First Theme:
Human Capital in the North

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Variations in Mobility Amongst Well-Educated People in the North – The Case of Finland

Seppo Aho

The traditional factors of production comprise property (including raw materials), capital and labour. Neo-classical theories of economic development are based on the assumption of a ”natural balance” that includes the idea of economically rational choices leading to the best final situation. Mobility of labour is a natural movement in this model as it balances differences between regional supplies and demands. Most theories of regional development consider mobility of labour as a threat to balanced regional development, as it may take away human resources essential to the future development of the region. The main production factor, labour, is not homogeneous: a small part of it is *the core force* of creation and management of work - Thorsten Veblen’s ”captains of industry” - while the bulk of it does the jobs created and managed by this minority. In modern economies, where capital as well as most raw materials are very mobile, higher-than-average regional unemployment is largely due to a lack of well-qualified people (”captains of industry”) who are able to create and manage jobs. Accordingly, the location and mobility of well-qualified people are essential issues in current studies of regional development.

Well-educated People as the Core Factor

Increasing mobility of labour is a general trend in many countries. This movement is usually associated with losses of population in peripheral regions and growth in core areas. The Finnish province of Lapland, for example, lost 6.1 % of its population in the six years from 1996 to 2001. Many of those who left the region were well-educated people - 82 % of them adults - and not nearly all of them unemployed. At the same time, the population of the Oulu area, the main centre of northern Finland, increased 14.2 %. (Tilastokeskus, StatFin 2002) The population has declined continuously in other peripheral provinces as well, while only a few urban ”growth areas” have increased their population. It is clear that unemployed people are not the only ones moving away. As data on the motivation behind the mobility of various age and professional groups are scarce, a major research effort (Aho & Ilola 2002) was undertaken to clarify the situation in the case of well-educated people.

The mobility of well-educated people was studied in a framework of eight Finnish regions that included regions losing, gaining and maintaining their population. Both recent graduates and people with many years' work experience were included in large samples (a total of 1811 people) of well-educated people, representing traditional and new professional fields alike.

The foci of the study included several aspects of

mobility and regional development. This paper concentrates on the following three features of well-educated people:

1) values and aims,
2) regional preferences, and
3) degree of regional attachment.

The study opened new perspectives on each of these themes, and the results are presented in the three sections that follow. This discussion is followed by a final section, which briefly presents the principal conclusions of the study.

Values and Aims

The results of the survey show the importance of working life to migration. They also show variations in mobility in different phases of an individual's career and life cycle. Getting a job and having a good career are the principal driving forces behind migration. There is a clear linkage between uncertainty of job opportunities and moving or thinking about moving away. For some groups of people, it is rather difficult to move away, whereas for others it fits their life situation quite well. The decision about where to settle after graduation - where to live, start a family and make career - is quite crucial. This is usually the place one gets used to, gradually notices one likes, and begins to become attached to. However, the place where one lives, even for many decades, does not necessarily become one's eventual home.

Work and life situation are the two most important factors affecting the decision on where to live. The importance of a career varies among different people and life situations. Work is not always the only or even the most important factor that is taken into consideration. Especially in middle age and later, when the threshold for moving is higher, the living environment becomes more significant. By and large, quality of environment is important, but people do not always rate it highest when comparing different factors. Services or facilities for different hobbies and interests are not usually considered as important as the living environment. The significance of the overall life situation increases with age. Experienced professionals who are planning to move away are usually dissatisfied with many key factors in their current location. On the other hand, moving away does not always indicate great dissatisfaction with the community in which one lives; life may be quite comfortable for the most part, but some crucial things are lacking.

Well-educated people do not usually rate the importance of their own roots or home area very highly. In practice, however, an individual's roots often do affect his/her choice of where to live, especially where recent graduates are concerned. Those who have studied in their own home regions are notably more inclined to stay there after graduation. Even those who do not consider themselves as having strong feelings towards their home region usually prefer neighbouring areas or familiar environments (the countryside or a big city, for example). Consequently, there is often a dilemma: is it better to stay home, or to leave and make a career elsewhere? There are also those who want to detach themselves from their home environment, but they are a minority. Most of the experienced professionals adjusted to the place where they settled. But sometimes in later years, new life situations develop which prompt a desire to move back to one's home district.

Even well-educated people are quite different in their aims and values. This variation is evident in the typology created on the basis of the respondents' evaluation of the main factors affecting their choice of where to live. For many people, *both career and family* are important. Among the experienced professionals, there was a type that can be described as *career and family people*; among the recent graduates there were two slightly different types, the "social" career and family people (i.e., work, family and other human relations were the most important things) and the *"roots" career and family people* (i.e., work and family were the most important things but economic factors and one's own roots were also significant). *Career people* were found both among experienced professionals and among recent graduates. They emphasise work, career, economic factors and living environment in their choices; family or other human relations are not crucial for them. A smaller but distinc-

tive group are the *family and roots people*, who rate family and their own roots highest. The recent graduates in this group also emphasise friends and living environment. The fourth main type comprises experienced professionals who emphasise *the quality of living environment* (but not their own roots). Figure 1 presents the distribution of experienced professionals and recent graduates in Lapland according to this typology.

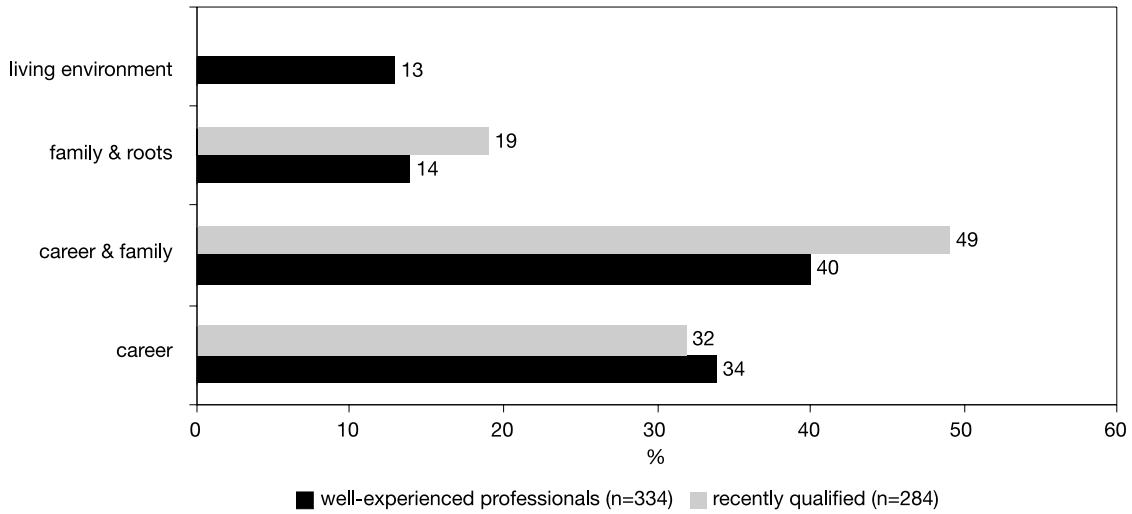

Figure 1. Experienced professionals and recent university graduates in Lapland: distribution according to typology 1 (main factors affecting the choice of where to live).

Career people are the most mobile of the professionals surveyed. They have acquired their (professional) training outside their home region more often than others and after graduation have been the quickest to move away, especially to southern Finland. Even experienced career people are more likely to move for career reasons.

Regional Preferences

Professionals in various parts of Finland - both experienced and recent graduates - state quite unanimously that the community where they live at present is pleasing to them. This indicates satisfaction but may suggest a desire for adaptation, too: few people probably want to admit that they are living in an area that they do not like. In general, areas near where one currently lives or is originally from are considered more appealing than more distant places. In particular, the most remote districts of one's native land are unattractive: people in northern Finland do not want to live in Uusimaa (the southernmost part of the country) and those living in southern Finland do not want to live in Lapland. Many people in Eastern Finland, for instance, would rather live abroad than in Lapland or in Uusimaa. Personal experience, however, seems to increase "regional tolerance": those who have lived in variety of districts have more favourable attitude towards different parts of the country.

There are clear differences in these preferences even within regions. The analysis indicated two dimensions here: preferences varied according to *North-South* and *countryside-big city*. Those with a northern background usually prefer northern Finland and those with a southern background prefer southern Finland. But there is also a group of broadminded persons who could as soon live in the North as in the South. Opposite to those who prefer the countryside are the cosmopolitans, who would like to live in big cities. Between these extremes are those who prefer smaller towns. Those who find the countryside attractive also like smaller towns - and vice versa. There is also a group of *flexible* respondents, who find cities, smaller towns and countryside all rather attractive.

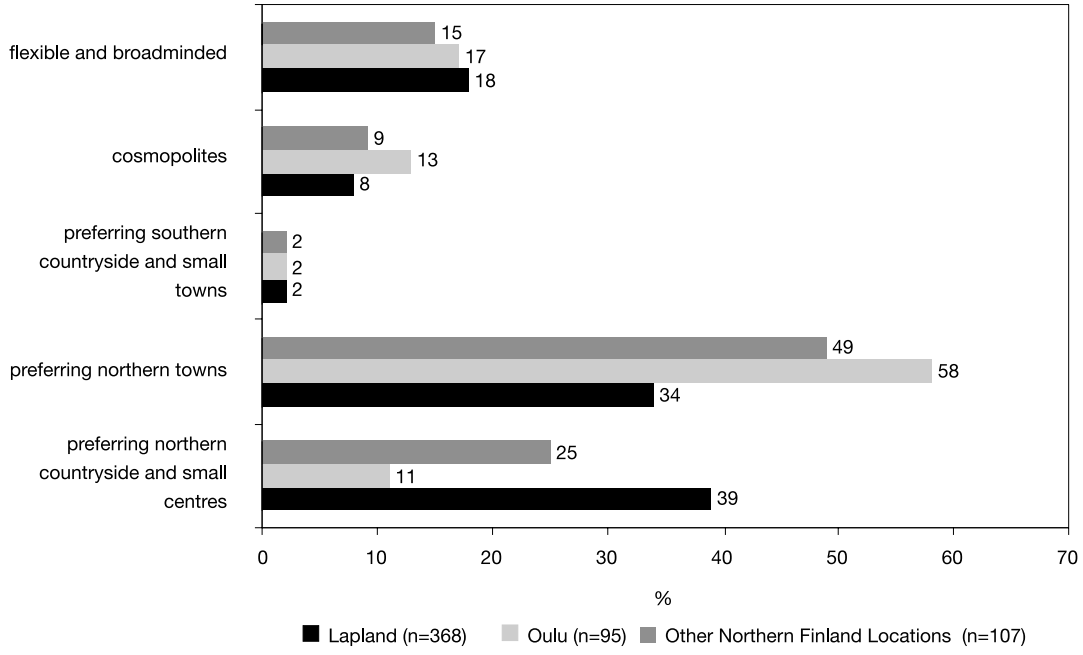

Figure 2. Categories of regional preferences, by background region.

Figure 2 presents the distribution of regional preference types for professionals originally from Lapland, Oulu and other locations in Northern Finland.

Regional preferences did not vary significantly between recent graduates and experienced professionals. Recent graduates who were originally from Lapland were not more cosmopolitan than experienced professionals; on the contrary, they seemed to favour the countryside a bit more often. This difference was not statistically significant, however.
See figure 3, which follows.

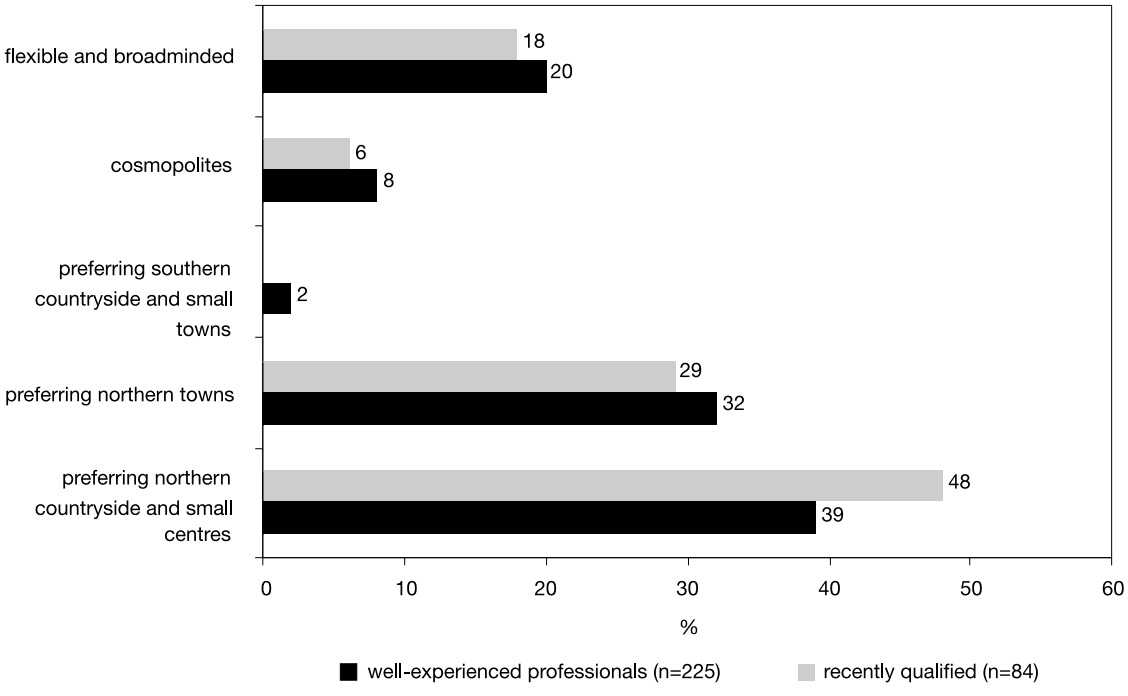

Figure 3. Categories of regional preferences, well-experienced people vs. those recently qualified.

Regional Attachment

The recent graduate age group is typically rather mobile. The time immediately following graduation is the most conducive to regional mobility. There are, however, clear regional differences in readiness to move. Those living in the capital region are least ready to move; they do not have as much of a work-related need to move as people in many other regions. The Oulu region also attracts people to stay. Mobility from Lapland and from eastern Finland is great. Recent graduates in Lapland prefer to move to the Oulu region, while their counterparts in eastern Finland more often favour the capital region. This is a clear indication of a certain cohesion in the north of Finland.

The degree of regional attachment varies a great deal both between and within regions. The analysis produced a clear typology to describe these differences in general terms. It has three main categories: those strongly attached and satisfied, those satisfied but still considering regional options, and those scouting other regions without current attachment. The first category includes most well-educated people (For the case of Lapland, see Figure 4). Most of the young recent graduates are tied to their region in many ways, but there are also many cases (especially in core regions) where attachment is based mainly on employment. This is rare in Lapland and eastern Finland, where work opportunities offer many people more motivation for leaving than for staying. In the capital region, there are many university graduates whose only attachment to the region is work and who are actively scouting out job opportunities elsewhere.

Those who are strongly attached to a region and satisfied intend (quite logically) to stay in the region more often than others. However, even here there are differences between regions: in Lapland and eastern Finland, more people in this group are scouting out other regions than among their counterparts living in the Oulu region or southern Finland. This probably reflects a certain realism as to prospects for work.

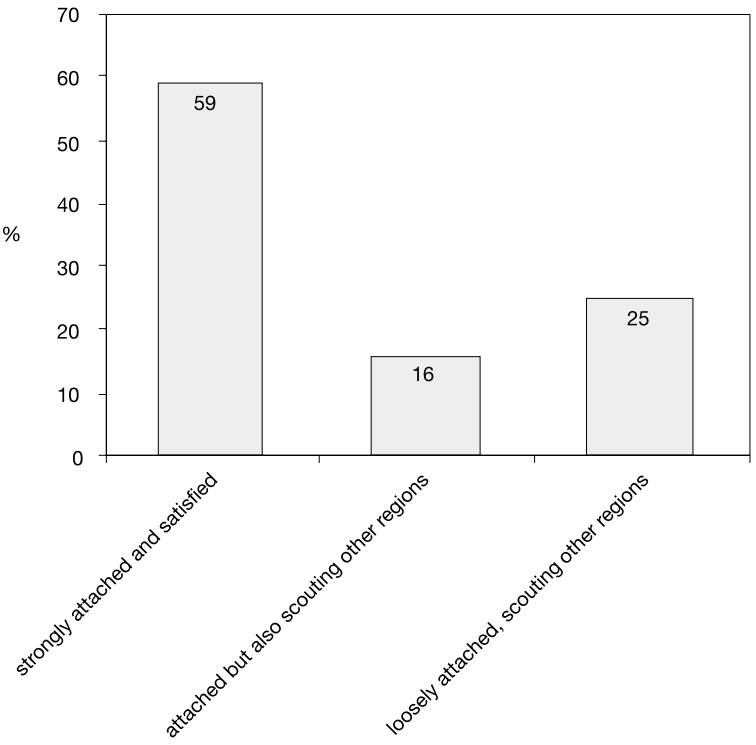

Figure 4. Regional attachment of the recently qualified in Lapland (n=245).

Those strongly attached to a region were concerned with family and ”having a place to call home” more often than those in the other categories, while those loosely attached were career people. Almost half of the career people among recent graduates living in Lapland, however, were strongly attached to their region and satisfied.

Recent graduates in Lapland fall into three main categories according to their plans for the next 5 to 10 years. Somewhat more than one-third planned to remain in Lapland; every fifth person anticipated moving to the Oulu region (only a few intended to move further, to southern Finland); and one-third were unsure or had no plans at the time surveyed.

Conclusions

The results of the study offer a basis for a number of conclusions. They are presented in detail in the main report of the project (Aho & Ilola 2002). The follow-

ing conclusions are essential for understanding regional mobility in general, and for assessing the future development of peripheral regions such as Finnish Lapland.

1) Broad generalisations should be avoided when describing the mobility of well-educated people. In order to understand mobility, it is essential to identify different categories amongst this population according to life values, environmental preferences and regional attachment. These categories are general in the sense that they are not tied to specific age groups, professions or regions. The readiness to move as well as the degree of, and motivation for, mobility varies between these categories. Knowledge of these categories helps in formulating relevant policies and finding relevant target groups for them.
2) Regional attachment is important to a majority of well-educated people. This attachment has different forms, with a long period of residence being the core factor in most cases. The likelihood of remaining in a region increases with the duration of stay; in the case of recent graduates, having a spouse and children also increases the likelihood of staying.
3) The mobility of well-qualified people is at its highest just after graduation. Additionally, however, the accumulated experience of mobility makes migration easier in many cases and less avoidable in the future.
4) There are a considerable number of well-qualified people who are flexible and broadminded in their regional attachment. This group represents an important potential for peripheral regions as well as others: suitable work challenges are likely to find countrywide interest amongst this category.

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This paper is based on the following research report: Aho, Seppo & Ilola, Heli (2002). Hyvien osaajien aluepreferenssit ja liikkuvuus (Regional Preferences and Mobility of Well-Educated People). Lapin yliopiston ytheiskuntatieteellisiä julkaisuja. B 39.

Shared, Parallel and Perpendicular Visions: North-South Partnerships in Research and Education in Canadian Environmental Science

Robert C. Bailey

As an Environmental Scientist who is also a mid-career academic, I have found that there is increasing convergence between the north and south of Canada in society's expectations of my research and education activity. More and more, university research and education, particularly in the area of Environmental Science, are seen by society as a service. Environmental ”problems” are ”solved” by Environmental Scientists, and this is the oft-stated justification for society's continuing, rather modest support of such scientific activity. At both undergraduate and graduate levels, students are ”trained” at universities for ”jobs”, and the training of highly qualified people is supposed to be the central role of the university in modern Canadian society. Canada's primary granting agencies, NSERC and SSHRC, define themselves as ”investors” in both research and training on behalf of all Canadians, and investors like to reap measurable returns. Research and education collaborations that mimic the construction of business networks, including explicit collaborations of industry, government, and academia, are encouraged and rewarded. Against this backdrop of increasing accountability and applicability of research and education, what some call the ”corporatization” of academia, has been an increasing need for and support of research and education in and about Canada's north. The question I would like to pursue here is how northern Environmental Science research in Canada is evolving in this new context of Canadian science.

Although my characterization of the present state of Canadian science in general, and Environmental Science in particular, may sound somewhat critical, I will make the case in my commentary that the present model of scientific research in the north of Canada, which incorporates community consultation through a licensing process, ethical guidelines for research, and facilitated communication with northern scientists and students, is a useful paradigm for all Environmental Science, north or south. The importance of and opportunities for increased environmental research and education in the north of Canada, with climate change, settlement of land claims and establishment of self-government by First Peoples, heterogeneous northern economic development, devolution of responsibilities from the federal to the territorial governments, modestly increased levels of government support for northern research, and increased educational opportunities for northern residents, perhaps means that we are entering a new renaissance of environmental research in the north after decades of rather limited and declining support and interest (Bocking 1996; Hutchinson 2000).

Scientific research and education in Canadian universities has changed markedly over the past two decades. ”Curiosity” driven research has retreated behind at least a veneer of research that has a more direct purpose and discernible benefit to society, often carried out in multi-disciplinary partnerships of many researchers. Although there has been some resistance to this evolution, many Canadian university scientists now accept a certain degree of re-

sponsibility to society for doing "relevant research". Large and medium scale partnerships and collaborations, using such funding tools as "Industrial Research Chairs", "Strategic Grants", "and "Centres of Excellence", have been used by the federal government to push the evolution of the academic science community in often very powerful and productive ways. Over the same time period, university students increasingly want to know exactly what skills they will be gaining to equip themselves for specific jobs when they complete their degree. I am often asked by students such questions as: "Should I combine my BSc degree with training at a technical college to maximize my employability?", "What will the Master's degree gain me in terms of jobs or pay available at the end of it?", "Will this MSc thesis project better enable me to compete for a job than this other project?", or "How much more employable am I with a PhD *versus* a Master's?" Many students, perhaps partially motivated by their parents who, generally, matured during a period of time when a lifelong career was the expectation but periodic, severe recessions were the reality, seem more concerned than ever with making the university experience, at both undergraduate and graduate level, a job training exercise.

Nowhere is this situation in research and education more true than in Environmental Science, which some see as an applied, multi-disciplinary enterprise by definition. If Environmental Science can be defined as the science of the environment that is relevant to human interest (i.e. applied science), it is easy to see how it has been successfully drawn into the evolution of Canadian science as I have described. In fact, many Environmental Scientists I talk to feel the *interdisciplinarity* of Environmental Science, whether actuated through multi-member collaborative networks or just by the increased breadth of perspective of the scholarly activities of individuals, is as inherent to the discipline as its application to human concerns. If one picks up a typical undergraduate Environmental Science text (e.g. Cunningham et al. 2000), it is immediately evident that the discipline is defined by the application of science to issues of interest (for a variety of reasons) to humans, and the issues are usually pursued from a multiple of social, physical, and life science perspectives. There is also, however, a lurking sense that Environmental Science is a poor cousin of "pure science", often tainted by its applied nature, which can very easily grade into advocacy for either a technocentric or environmentalist bias depending on the nature of the researcher. Indeed, the very nature of the research pursued and the decision about which scientific questions are worth devoting careers to is always affected by personal biases, conscious or unconscious. The tribulations of Environmental Scientists and their relationship with the community they work in, and to some extent for, are reminiscent of the uneasy relationship between physics and the development of nuclear weapons in the mid 20th century. Physicists like Einstein had no particular moral or ethical authority concerning the use of such weapons just because they had the talent to develop them.

When the Environmental Scientist goes north within Canada, the pressure and motivation to be a problem-solving consultant, or even advocate, may be intense. Environmental science in the north is at a critical juncture. With climate change affecting northern environments in a strikingly different magnitude and nature than those in the south (Stone et al. 2002; Callaghan et al. 2002; Moritz et al. 2002; Sturm et al. 2001), we desperately need a road map to our future physical, biological, and social (Berkes and Jolly 2002) environment in the north depending on the decisions made by society in the near term. In Canada, several settled land claims in the north mean that a number of First Peoples are an integral part of, and have a vested interest in, environmental research on their settled lands. Meanwhile, development pressures, both with the partnership of and outside the interests of First Peoples, present other questions for Environmental Scientists as to the effects of particular courses of action. Also, in Canada's northern territories, there has been a continual transfer of responsibility for environmental concerns from the federal to the territorial governments. With this devolution of responsibility has come identification of knowledge gaps in a territory's body of environmental knowledge and planning.

Recently, in response to a task force established by the primary natural and social science granting agencies (Hutchinson 2000), the Canadian federal government has at least partially recognized this growing importance of research in Canada's north through the creation of our Northern Research Chairs, and increased opportunities for northern students to gain scientific skills at undergraduate and graduate levels of training so that, eventually, there will be a critical mass of scientists at all levels among northerners primarily concerned with northern science. As these stimuli to Canada's northern research activity proceed, the hope is that a reinvigorated northern research community, with an attitude and perspective that better integrates southern and northern scientific and social cultures, will result.

It is my contention that we are verging on a renaissance of Environmental Science research and education in the north of Canada, a growing proportion of which will be carried out by or under the supervision of, or at least in collaboration with, northerners. Although some Environmental Scientists have bemoaned the increasing prominence of applied and team science, such science is still capable of generating profound hypotheses that can be tested, and it happens to be perfectly suited to our already established context of research in the north. There are many interesting and important scientific questions to answer in the north that do not require that university scientists become akin to contracted consultants, and their undergraduate and graduate students be glorified technicians in the ”consulting firm”.

Doing research in Canada's north requires participation in a licensing process not generally used in southern research
(Yukon Territory:
http://www.yukonheritage.com/programs-scientific.htm ;
Northwest Territories:
http://www.nwtresearch.com/default.cfm?res_obtain.cfm~mainFrame;
Nunavut:
http://pooka.nunanet.com/~research/Research_Forms.htm).
All licensing bodies require appropriate consultation, depending on the nature of the research, with the community or communities potentially affected by the research. Researchers must also adhere to the Ethical Principles for Research in the North developed by the Association for Canadian Universities for Northern Studies (*http://www.cyberus.ca/~acuns/EN/n_res_02.html*). The licensing and ethical standards approach of managing research in Canada's north could stand as an admirable model of research, north or south. It is particularly useful in the context of Environmental Science in Canada's north, where traditional knowledge, local human resources, and educational opportunities can come together to create an inspiring atmosphere for great science which is useful to society.

I have tried to make the case here that in Canada there is not only significant opportunity for doing great science, but also modest but growing resources available to carry the work out, and an admirable structure of managing science already in place through licensing and Ethical Principles. If these virtues of northern research can be balanced against the risk of Environmental Scientists becoming advocates for a particular northern perspective, I am optimistic about the future of Environmental Science in northern Canada.

Acknowledgements

I thank the organizers and hosts of the 2nd Northern Research Forum in Novgorod Russia, for a chance to share my views and discuss them and northern research in a stimulating atmosphere of ideas and debate. I also acknowledge discussion of issues presented here with other members of the Board and Council of the Association of Canadian Universities for Northern Studies (ACUNS) and faculty and students in The University of Western Ontario's Graduate Program in Environmental Science. What I have written here, however, represents my personal view and does not necessarily reflect the official opinions of ACUNS or UWO's Graduate Program in Environmental Science .

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Higher Education and Research - Ways of International Cooperation

Ingvild Broch

Dr. Lassi Heininen, the chairman of the NRF Steering committee, asked in his introduction paper to the Forum: why Russia, why Novgorod, why Veche? And he gave his answers to these questions. To me there are some other obvious answers to his questions.

As for a meeting in *Russia*, though there was an enormous interest in going to Russia in the beginning of perestroika and glasnost, there is less interest today. It is, however, not less important to come here now, when the possibilities for cooperation are actually much better and the first, somewhat exaggerated, expectations of what each side could obtain from the other have somewhat faded. These expectations were on all sides - including the Russian side, hoping for support for many projects that foreigners were not interested in. Today, we have a more realistic view of what we can gain from working together, and there is a more substantial cooperation, and not just a question of economic support.

I would also like to take this opportunity to express my admiration for the great progress that not only Russian academics but, no less, young people in general have made in their knowledge of foreign languages these last years. To be able to communicate and collaborate we must have a common language, and our Russian colleagues have done a great job here.

Why Novgorod? This is not really a question Scandinavians would ask. Novgorod was an important transit place for the vikings on their way to Constantinople, and Scandinavians played an important role in establishing the first state of Novgorod. We'll hear more about that later during our Veche. Now the Scandinavians are back in Novgorod. One example is the Norman project: Norwegian-Russian cooperation in teaching economics in close connection with industry and practical work, and with the support of the governor, a fruitful project that has been going on for approximately 10 years now, and has funding secured for another five.

Why Veche? Well, that is something specific to the idea of the Northern Research Forum, something I would like to learn more about. I do know that Veche was the popular assembly in ancient Russia, where people met to make common decisions. So to my ears, naming this conference Veche would mean that the idea is to give the interested public the possibility of participating in some of the planned discussions and to let students and citizens of Novgorod take part in our programme in an active way.

Internationalisation of Universities

Higher education and research are by nature international. At my home university, the University of

Tromsø in Northern Norway, 10% of the students come from foreign countries; and 20% of the academic staff are foreigners. And I don't think this is very special when compared with many European and American universities. This situation may still be different in Russia, but a hundred years ago the Russian universities were also truly international.

As I come from a small country, a country that has only been independent for about a hundred years, we have always had a lot to gain from international cooperation. Norwegians were educated abroad, many Norwegian scientists worked abroad. There was also a long period after the Second World War when the United States dominated academic foreign relations. During the last decades much attention has been on Europe, and especially on EU member countries. This is easy to understand: even if Norway is not a member country, we pay fees to the Framework programmes and we certainly want our money's worth. Much attention is therefore paid to this, and the ERA, the European Research Area, is the focal point of much of European research debate today.

"The Nordic Research Area"

The Nordic countries have long had their Nordic Research Area. There are long traditions of Nordic cooperation through the Nordic Council of Ministers, which now also includes the three Baltic countries and North-West Russia in many programmes. The Nordic Council of Ministers funds NorFA (the Nordic Research Academy), whose schemes also embrace the Baltic countries and North-West Russia, funding guest professors, PhD-courses, networks, etc. There is also NORDPLUS, funded by the Nordic Council, which is a well-established Nordic student exchange programme. In the Barents Region, there is an equivalent Barentsplus for students from universities in the Barents Euro-Arctic Region. (I observe that the notion of the Barents Euro-Arctic Region, which is in daily use in my part of the world, is not much used in the papers at this conference. The Barents Region consists of the northernmost counties of Norway, Finland, Sweden, and Russia. The name was introduced in 1992, in the aftermath of perestroika and glasnost.) The Barentsplus programme is more popular with Russian students than with Nordic students, so there is a job that needs to be done: making interesting courses which will attract more foreign students to Russian programmes.

In 1995, the Nordic Rectors' Conference set up a Nordic University Association in order to learn from each other's experiences in higher education policy, to promote Nordic cooperation and to coordinate Nordic efforts internationally. The Nordic University Association has begun a cooperation with the Baltic Rectors' conferences in a Nordic-Baltic Space of Higher Education. This is a good meeting place for developing common ideas and becoming acquainted with each other's systems.

The Bologna Process

Norway is on the verge of implementing a new academic system. This system is in close accordance with the Bologna Declaration, accepted by the EU and other European countries in 1999. The ultimate goal is to make the educational systems so like one another that students can move from one institution to another, in their own country or abroad, without problems. This ongoing process is aiming at recognition, not at harmonisation: it is a process of convergence, not one of uniformity. 33 countries are now (March 2003) members of the Bologna Process. If (or when) Russia decides also to join the Bologna process, collaboration within higher education will become much easier. Already many international projects in Russia try to conform to the Bologna standards, which are also more compatible with US standards than the old European systems were.

Master's and Ph.D.-Programmes in English

All Norwegian universities and some university colleges offer special programmes for international students (Master's degrees) taught in English. The new reform encourages institutions to participate in international programmes and exchange agreements.

And more programmes in English will be introduced both at the Master's level and the Ph.D. level. In 2003, the first 13 Research Centres of Excellence started up in Norway, financed by the Research Council of Norway and the Centres' mother institutions. All positions and grants are announced internationally, and the working language is English.

Regional Obligations

There is one position paper that specially appeals to me. That is Dr. Bailey's. He says:

> "Curiosity" driven research has retreated behind at least a veneer of research that has a more direct purpose and discernible benefit to society, often carried out in multi-disciplinary partnerships of many researchers. Although there has been some resistance to this evolution, many Canadian university scientists now accept a certain degree of responsibility for doing "relevant research".

The University of Tromsø was founded 30 years ago to keep up the population in Northern Norway. The theory behind that decision was that people educated in the North would be more likely to stay in Northern Norway after graduating. Northern Norway lacked medical doctors - and actually a lot of other professions too, but the focus was on doctors. Today we know that the plan worked. Northern Norway has qualified people working not only as MDs (where we still need people in remote areas), but as teachers, administrators, pharmacists, etc.

But the University in Tromsø is also unique among the Norwegian universities in the fact that the staff is engaged in what is going on in their part of the country. Dr. Bailey is focusing specially on environmental education and research; what he says, however, about the relevance and obligations of academic institutions to their surroundings and communities, and of professors and students taking part in discussions about the development of their regions is very important. In Northern Norway, as you may know, we are just starting to drill for oil close to very good fishing grounds; there is also a debate going on about fish quotas, boatsize, etc. At our University we have a College of Fishery Science. Journalists, backed by the public, have been challenging the staff at the College of Fisheries to come forth and tell what they know about the consequences of different fishing regimens. They have severely criticised the academics for being either reluctant to share their knowledge, or if they don't know enough about these issues, for not understanding and trying to find good solutions for the burning questions of today. One regional question of more than regional importance concerns the condition of the indigenous populations in the North. The objective of the Saami Centre of the University of Tromsø is to contribute to increased research on, and education about, indigenous and minority group affairs in general, and Saami affairs in particular. Extended networks, both national and international, are part of their work.

Future Cooperation

In future cooperation, I think that the experience and the networks that already exist should be used more actively and also extended to a broader cooperation. This includes not only the above mentioned Barents region networks, but also other existing networks and cooperation programmes, such as the Nordic ones and the EU framework programmes. We should try to make use of already existing schemes and to include non-members in them, rather than start up new schemes from scratch. There are many possibilities, though it is not always easy to find the necessary information.

In most countries there is a drive for international mobility within universities. Part of the Norwegian university reform is making it possible for every student to spend a term abroad, with the home university being obliged to help transfer foreign credits. As for student exchanges, the more advanced the students are, the more necessary it is that their professors know each other, or at least something about each other's research.

In my opinion, we have all much to gain from collaboration, and, I think, even more to gain from collaboration organised through institutional agreements,

rather than just through personal ties. Personal ties are, however, a good starting point for more formalised cooperation. The EU framework programmes are based on multilateral cooperation, and the EU has certainly succeeded in making that work. My experience is that it is often easier and less time-consuming to start bilateral cooperation. That depends, however, on funding possibilities.

To me it seems clear that there are important and interesting questions to be asked about the conditions in the European North, and about the North in general, where we can all contribute to finding good answers together. The answers will be better, and we will have a more challenging and interesting time, working together in multinational teams.

Telemonitoring in the Far North Health Care with the Use of Mobile Complexes

Anatoly A. Buganov

Introduction of information technologies in research and clinical practice gave birth to a new trend in medicine - telemedicine - which is an area integrating the latest achievements of various fields of informatics, telecommunications, radio electronics, instrument manufacturing industries, etc.

The main aim of telemedicine is the use of all these achievements to ensure a high quality of medical services for the population and to bring these services closer to the people. Telemedicine makes the services of highly qualified doctors accessible to people both in the cities and in the remote rural areas. This is particularly important for the remote regions with a poorly developed healthcare infrastructure.

Telemedicine with its high social and economic potential can have a significant positive effect on the clinical, research, educational and organizational aspects of the healthcare system: it is capable of breaking through the informational isolation of rural doctors and creating qualitatively new possibilities for their communication with colleagues from the large medical centers. Telemedicine can significantly improve the quality of medical help in the sparsely populated and remote regions of the Far North.

It is known that the North occupies 64% of the area of the Russian Federation. Only several decades ago this area represented mostly wild uninhabited landscapes; however, the North has recently experienced a great shift in its social and economic development. Big manufacturing complexes, modern cities and large industrial towns have appeared on its map. The areas of the new industrial development, however, are located in severe climatic conditions. The scarcity of the original population of these regions and the deficit of the workforce in the major industries in the Far North has created a significant population turnover. It is quite obvious, that under these conditions, development in the Far North brings with it not only impressive results, but also a lot of problems that need to be addressed.

A number of authors (V.I. Khasnulin, A.A. Buganov, V.A. Lobova, A.N. Lekhanova and L.V. Salamatina) have demonstrated in their works that the life of man in the Far North is characterized not only with an increased rate of illness, but also with a higher incidence of chronic diseases, and more frequent psychological and social instability. All this requires the development of new approaches to the issues involved in protecting the health of the Northern population.

One of the key points in building an efficient healthcare infrastructure in the far North must be its informatization, i.e. creation of a common information environment for all the interested parties: patient, doctor, medical institution, healthcare administration.

It should be emphasized that the last decade was an active period in the introduction of new information technologies in the healthcare system. First of all, it was a result of rapid developments in the area of telecommunications, the appearance of new hardware and software, local and global information networks, and the introduction of Internet technologies into various spheres of life. Another factor that facilitated the development of telemedicine was the existing experience of using computers and special software in the healthcare system both for treatment and diagnostic purposes, and for the management of healthcare institutions.

One of the most important issues with regard to the development of telemedicine is the development of its concept and strategy on the regional level. The basis of any telemedical program is the structure of the telecommunication network; it seems evident therefore that the main emphasis should be made on combining existing resources to create a common telemetric environment.

With regard to the healthcare problems of the Yamal-Nenets AO, this means organization of a unified consulting service based on a well developed IT network. This network can be outlined in the form of several levels.

The first level - the regional center - must have in its structure the telemedical center, concentrated in one institution and performing the function of coordination and distribution. It should be the main research, educational, methodological and coordinating link dictating the strategy and the policy of telemedicine in the Autonomous Okrug, including its organizational, legal, technological and staff aspects. This level will provide consulting services to patients and doctors' training.

The second level of the center should be organized on the basis of a leading multi-purpose medical institution. The main function of this center would be providing medical consultations for the population of the region based on the territorial principle.

The third level - municipal - will consist of the telemedical center set up on the basis of the central regional (city) hospital (CRH, MHD CRH), and will mostly concentrate on preparatory work for the patient consultations on higher levels.

In the long term, the lower level medical institutions can also be added to the regional (city) center: hospitals, poly-clinics, dispensaries, first aid stations, mobile medical teams (ambulance teams).
Creation of a unified regional telemetric structure will allow:

- saving and rational use of budget money, owing to elimination of duplication of costs;
- carrying out a consistent policy in terms of high technologies and standards, addressing legal issues, training new personnel, and developing the educational applications of telemedicine;
- using the clinical and research potential of the Research Institutes' clinics to raise the quality of highly qualified and specialized healthcare services.

In addition to this the regional telemedical structure will allow:

- the formation of a patient database;
- the development (taking into account the regional specifics) and duplication of standard techniques for patient treatment;
- the formation of a mini library of medical literature (concentration of methodological letters, recommendations, scientific reviews, treatment algorithms, etc.).

Telemedical technologies can be used not only for making diagnoses and providing medical consultations for patients, postgraduate education, and doctors' and nurses' training, but also for exchange of official management information between healthcare institutions and authorities. In addition to this, in the long run, telemetric technologies will allow not only the drawing of conclusions on the trends in the health of the population of the Okrug, but also planning the requirements of medical supplies and other medical resources.

One of the types of telemedical technologies offered

can be the introduction of telemedical consultations, which can take various forms:

Off-line consultation, when the patient data (text, graphics, photo-, audio-, and video materials) are prepared in advance in the form of electronic files in various formats and e-mailed to the consultation center server. The consultant's opinion is sent back, generally by e-mail, after the period of time necessary for studying the materials and writing the text of the opinion. The advantage of off line consultations is their relatively low cost and technical accessibility for a wide network of healthcare institutions.

The common algorithm for the preparation of the off line teleconsultation would be:

1. decision making concerning the organization of the teleconsultation, with a clear formulation of its purpose and the questions for the consultant; approving the possible consultation with the relevant center;
2. comprehensive examination of the patient according to an established standard for the existing or presumed pathology within the scope available at the given medical institution;
3. preparation of an abstract from the case history or other medical documents (according to the form agreed with the consultant);
4. choosing the visual materials necessary for the consultation that can be of real help in the search for the answers to the questions raised;
5. entering of the images into a computer from a video camera, scanner, digital camera, performing a quality check;
6. making an electronic case history, assigning an identification number to the package of sent materials;
7. sending the materials by e-mail or placing them on a server.

According to the data of some authors (I.A. Kamayev et al.) the off-line regime is sufficient for providing qualified teleconsultation in 60-80% of all cases.

On-line consultation (video conference), when the data are exchanged with the help of the teleconference communication equipment in real time mode. Discussion of a clinical case includes the voice (audio) information, exchange of the video applications data (with the help of the so called ”electronic white board”, it is possible to display the images on the screens of all PC's participating in a conference and, using the cursor, to draw attention to particular elements). The advantage of the on-line consultation is its immediacy, its ability to obtain additional information in an on line communication mode.

It should be emphasized, however, that video conferences require expensive equipment, special telecommunication means, and preliminary organizational work, which makes additional demands on the personnel of the center; use of high speed communication channels also makes it more expensive.

Current technology makes it possible to organize conferences not only between two participants, but also between several centers, for exchanging opinions on particular issues and using the results obtained to raise the level of doctors' qualifications. Modern multi-media techniques allow images to be projected from a computer screen to any stationary or portable screen, which makes it possible to organize conferences for large audiences.

It should be noted, that organizing medical videoconferences is a strategic task for practical healthcare. Its implementation will bring high quality medical diagnostics closer to the remote regions, and ensure a qualitatively new level of communication between doctors and the RAMS Research Institute of the Medical Problems of the Far North and other diagnostic centers, which will, in turn, raise the efficiency of the use of expensive medical equipment. In addition, this will raise the doctors' qualifications and will facilitate the formation of a research school in the region.

Combined consultation is a video conference with the text and audio-visual patient materials (electronic case history) sent in advance for the consultant's information. It is believed that this variant is optimal in terms of the scope of information offered.

While emphasizing the importance of the introduction of modern computer technologies for the

practical medicine of the Yamal-Nenets AO, it should be noted that this strategy has its specific requirements. These are related not only to the climatic, geographical and demographic conditions of the Yamal-Nenets AO, but also to the poorly developed transport infrastructure in the Okrug. With a fifth part of the population living in rural areas, it becomes evident that in order to bring highly qualified medical help to these areas it is necessary to develop an approach different from what is practiced in the healthcare system of the Okrug today.

In our opinion, one of the promising approaches in addressing this task can be the formation of mobile (self-propelled) medical crawler-based complexes. These mobile complexes must be completely autonomous, have good power reserve and high off-road performance, and be equipped with modern navigation equipment and communication systems, including satellite communication. They must have the amenities necessary which allow not only the transport of doctors to the remote villages and camps in the tundra, but also provide temporary housing.

The main purpose of the mobile medical complexes should be the maximum coverage of the rural population with modern medical services and the evaluation of the health of the population. The risk strategy should be ranked. Mobile medical complexes could be of two types: diagnostic oriented and treatment oriented.

The purpose of the *diagnostic* mobile medical complex is the maximum coverage of the population of a particular territory (region) with medical first aid, and stratification evaluation of the population by health rank.

The purpose of the *treatment* mobile medical complex is to offer a complete range of treatment directly to patients at their place of residence (including the tundra). This complex must include various types of portable medical equipment.

Population health risk stratification will allow the development of short and long term strategies with regard to the population of a particular territory (region) and plan not only treatment, but also preventive measures. The data obtained will help in making projections for the work load of ”small mobile hospitals” in various territories (regions) of the Okrug. It will be possible to have different configurations of these hospitals, including the specialized ones.

Beginning this work will allow the formation of a database on the natural health of the population, by gender, age, and length of stay in the North. This approach to the evaluation of health will coordinate the work of medical researchers, mathematicians, specialists in electronics and satellite communication, etc.

In conclusion, it should be noted that the ideas described in this paper can be realistically implemented in the healthcare system of the Autonomous Okrug. The Yamal-Nenets AO has today a Research Institute of Medical Problems of the Far North of the RAMS, with a clinic equipped with modern medical facilities. It not only has modern research technologies, but also has accumulated a significant database of the results of epidemiological studies of chronic non-infectious diseases. Researchers at the Institute are involved in the development of telemonitoring which can be implemented into healthcare practices on the principles outlined in this paper. We are confident that the right approach for the Far North would be to introduce modern mobile medical complexes with the help of which the whole population of the autonomous Okrug would be, stage by stage, covered with the medical consultation and preventive medicine services.

Evolution of the Indigenous Community and the Concept of ”Healthy” in its Development: Experience of Alaska Native People

Esther M. Combs

Early documentation of Alaska Native people was made by explorer Vitus Bering who came to Alaska in the mid-1700's. It was noted that Athabaskan Indians had societal groups called bands which included parents, their offspring, their spouses and dependents. From bands came the formation of clans that were tied together in a network of reciprocal obligations which were important in marriage, the potlatch, funerals and war. Some of the groups had leadership councils that decided, ”upon going to war or to pay ransom for people captured in war.... or elected the chief.” (Simeone)

Early Organized Indigenous Groups

The earliest western model organization ”formed by Alaska Natives was the first Russian Orthodox brotherhood created by Russian-Creoles in Sitka in 1878.” (Kan 1985, as quoted in Pullar 1997:52) In 1912, the first Alaska Native organization was formed, the Alaska Native Brotherhood (ANB). According to Arnold, ”along with the goal of winning United States citizenship the ANB had two related concerns: education for themselves and abandonment of aboriginal customs which were seen by whites as 'uncivilized'.” While these were the initial goals, the ANB later became, and in fact still is, the oldest statewide Alaska Native organization to uphold the traditional cultural heritage practices and beliefs of all Native people.

As the political issues affecting Alaska Natives intensified so did the actions of the Native leadership to protect the land and resources belonging to the indigenous people. By the mid-1960's, twelve regional associations were in place, with the primary goal of securing an aboriginal land claims settlement for Alaska Natives. Meanwhile the leadership of Alaska Native people developed a united front and formed a statewide organization, albeit a western corporate model, which was a significant political force in the face of its adversaries.

There were many cases of encroachment on tribal lands by federal, state and private parties but this happened less frequently as protections were afforded Native corporations and tribes under trespassing laws. There was also a tendency for governments, as well as private groups, to show a ”renewed interest in indigenous knowledge systems...that they be the bases for building more sustainable development strategies.” (Wright)

There are strengths in indigenous, people-based organizations ”that indigenous knowledge systems contain mechanisms which promote relatively equitable access to resources.”(Niamir as quoted in Wright) Some Native American cultural structures naturally promote a participatory style of management. Ott gives an example, stating ”the Navajo language contains no words meaning *superior, subordinate, boss, or hierarchy*...the absence of words for boss

and *subordinate* symbolizes the Navajo belief that a person is a person." The incorporation of traditional Native or indigenous values into traditional, western organizational structures in a community has been a formidable challenge.

From Western Ways to Culturally-Instituted Traditional Values in Community Development

In order to set the stage for a community organization that is culturally-driven and appropriately reflects the lifestyles and beliefs of the people, it is necessary to explain the impact of the early education system. This has had a long-lasting effect on generations of Alaska Native people, and has led to the extreme dysfunction of indigenous families and communities.

The Western education of Alaska Natives after the purchase of Alaska from Russia in 1867 first took place in American Protestant and Roman Catholic mission schools. The goals of the schools were to "Christianize" and "civilize" the Native students, as the 1994 Alaska Native Commission Report commissioned by the United States Congress succinctly states.

Government-operated schools focused primarily on the education of Alaska Native students because there were few non-Native children. With the influx of non-Native settlers who arrived with the Klondike Gold Rush of 1898, however, there was growing dissatisfaction with a school system that directed its attention to Native students. With questionable wisdom, the US Congress passed the Nelson Act in 1904, which directed the District of Alaska to assume responsibility for the education of "white and colored children and children of mixed blood who live a civilized life" (Commission Report). But the federal government still fostered a segregationist policy, as it directed the US Secretary of Interior to continue the direction and control of schools for Alaska Native children.

Later, in 1947, the federal government established a boarding school for Native high school students in Sitka, Alaska. In the 1960's, the schools were transferred to the state system and high school students traveled from rural homes to schools in the urban areas where they were boarded out, primarily to non-Native families. Many students did not want to return to their villages, some developed substance abuse problems, and suicides were not uncommon. This situation lasted for a decade until, as the result of a court case, the state was directed to build high schools in every community that had an elementary school.

Nevertheless, the school setting and curriculum negatively impacted Native students: they were taught by teachers from places foreign to their culture, the language of information transfer remained English, and the pictures painted as the backdrop for learning were from another world, alien to the children. It could be said perhaps that our Native children were successfully assimilated into the dominant white culture with the loss of traditional language and cultural knowledge. There are, however, efforts today by indigenous tribes and Alaska Native organizations to refocus the education of Native youth in our schools. Some examples are the hiring of teachers of Alaska Native heritage, language immersion classes in Yupiaq for children in southwestern Alaska, and youth clubs in high schools that promote social and cultural activities among Native students.

Alaska Native people are today in the process of redefining our history according to the teachings of our Elders, the stories handed down, and the traditional practices in our respective cultures. As Linda Tuhiwai Smith, a Maori of New Zealand, has so eloquently stated in *Decolonizing Methodologies*," ...history is about power... transforming our colonized views requires us to revisit, site by site, our history telling our stories from the past, reclaiming our past, giving testimony to the injustices of the past."

Several years ago I helped plan an Elder's Conference in Anchorage. We contacted many Elders, both locally and from other locations in the

state. The aim of the conference was to query the panel members about their childhood years, education, culture, family activities, and so forth. What came out on the first day of the conference was a lot of anger toward the Catholic Church who, in the late 1800's and the early 1900's, had operated mission schools and orphanages in the state. Most of the Elders had had bitter experiences such as being forbidden to speak their own language or practice their culture. The healing process began when the Archbishop came to the gathering and gave a statement of apology from the church.

In *A Yupiaq Worldview*, Oscar Kawagley notes:

> There are many problems because we have lost that essential balance...of mind, body, and soul...and have become exiles from our own cultural, natural, and spiritual worlds. When the Yupiaq maintained and sustained a balanced life, it is said that there was very little illness. The Elders have obviously made comparisons with respect to physical and psychosocial problems and patterns of disease of the past and those of today.

Our people, our Elders, have the solutions to our social, environmental, and economic problems, if only we will listen to them and heed their advice.

Capacity Building in Communities by the People in Partnership with Essential Supporters

Man did not weave the web of life - he is merely a strand in it. Whatever he does to the web, he does to himself.

Chief Seattle, 1854

While the rural communities of Alaska have generally strived for responsible governments, better leadership, and improved education, health care, housing, and infrastructure, there has not been a program, per se, of a self-determinant nature to support that effort. The exogenous efforts of well-meaning, outsider organizations or groups rarely have a lasting effect on a dysfunctional community. Our experience, over three decades, has shown that only when the people are involved in all phases of a program or change-effort, and thus gain a sense of ownership and pride in accomplishment, can it succeed.

Programs that have been successful have roots in the community and spring forth from local efforts directed by the indigenous people. Examples include community-based wellness and recovery programs for alcohol and drug abuse that incorporate Alaska Native cultural values and traditions. Programs of this type have been increasing in number in the past decade and have served to heal Native people of these addictions while strengthening their cultural mores. It is not possible to have a healthy community until we first have healthy people, leadership, and organizations.

While the Alaska Healthy Community Project was implemented only this year, the healthy community concept has been applied in many regions, statewide, in the past ten years and involves two approaches. The first is through a partnership project aimed at building long-term local capacities for strengthening rural Alaska communities in making informed decisions, managing change, and building and sustaining the local economy in order to achieve their desired future. The second is through the creation of a core course in the Masters Degree Program in Rural Development offered by the University of Alaska Fairbanks. This course includes a special course text, resource manual, and training at local and regional levels for community members.

There are three levels of partnerships. The first is a local community partnership that must include all the major community organizations, stakeholders, and interested parties, creating one informal community organization. That organization should reflect all the different groups of the community. The second level involves the regional resource organizations that will assist with the actual community development process. The third level of partnership is the design team who provide technical assistance, education, mentoring, and access to resources to the community and the region.

All in all, there are nine partners, including a primary Alaska Native health care organization, several

state organizations, a private foundation, the University of Alaska Fairbanks, and the funding agency, the United States Department of Agriculture. At the end of 2001, four rural communities were selected but, due to staffing constraints only one out of the four communities is being addressed at this time. Elements of the project include:

- The Partnership Design Team, for project oversight, design, implementation and evaluation.
- The local / regional team (including Elders and youth), for Healthy Community training in selected villages.
- Process design for each community.
- Community discovery process: using the Web of Community, which provides broad and in-depth overviews of the entire community.
- Short and long-term capacity building
- Resource identification and acquisition for community projects
- Local asset inventories and use for solving community problems
- One overall local community partnership for overseeing community efforts
- Community based evaluation

A key component is the Web of Community. It is one of the primary exercises a community will use to gain broad oversight of every segment of its structure, both tangible and intangible. In the center of the Web is usually placed the Sacred, where community members state what they consider sacred. In Alaska Native villages it has been *the Sacred*, or our culture and traditions, which has been most severely affected, and in some cases destroyed, altogether. So you can see the critical nature of the Healthy Community Process for the people - to regain their sense of self, their families, their heritage, and to attain the healthiness in their lives that we all deserve.

The Healthy Community model as previously mentioned is not new. It has been successfully applied on an individual basis in communities for several years. But this is the first time a comprehensive, partnership approach has been used, involving state and federal resource agencies. It is believed that the crux of the program is its involvement of the people at all stages of community planning, assessment, development and evaluation, so that ownership in the results and pride in the outcome will result.

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Can High Tech be a Leading Sector for Arctic Economies?

Lee Huskey

Can high tech industries be a leading economic sector for communities in the Arctic? While the New Economy and its high tech industries have recently lost some of their luster, they continue to shine relative to the Arctic's traditional resource industries on which Northern community economies are based. The future growth of fishing, forestry, mining, and tourism is limited by the constraints faced by industries in remote regions.

Remote economies have small local markets and are distant from significant markets. Remoteness reduces the price producers receive for their products and increases the costs of production. This limits profitable investment opportunities in remote regions (Leven, 1986). Remoteness restricts development because resource production must overcome the costs imposed by distance from markets.

Compared to resource industries, high tech industries seem to be without the limits imposed by remoteness. The business literature is full of claims about the "death of distance" (Ohmae, 1999; Coyle,1998). In fact, recent technological change that allows production of goods and services to occur away from population centers would seem to overcome the limits of remoteness. New technologies that reduce the cost of moving across space increase the potential for increased economic activity away from population centers. Those technologies that limit the effects of remoteness may provide additional economic options for communities in the North.

This paper examines the factors that affect the location of high tech industries in the United States. In particular, it looks at the strengths and weaknesses of rural, peripheral regions as locations for high tech industry. The insights from the US experience may be helpful in considering the potential of Arctic communities around the world.

Attracting High Tech Industries

In the United States, community efforts to attract high tech development vary significantly in expense and success. Many communities use a simple naming strategy to point to the region's openness to the industry. For example, Washington state has a 'Silicon Orchard" and Iowa has a 'Silicorn Valley' (Sterlicchi, 2001). More aggressive efforts use public funds to train workers, build infrastructure, and offer tax breaks to encourage high tech growth. Naming strategies are relatively inexpensive. Investments in training, internet infrastructure, and R&D tax subsidies are expensive (Bartik,1994). None of these approaches guarantees success.

Another type of strategy communities have pursued is the promotion of a region's quality of life

(Gavin,2001). A good quality of life has been suggested as an important reason why high tech firms move to communities. While there may be costs to improving a community's quality of life, this approach differs from the old industry chasing approaches. It offers residents benefits even if the approach doesn't attract new business. Improving the quality of life makes a community better for its residents.

The Importance of Place

What really matters in the location choices for firms in high tech industries? With the 'death of distance' these firms no longer need to seek locations near their markets. This freedom, however, doesn't mean that these firms will locate anywhere. The new location freedom doesn't imply that every place will become a potential business center. Replacing physical connection with virtual connections makes place matter more not less (Kotkin, 2000). The distinction between communities becomes more important in determining their economic success. If this is true, what community characteristics matter to high tech industries?

Examining the characteristics of communities that have successfully attracted high tech firms provides an answer (Rogers, 2001; Rogers and Jastrow, 2000; Levy and Stone, 1998). High tech firms will be affected by the cost of space as well as the taxes and other public costs associated with a location. Like all producers, high tech firms will be attracted to locations with low cost inputs, but scale economies and quality of life also seem important.

Economies of scale, which reflect a community's history and size, are an important community characteristic for high tech firms. Concentrations of economic activity lower the cost of production especially for new firms. Regions with industry concentrations offer the support of a web of suppliers, potential partners, and legal and technical specialists to new firms. The historic location of research universities and institutions provides the ideas for new ventures plus the manpower to start and staff these businesses. The importance of venture capitalists, not simply main street moneymen, is an example of a qualitative aspect of scale.

Quality of life is another community characteristic that is important for location of high tech industry. It matters for the most part because it affects labor costs. The quality of the education, the climate, and the recreational and cultural opportunities differ by place. The wages a firm has to pay and the costs associated with worker turnover may be less in a better quality place.

Low costs, high quality of life, and scale do not provide a recipe for the creation of a 'Silicon Tundra'. These traits are too general, but they provide a metric for the general appraisal of the potential of Northern communities. Rural, remote regions in the North are most likely to offer high costs and limited scale, so this list presents a question. What is the relative importance of quality of life in the location of high tech industries? Could a place provide enough quality of life to overcome the lack of the other factors? It is on the answer to this question that the Arctic's high tech future may rest.

The Importance of Quality of Life

Development officials in Northern communities may be encouraged by reports that quality of life matters in the location of employee-oriented firms in the US. Rural communities provide high levels of outdoor recreation and land based amenities that are limited in more developed urban regions. The quality of life advantages of rural locations are reflected in the importance of residential and recreational amenities in the recent growth of rural America (Nord and Cromartie, 1997).

A region's quality of life affects local wage rates. A number of studies have shown that wage rates reflect differences in regional amenities (Rosen, 1974; Gyourko, 1991). Migrants are attracted to nicer regions, which increases the supply of workers and reduces the wages paid. Workers migrate until their real incomes cannot be improved; in the nicer region they are paid lower wage rates and compensated in

increased amenities. The lower wages in nicer regions provide an incentive for firm location.

Human-capital-intensive firms in emerging industries will tend to follow workers to high amenity locations. However, the precise pattern of location will be sensitive to the trade-offs between amenities, compensation, and costs. Firms' location choices involve a tradeoff between a reduction in wages and increases in other costs, which places a limit on quality of life as an attraction strategy (Kohler, 1997).

In the US there is some empirical evidence which reinforces the theory that amenities matter in determining the location of high tech firms. At the county level amenities have been shown to positively affect economic growth (Deller, et al, 2001). Others have found evidence that quality of life was important for attracting firms in high tech industries to rural counties (Barkley and Keith, 1991).

What does this mean for the Arctic? Even if quality of life matters, does the North provide it? While many residents of the North might say that the access to the wilderness and the limited population provide them with a high quality of life, we need to remember there is no accounting for tastes. Tastes differ and the question remains whether workers in high tech occupations would find a remote area an attractive place to live.

The growth of high tech, labor-intensive businesses offers the prospect that low income rural and resource based communities in the Arctic can attract new industry and come closer to income parity with their nation's urban centers. The footloose nature of these firms and the absence of a need for an existing manufacturing base or a large labor force suggest that rural regions possess no obvious disadvantage. However, while quality of life matters, there is also evidence that the scale of activity also matters. The attractive force of agglomeration economies provides the limit to whatever quality of life advantage the North may possesses.

The Importance of Scale

Agglomeration economies reduce the cost of production in places of industry concentration; they also make it easier for new firms to enter. Marshall offered three reasons for this positive externality: labor market pooling, scale economies in inputs, and knowledge spillovers (see Krugman, 1993). These scale economies are lacking in the rural North.

Of the three reasons for agglomeration that Marshall identified, any Northern advantage in quality of life will only compensate for the lack of labor market pooling. Labor market pooling or a concentration of labor with industry specific skills lowers the cost of hiring workers. Firms face lower search costs, moving costs, and training costs. Better quality of life also lowers labor costs.

Marshall also suggested that clustering of firms allows producers of an industry's specialized inputs to achieve economies of scale by producing for a number of customers. The existence of specialists with a knowledge of the industry also makes it less expensive for new firms to enter the industry. The clustering of customers and suppliers also lowers the transport cost and the cost of face-to-face negotiations. Finally, clustering of suppliers may result in greater competition and lower supply costs.

Knowledge spillovers were the third source of agglomeration economies according to Marshall. Being close to competitors offers firms the opportunity to exchange information and technology; this is especially important in industries with significant, rapid innovation. This exchange of ideas may come through a variety of channels, such as through suppliers of intermediate inputs. It may also come through workers talking shop away from work or in more formal sharing organizations.

In the US the high tech industry is very concentrated. This pattern seems consistent with the importance of agglomeration or scale economies for the industry. It may be difficult for remote regions of the North to overcome the attraction of scale. Evidence suggests that when quality of life matters, it matters for loca-

tions that are close to major high tech areas (Huskey, 2002). States with high quality of life that are close to major high tech areas have a better chance of attracting this industry. In some cases, governments may create scale through investment and location subsidies, but this will be expensive and could, at best, affect only a few places.

Policy Implications

The positive effect of quality of life still offers a development strategy for rural areas. Investing in quality of life has the benefit of, at the very least, improving the lives of people in the region. Focusing investment and policy on improving a region's quality of life offers the additional benefit that it may also attract high tech business to the region.

Another avenue of high tech industry growth may come in connection with the resource industries that dominate these regions. If the level of resource industry activity generates significant scale economies and if the resource industry relies on high tech applications, high tech businesses might be generated. Firms that originate to serve the natural resource industry may expand to a broader market. The local natural resource industries would provide the initial market for this high tech growth.

The homegrown specialty approach seems consistent with the pattern of high tech specialization found in the US (Cortright and Mayer, 2001). One study found that high tech concentrations tended to specialize in relatively few products. Specialization was found in production, patents, and venture capital. The natural resource base of a rural region may give a direction to a high tech specialization.

Northern regions may attempt to spend their way to agglomeration economies by investing in research, venture capital, or university development. The connection to what else the region does is also important in these strategies. Experience with R&D investments in rural regions of Europe suggests that they have limited impact on economic growth. Rural regions may not have the industrial structure and infrastructure to incorporate new ideas found in these programs (Rodriguez-Pose, 2001). This provides another reason for looking for high tech opportunities related to the natural resource production base of the region. Focusing on the high tech component of home grown industries means the region is more likely to have the internal businesses, skills, and infrastructure to make the most out of new ideas.

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Human Capital in the North – The Canadian Situation

Peter G. Johnson

In my mind, the concept of Human Capital carries connotations of both existing expertise and the potential for developing expertise needed to meet the demands of society in the future. As new governance systems are established and further evolve in the north, there are significant new opportunities for northerners, whether indigenous or non-indigenous; but there are also very significant challenges. Demographics, in relation to the expanded demands of a global economy and global political systems, provide the background to the main challenge in Canada. Northern indigenous people wish to control their own destiny with their own resources, fully participating in all aspects of national governance, while maintaining their own culture. In order to accomplish these goals, they have to expand their collective level of expertise.

The population of northern Canada consists of: First Peoples; Inuit and First Nations; and others, mainly of Caucasian origin, who may be either second or third generation northerners or recent recruits from 'outside'. The statistics show that

- There are approximately 31,000 people in the Yukon, of whom 21% are First Peoples.
- There are approximately 42,000 people in the Northwest Territories, of whom 50% are First Peoples.
- There are approximately 27,000 people in Nunavut, of whom 85% are Inuit.
- In Northern Labrador and Northern Quebec, a large majority of the population are Inuit, Cree, or Innu.

In almost all regions, First Peoples represent the majority of the population outside the major government centres (Whitehorse, Yukon, pop. 23,000; Yellowknife, Northwest Territories, pop. 17,000; and Iqaluit, Nunavut, pop. 7,000) where most of the non-indigenous people live. Furthermore, the two elements of the population have different demographic age-structures: in marked contrast to the non-indigenous community, about half the indigenous population is under the age of 15. This provides both an exciting opportunity to train the next generation, and a challenge for the education system to adapt very quickly to these training needs.

The northern population has a wide range of skills and expertise. Non-indigenous northerners tend to have a higher level of 'formal' training, in the southern sense of university and college. The indigenous northern populations have fewer people trained in the southern system, and those individuals there are with a southern education are undergoing enormous stress to fulfill the demands made on them regionally, nationally and internationally; but many have skills based on the land. The indigenous populations are in the process of developing their expertise in western-defined disciplines, while attempting to maintain their culture and its ways of transferring knowledge.

It is often difficult to demonstrate what the population base and its distribution means for culture and governance in a global world. In terms of numbers, there are more students, faculty members, and support staff at my own university, which covers an area of five by three city blocks, than there are people in the Territory of Nunavut, with an area of 1.994 million square kilometres. On the Canadian national holiday, July 1st, more people assemble on the lawn in front of the Parliament Buildings in Ottawa to view the fireworks than reside in the whole of the northern territories and regions. Many communities are small, separated by long distances, and are only connected by air service.

The fact that Canada has a very small population base in a vast area of northern territory that is embarking on new governance systems makes it almost inconceivable that northerners -- indigenous or non-indigenous -- will be able to fulfill all roles required of them in the near future, especially given the move into global as well as national roles. Even though, as an identifiable component of the Canadian population, they have the highest percentage of young people, First Peoples are unlikely to be able to train sufficient expertise for regular governance roles, and for response to other issues such as climate change impacts or sustainable development, in the first quarter of the 21st century. The First Peoples of Canada wish to take the lead in most issues affecting their lives. This desire to take the lead is understandable and must be promoted in every possible way; but there is currently neither the human nor the financial capital for all of these roles. It must be pointed out however that federal agencies, even though they may have access to more human resources, do not themselves receive sufficient financial resources to fulfill all obligations. This is particularly true in scholarship and science where federal programs have been reduced in the last two decades and where there is no apparent will to develop strategies or set priorities.

Despite claims to the contrary, I feel that the ”new” governance models in the North for First Peoples, in agreements signed with the federal government, are essentially based on western-style government structures. Standard portfolio structures for education, heritage, economic development, law, etc. provide the basic framework, with management hierarchies identical to southern models. The First Peoples' population base of about 70,000 across the North, in three territorial and two regional governance structures, cannot realistically fill all positions at present without overloading some of the highly qualified individuals. Strain on human resources must be a major concern as governments try to fulfill all their obligations. Increasingly, this must have an impact on the youth, who currently make up about 50% of the population, and for whom there are very great expectations. What is the nature of this impact? It can perhaps be characterized by trends such as loss of time on the land with parents and elders, difficulty in maintaining language skills, absentee parents attending meetings around the world, and stress-related social and health issues.

The cost of infrastructure for a vast, sparsely populated region like the Canadian North is a particular challenge. Producing pilots, mechanics, engineers, and technicians, for example, from among the local population base is part of this equation. In order to ensure good airline connections within the north and with southern Canada, indigenous-owned corporations have bought two of the three major airlines (Canadian North and First Air) and are majority owners in the third (Air North). In addition, most of the smaller airlines are locally owned. Maintaining an expertise base is essential to the continued health of this infrastructure.

Elementary and secondary-level education in the Canadian North has made great strides in the last decade but there are still many gaps to fill. Among the issues still being addressed are: the need for more aboriginal teachers in disciplines such as the sciences; more development of culturally relevant curriculum; comprehensive availability in all communities (two decades ago residential schools in Whitehorse provided all Yukon high school education, now most communities have high schools but many are small and hard-pressed to offer full scholarship programs on limited resources); high rates of turnover of non-aboriginal teachers; drop-out rates that remain high

despite the advances made in the system; quality of connectivity to the Internet; and pressing community health and social issues.

In some communities, non-aboriginal parents still send their children south for secondary education, an admission that graduation from a high school in the north still does not guarantee the same level of preparation for university study as it does in the south.

Canada has no university located in the northern territories. Some universities, like Université Laval, the University of Northern British Columbia, and the University of Alberta, have northern-oriented programs, but the very small population base limits the ability of the northern colleges in Canada to offer comprehensive academic programs in all disciplines. Delivery of programs in the many small and more traditional communities adds to the significant challenges of developing human capital. Successful programs often exhaust their demand in a few years, and continuing to offer first and second-year university programs on a long-term basis requires a substantial financial commitment to small groups of students. Without these programs however, students have to go south straight from high school. This frequently means attending a non-northern-oriented program, while coping with the challenges of living in a city with a population far exceeding the number of inhabitants in the entire north. For students there is still a major challenge in moving to a southern city for academic training despite the many support programs in place. Introductory courses at southern institutions frequently have as many as 500 students enrolled, with more students in one classroom than in one high school -- or even some communities -- in the north.

Many of the important education links are circumpolar rather than north-south, reflected in the importance of organizations like the Arctic Council, the Circumpolar Ministers of Education, and the University of the Arctic. The possibility to use northern programs developed in other countries is often a more suitable option for Canadian students: the Arctic Studies program at the University of Lapland in Finland and the programs offered by the University of Alaska, Fairbanks are two such examples. More resources need to be available for northern training and for northerners to employ as much outside expertise as they see fit (not expertise chosen by southerners and the federal government).

Despite the challenges, which are well known to central governments, huge demands are placed on northern indigenous communities to develop human capital. It is difficult, or impossible, for communities to lead or participate in all initiatives: the University of the Arctic, climate change, northern contaminants, ocean management, sustainable development, endangered species, CAFF, AMAP, whaling conventions, etc. Who can provide the indigenous input in all of these initiatives? Effective partnerships to spread the load of representation, reduction of overlap as new multi-tiered governance structures emerge, trust resulting from transparency and openness allowing an issue to be represented by just one level of governance, can all help to relieve the pressures on human capital.

As is the case with education, circumpolar contacts are often more important than national linkages with respect to governance activities of northern peoples. Contacts are less bureaucratic, individuals can make a difference, and the processes are open and transparent. Considerable frustration arises from contacts with large bureaucracies that may be culturally insensitive, slow to respond, and closed in process.

Land claims and devolution processes based on southern models may not be justifiable for small northern communities. It often seems that northerners are being given roles without adequate means to develop and implement strategies, and they have little political representation at the national level. Some areas of capacity development suffer because of overwhelming demand for legal, social, and heritage expertise. Science in general can be cited as an example.

The push for community involvement in many programs, especially monitoring programs, adds to the stress load. Community involvement is ideal if time,

expertise and resources are available. But monitoring is a central government responsibility and community activity often seems to be used as an excuse to downgrade commitment.

The cultural integrity of northern peoples, whether indigenous or non-indigenous, is critically important; but there are major problems because of scarce resources for cultural research. Examples include work on degrading coastal sites, which needs to be done before more melt occurs with global warming, and the ice-patch research in the southwest Yukon. The ice patches on the uplands near Haines Junction, where caribou sought relief from insects during the heat of the summer, contain pieces of ancient clothing and hunting equipment as well as abundant datable caribou feces. Rapid melt is now threatening these 6000 to 8000-year-old records of caribou harvesting.

In conclusion, the demographics of the north of Canada make it very difficult for northern communities to take the lead or become partners in many activities. New governance systems represent an exciting opportunity as well as a significant challenge. Science capacity in particular needs considerable attention. In Canada the absence of a northern science strategy -- or even a national science strategy -- and the reduced levels of federal support for science over the last two decades has had a feed-down effect to the community level. Although there are federal initiatives, such as a discussion document on an oceans strategy for Canada[1,2] and a Climate Science Agenda for Canada[3] there is insufficient emphasis on the north, and with the exception of programs like the Northern Contaminants Program, the initiatives are not well coordinated.

Notes

1. *Canada's Ocean Strategy. Our Ocean Our Future.* Government of Canada, Fisheries and Oceans Canada. 2002.
2. *Canada's Ocean Strategy. Our Oceans Our Future. Policy and Operational Framework for Integrated Management of Estuarine, Coastal and Marine Environments in Canada.* Government of Canada, Fisheries and Oceans Canada. 2002.
3. *Climate Science Agenda for Canada 2002-2012*. Final report of a workshop to discuss a climate science agenda for Canada. Meteorological Services Canada 2002

Calotte Academy 2002

Tanja Joona
and
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The international Calotte Academy took place annually from 1991-1999, and now, since 2002, has begun again. It is an international forum for open discussion and dialogue between researchers and other academics on the one hand, and other stakeholders and interest groups, such as decision-makers (both politicians and civil servants), civil organisation activists, and business people on the other. It is also a travelling seminar within the North Calotte, which is the core area of the European North.

The central aim of each annual meeting encompasses both the current international and geopolitical situation of Northern Europe and also the regional dynamics of the North Calotte. The main themes concern regional development, governance, northern economies, security-policy, and opportunities for regionalisation.

Main Idea and Aims

According to the principal idea behind the Calotte Academy, East-West connections and inter-regional cooperation in the European North are related as, for example, the location of Inari in the middle of the North Calotte indicates. The assumption is that these connections mean more transboundary co-operation and will thus open new possibilities for northern regions and societies. An example of this can be seen in the increased cooperation across the border between Haparanda in Sweden and Tornio in Finland, including such initiatives as the ”På gränsen Project” (see Web page of Provincia Bothniensis).

From the beginning the aim has been to make the Calotte Academy, as well its sister forum, the Kuhmo Summer Academy, an annual international forum for fruitful discussion and debate across sectoral borders and between different actors in the European North, emphasizing a win-win-concept instead of a zero-sum-game. Discussion in the sessions of the Calotte Academy has dealt mostly with the challenges and opportunities connected with the development of northern regions in the context of both globalization and regional dynamics, and including more inter-regional cooperation in the European North. The objective of this kind of discussion is to overcome the barriers to not only transboundary cooperation but also cross-sectoral communication and even thinking, since these seem to be among the obstacles and problems of modern societies. Indeed, the Calotte Academy started its discourse on multilateral inter-regional cooperation, travelling across the national borders of the North Calotte, even before the Barents Euro-Arctic Region (BEAR) was established in 1993 (see the BEAR Web page).

Another goal of the Calotte Academy has been to educate representatives of different stakeholders and interest groups, with an emphasis on strategic thinking for planning and implementing development of

the northern peripheries. This is a result of the fact that the Calotte Academy focuses on not only problematic aspects of the present, but also on the consideration of different possibilities for the future.

The Calotte Academy is also envisioned as a loose network of several other research and expertise institutes in the region, including the Rovaniemi Polytechnic (RAMK), the Saami College of Inari, the Thule Institute at the University of Oulu and the Arctic Centre at the University of Lapland in Finland, not to mention the Institute of Economic Problems at the Kola Science Centre in Apatity, Russia, and NORUT Finnmark in Alta, Norway.

Background

The Calotte Academy was established in 1990 by the Lapland Summer University, the Tampere Peace Research Institute (TAPRI), and the Arctic Centre (AC). The 1st Calotte Academy was organized in May 1991 in Inari, Finland. Since then the Academy has traversed the North, crossing national borders and holding sessions in Inari, Rovaniemi and Tornio in Finland, Kirkenes and Svanvik in Norway, Nikel and Murmansk in Russia, and Haparanda and Kiruna in Sweden, with the precept that there should always be sessions in at least two different countries and regions.

The scientific community has also been active in northern affairs and arctic cooperation since the 1980's, especially in the 1990's. There are many scientific organizations and networks in the list of the international actors, including the IASC, the University of the Arctic, a university 'without walls', and the Northern Research Forum (NRF) in the circumpolar North, and the Kuhmo Summer Academy, and the Calotte Academy in the European North.

The latter two, the travelling 'academies', are fora for discussion and dialogue between researchers, civil servants and politicians, students, journalists, and representatives of civil organizations. The Kuhmo Summer Academy took place in Kuhmo, Finland, and in Kostamus, and Petrozavodsk, Russia in the years 1987-1997, and again in 2003. It became an international forum for researchers and civil servants dealing with the northern peripheral regions, and, at the same time, a journey from the frontier to the changing world. This avant-garde forum was then followed a few years later by the Calotte Academy.

Subforum for the Northern Research Forum

The Calotte Academy, and its experience, has also encouraged others to continue the process, creating an international network and forum for cross-sectoral discussion and dialogue on northern issues between different stakeholders. This was critical when the Northern Research Forum (NRF) was established, and the 1st NRF Open Forum in November, 2000 in Iceland and the 2nd Open Meeting in September, 2002 in Russia were organized (for more details see the NRF Web page, and Proceedings 2001). The Calotte Academy thus also serves as a subforum for the NRF and its Open Meetings.

Organizers

The Calotte Academy is coordinated by the Arctic Centre at the University of Lapland. The Idea Group for the Calotte Academy, chaired by Dr. Lassi Heininen, is in charge of the preparations for the annual meetings (*www.arcticcentre.org/*). The Calotte Academy is organised annually by the Rovaniemi Polytechnic (RAMK), the Saami College, the Thule Institute, and the Arctic Centre, in cooperation with the Institute of Economic Problems, Kola Science Centre, in Russia and NORUT Finnmark, in Norway. It is also supported by the County Union of Lapland (Lapin liitto), the Municipality of Inari, and the NRF.

Calotte Academy 2002

After a short hiatus, the international Calotte Academy was held again in Inari, Finland, on 6-7.

May, 2002. The main themes of the Calotte Academy in 2002 were ”Population Dynamics and Human Capital in the European North” and ”Traditional Knowledge and Application(s) of New Technology”. As part of the seminar, there was a round table discussion called ”Opportunities for the European North” with panelists from the University of Lapland, the Regional Council of Lapland, the Norden Association, the municipality of Inari, and the environmental organisation and tourism company, Riekkoparvi. In connection with the seminar there was also a questionnaire distributed, a report of which follows later in this paper.

As was mentioned earlier, the main themes of the Calotte Academy include both contemporary problems and the consideration of different possibilities for the future. It is thus relevant to examine the relationship between quantity and quality in the relationships of each province and municipality not only in the internal regional politics of their respective countries, but also in the development of the European North. The results from the questionnaire distributed along with the seminar include many interesting and rather surprising answers, and even a challenge for the decision-makers.

One of the central topics of the Calotte Academy 2002, Population Dynamics in the North Calotte, dealt with *quantity*, in particular, with population movement and the decreasing population in Lapland and other regions of the European North. Significant questions were raised during the seminar days: What is the right number of people in the European North, or is there even one? Are population dynamics, or even demography, a relevant factor in regional development at the beginning of the 21st century? This topic also, however, concerns human capital and well-being, i.e. *quality*, considering the impact of local and regional movements and NGOs on regional dynamics and development, and institutionalising a new concept of inhabitant.

The Academy’s second focus in 2002 concerned not only traditional knowledge and the application(s) of new technology, i.e. the so-called new industries, such as the media and virtual industry and their contents, but also the further development of traditional and local livelihoods such as reindeer herding. By new industries, or even, perhaps, a new kind of industry, is meant, in our world of globalisation and regionalisation, something which deals mostly with non-material and soft values. The idea is to look at these industries and livelihoods as challenges and opportunities for northern economies and societies, taking account of and emphasizing people’s physical and spiritual wellbeing and promoting resources such as ’health culture’.

The most recent meeting of the *Calotte Academy* took place in April, 2003 in Rovaniemi, together with the Barents Press Annual Meeting. As before, the main themes concerned northern issues like regional dynamics and the challenges of democracy in the European North. Particular themes of this meeting were ”Does the North Need to be Populated?” and ”Democracy of Old Structures under New Challenges.”

The Calotte Academy Questionnaire

When the Calotte Academy was being prepared during the winter of 2002, the idea arose to distribute a short questionnaire dealing with the above-mentioned themes. The questionnaire was sent to over 300 individuals and stakeholders’ representatives, women and men (56% of responses came from women and 44% from men), old and young, and persons both inside and outside the region, (i.e. Finnish Lapland and the North Calotte/Barents Region). Although it was emphasized that this was just a questionnaire, not a scientific research project, the questionnaire was answered by almost 200 people, and received significant attention in the local newspapers (See for example, Lapin Kansa 7.5.02, 25.5.02, and Kaleva 7.5.02).

The questionnaire began with ten multiple choice questions to which people were to choose what was, in their opinion, the best option. A summary of the responses we received follows. Approximately 70% of the respondents believed that the population in Lapland *should increase either considerably or somewhat*,

when taking into account occupational possibilities, the environment and the economic situation in Lapland today. 37% answered that there should be *considerably more tourists* visiting Lapland in the future, while another 48% said that *somewhat more* tourists should visit Lapland. 49% felt that different kinds of companies should either be established or move from other places to Lapland, and another 43% were of the opinion that they should do so a *little bit more*.

The answers to the questionnaire indicated that 58% considered the forest industry to have either a *quite positive or an extremely positive* effect on the development of Lapland. The mining industry was also seen as either *extremely positive or quite positive* (together, 75%) to Lapland's future and development. In response to the question concerning information technology possibilities and situation in Lapland, it was interesting that these rather new industries are expected to have either an *extremely positive* (42%) or a *quite positive* (42%) effect on Lapland's development. 46% saw the opening of the Salla border-station as a *quite positive thing*, and 27% of the respondents considered the opening of the borders an *extremely positive* development.

Lapland is seen as a pleasant living environment with many possibilities for spending high quality free-time (70%). 28% of the answers indicate that Lapland is considered to be *much* less developed than other parts of Finland, but the (so called) ordinary everyday life is either *quite good* (49%) or ordinary, that is, neither good nor bad (32%).

At the end of the questionnaire people were asked to write down three things in Lapland that were positive and three that were negative. The top five negative and positive issues in Lapland that people mentioned were:

Positive issues in Lapland	**Negative issues in Lapland**
1. Great environment	1. Decision-makers lack of faith
2. Peacefulness	2. Unemployment
3. The people of Lapland	3. Overly high emigration rate to the South and to the big cities
4. Many possibilities for leisure activities	4. Weak economic situation
5. Favourable living costs	5. Jealousy and rivalry

As can be seen from the above, the positive issues which people mentioned were related to things for which Lapland is famous and which people elsewhere, outside Lapland, also recognize and know: things like a clean and beautiful environment, peacefulness, space, the changes of seasons and a more relaxed lifestyle. The inhabitants of Lapland were considered to be open, honest and kind. On the other hand, as a negative issue, jealousy and rivalry were considered detrimental to the cooperation between different stakeholders, municipalities, officials, etc. Positive issues were also connected with the many fine leisure activity possibilities and the favourable cost of living.

The negative issues people mentioned most were the bad employment situation in Lapland and the decision-makers inadequacy in acting when necessary. They were accused of lack of faith, which has an effect on their decision making. Also, instead of taking any real steps forward, people tend to complain and blame one another. This however, is surely a universal phenomenon, not just a Lappish dilemma! Of course these kinds of problems can be more troublesome in peripheral areas, where decision making is funnelled from big centres, such as from Helsinki in Finland. The answers indicate that the economic situation in Lapland is considered to be weak, and that may affect the number of confrontations between different stakeholders: It is difficult to divide money if there's nothing to divide. The unstable economic situation is increasing people's anxiety about the future. Most jobs today are seasonal, causing many people to move to southern parts of Finland, to bigger cities and centres.

As it was one of the main topics of the Calotte Academy the questionnaire was supposed to examine not just quantity but also quality issues in Lapland. As mentioned above, people, especially young people, are moving away from Lapland, first to study elsewhere and later to stay, with their families, in better labour markets. The obstacles to

their coming back to their childhood surroundings are high. The beautiful environment, clean air, and peacefulness aren't enough when there are no facilities - no schools, shops or infrastructure - and everything and everywhere is very far away. In the Calotte Academy the characteristics of those who move away were discussed: Very often, they are young women who want to educate themselves, who have little or no interest in moving back home again, leaving Lapland full of bachelors with many social and psychological problems.

One of the most positive areas of industry in Lapland is travelling and tourism. These have grown significantly in recent years, and they are still growing. Tourism gives thousands of jobs - mostly seasonal - to many people in different fields. This is seen in a positive light in the country as a whole as it unites Lapland's clean and peaceful environment with the economic growth which is desperately needed. Tourism has been criticized however because of its concentration in certain areas and its adversarial relationship to the native environment and local inhabitants. Many municipalities also have a tendency to invest a lot of effort, strength and money in projects without first investigating and planning them properly. The confrontations between tourism and traditional livelihoods in northern Lapland are also providing challenges for the future: how to combine economic growth and the continuation of traditional livelihoods, like reindeer herding, with favourable conditions for its practice?

In conclusion it should be emphasized that this is not a question of just Lapland, Finnmark or Murmansk. It is a question of all the peripheral regions of the North being squeezed between globalisation and regionalisation. Globalisation stresses the ease of connections and communication, and the growing importance of larger and more powerful actors. At the same time, regionalisation offers another solution to the inhabitants and regional actors of the North, an opportunity to develop new kinds of connections and a new system. The northern parts of the world have always lived in a global, and at the same time, regional world. This has made the people of the North international actors from the very beginning. If the exotic nature and peaceful atmosphere fascinate more and more tourists, and the rich natural resources bring more companies to North Calotte, we can say that the novel character of northerness has arrived on many agendas. Northerness is a trendy word - even if only in a headline or as a symbol.

Gift and Give Back Economies - Cultural Sensitivity and Gender Awareness as Social Capital in the North

Kaarina Kailo

> Women are 70 per cent of the world's poor, and they own one per cent of the world's wealth. In every country in the world, women are poorer than men, and their poverty and economic inequality affect every aspect of their lives - their basic survival and the survival of their children, their access to food and housing, their physical security, their sexual autonomy, their health, their access to education and literacy, their access to justice, their ability to participate in public life, their ability to influence and participate in decisions that affect them. Women's economic inequality is integrally connected to their sexual exploitation, and to their lack of political power. As long as women as a group do not have an equal share of the world's economic resources, they will not have an equal say in shaping the world's future. Because governments are the primary implementers of human rights, addressing women's economic inequality must be a priority for governments now. (Day 2000, 12)

Two major conferences on Circumpolar women have been held since 1999: "Different Lives, Common Threads" in Whitehorse, Canada, and "Taking Wing - Gender Equality and Women in the Arctic" in Saariselkä, Finland, in 2002. I wish to draw attention to the key findings, recommendations and suggestions resulting from these two meetings where women from around the Arctic and Northern regions met in order, among other goals, to identify the critical issues of the near future. I have formed my own synthesis on the basis of these various meetings in which I addressed violence against women, nature and democracy. I have also incorporated into my vision of critical issues women's global perspectives among other things from the Women's Worlds Congress held in Uganda (2004a, b), where I chaired sessions on the Gift Economy, Sustainable Development / Ecofeminism and Sexual Abuse in the Global Context (Kailo 2002d). I have decided not to focus just on issues of Finnish women because global trade politics and McColonialism have an impact on local women's issues in the most remote regions of the world. We are interconnected in the global village, but not all aspects of this interdependency benefit women and other vulnerable groups (Afshar and Barrientos 1999; Batra 1994; Ås 1999).

In my view, the 2nd NRF forum and its follow-up will best serve the mission of promoting policy-relevant dialogues between members of the Northern research community if it addresses the critical issues (sustainable development and local / global eco-social well-being) from the point of view of all concerned "stakeholders" - women and Indigenous people included. The very terms used in the NRF description, "social capital" and "stakeholders" reflect the economic and market-driven ethos of contemporary global politics as the naturalized worldview of today- they are effects of what Vaughan (1997) calls the

patriarchal exchange economy. What is the implication for the future of the North that wellbeing is approached through the tunnel vision of economics and the market economy, and that human beings are increasingly objectified through the utilitarian language of capitalism? In considering the impact of neo-liberal trade ideologies, one needs to remember that only a small minority of Northern people own capital or are, literally speaking, shareholders of economic growth. To cite Angela Miles at the World Social Forum in Porto Alegre:

> On a world scale the polarization is obscene. In 1997, 450 billionaires had assets equal to the combined annual income of the poorest 50% of the world's population. World Bank statistics show that worldwide, the number of people living on $1 a day or less increased from 1.2 billion in 1987 to 1.5 billion in 2000 (22% of the worlds population), and if recent trends persist, will reach 1.9 billion by 2015. (Millennium Forum 2000, quote by Miles 2002)[1]

Furthermore, to quote Eisenstein:

> The same government that has rewritten social welfare law and ended 'hand-outs' to the poor has in 1997 given away digital spectrum worth up to 70 billion u.s. dollars to commercial broadcasters. The largest media companies in the world got the equivalent of at least five new channels in every market where they currently own one (Eisenstein l998, 83) ... The amount of tax breaks given to corporations and wealthy individuals in l996 was US 440 billion, more than seventeen times the combined cost of state and federal spending on AFDC (Aid to Families with Dependent Children). (Eisenstein l998, 62).[2]

Similar tendencies are to be found around the world under neoliberal politics. As women from around the globe have agreed in the above-mentioned conferences, the views, values, experiences and wisdom of women have to be recognized, made visible and heeded as a basis for local/global wellness on the economic, political, cultural and spiritual levels.

Despite women's collective disproportional share in working life, from family responsibilities to employment and volunteer work, they own, according to the UNDP, less than 1% of the world's property and continue to be victims of multiple forms of violence around the world (e.g. Smyke 1991).[3] In the arctic regions, women are particularly vulnerable to economic, cultural, spiritual, religious, psycho-emotional and physical s/exploitation and sexual violence. Furthermore, they bear the brunt of the effects of regional inequality in the provision of services and through other effects of transition economies and the push towards privatisation (see in particular Dokmanovic 2002). This is due to women's double or triple work load, their geographical isolation, higher unemployment, insufficient health and police services, the long distances to maternity care services, scarcity of networks of support, absence of shelters and the difficulty of hiding from abusers in closely-knit communities (Graeme 1990), to mention just some of the critical issues.

The globalization of free trade and the expanding market economy have brought unprecedented wealth and opportunities to many women in the North; the technological inventions of recent years likewise promise a cyber-revolution for women and Indigenous populations in the most remote Arctic regions. Digitized sexism and racism are also, however, new manifestations of asymmetrical power relations in the North (Eisenstein 1998). Without a serious analysis and consideration of the worldwide wedge (the increasing gender gap in employment, access to resources, income and services), only a small elite group of women benefit as "stakeholders" of Northern development projects. Women benefit little, or actually suffer, from new technologies and industrial investments when their impact is to destroy the traditional Indigenous life style (the explicit concern of Nenets, Montagnais, Cree and Sami women for example), or even merely to aggravate the conditions underlying women's economic dependency.[4] One cannot approach economics as an issue separate from politics, ideologies, worldviews and eco-social values. Economics is no more a neutral science than ecology, biology or technology, but is, rather, deeply embedded in ideologies set predo-

minantly by the white male elite. Sustainable development policies are likely to fail if they are based only on the sciences of biology and ecology, without regard for the social sciences or local grassroots level experiences and perspectives.

Across the globe, women have identified violence against women, the increased trafficking in women and children, and prostitution (a major expanding business in the North) as the critical issues to be addressed by governments, organizations, policy makers and researchers (e.g. Pietilä 1998, Kailo 2004b). Across the North, women are vulnerable to economic and sexual violence because of the socially unsustainable priorities determined as well as defended by multinational corporations. Governments in the North are subsidizing transnational companies (helping them produce private profits) while not requiring them to share the responsibility and/or costs of the social and ecological consequences of their operations, or to use the subsidies for concrete increases in employment (eg. the case of the company Salcomp moving from Finland to Asia to increase profits). If governments are more interested in defending the economic opportunities of multinational corporations (with profits often flowing away from the local communities) than in protecting the sustainable livelihoods of the local inhabitants, then northern development projects are a threat to the collective wellbeing - not evidence of progress. There is nothing more worthy of development in northern communities than the sustainable futures of their children and their ecosystems. There is no value in calculating mere economic growth and GNP as a measure of progress, where the young women and mothers are not well and are on the lookout for opportunities to leave the communities. One should also consider the Gross Nurturing Product - the mental subjective and spiritual growth, the growth in networks of mutual assistance (Vaughan 2002), beyond the monolithic concepts of endless and unrestrained economic growth and competitiveness.

One might cite numerous examples of the asymmetrical power relations that place women as (stake) holders of the shorter end of the stick. The social costs of parenthood are not shared equally by mothers and fathers and even governments break against laws when it comes to respecting women's labour rights (e.g. Eräsaari 1999). This has the impact of increasing women's difficulties in respect to securing jobs, advancement and pensions. In Finland, for example, as is well recognized, professional life is sharply segregated on the basis of gender. Women are overwhelmingly represented as employees in the service, care-taking, educational and health care fields, while men make up the majority in the professional fields that are the most appreciated and allotted the most resources: above all high tech or IT fields. Female businesses such as beauty shops and health centres are clearly less competitive than the male-dominated technology enterprises for structural reasons: not only do they have to shoulder the social costs of motherhood, maternity leaves and absences caused by sick children, but women themselves as entrepreneurs face the challenges of parenthood disproportionately as mothers with businesses. The men in the male-specific fields and businesses have, in contrast, the double benefit of NOT having to shoulder either form of social cost.[5]

Furthermore, the myth of women's dependency on male breadwinners conceals the asymmetrical power relations marking the private and the public realms of influence. While it is true, of course, that many women, even today, do depend on their partners' or husbands' incomes to make ends meet, this view is partial and misleading. It makes the dependency of men on women's unappreciated free labour invisible, allowing men to deny or conceal a form of labor that is taken for granted and left out of the GNP. Women as equals, as "bread makers" and as reproducers of the entire family, need to be recognized as social contributors, while the reasons for women's increasing violence and their failure to identify with family life and values also needs more expansive critical assessment. If birth rates and marriages are on the decline, the reasons must be sought in institutional, social, political, and educational, rather than individual, values. Women's increased unwillingness to bear children and become homemakers in certain regions attests to the economic conflicts that the current social policies create for them. Increasingly, government social policies are preventing women from

combining work and family, leaving them with meagre options. In Finland, for example, numerous studies and statistics reveal that employers, including the state, are increasingly avoiding their responsibility for carrying the costs of parenting. Young girls more than young men are given short-term contracts, allowing employers to not renew contracts for pregnant women or for women suspected of approaching their reproductive years.

Economic, mental, institutional, psychological and physical violence must be seen as interrelated aspects of one another. Economic violence disposes women to forms of dependency, rendering them vulnerable to other violence. Financially dependent, many women lack options for leaving violent partners, especially if they have young dependents. Finally, violence against women must be recognized by Northern researchers and policy makers for what it is: the most significant and immediate cause of women's physical and mental injuries and deaths (femicides). Studies show beyond any doubt that the home is the most brutal and dangerous place for women, around the globe. This is both a human rights issue and an economic one, for this violence costs tax payers unimaginable amounts of money (Heiskanen & Piispa, 2002) and ruins the conditions for stable and productive family life or employability.[6] According to statistics, one of every two women in Greenland experiences sexual violence, and the ratio is similar in other remote Indigenous communities. Certain Indigenous communities have a higher instance of multilevel violence because of the legacy of sexual abuse in residential schools (e.g. Canada), in addition to other forms of colonial impact. Combined with the increasing presence in northern villages of organized prostitution and trafficking (women lured from Russia and other places, particularly from Eastern Europe, to "work" in the West), many mothers with children have preferred to leave the communities in search of more support and services, better employment possibilities, less abuse, and an escape from the near-legitimised presence of prostitution which is tearing families apart. Russia, for example, is planning to legalize prostitution although the intimate links between trafficking in women and prostitution rings are well established and, additionally, it has been recognized as a form of violence against women. Sweden alone, so far, has criminalized the buying of sex, focusing on the antisocial acts of male customers rather than blaming the victims of sexual and economic abuse. The solution for this crisis, documented in many parts of the North, cannot be to replace local women with mail order brides from other countries where women are reduced to sexual slavery as the only means of survival (or forced into the sex trade through the trafficking networks).

The "stakeholders" of Northern development projects must heed these social factors when considering the conditions for the good life in the north (and not just good business for transnational interests). The gender perspective means also heeding the critical issues facing men in the North, from alcohol abuse, teen and adult suicides and unemployment, to depression resulting from the fragmentation and rupture of the communities' social fabric. One needs to research also the lives of marginalized Northern men. Finnish men's studies, for example, are exposing the costs to men of "armoured" or "hegemonic" masculinity, and the rigid gender roles that men are brought up to adopt. As all issues are interconnected, to fight the epidemic of violence against women, one needs to analyse and take account of the masculine mystique, the education and socialization of boys in Northern cultures, both mainstream and marginalized (Miedzian 1991). The evidence is strong that Indigenous communities have become more patriarchal and hierarchical as a result of the import of Western sex/gender systems.

As for research and policies concerning the delivery of health and social services, it is important to take into consideration culturally relevant ways of envisaging the services and, again, that they need to be informed by women's particular needs and issues. Policies drawn up for the Northern regions must, in the name of balance, consider the values and worldviews that Indigenous people and women, as groups, identify with and cherish.

The different agendas which pit Northern people against each other can be summed up as values

based, on the one hand, on the patriarchal exchange economy (the market economy and its culturally bound assumptions about development) and, on the other hand, the gift and give back (Kelley 1992) economies which are tied to Indigenous and women's logic of mothering, the ethics of care and social responsibility (Kailo 2000, 2002a, 2002b). The former tends to stress individual, androcentric, competitive values based on the male educational model, accompanied by short-term gain and the concentration of power as a concealed form of asymmetrical "exchange." The latter emphasizes ecosocial sustainability as the effect of group rights and responsibilities, sharing, social justice, equality and balanced relations between humans and nature. The gift economy[7] or paradigm caters to and satisfies needs without the necessity of exchange or reciprocity (children and the sick cannot reciprocate), whereas the exchange economy rewards asymmetrical trade relations without sufficient regard for social consequences or the costs to the environment and vulnerable groups. Men as well as women might identify with either economic form or worldview, but it is clear that the patriarchal exchange economy (with its myth of shared gain) is the only paradigm that is fully recognized and valued. The gift economy incorporates a different view of human-ecological and gendered interdependency. The exchange economy fails to recognize its own dependency on the free gifts provided by women to capitalism, which are comparable to the surplus value of the workers' labour to capitalism (Vaughan 1997). For Indigenous people, giving back to nature, on the other hand, has represented a non-hierarchical and non-dualistic worldview where goods are circulated as gifts in the name of collective peace and balance, not hoarded for private consumption. Treating animals with respect, as subjects with inherent, inalienable rights contrasts sharply with the commodification and subjugation of animals within agri-business. The treatment of women, Indigenous people and animals as mere raw materials or resources (cheap labour) would not be possible under the holistic, interdependent social covenant of Indigenous people. The social contract of Westerners, in contrast, sets up white men, culture, "civilization" and humans as the self, with women, Indigenous people, animals and nature as their inferior, dependent "other." The importance of uncovering and examining all the various modern forms of "arctic othering" (Kailo2002b) resides in the impact of monoculture on the future of all humanity and the biosphere: as Vandana Shiva has demonstrated, monocultures in nature and society result in loss of vital survival knowledge, ecological wisdom and adaptability, and plant the seeds for social unrest, injustice, violence and wars based on scarcity in the food chain (Shiva 1997a, 1997b). Scholars now refer to the dismissal and trivialization of women's and Indigenous peoples' worldview, wisdom and knowledge as epistemic violence. It is no less harmful than physical violence and racism and, in fact, represents the springboard for all the other forms of arctic othering. Academics have recently begun to explore a new and uncharted area of study, "white studies and mythology", the purpose of which is to devitalize the legacy of western, eurocentric scientific and cultural paradigms as the only ones worth emulating and developing.

I see as the critical issue of the North the importance of opening a cross-gender and cross-cultural dialogue to debate the clash of economic, social, spiritual and cultural traditions and worldviews. The changes in Northern climate and the economic instability, together with the increased feminization of poverty across the globe (including the Arctic) are serious threats to life in the North (see Canadian Woman Studies/les cahiers de la femme, 2002, 21-22). One needs to take a critical look at the monocultural and patriarchal politics, from economics to education, that are threatening the ethnic, gender-related and ecological diversity of the North.

Women as the pillars of the family cannot express their traditional logic of nurturance in a climate of male terror and male-only development projects. Gender and ethnocultural perspectives as well as gender aggregated data must be produced, mainstreamed and valued in all policies and research and not treated as a special, one-time topic ("Women in the North"). Women's perspectives need to be considered in all areas - from oil, gas, mining, human security, health, economics, reindeer herding, crafts, transportation, politics, education and culture to the

arts - so that an integrated vision of the gender impact can be factored in, and seen as, an element of social sustainability. Furthermore, the topics linked with the North must not be restricted to those prioritised in a gender-blind fashion by male scholars and politicians at the expense of fields and questions of direct relevance to women's lives (eg. the gendered aspects of security, violence, militarization, EU, Nato). The University of the Arctic should pay particular attention to this and to the areas of study women and Indigenous people find important (eg. supporting and valorizing local traditions, cultures, languages, crafts, food production, self-sufficiency, sustainability, local schools etc.) alongside the "male" issues that give more weight to economic development issues from tourism to male-oriented reindeerherding.

The many strategies to empower women side by side with men may require special loans to women entrepreneurs, focused training (business, IT, technology), new role models, funding and workshops to help develop leadership skills for women, mentoring programs, resources for better networking, sponsorship of skills exchange and related workshops, increased educational opportunities, parenting programs, legal counselling, human and women's rights advice, projects based on First Nations traditional knowledge, community partnerships, and empowerment workshops and curricula adapted to Indigenous history and culture, as well as to women's herstory and mythology. On the other hand, as has been established in these meetings, the collection of data connected specifically to women's lives in the North should be made a research priority. There is very little gender-aggregated data on the status of and challenges facing women in the remote Northern regions. Data is also urgently needed on the impact of the globalized market economy and neo-liberal policies on women across Russia and in various remote Arctic regions.[8]

It is only by giving serious consideration to all these interlocking social factors that one can create the conditions for eco-social wellness, healthy markets, and healthy workers in the North. The opportunities for healthy business are scarce in communities where the majority of women are victims, and half the population are perpetrators of violence. It should go without saying, however, that the markets must not be the measure of the value of human and woman rights. Women and nature have their intrinsic value beyond the needs of the market for cheap, flexible labour and unpaid homemakers. Finally, in response to the forum's invitation that all essays address the issues raised at the session, I must conclude: women and women's issues remained truly invisible. The concerns of this position paper were not addressed, they remained as invisible and unfocused as women's contributions, and the threats to their well-being, across the North. Yet, we must all realize that women's equality alone can guarantee quality of life for everyone in the Northern communities.

Notes

[1] Angela Miles is a Canadian Women's and Environmental activist as well as a researcher and professor of Women's Studies. She has been researching gender and globalization for years and presented these facts at various events, e.g. The Gift Economy session at the World Social Forum, Porto Alegre, January 2002. I do not have her precise references, but reference was made to the work of David Korten (1995). Among the references to Canadian women's status under globalization, she also cited Alt-Wid, Alternative Women in Development working group, www.igc.apc.org or the National Action Committee on the Status of Women, and CRIAW, "Women's lives in a changing world," January l995.

[2] Day also points out that "[w]omen in Canada are no better off economically in 2000 than they were 30 years ago at the time of the Royal Commission on the Status of Women" (Monica Townson, 2000, quoted in Day, 2002, 1). Also, the Danish economist Esther Boserup showed as early as l960, how development aid did not increase the life standard of most women in African countries south of Sahara (Boserup l970). It was from [Boserup's] studies that the conclusions were drawn about the payment for women's part of the world's necessary work: that the work amounted at least to between 66 and 75 per cent of all work, resulted in l0 percent of the salary volume given out globally, and that women owned less than 1 per cent of the private property in the world. The scientists concluded that all these figures would change unfavorably for women in the decades to come (Ås l999, 99). See also Lakeman (2000) for the Canadian situation of women and globalization. Numerous studies now reveal that the grim forecasts have become true, the feminization of poverty

is now a common corollary to "development" in Europe and elsewhere.

[3] Smyke among others has referred to these grim statistics which have become, since the early 1990s, even worse.

[4] For the unprecedented assault against democracy and environmental laws, see Nader (1993). As the impact of the GATT agreements threaten Europe, and as the trends to privatize services from health care to education are expanded, this issue is of increasing significance in the Nordic countries as well. See also Hassi (2001), Vainio-Mattila (2001) and Tuomioja (2001) for similar considerations. For the gendered and environmental impact of neoliberalism, WTO and the EU, see also the writings of Hilkka Pietilä (eg. 1998).

[5] The economic principles behind the neo-liberal free trade ideology stress the rights of individuals and "free" companies, paying little attention to the gendered division of labor, and its structural, institutional and attitudinal effects on women, who are interconnected with their dependents and cannot compete as "free individuals" as most men are able to do. Any system that does not take into account the invisible labor of women, from reproduction of the work force to emotional and other forms of "gift labour", benefits men in a unilateral fashion.

[6] The Finnish estimates are that the cost of violence vs. women is as high as 170 million marks per year (Heiskanen & Piispa 1998). For other significant statistics, see Perttu (2002, 25-27). Perttu notes that according to estimates, as many as 5000 women are killed because of dowry demands in India while another 5000 women are killed in the name of "family honor" in certain Middle Eastern and Latin American countries. She also points out that trafficking in women, according to the European Council, 2001, over 4 million women are sold around the world. See also Christa Wichterich's writings for the gender impact of the neoliberal economics (2002). For issues of economic justice in East-West European gender relations, see Tarasiewitz (2002).

[7] For Indigenous views of balance and traditional knowledge, echoing the gift and give back economies, see Rattray (2001).

[8] It is well-known that economic dependency increases women's vulnerability to sexual violence; since, however, even women who are highly educated and partners of non-alcoholic men suffer violence, one needs to locate the roots of male violence in educational models, institutional attitudes towards gender roles, "hegemonic" masculinity (R.W. Connell 1995), the masculine military mystique (Miedzien 1992) and the most competitive, aggressive capitalistic values (Vaughan 1997).

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Providing Legislation on Human Rights in the North - The Case of the Yamal-Nenets Autonomous Region

Sergei N. Khariuchi

In the coming decades the Russian economy will grow, mostly owing to the industrial exploration of the natural resources of the northern territories. This means that two civilizations, two different mentalities, lifestyles and cultures will have to co-exist. Cultural traditions and economic techniques that were developed and practiced over thousands of years, will inevitably be affected by the strong techno-industrial development, as will the environment of the first peoples of the area.

As we can see from the experience of Western countries, issues concerning indigenous peoples fall within the authority of state Security Councils. It is clearly understood that the problems of indigenous peoples are, first and foremost, issues of territory, of the land and its natural resources, and of partnership with indigenous peoples' organizations.

Article 69 of the Constitution of the Russian Federation provides that "The Russian Federation guarantees the rights of indigenous peoples in accordance with the accepted norms and principles of international law and the international treaties of the Russian Federation", and Clause 1 of Article 72 guarantees protection of the native environment and the traditional way of life of indigenous peoples and ethnic communities. In addition, there is the Order of the President of the Russian Federation from April 22, 1992 : "On immediate measures on protection of areas of residence and economic activities of indigenous peoples of the North", and a number of laws passed in the last decade protecting the rights of indigenous peoples.

The Governor and the State Duma of the Yamal-Nenets Autonomous Region (YaNAR) have acted as pathfinders in this respect since, formerly, our country had almost no laws concerning the protection of the rights of indigenous peoples and communities, although there were a few legal acts of this kind passed in the 1920's-30's by the Central Executive Committee.

In the early 1990's, we faced the task of conceptualizing the forthcoming activity related to securing the rights of indigenous peoples in the sphere of social and economic development, with participation of the representatives of these peoples and the leading northern researchers. In 1993, the Regional Council of People's Deputies discussed and passed the *Concept for the Social, Economic and Cultural Development of the Northern Indigenous Peoples of the YaNAR*. In 2000, after the main provisions of the Concept had been implemented, and the social, economic and political situation in the country had changed, the aforementioned document was amended in accordance with the redefined priorities of activity of the central and local authorities and the public organization of indigenous peoples. After lengthy discussions, the *Concept for the*

Social and Economic Development of Northern Indigenous Peoples was approved by the State Duma of the YaNAR and became a working document for authorities on all levels ,and in all spheres of activity.

The basic document defining the rights of indigenous northern peoples is the *Charter (Basic Law) of the Yamal-Nenets Autonomous Region*, which has supreme legal force over the territory of the YaNAO. In its preamble, there are provisions ensuring the protection of the rights and interests of the Northern indigenous peoples (Nenets, Khanty, and Selkup) residing in the historical territory of their ancestors, as well as those of other ethnic communities which have tied their lives to the region. In practically every clause of the Charter there are provisions guaranteeing the rights of the Northern indigenous peoples and other local ethnic communities, a more detailed interpretation of which is provided by the laws and regulatory acts of the YaNAO.

To date, the State Duma of the YaNAO has passed more than twenty laws and acts, regulating all spheres of life and cultural development, protecting the native environment and the traditional way of life of the indigenous peoples. Many other laws also contain provisions defining the rights, authority and guarantees for these peoples. I would like to describe some of them briefly.

In 1997, the regional law "On Regulating the Land Relationships in Locations of Residence and Traditional Economy of Indigenous Peoples of the North in the Territory of the Yamal-Nenets Autonomous Region" was approved by the Regional Duma. This was the first law on the rights of indigenous peoples to be passed, for several reasons, by the region's legislators. First, it needed to be defined, de jure, that the lifestyle of the Northern indigenous peoples is thoroughly based on land: for these peoples, the very sources of subsistence come from their activities on the land; losing their ties to the land deprives them of their livelihood and identity.

The second reason making the passage of this law urgent was the need to prevent conflicts of interest between land users in the traditional economies and the new industrial companies, arising from the lack of federal legislation. With this law, we managed to find an optimal solution for regulating land relations between government bodies, local authorities, indigenous peoples and ethnic communities, and the oil and gas companies.

At the same time, the Duma of the YaNAR approved the law *On Specially Protected Natural Areas of the Yamal-Nenets Autonomous Region*. Its purpose was to preserve the region's unique and typical natural complexes and sites, and its genetic fund of living organisms, both flora and fauna. In addition, the law was intended to regulate research concerning natural processes in the biosphere and to ensure not only control over its changes, but also ecological education of the population, and the strengthening of legal regulations in this sphere.

This law restricts any industrial activity incompatible with the permissible forms of exploitation for the specially protected natural territories (with the exception of ethnic-natural parks) if these activities do not maintain the social-ecological equilibrium in the territories (i.e. traditional ways of life and cultural activities). A notable feature of the law is the provision defining various exploitation protocols for the different categories of specially protected natural areas. The law makes distinctions between natural biosphere reserves, national parks, international and regional natural parks, landscape parks, microreserves, state reserves (ornithological, entomological, ichthyologic, soil, landscape, hunting, etc.), water table protection zones, health resort areas, natural sites, etc. These provisions create the possibility of defining more precisely the specially protected areas, and of maintaining appropriate regulations for their exploitation.

A good example of this approach is the law On Fishing in the Yamal-Nenets *Autonomous Region*. This should not be interpreted as a law aimed solely at the protection of the rights of indigenous peoples, though it is quite important for them since the products of fishing are one of their major sources of subsistence. The danger to this traditional livelihood of indigenous peoples is particularly significant as, in

the process of industrialization, the regional fishing resources suffered huge damage. In the initial years of industrial development in the region, 28 rivers and many lakes became useless for fishing.

The regional law ”On Reindeer Husbandry” should be noted among the most important laws for indigenous peoples and communities of the North. Reindeer husbandry has always been the main source of subsistence and culture-forming activity for the majority of the peoples of the North. According to ethnographic data, in those regions of the far north where the traditional style of reindeer herding was destroyed, the indigenous population decreased (on average) by 10.7 per cent over the past 20 years. At the same time, in regions where the reindeer population is over 11 reindeer per capita, there was an increase of the population, ranging from 3.6 to 23.7 per cent. In the Yamal-Nenets Region, the reindeer population is, overall, 15.6 per capita.

The law *On Reindeer Husbandry* defines reindeer husbandry as one of the traditional types of economy in the indigenous and ethnic communities of the North, giving its legal, economic, environmental and social bases. It aims, as is specified in the preamble to the law, at creating conditions for efficient economic activity and the preservation of the culture and traditional way of life for the indigenous peoples and ethnic communities of the North. The law provides guarantees for the stable development of reindeer husbandry, irrespective of the type of ownership, the satisfaction of people's economic needs for reindeer herding products, and establishes the preemptive right of indigenous peoples and communities of the North for reindeer herding.

Many customs developed among indigenous peoples of the North deserve public attention and legal implementation. This is true, in particular, with respect to the custom of the indigenous peoples of the North aimed at the prevention of child neglect and saving the lives of orphans. In accordance with this custom, orphans were taken into neighbors' families and treated as equal members. To maintain this humane custom, the regional law of April 29, 1998, *On Procedures and Size of Reimbursement and Additional Benefits for Foster Families in the Yamal-Nenets Autonomous Region* was passed. In accordance with this law, children belonging to indigenous peoples of the North who are taken into a foster families and who lead a traditional life are entitled, at the time they reach 18 years of age, to receive free of charge from the local authorities 30 reindeer and a housing complex for maintaining the traditional way of life.

The regional law *On Education* provides the organization for the study of native languages in areas of concentration of indigenous peoples, ensuring the training of specialists for organizing education in the native languages, and providing benefits for the teachers of these native languages in indigenous communities. The law also provides for the possibility of education for the children of nomadic and semi-nomadic indigenous families of in stationary schools, while ensuring the maintenance of contact with their families, allowing them to keep family and ethnic ties between generations.

The law ”On Local Self-governance in the Yamal-Nenets Autonomous Region” defines the specifics of the work of local authorities in the areas of residence of indigenous peoples, the forms of local governance among these peoples, and the formation and authority of the communities.

The law *On Mineral Resources and Their Use in the Yamal-Nenets Autonomous Region* was passed in February, 1997 and, together with corresponding federal legislation, regulates the issues of ownership, use, and disposal of mineral resources. The law provides a legal and economic basis for all aspects of the rational use and preservation of mineral resources, ensuring the protection of the rights and interests of the population of the Autonomous Region and of the resource users. Amongst other things, article 64 provides that ”part of the payments to the Region budget for the use of natural resources in the territories of residence and traditional economy of the indigenous peoples and communities of the North shall be used for the purposes of social and economic development of these peoples.”

In conclusion it should be noted that every region in

the Arctic has its own conditions, its own political and legal base, its own history and traditions. Thus, in each and every particular case, the methods and the forms of addressing problems can vary. I believe, however, that we should aim at developing a unified approach to legal regulation with regard to the North and its indigenous populations in the sphere of natural resource use. This approach should cover not only the issues of participation of the subjects of law, and the conciliation procedures, but also the issues of the rights of ownership of the state and indigenous peoples, the state authority and local governance, the legal regulation of environmental issues, and the preservation of biological resources, flora and fauna. It is only with this approach that we can together ensure the stable, balanced development of our regions and countries.

Innovation - The Challenge of the Russian European North

N.R. Toivonen

The Russian European North[1] (afterwards, simply "the Region") is a unique part of the world. The huge stocks of natural resources, including petroleum, natural gas, minerals, fish, wood, and water resources, on the one hand, and the severe climate, its vulnerable northern Arctic nature, the controversial demographic situation (the average population in the Region is just over four people per square kilometer) on the other, produce both a variety of opportunities and also a number of limiting factors for sustainable development of the Region.

Successful social and economic development of the area is implemented primarily by attracting investment into the economy. Creating a favorable climate for investors, one of the most important preconditions for the social and economic development of the Region, presupposes the availability of two essentials:

1. A favorable atmosphere in legal matters and financial and fiscal affairs, including understandable foreign trade legislation at the federal and regional levels.
2. The availability of competent investment management, which in turn presupposes:

- the presence of highly qualified personnel in all associated fields of knowledge - economists, lawyers, managers, engineers, programmers, technicians, etc.
- the presence of ready-made technical facilities to provide the know-how and the experience needed for the introduction of new technology, the infrastructure for innovation, etc.

The first of the these tasks is the prerogative of the federal and regional legislative and executive bodies. Considering the present political situation in Russia, this is likely to take from two to four years. The second problem needs to be solved in conjunction with the regional representatives - including state authorities, research and educational institutions and local businesses - and may take 5-10 years.

Russia´s Innovation Process Problems

Innovation process[2] development, which is supposed to ensure the introduction of applied science and technological solutions based on advanced scientific research into the economy and other activities, has been, so far at least, Russia's Achilles heel, and this metaphor is equally applicable to the Region. This can be illustrated with a few examples [1]:

First, the share of enterprises developing and introducing new or advanced products and technologies into production in the former USSR used to vary between 60% and 70%, whereas in post-Soviet Russia it barely reached 4.7% in 1997 and 6.2% in 1999. For the sake of comparison, in the EU the same indicator is 53% [2] (in Portugal - 26%, in the Republic of Ireland - 74%); in the USA it is 33%.

Second, the level of innovation process development in the country can be clearly seen from the percentage of advanced research results used in the design and production of new goods. In 1999, among Russian enterprises active in innovation, this was only 0.5%; in 1995, 0.8%.

Third, the share of hi-tech goods in the gross export volume scarcely reached 3.4% in 1998, illustrating not only the overwhelming proportion of raw materials in national exports but also the low level of competitiveness of Russian hi-tech goods enterprises in international markets. To compare, in the EU the hi-tech share in total exports reaches 17.1%; in Japan 24.6%; and in the US, 27.6%.

Fourth, it is expected that in 2003-2004 Russia will be an arena of technological disasters, triggered by a massive, over 70%, moral and physical corrosion of the industrial infrastructure.

Among the factors that hinder innovation process development we can name:

1. Lack of financial support from the State, insufficient financial resources of the enterprises, and the high initial costs of innovation;
2. Deficiency of appropriate legislation for stimulating innovation process development;
3. High risks and long-term wait before reaching the break-even point;
4. Low level of development of the scientific research infrastructure in the industrial sector, and the inexperience of these enterprises in introducing advanced research results;
5. Lack of information about new technologies, and insufficient cooperation between business and science;
6. Absence of experts in the field and the necessary supporting infrastructure - as can be seen, for example, by the fact that there are no technological parks in the Region. This situation may be explained by the problems of the transformation period, which Russia is currently undergoing.

The problem has gotten worse - in the aftermath of the abolishment, in 1991, of the notorious compulsory working place assignment procedure for graduates of the secondary and higher specialized educational institutions in Russia - due to the decreased influx of highly qualified personnel from leading universities in Moscow and Saint Petersburg.

Innovation Process Development Problems in the European North

The European North a unique arena for designing and testing models of international regional cooperation in the area of innovation. There are a number of reasons for this:

1. The favorable geographical position of the Region: not only the presence of the EU-Russian border, and the adjoining countries of Northern Europe, but also the existence of two regional communities most active in international cooperation in the Baltic and Barents Seas (The Baltic Council and the Barents Euro-Arctic Region);
2. The availability of huge stocks of mineral resources, with a similar variety of minerals in the Russian North and in the adjacent Northern European areas;
3. A high level of competence in the areas of mining and the advanced processing of mineral raw materials, in accordance with principles of sustainable development;
4. The evident political and economic interest of the world's leaders in the development of cooperation in the Region, and in the European North as a whole, supported by special international programs such as the EU Northern Dimension Program, the US Northern Initiative Program, and the Canadian Northern Dimension Program;
5. The substantial financial resources of local, international, US and Canadian funding organizations and financial institutions that could be available for the commercial development of natural resources in the Russian European North;
6. The close ties between research and educational institutions in the Region and in the Northern European countries, supported by

ongoing educational, research and exchange programs;

7. The illustrated tendency of international organizations to develop cooperation with Russian partners in the field of innovation, including the design and transfer of new technologies to the Russian market, in order to guarantee that their interests in the Region will be protected in both the near term and the distant future;
8. Close cooperation between educational, research and innovation institutions of the Region with the leading federal centers in Moscow and Saint Petersburg;
9. Diversification opportunities for the Region's narrowly focused industrial infrastructure which will create new jobs in the Region;
10. Long term economic, ethnic and cultural ties between the adjacent areas.

The existing potential, however, has not yet been fully employed in solving the concrete problems of the social and economic development of the Region. There are several reasons to explain this. We shall mention here only the most important ones.

First of all, there is a lack of coordination between the Russian programs of international cooperation and the Region's foreign activities. Efforts to synchronize the activities of the Barents Euro-Arctic Cooperation, the Northern Council of Ministers and the Russia-oriented programs of the Northern European countries failed. There is unfortunately very little unity in their work. The present situation leads to an absence of mutual conceptualization and planning of joint activities, and results in ineffective cooperation between these groups and the Russian territories.

An example of international institutionalized work in the area in question can be seen in the Asian Pacific Economic Cooperation (APEC). With respect to future prospects, this cooperation activity is in many ways similar to that of the Barents Euro-Arctic Region (BEAR): substantial mineral resources, involvement of world powers that have both funds and innovation activity experience, innovative know-how, and more.

At the same time, within the APEC framework the innovation process has already received a multidimensional start. In particular, APEC held an innovation forum "International Business Cooperation in the Sphere of Innovative Entrepreneurship" in Moscow, June 26-28, 2002. The innovation forum was one of the first noticeable APEC actions in Russia, helping to eliminate information barriers, assisting in the establishment of new business connections, and creating the necessary preconditions for joint business projects which are in the best interests of small and midsize innovative businesses in the APEC member countries and Russia.

Second, we have to admit that the majority of international and foreign projects and programs do not make any noticeable contribution to mutually beneficial and efficient cooperation with Russian partners. For example, in most of the EU's Interreg programs, the essential Russian partner has no more than a cameo role in the whole process. As a result of this kind of cooperation, Russian partners tend to lose interest in such projects. At the same time, there are scattered positive examples of international cooperation in the BEAR, where Russian and Norwegian organizations solve regional problems in partnership.

Third, multinational and foreign partners have demonstrated little interest in capacity building in Russia in the area of innovation process development. In particular, analyses of BEAR and NMR financed projects indicate that there are almost no coordinated and well executed programs in this field. The sole exception is the joint Karelian-Norwegian Fish Farm at the White Sea project, realized by Petrozavodsk State University and Akvaplan-Niva AS from Tromsø within the framework of the BEAR program. The project has affected the development of trout farming in all aspects, boosting research, education and commercialization of this sector in Karelia. Thanks at least in part to that project, Karelia now produces two thirds of Russia's fresh trout.

Fourth, cooperation between Russian and foreign organizations in the field of innovation activity lacks sufficient infrastructure and an adequate system of communication and consultation.

Fifth, Regional authorities, representatives of the industrial and business communities, and chambers of commerce not only underestimate the importance of innovation activity for the economy of their territories, unfortunately, but they also lack the necessary experience and knowledge for organizing such a process.

The idea of giving innovation activity the highest priority in the BEAR was suggested by this author in 1998, which is in line with the general trends of the cooperation conducted by this international institution [4]. Unfortunately, this idea has not found any support among the administrative bodies.

Innovation Development Opportunities in the European North

Analysis of innovation process development in the European North should include:

- Its immediate importance for the Region (*cf. Section II above*);
- Political and financial interests (*cf. Section III above*);
- The availability of corresponding legislation for innovation process development support (*cf. Sections I and II above*);
- The availability of clients and beneficiaries; these are, presumably, local authorities and businesses of the Region;
- The availability of contractors with the necessary qualifications and experience for the job.

An analysis follows, using energy production as an example.

Recent agreements between Russia and the EU [3] and, similarly, between Russia and the USA on cooperation in energy production inevitably affect the Region's interests. According to present plans, commercial development of the Shtokman natural gas field and the consequent construction of a gas pipeline crossing the Murmansk region, the Republic of Karelia and the Leningrad region will start in 4-6 years.

The extraction, initial processing and transportation of the raw materials, together with the accompanying technical, ecological and social aspects of this enterprise will require experts and appropriate technical assistance in a number of different fields.

The only institutions in the Region that are capable of providing for these needs are higher education and research institutions because they:

- Are training the necessary personnel in a variety of fields, covering all economic sectors of their territories;
- Are conducting fundamental and applied research;
- Have experience in organizing the innovation process, starting small and medium sized businesses, and finding solutions for representatives of big business;
- Have the technical and telecommunication infrastructure for an activity which covers a broad range of fields including scientific research, innovation, technology transfer, small and medium sized business, and the like;
- Have highly qualified personnel with a knowledge of foreign languages and modern telecommunication, and extensive experience of cooperation with international and foreign partners;
- Have networks in the territories, including their subsidiaries and their associated educational centers;
- Have broad political, business and social ties in the community thanks to their graduates and the presence in the market of educational services.

Experience in other countries demonstrates that efficient innovation process development may be promoted by technological parks and engineering centers acting as independent legal persons. Unfortunately, we have at present no consulting, innovational or other private businesses, which would be capable of coordinating such activity in the field of innovation process development.

In the present legal, fiscal and economic situation in Russia, the most efficient mode of organizing innovation process must be the creation of technological parks and engineering centers within the universi-

ties. These innovation centers could become independent and self-sufficient in 5-10 years time.

In Conclusion

The above short analysis indicates that there are urgent problems in innovation process in the Region that require immediate solutions:

1. Design of a concept and innovation process development program for the Region with a set of priorities and opportunities for all interested parties, the industrial sector in particular;
2. Integration and harmonization of multinational, foreign and Russian programs in the sphere of innovation;
3. Creation of a innovation process development network integrating foreign and Russian organizations that are interested in innovation promotion in the Region;
4. Creation of the infrastructure, including administrative bodies and a consulting system for innovation process support in the Region;
5. Prioritized support to those trends in innovation that are connected with technology transfer and are able to generate faster return on investments.

Solutions to these problems will allow us to create conditions for sustainable development of the Region, on the whole, and for innovation process, in particular.

Notes

[1] The Russian European North includes six subjects of the Russian Federation: The Republic of Karelia, the Republic of Komi, Vologda, Archangelsk, the Murmansk Region and the Nenets National Region.

[2] Innovation process is a kind of activity aimed at the development and introduction of new advanced technologies in order to produce either goods / services with more advanced features or larger quantities of the goods / services.

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