Stakeholder Cooperation in Sustainable Development: Three Case Studies in Norway

Torger Gillebo
Section for Learning and Education
Department of Mathematical Sciences and Technology
Norwegian University of Life Sciences
Aas, Norway
E-mail: torger.gillebo@umb.no

Charles Francis
Professor of Agronomy & Horticulture
University of Nebraska
Lincoln, Nebraska, U.S.A.

Abstract

Experiences from three case studies in rural and commercial development in Norway from 1995-2001 are analyzed and evaluated. The goal of the research was to contribute to local and regional innovations, and in the process develop a better understanding of the development process. Focus was on solving the realistic challenges met by entrepreneurs in their businesses and by the local community, as well as working within the specific context in each case location. The project revealed that generating new knowledge and at the same time encouraging tangible institutional change is a difficult challenge. Conclusions from the three studies are that rural and commercial development are complex and site-specific, and the process requires 1) good communication and collaboration among involved participants, 2) interdisciplinary, case-based research design, and 3) a continuous and learning innovation process. There is a need for ownership and sustained participation from all stakeholders, and much of the initiative and support must come from within the community.

Key words: rural innovation, endogenous development, communicative participation, interdisciplinary projects, participatory research, learning communities.

1.0 Introduction

The main goals of the government and university program for Rural and Commercial Development (BNU = *Bygde og Nærings Utvikling*) were to stimulate local development and to generate new understanding about the process in Norway. Practical research was conducted in close cooperation with communities that represented three regions: northern coast, western fjords, and mountainous eastern areas. Conducted by the Agricultural University of Norway (NLH) from 1995 – 2001 in three communities, the program was designed to explore the nature of challenges in each region and to determine whether there were commonalities in

successful strategies for local research and development that could be used to achieve innovation and revitalization in other areas of the country.

In 1992 the government launched a new proposition and introduced a more liberal international trade regime (Norwegian Ministry of Agriculture, 1992). Both farmers and the processing industry were challenged to develop new competitive products and, at the same time, more sustainable marketing strategies. Initiatives supported by the Ministry of Agriculture included programs to encourage rural development and innovation with new small-scale, value-added food and wood products. In addition, evaluations were conducted to assess the competence of local participants and university players, as well as the accomplishments of new programmes within this area. The conclusion was that the relationship between academia and small/middle size businesses generally was a "cultural chasm" (Gammelsæter and Bjarnar 2000). The research milieu in Norway needed to be more involved within rural readjustments, in development processes, and with local stakeholders.

2.0. Theoretical and Methodological Approach

The retrospective analysis and evaluation are based on a *multiple case study design* in an *explorative* mode (Yin 1994). We built upon experiences and collaboration with people in three geographically different regions in Norway. These regions were coastal communities in northern Norway (Steigen), fjord communities in western Norway (Varaldsøy), and rural communities located in the mountainous area of Østerdalen Valley in eastern Norway (Mountain Region). The method was a combination of conversations and participative observations, both by the partners in the project regions and by researchers and leaders at NLH. Results are based on observations made by the project research director of local collaboration and changes in the economy. Our concerns with regard to the innovation and knowledge processes during the program period were guided by the action research approach (Bawden 1991; Liu 1996; Ljung 2001). This approach is described by Ljung (2001, 174) as describing and understanding "a particular context while intervening in a way which would enable a desired change".

We applied a rural innovation perspective in which the *participation* dimension by local players is central to the process. The research process draws upon organization theory (Brunnson 1989), network theory (Murdoch 2000), and communication theory (Pretty 1995; Leeuwis 2003). Complex challenges in many rural areas generate a need for holistic, sustainability-oriented, and interdisciplinary approaches (Stonehouse 2003). When the goal is to examine the process itself and expand the knowledge level within this field, it is essential to emphasize the endogenous character of rural innovation – in contrast to the more mechanical way of thinking (Ray 2000). This thinking guides us to the phenomenon of *learning in context* and creates a need for applying theories of learning (Argyris and Schön 1996; Bawden 1991; Lieblein *et al*. 2004; Ljung 2001).

3.0 Research Questions

We first provide a reflection on key aspects that emerged as a result of cooperation between the university program and people in the three regions in Norway. Working together, the group arrived at a formulation of three research questions:

1. How should one establish cooperation among involved participants to achieve useful, innovative development in rural agricultural areas?
2. How should one design professional advice that is relevant to complex rural situations that encompasses agricultural production and other natural resource use, and is appropriate to key stakeholders?
3. How does one use what has been learned from experience as part of the innovation process, and what commonalities emerge from the three case studies?

4.0 Steigen Case: a Coastal Community in Northern Norway

The community of Steigen is located in northern Norway above the Arctic Circle at Latitude 68 degrees North. With an economy based on a food and fishing culture and a strong history of trade, communities have experienced substantial out-migration of the younger population to other cities in the region and beyond Norway (Tviland 1998). Because of the breathtaking scenery in this area, fertile soils, and many historical monuments, a primary goal for the case was to explore the potentials for new economic vitality and return of people who had moved away. The potential to build a multi-functional agriculture and rural landscape is especially important for this area that is well endowed with natural and cultural heritage resources and could serve as a location or destination for rural tourism.

The first meeting was with 10 people in the political and administrative leadership and began with brainstorming challenges and possibilities for the municipality. A second visit involved travel around the immediate area with the local contact person to meet professional groups and individual businesses related to agriculture and fishing. Subsequent visits to Steigen by university aquaculture specialists, and involvement of the university dean in contacting large cooperatives and commercial businesses were additional catalysts to the development process.

4.1 Case Results

From the first visit to the municipality there appeared to be potential for development based on the cultural landscape, recognition of the importance of the town as a former trade centre, the traditional food and fishing culture, and interest by people in the community. The project director and others in the BNU recognized a potential for tourism and relocation or return of people who had recently outmigrated. Lykkja (1998) developed a report which described the landscape character and overview profile of Steigen. The report became part of a developing plan for establishing a new education centre for nature, culture and health (prevention/recreation).

A research assistant visited Steigen, conducted interviews, and reported on the essential development patterns (Tviland 1998). Steigen is characterized by out-migration; the population decreased by 12% between 1987 and 1997. The current population is 2.800 people in the municipality. Agriculture and fishery account for 30% of the employment. Industry and service is also part of the primary employment sector. Both agriculture and traditional coast fishery have been hit by a lack of recruitment. The number of farmers receiving pubic subsidies declined from 240 in 1986 to 165 in 1997. With few young people educated in the

community and involved in the local economy, the average age for fishermen and farmers were similar at approximately 55 years (Tviland 1998).

Business types that have increased in Steigen were based on aquaculture. One fisheries researcher introduced two joint projects, including a fingerling production facility within a smolt company, and a wastewater treatment connected to a fishing net mending company (Lekang 2002). An idea was finalized to develop a food processing centre that would work together with the dairy and a new salmon processing plant in the municipality.

Visits to the community by university specialists and project people from the BNU raised expectations in the area, primarily through conversations with local leaders about ideas to rejuvenate the economy with food processing. There was a growing level of communication and mutual trust between local decision makers and development specialists. However, shortly afterwards there was criticism due to expectations greater than what could be fulfilled, lack of financial interest from the Norwegian Industrial and Regional Development Fund (SND), and lack of follow up from the university. Two observations are critical to the evaluation of the roles of local leaders and university specialists:

- The municipality had not formalized any strategic commercial plan of its own. This is an essential component of successful BNU programs and communities themselves must want commercial development and take on the role of the developer themselves by creating such a plan.
- Trips by university research director and professors gave a boost to collaboration on specific projects, yet the dean pointed out that: “After working some time with rural and commercial development (BNU), many researchers will find that they have not had the chance to publish as many articles in recognized scientific journals as other colleagues. For younger researchers this will result in a weaker base for merit in the research community” (Abrahamsen, R., 2000, lecture on 27 April 2000 in Steigen)

4.2 Planning Versus Communication

Faults with either planning or communication could seriously constrain progress in the project and reduce the potential for meaningful collaboration of the university in the community development process. In exploring potentials in Steigen for *instrumental (or mechanical) participant cooperation* (Amdam 1998; Ray 2000), we observed numerous and complex relationships among the several participant groups in the community and the advisors from outside; all these rested on the foundation of local resources. All local participants are to some degree dependent on the use and management of local resources, especially renewable resources such as soil, rainfall, ocean, and fisheries. We recognize that these relationships are complex – characterized by limited interaction between involved subgroups. In retrospect, we recognize that the national-level participants from the BNU were in many ways not a part of local thinking in the community, thus they are separated from the local community by barriers of distance and communication.

There is an instrumental character to some of these contacts. Within the context of the BNU it was regarded as sufficient to establish an agreement of intentions with the community, a coordinator was hired locally, and there were some project resources to draw upon. From the project management point of view, the coordinator and the funds would provide adequate incentive so that all participants

would respond to the initiative and begin project activities. This assumption was based on well-rooted organizational theories, for example Morgan (1997).

Small communities and rural areas, and especially the local commercial interests, are woven together into a larger national organizational system. With that in mind, the institutional perspective (Michelsen 2001) becomes more relevant, a factor not given adequate attention in the initial BNU program. An example relevant to Steigen is the dairy system in Norway. This particular system has become so extremely efficient that it begins to take on the aura of an "objective reality" (Berger and Luckmann 1997). The *TINE* dairy corporation in Norway has been a near monopoly for over 70 years (home page, http://www.tine.no/international/). The power of this organization in the market became apparent to the project team as they explored and evaluated the potentials of maintaining the local dairy in Steigen that was being threatened to be shut down. In spite of local interest and a vital need for making the local economy more sustainable, it was determined both locally and regionally that the chances of maintaining the dairy were almost zero.

However, if the narrow focus on strong market stakeholders is the only perspective considered, this would seriously constrain individuals or the local community from being innovative. A broader planning perspective can be gained by *communicative (or endogenous) participant cooperation* (Amdam 1998; Ray 2000) that looks beyond current economic realities to effectively envision a positive future situation and some of the methods to achieve it. With respect to the dairy example, even the most streamlined organizations are not so rational that they are not susceptible to influence or change. Brunnson (1989) suggests, on the contrary, that it is evident there are substantial inconsistencies *internally* in organizations and especially *between* organizations and their surroundings. Many well-organized food distribution companies can, under certain conditions, see the value of cooperation between local producers and consumer groups, and the potential for working together with regional authorities and researchers (Murdoch, 2000). It is well accepted that smaller, local, more agile businesses are better able to adjust quickly to market trends and meet demands of nearby consumers.

We explored the potential for regenerating employment by expanding the local dairy, and found that there were many factors such as national marketing that are far beyond the control of anyone on the local scene. There is potential for local marketing of niche products and for collaboration of local entrepreneurs with the national monopolies in the food trade. Aquaculture is in the growth mode, and fish culture researchers from NLH took action to help two local businesses expand significantly. Less was learned about the potential of revival of industries based on traditional coast fishing and processing fish products. In particular, developing relevant research programs in cases like Steigen through participation of key stakeholders is a more complex and time-consuming process than was anticipated.

4.3 Conclusions

Lessons learned from this experience includes:

- We were convinced in this experience that the process of developing a strategic commercial plan within the municipality must involve the participation of all key local stakeholders. In particular, it is important to recognize the interdependence and synergy potential between different industries: loss of the coast fishery and the coast culture will also reduce incomes for the farmers and make Steigen less attractive as a tourist location and residence. More focus on revitalization of food processing and local food culture may strengthen the exchange of experiences, knowledge and network between agriculture, fishery and aquaculture.
- We think that protecting and expanding key local industries will require a higher degree of good relations and cooperation with different *regional and national* stakeholders. Regional planning within transport, spatial planning, and education decentralization must be coordinated with the regional authorities and industries. By means of dialogue and partnerships, the chances for a balanced industrial development could be improved.
- Agricultural research and advising may have an important role in the future, but there is a need for building up capability to facilitate complex rural and coastal innovation processes that are outside the current expertise and normal research and teaching models that dominate academia and university work.

5.0 Varaldsøy Case: A Fjord Community in Western Norway

Varaldsøy is an island in Kvinnherad Municipality in western Norway, called the "pearl in Hardangerfjorden" because of the unique and sensitive environmental and cultural resources. Agriculture and number of farms have decreased 20% from 1994-2003 (Kvinnherad kommune 2004). Agricultural land runs the risk of being overgrown with forest, drastically changing the cultural landscape and potential for tourism. There is strong willingness among the inhabitants and their leaders to revitalize the island.

In the summer of 1998 a group of researchers, politicians and rural developers from Kvinnherad Municipality visited the island of Varaldsøy. The group visited key locations to establish linkages with different stakeholders and businesses, including farmers who combined milk production with building and rental cabins. Several sawmills produce materials primarily for ship building and making barrels, both industries that have long traditions in the area.

The team viewed a number of important environmental sites such as former pastureland and high value coniferous forest. The commercial value of these forest resources has caused a clash of interests between preservation authorities and local people, especially small-scale entrepreneurs who are desperate to continue meaningful employment.

Later, during our visit to the island, there were lively conversations with local people and researchers from NLH. The first important step, according to the local spokesman, was to change the environmental authorities' philosophy of *decisions from the top down*, which generated mistrust of higher authorities among local people and contradicted democratic ideals. Stakeholders felt this lack of trust and

local autonomy stifled commercial development. In place of onerous rules established elsewhere, they saw the significance of a more environmentally based agriculture to preserve the special natural resource and ecological qualities of the island. They were engaged in developing agricultural tourism tailored to a public wanting to live and work on an actual farm.

University specialists returned to their departments and decided to craft a project proposal. We narrowed the topic to "alternative rural residences" and concentrated on the following areas (from Lunde 1999) that were derived from the conversations with local stakeholders:

- Rural residential planning that reflects the local building tradition;
- Waste management and recycling programs;
- Site planning and community planning; and
- Investigation of residential and living preferences.

Our aim was to organize the program for researchers from different fields to establish cooperation and establish close working relationships with key stakeholders in Varaldsøy. We recommended doing this as a case study, in order to not base the work on an already defined model from the university. An exploratory approach allowed local conditions to shape specific goals, activities, and cooperation.

5.1 Case Results

The process within the university began with distribution of a general development proposal This proposal was sent to three institutes at the university. Two were positive to continue working on these ideas while the third was negative. The head of the latter institute warned about too much "consultant work" and "normative understandings, "the need for more "precise ways of looking at the problem," and a need for "systematic research". It was difficult to understand how the proposal was a departure from the normal research directions of the university, and scarcely possible to clearly define the problem at hand. This reaction from within the university was to become a major constraint to success of the project.

From clients on the island of Varaldsøy, the role of the university researchers was perceived as a top-down communication from professors at NLH to people in the community. This did not promote participation in planning or local ownership of the process and the project. In one exception, there was a student class where two researchers at NLH with their 20 students established a development plan based on interviews with people on the island (Edvardsen 1999), and two other professors helped develop a prototype for a special traditional horse cart, that was useful to small manufacturers which failed due to insufficient financing. These participatory planning exercises and concrete activities were the successes of the project. However, the project stalled because of an inability of the university to adapt their interests and methods to realities and needs of the community.

5.2 Reflections on Multiperspectives

This account illustrates the differences in perspectives that are revealed when working in a rural and commercial development context, and when research specialists attempt to fit the problems into an already established framework for solving them. In the field, the problems appear multi-faceted, different people

recognize unique research questions to be addressed, and every participant is a source of new ideas. On Varaldsøy, there was obvious concern about the vast richness of resources on the island and the possibilities for a multi-functional agricultural development. Local residents and leaders wanted external support, including research and advice from NLH, to have a firm grip on innovation and revitalization of the island.

There is no precise and absolute definition of any one sustainable development concept (Pretty 1995). A *multiperspective* approach is essential, and all participants need to be willing to adjust their understanding of what is sustainable through continuous learning (Ljung 2001).

Four subtopics addressed in the report about alternative residences proved to be fruitful. At the same time, it became clear that we were dealing with four distinct topics that could not be addressed through application of a stringent model of professional integration. It was apparent that it would take an interdisciplinary team with parallel subgroups working in the same geographic areas and a process to develop professional integration. Experience shows that an *interdisciplinary approach* (OECD 1972) must be more than just a collection of people and a cliché of words if the approach is to have any value.

Challenges in a place like Varaldsøy are not easily resolved by changing a property boundary, testing a new building construction, or similar single element of innovation. Since what is important is the interplay between nature, technology and people, it is essential that researchers also have insight into the unique local culture and how people arrive at decisions. One needs to apply a *holistic approach*, something Stonehouse (2003, 40) describes as the following:

> Sustainability necessarily deals with a complex blend of issues from the hard sciences (biological and medical), semi-hard sciences (environmental and ecological) and the soft sciences (economic, sociological, political and animal welfare). The case-study approach allows for differences as it progresses toward compromise solutions. It is holistic and integrative in concept and scope. It permits more than one right answer.

The holistic, interdisciplinary approach which Varaldsøy requires reveals the paucity of necessary tools within the conventional agricultural research universities. Experiences with the BNU-program are not unique as there are other examples of interactive experiences between local commercial interests and R&D-institutions generating mixed results and limited impacts (Gammelsæter and Bjarnar 2000). Schön (1983) uses the term “technical rationality” to describe the gap between research and reality that relies on the positivistic technological research approach. He maintains that convergent knowledge, which is not in harmony with a divergent reality, is a highly restricted or even amputated knowledge. The Varaldsøy-case seems to confirm this opinion.

5.3 Conclusions

We think many of the economic and social challenges encountered in Varaldsøy characterize other districts with similar climatic conditions and topography in western Norway. When incomes from agriculture fall and populations of domestic grazing animals decrease, overgrown fields quickly become forest. Yet specific changes in demographics and employment proved not to be the major challenges to

cooperation toward development. Descriptions of the challenges to revitalization and potential solutions were achieved, but attempts at effective collaboration broke down due to the structure and orientation of the university. Traditional top-down development approaches were apparent and local people felt they had been run over by the establishment. In spite of this, with direction from the BNU, one professor and his students were able to work in the area and developed a resource management plan which the local public planners found valuable. The research milieu at NLH was not prepared for an interactive and interdisciplinary way of working at that time}. Another important resource in Varaldsøy is an entrepreneurial culture and willingness to start up new businesses connected to natural resources and cultural traditions. The BNU-program participated in one of these innovations. The main conclusion from the Varaldsøy case is recognizing the need for a research infrastructure that provides space for local initiative and leadership and long-term follow up strategy for working with rural enterprises.

6.0 Mountain Region Case: Østerdalen Valley Communities in Eastern Norway

Municipalities in Østerdalen valley in northeastern Norway constitute the Mountain Region (*Fjellregionen*). The 24,500 inhabitants in 2000 were 1,500 fewer than in 1980. While employment in agriculture is at least 30% within some municipalities, this primary industry has decreased about 20% in the period between 1987-97. The service sector has increased mainly within public administration during the same period. The economy of the area as a whole was relatively steady and the situation was not characterized by an "atmosphere of crises". Local leaders saw challenges and a need for adjustments in the local economy, to reverse the erosion of the cultural foundation that is important for tourism and other service sector activities.

The Council for the Mountain Region served as a principle mode of entry to work with local groups in each municipality, as well as a good channel for communications linking to county level administrators and financial institutions. During the project period, several meetings were arranged for local politicians, rural developers, researchers from NLH, and other interested groups. One result of these meetings was establishing one-on-one contacts between local stakeholders and university researchers. A rich forum for communication and contacts led to a number of projects that included surveys, experiments, and interviews in the area.

6.1 Case results

Initial research focused on clarifying potentials and challenges in specific product areas, including:

- Resources and ongoing activities connected to new and small-scale food processing in the region were described by Boye (1997). Helgheim and Øverbø (2000) gave an overview with regard to lake fishery, hunting, game rearing, and grazing in outlying areas. Specific recommendations gave a prospectus on which enterprises appeared to have a sustainable production and economic potential for the region.
- One aquaculture researcher was engaged with methods for feeding and rearing of normally wild fish – especially char – in a small-scale fish barn (Lekang *et al*. 2000).

- Two researchers dealing with small livestock and cultural landscape conducted an experiment with Cashmere goats with the purpose of producing kid meat for sale in combination with landscape management (Clemetsen and Eik 2000).
- Two researchers in forestry economics performed a strategic plan process where local resource persons carried out interviews with operators of sawmills, vendors of supplies for building log houses, and carpenters. The survey revealed a need for more specific goal-directed recruitment, training, and network building (Underdal and Lunnan 2000).
- Several producers launched a regional speciality sour milk product (*tettemelk*) based on organic milk. After initial contacts, it became apparent that this activity was not a priority interest for the research organization. Later, the dairy stakeholders did succeed with a project that has recently applied for certification as a product from a protected geographic region (Jervell *et al*. 2004).

Towards the end of the program period, many in BNU began to realize that work could not continue in its fragmented state. In the final phase, the local Council for Mountain Region made their interest clear in a "Pilot program for innovation in agriculture and food processing in the Mountain Region of Norway," and that "with the experience from the BNU-program we hope to have a deeper future cooperation with the agricultural university where we have joined the development projects into a more thorough program" (letter dated 20 June 2000 to NLH). In an assessment of university contributions, the council further stated,

> It is difficult to put researchers' individual interests into effect in a cohesive program for rural development. Fragmented contributions become weak without being able to take into consideration the deeper connections and the complex conditions that exist in the relationship between rural development and commercial development. From the point of view of the Mountain Region, we believe, therefore, that BNU should to a greater extent put individual professional interest in a more comprehensive context whereby a research program is directly linked to a development program for an area.

In similar fashion, NLH declared that, "In the upcoming strategic planning period, the university will have as a priority to develop interdisciplinary cooperation as unique quality about our university" and there shall "be established organizational structures and systems for resource allocations that are adaptable to interdisciplinary forms of cooperation and programs" (Agricultural University of Norway 1998, 4).

These perspectives and written commitments provided a good starting point for a new phase of the project in which both partners now realized the need to address the issue in a deeper, more determined way. As many were expecting a new, positive resolution from the university's board of directors, to their surprise came the following announcement: The BNU-program was to be permanently discontinued.

6.2 Single-loop and double-loop learning

There are many lessons to be learned from the Mountain Region case study. It is a story of identifying critical needs at the local community and regional levels, and mobilizing key stakeholders to gather the resources and implement innovative projects with strong local support. It is also a story of changing priorities in a research organisation, and lack of long-term commitment to ideas that require more than short-term attention. This is the reality of development, and provides an example of the complexity of getting all the players onto the stage at the same time and seeing a project through to the final curtain. Fortunately, there are examples of theory in the literature that help to describe the situation, and building on these principles can lead to understanding of how institutional change is possible.

The change in focus from traditional individual agricultural practices to a broader agenda of rural development and growth for small and medium-sized local businesses represents a substantial new orientation. Argyris and Schön (1996) point out that such change in process very often cause difficulties because the established partners have a tendency to want to keep the status quo. The author's use the term "*single-loop learning*" to describe situations where one partner initiates a series of changes to better a situation that is currently considered non-optimal. In reality this means an adjustment of profile or image in the activity, for example, a flexibility to adjust activities to what is perceived as currently politically correct. This will usually not have any deep or disruptive effect on guiding values and on-going activities. In the event that organizational flexibility and change are essential, then Argyris and Schön (1996) feel that double-loop learning is required, i.e. that people and organizations are open-minded towards new, often strange, ideas and that they are willing to orient central parts of the business or the organization towards new goals and values. An example is shown in Figure 1.

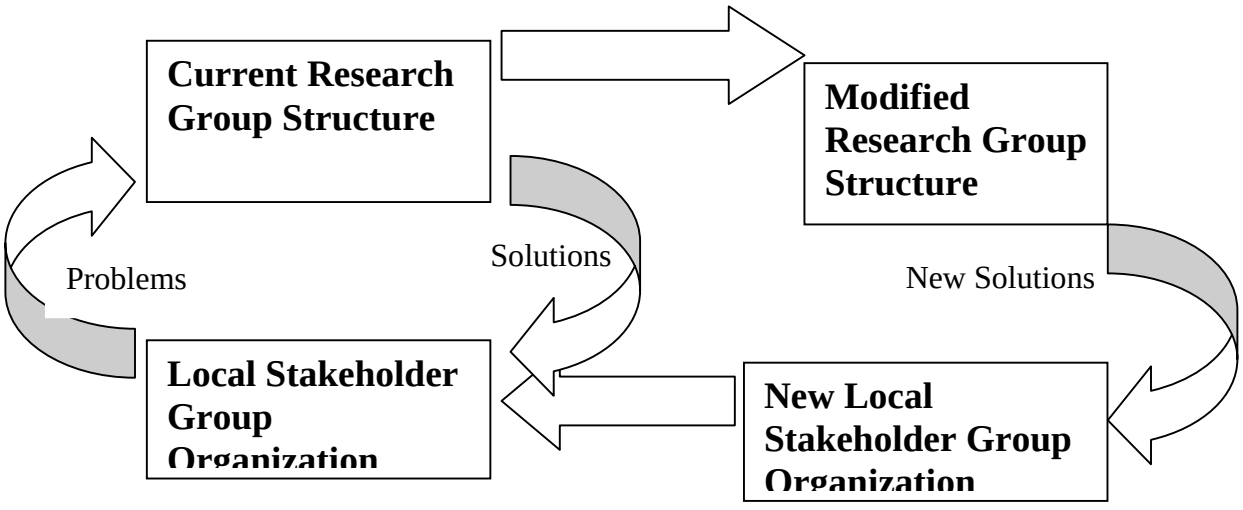

Figure 1. Single loop learning or communication cycle; double loop learning or communication cycle between modified research group and new stakeholder organization.

The left hand side of Figure 1 shows an interaction between local stakeholders and a research group, where the questions are simple and the answers straight-forward. Neither the questions nor the solutions require any major change in organization or thinking in either group, or in the process to foster development. When the situation is more complex, another level of thinking and organization may be required. If the phrasing of questions requires a high level of cooperation among different stakeholder groups, for example, then a new decision making process may be required. Likewise, if complex questions cannot be easily solved by a research organization that is conventionally organized into departments and disciplines, it may require closely functioning interdisciplinary teams to find solutions. Such activity requires a cycle through the right side of the figure. Yet we recognize that ideas, solutions, and applications will often need to flow through the same organizations that were initially challenged with the questions – thus the arrows cycle back to the local people and to the original research group as well.

In the literature there has been much written about *learning organizations* (Argyris and Schön 1996; Senge 1990). The request from the Mountain Region for closer collaboration with the research organization indicated openness for new initiatives and potential to accept new knowledge in a way not previously seen in Norwegian agricultural districts. From the point of view of the local stakeholder group, the potential for double-loop learning, even *regional learning*, was apparent.

6.3 Conclusions

The political scope across municipalities within the Mountain Region released a desire for a thorough grasp of what was needed for revitalization of the primary industry in the region. Especially the local stakeholders wished to link indigenous experiences with professional knowledge from the university campus. There were contacts established and cooperation initiated between local innovators and researchers from NLH. There was also progress in clarifying potentials of the region and exploring new modes of cooperation. However, more was learned about the challenges and processes of setting up regional innovation linked to the research organization than actual progress made in the field.

To catalyse a more comprehensive activity at the community and regional levels, it is important to view the results of this case in several ways.

- When the purpose is to generate innovation systems in rural areas it is important that responsible regional politicians involve themselves as supporters and new thinkers. The Mountain Region politicians must direct themselves in order to feel ownership of the project. When meeting and cooperating with discipline-oriented universities such as NLH, we think this region has a need for more internal communication in advance for clarifying its own goals and strategies.

- Researchers are a vital component of the process. Their individual capacities and contributions can be useful, but when faced with complex challenges such as those in rural development this characteristic of researchers and the support of their organizations may be a seriously limitation. In the Mountain Region case we were able to link researchers with specific projects partly two by two. However, researchers who involve themselves in processes where the goal is to improve the situation in a whole community must be conscious of the need for interdisciplinary teams as a desirable working method. In implementing activities, such teams must establish balanced cooperation with the all

stakeholders so that experiences and knowledge are brought in from *both* sides.

- It is positive when the leadership within a university recognises the limitations of the current institutional infrastructure with regard to contributing to regional innovation processes, as clearly shown in this case. However, the lack of willingness to follow up on the initiative from the Mountain Region may indicate a need for deeper scrutiny of basic questions about the role of the universities in research. If regional and location-specific innovation is the purpose of development research, to what degree are technology, human recourses, and social arrangements interdependent? We propose that an organization should foster useful working relationships with clients in the country in an environment of respect and cooperation among equals.

7.0 Overall Conclusions

This series of projects carried out by the BNU-project over several years in three regions of Norway has been analysed as three case studies that illustrate the complexity and shortcomings of institution-driven rural development as well as the need for location-specific solutions and close involvement of local stakeholders. At the outset, we posed three research questions, and here we summarize what was learned in each area.

1. How should one establish cooperation among involved participants?

There is no single or simple answer to how communication is established with stakeholder groups, yet from these three cases we confirm what is known in rural development. There is no substitute for personal contacts, individual conversations, and building trust among the players: local groups, research organization, and project personnel. Meetings with stakeholders, building personal relationships, and clear communication within an environment of mutual respect are all essential. Although the focus is agriculture and natural resources, and many of the specialists from the government and from the university have this as their focus of interest, it becomes clear very soon in a community or region that there are many economic, social, and environmental factors that interact in determining the potentials as well as the constraints to development. The reality often does not fit the theory as developed in the university. These potentials for development and local constraints are best understood by a multi-organizational team that keeps the best interests of the community above their own personal needs and those of their respective organizations.

2. How should one design professional advice that is relevant to rural complexity?

The unique challenges and potentials of each of these three areas were obvious. In Steigen, people were preoccupied with new employment possibilities. On the island of Varaldsøy, the focus was primarily on the area's residential qualities. In the Mountain Region people saw many new possibilities of developing strong, regional institutional arrangements in order to catalyse development. Project personnel in Rural and Commercial Development (BNU) recognized that rural change is a many-faceted challenge. Each of the three cases showed the difficulties in relying on simple questions and single solutions, and it was apparent that many of the players both in the community and especially in the university were accustomed to looking at development in a rather simplistic way. The potentials

for double loop learning by everyone involved need to be explored as a basis for effective visioning and change.

3. How does one use what has been learned as part of the project, and what commonalities emerge from the three case studies?

One key lesson is that it takes time to allow for building trust among people and organizations, and to create an environment that encourages greater integration between knowledge and reality. It is apparent that there is a large gap between knowledge and taking action (Lieblein *et al*. 2000). Communities are oriented toward action, and there is need for highly visible and effective change as quickly as possible. This is usually not realistic, and the process of evaluating potentials and constraints and visioning new future desirable scenarios brings home the message that change will often be slow and takes a long-term commitment. Universities are dedicated to teaching and to generating knowledge through research, and most faculty members are not necessarily oriented toward action. The three cases illustrate in different ways that the knowledge and solutions available in single departments or from individual researchers may often not be the ones needed in a particular situation. A high level of communication, an atmosphere of mutual respect, and a realistic appraisal of what is possible within all organizations involved are essential. In conclusion, it was learned that the road to knowledge *about* BNU or any other program dedicated to development, will require experience from action *in* BNU.

8.0 References

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