

Sustainable Transformative Economy in the Subnational Context: The Case of Sudbury, Ontario, Canada

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Abstract: This article examines the city of Sudbury, Ontario, as a case study of a sustainable transformative economy in a subnational context of Canada. Historically defined by intensive mining and severe ecological degradation, Sudbury has undergone a remarkable process of environmental restoration and socio-economic transformation. Through the combined efforts of local government, industry, universities and educational institutions, as well as nonprofit organizations, and grassroots initiatives, the city has reversed decades of environmental damage while fostering community resilience and sustainability. Drawing on examples such as the Junction Creek Stewardship Committee, Earth Care Sudbury, the Good Food Box, and the Sudbury Community Garden Network, the article illustrates how civic participation and inter-institutional collaboration have reoriented local development toward ecological stewardship, food security, and social equity. The Sudbury experience is an example demonstrating that transformative economies, grounded in solidarity, cooperation, and environmental responsibility, can be effectively implemented at the municipal level, offering a model for other regions seeking to balance ecological recovery with community well-being.

Keywords: transformative economy, Sudbury, Canada, environmental restoration, sustainable development, local development.

Introduction

This article addresses the concept of transformative economies, emphasizing transformative economic practices and community-based initiatives in Canada. It underscores the critical role of citizens in addressing local challenges and showcases several community organizations committed to social and environmental change. It also stresses the significance of collective action in fostering social transformation. Specific community initiatives are highlighted, including the Junction Creek Stewardship Committee, the Good Food Mobile Market, and the Sudbury Community Garden Network, among others. The article suggests that communities can play a pivotal role in implementing positive change and emphasizes the importance of citizen participation in advancing transformative and sustainable economies.

Before we go any further, it is important to define what is meant by the term 'transformative economy'. This refers to an economic approach that encourages significant changes to existing systems to promote greater equity, sustainability and social justice. Rather than focusing solely on economic growth, this approach considers the social and environmental impacts of economic activities.

Transformative economies challenge prevailing structures and practices to achieve more equitable and sustainable development. They promote economic activities grounded in principles of solidarity, cooperation, and environmental sustainability, as well as strategies for addressing pressing social and environmental issues such as poverty, inequality, global warming, and environmental degradation (Porro 2017).

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Transformational economics is an area of economic thought that focuses on redesigning systems and institutions to make them more sustainable, fair and socially responsible. Rather than relying exclusively on traditional indicators such as GDP, it prioritizes human welfare, ecological balance and social equity. It critiques orthodox, neoclassical approaches for their excessive focus on growth, profit-seeking and individualism, and proposes a more integrated, systemic framework instead. It claims that current capitalist systems are inherently exploitative and urges substantial reforms to market dynamics, property ownership, corporate management and globalization processes (James Lind Institute, 2024).

In sum, transformative economies focus on reorienting economic systems through a holistic and sustainable lens that integrates financial, social, and environmental dimensions. Key characteristics include sustainability, social justice, economic democracy, human development, solidarity and cooperation, resilience, and both local and global perspectives. These features reflect a fundamental shift in how economies are conceptualized and practiced. Examples include collaborative economies, the social and solidarity economy, cooperative economy, community-based economy, the economy for the common good, social economy, and feminist economy.

Environmental Improvement

According to the 2021 Canadian census, the municipality of Greater Sudbury had a population of 166,000, considered a mid-sized city in the Canadian context but relatively small compared to urban areas in Latin America. Geographically, however, Sudbury is vast, with an area of 3,229 km², making it the fifth-largest municipality in Canada by land area out of 3,773. One might ask how a city of relatively modest population size came to have such active citizen participation, numerous organizations, cooperatives, and solidarity-based activities. This was not spontaneous but rather the result of years of sustained civic engagement.

The Sudbury region was inhabited by the Ojibwe people of the Algonquin group for centuries before European contact. French Jesuits were the first Europeans to establish a settlement, founding the Sainte-Anne-des-Pins mission, named for the abundance of conifers, particularly White Pine (*Pinus strobus*), Red Pine (*Pinus resinosa*), Jack Pine (*Pinus banksiana*), and White Cedar (*Cupressus lusitanica*), as well as deciduous species such as Eastern Hemlock (*Tsuga canadensis*) and Yellow Birch (*Betula alleghaniensis*).

This rich forest environment suffered its first major blow when timber from surrounding forests was used to help rebuild Chicago after the Great Fire of 1871. The second and more profound impact occurred in 1885 when large nickel deposits were discovered during the construction of the Canadian Pacific Railway. To extract commercially pure nickel, the industry developed massive roasting beds the size of two football fields. Layers of wood were stacked beneath nickel sulfide ore (NiS), ignited, and burned for four months, releasing nickel from sulfur. The released sulfur, however, caused devastating environmental effects.

Between 1905 and 2005, over 100 billion tons of sulfur dioxide were emitted into the atmosphere, acidifying Sudbury's soils and contributing to acid rain globally (Potvin 1995). The soil became so acidic that tree seeds could no longer germinate, compounded by ongoing deforestation to fuel the roasting beds. The once-rich forest cover of pines, birches, cedars, and hemlocks gradually disappeared, leaving behind a devastated, barren landscape. By the 1960s, Sudbury's terrain resembled a lunar landscape, one of the most dramatic cases of environmental degradation worldwide (Mykytczuk 2021).

The Environmental Miracle of Greater Sudbury

In the 1960s, a turning point emerged. This was the era of the counterculture, civil rights movements, and increased social activism. The major nickel producers, INCO and Falconbridge, held substantial financial reserves for expansion, while the provincial government, despite having environmental regulations, had largely turned a blind eye to pollution to avoid jeopardizing employment and votes—these two companies together employed nearly 25,000 workers.

By the mid-1960s, however, the severity of the environmental crisis could no longer be ignored. The provincial government began to enforce its environmental laws. At the same time, Laurentian University, founded in 1960, attracted international faculty, including scholars experienced in addressing large-scale industrial environmental damage. This convergence brought together mining executives, municipal, provincial, and federal officials, university experts, and citizens.

The consensus was that despite the severe environmental degradation, restoration was possible, though costly and requiring joint effort. The first step was reducing sulfur emissions, which at the time amounted to 2 million tons of sulfur dioxide annually. In 1971, the construction of a 381-meter “Superstack” reduced sulfur dioxide emissions by 90%, paving the way for ecological restoration (Bradley 2010).

Another key measure involved applying calcium carbonate to increase soil pH—10 tons per hectare were spread across 3,400 hectares by air and land (City of Greater Sudbury 2023a). This significantly reduced soil acidity and metal uptake, enabling plant growth. A customized mix of grasses, legumes, and fertilizer was sown, creating a healthy prairie suitable for reforestation. The four-step process—liming, fertilizing, seeding, and tree planting—remains the basis of Sudbury’s greening strategy.

Since the program’s inception, over 12 million trees have been planted and more than 3,400 hectares restored, a remarkable achievement. In 1973, the local advisory panel VETAC (Vegetation Enhancement Technical Advisory Committee) was established to coordinate collaboration among industry, multiple levels of government, Laurentian University, and the community. Following five years of site-specific research, the municipality launched its Land Reclamation Program in 1978, now known as the Greening Program. Since its launch, thousands of projects have been implemented, with 13,254 volunteers contributing (Monet 2023).

Many high school students participated, some of whom had never seen a tree in their childhood, witnessing the transformation of Sudbury’s once-barren lands into forests reminiscent of the early twentieth century. This environmental success story fostered a collective belief among Sudbury residents that change is possible but requires sustained effort and collaboration (Vetac 2021).

The following section discusses multiple examples of community-based initiatives.

Junction Creek Stewardship Committee

Junction Creek runs through the city of Sudbury, and since 1883 this urban river initially served as a water source for Canadian Pacific Railway locomotives passing through the city. Later, it was used as a drainage channel, and by the 1940s a storm sewer system had been constructed. Nevertheless, the creek continued to receive acidic effluents from the mining industry. Mining and smelting also indirectly contributed to pollution through acid- and metal-laden runoff from tailings areas entering the watershed. In addition, construction debris was often dumped into the creek, making it inhospitable to fish; only insect species capable of surviving extreme conditions remained. Residents also treated the creek as a dumping ground, recalling its historical role as an open sewer. Remarkably, as late as 1998, people were still disposing of garbage in the river. Changing long-standing behaviors proved challenging, and this urban waterway was no exception.

In 1998, while teaching an environmental course, I invited my students to participate in a cleanup initiative. To our surprise, we encountered other professors and later community members interested in improving the river. In 1999, we decided to establish a “Friends of Junction Creek” group. Initially comprising only 11 members, the group steadily grew. Cleanup campaigns were organized to remove large volumes of debris, which we temporarily piled along the banks. Initially, authorities were unresponsive; eventually, a truck was lent to us on a Saturday, with the condition that we supply fuel and pay the driver’s wages. After removing several tons of waste, the driver was so impressed by the community’s volunteer effort that he refused payment. Later, the municipal council formally recognized the group and began assisting in debris collection.

Dialogue with polluting mining companies followed a similar pattern—initial resistance but eventual engagement. The largest mining firm ultimately built a treatment facility to manage effluents entering the creek. This development enabled fish reintroduction and bank restoration, all supported by community volunteers. The response was overwhelmingly positive: trees and shrubs were planted, 18 fish species have now been recorded, and turtles have returned. The committee also integrated environmental education programs into the curricula of six primary schools located along the creek.

Another notable success involved infrastructure: the municipality constructed 20 kilometers of trails, some with lighting, transforming the creek corridor into an attractive urban feature. The committee continues to spearhead beautification and education initiatives under the motto: Creating Hope Through the Environmental Restoration of an Urban River. Programs include invertebrate monitoring, collaborative research with colleges and universities, and innovative outreach. For example, to address graffiti issues, the committee proposed a civic-art partnership: the city supplied materials, while the committee invited graffiti artists to participate in themed contests focused on aquatic life, granting them sanctioned spaces on bridges and concrete embankments. Sculptors were also invited to create works

using materials recovered from the creek. Community engagement has been exceptional (Junction Creek Stewardship Committee 2023).

The Junction Creek Stewardship Committee is a good example of how local people can make a big difference to the environment if they work together and are supported by the local council and other organizations. What started as a small-scale volunteer initiative evolved into a structured movement that could influence both municipal governance and industrial practices. This case also demonstrates how persistent civic activism can overcome entrenched environmental degradation and shift public perception of urban waterways from waste sites to valued ecological and social assets. Integrating educational programs, participatory restoration projects and innovative strategies was crucial to this transformation, as it broadened community ownership and visibility of the initiative. Furthermore, the committee's journey relied on multi-actor collaboration: while community members contributed labor and advocacy, municipal authorities and mining companies ultimately provided resources and infrastructural enhancements.

Earth Care Sudbury

Earth Care Sudbury was established in 2000 to engage the community in environmental action and promote a healthier, more sustainable city. It is a unique partnership between the City of Greater Sudbury and more than 100 local organizations and businesses, all formally committed to making the community cleaner, greener, healthier, and more sustainable. The initiative originated at Laurentian University, where municipal leaders convened a breakfast meeting with Sudbury's industrial cluster to discuss environmental practices.

Initially, companies were skeptical. However, each was asked to identify its energy costs, particularly electricity usage and lighting systems. The city funded an external expert to meet with businesses and demonstrate how environmentally friendly practices could lead to significant financial savings. Business owners were surprised by the economic benefits of sustainable measures and gradually embraced the idea. Over a year of such breakfast sessions led to the signing of a community partnership declaration for environmental improvement.

Earth Care partners have adopted varied approaches, some focusing on internal sustainability through technological upgrades and infrastructure improvements, others emphasizing education and behavioral change among employees and the public. Many pursue both. The Earth Care Sudbury Action Plan 2010 was developed to guide greenhouse gas reduction and foster community-wide sustainability. Its overarching goals are to improve environmental health in Greater Sudbury, encourage community members to assume environmental responsibility, and share knowledge and best practices (Earth Care Sudbury 2010).

The effectiveness of collaborative governance models in advancing urban sustainability is illustrated by the Earth Care Sudbury initiative, particularly when partnerships are formed between municipal authorities, private industry, and civil society. By reframing sustainability as both an environmental imperative and an economic opportunity, Earth Care was able to overcome initial skepticism from local businesses and foster a commitment to collective action across a wide range of stakeholders.

Green Living Newsletter

Green Living is an information outlet sharing stories on improving the environment, building healthier communities, and strengthening the local economy. Content is produced by the City of Greater Sudbury and is provided "as is" for the benefit of residents, without editorial oversight by Sudbury.com. Articles inform citizens about actions they can take to make the city greener, such as reducing greenhouse gas emissions through daily habits, attending community events like the Children's Water Festival, preparing for climate change, carpooling, and participating in idling-reduction campaigns (Earth Care Sudbury 2020).

The Good Food Box and Mobile Good Food Market

In 2002, a colleague from the Sudbury Medical Unit and I received a grant to conduct a feasibility study to determine the need for a Good Food Box program, similar to those in other Canadian cities. The study concluded that at least 200 families could benefit. We presented the proposal to the municipal social services department, which endorsed the idea, and in 2003 the program began.

The Good Food Box is a nonprofit community initiative that helps individuals and families access affordable fresh fruits and vegetables year-round. It operates like a bulk-purchase club: each month, participants prepay \$19 (large) or \$10 (small) for a box of assorted produce. To our surprise, 600 families now use the program.

In 2010, responding to community demand, we launched the Mobile Good Food Market, a weekly pop-up market that brings fresh produce directly to neighborhoods, serving seniors and families without transportation. Operating on a nonprofit basis, it increases access to healthy food (City of Greater Sudbury 2013b).

Summer Farmers' Market

This market supports local producers and artisans. While profit-oriented, it is municipally supported, with the city providing space for vendors. Operating from June to October, its goals are to offer a safe, inclusive venue for farmers, artisans, and customers; encourage more producers to join; inspire residents to buy locally; and promote sustainability, environmental care, and access to fresh, locally grown food (Greater Sudbury Market Association 2019).

Earth dancers

Earth dancers is a nonprofit contemporary dance company led by students under the guidance of an artistic director. The company includes preschool, elementary, secondary, and university sections and has operated since 1989. Earth dancers promotes environmental awareness and has raised over CAD 200,000 for environmental organizations through annual benefit performances. The company's mission states: Through the universal language of dance and purposeful efforts, we strive to set a precedent of excellence in our community and be leaders in rejuvenating and sustaining our environment for the future.

Every year, dancers rehearse, participate in outreach, fundraise, and contribute to production efforts, from media relations to sponsorship, dance marathons, bake sales, and programs like Adopt-a-Highway. Their tireless work runs from September to April, culminating in public performances (Earth Dancers 2020).

Sudbury Community Garden Network

Founded in 2008, the Sudbury Community Garden Network is a volunteer-driven grassroots organization that connects numerous community gardens throughout the municipality. It enables resource sharing, collaboration, and strategic growth, identifying opportunities to establish gardens in areas of need.

Community gardens in Sudbury are created, planted, maintained, and harvested by dedicated volunteers and local food advocates committed to building a healthier community. Participants learn about nutrition, food security, gardening, and conservation. Gardens are located at schools, churches, seniors' residences, and parks, making productive use of underutilized spaces. The network partners with organizations across Greater Sudbury to deliver a range of programs under the Grow Your Neighbourhood umbrella.

The above initiatives highlight the variety of ways in which community engagement can foster sustainability, food security and environmental awareness. The importance of both informational and participatory strategies is highlighted by these programs collectively. While a vital role is played by communication platforms such as Green Living in shaping environmental consciousness and encouraging individual behavior change, structural barriers to accessing healthy, affordable, and locally produced food are directly addressed by initiatives such as the Good Food Box, the Mobile Good Food Market, and the Summer Farmers' Market.

Shared Harvest

Shared Harvest is a charitable organization whose mission is to foster community health by creating connections between people, the food we consume, and the land from which it originates. The organization supports individuals in acquiring the knowledge, skills, and resources necessary to access or cultivate their own food in ways that enhance the urban environment. Shared Harvest has coordinated volunteer participation in the establishment of multiple edible forest gardens, each smaller in scale than the initial project but distributed throughout the city.

Eat Local Sudbury

Eat Local Sudbury is a cooperative that operates a local store selling regionally produced goods, thereby providing small-scale producers with a retail outlet through the cooperative's storefront.

The Greater Sudbury Food Policy Council

The Food Policy Council is a non-profit organization driven by the commitment of volunteer members dedicated to ensuring a healthy and sustainable food system across the municipality of Sudbury. The Council facilitates networking by bringing together actors from across the food system, including agriculture, food processing, environmental stewardship, and public health. (GSFPC, 2022)

Coalition for a Liveable Sudbury

The Coalition for a Liveable Sudbury is a grassroots alliance of citizens and community groups united by a vision of Sudbury as a green, healthy, and engaged community. Its efforts are directed toward creating a more liveable and sustainable municipality through advocacy, research, action, support, and collaboration. The City of Sudbury is envisioned as a sustainable, resilient, vibrant, and equitable community in which citizens work collectively to achieve positive change. (Coalition for a Liveable Sudbury, 2021).

The initiatives described—Shared Harvest, Eat Local Sudbury, the Greater Sudbury Food Policy Council, and the Coalition for a Liveable Sudbury—collectively illustrate a multi-scalar approach to building sustainable and resilient food systems. Although each organization has a different purpose, they have common goals centered on community empowerment, ecological stewardship and equal access to resources. Shared Harvest focuses on direct engagement with food production through educational and participatory gardening practices, while Eat Local Sudbury strengthens local economies by supporting small-scale producers and promoting regional consumption. The Food Policy Council contributes a governance dimension, fostering cross-sectoral collaboration and shaping systemic food policy. Finally, the Coalition for a Liveable Sudbury extends the scope beyond food, situating sustainability within a broader vision of community well-being, resilience and civic engagement. Together, these initiatives reveal an integrative model in which grassroots activism, cooperative enterprise and policy advocacy intersect to advance holistic urban sustainability.

The municipality of Sudbury has developed a successful model of environmental regeneration and community strengthening through citizen participation, inter-institutional collaboration, and a commitment to sustainability. Several local organizations stand out for promoting the connection between people, food, and the environment.

These efforts have been made possible through the joint work of local government, the mining industry, educational institutions, and nonprofit organizations, enabling the reversal of decades of environmental damage caused by mining. The Sudbury case demonstrates that coordinated, long-term action can transform degraded ecosystems and create sustainable, cohesive communities.

Conclusions

The case of Sudbury proves that a subnational context can be a fertile ground for building a sustainable, transformative economy. Once an emblem of large-scale industrial degradation, the city has reinvented itself through environmental restoration, civic engagement and institutional collaboration. The city's experience shows that transformative economies are practical frameworks that can guide communities towards resilience, equity and ecological regeneration, rather than being abstract ideals. Community-based initiatives, ranging from food networks and urban gardens to environmental education and cultural projects, have complemented formal governance structures to foster a holistic model of sustainability. By integrating grassroots activism with municipal leadership, industry participation and academic expertise, Sudbury has achieved measurable ecological recovery while strengthening social cohesion and economic diversification. Transformative change requires long-term civic commitment and multi-actor cooperation.

The major achievement of community-based work in the Municipality of Sudbury has been, and continues to be, the active participation of citizens supported by industry, government, and educational institutions. This case exemplifies how civic engagement, inter-institutional collaboration, and community commitment can bring about the environmental transformation of a severely degraded region. Through a series of strategic initiatives, Sudbury has successfully mitigated the harmful effects of decades of mining activity and restored its natural ecosystem. The concerted action of local government, mining companies, academic institutions, and the broader community has been fundamental to this success.

The implementation of key measures—such as reducing sulfur dioxide emissions, applying soil remediation techniques, and restoring the landscape—has enabled the regeneration of areas previously devastated. Environmental education programs, community engagement, and awareness-raising initiatives have fostered a culture of environmental responsibility across the population.

In addition, diverse local initiatives have played a crucial role in advancing sustainable practices, educational outreach, and the construction of a community network committed to environmental stewardship. These activities have made significant contributions to the restoration and preservation of Sudbury's natural environment.

Permanent commitment and collaboration among local government, businesses, non-profit organizations, and citizens remain essential to sustaining and expanding these transformative efforts. Sudbury's experience demonstrates that, through collective action and long-term projects, meaningful environmental recovery can be achieved, thereby fostering sustainable and resilient communities.

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