URBAN QUALITY OF LIFE AND INDUSTRIAL PROJECT MANAGEMENT: THE CASE OF ALCAN ALUMINIUM SMELTER IN ALMA, QUEBEC, CANADA

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Study background

This quality-of-life study involving the population of Alma (30 126 inhabitants) is part of a five-year, multidisciplinary research program entitled *Modélisation du suivi des impacts sociaux de l'aluminerie Alma* (www.uqac.ca/msiaa). The goal of this research program is to document the social impacts arising from the establishment of the Alcan industrial megacomplex in Alma (see Map 1). The Alma smelter began operation in 2001. It employs 865 people and has a production capacity of 407 000 MT of aluminium ingots.

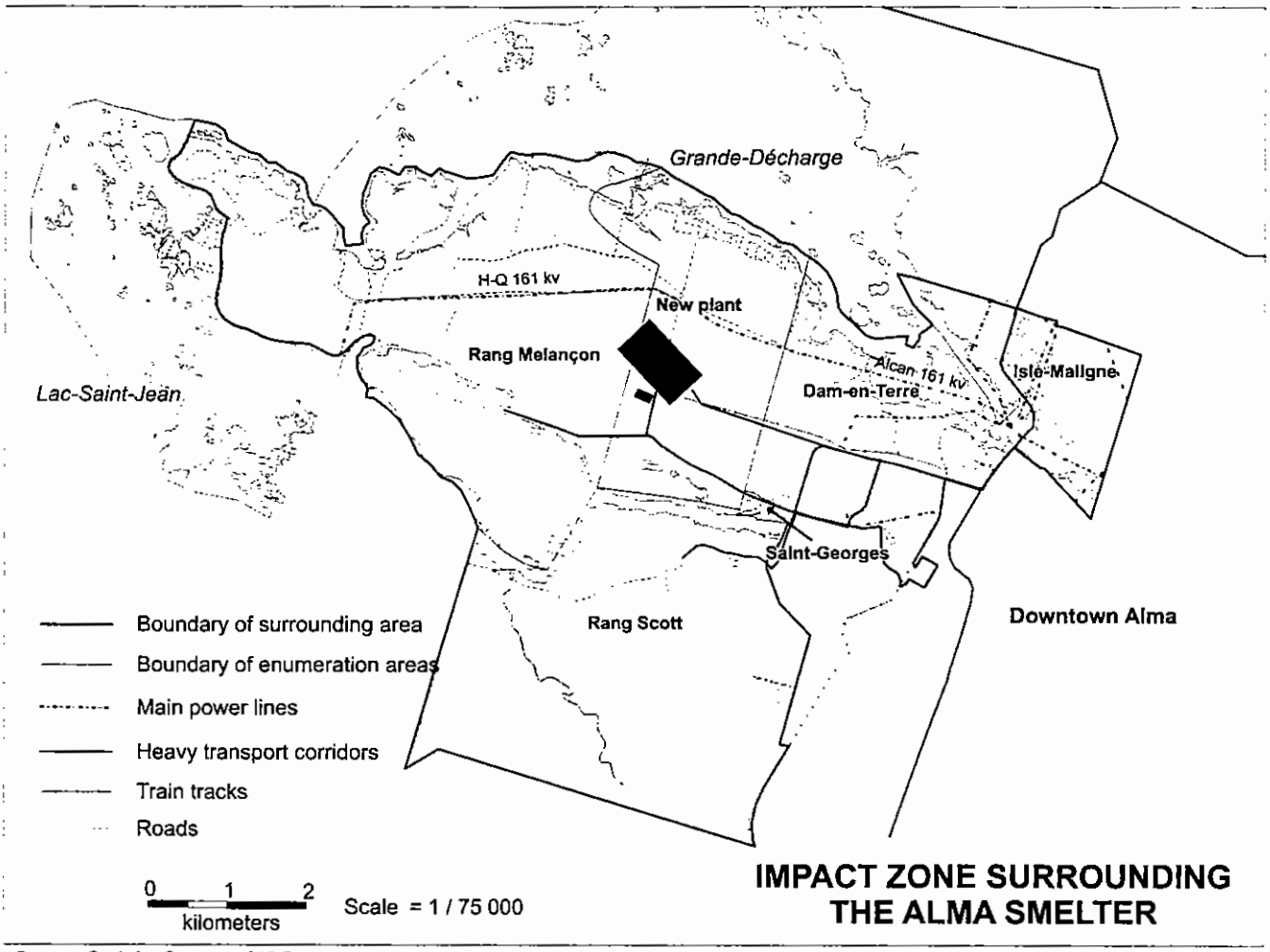
The research program is being carried out in parallel with the project, rather than retroactively. Thus, various thematic reports have been published on topics such as the project's economic spin-offs and changes in the housing and transportation sectors. More specifically, this study aims to gauge the perceptions of Alma residents regarding their quality of life as stakeholders. In order to ensure that the study produced a more accurate indication of the community's evolution and to tie the study in with the various phases of the implementation of this industrial megaproject, it was conducted in three parts, i.e., in 1998, 2000 and 2002, corresponding to the planning, construction and operation phases.

Quality of life: Approaches and definition

Interest in quality of life is not a new phenomenon. The ancient Greek concept of *eudaimonia* encouraged individuals to achieve their full potential in order to ensure they had a good life (Dubois, 1999). A good life was often associated with a good living environment, particularly in the writings of Aristotle and Plato. The importance of geographic context for the Greeks is symbolized by the model city plan proposed by Hippodamus of Miletus in the fifth century BC.

In the quality-of-life literature, studies generally follow one of two approaches: those that use objective indicators and those that concentrate on subjective indicators. Objective indicators are quantitative measurements such as migration and housing data from Canadian censuses. Subjective indicators are qualitative measurements that are generally drawn from interviews with residents and that are based on their perceptions and their degree of satisfaction with living conditions. Our research is based on the second type of approach. Individuals and communities act according to their perceptions, which then become concrete realities that must be taken into account.

Map 1. **The Alcan industrial megacomplex in Alma**



Source: Statistics Canada, 1966 Census

Marc Mercier et Martin Simard, 2002

The definition of quality of life is therefore related to the two approaches described above. There is no perfect or complete definition of quality of life. However, we can use the definition proposed by the World Health Organization for the related concept of health, i.e., "a state of complete physical, psychological and social well being." Despite its subjective and interpretive nature, quality of life seems to be associated with the fulfilment of certain physiological and psychological needs, such as those identified by Maslow in 1954. Therefore, the economic and geographic conditions experienced by individuals and local and regional communities are significant factors in the fulfilment of these needs.

Research objective and methodology

The two objectives of the study were:

- To develop a profile of quality-of-life perceptions of Alma residents, with an emphasis on the evolution of those perceptions between 1998, 2000 and 2002 and the evaluation of variations in perceptions among different population subgroups.

- To examine the impact of the Alma smelter, particularly the possibility of a relationship between residents' perceptions and the changes brought on by the new industrial megacomplex.

The same questionnaire was used during the three phases of the study. It contained 34 questions administered in person by investigators. Interviews lasted an average of 20 minutes each. The study was carried out in three phases, i.e., in 1998, 2000 and 2002. Each time, the study covered a representative sample of the population, taking into account the demographic weight of the Statistics Canada enumeration areas (1996 boundaries). The response rate ranged between 61.3% and 73.0%. The questionnaire was administered by a team of 22 investigators.

Main results

The study of the perceptions of Alma residents of their quality of life indicated that, as stakeholders, residents are generally satisfied, despite an increase in impacts during the construction phase of the Alma smelter. The responses gathered showed a broad consensus on a number of issues.

Thus, an Alma resident is generally someone who:

1. Is satisfied with his/her quality of life with respect to the biophysical and community environment as well as the economy.
2. Is concerned about issues related to health and family.
3. Sees Alma as a dynamic community and does not plan to move.
4. Perceives few environmental risks, while remaining aware of the possible effects of industrial activity (see Table 1).
5. Is somewhat dissatisfied with the traffic situation and noise caused by blasting during the construction phase.

Table 1. **Positive evaluation of the state of biophysical environmental indicators**

Indicators	1998	2000	2002	Average
Drinking water	87.8%	87.4%	91.4%	88.9%
Ambient air	87.4%	89.5%	85.0%	87.2%
Acoustic environment	93.4%	79.2%	75.2%	82.2%
Green spaces and recreation areas	81.3%	79.3%	74.0%	78.0%

Conclusion

The three-part qualitative study proved to be an interesting and effective way of obtaining new information that will be useful to local and regional stakeholders. This information is based on the daily lives of residents, as part of a process that integrates all aspects of community life. This process relies on sources other than the traditional sources of information, which are based on the opinions of experts working in related fields. It is therefore an innovative research approach, designed to complement the usual data sources.

This type of study goes far beyond the sphere of environmental assessment and could be applied to various fields, such as public health, urban planning and regional development. The concept of quality of life allows a detailed and comprehensive examination of the physical and mental condition of residents. The longitudinal qualitative study is a tool for social and territorial monitoring that takes into account the duration and context of events. It can be associated with a new generation of studies intended to lead to projects adapted to the characteristics of affected populations and implement programs and policies that are responsive to the needs of residents. In this way, by ensuring the social acceptability of private and public action, these processes contribute to the well being of stakeholders and the general population.

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