Local Communities in Québec
Christiane Gagnon

Since the end of the 1970s, the aluminium industry worldwide has undergone major restructuring. While there have been plant closures in Japan and the United States, capacity increases have occurred in places such as Québec, Australia, Brazil and Venezuela. Changes in the strategies of multinational companies have wrought physical changes on the primary aluminium industry. This process of global relocation of the aluminium industry interacts with territorial conditions as well as with provincial and local governments. The resulting restructuring entails social and physical changes due to for example the effects of constructing plants and hydroelectric dams. The overall consequences are what social geographers refer to as the ‘sociospatial’ impacts.¹

This chapter studies the case of northern Québec², to illustrate the local, sociospatial impact that results from global restructuring of an industry. The first part summarises the development of the aluminium industry in Québec, during the 1980s, the government’s energy strategy and industrial policies and gives a brief description of the sociospatial characteristics of the Saguenay-Lac Saint Jean region. The aluminium industry in the region and the agreements made between the state of Québec and the dominant company, Alcan, are examined. The second part looks at the sociospatial impact of industrial restructuring on local communities and concludes by discussing the significance of restructuring on social change and regional development.

For a complete analysis of the global restructuring of an industry, it is necessary to understand the effects of such change at a local level. Major
structural changes of an industry, or changes in the strategy of major trans-
national corporations, can have profound local effects on the regions that
host these industries. In this discussion, the term 'locality'\(^3\) embraces the
entire economic, social, cultural and political dimensions of a region. In
particular, we shall examine how the relocation and expansion of the alu-
minium industry in Québec was influenced by the industrial and energy
policies of government during the 1980s.

**QUÉBEC'S ENERGY POLICIES**

There is no doubt that Québec's energy policies have played a critical role
in the deployment of the aluminium industry in the province. The first
settlements in Québec were shaped by the vast hydrographic network,
which provided natural communication between settlements and conduits
for the fur and lumber trades (Fig. 7.1). From the beginning of Québec's
industrialisation in the 1920s, the exploitation of hydro-electric power has
strongly shaped the industrial strategy of the province. Since then, the
government has emphasised the province's abundant hydro-electric
power to attract American industrial investors.

The aluminium industry (notably Alcoa) was quick to take advantage
of the favourable local policies which allowed the private development of
the hydro-electric dams on the Saint-Maurice and Saguenay rivers. In
1944, a public corporation, Hydro-Québec, was set up to manage the ex-
ploration of hydro-electric power in the province. In 1963, the government
of Québec decided to nationalise the hydro-electric industry and to de-
develop new capacity in anticipation of increased demand. Some companies,
however, for whom electricity was of vital importance, were allowed to
retain their own private hydro-electric generating capacity. At the time,
Alcan was the largest producer of hydro-electricity in the province (27.5% of
Québec's entire capacity). The company avoided nationalisation of its
power generating capacity, which still remains in the private sector.\(^4\)

Today, Hydro-Québec manages generating capacity of approximately
30,000 MW supplying domestic users and large industrial customers in
Canada and selling surplus electricity to the north eastern states of the
U.S. Hydro-Québec aims to export around 10% of its entire generation by
FIGURE 7.1.

Québec's Hydrographic Network and Drainage Basins

Source: Carte des bassins versants du Québec, Ministère des richesses naturelles. 1975.
C. Chamberland, Les Laboratoires de géographie, Université du Québec à Chicoutimi, 1993.
the year 2005.\textsuperscript{5} Competitively priced hydro-electric power is the ‘driving force’ for Qu\'ebec’s economic development. To this day, it is a lure to industrial investment in the province.\textsuperscript{6,7}

From 1987, in order to attract new aluminium and other metal producers, Hydro-Qu\'ebec entered into special ‘shared profit/risk agreements’ with 13 companies. The agreements link the electricity charges to these customers to the market price of aluminium. These prices are often lower than electricity prices charged to other large industrial consumers.\textsuperscript{8}

The combined consumption of the 13 companies is equivalent to the capacity of the next Grande-Baleine River hydro-electric project.\textsuperscript{9} The exact terms of the agreements have not been made public, but some information was disclosed when the Great Council of the Cree (one of the local aboriginal peoples) tried to obtain copies of the contracts.

**RESTRUCTURING IN QU\'EBEC**

The development of the aluminium industry in Qu\'ebec can be divided into three periods. Between 1899 and 1950, the sector was largely dominated by Alcan, which was originally a subsidiary of Alcoa. During the second period, from 1950 to 1980, Alcan’s connection with Alcoa was completely severed, while another producer, Reynolds, arrived on the scene and built an aluminium smelter at Baie Comeau (Fig. 6.1). The third period, extending into the 1990s, has been characterised by an increase in the production of primary aluminium; the arrival of new producers (Pechiney, Alouette consortium and Alumax) and the Qu\'ebec state becoming financially involved through Soci\'et\'e G\'en\'erale de Financement. Another significant development has been Alcan’s diversification into new products and fields of activity, such as composite materials and recycling. The company also improved its hydro-electric production and expanded its investment in research and development.

Since the beginning of the 1980s, there has been a major development on the banks of the St. Lawrence and Saguenay rivers. Five new plants have been constructed at B\'ecancour, Deschambault, La Baie, Chicoutimi and Sept-Iles. Two others are currently being expanded at B\'ecancour and Baie-Comeau, while expansions of a further two have been proposed at
FIGURE 7.2

THE HYDRO-ELECTRIC FACILITIES OF ALCAN IN SAGUENAY—LAC-SAINT-JEAN

CHUTE-DU-DIABLE DAM
205 MW

CHUTE-À-LA-SAVANE DAM
210 MW

LAC SAINT-JEAN RESERVOIR
$5.417 \times 10^7$ m$^3$

MANOULANE RESERVOIR
$2.657 \times 10^7$ m$^3$

PASSES-DANGEREUSES RESERVOIR
$5.227 \times 10^2$ m$^3$

AND

CHUTE-DES-PASSES DAM
750 MW

ISLE-MALIGNE DAM
402 MW

SHIPSHAW DAM
896 MW

Source: Alcan, Énergie électrique, 1983.
G. Chamberland, Les Lacrates de géographie, Université du Québec à Chicoutimi, 1993.
Alma and Sept-Iles. These new additions have already increased primary aluminium capacity to around 1.75 Mt/y, with total capacity expected to reach 2.3 Mt/y by 1995.\textsuperscript{10} In the early 1980s Québec accounted for around 8\% of the Western World’s aluminium ingot production. This should rise to about 11\% when current and planned expansions have been completed.\textsuperscript{11}

A full understanding of the spatial reorganisation of the aluminium industry globally requires a detailed study of the changes and their implications at a local level. To this end, a study of the Saguenay-Lac Saint Jean region (SLSJ) was undertaken in the 1980s.\textsuperscript{12}

**THE SAGUENAY-LAC SAINT JEAN REGION**

The first large scale aluminium smelter in the Western World was built in the SLSJ region. It was at the Jonquière complex (Arvida) that Alcan (at that time still Alcoa) poured its first aluminium ingot in 1926. Later, Alcan rapidly expanded its aluminium production to meet the demands of the Second World War. Company towns were constructed beside the plants which recruited workers formerly employed in farming or forestry.

Alcan Aluminium Limited, one of the world’s largest primary aluminium producers, has concentrated a large part of its ingot production in this region (about 40\% in 1988) and exports to foreign markets, mainly the United States.\textsuperscript{13}

In the 1970s, after several years of expansion, the aluminium market experienced several downturns. Seeing a decline in both profits and market share, Alcan decided to modernise its old plants in Québec; to relocate some of them and to increase its production capacity for primary aluminium and hydro-electric generation. At the end of the 1970s, a broad programme of industrial modernisation took place. This was stimulated both by the need for commercial competitiveness and by increasingly stringent environmental regulations.

The economy of the SLSJ region remains poorly diversified, export-orientated and based on exploitation of natural resources (primarily forest products and hydro-electricity). The population (296 496 in 1991) is mostly urbanised and distributed among five major industrial towns (La
Baie, Chicoutimi, Jonquière, Alma and Saint-Félicien) and 55 smaller, rural and urban municipalities. The three towns of the Saguenay conurbation account for half of the region’s population.

In the 1980s, the services, trade and manufacturing sectors were the region’s main employers (Table 7.1). In 1991, total employment for the region was 115,900 (down 2.4% from 1990). In manufacturing (which includes the aluminium and pulp and paper industries), Alcan remains the major private employer, providing 7,500 jobs out of the sector total of 19,700. Between 1977–89, however, unemployment rates in SLSJ were between 1–5% higher than for the remainder of Québec, thus making the region particularly sensitive to any downturn in the provincial economy.\(^{14}\)

Gauged by a variety of social and economic indices, the SLSJ region compared unfavourably with other industrial regions of Québec during the 1980s. The likely evolution of this status may be analysed in terms of the changes in the locally dominant aluminium industry and the territorial concessions granted to Alcan by the government, particularly with regards to its exploitation of hydro-electric power.

**ALCAN’S MODERNISATION PROGRAMME**

During the 1980s, Alcan began a programme of modernisation which included relocation of some of its plants and diversification and extension of its products. At the same time, the company implemented a strategy of partnership with local communities aimed at mitigating the impact of unemployment caused by the modernisation programme.

Long before the 1980s, Alcan had established its dominance of the regional economy on the basis of the following structures:

- Six hydro-electric power plants with a total capacity of 2,700 MW (Fig. 7.2).
- An electricity distribution grid supplying domestic users in several municipalities, as well as other industries.
- Control of extensive water systems, including the levels and flow of lakes and rivers.
- A private railway linked with the national rail system.
• A deep sea port at La Baie, used primarily for Alcan’s export of ingots and the import of its raw materials, such as bauxite and alumina. Surplus capacity is used for the export of products produced by other companies in the region.
• Two primary aluminium plants: Jonquière and Isle-Maligne with respective capacities of 430 000 t/y and 73 000 t/y (1978 figures).
• A large chemical complex comprising several plants at Vaudreuil. One plant transforms bauxite into alumina, another produces aluminium fluoride and by-products from the alumina and aluminium processes, such as gallium (used in aerospace and military applications).
• A major research and development establishment.
• Two small plants in Saguenay and Lapointe for semi-finished aluminium products such as rod and electric cable.
• Extensive land holdings along the shores of Lac Saint Jean and in the industrial towns of the region.

In 1980, the industrial and urban landscapes began to change with the capital restructuring that was taking place. Alcan’s modernisation brought the partial closure of old plant and replacement of lost capacity with new aluminium smelters. Grande-Baie, which came on line in 1981, and Laterrière (1989) each have a capacity of about 200 000 t/y.\textsuperscript{15} Following the start-up of these new smelters, some of the old pot lines at Arvida and Isle-Maligne (which used older Söderberg technology) have been closed.\textsuperscript{16}

Capacity has not just been replaced, but increased: from 429 000 t/y in 1975, to 664 000 t/y in 1992. Construction of a third new smelter at Alma has not yet commenced.

As well as relocating production from Arvida to Grande-Baie and Laterrière, Alcan also diversified production with the implementation of small new high technology plants, which included:

• The Dubuc plant producing Dural and Duralcan: high strength materials with applications in the automobile, sports equipment, aerospace and military industries.
• The C-Axis plant, producing structural materials. This plant was, in fact, closed in 1991.
• The Guillaume-Tremblay plant opened in 1990 for the treatment of skim or dross from all aluminium smelters in Québec.

In summary, Alcan’s restructuring has brought about decentralisation and relocation of smelting operations in the region; the modernisation and expansion of other plants (such as the fluoride and casting units) and the building of new small high technology plants.

These changes, however, are just a small part of Alcan’s global modernisation strategy, first expressed some 25 years ago. Its four main objectives are: 1) higher productivity; 2) environmental protection; 3) improvement in working conditions and 4) rationalisation of energy resources. By the end of the 1980s, Alcan’s position was similar to that following World War II. The links were clearly established between profits, hydro-electric capacity and modernisation. According to Alcan:

At this moment of our history, (...) we found ourselves with a strong balance sheet and good cash flow, sufficient flow to undertake a number of long-term projects and in particular both to rebuild in the East of Canada our old aluminium smelters and at the same time add to our hydro power capacity in the West.17

This statement underlines one of Alcan’s main strengths: its control over the costs of its own energy usage and the profitability of selling surplus electricity. Consequently, the SLSJ region was directly affected by Alcan’s management of the artificial water level of Lac Saint Jean and the Québec government’s royalties from the company’s privately generated hydro-electric power.

RENEWAL OF ALCAN’S ENERGY AGREEMENTS

Alcan manages a vast hydrographic network, embracing a surface area of 73 000 km², from which it generates its own hydro-electric power (capacity 2 687 MW). Clearly, the renewal of the agreements/concessions which allow the continuation of this capability are of crucial importance to the company (Fig. 7.2). The current agreements hinge on three particular events. These also serve to illustrate the relationships between
Alcan and the state of Québec and between Alcan and regional interests, such as social groups and trade unions:

1977: The renewal of Alcan’s concessions for private hydro-electric power generation, against payment of royalties to the state of Québec.
1984: The lease on the Peribonka River.
1985: The decree concerning the programme for stabilising the shores of Lac Saint Jean.

RENEWAL OF ROYALTIES
At the time of the 1977 Parliamentary Commission on Natural Resources, Lands and Forests, the National Confederation of trade unions (Confédération des syndicats nationaux) campaigned for the nationalisation of Alcan’s hydro-electric generating capacity. This would have resulted, inevitably, in increased energy costs to the company. At the time, the president of Société d’Électrolyse et de Chimie Alcan (SÉCAL, the regional subsidiary of Alcan), stated that the company’s investment programme for modernisation would depend on secure access to energy:

Our expansion, modernisation and improvement programme in our aluminium smelters in Québec will, of course, depend on the availability of funds on world markets, on stable labour relationships, and especially on a secure energy supply.18

Following a question from a Commission member, SÉCAL’s president replied that an increase in royalties could have consequences on the company’s modernisation programme. Another Alcan director was more specific: “In principle, each time that our costs increase, it’s one dollar that we shall not spend.”19

At the time, however, Alcan had already bought the land for the construction of the new Grand-Baie aluminium smelter, as the first step in its modernisation programme. Despite the pressure from the trade unions, the company escaped nationalisation of its power-generating facilities. However, Alcan finally had to accept an increase in the royalties it paid to the state of Québec on hydro-electricity generation, which had remained
unchanged for the previous 40 years. These royalties amounted to $C4.6 million in 1976 – 77, and $C16.4 million, between 1977 and 1986.\(^{20}\)

**The Peribonka River lease renewal**

Alcan promoted its strategy for modernisation, arguing the need for increased international competitiveness and less polluting technology. Since the programme would involve considerable investment in the region, Alcan succeeded in negotiating another major agreement. In 1984, Alcan signed a 50 year extension of its lease on the Peribonka River at a low rent that was highly favourable to the company (Fig. 7.1). In return, Alcan committed itself to pursue its modernisation programme in the SLSJ region and elsewhere in Québec, specifically: undertaking a capital investment of $C3 000 million and guaranteeing a primary aluminium output of 1 Mt/y between 1985 and 2015.

**Stabilisation of the shores of Lac Saint Jean**

In 1985, the government of Québec awarded Alcan the exclusive management of Lac Saint Jean for a term of 10 years, allowing the company to maintain artificial water levels for its own hydro-electric generation purposes. In addition, Alcan was granted the right to pursue a programme of shore stabilisation measures, at an estimated cost of $C40 million over ten years. Among other things, this allowed Alcan to build structures along the beaches aimed at minimising erosion on private and public property.

The company’s maintenance of an artificially high water level, during autumn and spring, remains a long-standing source of conflict between Alcan and lake shore users. In 1986, after controversial public hearings, the Québec government accepted the retention of Alcan’s solution to the problem in its entirety. It did so, in spite of strenuous opposition from ecologists, lake shore users, recreation and tourism developers and conditional opposition from certain municipalities. Notably, the decision also went against the recommendations of the government’s own environmental body.\(^{21}\)

Because it operates its own hydro-electric generating capacity and under favourable agreements, Alcan enjoys an undeniable advantage over its
competitors. Energy represents a major proportion of the total production costs of aluminium. For most Western World aluminium producers, the unit cost of energy doubled between 1970 and 1980, while Alcan remained largely sheltered from this increase. Apart from the resource royalties payable to the state, Alcan has considerable control over the cost of supplying itself with electricity. This has clearly enhanced its international competitiveness as an aluminium producer.

Not only can Alcan supply itself with electricity at prices that are stable and largely independent of fluctuations on the open energy market, it can also do so at prices that are genuinely amongst the lowest in the world. Alcan’s actual unit generating costs are a closely guarded secret, but estimates are regularly advanced. In the 1970s, some commentators suggested 0.125 cent (Canadian)/kWh; while in 1983, other observers calculated a figure of 0.25 cent/kWh. Low energy costs are the main reason that, in 1980, Alcan’s production cost for a tonne of aluminium was put at $US50, “as opposed to $US300/tonne for U.S. competitors and $US950/tonne for Japanese aluminium smelters”.

Moreover, Alcan is able to sell electricity that is surplus to its own requirements. In the two years 1986 to 1988, electricity sales to outsiders produced profits exceeding $C500 million.

Undoubtedly, Alcan’s private exploitation of hydro-electric power is crucially important to its profitability and the company’s strategies in Québec. The renewal of favourable agreements between Alcan and the state of Québec have greatly enhanced the company’s global competitiveness as an aluminium producer. But have the local communities also benefited from these agreements?

Regional communities were not directly involved in the negotiations between Alcan and the state over hydro-electric royalties and the extension of the Peribonka river lease. Neither did the region derive any obvious benefit from these agreements. The Québec government increased the royalties paid by Alcan for exploiting hydro-electric power, but no claim was made for this money by regional communities to compensate for the loss of jobs caused by Alcan’s modernisation programme.

In the case of the negotiations for the renewal of the Peribonka River lease, no local community was either informed or involved. It was renewed in
1984, 25 years before the expiry of the existing lease. Such an agreement has major implications for regional planning and development because it cannot take into account a host of variables that may change so far into the future. These might include changes in production technology, relocation of production, plant closures, etc.\textsuperscript{30} In addition, the agreement was disclosed just before a debate concerning Alcan’s management of the water level and shoreline of Lac Saint Jean. The timing was such that public attention was effectively diverted from the Peribonka River issue.

As can be seen, local communities and government institutions were often left out of Alcan’s negotiations with the provincial government on important issues such as territorial leases and exploitation of natural resources. This is not to suggest that local communities derive no benefit from these arrangements.

At Lac Saint Jean, local communities and lake shore users benefit from the measures Alcan has taken against shore erosion. In more general terms, the local economy is also likely to benefit from the massive capital commitment that should ensure Alcan’s strong industrial presence in northern Québec for the foreseeable future.

**ALCAN’S ‘PARTNERSHIP’ STRATEGY**

The private exploitation of natural resources, bringing only indirect local public benefit, has become an issue of increasing importance. This is particularly so in a resource rich, but otherwise economically disadvantaged region such as the SLSJ. Aware of the issue and in order to mitigate any public hostility to its activities, Alcan’s strategy has been to try to establish a sense of partnership with the communities in which it operates. This ‘partnership strategy’ is illustrated by the statement: “Wherever Alcan operates, a concern for the community and a partnership with local people is the keynote of its activities”.\textsuperscript{31}

All through the 1980s Alcan has promoted this strategy of partnership with local communities, in order to ensure a social environment that, if not amenable, was at least not hostile to its corporate goals. In particular, Alcan has addressed the consequences of its corporate modernisation on re-
gional communities in encouraging local entrepreneurship and job creation schemes. It has also sought to enlist consensus for its regional developments and has stressed its commitment to environmental protection. The company has also tried to foster a sense of local character by promoting social and cultural activities.

Between 1984 and 1991, Alcan demonstrated its concerns for local communities by its active participation in ‘round tables’ and ‘socio-economic summits’.

Such activities represented a new type of social negotiation in which a wide variety of interests took part. These included traditional protagonists such as trade unions, local government and corporate interests, but also groups relatively new to such discussions, such as environmentalists, representatives from education and various regional community organisations.

Alcan has supported efforts to develop new businesses in the region to counterbalance job losses resulting from its own modernisation programme. It has invested in the local job creation organisation, Société en commandite de création d’entreprises (SOCCRENT), which gives financial support and expertise to small ventures.

Alcan’s policy of partnership with the community extends to local education, particularly with the University of Québec at Chicoutimi. With the help of federal government and university foundation subsidies, Alcan has helped to create two industrial research chairs (on primary aluminium) at the region’s university. In addition, Alcan also has links with a number of ‘high tech’ enterprises concerned with the marketing of its technology.

Another example of Alcan’s partnership with the community is its support of medical organisations. The company is also active in promoting a sense of local identity by its support of social, sporting and cultural activities, such as The Alcan Quartet. It has also encouraged conservationist activities, such as a campaign, led by Greenpeace, against the extinction of white seals in the Saguenay and St. Lawrence rivers. For a company whose activities are founded on the exploitation of natural resources, a strategy of partnership with local communities is seen as an integral part of the process of industrial restructuring.
THE SOCIOSPATIAL IMPACTS OF RESTRUCTURING

The restructuring of Alcan's aluminium industry in northern Québec has impacted locally on planning, changes to municipal land-based revenues, employment within the region and environmental issues.

Local planning

Large metallurgical operations of any kind are physically imposing and occupy sites of considerable area. Primary aluminium smelters require a massive input of electric power and water, as well as a wide range of ancillary services. Such industries tend to dominate the locations in which they are sited, taking the 'lion's share' of natural resources. The presence of a heavy metallurgical industry may have an adverse effect on other activities and may positively deter such industries as tourism.

Alcan's modernisation programme had particular and direct planning implications for Laterrière Village and Notre-Dame de Laterrière, which were rapidly merged in 1983 in anticipation of the establishment of the new Laterrière plant. Concurrent with this amalgamation was another proposal by the mayor of Chicoutimi to unite Laterrière with Chicoutimi. The mayor's proposal provoked a strong reaction from the Laterrière community. As it happened, most of the energy of the local community was directed against the proposed merger with Chicoutimi. Ironically, little concern was given to assessing the consequences of building a major industrial plant in the heart of an erstwhile agricultural and forestry community. (Fig. 7.3)

After a series of political debates and a great deal of pressure applied to Laterrière, an agreement was signed between the townships concerned and the Québec government. An area of 970 hectares was declared an industrial zone and ceded to Chicoutimi, to enable the town to receive additional tax revenues from Alcan. As compensation for the loss of this land and future revenues from it, it was agreed that Laterrière should receive an annual royalty from Chicoutimi. The cession of land holding required new legislation and set a precedent in Québec law, because Alcan's land was not contiguous to the township to which it was ceded.

This event has had a profound effect on the community of Laterrière. It enjoys 'new city' status and is now trying to adapt to the economic, social
and environmental consequences of the new Alcan plant. These include noise, the industrial use made of the Du Moulin river, the aesthetic consequences for the historic village and the relocation of some inhabitants. New demands have been made on municipal services and infrastructure, while property tax has increased.

**Local tax revenues**

The relocation of Alcan’s aluminium smelters had major financial consequences for local communities, notably with respect to revenues from rates levied on industrial land. The four urban municipalities of Chicoutimi, Laterrière, La Baie and Jonquière were considerably affected in this way.

The city of La Baie has seen its revenues increase by some $C4 million each year, following the construction of the Grande-Baie plant in the early 1980s. The city of Chicoutimi, which receives the industrial taxes from the Laterrière plant, has seen a similar increase in revenue, following the plant’s completion in 1989. Laterrière, the town actually adjacent to Alcan’s plant, receives an annual royalty of approximately $C350 000 from the city of Chicoutimi, to compensate for the loss of land and revenues therefrom.

However, the situation for the municipality of Jonquière is considerably less favourable. Following the closure of some Söderberg pot lines at the Jonquière complex, the value of the land for rating purposes was reduced by some $C60 million. This has resulted in a sharp reduction in the town’s industrial revenues, and has even necessitated a fiscal reorganisation within the municipality. Jonquière has suffered demographic decline and other social consequences as a result of Alcan’s modernisation programme.

Before the 1980s, all of Alcan’s smelter operations were concentrated at the Jonquière complex and Isle-Maligne. The opening of the two new plants has redistributed industrial property taxes within the region, resulting in fiscal parity between the two largest towns of Chicoutimi and Jonquière. Before 1989, Chicoutimi did receive such revenue, which was one of the obstacles to the attempted urban merger of 1974. Now that these financial and fiscal differences have disappeared, an eventual amalgama-
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FIGURE 7.3

MUNICIPALITY OF LATERRIÈRE AND LOCATION OF ALCAN'S PLANT

LEGEND

- Aluminium smelter in operation
- ALCAN's buffer zone
- Limit of municipality
- Major road
- Regional road
- Street

Source: Municipality of Laterrière

C. Chamberland, Les Laboratoires de géographie, Université du Québec à Chicoutimi, 1993.
tion of the towns in the Upper Saguenay region – Chicoutimi, Jonquière and La Baie – remains a possibility.

**Regional employment**
The most substantial social consequence of Alcan's modernisation programme is, without doubt, its effect on employment in the region. In spite of the construction of the two new aluminium smelters at Grande-Baie and Laterrière, modernisation of plant and rationalisation of working practices have resulted in a net loss of 2,100 jobs over the period 1980-89. This equates to a reduction of about 22% of Alcan's workforce in the region (Table 7.2). This drastic employment reduction has had dramatic repercussions for a local economy that is poorly diversified and in which Alcan is the biggest private employer. Moreover, the payroll of the region has shrunk disproportionately to the number of jobs lost, since they were comparatively well paid jobs. As with any major retrenchment, unemployment has had an adverse affect on the social and economic fabric of the community.

Any future increase in production capacity in the region is unlikely to create new jobs, with the trend towards more labour-efficient technologies in all industries.

**Environmental concerns**
An important element in Alcan's modernisation programme has been the change in public attitudes towards the environment and increasingly stringent environmental regulations. Alcan has even used environmental concern to justify the modernisation of its operations. As an example, at the time the Laterrière project was announced, the company argued:

*The recent decision to go ahead with the proposed Laterrière plant constitutes the next step, of major importance, with the objective of improving the performance of our system of electrolysis plants in Québec as regards the protection of the environment.*\(^{37}\)

Had Alcan decided, instead, to modernise its old aluminium smelters in Québec the company stated that it would not have been principally for commercial reasons:
There is no doubt an economic benefit, more efficiency, but the deciding factor will be health and the environment. The old plants had to be modernised because of the environmental problems they were causing.\textsuperscript{38}

Since the beginning of the 1980s, environmental issues have had an increasing influence on Alcan’s policy making.\textsuperscript{39} Not only has the pressure of opinion grown from the general public, ecologists, workers and shareholders, but environmental laws have become more stringent and company directors increasingly aware of their liabilities in these matters.

While new aluminium smelters have become cleaner, plants like the one at Grande-Baie (which meets current environmental legal specifications) still emit significant quantities of gases and dust. These atmospheric pollutants include sulphur dioxide, carbon monoxide, fluorides and volatile organic compounds.\textsuperscript{40} Because of these emissions (particularly the high concentrations of fluorides), buffer zones have had to be demarcated around the aluminium smelters.\textsuperscript{41}

At the Laterrière plant, in spite of the new technology, Alcan was recently forced to invest a further $C3.5 million to improve dust collection.

It is well-known that the older Söderberg smelting technology causes serious atmospheric pollution. The modernisation of the Jonquière complex became a matter of urgency, if only on environmental grounds. Between 1940 and 1983 and before the installation of a dry scrubber, the chimney stacks of the Jonquière complex emitted 173,993 t of fluorides. This is 74\% of all smelter emissions of fluorides in Québec over the period\textsuperscript{42} and represents a considerable pollution over forty years.

In the inorganic chemical facilities, as for example at the Vaudreuil plant of the Jonquière complex, the Bayer process has been the major culprit of pollution. The Bayer process discharges several pollutants into settling ponds, water courses and drains, including: caustic soda, cyanide, sulphuric acid and fluorides.\textsuperscript{43}

It should be noted that Alcan’s programme did not include the rehabilitation of the company’s six toxic dump sites at Jonquière and Laterrière, five of which have been classified as “presenting a current potential public health risk and/or a potentially high risk for the environment”\textsuperscript{44}.

Even if Alcan’s modernisation programme has produced some individual environmental improvements, no assessment has been attempted of
the cumulative effects of these changes. The industry now includes four aluminium smelters concentrated within a radius of 25km in an urban area. Production has increased from Alcan’s chemical complex as well as two new smaller semi-finished aluminium plants. There are also the effects of the company’s management of water systems for hydro-electric power. It seems likely that all these physical changes have placed additional pressures on the environment of the region.

If Alcan and the provincial government are truly committed to the concept of sustainable development, a full study of the potential effects of industrial modernisation and relocation will have to be made in order to manage any risk to the environment.

The second part of this chapter has illustrated certain local and regional consequences of the global restructuring of the primary aluminium industry. Whether or not the case of the SLSJ region is unique is relatively unimportant. It does, however, illustrate the close interaction between the global economic restructuring of an industry and local communities, sometimes to their detriment.45

Today, corporate strategies present even greater challenges to local communities than in the past. It is important for local communities to participate fully in responding to exogenous changes thrust upon them, in order to secure the best possible social and economic conditions for their present and future needs.

CONCLUSION
The preceding discussion has looked at local responses to industrial restructuring and changes in corporate territorial strategy. Industrial reorganisation should not be regarded simply as a structural or temporary adjustment of capitalist production. It is also, according to Massey, “a process of social transformation ... an early element in social change”. 46

The restructuring of the international aluminium industry is but one example of a trend in global restructuring. Markets are becoming globalised, welfare states have been weakened and the redistribution of wealth, constrained. As a result, local communities need to participate more actively in their own development. In other words, local communities are
gradually being promoted into the position of partners in the changes that affect them. As some authors have pointed out, the ‘partnership society’ is becoming a new paradigm: a new social contract based on the search for a consensus between a greater diversity of social interests. This new pattern stresses the capabilities and specific characteristics of the individual community, while at the same time identifying particular responsibilities for the various participants involved. Increasingly, communities are developing a sense of common purpose in responding to social change.

In this particular case study of the SLSJ region, the different component localities of the region appear to have responded differently. Some communities have derived a direct local benefit from major industrial projects, while others are seeking alternative ways to promote economic and social development. Examples of the latter include tourism projects (for example ski resorts) or the development of nature conservation sites (for example the Saguenay and Marine Parks).

The Alma municipality adopted a pro-active response to industrial relocation. In 1988, Alcan announced its decision to build a new plant on an existing site. The municipality had already established a close relationship with the company’s regional management and draft approval for the development had already been drawn up even before Alcan’s decision to go ahead with the project. The municipality further demonstrated its willingness to collaborate by pre-emptive developments, prior to the start of Alcan’s construction. These included implementation of the municipality’s own water catchment, which had previously depended on Alcan, the planning of a by-pass for heavy transport and planning for total recovery of the old plant for other industrial activities. The Alma municipality went even further in offering Alcan other planning and infrastructure incentives. In this case, the response of the local municipality clearly converged with Alcan’s own ideas of a strategy of partnership: “Alcan does not want to manage cities any more, but to be a partner.”

Do local communities really have any control over their own destinies, when faced with large scale industrial redeployment brought about by global restructuring? Possibly! However, as shown by Québec’s policies on hydro-electric power, local communities can be excluded from deci-
sions concerning resource management. Before the relocation of Alcan’s smelters, no assessment was made of its effects on the locality. Certainly, no strategies were advanced to mitigate any adverse consequences on local communities that this restructuring might have had.

Active public participation in decision making is vital if communities are to develop optimally when faced with major, externally driven change. Decisions that will have profound and long-lasting effects on local communities should be as well informed as possible. Beyond these rational means to improve decision making and development, further scientific investigation concerning the social and spatial impacts of industrial restructuring remains a cornerstone in the achievement of a viable development for our common future.  

BIBLIOGRAPHY


NOTES

1. For a discussion of the 'sociospatial' concept please see for example Friedmann, J. and Weaver, C., Territory and function, Berkely and Los Angeles, 1979; Gore C., Regions in question, Methuen, London and New York, 1984; Cooke, P., "The local as a site for social mobilisation", International Sociological Association Bulletin, October 1982.
4. Faucher, P. and Bergeron, J., Hydro-Québec, La société à l'heure de pointe, Presses de l'Université de Montréal, Montréal, 1986.
profitability of this strategy for Québec is controversial.
8. For one of these contracts (Norsk Hydro), the rate is estimated to be 1.5 cent/kWh. This is a reduction of 25-50% of the regular price. For details see footnote 41 in Chapter 2 and Chapter 6, pp. 256ff.
10. Including the partial closure at Arvida in the Jonquière complex.
12. For more information about the case study, see Gagnon 1991, op. cit.
15. The modernisation scheme of Grande-Baie was presented by Alcan at the Labour Court as an expansion. In this way the company could argue against the local trade union in favour of a non-unionised plant.
16. By the end of the modernisation programme, with the implementation of the Alma smelter, only six pot lines will be retained at Arvida’s oldest plant, which will be operating at about one third of its initial capacity.
19. Ibid.
Concerning the question of conflicting interests of users of the Lac Saint Jean level and shores see doctoral thesis of C. Gagnon (chapitre III), op. cit.
29. Since this agreement, the regional use and control of royalties was claimed first by some local pressure groups and subsequently by territorial collectives (Municipalités Régionales de Comté, MRC).
30. No progress was made concerning the possibility of local secondary aluminium smelting, a long-standing demand made by the region.
33. The union, Fédération des Syndicats du Secteur de l’Aluminium (FSSA), withdrew from the regional consensus committee because the latter was unwilling to denounce Alcan’s attitude on job losses.
34. Before the arrival of this industrial project, all prior attempts to stop the merger were in vain, but as Alcan did not want to negotiate with too many local communities, it accelerated the merger process.
35. Radio Canada Public affairs news bulletin, January 11, 1989 and interview with the local treasury clerk of the city of Jonquière.
37. Alcan, Presentation made by Culver, op. cit.
38. Alcan, Interview with the Director of Environment, Montréal, 1989.
39. Ibid.
51. This does not in any way signify the end of conflicts or of social and spatial dualism as an instituted scheme.
52. In 1988 the company announced that it would build a new plant on the same site by around 1995. However in the 1990s, the company appears to have shelved the project.
55. These were in fact declined by Alcan.
56. We mention the land necessary for solid and liquid waste dump sites, use of air and land and rivers, fire and police services.
59. This case study was supported by the Social Sciences and Humanities Research Council of Canada (SSHRC).
TABLE 7.1. COMPARISON OF EMPLOYMENT BY ECONOMIC SECTOR IN THE SAGUENAY-LAC SAINT JEAN REGION AND QUEBEC IN 1991
(Number of persons)

<table>
<thead>
<tr>
<th>Sector</th>
<th>Saguenay-Lac Saint Jean</th>
<th>Québec</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture</td>
<td>35 000</td>
<td>66 600</td>
</tr>
<tr>
<td>Other primary sectors (mining and forestry)</td>
<td>54 000</td>
<td>40 800</td>
</tr>
<tr>
<td>Manufacturing industries</td>
<td>19 700</td>
<td>530 100</td>
</tr>
<tr>
<td>Construction</td>
<td>5 700</td>
<td>144 000</td>
</tr>
<tr>
<td>Transportation, communications</td>
<td></td>
<td></td>
</tr>
<tr>
<td>and public services (electricity, water, gas)</td>
<td>6 100</td>
<td>215 000</td>
</tr>
<tr>
<td>Trade</td>
<td>19 600</td>
<td>535 900</td>
</tr>
<tr>
<td>Finance, insurance and real estate</td>
<td>3 800</td>
<td>189 200</td>
</tr>
<tr>
<td>Services</td>
<td>43 800</td>
<td>1 047 700</td>
</tr>
<tr>
<td>Public administration</td>
<td>6 900</td>
<td>241 500</td>
</tr>
</tbody>
</table>

Total all sectors 115 900 2 986 900

<table>
<thead>
<tr>
<th>Year</th>
<th>Number of workers</th>
</tr>
</thead>
<tbody>
<tr>
<td>1980</td>
<td>9,500</td>
</tr>
<tr>
<td>1981</td>
<td>9,500</td>
</tr>
<tr>
<td>1982</td>
<td>9,100</td>
</tr>
<tr>
<td>1983</td>
<td>8,800</td>
</tr>
<tr>
<td>1984</td>
<td>8,400</td>
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<tr>
<td>1985</td>
<td>8,200</td>
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<tr>
<td>1986</td>
<td>7,800</td>
</tr>
<tr>
<td>1987</td>
<td>7,600</td>
</tr>
<tr>
<td>1988</td>
<td>7,600</td>
</tr>
<tr>
<td>1989</td>
<td>7,400</td>
</tr>
</tbody>
</table>

Source: Ministère de la Main-d’oeuvre, de la Sécurité du Revenu et de la Formation professionnelle, Québec. 1989 data from Alcan.