Governmental agencies; (2) Educational institutions; and (3) Innovative firms and entrepreneurs.

Stimson et al. (2009) attempt to model and measure the impacts of leadership on regional growth and development. According to them, there are four relevant variables with regard to regional endogenous growth and development: *Resource Endowments and Market Fit* (quasi-independent variables), *Leadership*, *Entrepreneurship* and *Institutions* (intervening variables). The first variable is *quasi-independent* because it states the current condition of a region’s economy, and it is seen as a given. The other three *intervening* variables are, according to the authors, the main variables that influence the endogenous development of the region. Following is a short explanation of the four variables. Below we present the figure as introduced by Stimson (Stimson et al., 2009).

Resource endowments and market fit

The first dimension of the model used for this research is ‘resource endowments and market fit’. For an economy to grow and perform well it must, first of all, possess sufficient resources. A second important aspect is the market fit that a region has with respect to the current market conditions. It is also clear that the capacity of local leaders to act and the capacity of institutions to be effective are highly dependent on the resources that are available to them. This is also the case the other way around. The more effective and efficient the leadership and institutions in a certain region, the better a region can act to increase its pool of resources and its capacity to serve current market conditions. A region has a market fit when it can effectively compete with other regions to capture market share cooperatively outside and inside a certain region.

Leadership

According to Stimson et al. (2009), leadership is a difficult term to define. There is no ideal concept for being or becoming a good leader, especially not when you look at regional economic development. In addition, the amount of research regarding leadership in regional economic development and the nature of this leadership are scarce. When looking at companies with excellent performance, leadership can be defined in terms of a person. However, for regional economic development, this is different. In this case, good leadership can be seen as an expression or a result of the collective action of a society or a group of people. The literature review shows that this leadership potential, this community feeling, has been captured in the concept of community leadership. "Thus, in regional economic development, leadership is usually seen not as a "starring role" but as a "collaborative" action (Fairholm, 1994; Heenan and Bennis, 1999).

For regions to adjust to continuous changing circumstances, and thus be flexible and possess sufficient knowledge, it is important to collaborate and create collective processes. That is why a strong connection between institutions and leadership will be important.

According to Stimson et al. (2009), community leadership with regard to regional endogenous growth has a strong link with entrepreneurship. They state that the desire of individual entrepreneurs "to collaborate – to work together – to create positive externalities beyond their own self-interest or profit is what generates and/or

enhances effective leadership in a collective context for regional economic development". They also mention that it is important that a strong link exists between leadership and institutional considerations. In their words, "Collaboration, trust, power distance and entrepreneurialism are products or outcomes of the interactions between leadership and institutions."

In addition, Stimson et al. (2006) stated that:

"Leadership for regional economic development will not be based on traditional hierarchy relationships; rather, it will be a collaborative relationship between institutional actors encompassing the public, private and community sectors – and it will be based on mutual trust and cooperation."

Saddi et al. (2010) researched the leadership qualities in order to conquer the present local challenges of political and economic transitions. It became evident that three certain qualities are especially important for leaders, specifically, farsighted vision, pragmatic openness and conscious presence. In the context of community leaders, it becomes interesting how this can be worked out.

Entrepreneurship

According to Stimson et al. (2009), many authors use the terms leader and entrepreneur as synonymous. They state that both share the same characteristics as risk bearing, initiative, determination, vision, etc., but they cannot be seen as the same. They argue that "acting on their own, entrepreneurs can advance products and industries and can be leaders within their range".

However, as the world became more integrated, and interdependencies assume increasing importance, a separation of leadership and entrepreneurs becomes more apparent, especially when we are talking about carrying or taking individual economic success (at a business level) to the more complex level of the development of a region as a whole.” The discussions on entrepreneurship become even more complex by extending this to *social* entrepreneurship. Brouard and Larivet (2010) define a social entrepreneur as ‘an individual or group of individuals who act(s) as social agent(s) using entrepreneurial skills for value creation’.

Institutions and institutional factors

The role of institutions, especially in regional economic development, is crucial. Institutions provide the structure in which businesses and communities must operate. North (1990) adds that “Institutions reduce uncertainty by providing a structure to everyday life.” He continues, “Institutions, together with the constraints of economic theory, determine the opportunities of society (North, 1990: pp 20)”

According to Stimson et al. (2009), institutions and institutional factors contain a wide variety of issues with regard to governance and government. They also mention that it not only concerns the public sector but also the private sector, NGOs, community actors and structures. These institutional factors provide the rule structures and the organizations within a society for it to operate. The functioning of these factors can have a big influence on how efficient and effective a society operates and on the competitiveness of these regional and national economies.

Stimson et al. (2009) also mention that the effectiveness of local governance is closely linked to leadership (especially leadership turnover), weak or ineffectual leadership and inconsistencies and incoherence between the elected officials, politicians and bureaucracy with a region or country. In addition, uncertainty can also be created by a lack of clear political goals and unclear divisions of tasks between stakeholders and actors. This uncertainty (accompanied with a short-term focus) often results in increasing transactions and a region or city that is less competitive.

How endogenous is Endogenous?

Coffey and Polese (1984) stated that *Endogenous* means: (1) having an internal cause or origin; (2) not attributable to any external or environmental factors; (3) confined within a group or society. In other words, it is important to keep in mind that the growth and development processes in the regions originate throughout the activities of the people living there. Therefore, it will be relevant to include the local actors in our model.

According to Stimson et al. (2009), the four above mentioned variables are the most relevant with regard to regional endogenous growth and development. *First*, a region must have sufficient resources in order for it to grow and develop; and the current market must fit with the expectations of the main industries in the Indonesian fisheries and seaweed market. Resource endowments and market fit have a significant influence on how leaders act and on the effectiveness of institutions and vice versa. *Second*, it is important that there are people present who will come forth and act as strong leaders. How-

ever, it is still difficult to define what good leadership is, especially with regard to developing countries. In Western countries, leaders can be defined in terms of a person, but in developing countries, good leadership is often a form of collective action carried out by local communities. *Third*, strong leaders must also be entrepreneurial, as well as the other way around. However entrepreneurship and leadership are not synonymous, they can share a lot of characteristics but their function in the local economic development process differs. It becomes even more interesting considering that, in Europe, entrepreneurship is considered to be an individual activity, but in developing countries, most of the time, it will again be thought of more as a collective action. *Fourth*, institutions cover a wide variety of issues with regard to governance and government. The functioning of these factors can have a big influence on leadership and on how a region develops.

Stimson et al. (2009) clearly describe their endogenous variables as being crucial for the development and growth of a region. However, if we want to focus on the people in the local situation and attempt to change their situation for the better, then we believe we will need to add at least two variables to the model that are related to these people. Hence, we have added a combination of their knowledge and skills as well as the way they (are able to) cooperate.

Theoretical Reflection: How to include the local community?

In this section, two new variables will be introduced, *Skills and Knowledge* and *Human Coordination*. These vari-

ables can be seen as an addition to the model of Stimson et al. (2009) and are covering the capabilities of the local actors living the region. The variables and the corresponding literature will be further explained. The first variable of Skills and Knowledge, on the individual level, refers to the development of one person is introduced as the capabilities. For skills and knowledge on the collective level, the way people organize the social-economic activities are introduced for the capabilities. This means it is about co-management and cooperatives or, in a more general label, human coordination.

Skills and knowledge: Capabilities at the individual level

Endogenous growth entails that human assets also play an important role in the development of a region. Training and education are two crucial activities that influence the development of skills and knowledge of people. The model of Stimson et al. (2009) does not mention this variable separately. Instead, they consider that this variable is already present in a developmental region. However, additional literature suggests that this variable alone also plays a crucial part in the development of a region. For example, Smart (2005) mentions that, when looking at the commercial cultivation of seaweed, also called “*phycoculture*” (Tseng and Borowitzka, 2003), “training and education in alternative techniques could prompt greater efficiency and yield but would need to be put in place by GOs or NGOs”.

In Eastern Indonesia, there are already some programs that could facilitate seaweed cultivators better by teaching them new skills and knowledge and

facilitate their access to capital. One of such programs is called PENSA (Program for Eastern Indonesia Small and Medium Enterprise Assistance) and, within this program, it is shown that it will be possible for a region to become involved higher up in the value chain if the farming industry expanded sufficiently (Smart, 2005).

Smart (2005) also mentions the build-up of human and social assets in a “*phycoculture-economy*”. According to him, a “*phycoculture economy* includes many people directly as paid laborers and family members, farm owners, middlemen and traders with secondary involvement including suppliers of equipment, boats and onward transportation provision”. He adds, stating, “*Phycoculture provides a cash economy which can help preserve human assets by curbing the migration of the young seeking incomes further afield. The involvement of outside organizations can develop skills and knowledge through education and research and introduce new techniques to make use of deeper unproductive areas, further developing the opportunity for diversification into this occupation.*”

Skills and knowledge for ways of cooperating

For creating ways of cooperating, it is important that the local actors that are involved in the process can be entrusted to manage their resources (Berkes, 1989). Therefore, first, it is most important that these local actors can manage themselves. Otherwise, not much progress can be made in forming cooperation. Second, it is also important that the local government will also cooperate in this process. According to

Pomeroy (2001), government resource managers are often reluctant to share authority. This is not only to keep their own political power but also because these managers are somewhat skeptical about the capabilities of local-level management. Thus, part of the responsibility to enable this collaboration lies in the hands of local actors.

According to Pomeroy (2001), “managers’ reasons for skepticism include the local presence of appropriate knowledge on the part of the fishers and the ability of fishers to organize them to manage for long-term sustainability.” He adds to this statement stating that “even in countries with high standards of education, it is true that fishers tend to have lower levels of education than the general population.”

Example 1 - The Philippines is one of the countries with the greatest numbers of fisheries with community-based management and cooperation. However, one of the bigger problems with regard to this type of management is that fishers have difficulty in organizing themselves for collective action. Pomeroy (2001) mentions that “in reviewing the Philippine projects, it was found that fishers often recognize that a problem exists, they will discuss the situation among themselves, and they will discuss possible solutions to the problem, but very few groups of fishers will take action to either formally organize themselves or to develop institutional arrangements (rights and rules).” His review (Pomeroy et al., 1999) also found that, in less than 20 percent of the cases, the fishers actually took action on their own and took initiative to organize and develop institutional arrangements.

Pomeroy (2001) concludes his statements about skills and knowledge to say that “information and education have proven to be an important intervention in assisting fishers to take collective action and cannot be divorced from the organizing work. Fisher-to-fisher transfer of knowledge and experience from fishers who have benefited from collective action to those contemplating collective action is a useful education method.” Also, Uiterkamp and Pennink (2012) made clear that the knowledge is an important factor in local economic development as it contributes to capacity development of individuals.

Leadership

Pomeroy et al. (1998) mention two factors that are crucial for the success of co-management; leadership and incentives. They state that leadership is very important, “local leaders set an example for others to follow, set out courses of action, and provide energy and direction for the co-management process. Pomeroy’s research in 2001 adds to this, stating that leadership is also one of the limiting factors to take collective action for fishers. He mentions that “no individual is willing to step forward to lead, there is no one in the community with enough credibility among the fishers to lead, or divisions within the community or group of resource users will not allow for a leader to emerge.” In addition, he mentions that “if enough initiative exists among the fishers, they may approach a supportive politician and ask for assistance, or they may contact an external change agent, such as a NGO, academic or research institution, to assist in community organizing and development of institutional arrange-

ment.” Pomeroy (1998) also mentions that community leaders, such as the Mayor of a city or region (“Bupati”), might not be the appropriate leaders for a co-management process. He continues with stating that a leader’s term of office is best to be limited. In this way, there are also chances for others to gain leadership skills, and it might reduce the possibility of corruption (Khan and Apu, 1998). In addition, Pomeroy et al. (1998) also mention that reliance on one individual to act as a leader can sometimes create problems. According to them:

“the external change agent must not act as a leader because the community will become dependent upon them. The community must develop local leadership itself. Training and education efforts must strive to build and develop leadership skills among a variety of individuals in the community so that the co-management activity does not become dependent on one person.”

According to Buhat (1994), forming a core group is strategic in identifying and developing leaders. The members of this core group can be drawn from committed individuals that consistently participate in the co-management process and who are concerned with sustainable resource management. Previous research has proven that leaders who are trained and recruited locally are a powerful force in mobilizing residents for collective endeavors, spearheading awareness campaigns and outreach efforts, and motivating stakeholders to take action (Pomeroy et al., 1996; Katon et al., 1997).

Incentives

The second factor influencing the co-management process is incentives. Pomeroy et al. (1998) stated that a process for co-management often involves giving up individual short-term benefits in exchange for real and perceived longer-term benefits. Pomeroy (2001) elaborated on the subject of incentives with mentioning “an incentive, whether economic, social and/or political, must be present, recognized and agreed upon by the fishers. The incentive must exist on both the individual and group levels. There must be an inherent strategic benefit and advantage to engage in the new arrangement. The incentive cannot be imposed from outside but must be internally generated.” An appropriate incentive structure is very important. Pomeroy et al. (1998) state, for example, that “for a poor fisher with a family to feed, the incentive structure to support and participate in co-management must be clear and large. Risk is involved for the individual in changing management strategy.” A way to see if an incentive structure really works in a community is when the members of a community invest resources (labor, money) in their own project.

Example 2 - According to a review of projects in the Philippines (Pomeroy et al., 1996), project failure occurred most frequently when fishers did not perceive the same incentive for change as did the project implementers. “Positive cultural attitudes toward efficacy of collective action were consistently related to perceptions of positive change resulting from the project.” In 1998 Pomeroy et al. elaborated on this factor.

Economic incentives such as a higher income, food availability and protection of livelihoods are usually best for individuals in the system. Economic incentives can also be important for resource stakeholders such as seaweed traders and processing factories because they are dependent on a fixed supply of seaweed products. For communities that are currently performing activities other than seaweed cultivation, economic incentives can also be important. For example, resort owners, dive tour operators and managers of tourist-related businesses benefit from the preservation of coastal ecosystems and the maintenance of clean coastal waters. These have a direct bearing on the earnings they derive from different communities who patronize their businesses (Pomeroy et al., 1998).

Human Coordination: Capabilities at the collective level

According to Orogo (1994), creating ways of cooperating between the local community with the governmental and educational institutions can be very convenient and “will provide and generate economic and business activities for the community and cooperative”. He mentions that when small communities are working together in a good manner, it will create economic strength and advantages by using organization, training and shared equipment. Eley (2006) also mentions that “community level participation is essential to ensure that the new laws and legislations of the fishery are followed”. He adds that “the danger of imposing a management regime is that the community will cause a degradation of lifestyle, nutrition and/or income” and that “such an impact will almost certainly cause a loss of trust

and willingness to cooperate from the fisher folk of the respective community and compromise the acceptance of the policies endorsed”.

Smart (2005) also mentions a case of a cooperative of seaweed farmers and fishermen that was set-up but eventually failed because of a lack of funding and grants from GOs and NGOs. This cooperative hoped to acquire money and equipment, but they never received a response on their application. In BauBau we saw that in the LERD project (2007) that was carried out by ITB and UoG, the Bappenas and the NESO (see for a short description Pennink, 2012) the LERD Team did an enormous effort to inform the fisherman and were also able to help them to become more organized and this helped them in strengthen their position in the value chain of seaweed.

According to Baticados (2004), one of the main issues regarding the success of a cooperative is economic benefits, and they only form if “the sustainability of their livelihood is seriously threatened”. Baticados (2004) also mentions that economic benefits are not the only issue for success. Cooperatives should also be “used as a source of information to protect and promote long-term sustainability through management of their resources”, and they should become an important part of the local management system by utilizing their organizations skills “taking into account the socioeconomic and cultural needs of the community”.

Pomeroy (1995) also mentions that, according to recent research on the management of coastal fisheries in Southeast Asia and around the world,

when communities of fishers are left to their own devices, they can, under certain conditions, regulate access and enforce rules through social practices and community institutions and, consequently, use fisheries resources sustainably. He also adds to this statement that these informal and traditional management systems can be ineffective and inequitable. National governments are still failing to develop an adequate complement or substitute to these management systems, and several government efforts in fisheries management in many Southeast Asian countries have been poor. According to him, fisheries management should not only be a governmental function. However, in most countries, there is almost no role for fishers or fisher organizations in the planning and management process.

One of the main problems, according to Dey and Kanagaratnam (2007), with regard to the management of fisheries is that it is still conducted in a centralized and top-down manner “focusing on objectives relating to fish resources and based exclusively on formal biological science (Viswanathan et al., 2003) and mostly disregards the experiences of fishers (Degnbol, 2003)”. Nielsen et al. (2004) also mention that “fisheries management, as it has developed with the modern rationality of industrialized societies (modern fisheries management), does not represent a solution either. This centralized (top-down) fisheries management focusing on objectives relating to the fish resources and based exclusively on formal biological science is increasingly questioned in the societies in which it was developed. Attempts to introduce such management in other environ-

ments have generally been without much success. Such management systems are inherently unable to address the present problems of fishing communities due to the ways objectives are defined, limitations in the knowledge on which they are based and the top-down nature of implementation.”

According to Pomeroy (1995), there is a “growing realization of the need for increased participation by resource users in fisheries management and greater localized control over access to the resources can be seen in a wide range of policies and programs throughout the Southeast Asia region”. He concludes this statement by mentioning that, in almost all cases, the future of community-based resource management “seems to lie in a form of co-management, a sharing of responsibility and authority for resource management between the government and the local resource users/community”. In his 2001 article, Pomeroy proposed figure 1 as a model for the co-management of fisheries:

According to Pomeroy (2001), “needs and demands within the small-scale fisheries sector also differ across regions and no single management solution can be appropriate for all cases”. So, the process of co-management has to be seen as a process of resource management, constantly adjusting and maturing to changing conditions with involvement of aspects like democratization, power sharing, social empowerment and decentralization. He additionally states that “co-management is not a regulatory technique but a flexible management strategy in which a forum or structure for action on participation, rulemaking, conflict man-

agement, power sharing, leadership, dialogue, decision-making, knowledge generation and sharing, learning, and development among resource users, stakeholders and government is provided and maintained. Partnerships are pursued, strengthened and redefined at different times during the co-management process depending on the existing policies and legal environment, the political support of government for community-based actions and initiatives, and the capacities of community organizations to become government partners.” Looking at the statement mentioned above, the process of co-management can be a long-term, costly and complex endeavor.

Advantages of co-management

According to Viswanathan et al. (2003) and Pomeroy (2001), the potential advantages of community participation in management of fisheries include equity and efficiency. When communities are participating in management, it is more economical in terms of enforcement and administration than a centralized system. Community participation also entails a form of self-management because the fishers will take responsibility for several management functions. In this manner, the community can develop a management strategy that better meets local needs and conditions and are, in their perspective, more legitimate because members of local communities understand their needs, opportunities and problems better than a random outsider. Co-management can also avoid the problem of cultural differences because when the local communities are involved in the process, they will support and respect each other’s culture more. The participation of local

communities in the introduction and improvement of management strategies can also reduce the amount of social conflict and maintain or improve social cohesion in the community.

Example 3 - A good example of a sustainable and successful community management program can be seen in the Line Islands (Luxton and Luxton, 1999), where a state owned corporation, ASC (Atoll Seaweed Company), invested money and trained local people to set-up their own farms and cultivated seaweed for the commercial market. The ASC purchased all the grown seaweed by the farmers and later sold it on the international market. By training and educating the people through community management, the program became a self-funding co-operative that could provide for a sustainable livelihood for the community involved.

Example 4 - Another example of a successful co-management program is mentioned by Cahill (2005). In his article, he mentions a project called JCPP (Jagna Community Partnering Project), and it consists of four subprojects. One of these projects has also been initiated in Baubau, and the main aim of this project is "to develop group livelihood projects using the resources and skills already available within the community". Cahill (2005) uses a subproject that was initiated in the Philippines in collaboration with the local government as an example. The staff of the projects was responsible for providing guidance on the action research component of the project. Cahill (2005) stated that "to facilitate collaboration between the implementing agencies, one worker from

each organization was employed on a full-time basis to initiate the project. The three agencies shared equal responsibilities for decisions about the daily management and overall methodology of the project." Cahill (2005) adds that the projects, so far, are a success but according to him, "each group has still a long journey ahead in terms of formalizing their business structure, securing grants or loans to improve production and sustaining relationships between the NGOs and government departments". According to him, "the groups will still need on-going support from project workers for at least five years to conduct further training, monitoring and conflict mediation".

Decentralization and co-management

"Decentralization refers to the systematic and rational dispersal of power, authority and responsibility from the central government to lower of local level institutions – to states or provinces in the case of federal countries, for example, and then further down to regional and local governments, or even to community associations." (Pomeroy, 2001)

Indonesia is a country with many diverse customs, cultures, coastal communities and resources. It has a three-tiered government system: central, provincial and local (districts and cities). Siry (2006) mentions that Indonesia is currently entering the *Reformasi* era that began in 1999. This era has brought new models for the management of Indonesian coastal zones. According to Siry, (2006), "Coastal zone management in Indonesia is entering

a new phase as a result of two new laws.” (Law no.22 and no.25/1999, which was then revised as Law no.32 and no.33/2004). The contents of these laws emphasize the government’s decentralization process and are enhancing the role of the community in the management of resources. More specifically, these laws change the hierarchical relationship between the local and the provincial government. Siry (2006) comments that “the local governments, both *kota* and *kabupaten* (cities and districts), have become autonomous and are no longer obliged to hierarchy report to the provincial government”. So, in other words, these laws give more power and authority to the local governments to manage their own resources in the most sustainable way.

According to Pomeroy (2005), more and more governments are committed to implement programs and policies of community-based resource management and decentralization, especially in Southeast Asia. According to him, these programs cannot be implemented in isolation because the planning and implementation of these programs requires “the development of new legal, administrative and institutional arrangements to complement contemporary political, economic, social and cultural structures”. Co-management is necessary for the implementation of these programs. This means that the local fishermen will become part of the process and that they will be working in cooperatives with their own rights and responsibilities. Therefore, it is necessary to face one of the biggest pitfalls with regard to this subject because new institutional arrangements need to be created that can sustain

community participation and in a way that the poorer regions of a community benefit from this change in a sustainable manner (Dey and Kanagaratnam, 2007). This bottom-up approach of management will be the trend for the near future.

Example 5 - The World Fish Center already experimented with the concept of co-management in the late 80’s. These pilot activities were mainly focused on studying the delegation of management responsibility and authority between local-level institutions and the state-level institutions. The concept of co-management fit as a sort of middle ground between the state-level concerns in fisheries management for equity and efficiency and the local-level concerns for active participation, self-governance and self-regulation. In 1996, the World Fish Center began with a pilot of community participation called the Community Based Fisheries Management (CBFM). This approach was somewhat different then the co-management concept. Co-management was more about the partnership between centralized government management systems with local institutions. CBFM tried to establish formal institutional arrangements at community levels in collaboration with local NGOs and with the support of governmental institutions. This led to the establishment of community-led, women-led and fisher-led community based organizations for the management of fisheries. This CBFM approach differs from the co-management approach on the level of participation of government and the stage when this government becomes involved in the process. The CBFM approach is

mainly focused on the establishment and empowerment of local-level institutions through community-focused approaches with little support from the government. The process of co-management not only focuses on these issues but also looks at the establishment of partnership arrangements between the local community, resource users (e.g. seaweed cultivators) and government institutions. (Dey and Kanagaratnam, 2007)

According to Pomeroy (1995), community-based management systems have a long history in Indonesia, but current national laws in Indonesia do not recognize local community management systems with regard to fisheries. These management systems have long been centralized in Indonesia. In 1994, a new program of poverty alleviation, called IDT (*Inpres Desa Tertinggal*, or in English: Presidential Instruction on the Less Developed Village) was developed. This program was aimed at promoting the economic growth in farming and fishing villages by decentralizing and by the active participation of local communities. In many countries in Southeast Asia, including Indonesia, there is an increasing commitment of governments to decentralize policies and programs. At the moment, the Indonesian Ministry of Marine Affairs and Fisheries is in the process of enacting the *RUU Pesisir*. According to Siry (2006), the *RUU Pesisir* is going to play a central role with regard to the decentralization process because “it encourages local governments to manage their coastal zone and recognizes local communities and traditional rights”. Three major topics are being addressed in this act (Ministry of Marine Affairs and Fisheries, 2002), specifically: (1) Developing a

framework for coordination, integration, and consistency in management and planning decisions; (2) Creating a voluntary, incentive-based program for local integrated coastal management at the city and district levels; and (3) General provisions relating to administration and implementation, such as monitoring and evaluation, conflict resolution, and funding.

Hence, the *RUU Pesisir* is a vital step in the development of the decentralization process, and this act will play a strategic role in this process. According to Siry (2006), this is due to Indonesia having a limited amount of administrative resources and, therefore, not all marine and coastal management issues can be handled with the same degree of urgency. Siry (2006) adds that most of these issues occur at the local level and require solutions that are tailor-made. The devolution of responsibility and authority to local governments is, therefore, necessary for the management of the coastal zones in Indonesia. The LERD project in BauBau has changed how the region is currently managed and the decentralization of the LGA's have a positive influence on how the region and its fisheries are managed. The people that were involved in the LERD project gained additional skills in managing a region like BauBau in a different (more decentralized) way. In the long term it will lead hopefully to more economic growth in farming and fishing villages by decentralizing activities and by the active participation of local communities.

New and expanded model

After presenting the two new additional variables for this research, the

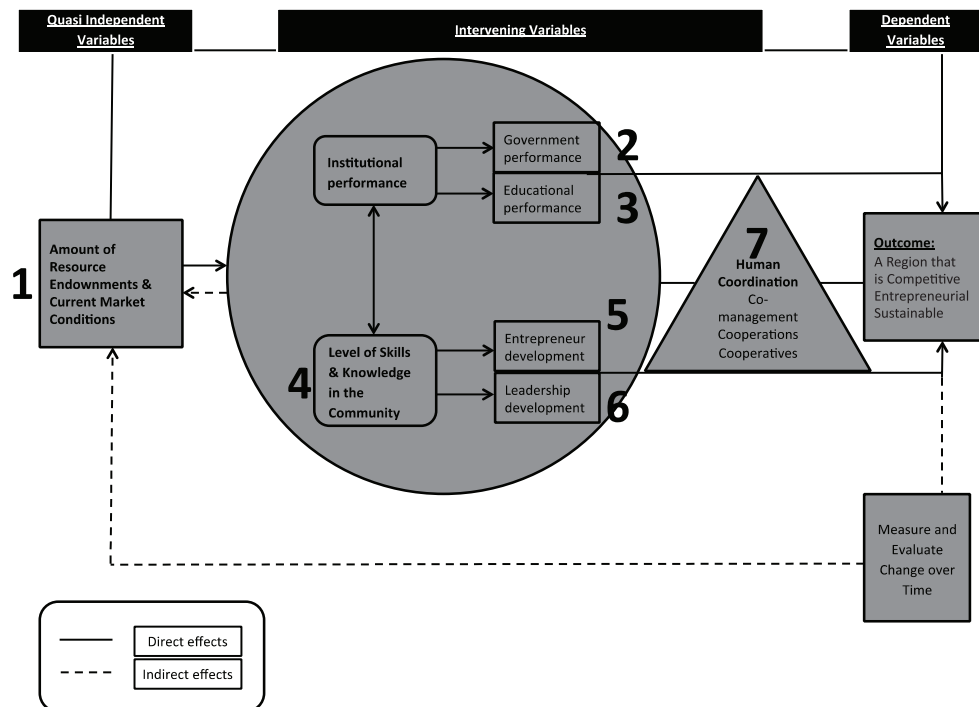


Figure 2. An expanded model on Local Economic Development

original model used by Stimson et al. (2009) is modified and expanded. The first change that is presented is that *Educational Performance* is added to the variable *Institutions*. The second change is that the variables *Entrepreneurship* and *Leadership* are both sub-variables of *Skills and Knowledge*. The third change is that the variable *Human coordination* is added to the model. The fourth change is that the variables, relevant to this research, are numbered in the model (no. 1-7). The numbers of the variable-boxes in the new model are synchronized with the paragraphs of the Results part in the next section of this research. For understanding the new model, it is convenient to look at the model before and after reading the paragraphs. In this way, the impact that the variables have on becoming a competitive, sustainable and entrepreneurial region will be illustrated in the model. With the help of these modifications, we want to em-

phasize the role that the local community plays. On the one hand, it is important for their role that the capacity of the local community develops and, on the other hand, that the way the local community can be or is organized can be improved and can further contribute to an increase in local economic development.

RESEARCH METHOD

For the empirical component of this research, the main data collection is semi-structured interviews of local respondents in two regions and additional interviews with educational and governmental institutions. We visited four villages in BauBau and Wakatobi. In these villages we interviewed eighteen respondents. This region was chosen because of two reasons. BauBau and Wakotobi are in the context of Indonesia remote area's with hardly any economic activities. This means that

models of Regional Economic Development will be very relevant to describe the situation there. The second reason that supports this classification is that the commodity we focus on is the seaweed production, an activity mostly done by local people with mediocre or even poor economic condition. This reinforces the need to have a closer look at these situations in terms of Regional Economic Development.

The interviews consisted of a set of information based objectives (sub-categories). Each interview was conducted in a different manner based on educational or social background in order to get the best information on the local seaweed industry. For the interview, 44 questions were asked, divided into 10 different subcategories related to the model used by Stimson et al. (2009): (1) Role of local government; (2) Skills and Knowledge (additional variable); (3) Firms' strategies; (4) Leadership styles; (5) Leadership in the region; (6) Rule structures; (7) Turnover; (8) Entrepreneurship; (9) Human coordination (additional variable); and (10) Region's resources.

The two additional variables, Skills and Knowledge and Human Coordination, were added before conducting the empirical research. After studying the literature of Stimson et al. (2009) and additional literature with regard to regional development, it seems that these factors play an important role with regard to the performance of the other variables. In addition, the influence of skills and knowledge in forming human coordination will be explained. In qualitative research, this is the main result we can expect: explaining the suggested new factors and/or

coming up with new factors based on the empirical data collected with the help of semi-structured interviews. In the case of our research, we will present an elaboration of these new, additional variables in the next section of this research.

Selection of regions

A sample of eighteen people has been interviewed from different social backgrounds and areas in the community (i.e. educational, governmental and agricultural). Interviews with the seaweed farmers were conducted in the three main seaweed farming areas on Baubau and Wakatobi. The villages that were visited are Palabusa and Sulaa (on Baubau) and Wangi Wangi (on Wakatobi). Permissions for the interviews were requested from the local government officials. These local government officials also helped with the transportation to the relevant areas in Baubau and Wakatobi. Additional interviews with educational and governmental institutions were also conducted on the island of Java, more specifically in the cities of Jakarta, Bandung and Yogyakarta. The largest number of the people that were interviewed has a direct or indirect relationship with the region of Baubau. Many people in Indonesia, especially in the somewhat poorer regions like Baubau, cannot speak English. A translator was necessary during the interviews in order to understand what the respondents said. At times, a secondary translator was used because of the different dialects the people are speaking in the regions. The primary translator knew about the research topic of this paper and, therefore, had some knowledge about how to ask the questions and what kinds of answers were expected. The complete

list of interview questions was also translated into Indonesian, and a copy of the list was provided to each person interviewed.

RESULT AND DISCUSSION

The variables mentioned in the new and expanded model will be investigated in Indonesia. This will provide a quick view into the field of regional seaweed industries and variables that are related to the subject of regional development and endogenous growth. The results of this empirical research are mentioned below, and they are summaries of the interviews that were conducted in Indonesia.

Market Conditions and Resource Endowments in Sulawesi

The standard of living in the region of Baubau is very low. Cultivating seaweed is a relatively profitable business in comparison with other businesses. The biggest problem is that the people do not know this. Another problem is that they get extorted by local traders. The best way to fix these problems is to provide the local people with knowledge about seaweed cultivation and trading. An additional profit is that the quality of the seaweed will increase and, consequently, the prices of the seaweed will stabilize.

The influence of China and Japan on this process is significant. At the moment, China and Japan are one of the main causes of the decrease of the seaweed quality because they import seaweed in large quantities without looking at its quality. The fluctuating price of seaweed is also an important concern with regard to the standard of living in Baubau. The minimum price

that is set by the local government is much too low. The local government must intervene more in this matter to improve the development in the region. For an illustration of how this can be done, the local government must look at their neighbors, the island of Muna. It is important that the local government of Baubau focuses its attention more on the situation in Muna because they are performing significantly better than Baubau in terms of production. However, Baubau is only focusing its attention on its own industry at the moment. In the region of Baubau, there are two different types of seaweed cultivators: the dependent and independent cultivators. The current ratio in Baubau at the moment is 60/40. The local government has good ties with the bigger industries in Surabaya and Makassar. These industries also invest themselves in the region. Both the dependent and the independent are supported by the local government. In addition, the local government is currently in the process of establishing a seaweed processing industry in the region. This will give a big boost to the economy in the region, and the local government must be the “director” of this change.

Another issue Baubau is struggling with is that many valuable (skilled) people leave the region to seek better employment elsewhere. The local government needs to look for more possibilities to keep these higher-educated people in the region. The local educational institutions also have a big influence on this matter. The local people should not be taught how to work for other companies but should be educated in how to create their own businesses. In addition, greater women

involvement in the local seaweed industry could develop more possibilities for the region.

The current market conditions are quite positive, but they must be stabilized to further develop the region. The region of Baubau has sufficient resources for this to happen, but it has to find a way to use resources better. Therefore, human assets need to be trained and kept in the region.

Governmental Institutions in Sulawesi

Indonesia knows a long history of centralized power and strong hierarchies. But also already a long period, the Indonesian government is working on decentralization. Indonesian legislation is being amended and improved. This will help local government institutions to regulate and manage their own autonomous regions. Government institutions like the Bappenas and local Bappeda offices help governments decide and plan what must occur to support the decentralization process (e.g. by making use of LERD teams). However during the research, it became clear that much of Indonesian legislation is still focused on national level issues. At least there is almost no clear understanding of the legislation with regard to local industries such as the seaweed industries in regions like Baubau and. Satria and Matsuda (2004) have done a much more in depth study of the process of decentralization

Legislation is one aspect of decentralization; another aspect is the growing importance of the attention for the actors at the local level. If it comes to devolution in the decentralization pro-

cess (see Satria and Matsuda (2004)), it also becomes even more relevant to include the local communities and governmental institutions in the regional economic development models.

The relationship between the central and local government is also one of the aspects that requires attention. At the moment, the collaboration between the central government and the local governmental agencies seem to not be very effective. To strengthen the relationship between both governments, there is now a consensus to involve more local communities in the decision-making process. This will positively influence the position of the seaweed cultivators in Baubau as they will receive more direct benefits from production, and they can receive better support and facilitation from both governments.

In the past recent years, the local government spent significant time and effort in improving the infrastructure in the region. This will attract more local and foreign investors because Baubau now has a better distribution network. The local government is also increasingly collaborating with South Korea. This will create more investment and recreational opportunities for the region and it will assist in further developing the region.

The local government does not support seaweed cultivators in a financial way; the only facilitation they receive is in terms of training and material; however, this facilitation is not enough. People need to be encouraged to create their own businesses, and the only way to do this is to train and educate these people.

Educational Institutions in Sulawesi

Educational performance is a variable that was not separately mentioned by Stimson et al. (2009) in their model. However, this seems to play a crucial role in the process of developing the region of Baubau. More and more educational institutions are showing an interest in this region and, therefore, a stronger collaboration with the local government is necessary. At the moment, research is being conducted in the region about improving the quality of seaweed. In addition, research has been done about how to influence people from different cultures and make them less resistant to change. All of these developments will have a positive influence on the region. The central and local government still needs to realize this. The amount of funding for research should also be increased to improve the quality of education in the region.

Educational performance in the region of Baubau itself is quite low at the moment, and the quality of education is decreasing. Educational institutions from outside the regions are showing an increasing interest in the region which is a positive development that should be encouraged more. For this to happen, educational institutions, the local government and the industries with its cultivators have to collaborate on a more intensive level.

Skills and Knowledge in Sulawesi

The additional variables skills and knowledge have a direct relationship with human capital. In the region of Baubau, human capital is sufficiently present. However, people need to be trained in order to develop and grow,

and training and education are lacking in this region. In order for this to happen, the people in the region should first be organized. Dealing with different cultures, norms and values are also an important aspect in this matter.

Contradicting the expectations about local government support beforehand, a couple of courses and work programs were already put in place that helped the seaweed cultivators. The local government also helps the seaweed cultivators with supplies such as ropes and nets. On the contrary, what the local government does not do is to help the seaweed cultivators financially. The local government's role in this matter is minimal. At the moment, they only set-up a minimum price for the seaweed crops, and they recently improved the infrastructure in the region.

Corporate Social Responsibility (CSR) is a new form of funding that provides new possibilities for underdeveloped people with regard to training and education. One of the problems with CSR is that people and companies do not know what it is. This is an issue for the government because they supervise what happens with the CSR-assets. At the moment, the local government does not know how to manage this. Another problem is that the concept of CSR needs to be redefined. In other words, from which companies do we get money? How do we measure the effectiveness of CSR? And how can we improve the management of CSR?

In the original model of Stimson et al. (2009), Skills and Knowledge are not mentioned as a separate variable. However, as mentioned above, the training

and education of human assets are one of the most important things with regard of the development of this region. In the original model, only Leadership and Entrepreneurship are mentioned as variables. These variables should, however, be mentioned as an issue related to a more holistic variable, namely Skills and Knowledge. Another advantage of introducing Skills and Knowledge is the opportunity to investigate the relationship between them more in depth. Perhaps it will be fruitful to see the combination as related to the balance between indigenous knowledge and external knowledge. Knowledge development is not just a matter of knowledge transfer (Uiterkamp and Pennink, 2012) but also of acceptance and embedding in indigenous knowledge as has been studied in the Salmon Fishery in Alaska (Paige et al., 2009; Barnhardt, 2008). The role of that indigenous knowledge is also important in finding ways of improving the local economic development and, at the same, taking into consideration the ecological environment in a local situation. It might be the case that the older indigenous knowledge can shed light on the directions of where to go and how to develop as has been researched on the salmon fishery in the north of America (Alaska) by Menzies and Butler (2007)

Entrepreneurship in Sulawesi

The term entrepreneurship and governmental institutions have a strong relationship when looking at the region of Baubau. The entrepreneurs in the region, in most cases, have worked or are still working for the government. Entrepreneurs play a very important role with regard to the seaweed industry in this region. They are often

involved in the whole process from the cultivation, production and collection of seaweed to the distribution and selling of the crops. One of their main activities is training and educating the cultivators. Thus, entrepreneurs are also involved in the development of skills and knowledge of human assets.

Entrepreneurs not only give training, they also receive it. These training sessions are organized by the local government. Therefore, the local government is also involved in the development of entrepreneurship in the region. However, they are only involved in matters of training and education. Entrepreneurs do not receive any form of financial support from the government. That is why, for this country and region to develop further, it should also support entrepreneurs financially. In order for this to happen, the government should first establish a good definition of the word 'entrepreneur'. At the moment, the government has issues in organizing entrepreneurs because they often do not know which people to qualify for support. Therefore, a clear definition of who qualifies as an entrepreneur is essential.

The variable Entrepreneurship is mentioned as one of the key variables in the original model of Stimson et al (2009), and, indeed, entrepreneurship can have a very positive influence on the development of this region. At the moment, however, entrepreneurs do not have a big influence on the growth of this region. For a change to happen, the government should redefine their policy with regard to the support and perhaps they should consider also to support more explicitly local entrepreneurs or local actors who want to

gether set up business (group entrepreneurship)

Leadership in Sulawesi

In order for the region of Baubau to develop, it should establish collaboration between the most relevant parties in the seaweed industry. For this collaboration to succeed, the region should have a strong leader. However, leadership is not one of the strongest skills possessed by the people in Indonesia. Normally speaking, the mayor (Bupati) of a region should be in charge, but the Bupati's influence on the region is currently too low. One of the problems is that the Bupati does not have a good connection with the local people. Another problem is that corruption also plays an important role with regard to the functioning of the local government.

The best leadership style that positively suits the region should be democratic. However, as mentioned before in this research, the education level of the people in this region is low. Therefore, a large number of people in the region are not capable of making an informed decision. That is why the leader of this region should serve the interests of these people in the best manner with a strong vision. The Bupati can be this leader, and he should not only have the interests of the government at heart but, more importantly, he should also listen to the people in the region. But besides the Bupati other leaders as well as informal leaders could fulfill this function as well.

As mentioned before, the local people are not yet able to handle a democratic leadership style. Consequently, it is better to maintain a top-down structure

to implement changes in the region. At the moment, the government is still in the process of involving more and more people in governing this country. This means that, in the long-term, this structure will become flatter. However, for the moment, this top-down structure fits the situation best.

The term Leadership, just like Entrepreneurship, is also mentioned as a key variable in the original model of Stimson et al. (2009), and, indeed, for the development of this region, a strong leader is very important. However, strong leaders are difficult to find in this country.

Human coordination in Sulawesi

There are many relevant parties (e.g. government, educational institutions, local buyers and sellers, the community) that influence the endogenous growth of the region of Baubau. In order to develop this region even further, the possibility of forming a cooperative/collaboration between these parties can be very useful. The people within these parties are often already collaborating on some scale, however, for these parties to collaborate better with each other, legislation needs to be revised to structure this process better.

There are many benefits when all of these parties are working together such as reducing conflict, better distribution of information, and an easier acquisition of finance. At the moment, the local government is already engaged in the development of cooperatives and is attempting to encourage and stimulate this process further.

The option of forming collaboration arose during this research. It became

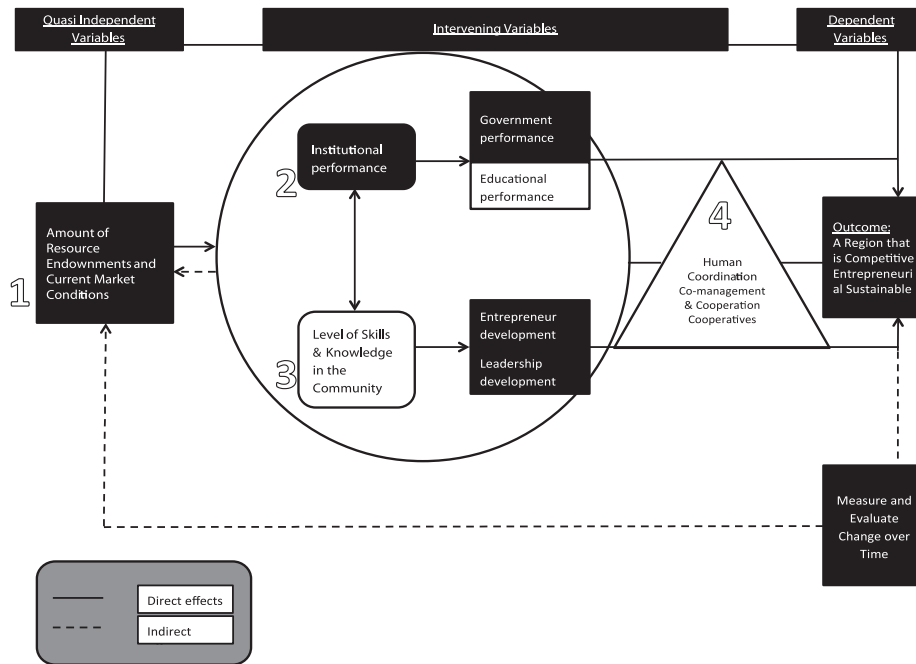


Figure 3. Local Economic Development including the capabilities of the local actors

clear that many parties are active with regard to the Indonesian seaweed industry and, in most cases, there was already some form of collaboration within these parties. Forming a better collaboration between these parties should be the next step in developing this region further.

More competitive region?

Finally we have to pay attention to the dependent variable in our model: the region has become more competitive, at least in terms of entrepreneurship. Our empirical research is based on a small number of respondents and the measurement was only at one moment in time so we have to be cautious on what we can say. In BauBau at least we can see that the position of the seaweed farmers in the value change has been improved. They are better organized and have more information. The Local Governmental agencies have a more positive attitude about this eco-

nommic activity, the Bupati and his staff is involved in a positive way in this process. In this way the region has been developed. After some time, a replication of this study could show if the effects are also sustainable and if indeed the function of entrepreneurship has been improved not just at one moment but also over a longer period.

CONCLUSION

The model on the next page depicts the variables that influence regional endogenous growth and development according to this research. The black boxes in the model show the variables that were also mentioned in the model of Stimson et al. (2009). The white boxes show the additional variables that were added after performing this research.

The first box shows *the amount of resource endowments and market conditions*. The region of Baubau is one of

the poorest areas in Indonesia. Fishing and seaweed cultivation are two of the main sources of income in this region. When looking at resource endowments, the research showed that the resources are already there in terms of human capital and raw materials. A large number of the people that live in this region have a very low level of skills, and these people have never had the opportunity to receive a proper education. In other words, the amount of resources in the region is sufficient; the problem is that these resources are not managed properly.

The second box shows the *institutional performance* in the region. This variable was also in the original model of Stimson et al. (2009). However, in their theory, they only mention institutional performance with regard to the government. This research showed that educational institutions also play an important role when looking at the development of the Baubau region. As mentioned previously, there are sufficient human assets in this region. In order for them to develop, they need to be educated and trained. Hence, the addition of the variable educational institutions to the original model is justified. This research also showed the importance of a well-performing government on both the central and local levels. The Indonesian government is currently not performing well. To develop regions like Baubau, the central and local governments should perform better to support the process of decentralization.

The third box shows the additional variable *level of skills and knowledge in the community*. This variable was not mentioned in the original model of

Stimson et al. (2009). In their model, the variables entrepreneurship and leadership play a crucial role in the process of regional endogenous development and growth. However, this research showed that these two variables must be downplayed to the more holistic variable skills and knowledge. The variables leadership and entrepreneurship are part of the development of skills and knowledge in the community. The local communities must receive proper training and education to develop their own skills and knowledge. At the moment, these people do not have sufficient opportunities to do this.

The fourth box shows the additional variable *human coordination*. In the original model of Stimson et al. (2009), this variable is not included. However, by developing seaweed cooperations and performing community-based management, the most relevant parties with regard to the region's seaweed industry can collaborate on a higher level. This will create more involvement of local actors in the development process. The Indonesian government is currently in a process of decentralization, which is still in its earlier stages. However, it can be seen as one of the first steps towards community-based management and the development of seaweed cooperatives.

This research showed that not only quantitative economic factors (e.g., productivity, prices, and costs) are important for measuring regional development. Factors such as human capital, skills and knowledge also have a significant influence on regional development. These qualitative (endogenous) factors are perceived as

difficult to measure. When a region is able to effectively address these endogenous factors, it will be more agile and rapid in responding to changing circumstances. The factors “Skills and Knowledge” and “Institutions” were used to measure the impact that these factors have on the regional development in Baubau. The factor “Skills and Knowledge” was further divided in the sub-factors “Leadership” and “Entrepreneurship” and the factor “Institutions” was divided in the sub-factors “Government Institutions” and “Educational Institutions”. It is, however, extremely difficult to measure the effect these factors and sub-factors have on regional development. The revised model that was used for this research should be made more specific to accurately measure the impact that these factors have.

Conclusively, the variables mentioned above can play a crucial role in developing Baubau as a competitive, entrepreneurial and sustainable region. The entire process of getting the region to this outcome should be measured and evaluated on a regular basis. At the moment of this research we have seen that the conditions for a better entrepreneurship in this region has been improved (local actors were more informed, stimulated to be organized and increased support of local governmental agencies). But in the long term this has to be investigated much more in detail and we hope that this model we developed will be helpful.

Future Research

Future research should look at what leadership and entrepreneurial behavior entails with regard to emerging economies as leadership comes in

many forms. In western economies, it often comes in the form of one person. In Third World countries, however, it arises through collective action instead of an individual action. In addition, many studies have tended to assume that entrepreneurs act and think similarly no matter where they are globally located. However, the term entrepreneurship has many different definitions. This makes it difficult for local governments to determine what definition to choose. The terms leadership and entrepreneurship have a completely different definition in an emerging economy like Indonesia when comparing it with Western economies. In addition, the impact of culture on leadership and entrepreneurship might also be an interesting subject to look at. This entails looking at religion, values and norms and the way these factors influence individual and organizational behavior. Studying emerging economies not only contributes for better understanding these economies, but it also broadens the view of how change management should be perceived in an unstable environment. Therefore, there is an extension and revision needed of already existing theories with the consideration of new contextual variables. This also allows for researchers to develop new theories and models.

Limitations

One of the biggest struggles during the empirical research was the difference in education level. In the regions of Baubau and Wakatobi, it is common that a majority of people leave school at a young age to start farming or fishing. Some of the initial questions on the interview list had to be simplified because, otherwise, they could not understand the question. Also, some

terms that were used in the English list of interview questions could not be translated into Indonesian. For example, a word like 'phycoculture' (the farming of seaweed for commercial means) cannot be translated and, therefore, the translator was required to improvise which, consequently, caused the second problem.

During the interviews, there was significant dependency on the translator. First, the translator had to ask the questions in the right manner, or the questions would not be understood. Second, the translator also had to give the right explanations for the answers to the questions, thus, he had to provide answers that could be used for the research. Third, the translator only gave a summary of what the interviewee was saying. This reduces the quality of some of the questions and answers.

The selection of interviewees was also quite unsystematic. The selection of

the locations to visit and the people that could be interviewed was mainly done by local government officials. On one side, this is very convenient, but, on the other side, it also caused some constraints because there were no options to conduct interviews outside of this selection.

During the visits to the seaweed cultivation areas, not many women were interviewed. Seaweed cultivation is an activity where the whole family is participating. The somewhat heavier work, such as the harvest, is done by males. The slightly lighter jobs, such as attaching the seeds to the nets, are done by the women and children. For the research, it would have been interesting to also interview women, however, during our visit; the harvesting season was almost over. Therefore, not many women were present at the cultivation sides.

- Barnhardt, R. (2008), Indigenous Knowledge Systems and Alaska Native Ways of Knowing, *Anthropology & Education Quarterly*, 31(1), 8-23.
- Baticados, D. (2004), Fishing Cooperatives' Participation in Managing Near shore Resources: The Case in Capiz, Central Philippines, *Fisheries Research*, 67, 81-91.
- Berkes, F. (1989), Co-management and the James Bay Agreement. In: Pinkerton, E. (ed) *Co-operative Management of Local Fisheries*, Vancouver: University of British Columbia Press, 189-208.
- Birkhölzer, K. (2005), *Local economic development and its potential*, Paper for the seminar on Local Economic Development, organized by the Network of Cooperatives of Local Authorities of South-Eastern Europe, 1-23.
- Brouard, F. & Larivet, S. (2010), Essay of clarifications and definitions of the related concepts of social enterprise, social entrepreneur and social entrepreneurship, In Fayolle, A. & Matlay, H. (Eds.) *Handbook of research on social entrepreneurship*, Cheltenham: Edward Elgar Publishing Limited, 29-56.

References

- Buhat, D. (1994), Community-based Coral Reef and Fisheries Management, San Salvador Island, Philippines, In White, A., Hale, L., Renard, Y. & Cortesi, L., *Collaborative and community-based management of coral reefs*, Kumarian Press Library of Management for Development, 33-50.
- Cahill, A. (2005), *Engaging communities for local economic development: Lessons from the Philippines*, Paper presented at the International Conference on Engaging Communities, Brisbane, August, 1-17.
- Coffey, W. J. & Poles, M. (1984), The concept of local development: a stages model of endogenous regional growth, *Papers of the regional science association*, 55, 1-12.
- Degnbol, P. (2003), Science and User Perspective: The Gap Co-management must address, In Wilson, D.C., Nielsen, J.R. & Degnbol, P., *The Fisheries Co-management Experience: Accomplishments, Challenges and Prospects*, Kluwer Academic Publishers, Netherlands, 31-49.
- Dey, M.M. & Kanagaratnam, U. (2007), *Community Based Management of Small Scale Fisheries in Asia: Bridging the Gap between Fish Supply and Demand*, Conference Paper 23, World Fish Center, Penang, Malaysia.
- Eley, N. (2006), *Fisheries Management, Livelihood Diversity and Opportunity: A Case Study of the Kaledupan Coral Reef Fishery: Wakatobi Marine National Park, South East Sulawesi*, Final Year Dissertation Project, University College London.
- Fairholm, G. (1994), *Leadership and the Culture of Trust*, Westport: CT: Praeger.
- Heenan, D. & Bennis, W. (1999), *Co-leaders: The power of Great Partnerships*, New York: John Wiley.
- Indonesian Ministry of Marine Affairs and Fisheries (2002), *The Need for a New Coastal Zone and Small Island Management Act in National Sustainable Development*. Jakarta: Ministry of Marine Affairs and Fisheries.
- Katon, B., Pomeroy, R. & Salamanca, A. (1997), The Marine Conservation Project for San Salvador: A Case Study of Fisheries Co-management in the Philippines, *Fisheries Co-management Research Project Working Paper*, 23, 10-95.
- Khan, M.S. & Apu, N.A. (1998), Fisheries Co-management in The Oxbow Lakes of Bangladesh, Hittagong University, *Fisheries Co-management Research Project Working Paper*, 23, 1-61.
- Luxton, D. & Luxton, P. (1999), Development of Commercial Kappaphycus Production in the Line Islands, Central Pacific, *Hydrobiologica*, 398/399: 477-486.
- Menzies, C.R., & Butler, C.F., (2007), Returning to Selective Fishing through Indigenous Fishery Knowledge, The example of K'moda, Gitxaala Territory, *American Indian Quarterly*, 31(3), 441-510.
- North, D.C. (1990), *Institutions, institutional change and economic performance*, Cambridge: University Press.
- Nielsen, J.R., Degnbol, P. & Viswanathan, K.K. (2004), Fisheries Co-management – An Institutional Innovation? Lessons from South East Asia and Southern Africa, *Marine Policy*, 28 (2), 151-160.
- Orogo, V. (1994), *Management Strategies toward a Viable Seaweed Cooperative Enterprise in Sorsogon, Philippines*, Seaweed Production Development Project.

- Paige, A., Churchill, S., Ratner, N., Turek, M., & Coiley-Kenner, P. (2009), *Local Knowledge, Harvest Patterns, and Community Uses of Salmon in Wrangell, Alaska*, Alaskan Department of Fish and Game.
- Pennink, B.J.W. (2012), From “Family based” to “Industrial based” production: Including the local actors into the Triple Helix model (AJTM), *The Asian Journal of Technology Management*, 5(2), 70-79.
- Pomeroy, R.S. (1995), Community-based and Co-management Institutions for Sustainable Coastal Fisheries Management in Southeast Asia, *Ocean and Coastal Management*, 27 (3), 143-162.
- Pomeroy, R.S., Pollnac, R.B., Predo, C.D., & Katon, B.M. (1996), *Impact Evaluation of Community-based Coastal Resource Management Projects in the Philippines*. Fisheries Co-management Project Research Report 3.
- Pomeroy, R.S., Katon, B.M., & Harkes, I. (1998), *Fisheries co-management: Key Conditions and Principles drawn from Asian Experiences*, Presented at “Crossing Boundaries”, the Seventh Annual Conference of the International Association for the Study of Common Property, Vancouver, British Columbia, Canada, June 10-14.
- Pomeroy, R.S. (1999), Devolution and Fisheries Co-Management, In Collective Action, Property Rights and Devolution of Natural Resource Management: Exchange of Knowledge and Implications for Policy, *Proceedings of the International Conference, Puerto Azul, Philippines*, 21-25 June.
- Pomeroy, R.S., Katon, B., Genio, E., & Harkes, I. (1999), *Fisheries Co-management in Asia: Lessons from Experience*, International Center for Living Aquatic Resource Management. Manila, Philippines.
- Satria, A. & Matsuda, Y. (2004), Decentralization of fisheries management in Indonesia, *Marine Policy*, 28, 437 – 450.
- Siry, H.Y. (2006), Decentralized Coastal Zone Management in Malaysia and Indonesia: A Comparative Perspective, *Coastal Management*, 34, 267-85.
- Smart, O.H. (2005), *A Feasibility Study of Phycoculture as a Sustainable Livelihood in Kaledupa, Indonesia*, BSc Undergraduate Dissertation in Geography, University of Newcastle upon Tyne, 11th March 2005, 1-113.
- Stimson, R.J., Stough, R.R. & Roberts, B.H. (2006), *Regional Economic Development: Analysis and Planning Strategy*, New York: Springer.
- Stimson, R.J., Stough, R.R. & Salazar, M. (2009), *Leadership and Institutions in Regional Endogenous Development*, Cheltenham: Edward Elgar Publishing Limited.
- Swinborn G., Goga, S. & Murphy, F. (2006), *Local Economic Development: A primer developing and implementing local economic development strategies and actions plans*. World Bank.
- Tseng, C.K. & Borowitzka, M. (2003), Algae Culture, In Lucas, J.S. & Southgate, P.C., *Aquaculture: Farming Aquatic Animals and Plants*, 253-275.
- Schoot Uiterkamp, B.J. & Pennink, B.J.W. (2012) *Local Capacity Development via Knowledge Sharing: Empirical Results from Sulawesi*, Research Report No. 30, GSG, University of Groningen.

- Viswanathan, K.K., Nielsen, J.R., Degnbol, P., Ahmed, M., Hara, M. & Abdullah, N.M.R. (2003), *Fisheries Co-management Policy Brief: Findings from a Worldwide Study*. World Fish Center, Penang, Malaysia, 1-26.
- Yin, R.K. (2003), *Case Study Research: Design and Methods*. (Third edition) London: Sage.