Lessons Learned from the Ecovillage Movement:
A Global Analysis Focusing on Francophone Countries

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by

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This project is dedicated to the newest member of my family, my baby cousin

Walter Magellan Musser

in awareness of my responsibility to positively shape the world where he is growing up.

Acknowledgements

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Table of Contents

"I can think of forty reasons why none of their projects can possibly succeed and forty different tones of wry cynicism in which to express my well-documented doubts. But I also know that it is more humanely beautiful to risk failure seeking for the hidden springs than to resign to the futurelessness of the wasteland. For the springs are there to be found".

--Theodore Roszak (430)

Introduction to Ecovillages

What is an Ecovillage?

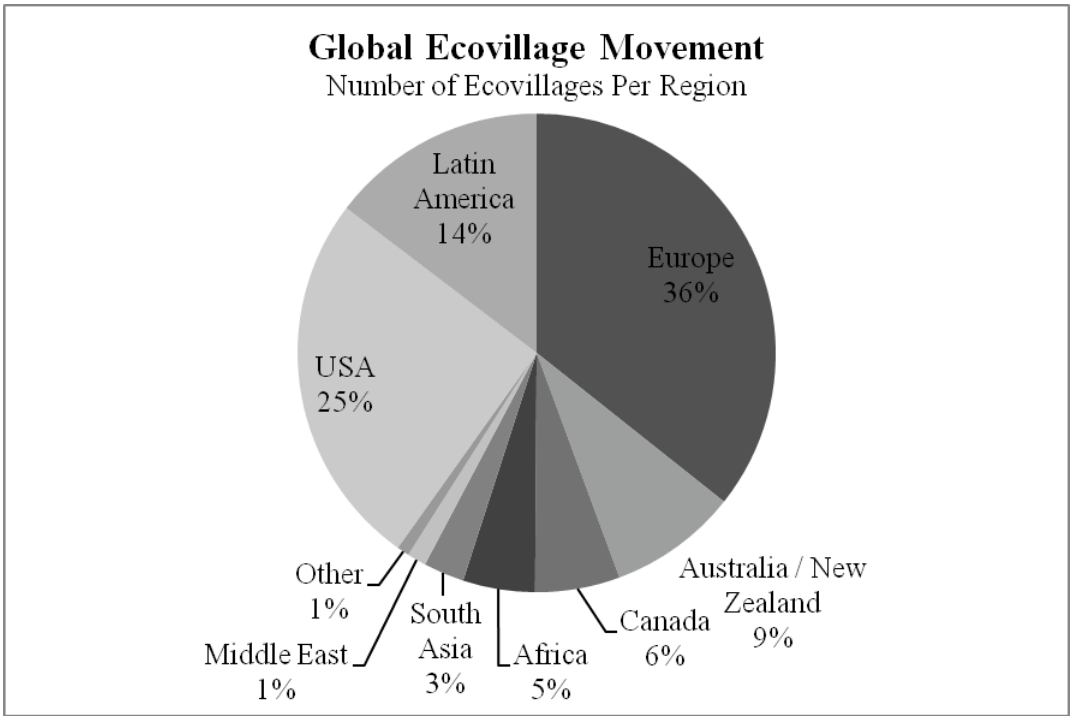
A scholar who toured ecovillages worldwide defined them as, "human-scale, full-featured settlements in which human activities are harmlessly integrated into the natural world in a way that is supportive of healthy human development, and can be successfully continued into the indefinite future" (Gilman). Basically, an ecovillage should be a sustainable community where the natural and the human world are engaged in a mutually beneficial relationship.

Ecovillages are so diverse, describing a "typical" ecovillage may be misleading, but I'll venture anyway, because it's important for the reader to have a mental image. Imagine a tightly clustered group of buildings (including a Common House where people share meals) of slightly eccentric appearance. Solar panels perch on houses; a windmill whirs in the distance. The signs for small businesses are hung over doorways here and there. Fruit trees and other edible plants are growing everywhere. Walking through the Common House, you pass a crowded bulletin board advertising committee meetings, negotiate your way around some children playing on the floor, and finally join a group of neighbors passionately discussing the finances for next year. Which project should get funding next?

The Scope of the Movement

Just how widespread is this movement? At the time of this writing the Global Ecovillage Network's website gives contact information for 471 ecovillages. However, a significant percentage of these ecovillages are start-up projects that have not actually purchased land and started building yet. On the other hand, some established ecovillages might not have bothered to put their information in

the website. For that reason, it's impossible to know the exact number of ecovillages in the world, but five hundred is probably a safe estimate. The following pie chart shows what percentage of ecovillages listed in the directory occupy which region.



Data compiled from Global Ecovillage Network's Ecovillage Directory on 19 April, 2010

Collectively, these villages form the Ecovillage Movement, a movement trying to solve environmental and social problems through communal lifestyles. This movement is given some cohesion by the Global Ecovillage Network organization, which connects them to one another and organizes yearly conferences where they can meet. Although the majority of ecovillage are rural, you also find city neighborhoods that have redefined themselves as "ecovillages". The problem of counting ecovillages is complicated because "ecovillage" can be loosely applied to many different kinds of communities.

There are two major categories of ecovillage. In the first category belong intentional communities (mostly located in developed countries). These are designed to be habitats for people who share an interest in sustainable living, community-building, and spiritual growth. They aim for self-sufficiency by nurturing small on-site businesses, notably agricultural and renewable energy projects. They frequently experiment with alternative currencies, and their governance systems tend to emphasize participation and consensus. Although they usually do not endorse any particular form of religion, earth-based spirituality is common.

The ecovillages that fall into the second category (usually located in developing countries) were not deliberately formed per se. Rather, they are long-established traditional villages classified as ecovillages due to their sustainable living practices. This may not reflect concern for the environment; they could be living sustainably only because they lack the funds to modernize. Nevertheless, these villages can apply to classify themselves as ecovillages, and become eligible to receive certain types of funding.

I observed one instance of this while studying abroad in Senegal. The village elders of Guede-Chantier made the decision to become an ecovillage, mostly to form a relationship with a nonprofit organization called GENSEN (*Global Ecovillage Network Senegal*). They promised to show commitment to environmental goals, and in return GENSEN used its resources to improve quality of life in the village. So the idea of "ecovillage" did come from outside, rather than being a grassroots movement. This brings up the ethical concern of GENSEN using its money to impose outside values on a native culture.

In considering this concern, it's important to remember that developed countries are imposing their values on developing countries anyway. Not only is there unrelenting economic pressure on various fronts, there is a daily barrage from all forms of Western media. My personal opinion was that GENSEN was one good influence among many bad ones. Every day the TV comes to glamorize the worship of wealth. As an employee of GENSEN commented to me, "American pop culture is everywhere. People are aware of rich lifestyles and they want more for their lives. You can see it in the 50 Cent T-shirts, Celine Dion music, and the constant talk of money". In the face of all that, here is one small organization promoting the idea that massive consumption isn't a good goal.

Senegal is just one example. The relationship between the "ecovillage people" and the natives of the developing country varies from place to place. In Sri Lanka, Ecovillage Movement leaders decided to call Sarvodaya (a genuinely grassroots inter-village movement) "Sri Lanka's Ecovillage Network". This is not too much of a stretch, since the ideals of Sarvodaya are close to Ecovillage Movement ideals. Both movements have a strong emphasis on communal action to solve problems and improve lives. However, I have not included the 15,000 villages of Sarvodaya in my count of ecovillages, because I think it would be misleading.

Since I am French Studies specialist, this project focuses on ecovillages from francophone parts of the world. However, I also have examples from other parts of the globe, particularly the USA, India, and Scotland (home to three of the world's largest and oldest ecovillages). Using these examples, I have put together chapters on six main areas where ecovillages are achieving progress. These chapters are based both on a literature review and the interviews I did with ecovillages from all over the world.

Another chapter explains my interview methodology and analyzes the results of my interviews in greater detail. These are the general outlines of my project; now I will explain my rationale for choosing ecovillages as a topic.

The Significance of Ecovillages

Only a very small percentage of the world population lives in ecovillages, so their current environmental impact is negligible in the grand scheme of things. However, ecovillages are significant because of the ideas they are creating. Ecovillages can serve as testing grounds for sustainable practices. By examining their struggles and successes, we can gain valuable insights, which will help craft policy for the shift into a green society. To keep our climate stable, carbon emissions need to be reduced by 80% before 2050. Although we know what our goal should be, figuring out how to get there is not easy. Ecovillages are trailblazers, looking for the path, running into obstacles, giving us some advance notice of what the problems and solutions will be.

Rather than waiting for a catastrophe to force changes upon us, we should make the transition to a green society in a controlled and researched way. Creating theories about sustainability will not be enough; we will also need field research. Ecovillage Movement leader Jonathon Dawson writes, "Ecovillages are in the forefront of exactly those types of applied research, demonstration and training that will be required in the transition: saving seeds, developing place-specific technologies for growing food, energy-efficient housing, energy-generation and so on. Perhaps most important of all, they are modern pioneers in creating a culture based on the abundance of simplicity". Although far from systematic in their approach, ecovillages are providing us with abundant data about the feasibility of green lifestyles and initiatives.

The rise of ecovillages is part of a larger shift in the environmental movement towards more practical strategies. Environmental strategists Nordhaus and Shellenberger authored a book called *Break Through: From the Death of Environmentalism to the Politics of Possibility*, which explains this shift. They believe environmentalism will succeed only if it expands its agenda to include the social problems of foremost concern to the public. For example, saving the rainforest means addressing the poverty of the people who are cutting it down; leaving poverty out of the equation is both bad strategy and bad politics (Nordhaus, 48). As a Senegal Ecovillage Network employee said when I interviewed her, "There are no easy answers to these complex issues and development must start by acknowledging why people make decisions that hurt the environment and work to provide alternatives. People won't stop cutting down trees if they have no alternative fuel to cook their food".

By expanding its mission to include more social concerns, environmentalism will shed its reputation as a narrow special interest and gain a broader support base. In other words, environmentalists need to broadcast the message that helping the planet is helping people too. Asking people to sacrifice their luxuries for the sake of the planet is not inspiring enough. To be successful, the green movement must show people how environmentalism can bring them personal gains.

In the context of ecovillages, having a Common House where thirty people share kitchen and dining facilities means fewer appliances are produced, decreasing strain on the planet's resources. There's your environmental benefit. On the social side, the shared kitchen will be less expensive, and people who want more community in their lives will get to spend more time around others. Rather than rely on a simple appeal to people's consciences, ecovillages advertise the social benefits of their low-impact lifestyle.

By subjecting every aspect of life in an ecovillage to intense academic scrutiny, I can analyze what strategies work, what strategies are less successful, and why. I can examine what motivates people to create change. If we make an attempt to achieve the 80% by 2050 goal, knowing these things will aid policy makers in charting their course.

How the Ecovillage Movement Began

The word "ecovillage" was invented in the 1970's. Mother Earth News in North Carolina used the word to describe the cluster of organic gardens, experimental energy systems, and novel buildings they built near their business office. At the same time, in Denmark, people were building "cohousing" developments that shared space and resources and later termed themselves ecovillages. Meanwhile, nuclear protestors in Germany built a community they called an *okodorf*-- German for ecovillage. Groups in different areas originated the concept independently.

A pamphlet distributed by the German *okodorf* reads, "We shall realize our important demand to save energy. We shall develop alternative technologies as well as societal alternatives. And we shall counter the radioactive job provision by the nuclear industry through creating employment opportunities ourselves-- ecological, decentralized, and oriented to the needs of the local population" (Joppke, 110). This citizens' group then organized a nonviolent protest in Hannover in March of 1979. Huge numbers of protestors carrying flowers streamed through the city streets. They covered up a sign announcing the name of their county with a sign saying, "Free Republic of Wendland" (Joppke 112). This radical gesture was an affirmation of decentralization and a bid for local control.

These similar, yet disconnected, initiatives might have remained disconnected if not for the

actions of Ross and Hildur Jackson. Very much aware of ecological issues, alarmed by the book *Limits to Growth,* Mr. and Ms. Jackson wanted to take action. They tried to do fund-raising for a green bank, only to be disappointed by their friends' reluctance to trust their money to the project. Ross Jackson decided that if he was going to accomplish anything, he would have to do it with his own money. So he built a computer model that predicted shifts in international currencies, and used it to make millions of dollars. With this funding, he created the Gaia Trust in 1990 (R. Jackson, 57). The Gaia Trust provided Robert and Diane Gilman with the funds to do a survey of existing ecovillages. The Gilmans created the definition of ecovillages cited at the beginning of this chapter.

In October 1995, the Gaia Trust helped to organize the first international ecovillage conference, called "Ecovillages and Sustainable Communities - Models for the 21st Century". The conference provided an opportunity for separate projects all over the world to organize themselves into a movement. They organized the Global Ecovillage Network, and Gaia Trust provided the seed money for it. Later the Global Ecovillage network received a grant from the European Commission.

One result of this conference was that intentional communities established before "ecovillage" terminology caught on, renamed themselves "ecovillages". These ecovillages are among the most well known and influential, since they have been established for the longest time. They serve as centers of learning where would-be ecovillage founders take classes on sustainable life.

For example, the Findhorn Foundation in Scotland was founded in 1963 as a spiritual community. Now an ecovillage, it serves as an education center and does consulting for the United Nations. Auroville was a spiritual community founded in 1968 in India by the Frenchwoman Mirra Alfassa, to honor the teachings of Indian guru Sri Aurobindo. It was designed to be an international village to demonstrate "the unity of humankind". Now it is an ecovillage nearly the size of a city, hosting large numbers of international visitors each year. "The Farm" in Tenessee was founded in 1971 by a group of radicals. It spawned many satellite communities in the USA. Not all of those survived, but the original Farm flourished (albeit eventually abandoning its ideals about communal property).

Where the Ecovillage Movement is Going

Considering the movement in all its diversity, no single ecovillage has achieved the pinnacle of perfection. Hildur Jackson writes: "none of the projects currently under way has as yet developed the idea to its full potential. So although many elements of the eco-village can be seen in different combinations in projects the world over, the fully functioning eco-village has yet to be created... the perfect eco-village will probably never exist" (6). The point is not Utopia. The point is all the interesting places we visit along the road to Utopia. In the end, the ideal serves more as a compass than a destination.

"We are inventing a new and original world. Imagination is seizing power".

--Sorbonne, Paris, May 1963 (qtd by Dickson, 8)

Foundations of the Ecovillage Idea

Ecovillages are the Latest Episode of an Age-Old Voyage of Discovery

The ecovillage ideology draws on many ideas, some relatively new, some centuries old. Although the ideology is a long way from being unified or systematic, we can identify some recurring themes. In the pages that follow, I will provide context for the movement by showing how it connects with older thinkers and social movements. In approximately chronological order, I will discuss the influence of the Bible, Rousseau's *Discourse on Inequality,* Utopian Socialism, sixties communes, the rise of the Green Party, and sustainability theory, linking each of them to ecovillage ideas. Going through all this will demonstrate how ecovillages are the latest incarnation of an age-old impulse. Ecovillages are the latest attempt to improve our lives by redefining our relationship with nature and with one another.

The Garden of Eden

The idea that a perfect world is possible and mankind is striving to return to it is a theme of world religion and mythology. My readers will be familiar of the story of the Garden of Eden: God plants in the garden "every tree that is pleasant to the sight and good for food," and Adam and Eve live there in perfect ease. Then, when they are cast out of the garden, their relationship with nature changes. Rather than wandering around eating all the fruit they want, they have to "earn their bread by the sweat of their brow," i.e. they have to struggle with nature in order to make it yield food. We see here the idea that regaining paradise is to restore our relationship with nature. In a culture with Judeo-Christian roots, this idea has powerful resonance. Nostalgia for a vanished golden age in which man lived in harmony with nature is part of Genesis.

The State of Nature

For Rousseau, this vanished golden age was called "the state of nature". His Discourse on Inequality (1754) describes the moment when we left the "state of nature" and founded civil society.

> "The first man who, having fenced in a piece of land, said 'This is mine,' and found people naive enough to believe him, that man was the true founder of civil society. From how many crimes, wars, and murders, from how many horrors and misfortunes might not any one have saved mankind, by pulling up the stakes, or filling up the ditch, and crying to his fellows: Beware of listening to this impostor; you are undone if you once forget that the fruits of the earth belong to us all, and the earth itself to nobody". (109)

This citation reveals a connection between environmental issues and social justice. Rousseau believed the invention of property, particularly land ownership, created a relationship of exploitation both of nature and of other human beings. Although Rousseau's "state of nature," is more philosophical construct than historical reality, ecovillage ideology joins Rousseau in crying we return to this natural state of supposed equality.

Rousseau sees the abandonment of self-sufficiency as the origin of inequality.

> "So long as they applied themselves only to work that one person could accomplish alone... they lived as free, healthy, good and happy men... but from the instant one man needed the help of another, and it was found to be useful for one man to have provisions enough for two, equality disappeared, property was introduced, work became necessary, and vast forests were transformed into pleasant fields which had to be watered with the sweat of men, and where slavery and misery were soon seen to germinate and flourish with the crops". (62)

Ecovillages take the point about self-sufficiency, while recognizing that self-sufficiency at the level of the individual would be impractical in today's world. So they aim for increased self-sufficiency at the level of the community, believing this to be a more achievable goal. By producing their own goods, ecovillages can lessen their linkage to global trade networks which help produce the kind of inequity Rousseau criticizes.

In addition to the equity issue, ecovillages want to be self-sufficient so they can serve as "life-boat communities," in case Peak Oil causes the collapse of industrial civilization (Heinberg, 157). They hope off-grid electricity and on-site agriculture will help them survive when/if civilization collapses. Hence, for reasons of both equity and long-term survival, ecovillages see increased self-sufficiency as an indicator of success.

Utopian Socialism

Utopian Socialism is the predecessor of the Ecovillage Movement, similar to it in many ways, but also marked by some key differences. Utopian philosophers wrote about the perfect form for society. Sometimes their followers would even buy land and try to create a community following the

tenants of the utopian philosophy. These communities were supposed to be "model villages," leading by example. The philosophers hoped the model villages would prove the workability of their concepts, and inspire imitation.

In practice, these villages were far from perfect, suffering from financial problems, sectarian strife, and isolation from the larger society they hoped to influence. Ecovillages also consider themselves to be "leading by example," but they don't claim to be perfect utopias, only to demonstrate certain improvements. This smaller, more reasonable claim makes them less vulnerable to skeptics who might accuse them of falling short of their goals. Sometimes, like their Utopian brethren, they can be isolated from mainstream society. But other times, they make a conscious effort to spread their ideas by holding classes and workshops for visitors.

Like utopian social experiments, ecovillages are demonstration projects that focus on equity. The focus on sustainability is somewhat different, since utopian socialists did their work before sustainability was ever a buzzword. On the other hand, Utopian writers did emphasize harmony with nature in many of their works. For example, the French Utopian philosopher Cabet filled his imaginary ideal city with, "Magnificent gardens that perfumed the air while charming the eye, forming delightful public promenades, while enhancing the delights of the enjoining dwellings" (21).

Cabet's followers founded a total of six communities between 1848 and 1898. They folded mostly due to funding and organizational issues, like so many of the Utopian social experiments of the nineteenth century. (Cabet was only one of many Utopians who immigrated to America to "build the perfect world". In France alone, we find two other notable examples: the followers of Fourier and St. Simone). By focusing more on practice and less on theory, ecovillages seek to avoid foundering like their utopian predecessors.

Sixties Communes

Around the time of the 1960s, we saw an upsurge of social experimentation, communes being founded all over the world. To take an example from French Studies, Lanza del Vasto was a peace activist who founded a commune called the Community of the Ark in France in 1963. In time, many more of these "Communities of the Ark" appeared in France, Europe, and Quebec. The goal of these communities was to achieve peaceful living and self-sufficiency. Del Vasto advised his followers to, "Suffice unto thyself. Be the one to enjoy what your own hands have made. Content yourself with what your own hands have made. Do without what you cannot make" (Del Vasto, 11). Although

ecovillages don't take it to that extreme, they are still focused on creating local economies. As explained before, some of our oldest ecovillages began as communes in the sixties, so the movements are directly linked.

Thoughts on Progress

The nostalgia for an idealized golden age and the impulse to go "back to the land" open ecovillages up to certain types of criticism. Opponents of environmental movement frequently accuse environmentalists of being anti-progress. Policy researcher Tom Randall writes in a particularly vicious column, "Maybe, sometime in the new millennium, windmills, solar panels, geysers, and mice running on treadmills (oops, scratch that one, forgot about PETA) may make some kind of significant contribution to our power supply. But right now, all are pie in the sky...The world runs on coal, oil, natural gas, nuclear reactions, and water flowing downhill through dams. The anti-progress environmentalists would have none of this. If they have their way, some future generation in the new millennium may sit huddled around their fires in caves, isolated from one another, leading unnecessarily shortened, hardship-filled lives, reminiscing about the 'good old days'" (Randall).

Here Randall reminds us that the "state of nature" is not necessarily idyllic. The same civilization which misuses natural resources has also brought us significant reductions in hardship, and increases in life expectancy. One must acknowledge this. However, living a sustainable way of life doesn't have to mean going back to the caves and huddling around fires. Like so many other critics, Randall has created a false dichotomy between primitive savagery and modern industrialization. By pretending the choice is only between a caveman state, and business as usual, he avoids the requirement to critically analyze the benefits and drawbacks of our civilization.

The moral of the story is to never let the word "progress" slip by uncritically. Always ask, "Progress towards what and by whom?" Due to the word "progress" being a word that is ambiguous, yet positively connotative, everyone always tries to co-opt the word "progress" in support of their own agenda.

Sustainability Theory

True progress may lie in the refinement of our social agreements. Hardin (author of the famous article, "The Tragedy of the Commons," published in 1968) suggested that, despite our drive

to find technological solutions for every problem, some problems only have social solutions. To avoid overexploitation of the commons, Hardin believed we needed social mechanisms that would enforce responsible resource use. He didn't think we could avoid the Tragedy of the Commons by appealing to people's better natures; instead, he believed in "mutual coercion mutually agreed upon," or social agreements that forbid overexploitation. Ecovillages use his ideas by making agreements to protect the commons within their village boundaries.

In 1972, a book called *Limits to Growth* attacked the assumptions of limitless growth underpinning economic theory and governmental policy. This book reported the findings of the Club of Rome, an informal international association of various professions, united by the desire to understand global problems. Their "Project on the Predicament of Mankind" examined, "the complex of problems troubling men of all nations: poverty in the midst of plenty; degradation of the environment; loss of faith in institutions; uncontrolled urban spread; insecurity of employment; alienation of youth; rejection of traditional values; and inflation and other monetary and economic disruptions," which they viewed as being interrelated (Meadows, 10).

The book examined trends in population, agricultural production, natural resources, industrial production, and pollution, and decided what they would mean for the future of mankind. The researchers concluded that, despite the ability of technology to push back man's natural limits, we would eventually have to recognize the fact the earth was finite and curb our growth accordingly. Although the book was heavily debated, it provided academic backing to those who said growth patterns needed to change. It also coined the term "sustainable development" (Wheeler, 8). Progress could no longer be understood as endless growth in a finite world.

In 1973 economist E.F. Schumacher published his much-acclaimed book *Small is Beautiful.* Schumacher believed in "appropriate" or "intermediate" technologies that people in developing countries could build and maintain themselves, freeing them from dependence on richer nations. In Schumacher's view, smaller technologies and smaller businesses could help create an economy which preserved human dignity and had a respect for human worth.

Ecovillage ideology sees appropriate technology as a means for increasing quality of life in poor countries, while bringing down over-consumption in rich countries. Appropriate technologies could gradually phase rich countries out of planet-consuming lifestyles. Simpler solutions to the problems of energy creation or waste disposal (for example, windmills and composting toilets) might have less impact on the earth.

Around this time-period Green Parties were organizing themselves politically and establishing

a supporting literature. Focusing on France, the presidential candidate Rene Dumont helped launch a Green Party and wrote a book provocatively entitled *Utopia or Death* (1973). The book tells us we can either solve the world's problems (create Utopia) or live with the deathly and catastrophic consequences of ignoring those problems. Dumont shares concerns about a finite earth with the Club of Rome, but as a politician he mostly wonders how we can motivate people to deal with the problem.

He asks his readers, "How do we make this idea of zero growth seem more acceptable, and even ultimately pleasanter, than always having more and more?" (Dumont, 95). His book is full of proposals to make the idea of zero growth seem attractive. For one thing, he suggests, less focus on production and consumption would mean more leisure time. "There would no longer be any justification for the hellish rhythms of assembly-line production" (Dumont, 105).

Dumont wanted people to be free from the demands of endless production, so they would have more time to enjoy nature and pursue their education. He suggests the formation of community conversation clubs that discuss (among other things) solutions for the problems of the world. In this way, the creation of social capital will be the foundation of the social change movement. Dumont's work shows how the importance of social capital in the green movement was recognized early on.

The UN showed its hand 1987, when their Brundtland Commission published a report called "Our Common Future". It argued in favor of sustainable development and equity and then laid out "strategic imperatives" to help achieve these goals. Essentially, it examined the question, "How can we preserve the environment while still meeting essential human needs?" They pointed out a gap between real needs and perceived needs. Although we might really need clothes to keep warm, our culture might make us perceive a need for a wardrobe of designer clothing. They wrote, "Perceived needs are socially and culturally determined, and sustainable development requires the promotion of values that encourage consumption standards that are within the bounds of the ecological possible and to which all can reasonably aspire" ("Our Common Future"). In this way, cultural change is at the root of sustainable development. This is why ecovillages don't limit themselves to experimenting with green technologies; they are trying to create a whole alternative culture that encourages sustainable levels of consumption.

It all comes down to your definition of "growth". If you believe a "growing" civilization must produce an ever-increasing quantity of material things, then growth is definitely limited. However, other factors besides the increase in material goods might be relevant to prosperity. Jigme Wangchuck, former ruler of Bhutan, quite famously coined the term "Gross National Happiness," to replace "Gross National Product" (Mustafa). If we can fashion a new set of standards, made to reflect

human well-being rather that sheer production, we can redefine our concept of growth and continue to "grow" without using up the last of the resources on this planet. The U.N.'s Human Development Index, which measures development using such factors as life expectancy and literacy, is one proposed way of measuring true progress as opposed to increased production ("Human Development Reports").

Conclusions

This whirlwind journey from the distant to the recent past establishes several things. Firstly, human beings have always wondered about their relationship to nature and wondered whether it could be improved. Establishing intentional communities based on new theories about human living is not new either. What is new is this uncomfortable consciousness of being close to the limits of a finite planet. Never has the call towards Utopia possessed such urgency as it does now. It may not be a choice between Utopia and death, as Rene Dumont suggests, but we are certainly at a turning point in history. These ideas provide the context for my project, and will serve as touchstones I return to as I examine the movement in greater detail.

"Money is like manure. If you let it pile up, it just smells. But if you spread it around, you can encourage things to grow".

--Thornton Wilder

Towards a Green Economy

Introduction

If ecovillages cannot maintain themselves financially, they cannot continue to exist. However the goal goes beyond mere survival into economic reform. The economic reform has three main goals: community self-reliance, sustainability, and social justice. A self-reliant economy is one that requires a minimum of inputs from external sources. A sustainable economy is one that relies on renewable resources and avoids causing environmental damage. An economy characterized by social justice would give everyone the opportunity to earn a good standard of living through dignified labor. Some ecovillages have made some progress on these goals, but others have been held back by various factors, or simply put their energy into achieving other priorities.

First this chapter goes through the economic theory behind these goals. Then we look at some examples of actual ecovillage economies, trying to understand how far they have come and what stops them from going farther. Finally, we use the lens of ecovillage experience to understand what barriers need to be removed if we are going to achieve greater success at these goals as a society. In this way, the lessons learned in the ecovillage can be useful in a larger context, confirming ecovillages in their role as "learning laboratories for a sustainable future".

Theories Behind Economic Reform Goals

First let's examine the theory which promotes self-reliance. The more self-sufficient a region, the less money it spends on transportation, and the more competitive it will be in a global economy in which fuel is scarce. If the cost of fuel rises, it will no longer make sense to have an economy so specialized that your snack has ingredients from three different continents. Using less transportation is also a contribution to the fight against global warming.

Self-reliance can mean more local autonomy and self-determination. A passionate localist

writes, "The variety of well-traveled goods certainly enhances the quality of our lives, but our growing dependence on them carries profound risks. The more essential an item is for our survival, the more dangerous it is to depend on someone outside the community selling it to us" (Shuman, 52). The economic dependencies can weave the community into a web of political dependencies.

The author gives the example of towns that survive only so long as the federal government continues to fund their weapons factories through defense spending. "A municipality dependent on federal dollars loses control of its economic future…. A community should never allow its economic heart and lungs to be hooked up to a blood supply thousands of miles away" (Shuman, 152). If your economic vitality relies on the decisions of an entity you do not control, your future is insecure. At least citizens have some minimal control over governmental decisions, but they have no control over decisions taken by corporate management. I could give the example of how my own Hudson Valley region in New York was plunged into economic decline by the departure of the mega-company IBM (Lueck). This is a plight echoed by local communities worldwide that depend on one capricious corporation for the majority of their livelihoods.

All this serves to illustrate why ecovillages place such theoretical value on localism Firstly, local economies depend less on fossil fuel based transportation. Secondly, self-reliance reaps dividends of freedom and political autonomy. Thirdly, a diversified local economy can be more resilient to fluctuations in the market. This is a matter of survival. If a village can enter into decline just because one company leaves or fails, then there's a problem with its economic structure.

However, even a good idea can be taken too far. Total self-sufficiency at the community level may be a questionable goal. As a member of the East Wind Ecovillage said, "It's one thing for these idealistic young people to say 'Subsistence farming is cool, because I'm healthy, and in my twenties,' and its quite another thing when we have a sixty-year-old member who might need forty thousand dollars for a bypass surgery". Some services (medical surgery is only one example) are easier to provide on the larger scale. Nevertheless, our mania for providing *all* services at the larger scale may not serve us well.

The next goal, sustainability, has a theoretical basis in ecological economics. E.F. Schumacher began this line of inquiry when he said, "A businessman would not consider a firm to have solved its problems of production and to have achieved viability if he saw that it was rapidly consuming its capital. How, then, could we overlook this vital fact when it comes to that very big firm, the economy of Spaceship Earth?" (15). According to this theory, earth's resources are "natural capital," which cannot be squandered but must be invested wisely.

Ecological Economics also says that environmental and social costs of pollution should somehow be worked into the prices of objects we buy, rendering them too expensive to be commonly purchased. As one professor explains it, "The 'externalities' that purportedly require the use of command-and-control regulatory techniques are actually traceable to the failure of the government to create and enforce well-defined tradable property rights to economically valuable resources" (Fosket et al, 219). For example, the government could charge for access to public waterways, instead of allowing factories to use them as a free disposal system.

Clever as this suggestion might be from the perspective of economic theory, the politics of implementation would prove unwieldy. If people are used to creating and purchasing goods cheaply, they will find cost hikes outrageous. Objective mechanisms for measuring "cost to society," would be next to impossible to create, with every special interest group in creation maneuvering to have the rules written in its favor. For these reasons, I don't think taxing and legislation will necessarily lead to rational outcomes.

So ecological economics provides a sound argument for protecting our natural capital, but policies to accomplish this are hard to create. This is why we see a shift in focus from the taxation and regulation to the "ecopreneurs". Ecopreneurs start businesses that promote sustainability. One scholar identifies four main sectors of this green business surge: wildlife habitat preservation, environmental technology, environmentally friendly products, and consulting services (Schaper, 73). The habitat preservation usually gets its funding from eco-tourism; for example, the business might purchase a nature reserve and support its conservation efforts with revenues from wildlife adventure walks, rental cabins, gift shop, etc. (Schaper, 216). Many ecovillages host ecopreneurs.

The World Business Council for Sustainable Development writes, "The old battle between those championing the environment and those advocating 'development' began to die down slightly when the two goals were seen more and more as inseparable sides of the same coin" (Schmidheiny et al, 11). There is also a "Greening of Industry" network, dedicated to, "aligning industrial development practices with sustainable development principles" (Jamison, 131). By using bywords like "ecological modernization," and "eco-efficiency," these groups have recaptured the language of progress, forestalling critics who would accuse environmentalists of delaying progress.

However, we should strongly consider the possibility that green business is over-hyped. A professor of Technology and Society says in his book, *The Making of Green Knowledge,* "Profit-making and environmental improvement can be combined, but it is certainly not obvious, or even logical, that they can be combined in all cases" (Jamison, 158). Ecopreneuring may alleviate symptoms rather than

address underlying problems. Rather than putting better players on the field, perhaps we should be changing the rules of the game.

The World Business Council on Sustainable Development points out analytically, "Efforts towards eco-efficiency by a company often reduce present earnings in favor of future potentials. Financial markets favor companies with high present earnings over those with future potentials" (Schmidheiny et al, 8). The idea that shortsighted greed is a byproduct of specific unwise financial regulations is much more optimistic than the idea that shortsighted greed is an inevitable consequence of human nature. Perhaps a change in financial regulations could unleash the potential of planning ahead.

The theory behind the third goal of social justice (or equity) is especially interesting. Schumacher said, "If we can recover the sense that it is the most natural thing for every person born into this world to use their hands in a productive way and that it is not beyond the wit of man to make this possible, then I think the problem of unemployment will disappear." Our current economy has been very successful at creating large numbers of goods at low prices. However we have not yet met Schumacher's challenge of finding adequate employment for all. Until we solve this problem, inequality is going to be especially bad.

Attempts to enforce equity through communism have achieved some well-publicized failures. The failure of one strategy should not keep us from producing fresh thinking on the subject, but often it does. The legacy of communist failure is stifling thought and debate on this issue. People who plead for equity can be accused of being communists, no matter what philosophy they are actually advocating. One political researcher wrote, "Corporate-funded, rightist libertarian think tanks like the Cato Institute and the Reason Foundation publish analysis and research supporting the Wise Use claim that green politics are the last vestige of communism's collectivist, One World Government plot to subjugate the planet" (Burke). In this vein, members of the Wise Use movement have been known to call environmentalists, "Watermelons; green on the outside, but red to the core" (Burke).

Derudder, who popularized ecovillages in France with his novel, *Adventurers in Abundance,* has an interesting chain of reasoning which points towards underlying causes of inequity. Ever since the Industrial Revolution, goods have been easy to produce, creating a labor surplus, he reasons. If about five people can easily produce the flood, clothing, etc. necessary to feed and dress one hundred people, what are the other ninety-five going to do for a living? Some of them may invent reasonable jobs for themselves, but others will remain unemployed, or (I would add) go into advertising.

Derudder is mainly concerned with the unemployment problem, but I want to take this

"advertising" train of thought a little further. The role of advertising is usually to create a desire where none previously existed. The plus side is that more people can be employed, not only creating the advertisements, but producing the good that prior to the advertisement was considered unnecessary. Unfortunately, this comes with a certain social cost; namely, millions of people are wasting their money to satisfy artificially manufactured desires. In the context of a finite earth, this is a *disaster* for resource management.

Overconsumption has been glibly attributed to human greed, but we may be laying the blame at the wrong door. People only earn a living so long as they can convince someone, "You want what I produce." It seems to me that the much-criticized trend towards consumerism is due to the ingenuity of people striving to remain employed in an era when a large labor force is no longer strictly necessary. People are shocked and disgusted by a society in which conspicuous consumption exists alongside the starving and the unemployed. Perhaps this is the natural consequence of certain structural forces we can understand and analyze.

Once we begin asking ourselves questions like, "What is the purpose of an economy? What do we really want the economy to do for us?" we are getting at the heart of the issue. Too long we have viewed the vagrant fluctuations of the economy, which produce so much human suffering, as akin to some unstoppable force of nature. The economy only exists because human beings invented it; we should be better capable of designing it to serve us well.

The laws of economics, unlike the laws of physics, are not written in the fabric of the universe. As the author of a book on *Whole Earth Economy* wrote, "Understanding that the economy is dependent on circumstances and not governed by contrived 'laws of nature' is a liberating insight. It makes people realize that they can choose alternatives, and it makes clear that our current circumstances require a different approach" (Brown, 29).

So what is the purpose of an economy? Is it a mechanism for the efficient allocation of goods and services? Richard Register, author of the book *Ecocities,* complains "Much of what we think of as efficient is just getting things done quickly that are pointless or dangerous and therefore shouldn't be done at all" (90). Rather than looking at how much we are producing, we should look at *what* we are producing. Are the things we are producing truly improving quality of life? Only by asking ourselves these more difficult, qualitative questions, can we truly ascertain whether our economy is "developing. The GDP attributes the same level of growth to your country whether you make a $10 million dollar bomb or grow $10 million dollars of potatoes.

So how should we measure whether an economy is fulfilling its goals? One idealistic author

believes, "The economy should bring an intensification and a flourishing of all the productive, provisioning, service, and trading activities that create and support the integrity, resilience, and beauty of life's commonwealth" (Brown, 36). This definition of a successful economy nicely unifies all three points about self-reliance, sustainability, and social justice.

Ecovillage Case Studies

Now we've brought the theory together, let's look at some actual ecovillages. An ecovillage should be like a miniature society producing many of its own essential services. Some ecovillages approach this ideal; others have a long way to go. It seems very clear that creating such conditions is extremely difficult. By looking at these case studies, I hope to understand the underlying causes for barriers to a sustainable economy.

Often you see the pattern of an ecovillage growing around the nucleus of one successful green business, and then adding other green business as it grows and matures. For example, La Cité Écologique de Ham Nord in Quebec was founded in 1984 to support an alternative school. Originally all the jobs in that community were related to the school, but now they have branched out and have several cottage industries within walking distance of the school: a natural-fiber clothing business, organic fruit and vegetable production, an organic restaurant, a bed and breakfast, and a health center (Carbonneau).

Another example is the Farm Ecovillage in Tennessee, which grew around the nucleus of a farm to become a larger community with a total of about twenty businesses. The majority of these are cottage industries. However, they also have some larger enterprises. One is a book-publishing company focusing on topics like vegetarian cooking and Native American spirituality (perhaps we should add "sustainability education" to the original four-part typology of green business). The other is a business that manufactures hand-held electronic radiation detectors, which people buy to see if their home is safe from nuclear radiation.

The business was started after Farm activists went to the Supreme Court with the nuclear issue and lost their case. Failing the legal solution, they tried to address the issue of nuclear safety using technology. The business employs twenty people full-time. My interviewee told me, "We got 10,000 monitor orders after Chernobyl. The radiation fallouts and terrorism threats we've been having lately have also boosted business considerably" (Farm Interview). The interesting thing about this business, is that it flourishes most when people perceive more threat and danger in mainstream society

It's not just the radiation monitors either; ecovillages often benefit in one way or another from waning confidence in mainstream society. One ecovillager told me, "one summer when CNN talked a lot about Peak Oil... there was a HUGE spike of interest in Ecovillage at Ithaca" (Ithaca Interviews). A Findhorn ecovillager said their sustainability classes had been bringing in more revenue ever since the economic recession hit. "We're hoping to have some solutions to a changing world. We've been doing well since the recession, because people would rather spend their money here, than put it in a bank that might collapse, I suppose," he said.

But competing with the mainstream economy (however much people might lose confidence in it) is a formidable task. I've been bringing up examples of ecovillages that managed to create relatively independent economies. But these successes are the exception rather than the rule. Often ecovillages become stuck for many years in the "fledgling stage," where their economy mostly relies on a single industry.

For instance, East Wind's economy is based largely on an organic nut-butter factory, which took off in the 70's and became so profitable that it eased the urgency of starting other forms of business (East Wind Interview). My East Wind interviewee complained, "I want us to be more nimble, I don't want us to suffer every time some asshole in Georgia taints the nation's peanuts supply-- the salmonella scare really hurt us, I can define that in dollar values! ….Forces that had nothing to do with us are making our lives more difficult. Nobody moves to community to have a shitty high-pressure sales job. My definition of success is that nobody has to spend hours on the phone doing sales."

Basically, the road to community self-reliance can be very long and bumpy. When I talked with the East Winder about their plans for diversifying their economy, he said, "I think with the baby boomers, the death industry will soon have a huge boom. There will be markets for green cemeteries and green caskets and natural burials, we're looking into all this stuff. We are also thinking of opening a conference center." No matter how much you believe in community self-reliance, there's considerable pressure to cater to the needs of the larger society of which you are a part. Because like it or not, that's where you can find money most easily.

Even the organic food and natural fiber cottage industries I have been praising frequently cater to the wealthy sections of mainstream society. If you were going to assess the degree of genuine localism that has been achieved, you would have to ask these industries, "Where's your customer base?" And if most of the customer base was outside the ecovillage, and the people inside the village weren't able to afford the goods... well, then you're not really reforming the system.

The economic self-reliance agenda doesn't always hit the top of the priority list. Some villages may be simply concerned with earning a living, while pursuing green agendas in areas other than economy. At the Ecovillage of Ithaca, a large bulk of residents either commute to jobs in the nearby city (many of them are employed at one of the universities) or e-commute through their computers to jobs in cities even further away. There are some issues with zoning laws that prevent all but the very smallest companies from operating out of the village. On the plus side, higher-paying jobs help with affording the latest in ecological design.

One business model that's been very successful has focused on tourism and education. In most ecovillages tourism is at least a part of the economy; but in *Ecolonie*, tourism is the main source of income. Visitors number more than 2500 each year. They come to *Ecolonie* for space, fresh air, green surroundings, and first-class accommodations (*Ecolonie* Interviews). They take creativity workshops and classes in sustainable living. Although sustainability education is very important in the larger picture, tourism-based economies are very far from self-sufficient.

The statistics on small businesses reveal that the majority fail a few years after starting up. Contending with these kinds of odds, it is no wonder that ecovillage economies grow slowly and painfully. Businesses with a social as well as a profit agenda sometimes must face painful decisions about how to split their energies between conflicting goals. Fledgling technologies and ideas are forced to compete immediately with fully developed competitors.

This is illustrated by a case study of ecopreneurship in the ecovillage of Guede-Chantier in Senegal (2009). My friend was one of the ecopreneurs, and she described her project this way: "In Senegal, while credit and loans are available to farmers in most areas, herders are unable to access the necessary funds to mitigate the impact of inherent risks. One American/Senegalese project team focused on creating a *tontine*, or savings and loans group for herders. They did so by organizing village herders and helping them learn the fundamentals of composting in desert conditions. The goal of the project was for herders to educate their village peers and to sell their compost to community members and farmers. The money earned through this process would be used to fund the *tontine*, allowing the herders to withdraw funds in times of hardship" (Goldstein).

Although the students were successful in persuading the herders to make compost for their own fields, they ran into problems when no one agreed to buy the compost. Since the villagers considered composting a new and unproven idea, they were unwilling to invest their hard-earned money in it. However, these events occurred only a year before the time of this writing, so there is hope that in future years, compost may begin to sell.

This story is a good illustration of the barriers to entry that beset many ecopreneurs in both developed and developing countries. Ecological technologies may be greeted with suspicion, in comparison to established ways of doing business. A severe shortage of capital and liquidity can make people unwilling to invest in anything that appears risky. This impedes innovation and slows "eco-modernization."

When you consider the agenda of equity, you find a diverse portfolio of solutions. Ecovillage economies vary widely in their degree of "socialism." *Ecolonie*'s permanent members hold the land in common, and this step away from private property is one of the accomplishments they take pride in. The Ecovillage at Ithaca is relatively capitalistic; everyone has their private incomes and their private home. Ecovillages like Twin Oaks and East Wind are income-sharing communes, but they are the exception rather than the rule.

Some ecovillages, like the Farm in Tennessee, started out as income-sharing communities and later switched over to private property. My interviewee at the Farm explained, "Financially, you can't do it on a shoestring. The communal years were very lean indeed... It was managed in a way that allowed things to mushroom and balloon so that eleven or twelve hundred people were here, seven hundred of them under age ten, and only three hundred people were working for income from the outside. So it collapsed under its own weight... but we still hold land in common, we take care of waters and roads together. We're still communal in ways. But everyone's income is their own responsibility now. We're more of co-op now." The switch helped the Farm continue to exist.

This reliance on income from the outside is the Achilles' heel of ecovillages. Of course it's almost inevitable that you use capital drawn from the mainstream economy as a starting point for your green businesses. The danger is then becoming addicted to that outside income permanently. If that is the case, the economy is unlikely to move beyond the fledgling stage and become independent.

One tool to strengthen the local economy and discourage capital flight to distant places is a local currency. Since local currencies are valueless outside their specific area, they can be used to ensure that currency earned in the community, is spent in the community. Many ecovillages have local currencies; Findhorn has the ''eco,'' EVI has the "Ithaca Hour," and Dancing Rabbit has "Greens." Alternative currencies can also be used to encourage equity. "Advocates of alternative currencies say they are a means of empowerment for those languishing on the margins of fiscal life, granting economic agency to people like the elderly, the disabled or the underemployed, who have little opportunity to earn money," reported Time Magazine (Schwartz).

The book that popularized ecovillages in France has many pages of enthusiastic advocacy for

something called the SEL, or *Systeme d'Echange Local*, (Local Exchange System). After joining a SEL network, you get points each time you provide goods or services to someone else in the SEL. Every time you receive free goods and services, you lose points. Negative points are discouraged, which prevents freeloading. It's more efficient than a straightforward barter system, because it's not a direct exchange. You might get your goods from one person, and give your goods to a completely different person, and you're still fair and square with the system.

The website SEL'idaire (a pun on the French word for solidarity) keeps track of the different SELs worldwide, and explains that SELs were founded in protest of an unjust monetary system. (Translated) "This archaic and obsolete monetary system continues to reign, ravaging humanity, and our narrow-sightedness is so powerful that we can no longer see what is happening, here on our own earth. This unhappy realization is what caused SEL to be born, first in Canada, then in France in 1995. Now there are a few SELs scattered all over the world, and more than 300 in France" ("SEL'idaire").

One critique of communism is that it does not reward extra effort with increased salary. The SEL is a creative solution in which effort is still rewarded, but inequity cannot gain much momentum. It doesn't do any good to hoard points because you can't really invest them, so these huge capital disparities cannot build up. This is both good and bad. For example, what if you need to purchase a house? How can you do that with SEL points? SEL probably doesn't have the flexibility and usefulness necessary to replace our current economic system, but it's an interesting supplement.

On a similar note, the French Ecovillage Network website advertises RES, *Réseau d'échanges de savoirs (*Network of Learning Exchanges). The RES was created in the 70's by a French schoolteacher with the philosophy, "everyone knows something and can teach what they know" ("*Reseau Francais des Ecovillages*"). It is very similar to the SEL, except people are exchanging lessons on interesting topics, rather than goods or services. The idea is to end the inequity that bars some from accessing an education.

So ecovillages can develop novel economic models and unique solutions to the equity problem. Successful income-sharing communes are relatively rare. But having common land or a Common House while living off separate incomes is common. This Common House model has a substantial pay-off; by sharing resources you can maintain a higher quality of life on a smaller income. One ecovillager characterized a $15,000 annual income as being "twice as much as I need" (Earthaven Interview).

Strategies for Getting Closer to Economic Reform Goals

Now that we've examined both theory and case studies, let's discuss strategies for closing the gap between the reality and the dream. The conclusions can be useful not only to ecovillages, but to other communities and projects pursuing similar economic reform goals.

Ecovillages are having a hard time with this green economy task because they have to build their infrastructure from scratch. Of course you can't say: "Okay, everybody don't eat for a few years until we figure out how to make this farm thing work out!" The separation from the mainstream economy can't be abrupt, or it's going to be tremendously painful. There needs to be a weaning process, and if you're not careful you just get stuck at some intermediate stage. Of course, there's a point where you can say, "We're independent enough. We can stop now. It's okay that these few goods and services be provided from the outside," but where is that point? How local is local enough? I'm not sure; this can be extensively debated.

According to the U.S. Small Business Administration, one out of four new small business fail within two years, and nearly 70% fail within eight, mostly because of undercapitalization (Shuman, 189). These are the odds we are dealing with. Even with a sound and profitable idea, the green business could buckle under due to insufficient starting capital. Here there is a role for grant-giving agencies like the Gaia Trust in Denmark, which give grants of start-up capital to ecopreneurs. A lot of mainstream environmental organizations are still locked into the charity model. If they diverted some of their funds into green capitalism, perhaps they would make a greater long-term effect.

But why do green businesses sometimes have difficulty competing? The standard answer is that doing things the "ethical" way is always more expensive, but like every truism this deserves a certain degree of skepticism. If an eco-friendly product is more expensive and has a harder time competing in the market, there may be some hidden reasons for that.

One benefit of doing business the regular way is that you have the tremendous advantage of this enormous support structure. If you are a contractor building houses from concrete, there are hundred suppliers you can call. If you are building houses from recycled papercrete, there are no factories and you're probably manufacturing your papercrete with something you jury-rigged in your garage. So does that mean only giant corporations with huge factories at their beck and call can succeed? Not necessarily. There are ways to offset the disadvantages of smallness.

One economist concluded after an extensive study of ecopreneurs in Australia, "The way to offset the disadvantages of smallness are through networking and clustering, due to benefits of shared

resources, interaction, and belonging to a greater identity...Cooperating within a geographic region can provide individual entrepreneurs and firms with a broader identity that can be utilized in marketing, attracting investment, lobbying for regional development and securing government assistance" (Schaper, 146). For example, organic growers in a region could develop an association with a shared logo. By marketing this logo collectively, they could cut down on their individual advertising budgets. Or they could pool funds to pay a lobbyist to support their shared interests, something which usually only larger companies can afford.

More low-cost adult education programs in accounting and management could make an enormous difference. There are likely a substantial number of would-be green entrepreneurs who are not acting on their ideas, because they don't have the self-confidence to make a business plan and apply for a loan, and feel intimidated by the numbers. Some activists also badly need to change their attitude towards money. Nothing can be gained by sneering at money and considering yourself above the pursuit of such filthy lucre. In the end, an aggressive attempt to educate yourself about money will probably help more than anything else in the pursuit of noble goals. Diana Christian included a lot of financial and legal education in her book, *Creating a Life Together; Practical Tools to Grow Ecovillages and Intentional Communities,* and one ecovillage founder was quoted in the preface as saying, "If I'd had this book from the beginning, things would have been so much easier for me."

Ecovillages seem to be pretty good at promoting equity within their borders. Since they are intentional communities, and most of them share at least some common resources, it's harder for someone who lives there to slip through the cracks. The key insight that sharing resources means using less money total can also be applied on a broader scale. For instance, a developer could create a low-footprint apartment building with many shared facilities and market it as "green community housing." The shared facilities would not only bring the price down for lower-income families, the social capital incurred thereby might help them prosper economically.

However, the mainstream economy has a strong grip, even on those who are pouring all their energies into creating an alternative. Times of unrest and uncertainty are when you see that grip slipping. When there's a nuclear meltdown; when there are terrorism threats; when CNN talks a lot about Peak Oil; when we enter a global economic recession; that's when you see people doing more research into alternatives. The strife serves as a catalyst for inquiry, causes people to start questioning some basic assumptions. So people who are promoting economic alternatives can use those instances of breakdowns or stress as arguments in their favor. For example, if someone says, "Invest in a credit union pursuing community reinvestment? That seems a bit risky," you could ask, "And these

mainstream banks with their federal bailouts? How risky are they?"

Conclusions

The infrastructure for the green economy is slowly materializing in response to people's worries about our collective future. First, we need more cooperation among small businesses and ecopreneurs engaged in similar tasks; this will give them the heft to compete with their mature adversaries. Second, we need to find a way of training the idealists out there to become financially competent, well versed in budgets and spreadsheets and bylaws. Third, the green economy needs to market itself more aggressively. On the negative side, it can market itself by taking advantage of the social unrest produced by dissatisfaction with the mainstream economy. On the positive side, it can point to the concrete gains that can be achieved by sharing resources.

"If we are to continue to shelter and feed the people of the world in the coming centuries, we will have to design in a different way than we do now."

– New Alchemy Institute (Todd).

Towards Green Buildings and Transportation

Introduction

Ecovillage have two major goals for reform in the area of buildings and transportation. Their first goal is to bring down the total use of energy and materials. Their second goal is creating infrastructure that is uniquely adapted to place and fits seamlessly into the local ecosystem. They've developed innovative ways of reaching these goals, in the face of four key barriers: the inertia of the existing infrastructure, legal restrictions, prohibitive start-up costs, and political resistance of various kinds.

If society as a whole decides to shift to a greener infrastructure, it can expect to encounter the same obstacles that ecovillages have run up against. Ecovillages in their role as trailblazers have discovered both new solutions and key problems. Awareness of these problems can help us plan for the shift into green. This chapter examines energy-conservation strategies and architecture adapted to place, then looks at obstacles to implementation and suggests paths to success.

Reducing Energy Use of Buildings

Energy-efficient buildings both reduce use of fossil fuels and bring down utility bills. A combination of insulation, energy-efficient appliances, and passive solar features can cut utility bills by as much as 80% (Heckeroth). A passive solar building might let heat in through large southern windows, and be sheltered by a hill from cold northern winds. Plant-covered trellises over windows are another passive solar feature; in the summer, the leaves provide shade, but in the winter, the sun can shine between the bare stems and heat up the building. Some green buildings may also include installations for producing energy from renewable sources.

One useful strategy for bringing down resource consumption is the use of recycled materials in building. Cordwood masonry (putting log ends into cement) uses junk wood unsuitable for building.

"Earthships" are dugouts whose walls are shored up with old tires; when the tires are hidden from the sun, they can no longer leach harmful chemicals, and they form very strong walls. "Papercrete" (or *liant-papier*, in French) is a recycled paper slurry mixed with a little concrete, to form hard light blocks. The production of regular concrete leads to a relatively high emission of green house gases, between 0.29 and 0.32 t CO2-e/m3, so papercrete is a good alternative. (Flower et al). The green architect should also think about the life-cycle of all his supplies; everything should be decomposable or reusable.

Reducing Energy Use of Transportation

Creating buildings that waste less energy and recycle resources is a simple engineering task. Sustainable transportation, however is as much a social problem as an engineering problem, involving as it does people's preferences about where to live and locate their essential services.

Ivan Illich writes, "The automobile has created more distances than it has bridged," and explains how we have become structurally addicted to cars (Register, 142). After the car made transportation cheap and easy, people started building their homes and businesses in ever-more remote locations. This created sprawl, endless areas where life without cars is inconvenient or impossible. The problem of urban sprawl varies from country to country, but it is a growing problem worldwide.

So how do ecovillages fit into this picture? In some ways, the ones that are located in rural areas are only making things worse. Unless the ecovillage provides total on-site employment (somewhat rare) commuting is a necessity. Even when public transit exists, people may not use it because it is too inflexible to suit their schedules (Ithaca Interviews). Car-sharing practices can cut down on total cars, but don't necessarily do as much to bring down total gasoline use. The more isolated and rural an ecovillage is, the more energy its commuters burn, contributing to global warming.

One solution is to move the ecovillage into the city. City dwellers can take advantage of urban density and public transit systems to minimize their contribution to global warming. In his book *Ecocities,* Register writes, "Cities are blamed for the sheer quantity of their population and pollution and for their demand for energy and other resources, but if the same number of people with the same level of consumption were more dispersed, their impacts would be far greater"(49).

So we can argue that cities have a condensed ecological footprint. But on the other hand, what

about the cost of transporting food, water, etc from the surrounding countryside to feed the people in the city? Furthermore, do cities isolate people from nature? Some of these concerns can be addressed by innovative ecological design of cities. For example, urban farming and roof gardens could ease the pressure to import food, while making greenery part of the cityscape.

This logic has caused a few ecovillages to locate themselves in city neighborhoods. For example, the Los Angeles ecovillage bought a block of city apartments and restored them as living quarters for their intentional "ecovillage" community. They host organic gardening projects, a bicycle co-op, and workshops like, "The Bus-Rider's Union; Re-envisioning Urban Transportation and Building a Mass Movement for Civil Rights and Environmental Justice" ("Los Angeles Ecovillage").

On the social level, re-envisioning city neighborhoods as "villages" could do something to mitigate big-city anonymity while building community cohesiveness. Admittedly, urban ecovillages might not be able to take their farming goals as far as their rural counterparts. But other goals, such as sustainable transportation and economic vitality, might be easier to accomplish while in a city. Ultimately, the ecovillage movement needs both its urban and rural branches to succeed. And urban ecovillages remain at a slight disadvantage because "getting in touch with nature" while living in the middle of the city seems so counterintuitive to most people.

"Natural" Architecture

Although I have by no means exhausted the topic of energy usage, I will now move on to my second topic, "architecture adapted to place," or "vernacular" architecture. This system of architecture is distinguished by the use of natural, locally available materials, and the expression of human creativity and regional identity.

The political philosophy of this is expressed on a French website devoted to natural building: "A human group identifies itself by its culture: its architecture, its arts, its agriculture, its beliefs, its language... is it necessary to rejoice in the artificial internationalization of architecture, etc...? Say no to standardized architecture, maladapted to the local environment, created by the speculation of the industry" ("*Biomateriaux*"). This architecture is not only bland and homogeneous; it builds itself at the cost of ecosystems.

"Re-indigenization," is the vocabulary sometimes used to describe this return to a unique regional identity and culture that respects the earth. One leader of the movement explains, "Over several generations, we can imagine a distinct architectural style evolving in each bio-region, along

with a unique system of food production, and so on, all of which will reflect what local people know about their climate, resources, and ecosystems" (Kennedy et al, 86). "Indigenous" can be a controversial term, but I do not use it here in the sense of native peoples; I mean it in the sense of "belonging" to a region. The idea is that buildings should fit smoothly into ecosystems. Architect Carol Venolia writes, "The buildings to which we have become accustomed in Western civilization reinforce the myth that humans are separate from the rest of nature" (Kennedy et al, 36).

Green architects try to design buildings to connect people with nature. The layout of an ecovillage should encourage biodiversity to flourish within the village itself. A book entitled *Land-Use Planning for Sustainable Development* explains the importance of interweaving the urban and the natural: "When we see land as a community to which we belong, we may begin to use it with respect and love" (Silberstein, 188).

One way to preserve nature is to use "natural" building materials. The founder of the Natural Building Colloquium defines natural building as "any building system that places the highest value on social and environmental sustainability" (Kennedy et al, 6). Natural buildings tend to be small, made with locally available and renewable resources. Frequently they are created using simple techniques so the owner can help build his own house. Unlike mass-produced houses, these can have unique designs that express their owner's creativity. Possible construction methods for these "natural" buildings include strawbale, cob, cordwood masonry, adobe, earthbag, rammed earth, dugout, and houses made from recycled materials.

In France, the *auto-ecoconstruction* movement (self eco-construction, building your own home) is blossoming in interesting ways. "Participative building sites," are advertised as venues where people can connect with one another while learning new skills. One article explains the three-fold benefits of *chantier participatif* ("*Formation Organiser un Chantier Participatif*"). (Translated) "You will learn how to do it! (*savoir faire):* 'I will give you a hand in constructing your walls— and then I will know how to construct my own walls.' You will learn how to be yourself! (*savoir-être)* 'Live together for a few days, share about our life experiences; confront our everyday reality; learn to talk, respect, accept, and find the marvelous in one another.' And lastly, you just learn (*savoir)* 'I teach you the principles of bioclimatism, and you teach me how to make bread.'" The goal is not only to build the house, but to foster an atmosphere of collaboration and exchange.

The personal connection one can feel to a self-built home is another selling point for natural buildings. The chance to design your own built environment, rather than live in a mass-produced one, could draw people to invest in ecovillage properties. Barbara from the Ecovillage at Ithaca

commented on how people enjoyed building their own structures: "This place is nice for the guys. For them, the Ecovillage is like one big erector set."

Probably more people would do self-construction if the logistics were not so intimidating. Getting a building permit, creating your own design, figuring out materials (with the possibility of the roof collapsing if you do something wrong) is a formidable task for a lone builder. However, a supporting literature for natural builders is rapidly evolving.

However, this paradigm of ecological building is directly opposite to the one discussed in the beginning of the chapter, which focused on density and reducing transportation. Is the truly ecological building the self-hewed cabin in the woods? Or, given the realities of an ever-increasing world population, is the ecological design found in a cluster of skyscrapers? I suspect a truly viable solution will ultimately include examples of architecture from both strains of the movement.

Obstacles to Green Building and Transportation

I will now begin my in-depth discussion of obstacles to green building and transportation. The inborn inertia of the status quo is responsible for many of them. For example, zoning is still one of the biggest stumbling blocks for would-be natural builders. Lobby groups have been formed to help change laws that discriminate against natural building. For example, the European Straw Builders' Network lobbies governments to promote sustainable housing, as well as teaching workshops that demonstrate natural building techniques ("The Last Straw Resources"). Online wikis are spontaneously forming to teach natural builders their way around the zoning laws.

Cost still remains a substantial barrier to living in green homes. David Bainbridge, a professor of environmental studies, claims, "If we had more flexible building codes and gave home photo-voltaic installations the same subsidies we gave utilities, it would probably be cost-effective to build a solar stand-alone straw bale house with super-efficient appliances" (Kennedy et al, 32). But in the absence of favorable government policies, how to overcome high costs?

The tour guide at Ecovillage at Ithaca explained, "When people buy houses in the Ecovillage, their down payments have to be much bigger than what banks usually charge. That's because Ecovillage is kind of a new idea, and banks are suspicious of what they don't understand. You can't really get a house here unless you can find a 40,000 dollar down payment. That's because co-housing is not a recognized financial model." The resistance to new ideas takes place at all sorts of different levels, usually with the effect of driving up costs. Also on the subject of costs, the tour guide said:

"Houses here can be very hard to afford sometimes. Roughly speaking, it can be ten-fifteen years before you recoup the house's extra cost through energy savings. But it is an investment, no doubt about that."

Houses along the Ithaca model would only be accessible to the upper and middle classes. The poor would simply be unable to invest in these energy-efficiency features (no matter what dividends they reaped in the long term) because of the initial cost. There are some financing models that address this, notably a system in which the cost of insulating your house is gradually paid off through slightly increased mortgage payments. In the absence of such creative thinking and financing systems, green homes remain difficult to afford.

Summary of factors driving up cost: some of the more innovative materials do not benefit from the efficiency of mass production. The process of getting zoning permits for an unusual building can be expensive, in terms of time and energy if not money as well. If the owner does not have the expertise to do his own design, a green architect may charge higher fees. Systems for generating electricity off-grid can be quite expensive.

Some of these are the natural start-up costs of pioneering a new field. If natural materials become more popular, mass production could drive down some costs. On the legal side, some cities are already updating their building codes to reflect the concerns of green architecture. Likewise, if green architecture expertise becomes more common, the consulting fees will not be so stiff. The solution to a lot of these problems is time and persistence.

Some issues are not so simple however. Register relates how a group called Urban Ecology worked in Berkeley in the 1970s to create ecological neighborhoods, only to founder in murky political waters. Their story is illustrative of political and class issues that the green movement must consider. When a plot of city land was being considered for redevelopment, Urban Ecology drew up beautiful plans for a mixed-used housing development. In mixed-used buildings the need for transport becomes absolutely minimized because there is living, shopping, and working all under the same roof. Urban Ecology enlisted allies for their plan, only to be astonished by opposition from low-income minority advocates (Register, 234).

Three plans were being proposed for the site in question: an industrial park, a low-income housing development, and the ecological mixed-use housing. The minority advocates weren't against the ecological housing per se, but they absolutely opposed the industrial park. They thought the low-income housing would be easy for people to understand, whereas the mixed-use housing plan would just confuse people, and lose political support. So in a shrewd move to remove competition for their

plan of choice, they circulated slander about the Urban Ecology project. Maybe they were also concerned about the ultimate affordability of the ecological buildings.

Today, a similar organization, Ecocity Builders, still works in Berkeley as an advocate for mixed-use housing. Their many interesting projects include digging up paved-over creeks and transforming them into nature preserves. So the campaigning continues. Much can be learned from Urban Ecology's political failure however. In a word, if the environmental cause does not place a high value on social justice, they will always be politically vulnerable. Outreach to minorities, and a focus on controlling the costs of the ecological apartments, might have snatched success out of the jaws of defeat for Urban Ecology.

Conclusions

Unsustainable buildings and transportation benefit from a giant infrastructure explicitly designed to support them. Laws permit them, banks loan them money, factories provide them with supplies and schools train professionals how to make them. Governments build highways for the gas-guzzling cars. A global economy based around resource extraction, provides an endless series of cheap and tempting options to distract from natural and local materials. Under these incredibly adverse circumstances, green alternatives are still managing to grow and flourish, largely because of ideological commitment. The reason for this commitment is simple: these options are probably the best way to ensure our prosperity moving into the future. That is why the green infrastructure is steadily growing.

Questions still remain to be solved. How can we balance social and environmental justice goals? How can we balance the need for urban density with the need to stay in touch with nature? The experience of ecovillages all over the world shed light on these issues, so that we can plan our steps into the future.

"We will need to "green" whole cities. We will have to build thousands of wind farms, install tens of millions of solar panels, and retrofit millions of buildings... Reversing global warming will require a World War II level of mobilization."

--Van Jones (58).

Towards Renewable Energy Use

Introduction

Jonathon Dawson, a director of the Global Ecovillage Network, teaches sustainability classes and the first question he poses his students is, "Describe the various ways in which we eat oil" (Dawson, "Surviving Peak Oil"). Both metaphorically and literally, we are ravenously "eating" fossil fuels because we depend on them to survive. Vast supplies of cheap energy support our unprecedented levels of global population. Of course, these reserves are finite and sooner or later we will need to transition into another way of fueling civilization.

This chapter will describe green technologies and a variety of alternative energy options. I will analyze the barriers to renewable energy, and show how ecovillages are showing leadership in this field. By contextualizing ecovillages in the larger picture of the energy question, I will underline their significance as learning laboratories for a sustainable future.

Ecovillages everywhere grapple with the question, "How do we avoid using more energy than we produce?" Eco-friendly technologies fall into two categories: those that produce energy from renewable resources (solar, wind, geothermal, etc) and machines that use less energy through increased efficiency. I argue in this chapter that creating renewable energy and reducing demand for energy are the most important. Designing efficient alternatives to inherently questionable technologies will only take us so far.

A biodiesel pioneer writes, "We have spent the last century and a half building giant top-down, oppressive energy infrastructures that require that we move mountains and start wars to maintain. Along the way we have forgotten that energy should be generated where it is consumed" (Estill, 139). This is a recurrence of a familiar theme in the Ecovillage Movement: food should be grown where it is eaten, building materials should be sourced from building sites, and finally, energy

should be generated where it is consumed. We should be part of the surrounding ecosystem, not basing our lives off materials extracted from a distant site.

Pressure from Impending Peak Oil

Many ecovillagers expressed in their interviews a belief that a "Peak Oil" event would cause a swing in mainstream society towards an ecovillage lifestyle. Dawson has a more pessimistic view of Peak Oil however. He inquires skeptically if the Peak Oil Crisis can possibly "be so serious enough to force the disintegration of global capitalism but not so serious as to cause deep and widespread suffering in the general population? And what of the likely authoritarian reaction of the state, using the opportunity of crisis to strengthen its powers?" ("Peak Oil"). Although a gradual and peaceful shift to less energy-intensive modes of production is possible, Dawson says "much more plausible is a scenario in which global supply lines crumble and food shortages follow in short order. What follows then is unlikely to be pretty," he claims ("Peak Oil").

I disagree strongly with Dawson about the likelihood of a total crisis scenario. However, I agree that ecovillages should be taking the implications of a post-petroleum world more seriously. One of Dawson's most cogent criticisms is, "Ecovillages, especially those that are dependent on income from educational activities, often prioritize relations with their consumer base or ideological allies in cities and countries far away over those with their immediate neighbors" ("Peak Oil"). Ecovillages that depend on tourism and education revenues would no longer be viable in a world where expensive fuel posed a barrier to travel. If ecovillages took Peak Oil more seriously, they might put more of a priority on creating a local economy and ties with their neighbors. The classes are great because they spread ideas, but this extensive traveling is not necessarily a luxury we will have for long.

Efficiency vs. Sufficiency

Whether Peak Oil comes as a sudden disaster or a gradual change, sooner or later we will need to change the way we do technology. Many green technologies (for example, hybrid cars) focus on making existing technologies more efficient. But can efficiency alone be enough? "The Jevons Paradox is the principle that improvements in efficiency that result from new technologies often encourage even greater consumption of the energy or material conserved. Thus, electricity saved by

installing efficient light bulbs might be squandered on an air conditioner; people might feel better taking longer trips once they have fuel-efficient vehicles" (Brown, 80).

The celebrated researcher Wolfgang Sachs wrote along similar lines, "When relative improvement in resource use goes hand in hand with an absolute rise in resource use, not much is gained in ecological terms... It is for this reason that the efficiency perspective, if it is to become meaningful, must be embedded in a broader sufficiency perspective. The question 'how much is enough' cannot be avoided" (185). In other words, questions about how much we really need might be more relevant than questions about how to improve efficiency.

Suppose we created more efficient versions of all the machines we used now; we still might be consuming too much. So what if we used different kinds of machines, built a new kind of infrastructure instead? Specifically, this would take the form of: "Forget trying to build the 'green car' what we really need are some trains!" Or, "forget trying to make 'clean coal;' let's live communally and share the energy of a solar-powered common house." In this way of thinking, cars will never be green and coal will never be clean.

The value of simplicity is compellingly invoked by former White House Advisor and activist Van Jones, who writes in his book *The Green Collar Economy, "*When commentators evoke the 'green jobs of the future' our minds sometimes start conjuring up images at the far edge our imaginations. Perhaps we envision a top-secret California laboratory, where strange and mysterious geniuses are designing space-age technologies to save the world. We see cool and beautiful Ph.D.s wearing fancy goggles and green lab coats, turning the dials on strange and wonderful machines. Or maybe we see a courageous space cowboy in orbit, bravely constructing the solar panels that somehow beam down energy to our cities... Let's be clear, the main piece of technology in the green economy is a caulk gun. Hundreds of thousands of green-collar jobs will be weatherizing and energy-retrofitting every building in the United States" (9).

He is satirizing the widespread idea that "green technology" is high-tech and glamorous and impossibly complex. Many of the "greenest" technologies have been around for hundreds of years. We've always known we can save energy by insulating houses properly; the problem is financing and collective action, not lack of scientific expertise. Technological problems are always posed along the lines of, "we need a new discovery; we need a breakthrough invention." The sustainability problem might simply be a matter of learning to apply what we have *already* discovered.

Characteristics of Green Technology

Technology that imitates nature (also known as biomimicry) is a popular concept in this movement. (One example of biomimicry is velcro, which mimics the burr seed that sticks to your clothes.) The theory is that technology following the patterns of living things will fit better into nature. An ecocity advocate advised that we "use nature as a model for designing our own communities, lifeways, and technologies" (Register, 19).

In nature, pretty much every atom gets broken down and used as an atom in some other organism. So an example of technology imitating nature would be a product in which every component could be reused or recycled. To figure out whether a product meets this standard, something called a "life-cycle analysis" (also called technological metabolism) has been developed.

Another example of biomimicry would be adaptation to local conditions. Animals have different strategies for getting and storing energy depending on what environment they live in (rainforest, desert, tundra, etc). Thinking along the same lines, a machine should be built to suit the environment and terrain where you intend to use it. A coal plant (unsustainable technology) is pretty much the same coal plant no matter where you place it. In contrast, machines designed for extracting energy from renewable sources *have* to be adapted to the local terrain. In a desert, solar panels can benefit from long hot sunny days, but they wouldn't be cost-effective in a cloudy environment, for example. Every terrain has its own kind of energy-harvesting "creature."

Renewable Energy Pros and Cons

Another advantage to diversifying energy sources is that it increases resiliency. National Renewable Energy Laboratory specialists say, "Renewable energy micro-grids with decentralized management and control offer increasing degrees of grid reliability, stability, and resiliency in the face of power outages" (Penney et al, 12). An economy based on a diversity of energy sources would be very robust. If bad storms knocked down the windmills, then the solar panels could pitch in and vice versa.

Each renewable energy source has its own pros and cons. Photovoltaic cells have the advantage of being convenient and easy to purchase. You don't have to be some kind of expert to use them; provided you have the money, the company will install them for you. Once installed, they

require little maintenance and produce no pollution. On the con side, the process of manufacturing them does generate a fair amount of pollutants and uses up energy (Carless, 18).

Wind power can be less expensive than the other options (Carless, 38). Windmills are potentially dangerous to birds, but the scale of ecological disruption is nothing like that of a large dam. An unexpected source of opposition to windmills comes from people who think they look unsightly. A French website on the *pratiques* (practical skills) of building an ecovillage posted "An open letter to the primary opponents of wind-power," which passionately denounced their obstruction. (Translated) "I was profoundly shocked by the attitude of groups of people who fought against windmills from the start. What kind of world do we want to leave for our children? A world in which fossil fuels have been exhausted by a few generations of Westerners? A world which doesn't know what to do with nuclear waste? ...You say windmills look monstrous. The truth is, we have to take responsibility for our consumption of electricity" ("*Lettre ouverte à quelques anti-éoliens « primaires »*").

Hydroelectric power is even more controversial, since large dams can significantly disrupt local ecosystems or even flood villages. They also block the spawning paths of fish. But on the plus side, they are completely pollution-free (Carless, 63). Wave energy, tidal power, and geothermal energy, I pass over quickly because they require relatively high initial investments, which may be somewhat beyond the range of the ecovillage. Ironically, some of the larger and more complex renewable energy devices rely on the fossil-fuel based infrastructure to put them in place!

Ecovillages often experiment with biofuels. The major criticism of biofuels is that it takes too much energy to produce them, to the point where they may even be a net energy loss (Greer). However, I think this criticism is mainly directed at biofuels that process crops from resource-intensive cropland. Biofuels made out of weeds or used cooking oil may be a viable option. Recycling such materials into energy is more of an energy supplement than an energy solution, however.

Barriers to Renewables

Since all these options are out there, why are they so slow to gain market share? Why do fuels based on nonrenewable resources still dominate the market? The renewable energy technology is ready for wide-scale implementation. The US Department of Energy reported in 1993 that, "today it is technically possible for renewable energy to supply more than 250 times the amount of energy our nation uses each year" (Carless, 9). (Of course the adjective "technically" is key here; it might be

technically possible to service all the energy needs of the USA by paving all of Arizona and New Mexico with solar panels, but would such an approach really make sense?)

So are there economic reasons for delaying implementation of renewable energy? An economics professor writes, "the work on the adoption of existing energy technologies suggests that a relatively large number of technologies that make economic sense have not yet been adopted. Why has the diffusion of those technologies been inefficient?" (Fleming, 208).

The Union of Concerned Scientists did some research into the deeper causes of this phenomenon, and identified some key barriers to the implementation of renewable energy. New technologies cannot compete on a level playing field with mature technologies (For example, the mature technologies benefit from mass production while experimental models cannot). There are price distortions caused by subsidies to fossil fuels, and an unequal tax burden for alternative energies. There is a failure of the market to adequately value the public benefits of renewables, (perhaps due to the lobbying powers of entrenched fossil fuel interests?) and finally there are market barriers including inadequate information, lack of access to capital, and "split incentives" between building owners and tenants ("Barriers to Renewable Energy Technologies"). An example of a split incentive is a landlord who refuses to install solar cells, because the high prices his tenants pay for utilities is not his problem.

Noted environmentalist Robert F. Kennedy Jr. complains of the subsidies to oil and coal which distort the market, but he also blames, "an overstressed and inefficient national electric grid can't accommodate new kinds of power... [and] a byzantine array of local rules impedes access by innovators to national markets" (Jones, ix). Another author quotes the head of NASA saying "institutional and financial commitments to nuclear power have starved solar energy for decades" (Henderson, 92). This may be particularly true in France, one of the world's leading exporters of nuclear energy (Kidd).

Overcoming Barriers to Renewable Energy

So with all these factors playing against renewable energy, how can the transition be accomplished? One of the barriers the Union of Concerned Scientists mentioned was "inadequate information." A team of academics from the National Renewable Energy Laboratory concurs, saying, "Findings reveal that there is little information available on how to integrate renewable technologies as a system in community building design. There is a real information gap and need to share

renewable technology information with builders, developers, and stakeholders who are interested in pursuing renewable technology integration in communities" (Penney et al, 2). In the task of disseminating information, ecovillages play a role by offering lessons in topics from solar panel installation to biofuels.

In the end, political change is also deeply necessary. Ecovillages are having success with renewable energy systems because their idealism helps them persevere through the obstacles caused by unfair subsidies, etc. Less ideological parties will probably not follow in ecovillage footsteps if the government does not remove barriers to renewable energy's profits. However, the success of ecovillages in the renewable energy field could be a powerful argument on the side of those campaigning for the necessary political change.

Ecovillage Leadership

The Dancing Rabbit Ecovillage is a leader in community implementation of renewable energy, designing an off-grid system from the start. They rely entirely on solar and wind, but doing so requires they put up with considerable inconvenience. In an interview with a Dancing Rabbit member, I received this description of the experience: "My house is just solar (not solar and wind) which means it runs out more easily. We looked at forecast, and if there are five days of sun, okay, we can run some appliances. I used to be aware of electricity because of the bills, here I am aware because I might run out. We look at our battery every morning, green means we can use everything, black means everything is turned off... the kids are aware of the power levels, what they can use and what they can't."

"The first year, we had a whole week in February where we had to use candles. I had really romanticized this thing before moving here... for a week at time it's not too bad... I really want wind-power on our house, because sometimes the blackout just goes on for too long. It's frustrating if you have sick kids and need to be up in the middle of the night. Cooking with candles and a battery headlamp is not fun! Ugh, you just want to turn on the light. It is an adventure though, and I like it, I like the challenge. I complain, but I also kind of enjoy trying to make it work. I do all sorts of things to make it work. I don't shower very often, I wash up in the sink, and I feel kind of proud that we've made it work, by just being really conservative and thrifty with it" (Dancing Rabbit Interview).

The inconveniences described here are not things your typical consumer would put up with it. In fact, most ecovillages don't even have off-grid systems; Dancing Rabbit is especially advanced in

this regard. Either clean energy needs to become less inconvenient, or more people must be willing to resign themselves to the necessary thriftiness.

A Dancing Rabbit blog discusses whether Dancing Rabbit should eventually consider hooking their system up to the grid. This would stabilize them during unfavorable weather conditions. But during times when there was a lot of sun and wind, they might end up producing more than they could use and actually selling to the grid. The blogger explains, "My first reaction to DR hooking up to the grid was 'no way!' I didn't want to have anything to do with a system that uses coal and nuclear power – hooking up to the grid felt akin to sleeping with the enemy" (Anderson).

But then she began to consider the possibility that they could actually generate more energy than they consumed. People all over Missouri would then be using a little bit of Dancing Rabbit's power. She wrote, "I LOVE THINKING ABOUT THIS. It is always sunny and/or windy somewhere in the United States. What if those of us utilizing renewable energy (wind and solar) hooked up to the grid to share our excess electricity? Can we, by contributing our 'green' power, help with the huge culture shift that must happen to wean ourselves away from coal and nuclear power? What if dozens, hundreds, thousands, millions of individual homeowners and communities installed solar panels and wind turbines and sent power back into the grid?" (Anderson).

Calling the use of nuclear and coal energy, "sleeping with the enemy" is somewhat overzealous. After all, even the most advanced ecovillage is still tied into the mainstream economy in dozens of ways. Dancing Rabbit's off-grid system puts it ahead of many other ecovillages, but if industrial civilization is something everyone interacts with. As the blogger ultimately realized, working to reform the system is more productive than simply shunning it.

Tamera Ecovillage in Portugal is currently hosting a scale-model solar village design created by a scientist named Jurgen. Jurgen was researching solar technology applications for Africa, and he decided to test out his invention of a mini solar village on the ecovillagers. "Tamera has a huge amount of experience in co-operative living; this is necessary because energy consumption in single or small family households is too great," explained the scientist (Dregger).

His solar village is comprised of many different elements. A solar cooking stove produces hot oil as well as cooking food. Another machine receives excess hot oil from the stove, and uses the temperature differential between hot oil and cold water to move a flywheel. The flywheel can be used to mill grain, pump water or produce electricity. Its output is warm water, which can be used for irrigating the "polytunnel". The polytunnel is a miniature greenhouse constructed with props covered by a special membrane. His design shows the application of permaculture principles and

biomimicry, because the waste from one part of the design is turned into a resource for another part of the design.

The Samsoe Renewable Energy Island in Denmark succeeded in installing wind turbines after organizing some cooperative ownership models (Penney et al, 17). The Beddington Zero Energy Development in the UK uses a Combined Heat and Power plant that runs on chipped tree surgery waste ("Beddington Zero Energy"). BedZED has managed to entirely avoid the use of fossil fuels, using wood chips which might otherwise go the landfill. (Although it does sound like they rely on the presence of a nearby timber processor). They also have solar panels, charging points for electric vehicles, and energy-efficient buildings.

The ambitious Dongtan Ecocity China plans on building will use "a 33-MW electrical generating plant using rice-husk agricultural residue as a feedstock, together with a district heating system using the waste heat from the plant, to meet all of the city's water, space heating, and cooling needs" (Penney et al). The city will test whether these sustainable energy technologies will be feasible on a much larger scale.

Conclusions

At least we have examples of energy self-sufficiency. For food self-sufficiency you would be hard pressed to find a single ecovillage that took care of its own needs. But the energy problem is easier than the food problem. It is an area where extra push could take us to the finish line. Perhaps holding up examples of ecovillage success, could provide that extra push for a politician trying to pass renewable energy funding.

But where will that push come from? One author says, "we cannot talk about desirable technological changes unless we are prepared to discuss related issues of social and political change in the same breath," and I agree (Dickson, 147). Many ecovillages have achieved success in the renewable energy field, despite considerable obstacles. But for their innovations to spread, political barriers need to be removed, there needs to be a degree of social change. This focus on "more innovation," is misleading. We have plenty of innovation. What we lack is the will to take advantage of our innovations on a larger scale.

"We abuse land because we regard it as a commodity belonging to us. When we see land as a community to which we belong, we may begin to use it with love and respect."
--Aldo Leopold (vii).

Towards Rewilding and Sustainable Agriculture

A New Land Relationship

Ecovillages seek to craft a new relationship to the land. This includes not only a wish to enjoy nature, but also a drive to use the land wisely (in terms of agriculture) and to restore the land where it has suffered from human incursions. The quest for food self-sufficiency is often hampered by economic conditions. However, food produced on-site is often one of the main indicators ecovillages use to measure their success. Rewilding projects and securing nature conservation areas are also milestones for land stewardship goals.

The goals of sustainable agriculture include soil fertility, retention of native flora and fauna, biodiversity, efficient recycling of nutrients, and stable ecosystems which provide for human needs. (Leopold, 199). Since damaged ecosystems can have consequences for human health, health is also a large concern. A professor of agroecology writes, "We must build food systems that are organized on a foundation of health: health for our communities, for people, for animals, and for the natural environment" (Gliessman, 349).

Ecovillage farmers also search for ways to cooperate with nature. For example, rather than using pesticides which would kill off all insects in the area, an ecovillage farmer might make pockets of wilderness (old rotting wood and tangled bushes with shelter) in odd corners of his land which could serve as habitat for insect predators. These predators would thin out the population of insects which harm crops (Bang, 129). Such strategies require a more in-depth understanding of ecological relationships, but the benefit is reducing costly inputs that are potentially hazardous for environmental or human health. Renouncing petroleum-based fertilizers can mean lower yields sometimes, but the ecovillages' priority is to avoid using nonrenewable resources.

The author of *Gaia's Garden* writes, "We still hold vestiges of an earlier time's regard for nature as an enemy or as something to be conquered and restrained. Say the word insect to a gardener, and he will nearly always think of some chomping sucking pest that tatters leaves and ruins fruit. Yet the

vast majority-- 90% or more-- or all insects are harmless or beneficial...We need insects in the garden" (Hemenway). More than simply pioneering new farming techniques, these people are trying to change our relationship with nature and the way we think about nature.

They try to create efficient farms by mimicking ecosystems. For example, they might use a chicken tractor to fertilize the land; (a movable chicken coup that allows chickens to eat pests and fertilize the soil in different areas of the garden). In this way they are taking advantage of the symbiosis between plants and animals, mimicking nature's sustainable cycles (also known as creating a circular metabolism).

After arguing the need for change in the current agriculture system, this chapter will examine the spectrum of strategies within alternative agriculture. I'll discuss the overall feasibility of these strategies by using case studies from ecovillages and ecocities all over the world. This will help us identify major barriers to sustainable agriculture as well. Finally, I'll discuss the principles and practice of rewilding projects and the future of our relationship to the land.

The Need for Change

Critics of the current food production system blame it for a large variety of environmental and social ills. The book *Food Rebellions* explains how industrial agriculture is used as a tool of economic domination. Markets of developing countries are flooded with low-priced agricultural products made in developed countries. Often these products are supported by government subsidies, so they can be sold at below what it cost to produce them, and drive native farmers out of business. Native farmers look for other jobs, and in time lose their farming skills. Once the developing country has lost much of its ability to produce its own food, it becomes painfully dependent economically and thus politically. For this reason "food sovereignty," has become a highly politicized goal in many developing countries (Holt-Gimenez).

Suicide rates among farmers are strikingly high compared with average suicide rates. The suicides are, "correlated with a high level of indebtedness and an inability to pay off debts due to high interest rates, international competition, droughts, high cost of seeds, fertilizers and pesticides" (Gliessman, 39). Investigative writer Michael Pollan interviewed a classically high-tech potato farmer and asked him whether he saw any cost to genetic engineering (which can, among other things, create a plant whose seeds cannot be replanted, forcing farmers to buy more seed from the company next year). The farmer replied, "Oh, there is a cost all right. It gives corporate America one more noose

around my neck" (Pollan, 235).

Pollan described the industrialized potato farm as "a bright green circle of plants that have been doused with so much pesticide that their leaves wear a dull white chemical bloom and the soil they're rooted in is a lifeless gray powder. Farmers call this a 'clean field,' since ideally it has been cleansed of all weeds and insects and disease-- of all life, that is, with the sole exception of the potato plant" (217).

A study in an environmental health journal found, "The industrial agriculture system consumes fossil fuel, water, and topsoil at unsustainable rates. It contributes to numerous forms of environmental degradation, including air and water pollution, soil depletion, diminishing biodiversity, and fish die-offs... The pesticides used heavily in industrial agriculture are associated with elevated cancer risks for workers and consumers and are coming under greater scrutiny for their links to endocrine disruption and reproductive dysfunction" (Horrigan et al).

The transportation costs also include an element of waste, since "one fourth of fruits and vegetables distributed in today's commercial systems never make it to the consumer's table, because they spoil during shipment or on the grocery-store shelf" (Shuman, 59). The food we eat is increasingly chosen for ability to survive travel over long distances, sometimes at the expense of tastiness and nutrition. Akin to local food initiatives, ecovillages seek to connect producer more directly with grower. In this way they hope to increase the quality of the product as well as lower prices by cutting out the middlemen and the transportation costs. Their efforts have been rewarded by some success, but there is still a long way to go.

Furthermore, the lack of species diversity increases the chance of famine, since a single disease could wipe out a very large portion of the world's food crops. "Growers around the world are relying on dwindling number of carefully designed seed species" (Shuman, 62). Seed banks preserve different varieties of seed to prevent biodiversity emergency, but insufficient funding means they still let some seed varieties rot away. As agriculture becomes increasingly non-diverse, we put ourselves further at risk for a global food crisis. So when ecovillages make their farms and gardens, they are acting in response to a global problem.

Spectrum of Ecovillage Farming Strategies

The specific strategies the ecovillage use to pursue sustainable agriculture are diverse. One method is a CSA (community supported agriculture) in which customers pay for a "share" of the farm

and in return receive a box of whatever the farm has produced once a week. There might be a community garden supported by volunteer labor, or everyone might have private plots. There usually has to be an element of volunteering or community support; it can be difficult to make a straightforward for-profit farm succeed if it follows environmental guidelines.

Many ecovillagers go into the territory "beyond organic" and pursue permaculture. Permaculture is a contraction of "permanent agriculture" and is a specific sustainable farming philosophy invented by Bill Mollison in the 1970's. The idea of permaculture is to design farming settlements in ways that mimic natural ecosystems. If the outputs of one species are the inputs of other species, the farm can recycle resources into the indefinite future. In this spirit a permaculturist put a sign on his farm saying, "Employed on this farm are one stockman, one irrigation man and 50 billion worms"("Permaculture").

Permaculture theories have achieved worldwide popularity among members of a certain green subculture. Many ecovillages augment their incomes by teaching much sought-after permaculture courses. The basic concepts continue to be translated into many languages; a "permaculture francophone" website provides an on-line tutorial in basic permaculture principles, and suggests various projects for the interested student ("Permaculture Francophone").

One principle of permaculture is to focus on the connections between living organisms. Rather than viewing each crop or product as a separate item, the focus is on how they interact with one another to form a larger system. A design is only formed after thorough research on every species and physical aspect of the site. Every organism in the system should be used in more than one way. For instance, a hedge that shelters crops from the wind could also bear fruit and provide wood for kindling. Chickens, which provide eggs, could also fertilize crops and eat garden pests. Thoughtful design minimizes the need for energy and labor. For instance, the most labor-intensive crops go nearest the door, and the least labor-intensive crops go farthest from the house, to minimize total walking.

What began as a sustainability strategy some people have expanded into a life philosophy. One guide to permaculture says, "If we think of practices like organic gardening, recycling, natural building, renewable energy, and even consensus decision-making and social-justice efforts as tools for sustainability, then permaculture is the toolbox that helps us organize and decide when and how to use those tools" (Hemenway, 5). This author views permaculture as the discipline of fitting parts together into a smoothly functioning whole. As such it can be applied to more than just farming.

Once permaculture becomes more mainstream, perhaps a scientific evaluation can be made of

its efficiency. Then we can answer key questions like, "What population would a permacultured earth support?" Those who support energy-intensive, mechanized farming usually mention the hungry billions they hypothesize would starve without modern agriculture's efficiency. However the issue is more complex than it appears at first sight. Ultimately, those petroleum-based fertilizers are going to run out. Also, what about the effect industrial agriculture has on the economies of developing countries? An analysis of the impacts of industrial agriculture cannot just be about the sheer bulk of food produced. One must also consider the political impacts of the food production and the long-term viability of its methods.

Organic agriculture is far better known and more mainstream than permaculture, and so has endured a higher degree of scrutiny. Scientific studies measuring the efficiency of organic agriculture abound. In terms of sheer yield, the comparison between organic and regular agriculture seems to depend on crop, circumstance, and location (Gliessman, 21). Sometimes organic methods yield less total product, and maintain economic viability by charging more. But in other cases, organic methods can produce the same amount or even more. The trick seems to be choosing products that are uniquely suited to the area in which they are grown.

However, the yield measurements in the studies I quote are not made during the "transition period". The transition period is a time (lasting about 3-5 years) when the farm is shifting from regular to organic agriculture. During this period of time, yields are drastically lower. This is mainly because organic agriculture relies on the biota of the soil (beneficial mico-organisms and bacteria) to do soil enrichment tasks. Since use of pesticides and petroleum-based fertilizers kill off many of these-organisms, the farmer starts off with a "dead" field. Three to five years is the period of time it takes "the community under the soil" to re-establish itself (Gliessman et al, 16). The transition period can be very tough for farmers financially and is a major barrier to converting to organic agriculture. It's hard to wait years for profits. Ecovillages' ideological commitment to organic agriculture may help them weather the transition period.

A study found that organic farms had far greater total biodiversity and 50% more wildlife than a regular farm (Gliessman et al, 30). Unfortunately, this also means more weeds and pests, which may make organic produce look less beautiful and appealing. Organic farming is also more labor intensive, which makes it tougher to make a profit, but this is a net social benefit in an era of high unemployment (Gliessman et al, 37).

The French Food Safety Agency made a 236-page study of every aspect of organic agriculture. The document explains, "In the 50s, organic agriculture emerged in France as an initiative of farmers

and agronomists concerned to preserve the fertility of soil and the health of animals, and from doctors and consumers anxious about the quality of food" ("*Evaluation nutritionelle*," 21). The report explains that until the 80s, France was the foremost European country in organic agriculture, but the movement lost momentum due to "lack of interest from public powers," and also the commercialization of the movement made organics lose credibility in the eyes of consumers. ("*Evaluation nutritionelle*," 27). The growth in the organic sector remained stagnant until 1998, when organics began to catch on again and the movement grew rapidly.

This pattern occurs over and over again when researching the recent history of sustainability trends. Around the sixties and seventies, a tremendous upsurge of interest in "green" things. Followed by a period of disillusionment and inertia, until around the turn of the century, when for some reason interest perks up again.

However, in contrast to the anti-authoritarian attitude of the sixties, ecovillages are finding ways to bridge with the mainstream. For example, the author of *Ecovillages* writes, "Its fine to team up with a bunch of radicals and suggest the totally new approach of no-plough permaculture cultivation. They might also buy the idea of linking up with the rest of the cosmos and with the spiritual world and going for biodynamics. But most farming the western world is done by pretty conventional people; trying to promote things which are too radical will often generate conflict and rejection rather than positive change" (Bang, 128).

Examing Feasibility Through Case Studies

One of permaculture's most famous maxims is, "The biggest limit to abundance is creativity. The designer's imagination and skill usually limit productivity and diversity before any physical limits are reached" (Hemenway, 7). This creativity is something we will need if we are going to feed the world in the coming centuries. One interesting possibility is urban agriculture, which would drastically reduce the amount of transportation needed to bring food to people's mouths. Although growing produce in the crowded pollution of a city seems like a far-fetched idea at first, many recent urban revitalization projects center around urban farms and gardens. A study by the United Nations Development Program showed the feasibility of urban agriculture; for example, Hong Kong was able to grow nearly half its own vegetables (Shuman, 59). Initiatives like these hopefully make the concept of the "urban ecovillage" or the ecological city more plausible.

However, even the most fervent advocates for alternative methods of farming and feeding the

populace admit "how far urban agriculture, CSAs, farmers' markets, and village stores can go in feeding a community is unclear" (Shuman, 61). A professional gardener who had provided himself with his own vegetables for many years calculated the return on his time and found it to be only 1.50 British pounds per hour in the financial sense (H. Jackson et al, Ecovillage Living, 34). The recreational benefits of gardening persuaded him to continue despite low financial returns, but present-day economic conditions do not support people growing their own food. The effort ecovillages put into their farms and gardens is more for environmental and social reasons than for financial reasons.

An account from the Svanholm Ecovillage in Denmark reads, "after the pioneer phase and the excitement of digging with our hands in our own soil, we realized that there was little time left over for producing our own food if we also had to take care of our income-generating activities. We ended up delivering basic food items (milk, carrots, potatoes, meat, onions an flour) and combining these with various vegetables and fruits from our 'self-sufficiency' culture. We have had to compromise on some of our high ideals in favor of more pragmatic approaches" (H. Jackson et al, Ecovillage Living, 38).

Did Svanholm really compromise on its ideals? The author goes on to describe how Svanholm gives itself an ecological audit at the end of each year "The task of making Svanholm sustainable is a never-ending process, and it doesn't happen by itself. We routinely review our ecological goals (once a year) holding them up against our lifestyle and our production activities" (H. Jackson et al, Ecovillage Living, 38). To me this indication of ongoing effort is a sign that Svanholm did not, in fact, compromise its ideals. It simply decided that its high goal of sustainability would have to be accomplished piece by piece, over many years, instead of all at once.

People (within the ecovillages and without) frequently confuse this gradualistic approach with "compromise" or "giving up on your ideals." I would say so long as an ecovillage tries to become a little more sustainable each year, it is holding true to its ideals. Indeed, this idea that the ecovillage has to achieve EVERYTHING in its first year is the downfall of many nascent ecovillages who get discouraged by trying to reach the moon in one leap.

Some agricultural products seem to be more successful than others; for instance many ecovillages have had good luck with cheese production. Also, the "higher quality" niche seems to be a place where the organic produce can make a dent in the market. Of course selling to well-off, eco-conscious consumers isn't the same thing as revolutionizing the entire system of agriculture.

However, the seeds ecovillages are planting could produce greater change one day (no pun

intended). Yarrow Ecovillage in Canada is a good example of how agriculture and wilderness can be fruitfully combined. They produce many varieties of berries, apples, and nuts under an organic certification. They minimize tillage, and grow compost crops to enrich the soil with organic matter. In 2004, they planted hundreds of native trees and shrubs along the bank of their stream, trying to create a more diverse and balanced ecosystem that would attract birds and other predators that keep pests under control ("Sustainable Agriculture"). Rather than viewing wilderness as the enemy of agriculture, they try to create symbiosis between the two.

Earthaven Ecovillage in North Carolina has also made sustainable agriculture one of their primary aims. They say, "One of our first tasks was to create a permaculture-based site plan for developing our mountain forest property. We identified sacred sites; land to remain forested; areas for gardening, farming, and orchards; locations for ponds and hydro-power stations; locations for roads, paths, and common community buildings; etc" ("Farms and Gardens at Earthaven"). Developing according to their land use plan, they now have three farms, a trout pond, a plant nursery, and terraced neighborhood gardens. Even with all these efforts, they say, "We are not yet growing and raising most of our own food; however, this is important to us and is one of our next steps." It is clear that the path to food self-sufficiency is a very long one.

O.U.R. Ecovillage, another Canadian ecovillage, spreads its message of sustainable agriculture by focusing on, "providing education for a next crop of new farmers" ("About O.U.R. Ecovillage). They teach courses and offer internships on their "Permaculture-Designed Demonstration Site." Topics include food security, organic production, protection of farmland, raising livestock/poultry, soil management, water conservation, and alternative forms of land ownership. They are part of a large network of organic farms that train new volunteers every season.

Rewilding Initiatives

Making land productive for human needs is only one side of the equation; there is also the idea of restoring the wilderness. One of the most notable examples of rewilding took place in India's most famous ecovillage, Auroville. Auroville was located in a severely deforested area whose timber had been mismanaged under colonial rule. Lacking its protective tree cover, it was loosing tons of topsoil into the Bay of Bengal each year. They determined to reforest the area in the early 1970s, learning the techniques of rewilding by trial and error.

The first seedlings they planted were eaten by goats and cows, and swept away by monsoon

rains. So they limited the population of grazing animals, and made raised-earth banks to keep the monsoon rains from carrying away seedlings and topsoil. However, freak rains only washed away their efforts until they learned the trick of making their earth-banks "systematic and comprehensive, beginning on the top of the watershed and following the topography of the land" ("Environmental Work"). This more organized system was successful at protecting seedlings from monsoon floods.

With the help of grants and donations, Auroville planted over a million trees in ten years--timbers, ornamentals, fruit, fodder, and nut trees. They report, "As the trees grew, and micro-climates formed, many species of bird-life and animals returned, further accelerating the dissemination of seeds and enriching the environment" ("Environmental Work"). In 1982, their success attracted government funds to plant yet more trees and scientifically monitor the results, so that their tree-planting techniques could be applied to other regions of India which suffered from the same problem. Today, many Aurovilians serve as tree-planting consultants, helping reforestation efforts in other parts of India and even Tibet.

The Findhorn Foundation has also been involved in reforestation efforts. One of their members, Alan Featherstone, started a nonprofit called "Trees for Life", and developed some basic guidelines for nature restoration projects. (H. Jackson et al, Ecovillage Living, 27). Rewilders should work outward from areas of strength, trying to expand the borders of areas where there is a good population of wildlife. They should pay particular attention to keystone species, and use pioneer species to imitate the process of natural succession. They should also focus on connecting fragmented wilderness areas with one another; connected populations are more resilient than separate populations.

Invasive species should be controlled or reduced wherever possible, and missing ecological niches should be re-established (for instance, putting a dead log or snag in your newly planted forest, so that various necessary creatures can form a habitat there.) Featherstone concludes his list of commonsense rewilding principles with the injunction: "Love has a beneficial effect on all life." This is a principle less scientifically defensible than his others, perhaps, but very characteristic of ecovillage attitudes.

An ecovillage in Colombia works on rainforest protection. They research ways to make profits on rainforest products without cutting trees down, and they also started a Protection Program for the Leatherback sea turtle. They run an international voluntary work camp where environmentalists of all stripes go to do native tree plantings, implement appropriate technologies, and benefit from cultural exchanges. (H. Jackson et al, Ecovillage Living, 29).

Conclusions

Both alternative agriculture and rewilding movements need a more extensive research base on which to build their efforts. The professor of agroecology I quoted earlier complains, "the level of funding of research in organic systems does not reflect organics' 4% market share, even taking into account increases in 2008 farm bill…. producers need practical information and guidance on how to change their systems to affect the triple bottom line of economic, ecological, and social factors. The lack of farmer-ready information on conversion, including access to production and market information as well as training in organic management systems, is considered a major barrier" (Gliessman, 40).

Even if the government is not giving these efforts their fair share of research money, citizens and ecovillages can accelerate the information-gathering process greatly. The Director of the Center for Alternative Technology in Wales outlines a simple way anyone can conduct research. "Think of something we do not know. Divide a certain crop into several plots with different treatments, record the results, and report them. You still get the stuff to eat, but you also move our knowledge forward" (H. Jackson et al, Ecovillage Living, 36).

A database or wiki for collecting these mini-experiments from all over the world, and sorting them by location, would probably accelerate progress in the field and provide a wealth of site-specific information. Collaboration technologies between ecovillages and other like-minded efforts have a long way to go, and could probably do a lot to push the movement forward. After all, the expert says, "The steps towards sustainability can happen only if knowledge about the conversion process-- what works and what does not, what barriers exist and how to remove them-- is widely disseminated, expanded, and improved upon" (Gliessman et al, 347).

Sustainable agriculture and wilderness preservation present a huge challenge for ecovillages, particularly in light of the expanding world population. However, impressive efforts in the field have already been made, and sustainable agriculture will grow considerably more robust as we expand our knowledge base. Using relationships between organisms to create sustainable cycles is probably a key break-through. If progress and discovery continue, maybe we can hope for a day when all farms function like mini-ecosystems. Financial barriers to sustainable agriculture (including disproportionate government subsidies) are the main factors currently holding back projects.

The best skill of a good leader is to bring out the leadership qualities in others.

--Graham Bell

Towards Equitable Governance

Introduction

Sustainable development scholars wrote after an ecovillages world tour, "While green technologies are very important, the dominant issues are human ones. The greatest challenge for most ecovillages is learning to live and work together in harmony" (Hollick, 63). Since sharing resources is such an important part of ecovillages' strategy for reducing their footprint, there needs to be mechanisms in place for ensuring that the sharing is just and equitable. Not just for idealistic reasons either; if people think they aren't getting their fair share, they would have every reason to leave the ecovillage. Everyone who makes a significant contribution to the community needs to have a voice in how it is run, or the project will have trouble retaining members and surviving in the long-term.

An effective ecovillage government should keep people aware of their rights and responsibilities make sure resources are distributed fairly, and provide a mechanism for reconciling disputes. If people have faith in the community government's ability to create fair compromises, cooperation becomes more possible. However, good government does not automatically occur as the result of good intentions. It must be carefully designed, usually with "vision documents" which form a sort of blueprint or constitution for the ecovillage government.

This chapter focuses on consensus, sociocracy, and other methods designed to give everyone a voice. I mean to investigate the question, "How can a decision-making method in which everyone has a say, be made to work?" How do all those disagreeing voices get woven together into one harmonious decision? Ecovillages are pioneering techniques of intensive collaboration. They are inventing "social technologies" which could have widespread use outside the ecovillage. The purpose of this chapter is to understand how these social technologies function and make an argument for their overall value. Without governance structures to draw out the best in people and engage them effectively with others, there will be no momentum towards overall goals.

Power Structures

What governing structure do ecovillages have? The question becomes complex because an ecovillage is usually many things at once. There are legal categories for nonprofits, businesses, and municipalities, but ecovillages blend all three in unique and interesting ways. Activities like nature preservation, land stewardship, and sustainability education, may need a nonprofit structure to support them. The on-site green businesses definitely count as profit-making enterprises. No legal entity is a convenient "container" for the ecovillage in its entirety. (Should "ecovillage" become a legal classification, the logistics of creating them would be simplified tremendously).

The ecovillage in its identity as a "municipality" often uses sociocracy or consensus decision-making methods (explained in detail later in the chapter). Majority rule is also used, although less common. The ecovillage in its identity as nonprofit will usually have a "Board of Directors" chosen according to rules that vary from village to village. Finally, the ecovillage in its identity as a collection of small businesses is most likely to have the traditional structure of "boss and employee." These different power structures all overlap, exercise jurisdiction over one another through an informal system of checks and balances, and wield influence over people's lives.

Perhaps an example will clarify things. A Findhorn Foundation member, asked about the pros and cons of his ecovillage governing structure said, "Freedom of speech is a pro. And the freedom of speech leads to anarchy as well because everyone is entitled to their voice, which leads to a long process. Legally the foundation is a charity with a Board of Trustees, a nonprofit. Our trustees come together twice a year and appoint a management team. It's basically a normal sort a structure, but it isn't boss giving orders and workers carrying them out. We have conflict resolution groups and the opportunity to speak, it's not like we're beaten up and thrown out if we don't follow orders... When you have a king or queen giving orders and obeying them because they are the boss, it is very efficient – it's not very comfortable for people at bottom, but at least it's simple. We don't want to do it that way though [pauses to think]. Of course, with the small businesses it's a little different. The person who runs the shop is the boss, and he can fire people if he wants to. He's the boss and can run it is his way. The village is made out of many different parts" (Findhorn Interview).

Vision Documents; Creating Community "Blueprints"

What makes the equality and cooperation possible is that ecovillage members are generally

united by some common goals. If the ecovillagers had very different goals, and some people's goals were being pursued to the neglect of others, then how could equality reign? Deciding on a common purpose from the start makes governance much easier.

Christian, who serves as a consultant for start-up intentional communities, advises that making "vision documents" which state common goals should be a first step. That way if disputes arise in the future about "what the community is really about," you can simply refer to the original documents. I interviewed someone trying to found an ecovillage in Quebec who did not benefit from Christian's advice. He suffered through years of interpersonal conflict before it finally occurred to them to write an "eco-charter," laying down rules and guidelines for the community. He told me things have gone much more smoothly ever since people agreed to the written guidelines (*Solution de Vivre* Interview).

When I interviewed an ecovillager from *Ecolonie*, she told me, "It is important that our vision is clear. That's why we have several documents about it that everybody can look at on our website. At the same time, and this might look like a paradox, our vision is not a dogmatic one. Just as life always develops, also our vision does. In the winter we take time to discuss about these fundamental aspects of our community. Sometimes we adapt certain elements, and sometimes we decide that certain aspects are exactly the way they should be." In other ways, they have built-in a mechanism for the group agreements to gradually shift over time to reflect the group's most current set of needs. In this way they can achieve both the force of conviction and the strength of flexibility.

However, ecovillage agreements and bylaws usually do not have full legal force under the country's laws. They are kept because of peer pressure and voluntary self-enforcement. Nevertheless, having clear and specific agreements can still help. Although idealistic ecovillage founders may believe goodwill can govern everything, sooner or later there will be a disagreement, and it helps if you can refer to a "constitution" in that case.

For instance, Christian recommends that initial agreements are specific about what property an ecovillage member can take away when he/she leaves the community. If people who spent money improving community property decide to leave, they may demand their money back. This could pose an extreme cash-flow difficulty if the money has already been spent on fences, buildings, etc. People have been known to resort to lawsuits in this kind of situation. If people sign on to a contract which defines the difference between private and public property from the very start, that helps prevent the kind of indignation which leads to lawsuits.

So the "vision documents" cannot be dispensed with. They set a baseline for group

agreements; define decision-making methods and common goals. The following sections will explain in some detail the decision-making methods ecovillages like to use, and how they work.

The Basics of Consensus

To clear up some possible misconceptions from the start, consensus is more than just a voting system that requires unanimity. Rather, it is a commitment to making sure that the final course of action addresses the concerns of the entire community. Advocates of consensus complain that in a majority rule system, there are always winners and losers. They believe that most conflicts between opposing positions are simply false dichotomies. "We could either do this OR that," is a false choice, so you participate in "the creative search for a third [and better] way" (Dressler, 47). They praise consensus as a way of avoiding, an "us vs. them atmosphere." Since everybody has to be able to live with the proposal, it is counterproductive to alienate people by demonizing their positions.

According to the theory of consensus, disagreement is something to be treasured. Every time someone has a problem with the proposal, and the proposal is adjusted to address the problem, the proposal becomes better. In this way, disagreement drives improvement. However, sometimes the process of getting to agreement can be frustrating. A professional consensus facilitator mentions, "When trying to agree, groups can experience fruitful innovation or intense frustration. Often, they experience both. I call this the cycle of disagreement and discovery" (Dressler, 43).

Activist Tom Atlee believes that passionate disagreement is a very good thing. "Too often we are urged to be dispassionate because passion is so often associated with dogmatism and inflexibility," he explains. "But passion is where the creative juice is, where the caring is, where everything that is truly important lives. It just needs help to break out of fixed ideas and preconceptions long enough to become aligned with the passions of other people. This generates the power needed to realize shared visions and solutions" (Atlee, 28).

Sometimes the group does get stuck, unable to reach a decision. This is most common in groups that have not been trained how to use consensus properly. Consensus training teaches people to discard the mentality of needing to "win the argument." Everyone should enter the process wanting to find a common ground, and the solution that is best for the group as a whole. This is why some ecovillages and cohousing developments require members to be trained in their decision-making method before joining ("Orientation Process").

The Origins of Consensus Theory

An article in a journal of social welfare credited the Quakers with inventing the consensus process about three hundred years ago. "Consensus is referred to in business administration texts, used in the international political arena and in constitution writing by independent nation-building countries," the author says (Gentry). Considering how broadly consensus is used, I think she may be giving the Quakers too much credit for its "invention," here. Surely small groups throughout human history have used consensus methods, even if they did not use that explicit terminology to describe what they were doing.

However, the Quakers did have an important contribution to the philosophy of consensus decision-making. The reason everyone should have a voice in decision-making, according to the Quakers, is because "there is a God, Spirit, Wholeness, Goodness in each person-- that inspiration and wisdom can be held by anyone and everyone" (Didcoct, 45). Since everyone has a connection to the Divine, you need to listen to everyone to follow the Divine Will.

The Findhorn Ecovillage acknowledges the spiritual element of decision-making, by incorporating meditation into their meetings. When the discussion gets too heated, everyone closes their eyes, meditates, and looks within themselves for spiritual guidance. In their own words, " We seek to find out 'what wants to happen' by inner attunement. This practice we call spiritual management" (Riddell, 93). They moderator of the decision-making group is poetically called the "Keeper of the Heart."

Usefulness of Consensus

Because consensus is an intensive form of cooperation, it can be useful for all different sorts of "communities," not just ecovillages. The consensus decision-making method has even received some attention from the corporate world, which sees it as a process for arriving at better decisions. Some ecovillage "consensus facilitators," even make money advising corporations on how it works. (Dressler, Preface).

An economist expert in social capital writes, "The age of commerce was widely thought to mark the eclipse of community. Writers of all persuasions believed that markets, the state, or simply 'modernization' would extinguish the values that throughout history had sustained forms of

governance based on intimate and ascriptive relationships... but far from being an anachronism, community governance appears likely to assume more rather than less importance in the future" (Bowles). According to this writer, the Information Age has brought with it a surprisingly new reliance on community governance.

He continues, "As information-intensive team production replaces assembly lines and other technologies, and as difficult-to-measure services usurp the pre-eminent role, as both outputs and inputs, once played by measurable quantities like kilowatts of power and tons of steel; in such an economy increasingly based on qualities rather than quantities, the superior governance capabilities of communities [come into play]" (Bowles). In other words, community governance is useful for deciding how to share work, as the tasks get more complex and harder to measure.

Building on the argument posed by Bowles, I could argue that collaborative decision-making techniques are the way of the future. The Open Source business model (based on grass-roots collaboration rather than hierarchical structures) has recently shown some instances of superior financial viability (Tapscott et al). By developing the concrete skills and tools that are used in collaborations, ecovillages are forming cutting-edge expertise, which will be more and more in demand. Here we see them again in their trailblazing role.

Drawbacks to Consensus

Consensus also has its drawbacks. Sometimes it can be unpleasantly slow. The advocates of consensus are aware of the speed problem, but they claim a decision arrived at through consensus will be implemented faster because everyone has 100% commitment to it. "A speedy decision made by an individual or through majority voting may be efficient, but it may also result in slower implementation due to resistance or unanticipated consequences" (Dressler, 11). The premise of their philosophy is, "Real change does not come from decree, pressure, permission, or persuasion. It comes from people who are passionately and personally committed to a decision or direction they have helped to shape" (Dressler, 3).

Consensus could do a better job of taking expert knowledge into account. The position, "every person has an equally valid piece of the truth," does not acknowledge that some people may have spent more time researching an issue than others. Someone writing about his ecovillage experience remembers, "One person did a lot of research on his own and felt hurt when the others wouldn't accept his recommendations. I remember his muttering about suing to recover the cost of his time"

(*Communities Magazine,* Winter 2004, 39). Unless people can learn to place greater weight on informed opinions, I'm not sure how this problem can be fixed.

The major drawback to consensus is the effort involved. There is an expectation that everyone be committed to informing themselves and understanding the issues at stake. If that commitment isn't there, even if there are just a few people who aren't participating properly, the whole thing can become a mess. This is why sometimes a less intensive form of collaboration than consensus may be better for a group.

More Decision-Making Methods

Other decision-making methods place emphasis on equality, without that troublesome absolute commitment to making *everyone* happy. The fundamental conundrum here is: how can you have both leadership and equality? Any organization needs leadership to function, but how can leaders lead without placing themselves in positions of superiority?

One popular method is "sociocracy." The word sociocracy comes from the Greek "socios" and means rule by the social group (Buck, 39). The word was invented by an electronics CEO who used the method in his company. In brief, committees make decisions about their areas of expertise, and post their decisions in a public place. People have three weeks to state their objections, and the committee is obliged to modify their proposed course of action to address the objections. If nobody objects, the proposal goes into action. By soliciting explicit objections rather than involving everyone in unanimous agreement, sociocracy can be speedier than consensus. It also gives people who aren't interested in politics the option to ignore them, or only pay attention to the decisions they care about.

Multi-winner voting is another governance method, which has been used with great success in making budget decisions. In the example I read about, the ecovillage held a "Budget Party" and every project that wanted money that year, set up a creative visual display somewhere in the room. The display explained what money they needed and why. Every "party guest" was given an envelope of monopoly money: the group's total yearly budget divided by the number of members in the community, an amount representing their personal "budget power" (Christian, Creating a Life Together, 52).

They wandered around the party giving money to the projects they wanted to see funded. Every time a project became fully funded, a bell would ring, everyone would cheer, and the particular display would close up shop. At the end of the evening the least-funded projects gave their money to the almost-funded projects. This particular budget-making technique has spread from the ecovillage

that originally invented it, because it makes budget decisions (some of the most painfully difficult decisions a community can face) easy and fun. One possible pitfall is that boring but necessary projects would be underfunded because they were not well enough advertised at the Budget Party.

The Farm Ecovillage handles their budget in a way which gives people a lot of direct control over how many social services they want in a given year. "Every year there's a non-optional amount of items to get taken care of. The amount we charge to take care of those changes every year, and we vote on it, and it's a whole process to go through to figure out the dues, up to about 80 dollars a person per month to keep the community functioning. The optional services we provide if people voluntarily pitch in a dollar, and the success of that has to do with stability of the members themselves. We have waivers for people when they're sick, and we try to take care of each other when someone's finances are suffering" (Farm Interview). By making a distinction between "optional" and "non-optional" services the government provides, the Farm's government stays slim, trim, cheap, and primarily defined by the needs of those who are paying the "taxes." A study on Farm taxes vs. the taxes of a regular municipality might yield some interesting results.

Social Technologies

Social technologies are methods group facilitators can use to help the group progress more smoothly towards an agreement or a final decision. Some of these methods apply an almost scientific precision to analyzing group feelings. For example, there is the anonymous polling graph. Everyone writes on a slip of paper a number between one and ten, (one signifying strong opposition and ten signifying strong support for the proposal being discussed). A bar graph is made of the results, which shows not only how the group is divided, but how deep the divisions are. (In a simple discussion, the more vocal members' views are better represented. This method has the advantage of accurately reflecting the true spread of opinion within the group).

Consensus cards are another "social technology". Before a meeting, everyone gets a green, a yellow, and a red index card. At key points in the discussion, the moderator can ask people to hold up their cards. Green means, "go forward with the proposal," yellow means, "work out some concerns before going forward," and red means, "I am absolutely not happy with the proposal yet". This allows you to recognize instantly which people are objecting, and efficiently work to address their concerns.

Focusing on key questions also helps move the group forward. Examples of such questions:

"Do we all have a common understanding of the facts? What facts do we disagree about, and how can we get clarification? What are the likely consequences of the proposal? What are the likely consequences of continuing with the status quo? How can we state the issue we are discussing as a 'How do we accomplish ____?' question? What do we really want to achieve? What side effects do we want to avoid? What are our resource limitations?" (Dressler, 35). Such questions can help focus a stalled group.

It's important to be conscious of the different levels of communication and have outlets for expressing them all. The Ecovillage of Sieben Linden has three different kinds of meetings: one kind for emotional sharing, one kind for philosophical discussion, and one kind for logistics and planning. That way, philosophical discussion and emotional sharing don't hijack the process of getting things done, but neither are they marginalized and pushed to the side. The emotional and philosophical meetings contribute to group unity and emotional connection. This makes the logistics meetings more efficient, because people are less likely to waste time in conflict over core values, or emotional displays (Joubert).

Powerful Personalities and Power Imbalances

Does all this explicit concern for equity and sharing mean that ecovillages never have problems with power imbalances? Not at all. On the contrary, Christian tells us "Much of the conflict in a core group or community occurs over issues of unequal distribution of power" (Creating a Life Together, 55). Sometimes the power imbalance is structural. If one member legally holds land for the others or is an original founder of the community, they can end up having more power and influence. This can be addressed by creating new community agreements that distribute power equally among members.

However, sometimes the problem is not structural, but a question of personalities. Some personalities naturally wield more power than others. Charisma, determination, assertiveness, unwillingness to compromise – all of these traits can help form a powerful personality that the more mild-mannered have trouble competing with.

Christian says, "We need to find a balance between honoring the leaderful contributions of these people-- hey we need them!-- without abdicating our own responsibilities for contributing, or speaking up when we see things differently, and making sure we keep the power spread horizontally across our group." Power imbalance can even occur accidentally; when the charismatic personalities are unaware they are dominating others. "Those who have power and privilege often aren't aware of

it. They exercise power unthinkingly, even innocently, and don't usually notice that it's not reciprocal" (Christian, "Decision-Making and Power", 25).

Sometimes ecovillages have problems with an over-concentration of powerful personalities. An Earthaven ecovillager told me, "So many people who come to these villages are visionary people, which doesn't meant that they're cooperative, just that they're visionary." An article about "Inside Ecovillage Life" says, "those people responsible for pioneering ecovillages are often those who have the most trouble living in them. People referred to as "cultural creatives" tend to start ecovillages, but they have the biggest problems with the pressure that tends to grow up within the community. The pressure to conform to the norms of the group becomes too much" (Sullivan).

In other words, people who are drawn to this radical task of creating an alternative society might have very specific ideas and passionate convictions about how that alternative society should unfold. This means they have the potential to get very, very, upset when the ecovillage starts looking significantly different from their personal vision (which is almost inevitable when you consider the numbers of people involved.) In this way, visionary can almost be the opposite of cooperative. Having too many leaders in one place does not make for smooth sailing.

An atmosphere of equality should still include the possibility for gifted people to out-achieve others if they are capable. Communities should not exert pressure to conform to the mean, but sometimes they end up doing so by accident. Christian says, "Australians call this the 'tall poppy syndrome.' If we see some poppies shooting up taller than others in a field, well then, mate, just lop 'em off so they're no higher than the others. I've seen, and maybe you have too, a tendency towards poppy-lopping in some communities, especially those where everyone being equal is almost a religion" (Christian, "Decison-Making and Power," 25).

The core dilemma here is how to have leadership without having domination. How can some wield the power to perform necessary management tasks, without making others powerless? How can we acknowledge the superior abilities of some, without denying everyone's equal worth as a human being? French revolutionary Ledru-Rollin was reported to have said, "There go my people. I must find out where they are going so I can lead them." Maybe the solution is re-envisioning leadership so it includes an element of following.

Acclimating to Community Governance

The good news is that cooperation does get easier for groups over time as they acclimate to one another. A couple who helped create Lebensgarten, an ecovillage in Germany, describe the tumultuous early days, and how things improved as people adapted to their life in community. "None of us were educated to deal with the multi-faceted relationships in community... the first step was to realize that we all had to let go of our dreams... so that we could accomplish them (usually in a somewhat modified form) later on… We all had quite similar problems accepting others" (H. Jackson, Creating Harmony, 144). She describes how eventually, people moved away from dreading debate and started to embrace it as a chance to learn. "We learned to look at conflict in a different way: 'Hey! There is something to learn again-- be creative and enjoy it!'" As the years rolled by, she said, "learning was beginning to get easier, faster, and was happening with more and more fun instead of pain" (H. Jackson, Creating Harmony, 144).

An account of the Findhorn Ecovillage also describes a process of gradual adaptation to the cooperative process. "Visitors who come to the Findhorn Foundation full of notions of business efficiency and 'modern management methods' are often taken aback by the slowness, complexity, and apparent vagueness of our decision-making process. If they stay with us for awhile, and try to find an inner understanding of what is going on, they 'mellow'" (Riddell, 94).

I suspect consensus at its best occurs when people learn to love conflict— the right kind of conflict. One author uses a weather metaphor, "Storms are part of the natural landscape of participative decision-making, just as they are in nature" (Dressler, 72). Conflict between friends is something we ordinarily dread, but there is healthy and unhealthy conflict. Healthy conflict, like a storm that soaks the ground with nourishing rain, may actually help the community grow.

Conclusions

Cooperation entails a lot of labor, both mental and emotional. However, if you want to get things accomplished on a grander scale than one person or one family, it is absolutely necessary. In the end, inventing clever technologies and finding money and building green architecture are going to be the easier parts of creating a sustainable world. The difficult part of creating a sustainable world

will be reaching some kind of agreement about how we are going to do it. If people don't believe their voice is being heard, they aren't going to want to participate. And including everyone's voice is a difficult task.

So what can make the task less difficult? We need mutual agreements that clearly define rights and responsibilities for all the stake-holders. Public and private sectors need to be part of some larger identity so they can work together towards common goals. Perhaps training in teamwork and cooperation could become more extensive. Cooperation isn't necessarily something that comes instinctively, but it can be painstakingly built through the application of social technologies. However, the process will never move forward in an effective way if the stake-holders are not well-informed and well-educated about the issues at hand.

There is an emotional component as well. The Secretary of the Federation of Egalitarian Communities writes, "It seems to me that the effort of developing a sense of trust, even as it is regularly betrayed, by continually re-experiencing the restoration of trust out of the jaws of collapse, is a deep part of the work of radically revisioning a better world" (Burgess, 17). The key is not to lose faith in the process after it lets you down once or twice. Rather, people must continue working with the faulty process, trying to improve it, continuing to exercise citizenship.

Things may be simpler and more peaceful if we remain in our autonomous units, rather than banding together to achieve something greater. In the words of an Ithacan ecovillager, "The best thing about the ecovillage is PEOPLE. And the worst thing about the ecovillage is, well... people." So what is the compensation for learning to cooperate? "At least you never get bored." The cooperative life will always be more work, but at least it is never boring.

"It makes no sense to those seeking change to willingly surrender the language of the great faiths."
--Van Jones, (91).

Community and Spirituality

Introduction

One of the more nebulous goals of the ecovillage movement is to create a new culture. In this culture, spirituality plays an important role. A founder of the Global Ecovillage Network developed a rubric for ecovillages to evaluate themselves, and Culture/Spirituality was one of her four main categories of achievement. (The other categories were Social Structure, Ecology and Infrastructure). According to her, an ecovillage was succeeding in the culture/spirituality dimension when it had a) creativity, arts, personal development, b) rituals/celebrations, cultural diversity, c) a new holistic circulatory world view, and d) a process towards peace, love, and global consciousness (H. Jackson, Creating Harmony, xii).

In addition, the Global Ecovillage Network advertises a "Design for Sustainability" course, in which "the spiritual dimension to life's existence is an integral component" ("Spiritual Ecovillages"). So why all this emphasis on spirituality? How does something so intangible link to the practical reality of creating a sustainable world? The answer is that interior change lays a foundation for external action. Many sustainability theorists have pointed out the importance of some kind of moral or cultural shift. This chapter describes that shift and explains its importance.

Social Capital Deficit

The need for this shift is underlined by measurements revealing troubling signs in our present society. Putnam, a leading sociologist examining contemporary social capital, found a decline both in social interaction and civic engagement over the course of the past sixty years. He wrote, "Active involvement in face-to-face organizations has plummeted, whether we consider organizational records, survey reports, time diaries, or consumer expenditures... during the last third of the twentieth century formal membership in organizations in general has edged downward... more than halving most indexes of participation within barely a few decades" (Putnam, 63).

In other words, community is on the decline because of the drop in face-to-face interaction. Social capital theory shows people are more effective at carrying out their projects (anything from starting small businesses to bringing about political change) when they are embedded in a dense network of social relations. "Social networks have value. Just as a screwdriver (physical capital) or a college education (human capital) can increase productivity, so too social contacts affect the productivity of individuals and groups" (Putnam, 19). Just as social networking can bring about positive change, isolation can also lead directly to distrust and conflict.

One interesting sociological study examined whether living in an intentional community could make people more tolerant of one another's differences. They concluded that, "residents of the communal living model demonstrated significantly greater values of tolerance [for individuals of other races, classes, and cultures]" (Olson et al). Since they were working as a team, they were less likely to harbor prejudices towards their teammates.

Most people focus on looking out for their families; ecovillages hope to scale that up so that people are looking out for their community or even the whole world. An ecovillager from Ithaca wrote, "In America it's rugged individualism, you know? Live free or die. It's hard to think outside the box. People think about their personal lives, their families. If there's a crisis in the family, then they start to think. They don't think beyond their families, mostly (and whether they're well-educated or not, doesn't seem to be as big a factor as you might think.) When you're centered around your family, it's a big step to think about your community, or region, or nation or even planet. I guess people do it some every four years – at election time. The rest of the time, they're just hoping whoever they elected will fix things. People in the ecovillage are different, because they are thinking about issues *all the time*." The self-governance in ecovillages produces a culture that is interested in the "big issues," and a commitment to civic engagement.

Importance of a Social Infrastructure

Creating a "green culture" is important because people are acutely responsive to social pressure. One ecovillager talked about the role of "green peer pressure" in her life. "I'm inspired by my neighbors to carpool, walk to work, and things like that. I did a lot of things before I came here (like drying my clothes on the clothesline) but the peer pressure helps. Here, we're feeding on one another's strengths, instead of weaknesses" (Ithaca Interviews).

In a similar vein, a book about creating eco-teams in Portland said, "Many workshop

participants commented that they had personal growth breakthroughs in this group setting that they would never have had on their own. It was the group format that inspired people to change...Within a few months, there were more than fifty teams spread across the country, then a hundred" (Gershon, 41). The enthusiastic response to the drive for eco-team membership, suggests society may be ripe for cultural change.

The founder of a group called "Alternatives for Community & Environment" summarizes the discussion this way: "environmental problems in the United States are in large measure a result of a widespread deficit in *social* infrastructure" (Shabecoff, 56). He believes we would make more progress on environmental issues if people were socializing more. Socialization would naturally lead to collective political action. If it's hard to make friends, it's also hard to make change.

So when intentional communities (ICs) actually manage to put the "social infrastructure," in place, how do people's lives change? A team of economists wrote a paper on this topic, studying the interactions between built capital, human capital, social capital, and natural capital. (Natural capital means the natural resources in an area, and built capital means the buildings, machines, etc. owned by members of a community). They wrote,

> "Survey results indicate that ICs have a better balance between built, human, social, and natural capital than unintentional communities (based on a parallel survey of neighborhoods in Burlington, VT, USA) and that this results in a higher quality of life among residents... By substituting social capital for built capital, ICs provide a higher quality of life to their residents despite significantly lower income. By converting private goods into public goods, it is feasible that ICs enable all to live better with less capital" (Mulder et al).

In other words, the intentional communities they studied needed fewer resources overall because they were able to share resources. They called their study an "existence proof" that is is possible to achieve a high quality of life while consuming at rates less than the USA average. So the rewards of community can be very tangible: the same quality of life for less money.

Significance of Spirituality

The risk of the rhetoric surrounding spirituality is that it can alienate potential allies. One critic from the Journal of Inclusive Democracy wrote an article, called: "Ecovillages; part of the solution or part of the problem?" in which he accused ecovillages of being tainted by, "New Age rubbish" (Fotopoulos). Even though this critic was in favor of sustainability and social change, talk of gurus and inner peace produced in him a reaction of instant aversion. As Christian puts it, there can be, "annoyance and impatience between those who want to use visualization, affirmation, or prayer as

the primary means to manifest community, but may not feel comfortable with budgets, mortgages, shovels, or power tools, and those who want to use strategic plans, cash flow projections, and work parties as the primary means to manifest community, but are leery of 'invisible stuff" (Creating a Life Together, 209).

I myself was dubious about the relevance of spirituality, fearing it would be a distraction from more practical concerns. Then I noticed that ecovillages with spiritual practices seemed less likely to disband than their secular counterparts. Three of our oldest ecovillages are spiritual communities founded by charismatic leaders. A Findhorn ecovillager told me in an interview, "The most important thing about our community is the spiritual aspect. People ask why when most of the hippie communes in the 60s and 70s disappeared, why we didn't disappear. I think it was the spirituality."

He explained, "The basis of this place is that one of the three founder members heard a voice in her meditations and that's what guides us all the way through. For example, if you're having a disagreement, you close your eyes and feel into it, rather than using your mind (which is struggling to control everyone and everything). We know what's right and wrong in our guts rather than our heads. For the world to move in the direction of cooperating, people must use their gut feelings rather than their minds." Then he added with a wry laugh. " But how do you tell a top politician to use their gut to make a decision?" (Findhorn Interview). On the one hand, their spiritual practices (like meditation prior to taking important decisions) have worked out very well for Findhorn. On the other hand, such practices may seem off-putting or bizarre to people who are part of the mainstream.

A charismatic spiritual leader also founded Auroville Ecovillage in India. The founder of Auroville was a Frenchwoman called "The Mother", and she was a disciple of the famous Indian guru Sri Aurobindo. She believed that Auroville was the beginning of a new stage for humanity. She wrote, "A new world will be born; if men are willing to make an effort for transformation, to seek for sincerity, it is possible. From animal to man, thousands of years were needed; today, with this mind, man can will and hasten a transformation towards a man who shall be God" (Minor, 49). Some people are very attracted to this kind of rhetoric; others are quite repulsed by it. In general, I think ecovillages need to be more self-aware about what kind of impression they are making on people raised in traditional religious backgrounds.

Another theme in "The Mother's" rhetoric was the unity of all peoples. When Auroville started, each of the members brought soil from their own country. They mixed together these dozens of different soils to symbolize the creation of international ground. "The Mother" thought we were entering an age in which national boundaries would be erased, and she said, "Auroville is the first

crucible of planetary man... Everything in Auroville belongs to the whole earth and the members of Auroville are beings of the whole earth"(Minor, 49).

Breakdown of Elements in Ecovillage Spirituality

Obviously spiritual practices vary widely from village to village, and from member to member within the same village. Nevertheless, we can identify some nigh-universal themes, such as the idea that we are all connected. Even in the secular villages you find these themes, (just cast in philosophical rather than religious language). As the Global Ecovillage Network website says, "Most ecovillages do not place an emphasis on particular spiritual practices as such, but in their own ways ecovillages respect and support - the Earth and all living beings on it; cultural and artistic enrichment and expression; and spiritual diversity" ("Spiritual Ecovillages"). Then the website gives a point-by-point definition of what "cultural and spiritual vitality" means, which is even more detailed than the definition given at the beginning of this chapter. To methodically examine each component of ecovillage spirituality, I will bring up points from that definition one by one, illustrating each with examples.

One point in their definition was, "Shared creativity, artistic expression, cultural activities, rituals and celebrations." Many ecovillages I interviewed mentioned solstice and equinox celebrations, (usually in addition to, rather than replacing, traditional celebrations like Christmas and Easter). The spring equinox celebration usually included some element of "greeting the sun." My interviewee from Dancing Rabbit ecovillage told me, "The Equinox celebration this Saturday I'm helping to create with friend. We're going to do some storytelling. We would have observed the sunrise, but it's going to snow, so instead we will just have breakfast together." Earthaven Ecovillage greeted the sun on the Spring Equinox with drums and singing. I think the focus on solstices and equinoxes is about creating holidays based on events observable in nature. That way the celebration serves as a connection to and reminder of the natural world.

Another point from the GEN definition was a "Sense of community unity and mutual support." Gratitude for supportive neighbors was something that came up frequently in interviews. A Dancing Rabbit ecovillager said, "There's a feeling of being part of other people's lives, interconnected. Even with people I'm not especially close to, I feel we all have each other's best interests at heart. That's a lovely supportive environment to be in." And a Findhorn ecovillager said, "The best things are the sense of camaraderie, the common interest we share here, people aspiring to

think of the whole rather than of themselves. There's less selfishness."

Putnam makes a compelling economic argument for the importance of this when he says, "A society characterized by generalized reciprocity is more efficient then a distrustful society, for the same reason that money is more efficient than barter. If we don't have to balance every exchange instantly, we can get a lot more accomplished" (21). According to this theory, a neighborhood would advance faster if its neighbors were constantly in the habit of giving and receiving. A passionate permaculture theorist adds, "The point about this pattern is that we are offering something for nothing, and we are creating a world in which it becomes normal to do this" (Bell, 31). Offering something for nothing would hurt you financially if you were the only one doing it, but if everyone makes a habit of it, things work out. The (not trivial) problem of free-riders can be partially solved by a social pressure towards giving.

The next point in the GEN definition was, "Respect and support for spirituality manifesting in many ways." I see a sort of unity in diversity taking place here. For example, one village mentioned, "There is everything here from an inner connection to spirits or God, to Judaism, to people who lack a particular creed. Most of us pick a spiritual mixture" (Findhorn Interview). There is less concern for the language used to describe God(s), and more concern for underlying principles. We see some people moving towards the idea that the same divine power is called by many different names. A book by one ecovillager said, "As we experience the divine in ourselves, we become aware that it exists in everyone else too. God is omnipresent" (Riddell, 57).

Some authors carry this ecumenical impulse so far they attempt to unite scientific and spiritual paradigms. One author wanted to move towards a future where, "Science, beauty and God could never be perceived as separate, but as different aspects of the unknowable infinite" (Bell, 27). According to this idea science and religion are approaching the same truth from different directions. As you recall from the chapter on governance, every person is believed to carry their own "piece of the truth," and by putting the pieces together in a prolonged/debate discussion, you can approach the ultimate Truth. My only reservation with this philosophy is that it leaves insufficient room to acknowledge and criticize ideas that are actually incorrect.

Yet another point of the GEN definition of cultural/spiritual vitality was: "Understanding of the interconnectedness and interdependence of all the elements of life on Earth and the community's place in and relation to the whole." This point is especially significant, as an area where environmentalism and faith intersect. Here we have links to the philosophy of Deep Ecology, in which the sense of community expands beyond identification with other humans, to include

identification with all the world's plants, animals, and ecosystems. A cultural historian named Thomas Berry is an often-cited scholar on this subject; he wrote most famously: "the universe is not a collection of objects, but rather a communion of subjects" (Scharper).

James Lovelock, the scientist who created "Gaia Theory" has also been a source of inspiration for the Ecovillage Movement. Gaia is the mother goddess figure from Greek mythology, and Lovelock borrowed her name to create a terminology that described all of life on earth as one entity. Just as the different cells in your body cooperate to make one being, he thought the different life forms on earth cooperate to make one giant being covering the whole globe. It depends on how loosely you define "being" though. For instance, the Earth doesn't have a giant brain, or choose its direction through space. Lovelock argues the Earth is like a living organism, because it has systems for regulating its own temperature and the transmission of water and other materials throughout its "body." For this reason, I see Gaia more as an appealing metaphor than a scientific discovery.

People in the environmental movement who wish to claim a spiritual connection with the Earth frequently cite Lovelock's Gaia Theory as "scientific backing" for their spiritual beliefs. Whatever dubious value Gaia might has as a scientific theory, it does have tremendous value as a symbol which rallies people together. The idea is so appealing it has become widespread in popular culture (for example, it was a major theme in the recent Oscar-winning movie Avatar.) There are a few more components in the definition of ecovillage spirituality (such as commitment to creating a peaceful, just and sustainable world). However I have reviewed enough specific points to give the reader a detailed understanding of the major ideas.

Religion vs. Spirituality

There is a kind of tension between religion and spirituality. "The difference between religion and spirituality is simply that most religions offer a specific set of beliefs and structures to help people to attune to their innate spirituality... Spirituality is a more general term that includes religion but that also encompasses the general human impulse to reach out towards the greater whole of which we all are a part" ("The Difference Between Religion and Spirituality"). In other words, spiritual practices tend more towards the improvisational, where religion relies more on tradition and doctrine. This is where the tension comes in.

The founder of the Auroville Ecovillage tried to completely separate religion from spirituality. She wrote, "You must not confuse a religious teaching with a spiritual one. Religious teaching belongs

to the past and halts progress. Spiritual teaching is the teaching of the future-- it illumines the consciousness and prepares it for future realization. Spiritual teaching is above religions and strives towards a global Truth. It teaches us to enter into direct relation with the Divine" (Minor, 36).

I disagree with her distinction because I don't believe spirituality is superior to religion in any way. But why would we find ecovillagers wanting to say, "I'm not religious, I'm spiritual?" I think it boils down to a fear that religion is too close to being dogma. They're afraid of slipping into dogma, but they do want ideas like, "We are all part of something greater," or "We can access an inner wisdom by looking deep within ourselves," or "all of us are connected". As thus, many call themselves spiritual. It's important to emphasize that many ecovillagers also belong to a regular religion, or are agnostic/atheist. But ecovillages, especially certain kinds of ecovillages, do tend to attract an above-average incidence of spiritual types.

Spirituality can be viewed as an attempt to de-institutionalize religion. The problem is, when you lose the institution, you lose good things as well as bad things. Van Jones' book, *The Green Collar Economy* includes a section on "the importance of including people of faith in the green movement," which expresses my reservations perfectly. He writes, "Many environmental and social change activists say, 'Well, I'm all for spirituality, but I reject religion.' This is a perfectly reasonable and respectable personal choice. Yet it can often mask a deep resentment or even hatred of the totality of organized worship – and a stereotyping of all religious people as stupid, dogmatic simpletons... They tend to reduce the great faiths of the world to their worst elements, constituents, and crimes – and then dismiss all other facts and features. Nothing pains me more than to hear so-called progressives snarl the word 'Christian' as if it were an insult or the name of a disease" (89).

He continues, "today's social change activists proudly and eagerly celebrate the achievements of the civil rights movement… but one key fact seems to escape their notice. The champions of the civil rights struggle didn't come marching out of shopping centers in the South. Or libraries. Or high-school gymnasiums. They came marching out of churches, singing church songs. These people, these unimpeachable examples of audacity and accomplishment, were people of deep, deep religious faith. And when they prayed, it was through a long-dead Nazarene carpenter named Jesus Christ...This is why smug activists who treat the word 'Christian' as a useful synonym for 'dumb, mean bigot' do so much damage...they deny the truth of how meaningful social change has most often come about in this country. Worse, they leave powerful symbolism in the hands of dangerous practitioners of a less noble politics. It makes no sense to those seeking change to willingly surrender the language of the great faiths" (Jones, 90-91).

This further clarifies why I don't believe spirituality is superior to religion. It's also a major tactical mistake to leave (for example) Christianity out of the picture if you're trying to bring about social change in a country with a large number of Christians. Churches tend to have a lot of experience with organizing people to undertake group projects. If a church ever decided to make an ecovillage, it would probably display an above-average level of competence in completing the task (especially considering their previous experience organizing intentional communities such as monasteries). In contrast, ecovillages are created by semi-random groups of "like-minded" people, who might have trouble seeing themselves as unified.

Conclusions

On the community level, ecovillages are trying to create more connections and gatherings between people. On the spiritual level, there is the concept of connection on an even grander scale. Shared celebration and ritual, along with a sense of community unity and mutual support, (the first two points of the GEN definition) focus on connections between ecovillage members. But the other points of the definition function on a more global level. For example, cherishing spiritual diversity leads to connections between people of different cultures and countries. Recognizing the "interconnectedness and interdependence of all the elements of life on Earth," takes the concept of connection, and applies it to relations between all living things.

This chapter is about the heart of the movement. Most ecovillagers probably don't go around thinking in the grandly pretentious language I've quoted throughout most of this chapter. However, I think they do derive a lot of motivation and passion from the convictions I've detailed here. To be robust enough to succeed, a sustainability movement needs to have some kind belief structure and moral center. This belief structure is emerging day by day.

"Community life is a bit like a marriage; you have to face conflicts and create compromises. It's a richer life but not a simpler one."

– Julia

Ecovillage Interviews

METHODOLOGY

Interviews were conducted on the phone except in one or two cases when the ecovillager preferred email, and Ecovillage at Ithaca, which I visited in person. Contact information was drawn from the Global Ecovillage Network online directory. I always used the same list of questions (provided at the end of the chapter) although I did sometimes omit questions if the person being interviewed seemed impatient to finish. The interviews usually lasted around forty-five minutes, depending on how talkative the person wanted to be.

I contacted seven English-speaking and six French-speaking ecovillages in the USA, Scotland, Morocco, France, Canada, and Senegal. In most (but not all) cases I was only able to talk to one person from each village. The goal of these stakeholder interviews was to assess whether people found life in the ecovillage more satisfying, whether the ecovillages were achieving sustainability milestones, and where people thought the Ecovillage Movement was going. I deliberately chose questions that were very open-ended, so whatever concerns and interests ecovillagers viewed as significant would emerge.

As I listened on the phone, I would type the answers verbatim. When people started talking too fast, my typing would get so hasty I would make spelling and grammar mistakes, which I would go back and correct later after the interview was over. This correction process might have introduced some slight changes in wording, but mostly the wording (and certainly the ideas) have been faithfully preserved.

An Important Note on Bias

There was a significant element of observation bias in my study, because the people I talked to were not random; I was talking to whoever had the job of answering the ecovillage's main phone

number. In small ecovillages, that person was usually the leader or the founder of the ecovillage. In larger ecovillages I would get someone who had the job of being a public relations person. In most cases, they probably felt some obligation to represent their ecovillage in a positive light. This wasn't true of everybody; I did talk to one interesting lady who worked in the ecovillage's visitor's center and was nonetheless very free with her criticism of the village. In general, people were more willing to be their own critics than I might have expected, but that doesn't free us from the obligation to take all these answers with a grain of salt.

In the case of Dancing Rabbit Ecovillage, I didn't have a phone number, so I sent an email that was forwarded to the entire village, with the note, "Who wants to talk to this student?" The person who volunteered to talk to me seemed more in love with her ecovillage than anyone else I had talked to in my whole study. I suppose people who were less in love with the place would not take time out of their day to talk to a random student about the ecovillage's qualities.

In other words, my study of intentional communities resembles a study on marriage where the scholar only talks to happily married couples. It's very important that I be honest about that. I know there are people who join intentional communities, who absolutely hate it and end up leaving. I couldn't talk to them; I didn't have any way to contact people who were "divorced" from their communities. Does this mean my results are illegitimate?

Well, my hypothetical scholar of marriage might defend himself by saying, "The topic of my study is not divorce; the topic of my study is marriage. I can learn something important about what makes marriage work, by examining the happy couples." My defense is similar. I'm interested in what makes community work. By interviewing people who are content to live in their community, I learn more about what makes it work out well. Interviewing people who were disgusted with their intentional community and left, would be an interesting and legitimate topic of study. It just doesn't happen to be *my* topic of study.

Importance of Interviews

Many of the books I read about ecovillages focused very much on theory. They might describe ideal practices or argue in favor of the ecovillage ideas and philosophy, but unbiased case studies were much harder to find. I wanted to know how the experiences on the ground compared and contrasted with ideal practices and ecovillage theories. Is community life really so wonderful? Are ecovillages really so self-sufficient? Do the people directly involved in the movement believe the movement is

succeeding? Despite the bias I have acknowledged, my interviews provide a valuable counterpoint to my reading. People who write books and articles usually have some agenda to prove, some point to hammer in. The people I talked to were not carefully formulating premeditated arguments; they were saying whatever came to the top of their heads in response to my questions. I did interviews because I needed viewpoints that were more spontaneous, genuine, and connected to realities on the ground.

What follows is a sampling and analysis of some of the most significant answers I heard, organized by theme. I focus on four major themes: social gains, ecological gains, the struggle for cultural change, and the political implications of the movement. Should the copies of my interview transcripts be missing or unavailable, just send an email to ashlock4agreenfuture@gmail.com and I will provide them.

ANALYSIS OF SOCIAL GAINS

The Search for the Missing Piece

People move to ecovillages because they feel something important is missing in their everyday lives. They move to ecovillages looking for company, for a sense of meaning, or for a challenge. It's not a change that's undertaken lightly. For one thing, moving to an ecovillage often means going a long way away from friends and family. It means uprooting yourself from something familiar and going into something that is largely unknown. So the people who move to ecovillages generally have very good reasons to be dissatisfied with what is familiar and mainstream.

An East Wind ecovillager explained to me, "Once you're past college age, life can get lonely. When you're not in college any more, there is no institution that goes about organizing social functions. Once I wasn't in school, there wasn't really any way to meet people." He was in effect transferring himself to the ecovillage to solve his social capital deficit.

Richard from the Findhorn Ecovillage told me, "Before I came here I was a computer manager for an American bank in London, and I had lots of money and a nice apartment and had everything I thought was important, and I realized that it wasn't enough. I wanted to be more real. Rather than pushing for money and high positions in society, I wanted to be doing something meaningful." Maslow's Hierarchy of Needs is a psychological theory that states once people have achieved their

basic needs, (food, security, and love) they start trying to satisfy their more mental needs, such as the need for self-respect, self-actualization, participation in something meaningful. Under this theory it seems natural that Richard would want to take it to the next level.

Meadow, a woman from Dancing Rabbit Ecovillage, had a long and interesting story explaining her move. "How did we decide to move here? Through much talking and thinking and wondering and doubting, because we were very much in mainstream culture (except for composting and home-schooling and no chemicals on lawn) but we lived in city suburbs and drove to the grocery store and everything... It was a big change to live in community, we didn't know anything like this existed, but before we found it we were trying to create it for ourselves I think. We loved gardening and were connected to the CSA [Community Supported Agriculture]… we talked with friends about our longings for something that really was an awful lot like this place… back then it really seemed pie in the sky though." Maybe "social entrepreneurs" who are willing to go to the risk and effort of starting an ecovillage are relatively few and far between. However, suburban couples with vague unvoiced dissatisfactions about mainstream society are probably far more common, and good news for the growth potential of the Global Ecovillage Movement.

To continue her story, "A friend of ours called, and said she had found Dancing Rabbit while surfing the web when she had insomnia. She said, 'I want to go there so badly! I might be crazy though, so I need you to go with me.' So we went together to the first visitor session, and my husband and I just fell in love with it... After the first week of our three-week stay, we kept saying 'Are we crazy? Would we really do this?' Both our parents are still in Rochester, and my parents had spent their whole lives in that area, so it felt pretty huge to even consider doing it. I guess that tells you much of a draw there was! Because in moving from New York to Missouri, we were giving up friends and family connections that were really important to us." Ironically, this family's search for community uprooted them from the community they already had. If they felt it was worth it, that's definitely a powerful testament to the quality of life in the village.

Meadow continued, "It was a funny coincidence, too, because of what had happened the day before. You see, my oldest son likes to draw architectural schemes, and he wanted to make a picture of my dream house and give it to me. So he asked me what my dream house was, and I started describing something that was actually a lot like what you find in Ecovillage! I told him, 'The house itself doesn't matter so much, but make it small and open with solar panels and rainwater catchment. But put it in a community with other houses. Somewhere in a rural area where I can walk out really easily, and do more gardening. A place where everyone knows each other and is cooperative. A place

where I can just walk to friend's houses, and you can go out and play everywhere-- it's not like everyone has their own little yards.'" The parallelism between her personal dream and Dancing Rabbit's vision is really quite startling. Also important to emphasize, she doesn't seem like a radical: most of her stated wishes, (like wanting to walk to friends' houses) are fairly simple.

Many claim both political and personal reasons for moving to the ecovillage. One ecovillager says: "Not only do I prefer living in an ecovillage, despite all the glitches and shortcomings, but it's the only sensical choice for me or anybody else whose sincere intention is to regain his place as the assigned steward of this wonderful creation entrusted in our hands," which is your standard environmentalist line (Penyon Bay Interview). Also, "I moved to my ecovillage for the future of humanity" (Fondale Interview). In the ecovillage they can see themselves as an important part of the bigger picture, not just one person among billions.

A woman from Earthaven ecovillage told me, "I was a political activist and I liked the way people live here, because we are off the grid. It was not really a big change for me though, because before that I was living out of my backpack and doing political work and getting arrested for sixteen years [in a civil disobedience context.] Even before that, I was in Ann Arbor Michigan working with the food co-op, so I have been active for thirty or thirty-five years. I have to live in something like an ecovillage now, because it gets to the point where what else can you do? You have to do it, else you're just too *bored*." Many people explained to me that they moved to the ecovillage looking for a challenge. The difficulties involved in inventing an ecological lifestyle keep your mind busy.

So we see that people move to ecovillages for a mixture of personal and political reasons, although the personal reasons seem most important. They aren't self-sacrificing, ideologically-motivated heroes giving up a life of luxury to save the planet. Their answers demonstrate that the decision to move to an ecovillage is ultimately motivated by self-interest. This is the reason I believe the movement has real viability. A movement based on self-sacrifice has limited momentum; a movement based on self-interest will inevitably grow. An ecovillager from Ithaca summed it up very nicely: "It feels to me like there's a real desire for community out there. Something's missing for people. I don't know what; I'm not a sociologist. People crave community and find it here. People feel a personal need and are making it happen. Change is already happening!" (Ithaca Interviews).

Balancing Autonomy and Cooperation

My question, "What are the best and worst things about the ecovillage?" usually got answers

like, "The best thing about the village is people, and the worst thing is well... people!" The following sections explore the reasons for this in detail. Why are people the worst thing as well as the best thing? Well, ecovillage living requires a higher level of cooperation because of the shared goals and resource sharing. The question becomes, how can you simultaneously give everyone the freedom to go their own direction, while moving the community forward towards common goals? Does increased cooperation automatically mean sacrificing autonomy? Or is there a way to negotiate a compromise between the two?

One of my study participants told me, "[Before moving to the ecovillage] we pretty much made our own decisions. We could do what we wanted, provided we had the means and the time. Living in community, we got into it knowing it would not be the same" (Dancing Rabbit Interview). Probably the reason this person is still living happily in her ecovillage is that she had a realistic set of expectations about what living in community would mean. She came into it expecting to lose some autonomy, believing it would be worth the price.

Someone who didn't think about these concerns before joining a community would be in for a nasty surprise. The example given me was, "If we add to our house, there is a community process asking for concerns. If someone doesn't want us to add the room, there could be hurt feelings, or judgment"(Dancing Rabbit Interview). You have to be willing to put effort into the process. Crafting compromises can be an incredibly labor-intensive. Sitting back and letting someone else take the tiller of the boat you are sitting in, can be even more difficult than steering the boat for yourself. "Sometimes people are so attached to the way they want to see things, they get very upset when it doesn't go their way," said an ecovillager from Ithaca.

A founder of a newly established spiritual ecovillage thinks the key to smooth governance is "transcending the ego" but admits this is difficult for him. "We shouldn't think the way we used to when we were in the system. But getting used to new ways of thinking is the hardest thing... If we have a problem with each other, we quickly jump into the old patterns of attack and counter-attack. That's stupid" (*Vaux la Douce* Interview).

Risk of Over-Involvement in Neighbor's Lives

Ecovillages with good on-site employment have people living and working in the same place, which has certain consequences for interpersonal relations. An ecovillager from *Ecolonie* explains, "Normally people have separate work/home life, but if you work and live in an ecovillage, you get

confronted all the time with daily happenings, so it is important that people living in ecovillage know themselves, and are very clear in communicating."

Barbara from Ithaca adds, "You do get to know your neighbors. It's like having ten roommates. The worst thing is fighting. Fighting is harder to deal with when someone is always around, always in your face." This "in your face" aspect of community life is either it's greatest plus or its greatest minus, depending on how you look at it. Julia from Ithaca explains it quite well. "The good thing about it is, when you're in a bad way, having an emergency, there are people there for you. They come over to cook meals for you every day; people are getting support. On the negative side, everything we want to get done seems to involve a consensus decision... You can't just dig a hole and plant a tree, you have to find out what everyone will think of the tree, which is sometimes a pain in the butt. In that way, community life is a bit like a marriage; you have to face conflicts and create compromises. It's a richer life but not a simpler one." The comparison between community life and marriage often crops up in the intentional communities literature, perhaps because they both involve a loss of autonomy hopefully coupled with compensatory rewards.

The comparison with marriage cropped up again in this comment, "You know it would be easy to talk about politics here and the politics of decision-making, but quite honestly that isn't all that bad. It's grating sometimes, but its a better deal than fighting with your wife over the checkbook. You know certainly occasionally the community makes decisions that I don't agree with, but quite honestly I don't find that very often" (East Wind Interview). This was a surprising comment, because you'd expect compromising with a spouse (one person) to be easier than compromising with a community (many people). Maybe it's more about sharing common values than it is about sheer numbers.

Even so, numbers do matter. Often after an ecovillage's membership passes a hundred people, they grow skeptical of the consensus decision-making process and begin researching other decision-making methods. Consensus can be very unwieldy with large numbers of people.

The Need for Clear Boundaries

Setting clear boundaries is a good way to mediate the problem of being too involved in one another's lives. This can be difficult for new communities, in which social contracts have not had the time to solidify. Some lessons ecovillages learned the hard way: deliver criticism privately (don't shame people in front of the group), avoid judging people, and respect privacy. An ecovillager from

Ithaca told me, "An African anthropology student came here to study us, and lived with us for a year. One conclusion she drew at the end of the study is that people had a big fear of being rejected by their community."

If you live very closely with your community members, getting a sense of dislike from them can be devastating. Although it might be appropriate to casually form a negative judgment of an acquaintance or coworker, negative judgments of other community members can sometimes tear apart the fabric of the IC. Therefore, expressing disapproval of someone else's habits should be reserved only for extremely serious situations (like when someone's safety is at risk.)

Child rearing is one issue where finding the right boundaries can be especially difficult. One ecovillager said, "Everyone has different rules for their children. I think its tough to be a parent here, especially when two kids are having a ruckus and you have to deal with the issue of how to treat your neighbor's kid... It's hard to know what to do in some situations. You're always running up against the dilemma of when to interfere, and when to mind your own business" (Ithaca Interviews). On the other hand, an ecovillager from Dancing Rabbit commented, " I get to be auntie to a lot of babies here, even though my youngest is seven years old now. This is great, because I love babies." There is a trade-off here. On one hand, parenting in community means getting some free childcare and having your children benefit from a diversity of role models. On the other hand, tension can arise between conflicting parenting strategies.

Addressing Power Imbalances

Strong personalities tend to congregate at ecovillages, which can make the task of cooperation more challenging. One ecovillager told me, "Even though we are like-minded about intentional community and sustainability, none of our other opinions are just the same!" (Ithaca Interviews). In the presence of conflicting goals and interests, power imbalances invariably develop.

One ecovillager said critically, "There's one guy who shouldn't be chairing the meeting because he cuts off ideas that are different from his," but she qualified that with, "sometimes there are meetings where people function beautifully. I'd say the majority of meetings are not stormy" (Ithaca Interviews). However, keeping power imbalances from developing is something that requires constant vigilance, and most importantly, introspection. I've read more than one book by a community founder that said something along the lines of, "I was controlling everything but I had absolutely no idea how bossy was being until enough people pointed it out to me." Sometimes people

who abuse power think they are just acting naturally, and are unaware that others feel uncomfortable disagreeing with them.

An ecovillager from Earthaven said it very nicely, "The external permaculture is not too difficult to do, throwing recycled stuff around, or throwing solar panels on your roof. The inner landscape of permaculture is much more difficult" (She means permaculture here in the broader sense: a system in which each element helps the other elements work better). She continued, "I've gotten arrested many times for political stuff, activism, and let me tell you-- it's easy to protest! But governance, governing yourself, is HARD. Protest is easy, governance is hard." Under a dictator, people can just complain about the dictator's choices and avoid taking responsibility for anything.

Ecolonie had a Board of Directors with more decision-making power than other members. They explained it to me this way, "We sometimes use the analogy, that *Ecolonie* is like a moving wagon-- some people are pulling and some people are pushing. The pullers decide the direction; those are the people who have the vision about how things should go, a global vision, those people are on the Board. The other people, who are pushing, are just as important as pullers. So everyone is valued the same, it's just a matter of decisions made at a certain level. People love for the organism to advance, people who are pushing don't want to have a responsibility for the whole project and they just want to run a certain project, a part of the whole." Of course, the lady I talked to was a Board member. I have no idea how this leadership structure looks from the "pusher" side of things.

It seems clear that power imbalances do not disappear entirely from the ecovillage; and indeed, I didn't expect that. That would just be too Utopian to be believable. What does seem to be true is that people worry more about correcting the existing power imbalances. Rather than thinking, "he's the leader, we are obliged to listen to him," they think, "As the chair, he shouldn't be cutting off other's ideas." Where power balances do exist, people are aware of them and bothered by them, instead of accepting them, as might be more the case in the mainstream.

The *Ecolonie* "wagon metaphor" is a good example. *Ecolonie* mostly functions as a tourism business, but in a regular business, people would take it for granted that there have to be bosses. In *Ecolonie*, they seem very uncomfortable with the idea of bosses. To make themselves okay with the idea of leadership, they need this elaborate wagon mythos, to justify how it can be right for equals to wield power over equals. I don't know enough about *Ecolonie* to say whether this works well, but at least they are thinking about these issues and not ignoring them.

Social Courage

Living in community takes a great deal of what I would call social courage. A Findhorn ecovillager told me, "People tend to be much more honest in this environment, which is good but also difficult. In most of society we're not very honest; we don't speak our minds, which is more comfortable but less rewarding in the long run, maybe." Being willing to face what others think about you takes a lot of self-confidence.

Another ecovillager explained the need for social courage in this way. "It used to be if I disagreed with people, or had a misunderstanding, we wouldn't talk about it, we just would stop getting together. And then it would fester... here you can try to avoid people, but its really uncomfortable, so I've learned to be way more courageous and speak my truth. It makes things smoother. I see how it only hurts me in long run if I don't deal with a relationship" (Dancing Rabbit Interview).

Adapting to an ecovillage can mean becoming very comfortable with conflict and learning how to bring relationships through it. Dislike of confrontation can be gradually overcome if you believe that the underlying bond is strong enough to survive the confrontation. Perhaps this is why new communities tend to be much more volatile or unstable than long-established ones; the bonds of trust have had insufficient time to form.

Social Capital Increase

Even though living in community can be challenging, the reward is an increase in social capital. The question, "What kinds of events bring the community together?" was very revealing. Everyone I interviewed was able to tell me lots of things right off the top of their head that the community was doing together. For starters, most of the communities had the option to eat together at least once a week, sometimes every day.

They would band together to work on common tasks, and share everyday life to a much greater extent than neighbors usually do. They would band together to finish big jobs in a hurry. For example, at Ithaca, "The Westhaven Farm sometimes has a 'Weed and Feed.' What's that? You weed until you're ready to drop dead, and they feed you! It was so delicious, and besides we were starved after hours of weeding. I remember during one Weed and Feed it was pouring rain, and everyone was totally covered in mud. We really felt like we had earned that meal."

Holiday celebrations usually took place at the community-scale as well as the family-scale. The Farm Ecovillage told me, "We have collective birthday parties, for example everyone born in month of March will throw one big party together." Here are only a few of the things the ecovillagers at Ithaca mentioned to me: "Every Thanksgiving we have a tradition of playing football together. Once a year Graham makes taffy and invites everyone to come to a taffy pull...On New Year's Day we go crazy and have this event where people jump into the water, if they're brave enough. Sometimes Francis organizes flashlight tag in the woods at night. "

Ecovillages are developing their own unique traditions, so that each ecovillage has their own distinctive culture. One charming example from Dancing Rabbit: "We have Talent and Untalent Shows. Untalent means, even if you don't have a talent get up there and do something goofy. My middle son would kind of wiggle his eyes and suck in his stomach so he's the skinniest boy in the world, for example. And sometimes they will do that thing where a short person will stand behind a tall person so it looks like one person has the other's arms, and it looks so funny. And of course there are people who are actually talented and they are amazing too."

The evidence of social capital was revealed in times of stress, as well as by instances of celebration. For example, an ecovillager from East Wind told me, "We had a twenty-four year old member, and for twelve months he knew he had a brain tumor, but he didn't tell us. For a year he kept on working, spreading himself thin. When we had the service for him, seventy people were crying... we loved him so much, and I've never seen us be more of a family than on that day."

An ecovillager from Dancing Rabbit sums it up by saying, "There's a feeling of being part of other people's lives, interconnected. Even with people I'm not especially close to, I feel we all have each other's best interests at heart. That's a lovely atmosphere to be in." It seems clear that living in community means a lot of work and commitment. However, by the end of my interviews I was convinced that the work did reap certain rewards. It seemed to me these people really were getting something extra from living in an intentional community.

Conclusions About Social Gains

People move to the ecovillage because they feel there is "something missing" in mainstream society. They are motivated by the desire to pursue personal and social development, not just by environmentalism. Their desire to lead a different style of life is so strong that they will even leave homes and good incomes behind in order to search for that more meaningful lifestyle.

The ecovillage is not a utopia where everyone gets along in perfect harmony. Sometimes neighbors can become intrusive, and uncertainty about boundaries can lead to stressful situations. Just like in any community, there can be power imbalances and abuses. Nevertheless, there is still an atmosphere of concern for equity and the well being of others. The people I interviewed found what they were looking for in the ecovillage, even if they didn't find perfection.

The results of my study can be useful in the context of the broader environmental movement. When these people moved to the ecovillage, they reduced their consumption, but they also experienced immediate gains from the supportive social environment. They gave up something, but they also got something. Environmentalists will more easily achieve support if they can point out gains as well as losses that come from reducing consumption. The experience of these ecovillagers can be used to demonstrate to the larger public that you can increase your quality of life while using fewer resources.

A more intensive study of intentional communities could provide foundational research for a training seminar on "How to Live in Community." The researcher could study the interpersonal problems that occur in tightly knit social networks and why they occur, and develop a training program, which would help people avoid them. Since interpersonal conflict is the bane of all kinds of organizations, such a training program could be a vital asset to environmental and social movements of all kinds. This chapter provides some indications for what would need to be included in such a course.

ANALYSIS OF ECOLOGICAL GAINS

A Long Way from Self-Sufficiency

Ecovillages generally find achieving sustainability goals to be more difficult than they anticipated. Agriculture is a good example. When I asked, "Approximately what percentage of your own food do you grow?" start-up ecovillages would give me answers like, "We haven't really started that part of our project yet, but I'm sure we'll be growing most of our own food soon!" Whereas mature, long-established ecovillages would say in an embarrassed way, "Not much... we hope to get around to doing more of that eventually." Even though all the numbers I got were estimates (and

could have been inflated for optimism's sake) nobody claimed to grow more than 30% of their own food.

Considering all the obstacles discussed in my agriculture chapter, this is scarcely surprising. Food self-sufficiency is an extremely challenging goal. Ecovillages seem unaware of just how rare it is to achieve success in this area. They frequently assume (erroneously) that other ecovillages are doing better, or growing more, and blame themselves for not trying hard enough.

For example, a Findhorn ecovillager says a tad defensively, "We do as much as we can, we don't have enough land to feed 5000 people, we only have 7 acres." A man from the ecovillage training center at The Farm said, "People make their own sauerkraut, we have our own cows, eggs, chickens, we've got somebody who's starting a trout pond business. Some people grow turkeys, some people have done some wool… we don't have any goats anymore… I would say we would be very lucky if we raised 10 percent of own food. With some people that's higher because they can their own tomatoes and whatnot." He seems to feel ten percent is a low number, but it's still an impressive achievement in the context of the difficulties involved.

Only one of the ecovillages I talked to was fully off-grid, although many of them used renewable energy sources as supplements. Also there were very few examples of what could be called a truly local economy. My question, "What professions do people in your ecovillage have?" was very revealing in this regard. Two of the ecovillages I talked to had economies based around a single business, which is risky and precarious. Many more ecovillages had an over-reliance on outside employment, with a majority of their people working on off-site businesses.

The two oldest ecovillages I talked to had the most independent economies. In many cases, I think ecovillages suffered from not planning for the creation of on-site businesses from the start. If ecovillages kept employment and financial needs in mind from Day One of planning, I think more ecovillages would achieve long-term success.

So these aren't communities with independent economies that grow all their own food and generate their own electricity. Still, they've gone farther in that direction than a regular town would have. Furthermore, there's enormous momentum to continue moving in that direction. When I asked people what they wanted their ecovillage to look like twenty years from now, I received enthusiastic responses that described great plans for the future.

Ecolonie said, "We want to be more energy-independent. Showers for camping guests are already heated by solar panels, but we want to invest more in solar panels or other new methods of renewable or free energy. In the future it will be very important to be independent on the level of

energy. We want to buy as a little as possible from external sources. We are also discussing about buying more land in the near future. We take care of 40 hectares now, but we are convinced that with the economic and financial crises of the last few years, it becomes more and more important to be as independent as possible from world trade-markets."

An ecovillager from Ithaca described these hopes for the future: "I really want there to be regular alternative transportation so that people hardly ever have to drive cars... I want there to be fruit trees EVERYWHERE, and some way to store the fruit and preserve it. I want there to be more root cellars. More self-sufficiency. I hope we get more renewable energy, more solar and wind." Ecovillages have only partly achieved their sustainability goals. But there seems to be a lot of commitment to continue traveling in that direction, rather than sitting back and saying, "We've achieved enough now."

Danger of Overstretching

Despite the ongoing commitment to building a greener future, exhaustion seems to be settling in. One ecovillager told me, "You could be busy 24-7 if you wanted to here, there's that much going on. It's always about how to set the boundaries, because there's always so much" (Earthaven Interview).

Another ecovillager explained to me why living in an ecovillage was more labor-intensive than living in the mainstream. "I have some concerns about people being stretched too thin. Some people financially, some time and energy-wise, people who are really committed to this mission. Certainly there's a lot of work to be done and living this lifestyle increases one's workload. Goodness, there are decision-making meetings, committees, chores that weren't done before, like dumping humanure buckets or cutting firewood, or keeping yourself warm with wood, or a lot of gardening, cooking from scratch, walking everywhere, dealing with batteries, hanging laundry… everything just takes longer. And there are a lot of projects going on, and we're fifty people and a lot of those are kids. So there are people raising children, doing their own work, and doing Dancing Rabbit work, and having fun in addition to that, and it's a lot to balance. Mostly because the amount of volunteer work we do is much greater. My worry is burnout… My main concern is that people learn to balance their lives, me included. I want to make sure everyone has time for compassion for themselves and others" (Dancing Rabbit Interview).

Part of the reason ecovillagers face so much extra labor is because they are pioneers. Once

some of the barriers to entry are overcome and green industries are more established, it will no longer be quite so difficult. However, we also need to face up to the possibility that a green lifestyle is *inherently* more labor-intensive. This is something for society to keep in mind as it makes a push towards reducing carbon emissions.

Not Utopia, Just a Testing Ground

When I asked people whether they considered their ecovillage a success, I was told that sustainability was more of a journey than a destination. A Fondale ecovillager told me, "Success is not just a good word, it's more of a progression little by little. It's just doing what you have to do! Living here is good for my evolution, but it's also good for the evolution of humanity. It's just a good way for me." A similar response: "Yes, it is a success but the work is never finished" (Carapas Interview). And the Ecovillage at Ithaca, currently in the process of creating a third neighborhood, told me; "Each neighborhood is an improvement on the last. For instance, the first neighborhood here didn't have solar panels, and the second one does. Maybe the next neighborhood will have geothermal! So you see, we are constantly progressing towards our goals."

When I asked what the Global Ecovillage Movement meant for the future of the world, people seemed to think I was going a little overboard. "We're not going to be shining stars, an example leading the change to save the world!" one woman said with some embarrassment. "We're just attempting in our own little way to be at the forefront of people thinking about these issues. A little ahead of the game, able to educate others" (Ithaca Interviews).

An *Ecolonie* leader emphasized with similar modesty, "We don't say our example is THE BEST example, not at all. We say *Ecolonie* is a testing ground." This concept of a testing ground is key. Even if the ecovillages by themselves are not significant, the lessons society can learn from the ecovillage experience could be important. We can learn from the trials and mistakes of ecovillages how to chart the course into a more sustainable future. As Ecovillage Carapas said, "We can be an example. If one person changes, the others will see what is possible. We will share our experience, our tools, and our methods."

One ecovillager told me, "If you live in an ecovillage – well, you have street cred. Nobody can say 'This can't happen,' because you've been living it" (Earthaven Interview). I would have to qualify that by saying that the rhetoric of ecovillages still exceeds the reality of what they have accomplished. However, what's important is that the gap between ideals and reality is continuing to shrink.

Shrinking Footprint

Everyone I interviewed was confident that living in an ecovillage made their ecological fooprint smaller. The reasons for the small footprint varied from village to village. One ecovillage might say, "We have constructive wetlands to handle gray water, and photovoltaics," while another might say, "We have good insulation, many solar panels and passive solar orientation." One answer that came up over and over again was cooperation: "reducing our total need for consumer goods through sharing" (Farm Interview). This was a strategy pretty much all the ecovillages used to reduce their footprint. "We are 65 people, we have 7 cars that go on the road. If we were 65 people out there, we'd have 65 cars that go on the road," a person from East Wind explained to me. I was also told, "Ecovillages give you a lot more than just reducing your footprint. You also get the whole community thing, and a different way of living more in tune with nature and with people" (*Vaux La Douce* Interview). Part of what made reducing the footprint worthwhile for people was they were also able to live a lifestyle that was more satisfying for them.

STRUGGLE FOR CULTURAL CHANGE

Culture Clash

The culture clash between ecovillages and the mainstream society may prove the downfall of ecovillage's plans to have a larger impact. Where ecovillages are viewed as weird or cultish, people will be reluctant to imitate their practices. One ecovillager said, "The biggest obstacle we face are people's fears, because people are afraid of doing things differently. We have to deal with prejudice, because people like to see things as the way they always were, and we're a challenge to that" (Findhorn Interview).

This prejudice can manifest itself at many levels. One ecovillager spoke with some resentment of the unwashed hippies stereotype. He said, "I may take one or two less showers than the locals, but really the difference is that I refuse to use deodorants with aluminum or perfume with harmful chemicals. And sometimes the locals think we stink, but sometimes we think they stink" (East Wind

Interview). Now that is a more resentful comment than I usually heard. However there was commonly a disconnect of some kind. Ecovillages located in conservative rural areas had more of a problem; ecovillages located nearby progressive university towns had less of a problem. But there was an ever-present danger of falling into "us and them" patterns.

Part of the negative stereotype is a legacy from the communes in the sixties. In many ways, ecovillages need to shed that image in order to progress. A man from an ecovillage in Morocco explained eloquently, "Ecovillages have become synonymous with garden asylums for the socially-decoupled, eternally broke, rebellious, tree-hugging, long-haired, uncouth, fashion-challenged, world-trade-summit-busting, sexually gregarious, work averse, joint-rolling and mind-altered bundles of human contradictions. We must shed that image and rise to a more adult position and truly reflect our nature, which is the glorious pioneers of the new emerging paradigm, the cornerstone of a new enlightened civilization, or brave men and women spear-heading a new living movement of change of restoration" (Penyon Bay Interview).

Image matters, especially in terms of receiving funding. In one interview I heard, "I would love it if there could be a message that it's not a hippie commune sort of thing... I'd love to see more information out there, telling people ecovillages exist! We certainly didn't know ecovillages existed. Maybe we could have the government waking up and putting funding behind developments like these; rather than seeing it as a freakish sort of thing, thinking 'We want to encourage this,' and putting the bucks behind it" (Dancing Rabbit Interview). Ultimately, ecovillages need to have sustainable economies and provide for their own needs. But there could be a role for governments or grant-giving agencies in giving capital to cover the start-up costs of an ecovillage. This is unlikely to happen so long as ecovillage have a negative image. This is particularly true of government funding, since politicians have to be so sensitive to the opinions of their constituencies.

Culture Connection

However, there aren't always bad feelings between the ecovillage and mainstream. Sometimes the ecovillage is able to benefit from positive recognition and spread its ideas to the larger society. A representative from Findhorn told me, "In the last few years we've gained a lot of political recognition. Thirty years ago, we were just a bunch of hippies, nowadays we get recognition from political parties. We are even working with political bodies to create educational programs. Society is changing to accept what we're doing, even as it opens up more to healthier foods and alternative

medicines." An ecovillager from Earthaven confirmed that impression, "All of these things like sustainable energy and organic foods and buying locally, are much more well-known and popular now than thirty years ago. I've been involved in this movement for thirty years and I've seen the changes."

Jean-Marc, from a mountain ecovillage in Quebec, placed a priority on connecting his ecovillage with other projects and making an impact on larger society. He told me, "We need to connect with other projects, because it is very hard to battle the industrial world. It is very hard, but thirty years from now people will see us as heroes, and say we saved this mountain! Right now people think we are crazy. Some people even think we are a cult! But I'm sure in thirty years, we will have had an impact on this area. We will have spread our message" (*Solution de Vivre* Interview). In this way he expressed confidence and faith that the cultural shift would go in his direction.

My interview with Jean-Marc was especially interesting because the first time I called the number of his ecovillage, I got a woman who said, "Our ecovillage no longer exists." Then she offered to pass my contact information onto Jean-Marc, who called me later. He immediately denied that his ecovillage project was over. "When they say our project is finished, they are wrong!" he cried. "People don't know what they want, and like to hit us because we're going somewhere. We have built places to live for fifteen people. One hundred people want to live here, but they don't have the money to commit to the project. Everyone wants to be part of a project like ours, but no one has the guts to invest... When people see our project, they are amazed, but they don't want to commit. They always find some reason to be dissatisfied, some reason to criticize. They criticize us for being capitalistic. But we need to be a little capitalistic. We don't want to return to the woods, we want to stay connected to society. It is so frustrating. I just to do a project, not sit around listening to critics cry that it is not really an ecovillage. We need to create a project that we can handle, a project that is not too extreme."

Here, Jean-Marc is criticized because his project is not extreme enough. The irony is, the people who are demanding that he completely reject capitalism and lead a self-sufficient lifestyle are actually keeping the project from going forward. Because they are disgusted with any project that does not accomplish everything in one leap, they abandon Jean-Marc's project and ridicule his efforts. Jean-Marc meanwhile is making significant progress with his gradualistic approach. Anyone who has high goals must accept the reality that they will be accomplished gradually. People who expect everything to happen all at once grow quickly discouraged, embittered, disillusioned, etc. They let the perfect become the enemy of the good and embroil themselves in internecine strife.

This is why ecovillages that have fallen short of the ultimate goals; energy independence, a green economy, sustainable food production, etc; should not be judged as failures. Rather than looking at whether they have reached this fabled "destination," their success should be judged by the miles per hour along the road.

Transition to a Green Culture

The situation was neatly summed up by one ecovillager who told me, "The ecovillage movement it finds itself on the cusp of two tectonic plates of culture, one is the mercantilistic-- which is dying-- the other the communistic (not to be confused with communist)-- which is being born. Thus the state of most of this newly delivered baby creature of human consciousness is one of relative and sometimes complete dependency on the old order, its internal member interactions are riddled with contradictions, its communal disposition is defenseless against the imperative demands of a social system that is monetized to the core, and faced to the daunting task of rebuilding a meaningful existence in a cultural environment that doesn't give a hoot" (Penyon Bay Interview). The first step to creating a better world is figuring out how to work with the world we have now, and that can be the challenging part.

There are several barriers in the way of switching to a "communistic" culture, not the least of which is people's deeply engrained habits. One ecovillager, when asked about obstacles in the way of his project said, "We don't have the habit of living collectively... we are trapped in the mentality of 'every man for himself" (Carapas Interview). When I ask what kind of shift would need to take place for ecovillages to grow and flourish, people described a nigh-spiritual change. "In mainstream society you see people working for themselves to have their own house, their own car, etc. It is very important that people realize they can cooperate, like we do, to create something together, that goes beyond their own personal needs and wants" (*Ecolonie* Interview).

However, every time there is evidence of breakdowns or failure in the mainstream culture, the alternative culture receives a boost. Ecovillagers share with others the perception that mainstream culture has been facing crisis after crisis lately. "By working together we can make a difference in creating other worlds. Because when we look around we have crises everywhere, financial crisis, food crisis, all sorts of crisis, and it seems to be getting only worse, not better... people realize they should create alternatives to a system which is falling apart" (*Ecolonie* Interview). Maybe describing the mainstream culture as "falling apart" is an exaggeration. However, it does have enough problems to

motivate a search for alternatives.

Ecovillages could provide an alternative to suffering from the economic crisis. Only one of the ecovillages I talked to was income-sharing; however, my interviewee was extremely enthusiastic about the benefits of living in an income-sharing community during a recession. He said, "I don't have a college degree, and in this economy, it's very difficult to maintain a job. As the economy changed, my friends on the outside that I kept in touch with-- their view of my lifestyle started to change, because suddenly I was employed and they were not" (East Wind Interview). Friends who originally found his choice bizarre, understood the sense of it, once they lost their jobs.

An ecovillager from *Vaux La Douce* told me, "Because of peak oil, peak energy, peak water, peak food, financial collapse, there's going to be millions of people who want to get out. That's why the green movement is growing and growing now. People like me who can see what's coming; we are making ecovillages and transition towns." Of course, nobody can actually "see what's coming," so I feel a little uncomfortable about this prophecy of imminent doom. People have been inaccurately forecasting the apocalypse for all of human history. However, it is true that unsustainable use of resources has produced certain warning signs.

Another person I interviewed was pessimistic about people seeing the benefits of a greener lifestyle before it was too late. "As far as stopping global warming before Peak Oil... only the activists can see the benefits of that! Most people are too stodgy to change the way they live because of somebody's theory. People would rather go into a state of denial: 'Excuse me, don't confuse me with the facts!; People would rather believe what's more emotionally comfortable to believe, than look at the information and realize they will have to change," she told me (Ithaca Interviews).

Her opinion is echoed by another: "Humans don't change unless they are put between the rock and the hard place, and they won't alter their behavior unless the fiction of monetized happiness can no longer be maintained and they are forced to seek better alternatives. I am quite pessimistic in this regard, not that the wind of time will be somehow hindered by our attitudes, but only that the epochal transition that is about to take place will not happen smoothly and gracefully and millions, even billions of people may have to suffer for the doings of a very little group of obtuse, short-sighted and self-interested individuals" (Penyon Bay Interview). According to these views, the first step in a transition to a better future would be exposing the "fiction of monetized happiness" as a fiction.

That is not to imply any disdain for money or self-righteous rejection of worldly things. People with that attitude tend to have projects that fail very quickly. Money should be respected for what it is: a useful and necessary tool.

However, other resources can be even more important than money. I had a couple of people emphasize to me that finding people with the right talents and skills was more difficult than arranging the financing. "You need to have good people, who have social and artistic qualities, as well as qualities to renovate buildings, technical and agricultural qualities— though of course you also need money to develop all these things" (*Ecolonie* Interview). "To move forward, you need money and the right skill mix. Even if there's enough money, you still need the right people with the right skills, or it won't move forward" (Ithaca Interviews).

Human capital seems to be more important than financial capital. Having committed and intelligent people working on the movement will make the biggest difference. "It will most likely be up to us, the degree of our commitment, how intelligent our decisions are, how much hard work are we will to put into it. Outside hindrances are very real, such as bureaucracy and natural cultural resistance to new ideas and new ways of doing things, but nothing can get in the way of a bull who has made up his mind. We need bovine testicular fortitude, that is it" (Penyon Bay Interview).

I believe very strongly in the importance of the cultural shift. More than any green technology we can invent, fundamental changes in people's attitudes, habits, and values will make the difference. Once the desire and the will is there, change will be difficult to stop. However, while the cultural shift is the most important, it is also the most difficult. The force of habit is so strong that nothing short of crisis is enough to convince people of the importance of change. As these crises pile up, the people with the foresight to invest time and energy into finding ways to live sustainably, will come out ahead. They will be in possession of high-demand skill-sets.

THE POLITICAL IMPLICATONS

The political implications of collectivist ownership did not occur to me until I had an interesting discussion with a man from the Farm Ecovillage. I asked him what kinds of changes would allow the ecovillage movement to grow. He replied, "There needs to be a lot of social change and attitude adjustment, and we need the developers and bankers involved, you're talking about a whole lot of change, because right now its structured from the top. Right now people don't carve out their own niches; they go into environment pre-built by bankers and developers. And the environment is built in a way that makes people separated... It's the status quo that every one has

their own family, which has no connection to nature or neighbors. So it's large thing to wake up one morning and organize yourselves... you can only do so much in a neighborhood where everyone has their own car, garage, and back yard... A huge shift would have to occur. But it can occur, I'm not saying it's impossible."

He continued, "In the regular world out there, we're more or less walking into the socially engineered platform that the government has set forth. This platform has been designed to make people isolated, afraid, at odds with each other. The change you're talking about may be the desire of people who wake up from sleep, and say we'd rather do something smart now that we're awake. But there will always be people who would rather extract taxes and fines and fees, than see something done the smart way. For example, if ten families got together and wanted to have two lawnmowers, not ten, and build common facilities for themselves-- if that happened, the obstacle would be those who have money and power, who would not desire that change to take place. They would deny permits, the perceived authority figures would say: 'You cannot do that! There are codes and rules and we will not lend you the money'… The system has to fall apart, or we have to decide collectively to change… The common person wants to set himself up in a sustainable way, but the system wants to extract… It would be great if it was encouraged from the top down, but that's just not the way things are right now."

I'm not sure whether attributing the isolation of people to malice on the part of governmental or corporate powers is accurate. However, I do wonder if there would be a corporate backlash against collectivity, if it started to catch on in a big way. The two lawnmowers thing is perfectly sensible-- after all, how often do ten people on the block mow their lawn at the same time? When you think about it, it is kind of ridiculous that some of these machines are still a one-per-household kind of deal. However, if people organize this way, there's an 80% drop in lawnmower sales.

What can the lawn-mower manufacturers do? Perhaps they can defend their sales with attack ads that paint the lawnmower-sharers as some sort of evil communists. I'm using the lawn-mower example somewhat humorously, but it doesn't have to be lawnmowers. Pick any commodity that can be rationally shared, and imagine the rage of the manufacturers as people wise up and save money through collective ownership.

If everyone starts sharing, that's great for the environment, but that's probably billions of dollars lost in sales for an enormous number of industries. So are those people all going to find other jobs? Or will they actively fight against the collectivity movement that is costing them money? This whole communitarian thing may be pulling at the toes of a sleeping giant.

The most overtly political response I ever got in my interviews came from an East Wind Ecovillager. He told me, "For the communities' movement to succeed, the public school system would have to stop treating socialism as a dirty word. The school system and the media would have to stop calling Stalin and Castro and China communists, because they're not, they're fascists with a bourgeoisie top. Rich men operating a poor country might call themselves communists, but they're not. And yet China, Cuba, and Russia, they are always called communists. Communism means everyone is equal; please take another look at the dictionary definition of the word."

He continued, "I had an argument with my dad the other day… I said we are a socialist republic; my dad said 'We are not socialist!' I said, 'Then how do we get our roads, education, police force, etc?' So until we start teaching honestly the definitions of these words, and not treating them as evil forces of World War Two, [Cold War?] people are going to be afraid of living differently." To put it bluntly, we've always had a mixture of private and public property; the debate is always about where to draw the line between the two. Ecovillages, with their "Common Houses" and shared kitchens are drawing the line in a slightly different place. This simple act of sharing may be considerably more politicized than anyone realizes.

As well as blaming the school system, the East Winder also blamed a certain cultural mindset. He told me, "It's very simple. I'll go to a community conference, where there are like-minded people, who say, "Oh, you're from East Wind! I want to start a community just like that OF MY OWN.'" He paused for dramatic emphasis, than asked me, "Do you see the problem there? Do you? The problem is the phrase, 'OF MY OWN.' For a community to start up, a group of people has to work extremely hard to purchase a piece of land that they will not own. That's very difficult for people."

I acknowledge that the drive towards ownership is very powerful. However, when ecovillages do succeed in owning things collectively, they're very proud of it. I heard from *Ecolonie*, "It's very important that private persons do not own the buildings or the soils, that it all belongs to the foundation… this structure is important, so that private people cannot enrich themselves with the work done at our place." In her view, the collective ownership made her place important and unique.

Because ecovillages are still relatively few and far between, they have not yet invoked much political ire. Sure, they might have had to deal with obnoxious zoning law or uncooperative town officials denying permits. But if collective ownership begins to catch on in a kind of big way, we can expect a political firestorm. The people who make money from the wastage entailed in excessive private ownership will be the ones fanning the flames. If the movement ever goes big, it will need a political strategy to deal with vicious propaganda attacks coming from these sources. I at least still

have no idea what that political strategy might be. There is much food for thought here.

CONCLUSIONS

The ecological benefits of living in an ecovillage are less substantial than you might expect from listening to ecovillage rhetoric. I believe time and hard work could do a lot to close the gap between rhetoric and reality, and that ecovillages are already setting challenges for themselves in terms of continuing to improve their sustainability. The social benefits of living in an ecovillage seem clear, although there are social costs as well (for instance, you might sacrifice autonomy to achieve a greater level of cooperation). Ecovillages have great potential to be models for the rest of society, but they need to overcome certain widespread negative stereotypes first.

When there are signs of trouble in mainstream society, more people begin to consider alternatives. People will be more willing to embrace ecovillages if they lose faith in existing institutions. However, waiting until a crisis forces change upon society will not be good for anyone in the long run. It would be much better if we could move towards a sustainable society in a deliberate, planned way.

The decision to share resources among community members is probably the most significant reform ecovillages have achieved. Although few of them share *everything*, they have discovered a certain logical benefit to sharing some goods: (appliances, machines, common facilities, children's play equipment) high-cost goods that are easy to take turns using. Imitating these practices would be a good way to decrease our footprint in a hurry. Unfortunately, actions that significantly reduce the total demand for goods will have widespread political consequences, since the producers will feel a need to defend their profits.

If we want to take the shift into green beyond the ecovillage and apply it to society at large, several things will be necessary. First, it will be important to have tangible, well-funded plans for achieving sustainability goals, not just vague promises to reduce carbon emissions by distant future dates. Just as the ecovillages are always planning what they can do next to become greener, there needs to be that kind of consistent effort. Second, architects and city planners need to arrange built environments in a way that will make it easy for people to connect, create social capital, and share resources. Third, the propaganda needs to have ample amounts of both fear and hope. The

doomsday scenarios will motivate people to research alternatives, but the promise and possibility of the alternatives also needs to be clearly demonstrated. Most people see alternative cars, alternative light bulbs, alternative eco-friendly shopping bags, but they don't really see alternative *lifestyles.* The allure of ecovillages is that they don't just offer different *stuff;* they offer a whole new lifestyle. I talked at the beginning of the chapter about how people perceive "something missing" in mainstream lifestyles. If enough people are troubled by this "something missing," alternative lifestyles could be due for a wide surge in popularity. This is where the promise of the Ecovillage Movement lies.

Interview Chapter Addendum: Questions Used in Interviews

1. How did you decide to move to your ecovillage?
2. Do you prefer ecovillage life to your former way of living? Why or why not?
3. What are the worst and best things about living in an ecovillage?
4. Describe a favorite ecovillage memory?
5. How many years old is your ecovillage and how many people live there?
6. What are the pros and cons of your ecovillage governing structure?
7. What kind of careers do the people in your ecovillage have?
8. How does your ecovillage support itself financially?
9. Approximately what percentage of your own food do you raise?
10. Do you have the impression that your ecological footprint is better than it would be outside the ecovillage? Why do you have that impression?
11. What kinds of events bring the community together?
12. Do you think your ecovillage is a successful one? What is your definition of success?
13. What goals do you want your ecovillage to accomplish in the near future?
14. What are the most serious obstacles that lie between your community and those goals?
15. What do you hope your ecovillage will look like 20 years from now?
16. What kind of social change do you think would enable the spread and flourishing of ecovillages?
17. What do you think the Global Ecovillage Movement means for the future of the world?

Ecovillages in developing countries had some questions which were slightly different:

12. How big a problem is poverty in your village?
13. What are the major environmental problems in your village and how are they being addressed?
14. How has globalization affected your village?
15. Do you feel your village is achieving a good balance between modern improvements and traditional values?

"The difficulty lies, not in the new ideas, but in escaping the old ones, which ramify, for those brought up as most of us have been, into every corner of our minds."

--John Maynard Keynes

Conclusions

Where We Are Now

Ecovillages have made a good start on reform into a sustainable society, and they have the potential to go even farther. They represent a fusion between social and environmental reform movements. On the environmental side, their ambitious goals include transition to renewable energy sources, ecosystem restoration, sustainable agriculture, and green architecture. On the social reform side, their goals include equitable governance, non-exploitative economic activity, community bonding, and self-development.

Most ecovillages that survive beyond their first few years make reasonable progress in at least one of these goals. On the whole, their most typical achievements are reduced footprints, sustainability education projects, increased community life, and new ideas about how to achieve sustainability. However, none of them have yet achieved complete sustainability coupled with a high standard of living. They might be "living off the land" more than the average person does, but a substantial segment of their financial support still comes from the larger "unsustainable" society.

Expecting an ecovillage to achieve total self-reliance would be like expecting the Wright brothers to go to the moon. However, telling people that ecovillages are unworkable projects with overly idealistic goals, is like telling the Wright brothers to quit wasting their time on this flight nonsense. Ecovillages are making discoveries that will be the building blocks for future discoveries.

Dawson, a director of the Global Ecovillage Network, writes, "The moral of the story is not (or rather, not necessarily) that a sustainable world will be comprised of places looking like ecovillages. The point, rather, is that ecovillage are developing models and lessons that can be applied elsewhere in more mainstream contexts" ("Peak Oil"). In this spirit, I have sought to find ways the ecovillage experience can inform the strategies of the environmental movement as a whole. I have formed some general conclusions about motivational strategies and methods for the green movement, based on the ecovillage experience.

A reactive environmentalism based around protesting the atrocities committed by the status quo has little hope of succeeding. A proactive environmentalism, however, which offers people a concrete alternative for their future, will inspire action on every level. Ecovillages offer a palette of alternatives, paint pictures of the various futures we can hope to seize.

Lessons Learned about Motivation

What Brings People Over to the Green Side

When I studied the motivations people had for joining the Ecovillage Movement, I noticed the two major factors were fear and hope. They were afraid of the way the world was going, but they were hopeful about creating a better way to live. The fear alone would not have inspired action, but simply led to despair. However, once there was the vision of building this ecovillage, there was some kind of path to follow. The fear was the stick, and the hope was the carrot, that moved people along the path.

The fears were based on information available from mainstream media. The media likes to cover "crises": the energy crisis, the food crisis, the financial crisis; every year new examples of things not working out, systems breaking down. In many ways the fears coming from this information may be exaggerated, but ominous feelings about our collective future are widespread.

What distinguishes ecovillagers from much of the nervous public is that they have put these fears together into a coherent framework. Rather than viewing global events as simply one disaster after another, they view these disasters as interlinked, brought about by common causes. The definition of these common causes varies from person to person, but there seems to be a universal hostility towards something which is generically referred to as, "The System". I'm not sure they define clearly what they mean by "The System", but by synthesizing numerous impressions, I have arrived at a definition of sorts. "The System" is the network of compulsions and incentives, which weaves individuals making rational choices into a mass of people moving in an irrational and undesired direction. Ecovillagers believe if they can create their *own* systems, they are curing the problem, not just treating the symptoms. Dawson writes,

> "Societies are rapidly waking up to the uncomfortable reality of being caught between the rock of Peak Oil and the hard place of global climate change. Widespread alienation from rampant consumerism is driving a growing trend, especially among the young, towards downsizing and simplifying one's lifestyle. The failures of modern agriculture and health systems have stimulated renewed interest in organic, locally-based food and holistic therapies... In short, we are witnessing the beginnings of what may prove to be a seismic socio-cultural revolution" ("Eco-Consultants").

Here is a gradual shift from awareness of problems to awareness of solutions. However, the

environmental movement must be careful about advertising solutions to relatively trivial problems as if they were the be-all and end-all of the movement. This trivializes the movement and reduces its credibility. A green blogger writes,

> "I find it very frustrating how many of my fellow dedicated enviros are utterly clueless about the sheer magnitude of the effort needed to hit that 80 [% reduction in carbon emissions] by 2050 goal. Far too many of 'us' think that driving a hybrid, changing their light bulbs, bringing home their groceries in reusable cloth bags, and not buying bottled water 'makes them green' and they're 'doing their part to help', etc. Not only are they not even close to doing 'enough', they're actually doing considerable harm by inadvertently sending the message to mainstreamers that what they (the enviros) are doing is the silver bullet that will solve our environmental problems if only we could get everyone to be like them. The mainstreamers see that what the enviros do isn't all that different from what they themselves do, so what's the rush? Why is everyone getting so worked up about it?" (Grinzo).

The green movement might have made a strategic error by placing such overwhelming emphasis on relatively trivial lifestyle changes. I suppose it's based on some notion of learning to crawl before learning to walk. The problem here is that making these small changes can be relatively dull. Big changes can appeal to people's imaginations in a way that small changes can't. This is the strength of the Ecovillage Movement. I learned from my interviews that people join ecovillages looking for a more interesting life and a bigger challenge.

This brings me to the other lesson I learned from my interviews, that the motivation to join the green movement needs to be personal. Abstractions such as 'saving the planet' and 'hope for the future' aren't enough; people also need the hope of improving their own personal lives. The environmental movement should look for ways to offer people personal rewards for their green efforts.

In summary: To motivate people to join the green movement, they need awareness of emotionally appealing solutions as well as fearful problems. Unfortunately, the latter are much better known than the former. The solutions should be grand in scope to appeal to the imagination, and to equal the scope of the problem. Finally, proposed solutions should also offer tangible personal rewards (such as the chance to find companionship, or lead a more interesting life) because abstractions (like saving the planet) aren't quite motivating enough. Perhaps I could have come to these conclusions in other ways, but my study of ecovillages led me right to them.

Major Barriers to the Green Shift

So ecovillages are still a long way from being self-reliant societies. What are the reasons for that? Many of the ideas that ecovillages are knitting together are still relatively new. The very newness provokes hostility and suspicion from the very allies that ecovillages most need. Banks may be

reluctant to grant mortgages to cohousing models. Municipalities may be reluctant to grant permits for cutting-edge green architecture. Organic farms and renewable energy devices will not get their share of federal subsidies, making it hard for them to compete with the monoculture farms and fossil fuels that do benefit from those subsidies.

The very word "ecovillage" may provoke a knee-jerk reaction of skepticism and hostility. "That just means a bunch of damn hippies living in the woods, doesn't it?" Some ecovillages have very good relations with their neighbors, but others still struggle to prove they are not unwashed hippies engaged in a crazy far-left social experiment. Any organizational affiliation that can give the ecovillage added credibility, such as a link with an established university or NGO, is useful.

However, I do have to admit there's a reason the mainstream lifestyle still has a lot of pull. The mainstream provides people with comfort, ease, and security. This is an issue particularly in developing countries, who see Western lifestyles on TV and view them as a release from poverty, deprivation, and suffering. A worker in Senegalese ecovillages said, "I think it is good to understand historically sustainable methods, but people have to recognize that Western lifestyles appeal to people all over the world and to actively deny that right is counterproductive" (GENSEN Interview). In this way, she was disagreeing with the philosophy of the organization she worked for, which praised and wished to preserve the sustainability of life in "traditional native villages."

It's easy to talk of post-materialist values, but if people are struggling to make a living wage, they will appreciate the cheap prices that come from the destructive extraction of natural resources. This disillusionment with consumerism usually comes from people who are right in the middle of that lifestyle, not people who are on the outside, looking in. If you've never had the chance to consume much, consumerism looks great.

This is the reason equity really needs to be part of this discussion. If the eco-friendly lifestyle becomes the exclusive luxury of the rich, then the movement has failed. One critic accused the Ecovillage Movement of being, "an elitist exclusive club, capitalizing on the growing interest in sustainability in society at large" (Fotopoulos). Although I did meet people of all wealth levels in the course of doing my interviews, I have to admit that some ecovillages did seem gentrified, home to a highly educated middle class. (Others were different, notably East Wind, the income-sharing commune located in the "poorest county of Missouri"). I would like to see less focus on expensive technologies, and more emphasis on living simply and consuming less. One of the ironies here is that the person too poor to afford a car has less of a footprint than the person driving the expensive hybrid-model car.

Maybe demanding both a low-impact lifestyle and Western-grade luxuries is wanting to have your cake and eat it too. Throughout this project I have made much of how shared resources (like a

Common House) allow people to consume less without really giving anything up. Maybe I am glossing over the likelihood that someday (no matter how ingenious we are) there are going to be some tough choices, especially in terms of labor. Living in sustainable communities is likely going to be very labor-intensive. Sure, I can say the work is interesting and meaningful (and don't we have a labor surplus anyway?) Nevertheless, I shouldn't hide that carrying out the suggestions in this project will entail a great deal of effort.

The lure of high salaries and cheap goods is not to be underestimated. I think it is a primary reason the ecovillage economies have not detached themselves from the mainstream economy. There is still simply too much to be gained flowing with the mainstream, especially when you factor in the difficulty of producing some types of goods with small-scale businesses. Still, ecovillages have made a more radical commitment to living simply than many have dared to.

If we do make a societal commitment to consuming less and living more simply, we will need to shift the way we approach employment. As discussed previously, the oversupply of labor is part of what fuels consumerism because everyone needs to sell something to survive. Either we need to work less or embrace more labor-intensive modes of production, and adjusting this way will require a great deal of coordination. If we simply start consuming less, without figuring out a good plan for adjusting production too, that will cause a lot of political and economic turmoil. Anyone profiting from the status quo will make vicious attempts to defend it.

Methods for Reaching a Green Future

Lessons Drawn from the Ecovillage Experience

I have identified several strategies that would help take ecovillages (and sustainability projects of all kinds) to the next level. The information about sustainability discoveries needs to be shared and organized in a more effective way. Small organizations need to band together into decentralized networks so they have some muscle with which to take on their larger competitors. We need to create institutions that support sustainability projects, particularly educational institutions. Finally, ideals need to be tempered with good business sense.

Ecovillages are continually reinventing the wheel, because there isn't a coherent system for keeping track of progress in their fields of endeavor. To solve this problem, I think every time an ecovillage (or similar organization) makes a significant accomplishment, they should enter a report into a database. The report would explain what they did and how they did it, so that anyone reading it would be able to retrace the footsteps of the original innovator. The database would be useful to

ecovillages as well as ordinary citizens; the reports could be 'how-to's on anything from marketing homemade cheese to getting permission for an off-grid structure.

To do such a database properly, you would probably need to financially incentivize the submission of articles in some way. A peer-reviewed journal that published the best reports on a monthly basis would be useful, and a staff to analyze the reports and draw larger conclusions would be a key development. Possible candidates for creating such a database/journal include the Global Ecovillage Network, the Gaia Institute, and various universities with an interest in sustainability.

The idea of clustering from my chapter on green economy also has some relevance here. When small businesses cluster, they can share information, resources, and marketing, without giving up their uniqueness or flexibility. For example, they might pool resources to hire a lobbyist to campaign on behalf of small business interests, balancing out the lobbyists the bigger businesses can easily hire. The problem here is organization. Although cooperation between ecovillages, small businesses, and NGO's would give momentum to the movement, actually making these connections can be a slow and laborious process.

The development of sustainability education is particularly important. Even more than money, we will need people with the right kind of skills to build this new future. Dawson writes that ecovillage expertise "in wastewater treatment, environmental education, renewable energy generation, organic agriculture, leadership skills, conflict-related training, and so on," is much in demand ("Eco-Consultants"). Many ecovillages are holding classes to teach green skills, from installing solar panels to permaculture.

Finally, ecovillages and other idealistic projects need to plan for financial needs from the start, creating business plans which will help the community move forward. In order to accomplish their social and environmental goals, they need to survive in a capitalistic society. So they should employ all the strategies of capitalism that are not inconsistent with their ideals.

I think there could be a great future for housing developments that resemble ecovillages. Developers could market their social and environmental benefits, and even come away with a profit. The grassroots approach to making an ecovillage is mostly what we've seen so far, but it is both slow and risky. For example, one development in London, (not precisely an ecovillage, but low-carbon housing) took the top-down approach to design and was very successful. An excerpt from one of their reports reads, "Providing that the financial and lifestyle benefits of this wholehearted approach can be demonstrated to developers, businesses and residents, it may be possible to bypass the incremental approach to innovation with its marginal benefits, and move towards environmentally, socially and economically sustainable communities" ("Beddington Zero Energy", 10).

To return to this idea of "the System," ecovillages are always talking about escaping "The System" getting outside "The System." But maybe if we could seize the controls of "The System," and start steering it in a different direction, we could make the most effective changes of all. "The System," has the money, the organization, and the power these citizens' projects so frequently lack.

Envisioning the Cultural Shift

Dawson writes, "After decades of being more or less off the radar—dismissed as kooks and freaks—ecovillage initiatives around the world are now increasingly affecting mainstream culture, and in fact, ecovillages are being sought out as partners by conventional, mainstream organizations" ("Eco-Consultants"). To me this is evidence that ecovillages are no longer only alternative societies, but starting to make small changes in "The System." The German government recently gave a prestigious award to the German ecovillage of ZEGG. In 1997 Findhorn Ecovillage was approved for formal association with the United Nations (East).

However, there is still a long way to go. Although longer-established or especially innovative ecovillages get recognition (particularly if they contribute to the local economy) plenty of ecovillages are still totally off the radar. The majority of the population has never heard the word ecovillage, even if they live close by one.

A professor of Technology and Society writes, "The political quest for sustainable development is best thought of as an ongoing series of cultural transformations by which the visionary ideas and utopian practices of the environmental movement are working their way into the social lifeblood" (Jamison, 45). If the cultural shift occurs, the financial backup, the political momentum and all the other needed pieces will fall into place.

The Union of Concerned Scientists has developed a Blueprint for a Clean Energy Economy, which could help stave off global warming with technologies and financial resources we know we have ("Climate 2030"). This makes it clear we need to change the way we're viewing this problem. The belief that more money and better technology can solve everything is prevalent, but that's not really the issue. We have plenty of money and technology. What's holding us back is the inability to muster our collective will for the adventurous steps required.

A worker in an ecovillage training center said, "Thousands of people come here [to the training center] in various states of wonderment and trying to do their own thing, and it's tough because you have to find the land, you have to find the capital, you have to agree, those few steps are the biggest

ones. Once you get to the point where you can say there is a 'We,' things are easier... How is a challenge, but it's not really the hard part" (Farm Interview). Ultimately, there are plenty of smart people to figure out "how." Logistical problems will always have solutions. What seems nigh insurmountable is the task of creating that "We."

The Future Awaits

When the financial system breaks down, people get laid off. When we build urban sprawl, people find their only option is commuting. When fossil fuels get scarce, people have trouble paying their bills. When the agricultural system breaks down, some people become obese while others starve. Democracy gets corrupted by well-financed special interests. The shrinking availability of common space makes it more difficult to interact with neighbors and build social capital. These are all instances of what an ecovillager might call "The System" doing its "evil" work. Notice how I put the word "evil" in quotation marks, because I don't really believe the system is evil. The system has given us good things too. Modern medicine brings longer life-spans, computers have revolutionized the way people communicate; it's easy to think of examples.

However, it's important to remember that the problems with the system are not the inevitable price of progress. We can and should question the system, redesign it to better suit human needs. A collapse in the financial system is not like a natural disaster or an earthquake. If an earthquake was causing all this damage, we would just pick up our wounded and move on. The question "Why did this happen?" would not be of much use. However, the financial system, unlike the earth's tectonic plates, was designed by human beings. If it is causing damage, we need to ask ourselves WHY, and we need to fix it. The same is true for the agricultural system, our energy-generation system, and all the other topics of my chapters in this project.

It is illogical that people should end up being victims of systems they themselves have created. If greed and shortsightedness are part of human nature, so be it. Make them part of the equation, make our shortcomings factors in the overall design. But idealism and generosity are also a part of human nature, and well-designed systems would allow those qualities to rise to the top.

We've known for centuries that the way to find things out is to create experiments. This is why ecovillages are so important: they are actively experimenting with strategies to create a better society. I'm not claiming that ecovillages have all the answers. Questions still abound. How will ecovillage's ideas work out if implemented on a larger scale? How can we find more ways around the obstacles that are keeping them from fully realizing their ideals? Are there better ideals they could be pursuing?

How can we promote replication of their successes? More research on all these questions is necessary.

I do think ecovillages and their creative search for new lifestyles offer hope for the future. Register, in a vivid description of the ideal ecocity that still exists only in his imagination, writes, "The buildings themselves rise up like the cathedrals of a religion of reverence for life on Earth, carrying trees and bushes up to high crags and crests and cascading vines and flowers down into the canyons" (188). Buildings like mountains, streets like canyons, greenery exploding from every surface: Register describes human buildings that are more like extensions of natural wonders than artificial intrusions. The ecovillage dream is that someday the natural might blend with the artificial, that humans will weave themselves into ecosystems instead of tearing them apart. It will take all our combined ingenuity and determination to achieve this dream, but the rewards are not insignificant either.

I believe there is a way around those grim "Limits to Growth." The first era of human progress has been one of expansion, pushing back our frontiers, exploiting new resources, covering the earth. We've covered the earth now; so what's next? The second era of human progress could witness a new kind of expansion, a spiritual and intellectual one. Now that we've conquered all this territory, the next frontier is figuring out how to wisely use the resources we have. Sure, someday we might expand into space or into the ocean depths. But the most significant expansions will be the growth of our ability to live wisely with one another. Ecovillages are like advance scouts on the long trail towards the beautiful and compassionate civilization we may build someday.

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