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# **The Next Generation of National R&D Programmes in Norway: Consequences for Action Research and Regional Development**

Jarle Moss Hildrum, Henrik Dons Finsrud,  
Pål Klethagen

This paper examines the impact of a new national R&D programme in Norway, Programme for Regional Innovation and R&D (VRI), which uses action research (AR) to facilitate innovation-oriented collaboration between regional industry, R&D and public institutions. While the VRI programme builds on a sequence of previous AR-oriented regional development programmes, it represents a significant novelty as it democratizes control over research funds from central authorities to regional coalitions of private and public decision makers. Drawing on our own experiences from a long-standing AR project in the Telemark region, we discuss how the commencement of the VRI programme is affecting ongoing development initiatives there and the conditions for conducting AR in regional contexts. We conclude that VRI has led to a situation in which more regional actors are involved in action research activities, and in which there is closer collaboration between researchers and regional decision makers. At the same time, we suggest, there is a risk that the new programme will lead to regional lock-in, and marginalization of national R&D institutions and action research competencies accumulated there during previous R&D programmes.

**Key words:** Large scale action research, regionalization, national programme, Scandinavian model, social partners

## 1. Introduction

The conditions for doing large scale action research in Norway are currently being influenced by decentralization of R&D resources to the regional level. This corresponds with a widespread belief among academics and governments that regionally based collaborations among public organizations, private industry and R&D are crucial for innovation and value creation (Porter/Sölvell 1998; Asheim/Isaksen 2002; Fricke/Totterdill 2004; Asheim/Gertler 2005). Many also endorse the argument that, in order to successfully develop such collaborative relations, regional actors should be given both resources and autonomy to carry out their own local development activities (Ennals/Gustavsen 1999; Amin 2004). For instance, drawing on a study of regional development policy in Sweden and the USA, Goldfarb/Henrekson (2003) show that regionalization of R&D resources is associated with enhanced collaboration between universities and industry, including significant involvement of new firms. The idea is that decentralization will induce closer collaboration between R&D and local work life, and thereby increase the relevance and quality of the research undertaken regionally. This resonates with a fundamental principle in action research of bringing influence over change processes closer to the people who stand to be affected by these (Lewin 1946; Reason/Bradbury 2001; Park 2001; Streck et al. 2005; Streck 2006). Indeed, as Lewin (1946) has argued; if people are active in decisions affecting them, they are more likely to adopt new and better ways.

These perspectives also reflect current policy trends in Norway, where the authors of this paper are conducting their research. Many policy makers now militate against standardised, top-down regional development policies, campaigning instead for a bottom-up approach where one seeks to differentiate and customise development activities to regional needs. For instance, according to the last inaugural declaration of the government, there is a need to stimulate growth in the regions through greater and more locally adapted investments in R&D and innovation (Office of the Norwegian Prime Minister 2005). Similarly, as stated in a government white paper; decentralization of R&D resources can make regional development processes more efficient and locally relevant, both in the sense that more local actors get mobilized in

R&D, and in the sense that decisions about R&D activities get taken closer to those who stand to be affected by these (Norwegian Ministry of Local Government and Regional Development 2004).

An important Norwegian policy initiative addressing this issue is the recent launch of the Programme for Regional Innovation and R&D (VRI), which aims to promote regional economic development through enhanced collaboration among public authorities, private industry and R&D institutions. As an experimental 10 years' programme, VRI is currently the only public programme sponsoring action research in Norway. Currently it organizes development activities in all of the country's 19 counties. While VRI builds on a sequence of previous national AR programmes (e.g. Gustavsen 2008), it represents a significant novelty in the Norwegian context as it transfers control over R&D funds from central authorities to regional coalitions of private and public decision makers.<sup>1</sup> This change has two important implications: The first is that the responsibility for designing and sanctioning research strategies no longer rests primarily within the realm of social science, but is moved out to regionally based coalitions of field actors. The second implication is that decisions regarding the allocation of funding to research organizations are no longer taken by experts in a centralized bureaucracy (the National Research Council), but are now subject to negotiations among regionally based coalitions of politicians, public officials, corporate representatives and researchers.

Drawing on our own recent experiences from a long-standing AR project in the region of Telemark, we seek to examine and discuss these implications further. More specifically, we inquire into whether and how the commencement of the VRI programme has affected the nature of collaboration between researchers and local decision makers in this region. In relation to this, we discuss whether the VRI programme is leading towards a more genuine AR situation in which researchers collaborate on equal terms with field actors,

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<sup>1</sup> More specifically, in the previous AR programmes, the National Research Council (NRC) allocated funding directly to R&D organizations that competed on a national level. In the new VRI programme, the NRC transfers funding to regional coalitions of private and public decision makers that subsequently redistribute funding to competing R&D institutes.

and thereby create more locally relevant and useful R&D strategies. In the final part of the paper, we discuss some of the challenges associated with this decentralization of R&D funds, emphasizing the vulnerable position of national R&D institutions and the competencies accumulated in those institutions during previous R&D programs. Before we get to these parts, however, it is necessary to briefly describe the background of large-scale AR in Norway and the launch of the VRI programme.

## **2. Norwegian action research and the VRI programme**

According to Martin (2008), the international action research literature does not deal with the specifics of large scale change, with the exception of contributions about regional industrial change in Scandinavia (e.g. Fricke 2008, Gustavsen et al. 2008; Qvale 2008). Hence, Norway seems to be one of the learning arenas for large scale AR projects. This is foremost due to its long tradition of national AR-programmes providing the necessary funding, and not least a strong tradition of collaboration between trade unions and employers at national and enterprise levels. Adding government to the collaboration, we get a tripartite collaborative structure, instrumental in developing a level of industrial democracy over the last four decades. Varieties of this collaborative tradition are shared across the Scandinavian countries, and hence it is referred to as the “Scandinavian model” (e.g. Gustavsen 2007; Gustavsen et al. 2010).<sup>2</sup>

The tradition of large-scale AR in Norwegian working life started with the Industrial Democracy Programme in the 1960s (Emery/Thorsrud 1976). The programme was initially based on a bipartite agreement between the national confederation of employers’ association (NHO), the main labour union (LO). Later, the government joined the collaboration. This collaborative construct on the national level has constituted the backbone of the series of national work life programmes to follow in Norway. Due to its novelty, the Industrial Democracy Programme has become a reference point in the action research

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<sup>2</sup> A closer look at the Scandinavian countries reveals that the “model” varies significantly from country to country. For a comparison and extended discussion, see publications from the EU-project Translearn (<http://project.hkkk.fi/translearn>).

literature ever since (Whyte et al. 1991, Qvale 2002; Gustavsen 2008; Greenwood/Levin 2008). Indeed, this pioneering programme paved the way for a number of large scale experiments at enterprise level with democratization as the point of departure. The experiments focused on the joint aims of improving working conditions, increasing the level of autonomy and securing productivity. The efforts at enterprise level turned out to be successful as isolated experiments. However, diffusion from the successful projects did not take place as anticipated (Gustavsen 2003). With ambitions on a societal scale, the lack of diffusion has spurred an ongoing quest for developing AR-approaches that seek to overcome the challenge of diffusion and achieve impact beyond the single enterprise, i.e. on a large scale. Over the last three decades, the approaches have gradually evolved to include network constructs, coalition building and, lately, the regional dimension in order to facilitate learning processes that mediate between the individual enterprise and the larger system (Gustavsen 2007).<sup>3</sup>

During the last 15 years, two consecutive public R&D programmes have provided long-term funding and legitimacy to Norwegian action research. The first programme, Enterprise Development 2000 (ED2000), lasted from 1995 until 2001 and focused on participative development processes within single enterprises, and on linking these enterprises into learning networks (Gustavsen et al. 2001). In 2001, the ED2000 programme was replaced by the larger programme Value Creation 2010 (VC2010), which focused on democratic development processes on the levels of enterprise, the enterprise network and the regional development coalition. The logic underlying these programmes was to carry out enterprise and network development projects as a way to promote innovative capacity and growth at the regional level. In both programmes, the social partners (LO and NHO) played key roles. In addition to designing and funding the programmes on the national level, the social partners also contributed to the carrying out of programme activities on the regional branch office level. Under the governance of these programmes, action researchers carried out workplace reform projects within most of

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<sup>3</sup> For an extensive overview over the Norwegian work life programmes (see Qvale 2002; Gustavsen 2008).

Norway's counties. While the ED2000 involved close to 100 enterprises, the VC2010 influenced more than 350 enterprises in 35 networks.

In the ED 2000 and VC2010 programmes, the allocation of funding to R&D organizations was based on the principle of national competition. To acquire programme funding, R&D organizations had to apply for funding directly from a national bureaucracy, the National Research Council (NRC), in which a panel of experts judged the applications based on a) the quality of the project proposal, b) the established collaboration with enterprises and networks, and c) the applicants' documented research competencies, in which action research competency was particularly relevant, but not a prerequisite. Regionally-based and national R&D organizations were equally eligible for applying and acquiring funding from the programs. Consequently, a mix of eight regional and four national R&D organisations emerged during VC2010, each "covering" a part of Norway. The focus of the various projects had to reflect actual relationships to enterprises and networks, whereas the design of the projects, their goals, research questions and research methodology were the sole responsibility of the R&D-institutions.

Taken together, the ED2000 and VC2010 programmes have had a number of important implications for regional development and the practice of AR. First, during the course of the programmes, a wide variety of long-standing enterprise- and network development projects were set in motion in most parts of the country. These projects, in turn, have carried with them a number of positive effects for the regions; such as productivity improvement and improved job security in existing firms, the creation of new firms, new regional infrastructure for industrial activity and broad-based dialogue forums focusing on regional economic and societal development (for a description of some of these results, see Hanssen-Bauer/Snow 1996; Qvale 2008). Second, by providing long-term funding for action research, the programmes have facilitated the accumulation of a specific set of AR competencies in several Norwegian R&D organizations. Third, the programmes have facilitated the forging of close collaborative relationships between these R&D institutions and regional labour market organizations, thereby preparing the ground for future AR-based regional development initiatives. However, in 2007 the launch of the new VRI programme disrupted some of the continuity

associated with these previous programmes. This is the topic to which we turn next.

### 3. The VRI program

The VRI programme was launched in February 2007 as a joint venture between the social partners, Innovation Norway, the Ministry for Regional Development and the Ministry of Commerce. The programme differs from the preceding VC2010 programme, in the sense that it employs a different logic to facilitate regional development, and in the sense that it is considerably larger. While VC2010 had a total yearly budget of 4 million Euros, the VRI budget is 17 million Euros.<sup>4</sup> As pointed out above, the main logic underlying VC2010 was to use enterprise development projects as a way to facilitate growth on the regional level. The VRI programme by contrast, focuses mainly on facilitating collaboration on the aggregate level of industry networks, clusters, regional R&D and the public sector. More specifically, the VRI programme was created through a merger of three existing regional development programmes; the *VC2010 programme*, the *Competence Broker Programme* and the *University College Development Programme*. While these three programmes shared the objective of facilitating innovation and growth on the regional level, they employed different methods and hired different organizations to achieve this objective. As we explained above, VC2010 was an action-oriented research programme. The other two programmes, by contrast, did not involve a research component but focused instead on developing industry-relevant education, personnel exchange arrangements and hiring technically skilled consultants mediate contact between firms and local R&D organizations. By fusing the programmes, the National Research Council hopes to achieve closer collaboration between R&D organizations and better integration of development activities at the regional level. An important consequence of this fusion is that the VRI

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<sup>4</sup> Out of this total budget, the Norwegian Research Council contributes 50% the local county administrations 25% and the participating firms 25%.

programme now incorporates a considerably greater variety of research methods and development activities than the previous VC2010 programme.

A key objective of the VRI programme is to experiment with new forms of R&D governance at the regional level, and mobilize more regional actors to participate in local R&D. To achieve this, the National Research Council (NRC) introduced a new mechanism for allocating funding to R&D organizations. Instead of continuing the previous practice of transferring money directly to R&D organizations that competed on a national level, the new programme grants funding to regional coalitions of private and public decision makers that subsequently redistributes funding to research organizations.<sup>5</sup> This means that the final decision regarding which R&D organizations should receive VRI funding is taken locally within the development coalitions. It is important to note that each region has to submit a formal application to the NRC describing the regional development strategy, the projects, and a detailed project budget. In the application, there should be several development projects, and at least one research project. If the NRC considers the application inadequate, it has the right to reject it and hold back funding. This, of course, means that the VRI programme does not entail a complete regionalization of R&D funding, but a hybrid solution in which the NRC retains a device with which to control regional R&D. Nevertheless, the new mechanism for allocating funding has some important implications: In contrast to the NRC which distributes funding on the basis of the quality of the application and the applicants' relevant experience and competence, the regional development coalitions are policy oriented organizations that are liable to emphasise other criteria, such as the preservation of jobs in local R&D institutes and the build-up of local R&D competence.<sup>6</sup> This poses some challenges to national R&D organizations. Since these organizations have no

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<sup>5</sup> By regional development coalition, we are referring here to a constellation of key decision makers within Norwegian counties, including representatives from employers associations, unions, regional political authorities and regional R&D organizations.

<sup>6</sup> Moreover, while the NRC holds specialized knowledge about action-oriented social research and is thus able to distinguish between the competences of different applicant organizations, the regional development coalitions are not specialised in research evaluation and are not equally capable of making such distinctions.

specific regional affiliation or local job-creation potential, they risk being marginalised for political reasons. We return to this theme later.

In addition to introducing the new mechanisms for allocating research funds, the NRC pronounced a set of formal requirements regarding the composition of the VRI development coalitions, or steering groups, as they were called. To be judged as 'regionally representative', and thus eligible for VRI funding, these groups should as a minimum involve the county administration, the social partners, Innovation Norway<sup>7</sup> and the participating R&D organizations. However, the NRC explicitly encouraged the regions to convene together broader groups (involving, for instance, regional business development agencies) to secure adequate regional representation in forming the regional VRI-strategies. Since a key purpose of the programme was to build action-oriented research competencies at the regional level, the NRC strongly encouraged regional universities, university colleges and local R&D organizations to participate in the programme as suppliers of research. Shortly after the NRC announced the launch of the VRI programme, 15 regional development coalitions were established, covering all of Norway's 19 counties. By 2008 each of these regional development coalitions had launched its own regional VRI project.

On a general level, we might conclude here that the NRC has reached its objective of mobilizing more regional actors to participate in R&D. Many of the regional coalitions owe their existence to the new programme. In addition, the VRI programme involves a significantly larger number of R&D institutions than the preceding AR programmes, the vast majority being regional. While 4 out of 12 R&D organizations were national ones in the VC2010 programme, only 2 out of more than 40 are national R&D institutions in the VRI programme. However, these numbers say nothing about the ways in which the programme has affected regional development activities and the practice of AR in Norwegian regions. To explore this topic further, we will look more closely at the impact of VRI in one specific region, the Telemark region, where we are presently carrying out AR activities.

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<sup>7</sup> Innovation Norway is the national development agency, and has offices in each region.

#### **4. The Telemark project**

This section presents experiences from a large-scale action research project in the region of Telemark, with its centre located about 160 km southwest of Oslo. Telemark encompasses the largest concentration of chemical process industry in Scandinavia and a number of fast-growing industries such as environmental technology, electronics, biotechnology and information technology. The region also holds a small R&D sector, including a technically oriented University College and four independent R&D institutes. The purpose of the AR project, in which the authors of this paper are currently working, is to promote innovation and growth in this region through improved collaboration on the levels of the enterprise, enterprise network and regional development coalition. The project was initiated in 2001 under the auspices of the VC2010 programme, and continued under the patronage of the new VRI programme from 2007 and onwards<sup>8</sup>.

##### ***4.1 Project background: the VC2010 programme***

The Telemark project was launched as a joint undertaking by the Work Research Institute (WRI) and the Telemark branches of LO and NHO. WRI's initial research strategy was to a) contribute to establishing a regional coalition of private and public decision makers, b) give AR-based methodological support to this coalition and its associated development projects and c) help building up action research competence and capacity at the regional University College in order to avoid a situation in which local development processes become too dependent upon the presence of external action researchers (Qvale 2008).

From the outset, WRI sought to target the research effort on the largest and most influential firms in the region, i.e. a number of plants in the process industry. These plants represent one of the strongholds of the Scandinavian model of industrial relations ranging back to the Industrial Democracy Program in the 1960s. Previous to the VC2010 programme, the Work Research Institute had worked on participative development projects within several of

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<sup>8</sup> See Qvale (2008) for an extended account of the Telemark project.

these firms, each pursuing team based work organizations. To facilitate learning and sharing of experiences, the Work Research Institute had early on brought these firms into a national network of process industry. Our long term involvement with *intra-firm* development is an important background for the turn to regional *inter-firm* development from the outset of the VC2010 programme. Qvale (2008) has explained thoroughly how the crisis around the year 2000 led the process industry in Grenland to pursue competitiveness, not only through internal improvements, but also through collaboration across firms. In this case, the participatory approach was brought to the network level by forming the Industry Cluster Grenland, in which union members and management participate on equal footing.

With less than a man year of research funding as the resource base for addressing regional industrial development, a very deliberate and focused strategy was warranted. Our strategy to focus on the largest industrial group was based on the assessment that this group, the Industry Cluster Grenland (ICG)<sup>9</sup>, would create a collaboration platform with sufficient impact and legitimacy to improve their own competitiveness, influence infrastructure development, involve other regional actors in regional dialogues, and eventually spread the development activities to other industries and firms. In addition, the Industry Cluster Grenland was at the time the prime national example of bringing the Scandinavian model to the firm network level.

A series of concrete development projects centred on the seven ICG firms were launched during 2002 and the following years. The projects aimed at achieving better utilization of resources across the firms by pooling together industrial maintenance and support services into shared companies and improving the industrial support infrastructure surrounding the firms. These activities, in turn, have carried with them several valuable outcomes such as successful start-up firms, considerable cost-cutting, as well as initiatives for developing industrial infrastructure in the region (for a more thorough description of these results, see Qvale 2008; and comments by Fricke 2008).

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<sup>9</sup> The Industry Cluster Grenland may not be a cluster in a Porter sense of the concept, but rather a network of firms. In this article, we are not making explicit distinctions between networks and clusters, but use the terms interchangeably as they are done by practitioners in the research field.

During these years, the researchers worked closely with the steering committee, the smaller executive committee and the network secretary. Hence, the role and function of the researchers was a direct response to the ongoing dialogues and development dynamics of the key network members.

One of the ideas behind focusing our limited research capacity on the ICG network was to utilize ICG as a platform for an extended regional dialogue on development issues. A central contribution from the researchers was to help conceptualize, design and lead a sequence of yearly dialogue conferences involving a broad group of employees, managers, politicians, public officials and researchers. These conferences, which the ICG firms have organised on a yearly basis since 2002, focus on developing different aspects of the regional environment, such as regional communications and transportations infrastructure, education and research and support infrastructure for industrial manufacturing. These conferences have, over the years, become an important arena for broad-based dialogues about regional development in Telemark.

To organize a more regular arena for dialogues on industrial development, the researchers from WRI helped to convene a regional development coalition responsible for supervising and supporting the VC2010 activities, as well as monitoring and supporting several other industrial development efforts in the region. Not least, the coalition served as a mechanism for exchange of experience, formulation of new ideas and launching of new joint initiatives. The coalition eventually consisted of representatives from the social partners, the county administration, the regional University College, Innovation Norway (a national industrial development agency), the Work Research Institute and a local business development agency focusing on the Grenland area of southern Telemark. In addition, representatives from LO and NHO at national level took part in the coalition. The regional directors of NHO and LO alternated in the leadership role of the development coalition.

It is important to note here that the role of the development coalition vis-à-vis the researchers was primarily advisory, once the ICG-network was chosen as the focus of the project. The steering impulses during the project came directly from the steering committee of the ICG, i.e. from union representatives and managers. Notably, the researchers got strong support for their

strategy from the start and throughout the project, most likely because it was developed and continuously refined in close collaboration with the field representatives themselves. While the members of both the ICG steering group and the development coalition took an active role in commenting on and implementing the research strategy, the main responsibility for the research activities lay with the Work Research Institute and the researchers there. This also reflects the actual funding regime, where the contractual relationship, the funding, the formal reporting and control mechanisms were handled by the Norwegian Research Council. The active support from the ICG network and from the development coalition was crucial in establishing the VC2010-project in Telemark, but in conceptualizing and writing up the project proposal to the Norwegian Research Council, the researchers had considerable freedom in order to be able to comply with the formal requirements put forward by the council.

Taken together, the VC2010 project in Telemark has been quite successful, in the sense that it a) established a well-functioning institutional structure for regional development, b) repeatedly created a regional arena for dialogue, and c) contributed to several development activities beneficial to the firms in Industry Cluster Grenland. However, the VC2010 project had not been able to enrol the regional University College and local R&D organizations as active contributors to organizational or network development activities. Despite continued efforts by many actors, both the University College and the other R&D organizations actively declined to participate in these types of activities. The commencement of the VRI programme changed this situation, and also disrupted the continuity created through the VC2010 programme.

#### ***4.2 Impact of the VRI programme on Telemark's regional development coalition***

The establishment of the VRI programme in Telemark affected the composition, leadership and function of the institutional structure set up during the VC2010 programme. Soon after the new programme was announced in early 2007, the VC2010 development coalition was dissolved. Since the Norwegian Research Council (NRC) strongly encouraged regional R&D organiza-

tions to participate in the VRI programme and receive funding, and encouraged the county administration to take the leadership role, the established structure was immediately challenged from political and institutional level. In the VC2010 development coalition the Work Research Institute, a national institute, was the only research supplier, and the activities were by external actors regarded as too focused on traditional industry in the Grenland area. Rather than developing the development coalition in response to new conditions, it was disbanded in order to comply with VRI-regulations put forward by the Norwegian Research Council. In certain respects, this has proved to be a setback for the coalition level in Telemark, but it has also opened up for new possibilities that yet have to be realized.

In order to design the VRI-initiative for Telemark, a new project group was formed involving participants from the Work Research Institute, the Regional University College and two regional R&D organizations (Tel-Tek and Telemark Research). While VC2010 focused strongly on AR, the new group was more heterogeneous involving a large number of different academic specializations, research traditions, methodologies and objectives. In its newly-won capacity as regional VRI coordinator, the county administration took the initiative to establish a new development coalition for the VRI programme. Since the county administration had a political obligation to involve all major industries and geographical parts of Telemark in its regional development projects, it convened a much broader group than the VC2010 coalition. This new group encompassed representatives from the social partners, the county administration, the county governor, Innovation Norway, the Work Research Institute, the regional University College, three regional R&D organizations, and seven municipal business development agencies. While the previous coalition group involved 8 different organizations, the new group included 17 organizations.

**Table 1: Telemark's development coalition in the VC2010 and VRI programmes**

	VC2010	VRI
<b>Coalition representation</b>	Partial regional representation (Grenland area)	Broad-based regional representation (all parts of Telemark)
<b>Coalition leadership</b>	Social partners	County administration
<b>Coalition function vis-à-vis researchers</b>	Mainly advisory	Responsible for R&D design and implementation
<b>Number of participants</b>	8	17

#### ***4.3 The impact of the VRI programme on regional research collaboration***

As explained above, the commencement of the VRI programme carried with it significant changes in the composition, leadership and function of the institutional structure set up during the VC2010 programme. These changes, in turn, have affected regional collaboration along two dimensions: The first dimension concerns the R&D organizations responsible for carrying out VRI development activities. The new group consists of WRI and three Telemark-based R&D organizations with a wide variety of methodological orientations. From shortly after the VRI programme was launched in February 2007, the group met on a weekly basis collaborating on preparing an application to the VRI programme. During the first meetings, there were intense negotiations and repeated conflicts about which projects the new programme should encompass, which methods should be used to carry out the project and how funding should be distributed across different projects. While the participants from WRI campaigned for the use of AR methods and enterprise development projects, the participants from the regional R&D organizations promoted instead the use of personnel interchange programmes and technical

consultants to improve collaboration between industry and R&D. After some months of intense negotiation, however, the group began to reach an agreement on these themes and gradually developed a joint R&D strategy and project portfolio. In relation to this strategy the group members planned several research partnerships involving the combination of different approaches. Most importantly, this emerging collaboration represents an important asset for the R&D sector in Telemark. Previous to the VRI programme there was very little collaboration between the local R&D organizations, but at present there is increasing contact and co-ordination of activities.

The second dimension of regional collaboration is the relationship between the researchers (in the project group) and the members of the regional development coalition. In the phase leading up to the deadline for submitting the application, the project group and the coalition group met frequently for full-day project meetings. In these meetings, the researchers presented outlines of project strategies and applications, while the members of the development coalition made decisions about which projects to pursue, reject or revise. As mentioned above, this kind of close researcher / field-actor collaboration already took place within the VC2010 programme. However, the VRI collaboration differs from this previous collaboration in several respects. During the VC2010 programme, the VRI researchers had the autonomy to prepare a complete R&D strategy, and later present it for approval in the regional development coalition. In the VRI programme, the VRI researchers did not have this autonomy but instead had to develop the R&D strategy in close collaboration with their regional R&D partners and the regional development coalition. Adding to this, the present development coalition involves a much larger and more diverse set of organizations than the ones set up during the VC2010 programme.

While the smaller VC2010 coalition group had a shared ambition to develop networks, clusters and groups of enterprises in order to promote industrial development, the new coalition group has a much more diverse set of preferences and suggestions. In addition to the changes in the membership and leadership of the development coalition, there was also a change in its function vis-à-vis the researchers. While the former VC2010 coalition group took on a mainly advisory function towards the researchers, the new group

controlled the programme funding, and thus exerted more direct control over the researchers' activities.

To be sure, during the first meetings in 2007, the coalition members showed strong interest in the regional VRI programme, probing about the value of carrying out different projects and methods, and giving suggestions for new or revised projects. The researchers responded to this by explaining their methods and their research activities, and by incorporating new project activities in the portfolio. As a consequence of this dialogue process, a total of 19 development projects were collectively designed. This broad project portfolio gives testimony to the involvement of the regional development coalition in the design of the VRI strategy. Indeed, each participant organization had its own pet project that it campaigned for and managed to include in the project application. However, as it happened, the NRC rejected the application on the grounds that it was too wide-spanning, and that the available programme resources would not be sufficient to fund all the projects. As a consequence, the researchers and the development coalition had a new sequence of meetings in the fall of 2007 and early 2008 in which they discussed and negotiated their way to a more focused project portfolio with a total of nine projects. In the summer of 2008, the NRC accepted the application and the Telemark VRI project was launched. In spite of this narrowing down of the project portfolio, it was still considerably larger and more heterogeneous than the VC2010 portfolio (see table 2). While the VC2010 programme had one major project in the process industry situated in three municipalities, the VRI programme had nine projects distributed across 5 different industries in eight municipalities. This foremost reflects the expansion of funding from 83' Euro in VC2010 to 500' Euro in VRI.

Taken together, the main implication of the VRI programme for our AR activities in Telemark concerns the collaboration with field actors and the scale itself. While collaboration between researchers and field actors, a key tenet of AR, is not new to the Work Research Institute, this collaboration has become even closer and more demanding through this regionalization of R&D. A larger number of partly uncoordinated actors that exercise more diverse and stronger steering, coupled with demands to negotiate resource allocation and project collaboration with R&D institutions with other research

**Table 2: Projects in VC2010 and VRI**

	<b>VC2010</b>	<b>VRI</b>
<i>Number of projects</i>	1	9
<i>Target industries</i>	Process industry	Process industry, mechanical industry, ICT industry, electronics, tourism
<i>Municipalities with project activities</i>	2	8
<i>R&amp;D suppliers</i>	WRI	WRI, Telemark University College, Tel-Tek, Telemark Research

traditions, add up to a new level of complexity. In relation to the VRI programme in Telemark, the WRI researchers were compelled to collaborate with regional R&D organizations and (later) a broad development coalition in designing the initial research strategy. This was highly demanding in the sense that they had to negotiate and work hard to get their viewpoints across and get acceptance for their methods. At the same time the process was highly rewarding, meaning that WRI developed a close and trustful relationship with the field actors and developed promising new research partnerships.

#### ***4.4 The VRI programme and action research strategy***

We will now turn to the question of how the VRI programme has influenced our action research strategy in Telemark. The extended scope of the VRI programme, the changing constellation of actors and the new regionalized R&D regime open up new possibilities, and also provide challenges that have to be met. Long term and large scale AR efforts like the Telemark project represent a privileged learning ground in several respects. One central aspect is how to handle the scale when the scale grows. We will return to this immediately. Another aspect is the more generic issue of handling the ever changing conditions for doing research typical to long term efforts. Whatever the initial conditions were, they will inevitably change over time. Hence, the project design and the strategy often have to be reconceptualized and renegotiated in order to move on. In the following we give an account of how our research strategy has developed in order to address not only development in a

region, but gradually a more multidimensional approach to regional development.

*The first element: Bringing the workplace level back in*

Our strategy during the VC2010 programme focussed on network and coalition levels and not the workplace level explicitly. This was based on even earlier work where team based forms of work organizations and a well functioning collaborative relationship between management and employees by and large were established in the leading enterprises within the ICG network. New ownership in several of the firms, both foreign and national, currently challenges the participative management style. As we involve still more enterprise networks, the issue of intra-organizational development processes resurfaces, and shows that the Scandinavian model of industrial democracy at workplace level may be more fragile than anticipated, even in one of the union strongholds of Norway. Our action research strategy (in Telemark) can therefore no longer take the organizational dimension for granted, but has to re-address the workplace level. In our view, this challenge is not limited to the Telemark region, but is becoming a national challenge, not yet recognized. The current national R&D-programme VRI is a chief example hereof. One of the intentions behind VRI was to carry the Scandinavian model further, and build on the industrial democracy tradition of its predecessors Value Creation 2010 and Enterprise Development 2000. At present, it has by and large moved away from the legacy of participatory projects at the enterprise level, and focuses solely on clusters and networks.

Then what should a return to workplace level imply? In a time of global recession, combined with the dominating shareholder value-perspective in industry, our approach has to address issues of competitiveness (and survival) head on. Hence, renewing and strengthening the competitive dimension of participative work organizations seems to be essential.

At the moment, *lean production* seems to represent a fruitful approach, providing it is combined with workers participation into what may be labelled *participative lean production*. The concept of lean production grew out of the Toyota Production System, and was based on extensive workers involvement

(e.g. Womack et al. 1991). Nevertheless, the participative element has a tendency to slip into the background, and turn the lean approach into a managerial technique for streamlining the organization. Our approach will therefore be to build on the collaborative component of the Scandinavian model present in the Grenland culture, and help design participatory processes that are able to tap into the competitive potential of the lean production philosophy.

As a small research team with limited resources, this strategic component has to be limited in scope, and still be designed to give maximum impact regionally. The core issue is therefore to link our change efforts in a small number of enterprises to a larger number of enterprises dealing with similar issues. This way, ideas, experiences and knowledge may be exchanged between the enterprises and serve to speed up learning and innovation. Hence, enterprise level efforts have to be integrated into the strategy for network development. In this way, our understanding of processes and issues at the work organization level becomes a platform for designing appropriate networks.

*The second element: Expanding the number of enterprise networks*

Our focus on the ICG network during the first years has proven to be a rewarding approach. The regional importance of the process industry has provided us with a strong template for engaging with regional actors (Qvale 2008), as well as demonstrating relevance and quality of our work. In the VRI programme it is important to include a wider set of networks in order to move towards a regional development agenda that more fully reflects the industry structure. As other networks emerge in the region and claim their importance for the future of the region, a single-network approach will inevitably marginalize our approach and weaken our position, but more importantly, it will deprive us of learning opportunities and possibilities for organizing stronger development dynamics in the region. Expanding the number of networks, and linking them together, will create new possibilities for learning, new dynamics and hopefully spur innovations through new combinations across traditional industry borders. We assume this strategic

element will establish a broader legitimacy base for our work, as it does align well with the preferences of regional decision makers.

Moving from strategy to practice is not necessarily simple. Established networks, championed and supported by certain actors with strong ownership, may not be readily available for collaboration, not to say inclusion into someone else's strategies. The idea of acquiring some sort of control over the research field and "take over" established networks, is of course futile, and in any case incompatible with the participatory values of action research. As action researchers we have to forge new alliances, rely on regional capacity and build on the participatory element where regional actors not only remain in control, but get mobilized and increase their influence. Our approach is therefore collaborative and characterized by repeated conversations with key stakeholders as we over time identify the specific roles we may take in a particular network. Entering into the VRI programme, we were able to include two other major networks in the Grenland-region. The first was STIG, a network of technology enterprises, many of them suppliers to the ICG network. The STIG network now comprises 18 enterprises with 3200 employees.

The second network to be included was the ambitious ICT Grenland network, bringing together enterprises in the software industry. ICT Grenland has more than 80 members, 60 of them enterprises, adding up to 600 employees. In this regional field there are from three to five substantial networks more, all potential participants in the next phase of the VRI program starting from 2011. Our ability to work with these networks relies heavily on regional capacity, where the day to day management is effectively taken care of. Building and supporting this regional capacity is therefore a keystone in our approach.

*The third element: Towards a cluster-to-cluster strategy*

Our strategy is not only geared towards increasing the number of networks or clusters, but to foster connections between them. The ICG and the STIG networks have obvious points of contact on the business-side, where several STIG enterprises are suppliers to the larger process industry plants in the ICG network. Learning issues like lean production, organization development, team based organization forms, health and security issues etc cut across the

member enterprises. The networks also team up naturally as a conversation partner with regional authorities regarding various infrastructure issues. Enterprises in the ICT Grenland network develop software applications for a wide array of industrial use, as well as health and education. Hence, they view themselves as an integral component in innovation processes in a number of other industries. The potential for innovative couplings are therefore highly present. At network level, the issues and skills required for network management is another obvious reason for connecting and learning across several networks.

*The forth element: Addressing the regional level*

We argue that a regional development strategy cannot be limited to industry clusters, but must seek to engage a wider set of institutional actors as part of the regional development dialogue.

A host of institutional actors at the regional level influences issues of great importance for industry, and they are increasingly demanded as members of governing or steering structures for various national initiatives at the regional level. This set of regional institutional actors are therefore so (potentially) important to the further development of the region, that the quality of their collaborative processes should not be reduced to an administrative act, but be subject to ongoing development and learning. As they co-create conditions for regional development, their collective functioning needs to be understood and successively brought forward. Thus, the fourth element in our action research strategy is to address the regional level as an arena for development in its own right, and not only as a steering structure taken for granted.

To some surprise, the introduction of the VRI-programme to Telemark rendered the previous development coalition from the Value Creation 2010-era illegitimate. The development coalition reflected an industry-focus and a strong ownership by the social partners, who jointly exercised the leadership of the coalition. While the coalition had a fairly broad institutional base and was chaired by the heads of the regional social partners, the other participants came from lower administrative levels in their respective organisations. When changes set in, this proved to be a less robust construction than anticipated.

Therefore, instead of building on the previous coalition in order to encompass a wider perspective and new actors in the new VRI era, the construction was dismantled. In its place, a broader coalition was summoned under the leadership of the county mayor. This coalition satisfies the VRI requirements, and brings together institutional leadership from all over the county. As such, it has the broader legitimacy that the previous coalition proved not to have. The partnership has in its first year produced an overall regional strategy required by national government. The downside so far has been a very limited ability to actually meet and address VRI issues, let alone act. The size itself contributes to this. This has created a need for other, mediating dialogues that effectively link overall policy questions with more hands on issues. Therefore, a smaller and more hands on coalition has been convened by the social partners to supplement the larger regional coalition. So far, the regional ability to strategize, launch initiatives and forge alliances is somewhat hampered by the less than optimal functioning of the regional level. Our approach is therefore geared towards improving the functioning of existing forums and initiating arenas for dialogue that seeks to integrate across levels, functions and institutions.

This is an example of the paradoxical situation where national initiatives to promote regional collaboration may alter the regional structure of trust, established relationships and governing structures, and in that sense dismantle parts of the very collaboration they seek to establish.

#### *The fifth element: Forging alliances with other R&D-institutions*

So far the strategic elements have been varieties and expansions of the strategy followed during the VC2010 programme. The fifth element introduces a new dimension to our work, but also provides new opportunities to address our old ambition of building local competence and capacity. The explicit purpose of the VRI programme to help develop regional colleges and regional research institutions, and the increased funding, has brought a number of new institutions on the scene. During the VC2010, the Work Research Institute was the only active research partner. In the new VRI, three regional institutions have joined in. This increase is typical all over the country, where

the total number of research institutions has increased from 12 in VC2010 to over 40 in VRI. This does not reflect an increase in number of institutions doing action research. Rather, it reflects the wide scope of measures included in VRI. Nevertheless, it introduces a new challenge, namely the need to forge alliances with other R&D institutions.

When decisions about which R&D organization to include in the VRI programme are made regionally, it opens up a much more politicized process, where personal and institutional relationships are put to play in the regions. Hence, alliances play an important role, and arguments based on identity, legitimacy, intentions and even rights, become stronger than other criteria. Maintaining a long lasting position in a regional research field then requires an ability on our part not only to establish good relationships to enterprises, the social partners and regional authorities, but also to the other R&D-institutions. This challenge of forging some form of collaborative relationship between R&D-institutions cuts across all of the 15 Norwegian regions, averaging three institutions per region that are part of the same program. By forging alliances to researchers from other disciplines and traditions, we are trying to take the collaborative dimension further. In a broad, regional development programme, there are several industries and a number of issues, tasks and roles to be filled. Hence, there should in principle be room for different approaches, aligned within an overall strategy. The challenge is to identify these, and to arrive at a reasonable division of labour and funding that provides for stable and constructive working conditions for the research teams. Otherwise, continuous power play and rivalry will enter the front stage and severely hamper the quality of the work done.

### **5. National AR implications of the VRI programme**

So far, we have described the regional implications of the VRI programme based on the Telemark case. However, the regionalization of Norwegian (change-oriented) work life research not only has implications for action research in regional fields, but also has implications at national level that deserve attention. In the following we will first highlight two interlinked implications of the VRI-programme, the role of national research institutions

and the position of action research. Secondly, we will draw attention to the enterprise level and the role of the social partners, and how the VRI programme seems to challenge the Scandinavian model.

### ***5.1 National institutions in regional processes***

After a merger of various councils in the 1990s, public funding of long term, programmatic research in Norway is centralized into one research council. Within this one Norwegian Research Council, the VRI-programme has achieved a monopoly-position as the sole financier of long term, change oriented research, i.e. action research. In that respect, VRI is supposed to represent the continuation of its predecessors Enterprise Development 2000 and Value Creation 2010. From January 2010, the regionalization of R&D resources will be taken one step further in the form of the establishment of 7 regional funds, also geared towards supporting regional R&D institutions. These upcoming regional funds will be under the control of regionally appointed steering committees. What then, are the consequences of this “regional turn” combined with the monopoly of research financing?

The regional perspective in VRI implies that the key research actors are supposed to be the regional University colleges and regional research institutes. The idea is that closer collaboration between research and work life will spur innovation processes, and increase the relevance and quality of the research undertaken regionally. The decision regarding which research institutions to include in the programme from each region is now entirely regional. Hence, regional politics has moved to the foreground, not only in defining areas for research and development, but also for selecting the participating institutions. National research institutions may be invited in if the region needs the competence or capacity.

Naturally, the dominating perspective becomes to support “your own” rather than supporting “someone else” coming from the outside. In other words, the first decisive entry point into the VRI programme is the location of the R&D institution, not the quality of the research proposal or of the researchers. That comes later in the selection process. Consequently, national research institutions are disadvantaged in this field, and have to base their

participation on other legitimating factors. The point is illustrated by the fact that only two out of four national research institutions have been able to continue from the VC2010 programme to VRI. One of them is the Work Research Institute<sup>10</sup> in Oslo, the other is SINTEF in Trondheim, which in this context actually is regional and operates in the region around Trondheim.

Not to involve national institutions in a national programme may unnecessarily hamper the progress of producing publishable research by international standards. Some of the regional R&D institutions have realized this challenge, and managed to employ researchers from the national institutions. This may be a feasible strategy both for the researcher and for the regional R&D institution, but it also has a substantial downside in discontinuing a research focus among national institutions. Because there is no other source of long term AR funding than VRI, one of the effects of this development seems to be that VRI is *eroding* national competence and capacity in this field in its efforts to *build up* regional competence and capacity. Will this shift be productive? If so, a crucial question becomes to what extent action research is successfully being promoted regionally through the VRI programme?

### **5.2 *Wither action research?***

Initially, the transition from the predecessor VC2010 seemed promising from an action research perspective. For the first time in the series of Norwegian work life programmes, the term “action research” was explicitly used in the programme documents. This seemed initially to be an important achievement for the action research community. However, also for the first time, “action” and “research” was split into different projects in order to accommodate for the active participation of non-researchers in the programme, as well as allowing for non-action research projects. Therefore, each region is supposed to have several “interaction-projects” focusing on the doing, and one or two research projects focusing on knowledge creation. From the perspective of

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<sup>10</sup> The Work Research Institute participates in three regional efforts, in Telemark, Vestfold and Oslo/Akershus, and has a stronger project portfolio than during the previous programmes. Hence, this argument is not about a marginalization of the Work Research Institute.

action research, this seems to be inconsistent, undermining the very idea of action research as an integrated process of change and knowledge development. While the national VRI-secretariat encourages, and even insists on close collaboration between interaction-projects and research projects, in order to overcome the unfortunate split, a true integration of the two only seems possible when the same persons are working both types of projects, as in the Telemark case.

The split between action and research was early on accompanied by a transformation of “action research” into a so called measure called “dialogue and broad participation”. The good intention was to encourage a participative approach to innovation and change, but it also served to de-emphasize research. As an example of the way action research seems to be marginalized in VRI, after two years of operation the first training course offered to VRI-practitioners and researchers on the issue of “dialogue and broad participation” was turned into a seminar about interpersonal communication skills. This is matched by the position of action research among the participating institutions. While an estimated number of 7-8 research institutions out of 12 pursued action research approaches during VC2010, now an estimated 5-6 out of more than 40 seems to show an interest in AR. Just in relative numbers, AR is outnumbered.

While national research institutions are becoming peripheral to this field, the clear, paradoxical image emerging from the VRI programme so far is a marginalization of action research as a consequence of this radical turn towards practical development. One may ask, has the regionalization gone too far, or just too fast?

### ***5.3 The Scandinavian model under pressure?***

The tripartite collaboration between the social partners and the government has been fundamental to the series of work life programmes since the Industrial Democracy Programme in the 1960s. Together with work life researchers, they have pursued new organizational forms based on increased autonomy and learning at work place level (Gustavsen 2007b). This is now internationally recognized as a particular quality of Norwegian work life (Parent-

Thirion et al. 2007). This collaborative construct is commonly referred to as the Scandinavian model, Norwegian version, and is characterized by collaboration at national level, combined with collaboration at enterprise level. The existence of participative forms of work organization is, however, not an automatic consequence of laws and regulations coupled with a Norwegian social capital associated with dialogue, trust and egalitarian principles. This may be a good template for participatory development, but it has to be coupled with knowledge about development processes, organizing and learning, and made subject to deliberate development work. How then, is this part of the Scandinavian model being influenced by the VRI programme?

As we have seen earlier in the paper, the predecessors of VRI emphasized the enterprise level, whereas VRI seems to have a focus only on the cluster or network level. Out of 15 regional programmes covering 19 counties, only 3-4 address organizational development in a limited number of enterprises. Parallel to this, the social partners at national level have reduced their joint development engagement, and also have a much more distant relationship to VRI than they had to VC2010. Regionally, their role as the leading agents in industrial development is gradually being matched by a more resourceful and ambitious county administration. Taken together, this portrays a situation in which the traditional element of the Scandinavian model is somewhat on the defensive. The challenge seems to be to readdress the enterprise level, and to utilize VRI as an opportunity to reinvent the Scandinavian model at the regional level, complementing the collaboration at national and enterprise levels.

## **6. Concluding discussion**

### ***6.1 VRI and Telemark***

This paper has examined a new Norwegian AR programme, *Programme for Regional Innovation and R&D* (VRI), in which a principal objective is to transfer research funding and control from central to regional authorities. It is now time to discuss how the commencement of this programme, and the associated decentralization of R&D, has affected our long-standing AR and regional development activities in Telemark: Has the programme led to a

more democratic situation, in which a greater number of regional decision makers are involved in the AR activities?

To a certain extent, the answer is yes. The decision of the county administration of Telemark to take on the programme coordinator role carried with it a large expansion of the regional development coalition. As a consequence, more organizations representing more industries and more parts of the region are involved in R&D activities. Moreover, because the regional allocation of R&D funding has been transferred to the development coalition, the coalition members are taking a more proactive and assertive stance towards the researchers. In contrast to the previous VC2010 programme where the initial R&D strategy was developed by researchers at WRI, the coalition members have participated in developing the VRI R&D strategy from the very start and onwards. This process was highly demanding, in the sense that it involved protracted negotiations and occasional conflicts about the strategic direction of the project and the distribution of funding. At the same time, the process was also highly valuable in the sense that it produced 'common ground' and trustful relations between WRI, the regional R&D institutions and the development coalition. This end-to-end collaboration with the field actors was a new experience for the WRI researchers involved, as well as for the other R&D institutions, and has paved the way for new alliances between R&D institutions previously not relating to each other.

The next question is whether this regional mobilization is leading to more regionally relevant and useful research than the centrally controlled, state-driven alternatives? It is clear that the research activities are now spread out across more industries (four) and a larger geographical area than the previous VC2010 programme which targeted its research effort at the chemical process industry exclusively. This is primarily due to the larger scale of the new programme, but it also reflects that the three regional R&D institutions are directing their activities towards regional development issues in new ways. This increased distribution of the R&D activities may carry with them new and valuable higher-level linkages between industry networks, R&D and the public sector.

On a more general level, the decentralizing of R&D resources through the VRI programme and the upcoming regional research funds may also intro-

duce a new challenge that to this point has not been highlighted, that of *regional lock-in*. Both VRI and the funds are explicitly geared towards supporting the regional R&D institutions, and regional decision makers are likely to make sure that that will happen. Instead of departing from a regionally recognized need for research, and commission the best quality research available, the choice of R&D issues are likely to reflect the competencies of the applying regional institutions, whatever their knowledge base and area of expertise. This way, the regions are risking a lock-in situation where national and international knowledge is not utilized, and important issues are not addressed because no one of the regional institutions covers these issues. In our view, this potential lock-in effect has to be addressed both as part of the VRI programme, and in launching the new regional funds. As we will return to below, this may foremost be a challenge for the national level.

### ***6.2 VRI and large scale action research: challenges to be met***

The declared experimental nature of VRI not only legitimates a series of new measures, principles and organizational arrangements. It also calls to pay attention to the ability to learn from experiences, and change, modify and improve the design of the programme as it evolves. The first 2 ½ years of operation (a quarter of the programme) will be reached by the summer of 2010. Hence, inputs to programme adjustments are currently being called for. In the following we will highlight some of the dilemmas and challenges that seem to emerge out of the first VRI phase.

The way VRI involves a large number of R&D institutions in collaborative efforts to promote regional development creates new opportunities for large scale action research. The scale itself makes it possible to expand from partial field constructs representing only a fraction of work life, to include a substantially larger number of industries and societal actors. As we have argued, it makes it possible to develop strategies that span the levels from the individual enterprise, via a number of interrelated networks and cluster, to the regional coalition level. Large scale action research is maybe not becoming more genuinely action research as a result of VRI, of course depending on the point of departure, but it is truly becoming more genuinely regional.

To realize this potential, however, a number of challenges have to be addressed.

Firstly, strengthening the regional R&D level without dismantling the national R&D level is a challenge that also concerns the lock-in problem. The structural prerequisites and incentives to prevent this from happening are currently not in place.

Secondly, the need to move from a number of separate development projects in each region to an integrated research agenda at national level seems to be necessary in order to speed up the learning and publication rate at programme level, and hence compensating for the limitations provided by regionalization.

Thirdly, the decentralization of decisions regarding research to a broad regional coalition raises a dilemma. On the one hand, the R&D institutions are challenged to prove their usefulness at the risk of being reduced to only providing instrumental support to plain and elementary development activities. On the other hand, they are challenged to do research that is nationally and internationally relevant. Therefore, they need to find a middle ground between being purely academically oriented and practically useless, and being purely practical and academically useless. Hence, the dialogue between coalition partners and R&D institutions about the content and focus of research has to be based on recognizing this duality.

Finally, to avoid a marginalization of action research in the VRI programme, the VRI programme at national level needs to consciously address action research as one of the legitimate forms of research in the programme, and provide learning processes about AR in the R&D community. If not, the overwhelming number of R&D institutions not involved in action research, will inevitably lead to a practitioner-researcher split, and a fragmentation of the national AR community.

### ***6.3 Coalition leadership and the Scandinavian model***

The commencement of VRI has mobilized a broader set of regional actors, and in that sense created a broader platform for dialogues on R&D-supported development. However, VRI has also altered the existing coalition and

changed the leadership role from the social partners to the county administration. The long term effects of this are of course unclear, but it does co-exist with other national efforts to strengthen the county level as the leading actor in regional development, foremost the upcoming establishment of regional funds for R&D under the governance of the county administration, operational from January 2010. Hence, the role of the county administration is likely to be strengthened even more. One may therefore ask whether the county administration will be able to develop a leadership role that serves to include and mobilize rather than exclude and pacify. To achieve that, a main challenge seems to be to maintain the dialogical and participatory element also at coalition level. It is of course a question whether the social partners will withdraw from their traditional position as key actors in regional industrial development, or if the broader regional participation will serve as a renewed platform for more resourceful and effective development efforts in which they partake, and in that way reinvent the Scandinavian model at the regional level. To do so, initiatives to bring the enterprise level back into the national development agenda are needed.

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