

Exploring Community-Based Economic Tools for Resilience In the Age of Climate Change and Peak Oil

1. Introduction and Key Concepts

This paper takes as a starting point that resilience is a capacity that is essential for communities to survive and adapt to the current and/or immanent realities of dramatic fuel price increases, food insecurity and climate change. These challenges to human communities demand innovation at multiple levels. Community and regional level action is among them. The hypothesis formed at the outset of this exploration is that the combination of three distinct bodies of theory and practice, namely: Community Economic Development (CED), Social Enterprise, and Community Development Finance (CDF) have a strategic contribution to make in building Community Resilience. For the purpose of this paper, each of these concepts and related bodies of practice are stripped to a simplified core from which their basic characteristics and linkages can be charted.

1. **Community Resilience** as defined in 2000 by the Centre for Community Enterprise is “the ability to take intentional action to strengthen the personal and collective capacity of its citizens and institutions to respond to and influence the course of social and economic change.” At one level, this definition of community resilience is almost synonymous with aspects of how CED is described below. However, as we will see later, it is a broader conceptual framework for understanding a range of attitudes and processes that shape community life. What’s more, the concept of resilience is being taken up widely by numerous innovative scholars and practitioners, and there is much to learn from other emerging models of community resilience. CCE is currently embarking on a significant R&D project to revise its own conceptualization of resilience by integrating ecological and socio-economic understandings of resilience.
2. **Community Economic Development** is a territorially focused strategy that aims to integrate social goals into the economic life of a particular place or region. It has been born out of necessity – from North American communities where the market has failed, where poverty, unequal power relations and depletion of human and institutional resources converge to sustain economic and social decline. Community economic renewal and revitalization through engaging the community stakeholders and its citizens in local action is a hall mark of CED.
3. **Social Enterprise** has to do with enterprise and trading where social ends are achieved using business means. This form of enterprise can be and often is employed as a tool in CED. It includes a wide range on non-profit, co-operative and associational enterprise activities across a wide variety of economic, social and environmental sectors. It is a key feature of the social economy, which can be understood as a wide range of activities in civil society that explicitly seek to integrate social goals into the heart of our economic life. .
4. **Community Development Finance** is the provision of capital (in either equity or credit formats) in a manner that addresses social goals as well as financial goals. Whereas conventional finance focuses exclusively on financial return, CDF integrates social goals into the mandate and decision making criteria of development finance institutions. They typically specialize in ‘gap financing’ for target projects that commonly do not find the necessary capital from conventional sources. The availability and quality of community development finance is of strategic importance to CED and social enterprise and is a factor considered in assessing community resilience. For the purpose of this paper we review CDF for its potential role in the capture of carbon off-sets for community development reinvestment in greening local economies.

The bodies of practice and tools associated with these four arenas have an array of exemplary practice and applications that can be drawn on when considering how to mobilize and manage community and regional resources. This paper focuses in on how these practices and tools can more adequately address the multiple challenges involved in reducing carbon emissions and adapting to climate change and dramatically more expensive fossil fuels.

1.1 Carbon, Fossil Fuels and the Adaptation Challenge

The Fourth Assessment Report (AR4) published by the International Panel on Climate Change spells out in no uncertain terms that the effects of global climate change are being experienced in a variety of ways in communities around the globe, affecting their exposure and sensitivity as well as their capacity to adapt (IPCC, 2007a). While it may well be true that certain areas of the world are more vulnerable than others to these stresses, it is clear that no place or people will remain unaffected. Thus, “integrating climate change adaptation into decision making is an opportunity to enhance resilience and reduce the long-term costs and impacts of climate change” (Lemmen et al., 2008: 7). Set out below is a summary of some of the main points of AR4 that pertain to our exploration of the links between the four areas identified above and the challenge of radically reducing global carbon emission in the next 10-15 years, on the one hand, and adaptation to the climate change already underway as a result of past and present emissions.

- Human-induced climate change could lead to some impacts that are abrupt or irreversible, depending upon the rate and magnitude of the climate change. (p.14)
- A wide array of adaptation options are available, but more extensive adaptation than is currently occurring is required to reduce vulnerability to climate change. (p.14)
- There are barriers, limits and costs, which are not fully understood. (p.14)
- Adaptive capacity is intimately connected to social and economic development but is unevenly distributed across and within societies. (p.14)
- Both bottom-up and top-down studies indicate that there is high agreement and much evidence of substantial economic potential for the mitigation of global GHG emissions over the coming decades that could offset the projected growth of global emissions or reduce emissions below current levels. (p.14)
- Many impacts can be reduced, delayed or avoided by mitigation. Mitigation efforts and investments over the next two to three decades will have a large impact on opportunities to achieve stabilization of emissions at lower levels. Delayed emission reductions significantly constrain the opportunities to achieve a lower stabilization level and increase the risk of more severe climate change impacts. (p.20)
- There is high confidence that neither adaptation nor mitigation alone can avoid all climate change impacts; however, they can complement each other and together can significantly reduce the risks of climate change. (p.20)
- Responding to climate change involves an iterative risk management process that includes both adaptation and mitigation and takes into account climate change damages, co-benefits, sustainability, equity, and attitudes to risk. (p.23)

Concurrent with climate change, the world is experiencing enormous increases in the price of oil as we slide over the peak in global oil production.¹ In an era when oil prices have more than tripled in four years (and are expected to increase to at least \$200 per barrel within five years), the ability of communities and regions to provide essential goods and services, such as affordable food, energy, and shelter for their citizens is becoming increasingly challenging (McKibben, 2007). Furthermore, it is argued that greater shocks than we can predict are likely to test even the most resilient community's strength and integrity in the future (Homer-Dixon, 2006).

Adaptation measures that focus on reducing community vulnerability to rising energy prices and climate change represent a logical initial step. In particular, helping regions and communities regain control over essential processes such as food and energy production and distribution systems need to be seen as vital adaptation strategies to build community resilience to impending economic shocks brought on by peak oil and climate change. In a global market place that continues to rely on fossil fuels and economic growth as economic cornerstones, the policy options that dominate the discourse remain focused on promoting integration, specialization, and risk taking as the route to diminishing community vulnerability and maintaining economic 'progress' (Adger 2003). An alternate route is to promote autonomy, local reliance, diversity and risk aversion. Adger suggests that these two possibilities are inherently divergent and that "the solution does not lie in a compromise of taking the least undesirable parts of both strategies and seeking a middle way" (Adger, 2003: 3). Rather, he argues, we need a new way of valuing autonomy, local reliance and the contribution they make to sustainability and resilience.

Whether Adger is completely correct or not, there is little debate that reweaving local economies into a bioregional context is a critical challenge, and that local and bio-regional action to increase capacity for adaptation and overall resilience is a key strategic choice. To foster the innovation required to move in this direction requires forging new patterns of market, governance and social relations that feature cooperative, collaborative and strategic capacity. Genuine progress towards resilient and sustainable communities is contingent upon a profound paradigm shift in social learning in order for the required changes in institutional structures and organizational processes to occur. Increased levels of consciousness, coupled with animating and mobilizing resources into a collective effort is also a pre-requisite.

1.2 The Central Importance of Community Resilience to Adaptation

In the context of communities, resilience generally means the capacity to engage in and collectively adapt to disruptions such that the community retains its overall vitality and viability. For nearly a decade now, numerous scholars and practitioners² have argued that fostering ecological and social resilience is essential in order to reduce key vulnerabilities and build adaptive capacity for the aspirations of creating a sustainable human-environment

¹ Depending on the source this event may, in fact, have already occurred. It is generally accepted that the peak of oil production will only be observable from hindsight, after it has occurred.

² See, for example, www.resalliance.org; IPCC, 2007 a, b; Walker and Salt, 2006; Folke, et al., 2002; Adger, 2000; Holling, 2000

relationship. Adapting to the realities of climate change and peak oil certainly fall within this domain.

“Resilience is not about promoting growth or change for its own sake. It is about promoting the ability to absorb shocks and stresses and still maintain the functioning of society and the integrity of the ecological systems. However, resilience also requires communities and societies to have the ability to self-organize and to manage resources and make decisions in a manner that promotes stability. Most important of all, resilience requires societies to have the capacity to adapt to unforeseen circumstances and risks. These objectives give generic guidance on how to promote sustainability at different scales.” (Adger, 2003: 3)

Research on vulnerability to climate change shows that it is the marginalized who tend to suffer the greatest impacts of changing environmental and economic conditions (IPCC, 2007). While some natural and social systems have inbuilt abilities to bounce back from adverse circumstances, most have to learn how to become resilient. This learning is a direct function of the social capacity within the community, which tends to be greatest where basic needs are sufficiently met and human development is a priority in addition to economic development or growth. In the concluding paragraphs of *The Upside of Down*, Homer-Dixon (2006: 308) claims that “if we want to thrive, we need to move from a growth imperative to a resilience imperative” and although economic growth is critical for billions of people, it “must not be at the expense of the overarching principle of resilience, so needed for any coming transformation of human civilization”. Thus, resilience is the underlying foundation that communities at all scales need to foster in order to reduce vulnerability to multiple stresses and build adaptive capacity to work through these challenges.

2. Tools and Practices that are Relevant to this Exploration

There are many tools and practices from the past and ones that are currently evolving that can contribute to solutions that enhance community resilience; however, their range and applications are well beyond the capacity of this short paper to address. Here we limit our exposure to elaborating the basic features of each of the areas that make up the scope of our exploration – CED, Social Enterprise, Community Development Finance, Community Resilience and Carbon Reduction and Off-Setting. In particular, the focus is on tools and strategies that contribute to the goal of reweaving economies that are more self-reliant within a local and bio-regional context.

2.1 CED – Basic Concepts and the Role of Community Development Corporations

Exemplary practice in CED almost always features an entity that mobilizes community and outside resources into a democratic, multi-stakeholder and multi-functional development process that explicitly aims to renew and revitalize a geographic area suffering social and economic marginalization.

While they can take many different forms, their principles, structure and function presage a higher degree of effectiveness compared to those organizations that do not include such principles or features. It is possible that some organizations that do not evidence each such practice may successfully perform important functions for their communities, especially when there are complementary institutions at work. What we outline here, however, is derived from the investigations and observations of many different practitioners and researchers in the field as most likely to predict success.

2.1.1 Basic Economic and Social Functions

Illustrated below in Figure 1 are the key economic and social tasks that, as woven together over time, constitute the main components of CED. The capacity that exists within a community, or among several communities, is fundamental to achieving economic and social outcomes. In addition to building community capacity, the overall challenge in building and implementing a CED strategy lies in creating a comprehensive orientation and a multi-functional approach. Economic and social functions, integrated by a range of programs, projects, enterprises and continuous community outreach aim to engage citizens and local stakeholders in becoming actors in the process of revitalizing and renewing their own community.

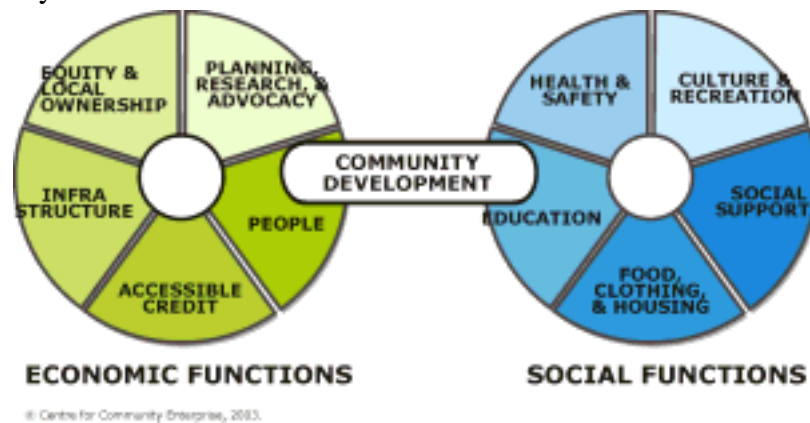


Figure 1: The Economic and Social Functions of Community Development

2.1.2 Features of an Effective Community Development Corporation (CDC)

The CDC that is apt to have the most impact upon its community (an impact that is nevertheless qualified and restricted, of course, by the decades of deterioration that the community has suffered) will have the following features:³

- A multi-functional, comprehensive strategy or development system of on-going activities, in contrast to any individual economic development project or other isolated or unrelated attempts at community betterment;

³ This is derived from *Tools and Techniques for Community Renewal and Recovery* (Centre for Community Enterprise, November 2000), which is comprised of extended descriptive entries on some 40 individual CED techniques.

- An integration or merging of economic and social goals to make a more significant impact for community revitalization;
- A base of operating principles that empower the broad range of community residents for the governance both of their development organizations and their community as a whole;
- A businesslike financial management approach that builds both ownership of assets and a diverse range of financial and other partners and supporters; and finally,
- An organizational format that is non-profit, independent, and non-governmental, even when for-profit and governmental entities are linked to its work.

While a single organization within any one locality may exhibit these features, it is not the only format in which CED may be effectively carried out. The system may, in fact, be the result of coordinated activities of a group of organizations. Organizations may also operate in relation to several communities and even on a broader regional basis and still be a key partner to a locally based CED organization. For example, Community Futures Development Corporations provide small business financing and technical support, and they typically operate in a region with several communities and can play a key role in providing certain types of development finance that would be difficult to sustain in a single rural community.

2.2 Social Enterprise

Social Enterprise is one tool that can be employed within a CED strategy. Similar to CED it is concerned with how to integrate social and economic goals. However, it operates at the level of the business whereas CED focuses on mobilizing a variety of different tools to revitalize a specific territory. The complementary relationship is illustrated in Figure 2

Figure 2: The CED – Social Enterprise Linkage



While social enterprise can be an important tool within CED, the primary motivation and function of social enterprise is not always connected to or confined to one locality. For example, it can be organized at the sector level, as in the case of a co-op made up of agricultural producers that cuts across an entire region or political jurisdiction. It can also operate across geographical and political boundaries, for example, a fair trade organization that links producers of various products in many countries to a range of markets.

In Quebec, the jurisdiction in Canada where social enterprise is most advanced, the Chantier l'Économie Sociale⁴ distinguishes what they call 'social economy enterprises' by the following five key principles: (Lewis, 2007, p.7)

1. The objective of the social economy enterprise is to serve its members or the community, instead of simply striving for financial profit.
2. The social economy enterprise is autonomous of the State.
3. In its statute and code of conduct, it establishes a democratic decision-making process that implies the necessary participation of users and workers.
4. It gives priority to people and work over capital in the distribution of revenue and surplus.
5. Its activities are based on principles of participation, empowerment, and individual and collective responsibility.

Between 1997 and 2007 results have been impressive in a province with only 7 million people. For example:

- Between 1997 and 2007 10 years, 20,000 new jobs have been created.
- Between 1998 and 2004, the local development centers (CED organizations) located in small regions across the province have helped launch 3765 collective enterprises.
- Several specific sectors of the social economy, such as: daycare, domestic aide, recycling, non-profit housing, and employment for disabled persons have grown significantly.
- At least \$755 million is invested in social enterprises, growing from \$28 million in 1996 to \$114 million in 2005.

It is important to note that various types of local and community development corporations have been an important component of the support network that has facilitated and supported this growth. Indeed, community and provincial development finance organizations have played a key role in organizing and leveraging this level of activity. As such, they are part of a broader capacity development and support system consisting of development finance pools and tools, technical assistance and supportive public policy.

2.3 Community Development Finance

Community development finance (CDF) requires an institutional format by which equity or credit is deployed. This format can range from a large, comprehensive banking operation with many different capital products and supporting programs (e.g. South Shore Bank in Chicago) to a very small organization with a single limited service such as the provision of loan guarantees for workers buying a share in a co-op. In both Canada and the United States, government policy and incentives has historically been key to capitalizing development finance institutions, although in the U.S. foundations have also played a key

⁴ Promoting and creating the environment for the growth of social economy enterprises is the Chantier's central priority.

role. In Quebec a web of development finance resources are in play, some at the local level, for example the loan funds of local development centers and Community Futures development corporations and others that have been organized at the provincial level by the Chantier l'Économie Sociale.

In any instance, the CDF institution, like any CDC, will invariably depend upon collaborative relations with other organizations in order to provide capital in the most productive fashion. For example, a worker co-op loan guarantee fund will rely upon another institution to provide the loans that it will be guaranteeing; and with that or another partner it will have to assure that the borrowers are adequately trained and supported for the type of business concerned and for sharing in the direction of that co-op business. Similarly, the commercial loan operation of a comprehensive development bank must assure that its borrowers have ready access to technical assistance on business problems they will encounter after receiving a loan.

2.4 The Community Resilience Manual

The Centre for Community Enterprise (CCE) designed a community resilience assessment and planning tool in the late 1990's that has been used and adapted in several countries.⁵ Its diagnostic, animation and mobilization impacts and its efficacy in realizing these results holds real promise for broader application. Indeed, CCE is currently raising funds to produce a second edition, one that is fully embedded in an ecological framework that will expand its relevance and application to helping animate and mobilize communities around carbon reduction and adaptation challenges.

Figure 3: Four dimensions of community in relation to the characteristics of community resilience (Source: Community Resilience Manual, 2000)



The model is framed by five key functions of a local economy (as indicated in the CED section above) and four essential dimensions of community – the attitudes and behaviors of people and organizations, the use of resources in and adjacent to the community and the level of collaboration etc. manifest in community processes. 23 characteristics of highly resilient communities are related to these dimensions are described in the manual. From these characteristics, a variety of quantitative and perceptual indicators are used to measure the extent to which each characteristic is present in a community at a given point in time. Community processes aimed at advancing collective interests

⁵ See the CCE definition of community resilience in the introduction to this paper.

(including local ownership, access to development finance and control of resources) are related to several of the resilience characteristics.

2.4.1 The Community Resilience Process

The Community Resilience Process outlined in the CRM involves four distinct steps that a community undertakes in order to evaluate the current level of socio-economic resilience of the community and create a plan to address the priority issues or deficiencies identified through the process. The first step is to establish a diverse local steering committee that can provide direction to the facilitator and ensure that a broad, representative sample of citizens is engaged in the activity of data collection and consultation. The goal of the second step is to present a “Community Resilience Portrait”, which summarizes the degree to which the community exhibits each of the 23 characteristics of community resilience at that particular time, and it illuminates the relationships between the characteristics both within and across the four dimensions of community. The third step involves local citizens in a full day decision-making workshop where they learn more about resilience and CED, and then use this information to analyze the community portrait and determine local action priorities to strengthen their resilience. Finally, community members are asked to do some additional reading and thinking to prepare for a second full day workshop that engages citizens and organizations in developing an action plan that will enable them to address the priorities identified in the previous step. At this stage, the facilitators and the steering committee seek to gain commitment from the community towards implementing the action plan and moving forward to strengthen the community’s resilience.

Revelstoke BC is a well documented “resilient” community. They participated in a test of the Resilience Manual in 1999. We wanted to see if and how the tool would have impacts in communities that already had a plan, already had good organizational collaboration, and had a history of effectively taking action to strengthen their economic well being. The process resulted in one clear weakness: the gap between economic and social serving organizations, and the resulting lack of connection between social and economic planning and action. The Community Futures and Economic Development office staff admitted this was simply not on their radar, but could see the advantages. They started by building a formal network of social serving organizations – a Social Planning Council. They then used this group to begin to weave social and economic issues and solutions into their local development plan. Shortly after this time they even changed the name of the economic development office to the “community” economic development office and hired an officer coming from education and training to run the office.

Their resilience was apparent in their quick, systematic response to the identified problem, but they admit that if the resilience process hadn’t elevated it as a key block to community progress, it could easily have slipped by them for years. Both resilience communities, and those seemingly “unresilient” communities have benefited from the process.

Recently, the resilience manual was adapted for implementation in 7 of the poorest villages (and 1 larger urban slum) in Botswana, Africa. As a result of these pilots the tool is being scaled up for use in other villages, and the government has committed support to

implementing the priorities that emerged from the pilots. There were concerns early on that the results of applying the tool would be so negative they would harm, rather than help, local energy for action. There were also concerns that no one would participate given the lack of openness to discussion/debate that is part of the culture. Even in this context, or maybe particularly, the way the tool engages citizens and organizations, and puts information into the hands of citizens who make their own decisions was remarkable. The proportion of citizens engaged in interviews and focus groups was far higher than we had experienced in Canada. There was one village for example, where tension between the Chief and citizens was strongly represented in the data. There was reluctance on the part of young, newly trained facilitators to highlight this tension. During the workshops however, the first priority that emerged was to strengthen mutual assistance and co-operation. This was the only village where this was among the top three priorities. The way the issue was framed and put forward, and perhaps the building of a common concern and understanding encouraged support even from the Chief and left the window open to work on this issue. It remains to be seen if action on the priorities will follow; implementation is beginning this fall.

2.4.2 Reframing a Tool that Works

Well short of a panacea, the application of this tool is not a replacement for CED planning or more traditional official community plans (OCPs). The CRM is a unique and effective diagnostic and educational tool that engages citizens and key stakeholders in ways that can accelerate the raising of individual and community consciousness while helping to strengthen their socio-economic resilience. On its own, or as one component of an integrated planning and mobilization strategy, the CRM leads to fresh and creative community conversation, a more holistic understanding of community change, better priority setting and elevated commitment to action.

This is all well and good, however, failing to explicitly acknowledge the interdependence between communities and the environment is an inherent limitation in the CRM's conceptual framework. Consequently, CCE is currently engaging in and seeking funding and community partners for an ambitious R&D project to revise and upgrade the current CRM. The intention for a revised CRM is to make a larger, more strategic impact on communities' ability to identify their strengths and vulnerabilities, and to leverage their assets in order to mitigate and adapt to current and future implications of climate change, peak oil, and the real and pressing challenges that accompany them.

The task is to develop, test and publish a community resilience tool that integrates the key strengths of the current CRM with the most relevant scientific and process/assessment aspects of the social-ecological systems (SES) approach⁶ to resilience put forward by the Resilience Alliance (Resilience Alliance, 2007). The goal is to create a community resilience model that acknowledges the inherent complexity, inter-dependence and resistance to change found in communities, and that facilitates pro-active innovation and

⁶ A draft research prospectus outlining the relative strengths and weaknesses of the two approaches and the overall research agenda is available upon request.

adaptation toward solutions to challenges such as carbon reduction and peak oil that are socially, economically and ecologically grounded.

3. Exploring the Linkages between Carbon Emission Reductions, Community Economics and Community Resilience

Resilience is an overarching concept that can help us become more grounded in the dual purpose and process of re-localizing economies and lowering community dependence on fossil fuels. The three cross-cutting trends identified above are likely to force communities to become more economically and materially self-reliant from the present onwards. The challenge of reweaving the roots of local economies more deeply into their bio-regions is huge, but certainly not insurmountable if consistent and concerted action is taken from the basic belief that change is possible and can produce a higher quality of life. Several key points emerge from these statements that underscore Adger's conclusion that we need new ways of valuing local autonomy and self-reliance for the role they play in enhancing community resilience and sustainability. The following discussion uses current practical cases to highlight the synergistic potential between CED, social enterprise and community development finance in reducing carbon emissions while adapting to climate change and peak oil, and strengthening the resilience of the community or region.

CED helps us understand the critical nature of community capacity for undertaking any initiative to re-localize an economy. Furthermore, it links community engagement, planning and projects, programs, finance and enterprise into a common strategy and a citizen based multi-stakeholder governance model that enjoys a certain currency in local community development. Social Enterprise is focused on organizing economic activity to meet social and environmental goals using various collective, cooperative and community ownership models. Compared to non-local businesses, locally owned and controlled enterprises generally produce more community wealth by spending more money at home, build stability by staying put for the long term, contribute to rising labor and environmental standards by adapting to new expectations more readily, and foster greater community resilience by reinforcing political participation and entrepreneurship.

This, in turn, can expand the horizons of CED groups and the social and solidarity economy movements regarding how they can contribute to building adaptive capacity while reducing the vulnerability of communities and regions to the impacts of climate change and continued price increase for fossil fuel. Indeed, the collective, local ownership of enterprises that aim to increase local and sub-regional green energy supply and local food supplies may have very particular contributions to make to increasing community resilience while decreasing carbon emissions and adapting to a low carbon economy. For example, community owned wind farms and micro-hydro installations, land trusts,⁷ and co-operative and non-profit models for strengthening local and regional food systems represent several possibilities that currently exist and can be expanded to blend CED and social enterprise towards the end of strengthening local social-ecological resilience while simultaneously reducing carbon emissions.

⁷ Land Trusts can take land out of the market as one strategy for increasing shelter affordability, or for easing intergenerational agriculture succession.

The Transition Towns and Transition Initiatives movement that has emerged in the UK and is spreading worldwide demonstrates this synergy well. In essence, Transition Initiatives establish and embark on an ‘Energy Descent Plan’, which is a process of relocalizing all essential elements that a community needs to sustain themselves and thrive, using CED and social enterprise solutions to help them accomplish their plan. Transition Towns use vulnerability audits, local currencies, local business development, permaculture techniques and a host of other strategies to build local resilience in the face of the potentially damaging effects of peak oil while dramatically reducing the community's carbon footprint, thus, addressing both peak oil and climate change simultaneously.

The Transition Handbook (Hopkins, 2008) argues that in our current and future efforts to drastically cut carbon emissions, we must also give equal importance to the building, or rebuilding, of a broad understanding of community resilience. Indeed, it is becoming increasingly apparent that cutting emissions without resilience-building is ultimately futile. In order to successfully combine these objectives, Hopkins (2008) argues that “transition culture” must, without glorifying the past or aiming to ‘return’ to it, engage and learn from those who remember how daily life was supported and what the invisible connections between the social, economic and ecological elements of society were just prior to the transition to the age of cheap oil. For example, in 1908 there were 1400 local cooperative societies and 2800 building societies in England, and in 2008 there are 40 and 60 of these organizations present (Connaty, 2008). This clearly indicates that local capacity for autonomy and self-reliance through shared ownership and mutuality has been diminished and needs to be rebuilt as one part of strengthening resilience.

Taking a more urban perspective to be sure, the Dynamic Cities Project (DCP) is an enterprising non-profit organization based in Vancouver, BC that conducts scenario-based research in collaboration with local professionals and governments, in order to develop “transition modeling” tools that foster the growth of more resilient cities, towns, and neighbourhoods in the face of climate change and peak oil (DCP, 2008). While expressly aware of and linked with the Transition Culture movement in the UK, the DCP approach is focused on creating energy transition strategies and “regenerating” the will and the adaptive capacity within various sectors of society (particularly governments and business leaders) to engage in broad dialogue and swift action to significantly reduce fossil fuel dependency. This is further testimony to the role that social enterprise *is* playing today to meaningfully address climate change and peak oil – and it is just the tip of the iceberg regarding the potential that exists for social enterprise and other forms of CED to positively impact community resilience and the peaceful adaptation to the changes in our midst.

A project based in the USA called Community Food Enterprise builds on the evidence that local, distributed ownership is a fundamental building block for long-term prosperity—and that market shifts in favor of local food offer small farmers and other entrepreneurs a promising new path to economic security (Wallace Centre, 2008). Community Food Enterprise’s stated objectives are:

- 1) To produce a comprehensive global practitioner’s guide to community food enterprises;

- 2) To build a global brain trust composed of opinion leaders, community groups, planners and entrepreneurs worldwide for advancing the design and application of community food enterprise; and
- 3) To build a dynamic, online resource to inform and link practitioners worldwide, including an open-source system for collecting and sharing examples of community food enterprises.

This case highlights elements of each aspect of economic development touched on in this paper, in that it studies and connects at the local level like CED strategies while taking a much broader, global scale of the enterprise itself. Although not explicitly described in their promotional material, there could be tremendous potential for the integration of this strategic enterprise with community development financing mechanisms, and possibly use the benefits from additional and verifiable carbon offsets as a capital reinvestment vehicle.

In another case that is illustrative of the potential for combining local and collaborative business models to solve cross-cutting challenges, the E4 Coalition (Economy, Ecology, Energy and Entrepreneurship) has been established to “build a network of people and organizations in order to find creative solutions to expand economic opportunity, implement new technologies for renewable energy, promote local self-sufficiency and sustainability, find new uses for forest products, cultivate local food production, preserve valued forest landscapes, and enhance quality of life in rural New England communities” (E4 Coalition, 2008). The E4 Coalition and Community Food Enterprise are both examples of organizations that are using social enterprise as an aspect of CED to enhance community resilience. In both cases, there is a local focus of ‘on the ground’ action in addition to larger, sectoral and geographically expansive networks of people working to support and coordinate the local activity.

Regarding the emerging market opportunities for reducing carbon emissions and for creating carbon offsets, one critical challenge is that communities are not being identified, or are not asserting themselves, as a central body through which carbon reduction initiatives can take place. One exception to this observation exists in the form of a current pilot project being undertaken in Canada by Community Development Capital and Carbon, Pembina Institute, David Suzuki Foundation and Eco-Trust, whereby systematic action to mitigate climate change by reducing carbon emissions in the small and medium sized business sectors is currently being taught and monitored. The pilot is designed as three stage workshop and action process of measuring the business footprint, designing and implementing mitigation strategies and designing a carbon off-set program aimed at creating capital pools for community development re-investment.

Carbon off-sets, although not a panacea, can potentially provide one practical format whereby the benefit of low cost carbon reductions can be connected to the interlinked goals of shared local ownership and building community resilience, creating a novel and true integration of ecological, economic and social objectives. The critical component in this process is the financing mechanism to fund initiatives and cycle the gains back into further reductions on behalf of the community. Thus, CDF plays a pivotal role in the mix of activities to reduce vulnerabilities while enhancing adaptive capacity and resilience to climate change, peak oil, and their many undesirable side effects.

4. Conclusion

By looking at CED, social enterprise and CDF through the lens of community resilience, this exploration has created a unique perspective on how to operationalize organizational and community change in the context of peak oil and climate change. The innovative initiatives presented above represent in many ways the edge of what's currently being undertaken to integrate approaches that are supportive of local economic sufficiency and vitality while meaningfully contributing to mitigation and adaptive strategies towards climate change and peak oil. These cases stand as evidence that action and movement on several interacting fronts is taking place, whether self consciously or not. The practical, resounding theme emerging from the cases illustrated above corroborates and expands upon a central conclusion from the AR4 *Synthesis Report*. Whereas the IPCC is telling us clearly that activities focused on mitigation must go hand in hand with those focused on adaptation, experience from the Transitions Movement and elsewhere indicate that any effort to mitigate climate change can no longer be separated from initiatives to address peak oil.

It is almost becoming a truism to state that neither communities nor enterprises of any kind are immune to the impacts of climate change and peak oil. The cases presented above indicate that both communities and enterprises can mitigate their vulnerability to these phenomena by taking intentional action to increase their capacity to self-organize and adapt to change, thus becoming more resilient. At the same time, there is an acknowledged poverty at all levels of policy development that is supportive of the kind and scale of changes that are commensurate with the prevailing sense of risk and urgency felt by scientists, activists, planners and organizers alike. However, the cases presented above demonstrate that rather than focusing on the old linear, mechanistic system and producing more of what we already have, it can be much more productive and fun to create new systems-based strategies and relationships that present a more attractive alternative to organizations and communities.

Tensions exist with respect to the timing and the appropriateness of various strategic responses to this enormously complex challenge, particularly considering the inherent uncertainties in predicting the rate of decline in global fossil fuel production, in addition to forecasted and surprise climate effects. Capacity building and learning are essential processes and they take precious time, and so it will become increasingly imperative to engage in these processes *while acting in specific and measurable ways*. This will require a widespread acceptance of uncertainty, which coincides with a willingness to experiment and continually improve upon what can be demonstrated to be working, while quickly releasing attachment to the models of thinking and acting which cannot be demonstrated to be working. What we are talking about here is increasing our personal adaptability and bringing the consequent resilience to the organizations we work with and from there back to our families and social relationships, thereby changing the matrix of possibilities in a direction that is most consistent with our highest purpose. Indeed, we need to come to some agreement with ourselves and each other on what that purpose is, as an un-aimed arrow misses 100% of the time.

These concluding remarks clearly lead to a host of questions that require further and synchronous development of theory and practice. What are the conceptual models that can most easily facilitate the cognitive and perceptual shifts that are required for adaptive leadership and governance structures? How can the community development tools and strategies identified here be scaled up and replicated in areas where they are needed the most? Can a revised CRM serve as a rapid evaluation tool for community resilience and adaptive capacity, and what is required in order to have appropriate monitoring and evaluation mechanisms in place at the enterprise and community levels? It is our intention that this paper has contributed, in some modest way, to the level of discussion concerning the practical issues associated with addressing climate change and peak oil. We earnestly invite you to engage with us in further elevating the dialogue and moving it forward in tangible and powerful ways to cultivate highly resilient and adaptive communities for present and future generations.

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