

















#### February 2013

On behalf of the Community Vitality Monitoring Partnership Process (CVMPP) steering committee, we are pleased to provide this report on socio-economic impacts of uranium mining in northern Saskatchewan. The need for the study was suggested by a number of northern leaders and it is with pleasure that CVMPP makes this report available, put together by a team at InterGroup Consultants Ltd.

There are many influences on the health and well-being of northern residents and on the vitality of our communities. In addition to influences such as personal health behaviours, the availability of health services, and our environment, social and economic factors play a significant role in affecting health of individuals and communities. These social and economic factors include education, employment, income, community infrastructure as well as culture and traditions, family supports and community identity.

This report looks at the impact of uranium mining on some of the socio-economic indicators in northern Saskatchewan in context of the overall socio-economic situation in northern Saskatchewan, which is influenced by many sectors over and above the uranium industry.

It is hoped that the information provided in this report will aid in the ongoing dialogue and the development of actions to further enhance the wellbeing of our communities and community members. This will require the partnering of various sectors, levels of government, and industry, as well as community members and organizations from local municipalities and First Nations to pave the way for more prosperous and sustainable communities. The report is available for downloading through www.cvmpp.ca or you can contact the CVMPP Coordinator at (306) 425-6883.

A special thanks goes to the expanded Steering Committee community members who assisted in providing direction for this project: Dr. Rose Roberts, Clifford Ray, Scott Robertson, Sandra Hansen, Rosalina Smith, Annie Robillard, Georgina Jolibois, Jim Andrews and Carolanne Inglis-McQuay.

Yours sincerely,

James Irvine, MD, MSc, CCFP, FCFP, FRCPC Chair, CVMP Steering Committee

## **PREFACE**

This study was commissioned by the Community Vitality Monitoring Partnership Process (CVMPP). The CVMPP was initiated in 1998 as an outcome of the Joint Federal-Provincial Panel on Uranium Mining in northern Saskatchewan. As a result of the Joint Panel's review, surface lease agreements for northern uranium mining projects require companies to participate in a community vitally monitoring program. The goal of the CVMPP is to provide information and insight to stakeholders so that they can actively engage in maintaining and improving the quality of life for residents of northern Saskatchewan. The focus of this process is threefold:

- Providing information about uranium mining impacts;
- Fostering partnerships that will work together on community vitality monitoring activities; and
- Developing effective communication activities.

This study of the socio-economic impacts of the uranium mining industry on northern Saskatchewan was guided by the CVMPP Steering Committee, which was expanded to include additional community members for this project. The CVMPP Steering Committee is composed of Dr. James Irvine (Chair), Medical Health Officer, Population Health Unit for the three northern Saskatchewan Health Authorities (Keewatin Yatthé Regional Health Authority, Mamawetan Churchill River Health Region, Athabasca Health Authority), Scott Boyes of Saskatchewan Government Relations, Warren Kelly of the Northern Mines Monitoring Secretariat, Darwin Roy and Gary Merasty of Cameco Corporation (Cameco), Glenn LaFleur and Richard Gladue of AREVA Resources Canada Inc (AREVA). The work of the CVMPP is supported by Thomas Sierzycki, Community Vitality Coordinator.

The Steering Committee was expanded to provide direction and guidance for this specific socio-economic impact project. This Expanded Steering Committee also included Scott Robertson of La Ronge, Sandra Hansen of Stony Rapids, Dr. Rose Roberts of Prince Albert with the Northern Intertribal Health Authority, Rosalena Smith of Pinehouse, Annie Robillard of Hatchet Lake, Clifford Ray of Sandy Bay, Georgina Jolibois of La Loche, Jim Andrews with Cameco, and Carolanne Inglis-McQuay of AREVA.

# **ACKNOWLEDGEMENTS**

InterGroup Consultants Ltd. (InterGroup) would like to thank the following individuals, organizations and communities for their participation in this study:

- Members of the CVMPP Steering Committee and members of the Expanded Steering Committee who played an essential role in framing the research, reviewing progress and shaping recommendations; special thanks to Dr. James Irvine who assisted in review of worker health reports and other key data, as well as detailed review of the worker health section.
- Community consultants and key person interview respondents in the case study communities of Wollaston Lake and Hatchet Lake First Nation; Cumberland House and Cumberland House Cree Nation; La Ronge, Air Ronge, and Lac La Ronge Indian Band; and La Loche and Clearwater River Dene Nation; they took time to share knowledge about their community, particularly the Community consultants and participants in the key person interview program. Community consultants were essential to the coordination of the interview program, as well as providing feedback on the research questions and providing support throughout the field work.
- Thomas Sierzycki, Community Vitality Coordinator, who ably managed the study process, coordinated the participation the Board and Steering Committee members and was invaluable in facilitating the process of obtaining company data.
- Staff at Cameco and AREVA who provided information from their respective companies.

  While InterGroup greatly appreciates their assistance, errors or omissions in the report are the sole responsibility of InterGroup.

### **EXECUTIVE SUMMARY**

The purpose of the study, commissioned by the Community Vitality Monitoring Partnership Process (CVMPP), was to identify the socio-economic impacts – beneficial or otherwise – of the 'modern era' of uranium mining on northern Saskatchewan (i.e., from the late 1970s to the present). It focused on types of effect that were discussed by the Joint Federal-Provincial Panel on Uranium Mining in Northern Saskatchewan (Joint Panel) in its 1997 cumulative observations report about potential socio-economic impacts of the uranium mining industry.

The study reviewed indicators of effects that could be attributed directly to the uranium mining industry (activities of Cameco Corporation and AREVA Resources Inc.) such as employment and business participation in the mining industry. It also reviewed changes in socio-economic conditions which may have been influenced to some degree by the industry (e.g., indicators of education levels and community well-being), but were also subject to an array of other influences. In addition, some socio-economic indicators (e.g., population) were examined to help understand the context of northern Saskatchewan during the period being examined.

The analysis drew from available statistical data (from uranium mining companies, Statistics Canada, government and other secondary sources), from literature and from key person interviews (KPIs) that were conducted in four case study communities (one in each of four regions in northern Saskatchewan). The study was limited in its ability to reach firm conclusions about the relationship between uranium mining and indicators describing social and economic change in northern Saskatchewan mainly because there is a complex set of factors influencing the socio-economic indicators analyzed. The analysis was limited by availability, completeness and comparability of data. Also, while the KPI program provided helpful perspectives from case study communities, the results were not considered to be statistically representative of the whole community or of other northern communities.

Conclusions of the study are discussed in the following categories: education and training, employment, business, local participation, contributions to government, worker health and community vitality. Based on these conclusions, CVMPP made recommendations to the uranium mining companies, governments (federal, provincial, First Nation and local), other stakeholders and CVMPP itself.

## **Education and Training**

Great strides have been made towards improving education levels in the north, particularly in post-secondary training relevant to the mining industry, such as apprenticeships and trades where attainment rates for apprentices are higher than in other parts of the province. This reflects considerable efforts by industry and government in post-secondary programming through initiatives such as the Multi-Party Training Plan (MPTP). While the number of northerners 15 years and older with at least a high school certificate or equivalent has increased substantially from 1976 to 2006, education attainment rates in northern Saskatchewan have not reached parity with provincial rates. Many of the barriers identified for post-secondary attainment stem from challenges faced in the primary and secondary education systems. Overall, greater efforts may be required in the earlier stages of education so that graduates from northern high schools are able to transition more readily into post-secondary programs and employment. These challenges are underscored by the anticipated long-term nature of uranium mining development in northern Saskatchewan and the need for an educated workforce.

CVMPP recommends that, in addition to the efforts already in place, the following areas receive attention:

- A multi-stakeholder approach should be used to discuss how to place more effort on early childhood development, building upon programs of those involved in funding and delivery of education services (i.e., provincial government, federal government, tribal councils, school boards, and communities).
- Uranium mining companies should target some education efforts and donations to invest in early childhood development.
- A multi-stakeholder approach should be developed, with leadership by governments (federal and provincial), secondary education institutions (e.g., tribal councils and school divisions) and post-secondary institutions and the uranium mining industry providing guidance where needed -- to provide support for bridging program(s) between high schools and colleges/universities.
- CVMPP and/or MPTP should undertake research regarding successful MPTP participants to identify factors that have contributed to success and the role that participation plays in community vitality.

• School boards, tribal councils and education institutions should provide dedicated career counselling in schools in northern Saskatchewan with the support of industry, where appropriate.

## **Employment**

The size of the labour force in northern Saskatchewan has steadily increased since the late 1970s, and based on the age structure of the population and the rate of population growth (about five times the provincial growth rate), will continue to grow over the coming decades. While the number of northerners employed in the northern economy as a whole has increased substantially during the same timeframe (from about 5900 in 1976 to 11,200 in 2006), the overall employment rate in northern Saskatchewan has remained relatively stable, at around 40%. This is considerably lower than the provincial rate, which remains above 60%.

In the uranium industry, the number of northerners, known as Residents of Saskatchewan's North (RSNs), employed directly in the uranium mining industry increased fourfold from 201 in 1981 to 832 in 2011. The proportion of the direct workforce (i.e., those workers hired directly by the mining companies) made up of RSNs appears to have reached a plateau during the last decade (e.g., about 46% in 2011). When considering both the direct workforce and the workforce hired by long-term contractors (e.g., security services, food services), the proportion of RSNs rose to 47% (2011). This fell short of the 67% target rate set by the Joint Panel in the 1990s, although each of the mining companies continued to try to find innovative ways to address this gap.

Entry level positions (which are all designated for RSNs) are at capacity across the various mine sites. The percentage of the workforce filled by RSNs likely will only increase as education and skilled attainment allows for RSNs to fill the trades, technical and professional positions. Efforts are required to increase this pool of qualified individuals in order to improve the proportion of RSNs employed; this further reinforces the critical links between education attainment and employment.

The uranium mining industry provides some of the highest-salaried positions in northern Saskatchewan, and the gap between RSN earnings and other mine employee earnings is closing as RSNs improve their skills and advance within mining operations. The average 2011 wage for RSNs involved in the industry was \$77,500.

In spite of the contribution that uranium mining employment provides to individuals, the average household income and median household income for the population as a whole, when adjusted for inflation, actually decreased between 1981 and 2006. The gap between the average and median household income, an indicator of income inequality, also steadily increased from approximately \$2,200 in 1981 to \$10,100 in 2006.

CVMPP recommends that they should research barriers to Aboriginal/northern workers' movement into supervisory and management positions (e.g., related to work experience) and into professional jobs (e.g., related to education).

## **Business Opportunities**

In terms of economic development, the uranium mining industry contributed significantly to the business capacity of northern Saskatchewan (e.g., growth in contracts from northern suppliers from \$23 million in 1989 to \$464 million in 2011). Some of the changes that have occurred within the business sector were not anticipated by the Joint Panel. Rather than increasing capacity solely through progressively more technical capabilities, the growth of the sector also has increased through multistakeholder ownership structures. While the Joint Panel observed that joint ventures enable northern contractors to access opportunities they might not be capable of realizing independently, many of the joint ventures created now have complex structures with multiple partners throughout northern and southern Saskatchewan. The benefits of these contract opportunities do not stay exclusively in northern Saskatchewan, which is something that many respondents in case study communities indicated. It should be noted that the examination of businesses within northern Saskatchewan was limited to the case study communities. It is possible that examination of other northern businesses could provide further insights into how the preference for northern suppliers and contractors adopted by the mining companies has influenced northern community economic development.

CVMPP recommends that uranium mining companies should explore ways for small northern companies to participate more in mine contract opportunities (e.g., allow pick-up of supplies/goods for delivery to mines from suppliers along shipping route rather than requiring products to be shipped via Saskatoon).

## **Uranium Industry Contributions to the Province**

The uranium mining industry makes contributions to the Province in the form of royalties, licence and permitting fees, and taxation (corporate taxation as well as taxation from the incomes of all the industry employees). Though not a comprehensive picture, the uranium mining companies contributed about \$146 million in royalties and taxes in 2011. In addition, the uranium mining companies spent a portion of their overall revenues on community initiatives, through donations to communities and community organizations, and through scholarships and bursaries (in 2011 estimated to be about \$1.7 million in northern Saskatchewan). This information seemed not to be well known in the case study communities.

CVMPP recommends that the Province should provide clearer communication about how much money goes to communities in the north with respect to all funding towards provincial services such as education, health and infrastructure. In addition, the Province should provide clearer communication about the level of payments to government from uranium mining, compared to potash, oil and other resource industries. Uranium mining companies should better communicate how community investment funds are spent.

#### **Worker Health**

Communication could be improved respecting worker health and safety. Although considerable research has been undertaken by the Canadian Nuclear Safety Commission (CNSC) and others that show the risks of working in the uranium mining industry during the modern era of mining are limited, this seems not to be commonly known. This suggests that, while important monitoring, inspection, and research are being undertaken, efforts to relay these results to those who have great interest, i.e., the residents of northern Saskatchewan, could be improved.

The study also found that substantive worker wellness programs are undertaken at the mine sites, focusing on topics like smoking cessation, physical activity, healthy eating and mental well-being.

CVMPP recommends that the uranium mining industry should continue to emphasize worker health and safety at the worksites and provide further communication to workers and the public about the health and safety record of the industry. This could include information about strategies that have been implemented to reduce risk, and even efforts to promote the health of workers, including risks from a variety of occupational hazards such as radon decay products (RDPs). Further efforts are recommended to communicate to the broader northern public the health and safety records of the industry with an explanation of relative risks from various industries or occupations in the Province. Health regions,

Ministry of Labour Relations and Workplace Safety, perhaps jointly with CNSC, could potentially assist with this communication.

The uranium mining industry should continue its efforts in their worker wellness programs at the mine sites following the principals of quality improvement to encourage the holistic well-being of workers, including smoking cessation, physical activity, healthy eating and mental well-being.

## **Local Participation**

There are a number of regulatory and social requirements for uranium companies to inform and engage with members of the public about their activities. Although engagement on the part of the uranium mining companies in Saskatchewan is still considered among the best practices in the resource sector in Canada, in particular through groups such as the AWG and EQC, communication on the part of the companies could still be improved. Efforts are typically focused toward communities that are important from a regulatory standpoint.

The study found that, among some community respondents, the expectation to be kept informed about uranium mining activities was not always met. Despite concerted efforts on the part of industry to keep the public informed using a wide variety of communication tools, many community respondents felt that mechanisms such as the EQC and northern tours are not as effective as intended in keeping the communities as a whole informed. There was also a feeling in some communities that the extent of community engagement is not sufficient, since not all communities in northern Saskatchewan are included in activities such as the annual northern tour. While the uranium mining companies indicated that they try to respond to community interests, they have found it challenging to communicate effectively with a large number of communities (57) located across the vast region of northern Saskatchewan.

CVMPP recommends that the Province and the uranium mining industry should explore ways to increase community awareness of benefits of mining to communities. The uranium mining industry should explore ways to ensure that the public receives information in response to questions and concerns that have been raised in communities, including addressing the challenge of language barriers.

The EQCs, with the support of the Northern Mines Monitoring Secretariat, should improve their communication function, with consideration of mechanisms to inform communities as a whole and not just to leadership.

The uranium mining industry should undertake continuous improvement regarding how to engage with communities. This could include a review of best practices and discussions with EQCs and community leadership.

The uranium mining industry should explore ways for communities in the vicinity of uranium mining developments to have meaningful involvement in project planning.

## **Community Vitality**

The socio-economic environment plays an important role in the vitality of communities and the health of the population. Through mining operations, agreements and efforts under corporate social responsibility, the uranium mining industry has had a significant impact on employment, through direct employment by mining operations and indirect employment by contractors; on economic development, through purchasing of goods and services from northern and joint-venture businesses (both the type of services and complexity of business arrangements have increased); on education/training, through efforts under the MPTP, provision of employment opportunities and support for apprenticeship, and through scholarships and donations; on transportation infrastructure (e.g., cost-sharing of road development) and community based supports (e.g., through community donations). For those involved in community planning and development (in selected case study communities) support from the uranium mining industry (e.g., donations) was seen as important, although not always easy to align with the priorities of the community. While smaller contributions from the mining companies were seen as valuable, some key persons noted that it was difficult to garner support for larger and longer-term community initiatives, such as infrastructure projects.

Despite these impacts, considerable socio-economic challenges remain in northern Saskatchewan and the benefits of uranium mining went only so far in improving the vitality of northern communities. Unemployment was high and the growing population meant that demands for employment from an expanding labour force also grew. In the case study examples (which provided a limited snapshot of selected communities) it appeared that economic benefits accrued largely to individuals and their families mainly because there were limited local opportunities to re-spend income and they made purchases, instead, in larger centres. On its own, income from uranium mining was not large enough to substantially increase overall community income in northern communities (i.e., as demonstrated by low average and median household incomes for communities as a whole). While education and training benefits were substantial in specific areas (e.g., apprenticeship), many education challenges for northern

Saskatchewan as a whole remain. Similarly, infrastructure and service needs in many northern communities were substantial, particularly related to housing.

CVMPP recommends that, in addition to taking steps noted earlier with respect to employment, business and other topics, that uranium mining companies could look for ways to improve the effects of instruments over which they have control -- such as agreements with communities, government agencies, business development agencies, etc. – with an effort towards better coordinating socioeconomic initiatives and/or contributing to local planning capacity.

The uranium mining industry, government and other relevant parties should participate together in looking at ways to address some of the broader challenges noted in the report. A specific example is a multi-stakeholder process to explore incentives to keep northerners in the north. The issue of keeping northerners in the north (i.e., maintaining the "human capital" of the north) is a multi-faceted issue that has no simple solutions. It involves the personal choices of individuals and families either to seek out opportunities provided by centres in the south (e.g., for education opportunities) and/or to avoid challenging living conditions in the north (e.g., crowded housing, lack of availability of housing for purchase in some communities). Ideas worth exploring include tax incentives by governments, uranium industry incentives that would be acknowledged and supported by the Province, and provincial/federal support for low-interest mortgages to address housing crowding.

CVMPP should explore the feasibility of developing an index to monitor community vitality based on the types of data available through Statistics Canada.

The Joint Panel recognized that it would not be possible for one industry to 'save the north' but there remain continuing expectations that the uranium mining industry should try to do so. It is fair to say, however, that the uranium mining industry is well positioned to make major contributions towards community vitality in the future, as they have in the past – with the right partners on the right initiatives. Clearly, addressing these needs requires a coordinated, multi-party effort, with substantive roles for governments (federal, provincial, First Nations and other local governments) and other parties (e.g., other industries, the business community, tribal councils, school boards, health agencies and individuals) as well as the uranium mining industry.

# Summary of Observed Socio-Economic Trends in Northern Saskatchewan

Indicator	Observed Trends
Population (context)	<ul> <li>The population of northern Saskatchewan is young and growing. Northern Saskatchewan's population growth has been about five times that of the provincial average (mainly as a result of a high birth rate).</li> </ul>
Labour force (context)	<ul> <li>Northern Saskatchewan's labour force has increased (doubling from 1976 to 2011).</li> </ul>
Education and training (general)	<ul> <li>The number of northerners 15 years of age and older with at least a high school certificate or equivalent has increased substantially from 1976 to 2006; however, there was little change in the proportion of the population without this level of educational attainment (58%).</li> <li>Educational standards in the north fail to reach provincial levels in high school. Pre-kindergarten preparedness and school readiness are also lower in the north and contribute to long-term economic and educational challenges.</li> </ul>
Uranium industry contributions to education and training	<ul> <li>Industry provides substantial contributions toward high school, trades, university scholarships, training, and apprenticeships. This is reflected in higher rates of apprenticeship attainment in northern Saskatchewan than other parts of the Province.</li> <li>The total number of northerners employed at uranium mining operations has increased considerably since the 1980s. Although industry has not met the target for northern/Aboriginal employment at the mine sites, it continues to try to find innovative ways to make improvements in this regard with education and training programs being an important part of the strategy.</li> </ul>
Employment (general)	<ul> <li>While the number of northerners employed has increased substantially (from 5,924 in 1976 to 11,272 in 2006), with the growing northern population, the rate of employment has not increased over time.</li> <li>Northern participation rates have remained relatively constant from 1976 to 2006 although the numbers participating have increased (with the increased size of the population).</li> <li>Employment rates have remained low from 1976 to 2006 with rates significantly lower than the provincial rate (40% versus 64%</li> </ul>

Indicator	Observed Trends
	respectively).
Uranium industry employment	<ul> <li>The number of northerners directly employed by the uranium mining industry has increased significantly (more than fourfold increase, from 201 in 1981 to 832 in 2011); however, the Residents of Saskatchewan's North (RSN) proportion of those employed has actually decreased just slightly from 1998. The target of 67% set as a goal has not been reached and the proportion as of 2011 was about 46%.</li> </ul>
	<ul> <li>Including both directly and indirectly (long-term contract) employed northern workers, the uranium mining industry employed 1,709 RSNs in 2011. This represented approximately 47% of the total uranium mining workforce (both direct and indirect employees).</li> </ul>
	<ul> <li>The impact of the uranium industry on employment in individual communities across the north was quite variable. Some communities had a greater percentage of their workforce employed in the industry than other communities despite being a substantially larger distance away, which tends to relate to the availability of skilled labour in a given location.</li> </ul>
	<ul> <li>According to data from Phases I to III of the MPTP (1993-2008), employment of RSNs in advanced positions (non-entry level) increased in absolute numbers (125 to 316) but the percentage of RSNs in these positions did not increase from 1998 to 2007 (in fact it decreased slightly).</li> </ul>
Income (general)	<ul> <li>After adjustments for inflation, the average and median household incomes have decreased in northern Saskatchewan from 1981 to 2006 while increasing in the Province as a whole. The gap between northern and provincial incomes has widened with median household income in northern Saskatchewan decreasing by about 14% while the provincial median income increased by about 11%.</li> </ul>
Uranium industry income	<ul> <li>The average 2011 wage for RSNs involved with the mining industry was \$77,500.</li> <li>Some northerners interviewed felt that the uranium mining industry has provided some of the greatest sources of economic stability for northern families.</li> </ul>
Uranium industry business opportunities	<ul> <li>There has been an evolution in the goods and services provided by northern contractors to the uranium mining companies – northern businesses have become more sophisticated, have matured and are working in other sectors.</li> <li>The structure of northern businesses has changed to include limited</li> </ul>

Indicator	Observed Trends
	<ul> <li>partnerships and multi-community ownership.</li> <li>Uranium industry contracts with northern suppliers grew from \$23 million in 1989 to \$464 million in 2011.</li> </ul>
Uranium industry contributions to the Province of Saskatchewan	<ul> <li>In terms of resource revenues to the Province, the uranium mining industry has made substantial contributions to the provincial economy annually \$145.9 million in royalties and taxes in 2011.</li> <li>Significant contributions from industry have gone to donations to northern communities and organizations and to scholarships (\$1.7 million in 2011).</li> </ul>
Uranium industry worker health	<ul> <li>Workplace injuries (with or without time loss) for uranium mine workers (open pit and underground) are lower than for many other industries and worksites, such as health authorities, hospitals and care homes; grocery, department store and hardware stores; commercial and industrial construction; cities, towns, villages and RMs; and transportation, courier and commercial buses.</li> <li>Workers in the modern uranium mining industry are at far lower risk of exposures to radon decay products and radiation than miners in the past due to improvements in safety practices.</li> <li>The risk of lung cancer for modern-era uranium miners (who generally have had higher smoking rates than the average Canadian) is nearly the same as that of other Canadians who smoke.</li> </ul>
Local participation in the uranium industry	<ul> <li>Local participation in the industry included participation of northern residents in the Environmental Quality Committee (EQC), the Athabasca Working Group (AWG), as well as industry-led engagement such as community and school visits, project-specific engagement and worker development.</li> <li>Engagement with the uranium mining industry varied by activity. Based on the IAP2 spectrum, public involvement extended from 'inform' to 'collaborate' depending upon the type of public involvement activity.</li> <li>The uranium mining companies focus the majority of engagement efforts on communities with regulatory importance to their operations.</li> </ul>
Community well-being index (general)	<ul> <li>The community well-being index (an indicator of overall community well-being, including income, education and housing) indicated, overall, that scores were higher in Saskatoon, Air Ronge and La Ronge than the other case study communities and the north as a whole. This disparity in community well-being, as evidenced by this indicator, appears to be widening over time.</li> </ul>

Indicator	Observed Trends
Uranium industry contributions to community vitality	<ul> <li>The uranium mining industry has made various contributions to community initiatives over the years that have been of value to infrastructure and services within communities, irrespective of whether the value of the contribution was large or small.</li> <li>In the case study examples (which provided a limited snapshot of selected communities) it appears that economic benefits accrued largely to individuals and their families mainly because there were limited local opportunities to re-spend income and they made purchases, instead, in larger centres.</li> </ul>