

A new paradigm of rural innovation: *learning from* and *with* rural people and communities

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Abstract

In current discussions of innovation, rural people are typically excluded from the creative class. However, the history of Québec rural communities shows that they have been and still are very creative, and that we can learn from them. Their innovation is manifested in three basic dimensions of sustainable development: managing natural environments, building instruments or institutions for economic development, and facilitating social life. Under this new paradigm of rural innovation, these innovations are studied as they emerge from within rural communities, as demonstrated by the Québec Rural University initiative. Rural communities should also be seen as living examples (or *living labs*) of innovation, as illustrated by the Québec government's "Rural Laboratory" program. "Rural clusters" are additional models for rural innovation.

Introduction: Innovation at the heart of the new rurality--we can learn from the rural world

Both scientists and the general public agree that the rural world is characterized by strong attachment to traditional values, and is lacking in a sense of initiative, creativity and innovation. This, supposedly, is why the rural world is lagging behind in development. We need to change this outlook, imbued as it is with a sort of urban ethnocentrism, and start to recognize the emerging paradigm of rural innovation¹. Rural communities are innovative places; indeed, innovation is at times vital for them. Their experience can thus be useful to society as a whole. We need to grasp the fact that we can learn from rural communities. Specifically, because rural people themselves have acquired skills in three major areas that collectively ensure sustainable development: (1) making productive use of their natural environment, (2) managing their economic development, and (3) structuring their social organization.

Forecasting tools, without resorting to futurology, identify several strong indicators emerging from these new ruralities. Whether brought on by globalization, new urban demands, government activism, environmental change, or the mobilizing action of rural inhabitants themselves, these emerging forms all aim in the same direction: revitalization of rural communities contributing to the sustainable development of the entire society.

¹ This paper is based on a previous presentation delivered at Krasnoyarsk (Russia) OECD Rural Policy Conference in 2012 and the chapter I wrote on this topic in the book coming out from the conference. See: OECD (2014), *Innovation and Modernising the Rural Economy*, OECD Publishing, pp, 112-126

Dominant economic development theory postulates that only large urban centres are capable of innovation because they harbour a creative class that propels economic growth. Historically, however, rural areas have also been highly innovative. They have proven capable of enhancing their natural environment, managing their economic development, and planning their social organization. Rather than clinging to the idea that rural inhabitants need to be taught, we could perhaps take a lesson in rurality: there is much to learn from country dwellers and their amazing capacity for innovation and creativity. They continually elaborate novel organizational or institutional arrangements to meet current challenges to adapt to a new economy, tailor local governance, or maintain basic services in small communities spread over a vast territory.

Québec's rural history illustrates the creativity and inventiveness of rural inhabitants, with the country road (*rang*) as their settlement and blueprint for organizing their sparsely inhabited rural space, work bees to raise barns and maintain public roads; farming circles to provide technical training; fire insurance mutuals to manage risk; and forest co-ops to create jobs, not to mention leading innovations such as joint plans to market farm products, fair trade before it became a household term, or Caisses populaires, credit unions that are a major economic force today.

Contemporary rurality is like a living laboratory where devices are invented and institutions founded to rise to the many challenges posed by today's development issues. In Québec, the residents of three small rural villages from the Bas-Saint-Laurent region, JAL (Saint-Juste, Auclair and Le Jeune in the Témiscouata area), implemented a vanguard cooperative known as the development coop. In other forest towns under threat, the formula known as the Sociétés d'exploitation des ressources was invented. In agricultural areas, co-ops were created to pool farm machinery, agro-environmental advisory clubs emerged, and the Tables de concertation agroalimentaire régionales were set up. To maintain health and education services, public-private and public-public types of partnerships were created. Moreover, to support such local development dynamics, new agencies were established, including the Centres locaux de développement (CLDs), Sociétés d'aide au développement des collectivités (SADCs) and the Fonds locaux de développement.

Rural innovation encompasses not only social innovation but also technical innovation, which is highly visible in rural enterprises. Several farm machinery producers prospered in that area before being subsumed by mergers. However, many leading manufacturers arose from the rural milieu before becoming international corporations: Bombardier, Tembec, Cascades, Prévost Car and Canam, to name a few. The current calls for access to high-speed Internet from all over rural Québec show rural dwellers' willingness to learn and profit from the latest technologies.

Rural areas are highly sensitive to contemporary economic and social change phenomena, such as globalization or the new knowledge economy. They are required to restructure and readjust, probably to a greater extent than the rest of society, which imperils social cohesiveness in the small communities that characterize rural areas. Rural people are more than farmers: they occupy the countryside and shape it for their own purposes, thereby performing the essential geopolitical function of affirming political sovereignty over the regions in which they live. It is precisely rural people's occupation of the land that is being jeopardized by the dynamics of the contemporary economy. This makes a political response to this situation justifiable.

The consequences of realizing that we can learn from rural communities are many and far-reaching. Instead of seeing rural people as part of the problem, we should see them as part of the solution. Rural development is not an objective to be reached through the application of action and specialized knowledge brought in from outside, but rather a goal which rural people themselves are responsible

for attaining. In other words, it is essential to understand that rural people, like other people, are perfectly able to embark on social learning processes that will sustain the progress of their own development.

1. Rural innovation: a key feature of long-term rural history

Recent theories on regional economic development have identified innovation (mainly technical) as a major driver of wealth creation and socio-economic development measured by the growth of GDP. Although this interpretation of economic growth makes sense, much of the research on the associated theories of “local or regional innovation systems” look at present rather than past innovation. Nonetheless, innovation has always been present, in both urban and rural settings, but the intensity of the innovation may have varied across historical periods. Many innovations have occurred in agriculture, increasing production per surface and per worker.

Rural innovations in the past might be characterized as innovation more by necessity than by opportunity, under the classical distinction made by the GEM (General Entrepreneurial Monitor). Québec’s rural history is marked by many innovations arising from necessity. First, settlement of land owners in colonial society exhibits an interesting pattern. The homestead was drawn as a very thin and long piece of land for each family. At the end of the plot, a road serves these households. The road links both sides, which means that a single road served many homesteads. Because each family built their house along the road, public investment was efficient and the taxes per farm for that public utility were low, even in a country recognized as large and under-populated.

Another rural innovation that has occurred by necessity in Québec rural history is the “Mutuelle-incendie,” a cooperative devoted to insuring against fire damage to farm buildings. Because farm buildings were made of wood, fire would often completely destroy them. Along with impressive solidarity resulting from the entire community’s donating time and resources to rebuild damaged barns (an initiative called “la corvée”), people started contributing regularly to a common fund to acquire resources to mobilize in case of fire. This arrangement continues today in the form of risk insurance. The local fire-mutuals gradually united and became part of the cooperative financial institution *Caisses populaires Desjardins*, credit unions that are an important component of Québec’s banking system and of the provincial economy as a whole.

Rural Québec also showed rural innovations with an agricultural cooperative sector rooted in its history. Given that many regions were isolated and had low population density, the private sector of farm inputs and farm outputs was not interested in doing business in those areas. Farmers consequently had no choice but to organize themselves to collectively buy their inputs and sell their products. Over time, with many mergers, all the local co-ops became partners of the “Coop Fédérée,” a large player in the Québec agri-food business.

Small farmers in Québec also innovated in the post-World War II period by putting in place the system of “plans-conjoints” (marketing boards) to organize collective trading of the small amount of production of each farm into a large amount of products offered to those buyers. The small producers thus gained real bargaining power with big industrial corporations processing their agricultural production. This innovation has reinforced the sustainability of family farms, which could get a better return on their production. In the classical case of milk, this return ranges up to 30-40% of the final price paid by the consumer instead of 10%, which is often the case in agricultural production. However, those marketing boards created an unexpected conflict in the agri-food system as large cooperatives started to play a significant role in the processing of agricultural products, especially milk. Farmers were both sellers (as partners of the marketing board) and buyers (as

members of the cooperative) of their own production. This conflicting situation was solved in an interesting way: to maintain the high price for the milk demanded by producers, the cooperatives rapidly became very high-tech. This allowed them to reduce their production cost and pass the productivity gains along to both farmers and the consumers of their milk products.

Rural Québec is characterized by forests; one third of rural communities are forest-dependent. The forest is partly private, but in some regions, public forest (crown-lands) predominates. The government then grants “harvesting rights” to big corporations, which can afford them. In the past, those corporations looked to small contractors to do the forest work. Many communities started “chantiers coopératifs,” a kind of worker cooperative that contracted with those corporations. Organized in a cooperative, rural workers can negotiate better conditions for the same work they used to do for small private contractors. A network of forestry cooperatives is still active in Québec.

In the late 19th century, Québec agriculture became more commercial with the production of butter and cheese (the famous cheddar) for the British market. It became clear that farmers needed to improve their production methods, especially to improve the quality of the milk they provided to small milk factories in each village. This need led to the creation of “Cercles agricoles” in almost each village, which provided training based on the concept of “enseignement agricole mutuel.” Because there were no agronomists at that time, farmers decided to learn by themselves, sharing their own experiments in self-educational farming clubs.

Rural innovation today: underestimated but widespread, contributing to sustainable rural development

After having established a list of those significant recent rural innovations in the Québec context, we can categorize them according three basic dimensions of rural sustainable development: 1) making productive and sustainable use of the natural environment; 2) managing economic development; and 3) structuring social organization. Most of the time, innovations can be characterized as social innovations, which is the creation and implementation of a new institutional arrangement to solve a problem, deliver a service, or take advantage of a new opportunity.

(1) Making productive and sustainable use of the natural environment:

- **Organisme de gestion en commun (OGC) de la forêt privée et le Résam - Regroupement des sociétés d'aménagement forestier du Québec:** ensures better management and productivity of many private forests. These corporations are also in charge of restoring forests to create jobs in rural forest-dependent communities.
- **Réserve Duchénier (wildlife reserve):** organizes the management of a large portion of public land for recreation, tourism and wildlife conservation, while creating job opportunities. The only case of a wildlife reserve managed by citizens.
- **Clubs conseils agro-environnementaux en agriculture:** a group of 50 farmers joined together and hired an agronomist to implement best practices in soil and natural resource conservation
- **OBV (les organismes de bassin-versants) (water management):** various stakeholders of a watershed joined together to manage the water in the basin sustainably.

(2) Managing economic development

- **Le crédit populaire and Caisses populaires:** whereas Caisses populaires have been instrumental as innovators in Québec's rural history, these credit unions continue to play a primary role in the economic development of the rural sector.
- **Coopératives de développement (JAL):** a form of cooperative in which all citizens of one or a few communities enrol to allow collective enterprises to develop activities to improve local economic and social conditions.
- **Coopératives d'utilisation du matériel agricole en commun (CUMA):** small farmers join together to buy and use agricultural machinery used collectively to reduce machinery costs.
- **SER (Sociétés d'exploitation des ressources, resource harvesting companies):** created after a social rural struggle in the 1970s, to give rural people from communities living along the large Québec public forest access to forest resources, mainly by working to restore public forests.
- **Le Réseau des Sociétés d'aide au développement des collectivités:** a network of local development agencies put in place by federal development (known as Community Future Development Corporation in other provinces) with devolution of management to local stakeholders, offering technical and financial support for small business start-ups. Acting like a community banking appear to be very efficient.
- **Conseil local de développement (CLD):** local government (municipal authorities) provides incentives and support to foster local economic development. Investments are supported by both central and local development. This innovation is described in further detail below.
- **Fonds locaux de développement-Solides:** in connection with the CLD and municipalities, these local investment funds helped finance small enterprise start-ups.
- **Rural cluster:** a local innovation system in a rural setting such as the small town of La Pocatière, Québec, described above.

(3) Structuring social organization

- **Coopératives de solidarité et de santé:** a solidarity cooperative (usually to put in place a health centre in a small community to attract doctors) is a new form of cooperative whose membership is open to all citizens.
- **Public-public partnership for maintenance of local delivery of services:** two public constituents, such as a school board and a municipal council, orchestrate mutually beneficial projects: reduce operating costs of public buildings in the community and use the spaces more effectively. Usually, public-private arrangements are used to deliver public services, but what is new and innovative is the capacity to have PPPs (as public-public partnerships).
- **Internet Access as a public service:** the local government offers high-speed Internet (broadband) in remote rural areas using Wi-max technology, e.g. in the municipality of *Nouvelle* located in the Gaspé region.
- **Agro-food consultation roundtables:** agro-food stakeholders from specific regions join together to organize R&D to improve opportunities in the field of producing, processing and marketing new food and products that showcase agricultural resources from that region
- **Multi-level primary schools:** designed to deal with low school attendance in small communities. Often, the six grades of primary school are combined into two groups of students to have a sufficient student volume to keep a school open in the community.
- **Inter-municipal service agreements:** a new institutional arrangement in which some municipal governments (usually small rural communities) join together to order a service (such as fire protection or waste disposal) to have better technical as well economic efficiency that benefits citizens, i.e. taxpayers.
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Many of those innovations are widespread in rural communities (like *Caisses populaires* or inter-municipal service agreements), while others are unique (like the *Réserve Duchénier*) and difficult to reproduce in other rural contexts. This list is not exhaustive; it shows that rural innovation is a reality and that there is much to learn from the rural experience.

A Place-Based Development Organization: The Centre Local de Développement (CLD)

Like the federal government in the 1990s, the Québec government adopted a place-based development approach as a general framework for public policy. This included the establishment of a new agency devoted to local development, the *Centre local de développement* (local development council), or CLD, in each MCR (regional county municipality). CLDs were established first as nonprofit organizations managed by local socioeconomic representatives, but in a recent reform, they became an integrated part of the MCR. CLDs offer support for local entrepreneurs, who are obliged to create and formally adopt a local action plan for economic development and job creation (*Plan d'action locale pour l'économie et l'emploi*, or *PALÉE*). The jurisdiction of a CLD appears to overlap with the mandate and territory of the CFDCs already in place, which have been effective for a long time. Indeed, it took time to divide the work between those two agencies. The complexity of these organizations and institutional arrangements, with their inevitable degrees of overlap, duplication, competition and tension, is not atypical in rural development contexts. Ireland has just gone through a radical cohesion process to reduce the number of rural development agencies from more than 100 to 55. The European Union continues to address the proliferation of development agencies. Fuchs (1995) noted this tendency in rural development as early as 1995. The institutional rearrangement of CLDs—their shift to being under the authority of the RCM—has many other consequences, which are discussed later.

Regional county municipalities (MRCs) must entrust the exercise of their new local development responsibilities to a nonprofit organization incorporated under Part III of the Québec Companies Act. They can either create a new organization or designate an existing organization, such as a CLD, to this task. At any rate, the organization must be called a local development centre (CLD), except in the case of community economic development corporations (*Corporations de développement économique communautaire*, or CDECs) within the jurisdiction of the City of Montreal, which can retain their designations as such. These organizations were established long before the CLDs and are also well known. The new law creating the CLDs did not change their name, even though they are an equivalent organization based in the Montreal area.

The CLD's business affairs are managed by a board of directors composed of elected municipal officers from local municipalities already on the MRC council and people from the business and social economy sectors. All members of the CLD board of directors are appointed by the council of mayors in the MRC. The territory's member of national assembly (MNA), the head of the CLD, and the director of the local employment centre are also members of the board of directors, but they do not have voting rights. The Québec government and each MRC contribute jointly to funding the activities of the CLD, which must submit an activity report and its audited financial statements to the MRC each year, in accordance with the terms set out by the MRC.

CLDs offer frontline assistance and technical or financial support services to prospective or active entrepreneurs, as well as to individuals or groups, including social economy businesses. These services include consultation, guidance, and referral services; assistance in preparing business plans, including pre-feasibility studies; help with financing; financial management assistance for businesses, primarily through *Fonds local d'investissement* (local investment funds); entrepreneurship training; mentoring and follow-up for entrepreneurs and businesses; and referral to

more specialized services, such as export or technological development services. The mandate of the CLD overlaps with that of the CFDC. In some MRCs, the adjustment was quite difficult, although, in most cases, CLDs and CFDCs have learned to work well together. Sometimes the two organizations are located in the same building, offering local entrepreneurs a “one-stop shop.”

CLDs are responsible for designing and implementing various financial assistance measures to support business development and local development projects. These measures constitute part of a CLD’s local plan of action to stimulate the economy, create employment, and develop entrepreneurship. The measures largely target young entrepreneurs, the development of social economy businesses, and economic diversification. The Fonds local d’investissement (FLI) is the main financial tool of CLDs. It provides funding (e.g., loans, financial assistance) to entrepreneurs to start up and expand businesses, including social economy businesses. Planning in a CLD is mostly about local economic development, whereas the political body of the MRC has a more physical-planning mandate, mainly in relation to land use. Nonetheless, it is clear that the discussion around the construction of the plan often acts as a learning process in which various stakeholders gain a better understanding of their region, assets, and challenges, as well as a view of what might be done locally to create more sustainable rural development. It is also expected that this process will lead to more strategic and integrated development action.

A rural cluster: the case of La Pocatière, Québec²

According to a widespread academic assumption, a regional innovation system must centre on a large urban setting. Nonetheless, previous research with a predominant Canadian scholar in the field, David Doloreux, shows that rural people are also innovative. La Pocatière is one example. It is a small town of about 5000 inhabitants, surrounded by very small agricultural and rural communities. There, one can see the development trajectory of a local innovation system in a rural region from an extended historical perspective (1830-2005) and analyse explanatory historical determinants to better grasp the main determinants of the special heritage of this innovation system and of the institutional context in which it emerged and evolved.

The attributes of a local innovation system identified in the recent literature are all highly evident in La Pocatière. They underline the relevance of institutional actors and their capacity to respond to economic and technological change. The specific features of the La Pocatière case lie in the dynamism of the institutional actors and their adaptability. As the long-term analysis has shown, the institutional configuration has continually and radically changed. Another notable point is the burgeoning of institutional structures of all sorts, often public or parapublic, during the contemporary period. The predominance of public-sector actors in this institutional configuration has been observed in other local innovation systems (Cooke *et al.*, 2004). But what is noteworthy in the case studied is the role and importance of efficient concerted action between public and private actors in the redeployment. To be sure, this action is recent, but founded upon an age-old heritage of local support and economic assistance structures underpinning the local innovation system.

Further, the evolution of the La Pocatière local innovation system follows an original and remarkable development trajectory. In contrast with many local innovation systems occurring in territories with long industrial traditions, La Pocatière has no evident manufacturing past. It first arose from within a solid tradition of farming and agricultural-science research and knowledge

² This section is based on the paper Doloreux, David, Stève Dionne and Bruno Jean, “The Evolution of a Local Innovation System in a Rural Area: The Case of La Pocatière, Québec” in the *International Journal of Urban and Regional Research*, 31 (1), 2007, Blackwell Publishing, Oxford (UK), pp. 1461-67

transfer around public teaching, applied research, and technology-transfer establishments that maintained relations with a production system consisting not of enterprises, but rather of a multiplicity of isolated producers. The farming class not only continually assimilated and integrated all the innovations associated with the development of agriculture since the mid-19th century, but lived through its transition from subsistence and domestic farming to a commercial and industrial agriculture integrated into the global agri-food system. Only subsequently, and indeed rather recently, did this local innovation system diversify into industrial production with the advent of the Bombardier factory, the applied physical technology research activities of the CÉGEP (college), and the emergence of several specialized firms as subcontractors. The analysis of this case has thus shown how a local innovation system can rest on a dynamic of inter-institutional cooperation rather than one of coordination among firms.

Additionally, analysis of the La Pocatière case has underlined the importance of local networks in the functioning and dynamics of its innovation system. This importance of local networks should not be obscured by the fact that these actors historically demonstrated their capacity to utilize outside resources, in both political and economic terms, on varied scales (regional, provincial, federal and international) in pursuit of their innovation activities and to strengthen and strategically position their institutional framework.

These types of highly institutionalized settings are often presented and regarded as not very conducive to the introduction and development of innovation systems. The rural and peripheral nature of a territory is often also perceived as a factor limiting the emergence of such systems. In the case of La Pocatière, an indisputably institutional and rural setting, one can maintain that this setting was, from the mid-19th century onward, a significant centre of technological development, strongly integrated with central Québec and connected to other important international centres, particularly in Europe. In the second half of the 20th century, La Pocatière's relative loss of importance in this respect did not reduce its ability to sustain its development as an innovation system and to renew it without descending into technological, institutional and social isolation. In this sense, the La Pocatière area displays an original historical experience, with a rare ability of the actors in the many local public institutions over a long period to deploy shared strategies aimed at a territory-wide economic development project, more or less explicitly expressed, but no less conscious or effective at mobilizing.

In this long-term development perspective, through all the breaks and changes of trajectory, the various agents and organizations transformed themselves, influencing the functioning and evolutionary capacity of the innovation system. For instance, the transfer of the Faculty of Agriculture to Québec City and the consequences of this decision for the research activities of the Federal Experimental Farm did not make a system largely based on this sector completely disappear. On the contrary, a regional agri-food and agri-environment techno-cluster centred on La Pocatière has been developed, and a network of small centres of agri-food know-how and technology transfers has flourished for about a decade around the Québec Bioalimentary Development Centre (CDBQ). The arrival of the Bombardier factory and the creation of a public institution like the CÉGEP and its technology transfer centres, not initially part of the government's plans but obtained through mobilization by local elites, are other examples. They clearly illustrate a new expansion in the techno-cluster, this time with one major actor from the private manufacturing sector, and technological liaison bodies coordinated with industry.

Université rurale québécoise (URQ): a new way to showcase rural innovation

The Université rurale québécoise³ is an informal organization that I helped put in place in 1997 with other professors of the Université du Québec and members of three networks of actors devoted to rural development, including Solidarité rurale du Québec, the Réseau des SADC (Sociétés d'aide au développement des collectivités–Community Futures in Canada) and Conseils locaux de développement (CLD). Every two years, the URQ organizes a forum of training exchange for rural development actors. The URQ's mission is to support the development of rural areas and communities by initiating ongoing training activities for rural development players and agents based on a “knowledge-sharing” approach designed to generate well thought-out, more practicable actions.. Over time, even if it is not expressed explicitly in its mandate, the URQ, already an innovation because of its unique institutional arrangement, became an event that showcases rural innovation from what we can learn.

The URQ model based on a “cross-fertilization of knowledge” approach, defined as an informal, user-friendly pedagogical approach built on the postulate that it is possible to “learn from and be moved to action by” rural life. It favours exchange between “academic” knowledge (emerging from reflection) and “experience-based” knowledge (emerging from action) (Jean, 2004). It is important to insist on the “long-term” nature of URQ outcomes. Community capacity development, the stated goal of the URQ, cannot be measured over the short term. Lavergne and Saxby (2001, p. 3) emphasize that the main challenge in matters of capacity development consists in reconciling the immediate need for tangible results (i.e. for purposes of accountability) and the long-term requirements for capacity development (CD) in a context of sustainable development.

What about the relevance of the URQ model? In its current form, does the URQ meet a real community need? Is it the best way to reach the objectives? Should the URQ model be maintained? These are the questions that must be answered to ensure that the URQ is a relevant vehicle to support community capacity development.

The first element to consider here is undoubtedly the unique nature of the event itself. The Université rurale québécoise is more than a simple symposium that participants attend to receive information. The data gathered show that the mixed-activity formula (conferences, workshops, field trips, etc.) and the exchanges maintained between partners from diverse circles and settings are very enriching. The URQ is considered as a major event in rural life and is recognized as one of a kind. In this sense, the URQ seems to truly meet a need in rural communities. It also provides a relevant means of moving closer to its own objective: community capacity development.

The apolitical aspect of the URQ is another interesting feature. Community development is undeniably coloured by various political struggles that sometimes permeate development organizations. Instead of bringing the players closer together, this situation tends to pull them further apart, in both word and deed. Many people have stressed the “neutral ground” of the URQ and the advantages this provides, especially in terms of richer exchanges and more concrete sharing.

Lastly, the model's flexibility is an asset in terms of its relevance. Aside from a steering committee made up of Université du Québec professors and representatives from the activity and development networks at work in rural settings, the URQ has no permanent organizational structure of its own. To date, each edition of the URQ has been designed to use existing structures (development organizations, universities, etc.). Characterized by fewer checks and balances, this organization method makes it easier to challenge certain aspects of the model or, if necessary, the entire model. The relevance of holding a URQ can therefore be reassessed before each edition. This highly organic

³ To learn more about URQ, visit <http://www.uqar.ca/urq/>

organizational approach is, however, not without its challenges. For example, it is difficult to pool and coordinate information, especially that which is useful for evaluations. Fundraising is also more cumbersome because requests must be reiterated by different individuals or organizations.

Rural inhabitants: an innovative or a creative class?

Recent theories on economic development stress the effects of proximity, generally evident in the urban and metropolitan settings, and innovation reconceptualized as creativity in the well-known work of Richard Florida. Accordingly, creativity is linked to high education levels as well as open-mindedness, which is more prevalent in multicultural urban contexts. Therefore, one might ask: are rural inhabitants less creative?

There is ample evidence that rural people are very creative or innovative, despite the general paradigm that they must be educated. Therefore, we must shift paradigms and ask what we can learn from the rural experience. As we have shown above, we can learn a lot, notably from rural populations' capacity to innovate, stimulate economic development, and improve the quality of life in the countryside.

Nonetheless, innovation in a rural setting differs from the pattern observed in urban environments. The economy of rural areas is based more on natural resources. There is also a trend toward industrial plants moving to the countryside. It is therefore not surprising to see rural innovation in agriculture, and that innovation continues, with the forms of agriculture arising now designed to produce high-quality products or to reconnect farmers and urban dwellers in "community share agriculture." This new agriculture focusing on the production of so-called speciality products is emerging before our eyes. Already firmly rooted in the regions, it is having a growth-generating impact on the revitalization of several rural regions.

Opportunities offered by changes in consumer eating habits, such as the trend towards "eating local" and the opening of several local public markets, have sharpened the innovative capacities of a new generation of producers, who more often than not come from urban communities. This renewal of agricultural interest is far from marginal, as seen in the case of cheese production, which now offers an array of products that compete with the finest imported cheeses. Agriculture that is more in harmony with the land and its people, which shows an interest in local markets without abandoning markets further afield, should better enhance agricultural potential and help redefine the terms and conditions of a new social contract between farm producers and the rest of society.

Forestry is another major rural natural resource, and a leading one for Québec. Considerable innovation in this area has occurred, and persists, in the form of new innovative models of management of public forests by rural communities. The current challenge of the Québec forestry sector is to better recognize the potential of a more multiple-use view of our forest, to see the forest as a diversified source of products, and to better understand its role in the environment, recreation, and tourism. There are currently good examples of untapped potential, such as floor coverings with previously discarded wood residues and the use of wood siding for home exteriors.

Diversification of the forest economy also includes the enhancement of many non-timber forest products (NTFPs). These are products other than wood that come from biological sources in the forest and require little processing. They may allow forest communities to benefit from the

natural resources located at their doorstep. This category also includes maple farming, the production of Christmas trees, wild blueberries from both blueberry patches and the forest, mushrooms, and essential oils extracted from softwood trees. More than 400 potential products could be harvested from our forests and make their way into a market that is increasingly sensitive to new consumer demands such as biopharmaceuticals or nutraceuticals (natural food supplements). Along with NTFPs, the potential of forest biomass to be used for energy and biofuel production has also become a reality. NTFPs may well reduce our dependency on oil and diminish greenhouse gas (GHG) emissions while broadening the range of the many socioeconomic benefits that forests offer society.

Finally, regarding industrial jobs in the countryside, the manager of a big brewery outside Vancouver has found that rural manpower might be an advantage that compensates for distance costs. Not only do rural workers tend to be less absent from work, but when machines break down, they can find immediate solutions or do temporary repairs while waiting for new replacement parts. As a result, the production line does not stop as often as in a city, where workers would typically wait for parts and technicians. This resourcefulness illustrates how rural culture is distinctive, despite evidence of the supposed merging of urban and rural culture.

To assess rural innovation, we must keep in mind that the rural population makes up only 20% to 25% of the total population. It is thus normal that the rural sector generates less innovation. Often, technical innovations are developed by urban engineering firms for use in a rural setting. One example is traditional “peat moss,” which now serves as very high-tech bio-filtration for sewage systems of isolated homes. All this shows that rural natural resources are now seen in another way, and extensive R&D is needed to find new uses of those resources. Innovation is definitely at the heart of future developments in the rural economy.

Conclusion

According to the classical GEM (General Entrepreneurial Monitor) distinction, some are entrepreneurs by necessity while some others became entrepreneurs by opportunity. Applying this distinction to innovation in the rural sector, it seems that past innovations are more by necessity. For example, people created cooperatives because no private enterprises were willing to offer the products or services they needed. Today, however, innovation in the rural setting corresponds more to innovation by opportunity. There is insufficient space here to discuss property models linked to those rural innovations, but they are diverse, ranging from classical private enterprises to cooperatives and social economy enterprises. This form of enterprise characterizes many start-up businesses in the cultural domain. The development of rural culture with eco-museums, interpretation centers, and summer theater is becoming a vibrant economic sector in some rural regions.

We can then talk of rurality as “Rural Labs” in the sense of the model of monitoring innovation used as a methodology to implement innovation in various domains of action. The second phase of Québec’s Rural Policy, acclaimed around the world according to an OECD report and the previous OECD Rural Conference, put in place a “Rural Laboratory.” The aim is to offer a substantial amount of money to a project with expected structural social or economic returns. Innovation is central in this program. About thirty projects are now under way. Even though many of them will not pass the “reality test,” the Rural Laboratory program will be considered a success because innovations that survive and prosper will contribute greatly to the quality of life and prosperity of the rural communities where they are established. Many might also be transferrable to other places.

All the innovations described above indicate that new ruralities are emerging and reflect a rural world that still holds a place in our contemporary societies by contributing to collective prosperity. Rural areas are places with a future, not mere vestiges from a past era surviving in a post-modern world. Rural communities are changing, adapting, innovating, inventing new rural forms, and emerging as multi-faceted ruralities. To understand the pluralist rurality of both today and tomorrow, we must take a new look at it. In Québec (Canada), new ways of looking at rural life are surfacing, notably through the Université rurale Québécoise, which has become a forum for social and institutional innovation by rural populations.

Québec rurality, committed to a process of revitalization, has become a true living laboratory where traditional economic sectors like agriculture and forestry, have begun to restructure, marketing new products and implementing new production processes. New urban-rural relations, based on more harmonious land development, are also surfacing. The rural renaissance in Québec features culture as a factor in economic diversification. Rural communities are mobilizing to become players in their own development, an effort supported by a sound rural policy.

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Chaire de recherche du Canada en développement rural	www.uqar.qc.ca/chrural
Centre de recherche sur le développement territorial	www.uqar.ca/crdt
Université rurale québécoise	www.uqar.qc.ca/chrural/urq
Chaire Desjardins en développement des petites collectivités web2.uqat.ca3chairesdesjardins	
Ministère des Affaires municipales, des Régions et de l'Occupation du territoire du Québec	www.mamrot.gouv.qc.ca
Partenariat rural du Canada	www.rural.gc.ca/rural
Fédération québécoises des municipalités	www.fqm.ca
Union des municipalités du Québec	www.umq.qc.ca
Solidarité rurale du Québec	www.solidarite-rurale.qc.ca
Réseau des SADC	www.reseau-sadc.qc.ca/

ICTs and Rural Development: Review of the Literature, Current Interventions, and Opportunities for Action. Robert Chapman and Tom Slaymaker. 3 Using ICTs More Strategically for Rural Development 3.1 Relinquishing control (of the information and the technology) 3.2 Encouraging participation and demand-driven ICT use 3.3 Harnessing ICTs through existing systems: Integrating knowledge systems 3.4 Community knowledge partnerships. 4 Conclusions 4.1 The potential role of ICTs for rural development. Industrial society has moved into an era of advanced technological innovation, affecting the way developed countries run their businesses, their institutions and lead their lives. Learning from and with rural people and communities. In current discussions of innovation, rural people are typically excluded from the creative class. However, the history of Quebec's rural communities shows that they have been and still are very creative, and that we can learn from them. Their innovation is manifested in three basic dimensions of sustainable development: managing natural environments, building instruments or institutions for economic development, and facilitating social life. Under this new paradigm of rural innovation, these innovations are studied as they emerge from within. Frugal innovation is the ability to generate considerably more business and social value while significantly reducing the use of scarce resources. It's about solving and even transcending the paradox of "doing more with less." Inventor of nanotechnology. I agree with you. We can see the change of Paradigm / Science, Business, management, Economic / Nanotechnology / New IP of Nano / give new opportunity to SME's for development in the World. 1896 users have voted. Develop an innovative packaging programme where you encourage people to bring their own bottles to get a discount and in the case of home delivery offer a bottle deposit.