

Green Microfinance: A Blueprint for Advancing Social  
Equality and Environmental Sustainability in the United  
States

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**Vita-**

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## **Executive Summary**

The nature of 21<sup>st</sup> century environmental problems—climate change, deforestation, the geopolitics of oil, etc—is such that they can no longer be separated from social problems such as poverty, malnutrition and war. In order to effectively tackle both challenges at the same time, a green economy must be created that is environmentally sustainable, socially equitable and inclusive. Without the support, ideas and passion of people of color, immigrants, women and the poor, a green economy will flounder and lack the vibrancy and potency it would otherwise have. This paper argues that an effective means of achieving an inclusive green economy in the United States is through the use of green microfinance, defined as loans of less than \$35,000 that have benefits to both the borrower and the environment.

Microfinance, starting with the work of Dr. Muhammad Yunus in rural Bangladesh in 1974 and now expanding to reach over 100 million people worldwide, has irrefutably proven that 1) the poor are credit worthy, 2) given the chance, people are capable of bringing themselves out of poverty, and 3) the provision of small-scale financial services to disadvantaged people can serve as a platform for providing other products and services that are empowering and beneficial to the recipients. As an example, Dr. Yunus, founder of the Grameen Bank, with which he shared the 2006 Nobel Peace Prize, has gone on to found nearly 20 other companies, ranging from enterprises that provide health care and clean energy to affordable eye care hospitals and the largest cellular provider in Bangladesh. The majority of these enterprises use microloans from

Grameen Bank to finance the purchase of the product or service. In the United States, microfinance can similarly serve as a hub around which other socially and environmentally beneficial activities take place.

Specifically, microfinance can support both social and environmental goals in the United States by incorporating environmental education and empowerment into lending programs; supporting ‘green collar entrepreneurs’—low and moderate-income individuals with ideas for green businesses—with loans and technical assistance; and by providing innovative loan products that cover 100% of the up-front cost of residential energy-efficiency and renewable energy.

Green microfinance has the potential to address pervasive poverty, financial exclusion and energy inequality in the United States. In addition, it can also allay the view among minorities that environmental organizations are predominantly white, middle class, and out of touch with their concerns. In so doing, it can bridge the divide between those that are arguing for environmental improvements and those that are suffering most from environmental degradation. Lastly, green microfinance can create green collar jobs, reduce greenhouse gas emissions, save ratepayers money and spur a revolution in small-scale businesses that create a more livable community and environment through market-based solutions.

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# 1 Introduction

Solving the major environmental problems of the 21<sup>st</sup> century--climate change, overpopulation, deforestation and water availability, etc.--will require a dramatic shift away from the 20<sup>th</sup> century top-down, “polluter pays” approach. There is growing recognition among environmentalists, politicians and business leaders that as environmental problems become increasingly global and tied to issues of social justice, the answers will have to come from a broader swath of the global population, including corporations, indigenous peoples and people of color, community organizations, and those most likely to be affected by rising sea levels and energy prices: the poor. Fundamental to this thesis is the belief that in order to solve these environmental challenges it is essential to create a green economy that leverages market-based solutions effectively and equitably. More specifically, the green economy needs to promote social equality, tap the ideas and receive the support of all segments of the population, and benefit those that have been traditionally left out of the old, “gray” economy—in particular, people of color, the working poor, immigrants, and women.

Whereas 20<sup>th</sup> century environmentalism (particularly in the United States) was characterized by lawsuits against polluters, the passage of laws such as the Clean Air and Clean Water acts, and a predominantly white, middle-class “base,” the 21<sup>st</sup> century has seen a proliferation of new approaches that are more inclusive and market-oriented. For example, one of the strongest voices in the U.S. arguing for “the federal government to quickly enact strong national legislation to require significant reductions of greenhouse gas emissions” is the United States Climate Action Partnership (USCAP), an alliance of

businesses and environmental organizations that includes Duke Energy, Environmental Defense, Ford Motor Company and Shell.<sup>1</sup>

At the same time, new environmental leaders are showing how environmental problems can be tackled in a way that also lifts people out of poverty, strengthens the economy and creates a more equitable society. Among the more notable of these leaders is Van Jones, a 40 year old, black graduate of Yale Law School, who believes that “that the best way to fight both global warming and urban poverty is by creating millions of “green jobs”—weatherizing buildings, installing solar panels, and constructing mass-transit systems.”<sup>2</sup> In fact, Mr. Jones’ concept of green jobs (also known as green collar jobs) has become so popular that during the 2008 Presidential election nearly every front runner was promoting his or her green job plan, and President Obama has drafted a plan designed to create 5 million green collar jobs.<sup>3</sup>

One of the fundamental challenges to implementing environmentally friendly challenges and moving toward social equality is that doing so isn’t cheap. Although green technologies such as solar photovoltaics carry with them a return on investment (both monetary and environmental), their high up-front cost dissuades all but the wealthiest individuals and corporations from purchasing them.<sup>4</sup> In a similar fashion, investing in low-income communities through job training and other programs reaps

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<sup>1</sup> "United States Climate Action Partnership." *United States Climate Action Partnership*. United States Climate Action Partnership. 12 Jan 2009 <<http://www.us-cap.org>>.

<sup>2</sup> Kolbert, Elizabeth. "Greening the Ghetto." *The New Yorker* 12 Jan 2009 4. Web.12 Jan 2009. <[http://www.newyorker.com/reporting/2009/01/12/090112fa\\_fact\\_kolbert?currentPage=all](http://www.newyorker.com/reporting/2009/01/12/090112fa_fact_kolbert?currentPage=all)>.

<sup>3</sup> "New Energy for America." *Organizing for America*. Organizing for America. 12 Jan 2009 <<http://my.barackobama.com/page/content/newenergy>>.

<sup>4</sup> Fuller, Merrian, Stephen Compagni Portis, and Daniel M. Kammen. "Toward a Low-Carbon Economy: Municipal Financing for Energy Efficiency and Solar Power." *Environment Magazine* Jan 2009 Web.15 Jan 2009. <<http://www.environmentmagazine.org/Archives/Back%20Issues/January-February%202009/FullerPortisKammen-full.html>>.

benefits to the individual and society, yet the costs associated with such programs—and the limited political power of the recipients—often leaves them under funded and neglected.<sup>5</sup> As a result, increasing attention is being paid to innovative mechanisms for financing both environmentally friendly technologies and social equality.

For instance, numerous companies, including Solar City, Sun Edison and SunRun, have sprung up to implement an ingenious business model wherein the company pays for 100% of the up-front cost of installing solar photovoltaics (PV) on the rooftops of homes or businesses, and they get paid back either through the savings realized on the recipient's energy bill, or by selling the energy produced by the array at a fixed cost over the life of the system. By eliminating the largest barrier to implementation of solar—the up-front cost—this model will enable more people to “go solar” than ever before.

Another similar model involves a municipality providing low-interest loans to homeowners or businesses so that they can install solar PV, solar thermal or energy-efficient technologies in their homes. As a result, their energy bills go down, and the mechanism for repayment is either a property tax increase or charge on the utility bill that is equal to or less than the savings realized from the installation. The power of these and other financing models to reduce greenhouse gas emissions, save taxpayers money and create jobs is tremendous. For the municipal model alone, a "study soon to be published by a team from the UC Berkeley Renewable and Appropriate Energy Laboratory found the potential for this type of financing to go national -- investing \$240 billion in

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<sup>5</sup> Sancton, Thomas, et al. "How to Get America Off the Dole." *Time Magazine* 25 May 1992 3. Web.05 Apr 2009. <<http://www.time.com/time/magazine/article/0,9171,975593-3,00.html>>.

renewable energy and energy efficiency, reducing 37 million metric tons of CO<sub>2</sub>, saving homeowners an average of \$190 a year, all at no net cost to government. "<sup>6</sup>

Similarly, over 30 years ago Dr. Muhammad Yunus found that giving small, low-interest loans to poor Bangladeshi women could enable them to break the cycle of poverty and move toward financial stability. Whereas aid programs might provide the women with free meals, clothes or shelter, Yunus' microcredit model allowed them to increase their income and decide for themselves what they wanted or needed to purchase. What's more, because the money was lent out rather than given away, Yunus' organization, Grameen Bank, was able to become self-sufficient and, eventually, turn a profit. In fact, "In 1995, [Grameen Bank] decided not to receive any more donor funds. Since then, it has not requested any fresh funds from donors."<sup>7</sup> Over the last 30 years Grameen has reached over 7.5 million borrowers in Bangladesh, of which 97% are women, created 2,535 branches, lent out more than \$7 billion USD, maintained a default rate below 2% and now has a staff of over 24,000.<sup>8</sup> In 2006 Dr. Yunus and the Grameen Bank were jointly awarded the Nobel Peace Prize "for their efforts to create economic and social development from below."<sup>9</sup>

Microfinance started as a response to the fact that traditional financial institutions would not give loans to the poor of the developing world because they were not deemed to be credit worthy and were unable to provide collateral. Today, however, according to

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<sup>6</sup> Devries, Cisco. "Berkeley Rules: Everything you need to know about Berkeley's innovative rooftop solar program." *Grist* 02 Nov 2008 Web. 14 Jan 2009. <<http://www.grist.org/article/berkeley-rules/>>.

<sup>7</sup> "Grameen Bank At a Glance." *Grameen Info*. Oct 2008. Grameen Bank. 12 Jan 2009 <[http://www.grameen-info.org/index.php?option=com\\_content&task=view&id=26&Itemid=175](http://www.grameen-info.org/index.php?option=com_content&task=view&id=26&Itemid=175)>.

<sup>8</sup> Ibid.

<sup>9</sup> "The Nobel Peace Prize 2006." 13 Oct 2006. Nobel Prize Committee. 12 Jan 2009 <[http://nobelprize.org/nobel\\_prizes/peace/laureates/2006/press.html](http://nobelprize.org/nobel_prizes/peace/laureates/2006/press.html)>.

the United Nations Capital Development Fund (UNCDF), microlending has spread worldwide, with “some 500 million people . . . currently being served by socially-oriented financial institutions” and “225 commercial banks and other formal financial institutions that are engaged in microfinance.”<sup>10</sup> In addition, microfinance institutions (MFIs) have begun branching into other areas, tapping into their existing networks and relationships with borrowers to provide financing for renewable energy, affordable homes, cellular telephones and more. For example, Grameen Shakti (GS), a company affiliated with Grameen Bank, “is one of the largest and fastest growing rural based renewable energy companies in the world . . . As of July 2007, GS has installed more than 100,000 [Solar Home Systems] SHSs in rural areas with more than 4000 SHSs installed per month.”<sup>11</sup>

Finally, even traditional banks are beginning to realize they have an important role to play in a carbon-constrained world. According to a January, 2008 report by Ceres titled *Corporate Governance and Climate Change: The Banking Sector*,

Banks are the backbone of the global economy, providing capital for innovation, infrastructure, job creation and overall prosperity. Banks also play an integral role in society, affecting not only spending by individual consumers, but also the growth of entire industries. As the impacts of global warming from the heat-trapping gases released by power plants, vehicles and other sources take root in everyday life, banks have never been more important to chart the future. The companies that banks decide to finance will be a linchpin in slowing Earth’s warming and moving the world economy away from fossil fuels and into cleaner technologies.

The report finds evidence that many banks are responding to climate change, with European banks being in the forefront and many U.S. banks following closely behind. Many of the positive actions have come in the past 12 to 18 months, especially in regard to overall disclosure, research and financial support for clean energy.”<sup>12</sup>

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<sup>10</sup> Isern, Jennifer and David Porteous. "Commercial Banks and Microfinance: Evolving Models of Success." *Microfinance Matters* Oct 2005 Web. 12 Jan 2009. <[http://www.uncdf.org/english/microfinance/pubs/newsletter/pages/2005\\_10/news\\_banks.php](http://www.uncdf.org/english/microfinance/pubs/newsletter/pages/2005_10/news_banks.php)>.

<sup>11</sup> "Grameen Shakti Evolving as a Social Business to Meet the Energy Needs of the Rural People." Grameen Shakti. 12 Jan 2009 <<http://www.gshakti.org/genesis.html>>.

<sup>12</sup> Cogan, Douglas. "Corporate Governance and Climate Change: The Banking Sector." Jan 2008. Ceres. 14 Jan 2009 <<http://www.ceres.org/Document.Doc?id=269>>

Despite the aforementioned trends in microfinance, banking, innovative financing for environmental technologies, market-based solutions to environmental challenges and the push for a more inclusive green movement, much remains to be done if we are to see a 21<sup>st</sup> century defined by social equality and environmental sustainability.

## **1.1 *The Aim of this Thesis***

This thesis focuses on a particular way in which social equality and environmental sustainability can be advanced in the United States: through the use of green microfinance. That is, whereas microfinance has proved to be an effective tool for dealing with poverty, and banks, venture capitalists and other financiers (such as Sun Edison) have begun providing capital for environmentally focused technologies and companies, it is still possible that the green economy will leave behind low-income individuals, people of color, immigrants, ex-offenders and women—the target population for US-based microfinance—unless a new approach is taken. If that were to happen, not only would the target population miss out on the opportunities created by a green economy, but the new economy would also miss out on the ideas, creativity, entrepreneurial spirit, and support of these individuals, groups and communities. Even the green job training movement, I will argue, is insufficient to guaranteeing an equitable green economy, and in chapter 4 I introduce the concept of the ‘Green Collar Entrepreneur’ as a way of making green job training programs even more meaningful and relevant.

Therefore this thesis sets out to clearly demonstrate the need for microfinance in the US that is specifically focused on the environment, and then lays out a blueprint for

how it would work and what its benefits would be, both social and environmental. In particular, I lay out four ways in which microfinance can be green:

- 1) By providing capital and technical assistance so that informal and micro businesses can invest in energy saving or renewable energy technology, or so that they can roll out new, environmentally friendly products or services, and by verifying the environmental friendliness of these new technologies and practices.
- 2) By providing capital and technical assistance so that ‘Green Collar Entrepreneurs’ can start or expand green micro businesses.
- 3) By incorporating a strong component of environmental education so that borrowers learn about conservation, recycling, emerging trends, and ways in which they can save and make money from the green economy.
- 4) By providing other services, in particular low-interest loans for residential energy-efficiency and renewable energy upgrades.

## **1.2 *Definition of Green Microfinance***

For the purposes of this paper, I am defining green microfinance as affordable loans of below \$35,000, coupled with technical assistance, that have benefits for both the environment and the borrower. The target populations to be reached by green microfinance are low-income individuals, people of color, immigrants, ex-offenders, women, and owners of informal, micro and small businesses. A green collar entrepreneur will be defined as an entrepreneur who comes from the aforementioned target population and who engages in an activity that improves environmental quality.

## 2 What is Microfinance?

Before discussing the need for green microfinance, as well as its benefits, it is first necessary to establish a clear sense of what microfinance is. This chapter, then, provides an overview of the current state of microfinance in both the international and the domestic contexts. It looks at the origins of microfinance and how it has grown from there; the need being met; the social impact of microfinance; and finally, existing research on the impact of microfinance on the environment (positive or negative).

### 2.1 *Definition of Microfinance*

The definition of microfinance has evolved over time, and still varies from country to country and context to context. However, in general the term

Refers to the provision of financial services to low-income clients, including the self-employed. Financial services generally include savings and credit; however, some microfinance organizations also provide insurance and payment services. In addition to financial intermediation, many MFIs [microfinance institutions] provide social intermediation services such as group formation, development of self-confidence, and training in financial literacy and management capabilities among members of a group. Thus the definition of microfinance often includes both financial intermediation and social intermediation. Microfinance is not simply banking, it is a development tool.<sup>13</sup>

Given the fact that microfinance institutions (MFIs) provide a range of services to the poor that go beyond making small loans, they are ideal vehicles for the provision of the services that I am terming green microfinance, as shall be demonstrated in subsequent chapters. Because MFIs do more than simply provide access to affordable credit, a distinction must be made between microfinance and microcredit, although the two terms are often used interchangeably. Microcredit specifically deals with the provision of

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<sup>13</sup> Ledgerwood, Joanna. *Sustainable Banking with the Poor (Project)*. illustrated. World Bank Publications, 1999. Print. p 18



small loans, and falls under the broader definition of microfinance. Microcredit is described in one of two ways, either “by the characteristics of the loan . . . or by the characteristics of the client.”<sup>14</sup> In the case of the former, the definition speaks to the size of the loan; in the case of the latter, it focuses on the assets of the borrower’s business. Either way, it is important to consider the difference between microcredit in developed compared to developing world contexts. In the United States, the Small Business Loan Administration (SBA) considers loans of up to \$35,000 to be microloans (with an average loan size of \$13,000)<sup>15</sup>, where for Grameen Bank in Bangladesh the threshold is a fraction of that number, and the average loan is \$130 USD.<sup>16</sup>

Even within countries, different thresholds may be used. For instance, The Rhode Island Economic Development Corporation (RIEDC) has a microloan program that provides loans up to \$10,000 per project and to “micro-businesses with annual gross revenue under \$300,000 [and] 5 or less employees.”<sup>17</sup> As has been established in Chapter 1, for the purposes of this paper I am using the SBA definition of \$35,000 for the maximum size of a green microloan.

## **2.2 Muhammad Yunus and the Beginnings of Microfinance**

Modern microfinance arose as a response to the fact that banks were not extending credit to the poor—and particularly the rural poor—of developing countries,

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<sup>14</sup> Jansson, Tor. "Microfinance: From Village to Wall Street." *Sustainable Development Department Best Practice Series* (2001): 16. Print.

<sup>15</sup> "Micro-Loans." Small Business Administration. 27 Jan 2009 <<http://www.sba.gov/services/financialassistance/sbaloantopics/microloans/index.html>>.

<sup>16</sup> Yunus, Muhammad. "Grameen Bank's Struggling (Beggar) Members Programme ." Jul 2005. Grameen Bank. 27 Jan 2009 <[http://www.grameen-info.org/index.php?option=com\\_content&task=view&id=221&Itemid=172](http://www.grameen-info.org/index.php?option=com_content&task=view&id=221&Itemid=172)>.

<sup>17</sup> "Micro-Business Emerging Growth Fund." Rhode Island Economic Development Corporation. 26 Jan 2009 <<http://www.riedc.com/business-services/financing/micro-business-emerging-growth-fund>>.

and as a result people were forced to endure the usurious practices of moneylenders. Though several microfinance programs came into being in different parts of the world at around the same time, the most celebrated of these—The Grameen Bank—traces its origin to 1974-1975, when a famine raged in the countryside of Bangladesh. At the time, Dr. Muhammad Yunus, the founder of Grameen Bank and co-recipient of the 2006 Nobel Peace Prize, was an economics professor at Chittagong University in rural Bangladesh. As Yunus writes in his book *Creating a World Without Poverty*, he “found it increasingly difficult to teach elegant theories of economics and the supposedly perfect workings of the free market in the university classroom while needless death was ravaging Bangladesh.”<sup>18</sup>

Yunus decided to go into the villages to find out why the poor were not able to bring themselves out of poverty. What he saw were “people working hard to try to help themselves—growing crops in their tiny yards, making baskets, stools and other craft items to sell, and offering their services for practically any kind of labor.”<sup>19</sup> Yet despite their efforts, the majority of people were unable to increase their income. Yunus’ great insight came to him thanks to a village woman, who showed him that the main problem lay in the fact that she “relied on the local moneylender for the cash she needed to buy the bamboo for her stools [that she sold in the market]. But the moneylender would give her the money only if she agreed to sell him all she produce at a price he would decide.

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<sup>18</sup> Yunus, Muhammad. *Creating a World Without Poverty: Social Business and the Future of Capitalism*. Public Affairs, 2008. Print. p 45

<sup>19</sup> Ibid. 45

Between this unfair arrangement and the high interest on her loan, she was left with only two pennies a day as her income.”<sup>20</sup>

Armed with this knowledge, Yunus and a student began identifying all the people in the village who were receiving loans from the moneylender, and found that dozens of villagers—42, in total—were borrowing an average of a measly \$1.55 USD per person per week. He realized that if they could borrow the money at a reasonable interest rate, they would be able to pay back the loan and increase their income. To test the idea, he lent \$26 USD to those 42 villagers, and after a successful pilot, began looking for ways of dramatically expanding the practice of microlending.

### **2.3 *The Growth of Microfinance in the International Context***

It didn't take long for Yunus, and other microfinance pioneers such as ACCION in Latin America, to approach banks about their findings. The banks, however, were not interested in providing loans to the poor because they lacked credit histories, could not secure the loans with collateral, and many of them could neither read nor write. In order to prove that the poor were indeed credit-worthy, innovators such as Yunus offered to guarantee and administer bank loans to poor villagers, yet despite near-perfect repayment rates, the banks were still reluctant to expand the programs to meet the incredible demand.

In response, Yunus formed the Grameen Bank Project, which in 1983 “was transformed into an independent bank by government legislation.”<sup>21</sup> In so doing, he initiated a trend that, over the next 25 years, would spawn myriad new banks dedicated

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<sup>20</sup> Ibid. 45-46

<sup>21</sup> "A Short History of Grameen bank." Grameen Bank. 29 Jan 2009 <[http://www.grameen-info.org/index.php?option=com\\_content&task=view&id=19&Itemid=114](http://www.grameen-info.org/index.php?option=com_content&task=view&id=19&Itemid=114)>.

specifically to serving the poor. In addition, many traditional banks would find that expanding into microfinance could be profitable. In fact, there are now “225 commercial banks and other formal financial institutions that are engaged in microfinance.”<sup>22</sup> The rise of microfinance around the world has been meteoric. In 1997 the first Microcredit Summit was held with “more than 2,900 people from 137 countries.” The summit “launched a nine-year campaign to reach 100 million of the world’s poorest families, especially the women of those families, with credit for self-employment and other financial and business services by the year 2005. That goal was very nearly reached . . .”

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### **2.3.1 The Need**

International microfinance has grown exponentially from its humble beginnings for the simple reason that it is an effective way of meeting the tremendous demand for affordable capital in impoverished nations. According to the World Bank, there are an estimated “500 million economically active poor people in the world operating microenterprises and small businesses,” most of whom “do not have access to adequate financial services.”<sup>24</sup> Moreover, in 2005 “about 1.4 billion people in the developing world (one in four) were living on less than \$1.25 a day,” the threshold for extreme poverty.<sup>25</sup>

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<sup>22</sup> Isern, Jennifer

<sup>23</sup> "About the Microcredit Summit Campaign." Microcredit Summit Campaign. 29 Jan 2009 <[http://www.microcreditsummit.org/about/about\\_the\\_microcredit\\_summit\\_campaign/](http://www.microcreditsummit.org/about/about_the_microcredit_summit_campaign/)>.

<sup>24</sup> Ledgerwood, Joanna p. 1

<sup>25</sup> "Understanding Poverty." *Poverty Analysis-Overview*. The World Bank, Poverty Net. 29 Jan 2009 <<http://web.worldbank.org/WBSITE/EXTERNAL/TOPICS/EXTPOVERTY/EXTPA/0,,contentMDK:20153855~menuPK:435040~pagePK:148956~piPK:216618~theSitePK:430367,00.html>>.

### **2.3.2 How The Need is Being Met**

International MFIs have developed innovative models for dealing with the challenges of reaching poor, illiterate and often geographically disbursed clients. Grameen Bank identifies the following strategies: associations; bank guarantees; community banks; cooperatives; credit unions; group loans; individual loans; intermediaries; non-governmental organizations; peer pressure; rotating savings and credit associations; and village banking. Despite the wide range of methodologies, there are several elements common to all these models.

#### **2.3.2.1 Reliance on Trust, Not Credit**

Where formal financial institutions rely on quantitative data such as credit histories in order to assess and mitigate risk, MFIs have found that a reliance on trust can result in extremely low default rates; in fact, a high-quality MFI will typically see default rates of below 3%.<sup>26</sup> The necessity of this approach is obvious, as the poor rarely have formal credit histories, and are unable or unlikely to be able to offer anything of value as collateral to secure a loan. What's more, even if collateral were secured, the transaction cost to the bank of creating the legal documents and then collecting in the event of default would be prohibitive.

Instead, MFIs develop social collateral, which can be done in several ways. One of the most popular is the group-lending model pioneered by Grameen Bank. Under this approach

Groups of five prospective borrowers are formed; in the first stage, only two of them are eligible for, and receive, a loan. The group is observed for a month to see if the members are conforming to rules of the bank. Only if the first two borrowers repay the principal

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<sup>26</sup> Kereta, Befekadu. "Outreach and Financial Performance Analysis of Microfinance Institutions in Ethiopia." *African Economic Conference* (Nov 2007) 28. Web.05 Apr 2009. <<http://www.uneca.org/aec/documents/Befekadu%20B%20Kereta.pdf>>.

plus interest over a period of fifty weeks do other members of the group become eligible themselves for a loan. Because of these restrictions, there is substantial group pressure to keep individual records clear. In this sense, collective responsibility of the group serves as collateral on the loan.<sup>27</sup>

### **2.3.2.2 A “High Touch” Approach**

Generally speaking, traditional financial institutions want to be as “low touch” as possible with their borrowers—in other words, they want to minimize transaction costs in order to maximize profits. MFIs, on the other, take a “high touch” approach, emphasizing continued interaction with the borrower throughout the life of the loan. For example, in addition to the aforementioned group requirements, the Grameen Model also includes mandatory weekly meetings, at which borrowers make repayments, receive additional training and support, and check in with a loan officer.

This approach serves two purposes. First, it enables the MFI to develop a personal relationship with the borrowers so that loan officers can identify problems before they happen. Second, it gives the MFI a chance to provide auxiliary services to borrowers. These include financial literacy training, information on hygiene, health, and fertility, self-empowerment and emotional support.

### **2.3.2.3 Tiered Loan Cycles**

Microloans are, by definition, small loans. However, a common feature of MFIs is that as borrowers complete loan cycles, they become eligible for increasingly larger loans. In so doing, MFIs minimize risk by giving the smallest loans to the newest clients, and the largest loans to the clients with whom they have developed the strongest

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<sup>27</sup> "Credit Lending Models." Grameen Bank. 05 Apr 2009 <[http://www.grameen-info.org/index.php?option=com\\_content&task=view&id=43&Itemid=93](http://www.grameen-info.org/index.php?option=com_content&task=view&id=43&Itemid=93)>.

relationships. Eventually, the most successful borrowers “graduate” from the MFI and are then able to access larger loans from a traditional financial institution.

#### **2.3.2.4 A Focus on Specific Demographics**

MFIs typically focus on specific demographics that are more likely to benefit from microfinance while still being able to repay the loans. In Grameen’s case, 97% of the borrowers are women, because in their experience women are the most likely to use the loan for the benefit of the family, thereby increasing the social impact of the loan.<sup>28</sup> The focus on specific demographics is important because of the different cultural and socioeconomic contexts of the different countries in which MFIs operate. Finally, MFIs tend to be most successful when they provide loans to people who are desperate to improve their situation. That is, the knowledge that failure to repay the loan may close the door on a significant opportunity to move out of poverty is what inspires many borrowers to consistently repay, attend group meetings, and fulfill the other requirements of a microloan.

### **2.4 *New Services***

As MFIs have grown and size and scope, they have begun to leverage their immense networks of borrowers—and the established relationships they have with them—to provide and connect borrowers with other services. Again, Grameen has been a trailblazer in this area; Grameen affiliated companies are working in the areas of renewable energy/energy efficiency; health care; fisheries; telecommunications; software development; and textiles, to name a few.

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<sup>28</sup> Ibid.

In many cases, Grameen Bank provides loans to borrowers so that they can purchase products and service provided by the affiliates companies. For example, “to-date Grameen Bank has provided loans to 353,909 borrowers to buy mobile phones and offer telecommunication services in nearly half of the villages of Bangladesh where this service never existed before.”<sup>29</sup> Grameen Phone, a separate legal entity that forms part of the Grameen Network, provides the phone service itself.

The way in which Grameen has managed to tap into its 7 million member borrower network to promote things like environmental sustainability, health care and cellular phone service—issues that at first glance appear to be outside the purview of microfinance—serves to underscore the power and the potential of microfinance to advance social equality, environmental sustainability and other issues as well. For this reason, I believe that MFIs in the U.S. can play a central role in creating an inclusive green economy—providing affordable capital, technical assistance, education, and connecting borrowers to other services so that they, their community and their environment all benefit.

Before getting into the specifics of how U.S.-based MFIs can create such an inclusive green economy, we must first take a look at what MFIs are currently doing in the U.S. Lastly, we need to address the social impact of microfinance, as well as discuss the existing research on its environmental impacts.

## **2.5 *The Growth of Microfinance in the Domestic Context***

In the 20 years since microfinance came to the United States via a Grameen-inspired program in Arkansas (supported by then governor William Jefferson Clinton)

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<sup>29</sup> Ibid.



called The Good Faith Fund, more than 500 such programs have been developed, with coverage in all 50 states.<sup>30</sup> In 2000, these programs “served an estimated 150,000 to 170,000 individuals,” providing them with loans, financial literacy training, business mentoring and other services.<sup>31</sup>

U.S. based MFIs offer a wide array of products and services. However, the vast majority of programs include a focus on business skills and financial literacy training, which are important given the complex nature of the laws and regulations to which U.S. business owners are subject. Moreover, the working poor of America—who by and large constitute the target market for microfinance—face unique challenges not seen in developing countries. These include credit card debt, poor or no credit history and tax returns to prepare. So daunting and pervasive are these challenges that some MFIs, including Washington CASH, have far more clients going into their business-training programs in order to receive technical assistance than they have borrowers taking out loans.<sup>32</sup>

U.S. MFIs that provide loans do so in myriad different ways. Some, such as Grameen America in New York City and MicroCredit-NH in New Hampshire, are pure replications of the Grameen Group Lending Model. Others, including ACCION USA, act more like a traditional bank in that loans are disbursed on an individualized basis, but with far more flexible credit and collateral requirements, streamlined application processes and an emphasis on the character of the applicant. Many U.S. MFIs are

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<sup>30</sup> Edgcomb, Elaine and Joyce A. Klein. "Opening Opportunities, Building Ownership: Fulfilling the Promise of Microenterprise in the United States." *FIELD* Feb 2005 11. Web. 30 Jan 2009. <<http://fieldus.org/Publications/FulfillingthePromise.pdf>>.

<sup>31</sup> "Fast Facts and Highlights." FIELD Institute. 02 Feb 2009 <<http://fieldus.org/Stories/FastFacts.html#programs>>.

<sup>32</sup> Sesnon, Cheryl, Executive Director of Washington CASH, interview held July 18, 2008

registered with the Treasury Department as Community Development Financial Institutions (CDFIs). Because many MFIs are registered as CDFIs, it is important to define what they are and how they differ from traditional financial institutions:

CDFIs cultivate specialized knowledge about the communities in which they do business. They forge deep relationships with their customers and community leaders. This translates into a willingness and commitment to spending time on individualized service, and specialized programs that are often too time-consuming or costly for mainstream financial institutions to implement. For example, many CDFIs offer non-conforming mortgages or loans. Others make accounts available to customers with limited or poor credit history.<sup>33</sup>

Much as international MFIs, CDFIs provide specialized, high touch services to clients deemed unbankable by other financial institutions. There are six types of CDFIs: community development banks; community development credit unions; community development loan funds; community development venture capital funds; microenterprise development loan funds; and community development corporations. In other words, CDFIs run the gamut from microfinance programs all the way to regulated financial institutions such as banks and credit unions.

### **2.5.1 The Need**

Regardless of the model that MFIs adopt, they are working to meet a tremendous need in America for access to financial services, credit building, and economic development. According to a 2008 study by the Center for Financial Services Innovation (CFSI), 40 million households, or 106 million individuals are either unbanked or underbanked.<sup>34</sup> That translates to 20% of U.S. households, or 22.2 million families, “in

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<sup>33</sup> "What Are CDFIs?." Coalition of Community Development Financial Institutions. 30 Jan 2009 <<http://cdfi.org/index.php?page=info-1e>>.

<sup>34</sup> "Fact Sheet: The Unbanked and Underbanked." Center for Financial Services Innovation. 02 Feb 2009 <<http://www.cfsinnovation.com/underbanked-fact-sheet.php>>.

which no one has an account” and another 19.4% of households that are underbanked.<sup>35</sup> What’s more, 50 million Americans entirely lack a credit score, shutting them out of the financial mainstream.<sup>36</sup> As a result, these individuals turn to expensive alternative and fringe financial services, spending “at least \$13 billion [per year] on more than 340 million alternative financial services transactions.”<sup>37</sup> These predatory and fringe financial service providers—which include payday lenders, loan sharks and check cashers—now constitute a \$100 billion dollar industry, enriching themselves at the expense of the poor.<sup>38</sup>

Finally, it is worth mentioning the extent to which poverty—particularly among minorities and immigrants—remains a pervasive problem in the United States. According to the U.S. Census Bureau, in 2007 the poverty rate was 12.5%, meaning that 37.3 million Americans lived below the poverty line that year. However, the poverty is not evenly distributed, but is concentrated among blacks and Hispanics; in fact, those groups experience poverty rates that are roughly double the national average.<sup>39</sup>

## **2.5.2 How The Need is Being Met**

MFIs address this need in several ways. First, by providing access to affordable capital, they eliminate or reduce the need to seek money from loan sharks or check

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<sup>35</sup> Ibid.

<sup>36</sup> "Lenders Find FICO Expansion Credit Score Delivers Strong Risk Assessment for Millions of Credit-Underserved." FICO. 04 Feb 2009 <<http://www.fico.com/en/Company/News/Pages/11-09-2006.aspx>>.

<sup>37</sup> "What Are CDFIs?." Coalition of Community Development Financial Institutions. 30 Jan 2009 <<http://cdfi.org/index.php?page=info-1e>>.

<sup>38</sup> McGray, Douglas. "Check Cashers, Redeemed." *New York Times* 07 Nov 2008 1-6. Web.25 Apr 2009. <<http://www.nytimes.com/2008/11/09/magazine/09nix-t.html?scp=1&sq=check%20casher&st=cse>>.

<sup>39</sup> "Poverty: 2007 Highlights." U.S. Census Bureau. 09 Feb 2009 <<http://www.census.gov/hhes/www/poverty/poverty07/pov07hi.html>>.

cashers. Equally importantly, MFIs provide financial literacy training that encourages individuals to open bank accounts (which, in turn, encourages savings), helps with budgeting, and reduces the likelihood of falling into credit card or other debt.<sup>40</sup> Some MFIs also report loan repayments to credit bureaus so that borrowers can begin building a credit history. Organizations such as the Credit Builders Alliance, a non-profit, have programs designed specifically to assist MFIs in bundling repayments and streamlining the reporting process. Along similar lines, MFIs have begun offering so-called “credit-builder loans”, which are small loans designed solely for the purpose of improving the borrower’s credit score. These loans also can serve to establish an initial relationship between borrower and lender.<sup>41</sup>

Despite all these trends, a significant percentage of the target population is not being served by MFIs. This is not surprising given the scale of the problem (consider the aforementioned statistic that in 2000 MFIs “served an estimated 150,000 to 170,000 individuals” out of a potential market of 100 million). MFIs also face challenges in creating economies of scale in a country as geographically scattered and socio-economically diverse as America. Moreover, U.S. MFIs face higher transaction costs than do their international counterparts, and are subject to stricter laws regarding the interest rates they can charge.<sup>42</sup>

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<sup>40</sup> "Benefits of Opening a Bank Account." New York City Department of Consumer Affairs. 10 Feb 2009 <<http://www.nyc.gov/html/ofe/html/save/benefits.shtml>>.

<sup>41</sup> "Credit Builder Loans." Credit Builders Alliance. 25 Apr 2009 <<http://www.creditbuildersalliance.org/toolkit-innovations/credit-builder-loans.html>>.

<sup>42</sup> "Microfinance Interest Rates as a Function of Transaction Costs." 09 Jan 2006. Micro Capital. 11 Feb 2009 <<http://microcapitalmonitor.com/cblog/index.php?/archives/129-Microfinance-Interest-Rates-as-a-Function-of-Transaction-Costs.html>>.

## **2.6 The Social Impact of Microfinance**

Until now we have more or less acted on the assumption that microfinance genuinely provides positive social outcomes. Before looking at the potential for microfinance to affect positive environmental change, however, we must first confirm the social impact of microfinance. In particular, we will briefly look at the ability of microfinance to empower women and reduce poverty/foster economic development.

### **2.6.1 Empowering Women**

Women are particularly affected by poverty, especially in developing countries. Of the roughly “1.3 billion people living poverty, some 70 percent are women, suggesting an underlying system within cultures that favors men over women with regard to accessing financial resources.”<sup>43</sup> In part because of this trend, and in part because several MFIs—in particular Grameen—have found that women are more likely to invest in their families, microfinance programs have tended to focus on providing affordable financial service to women.

A paper titled *The Effects of Microlending on Women’s Empowerment in Bangladesh*, by Michelle Bellessa, identifies several benefits to women of microfinance, including increased mobility and economic security.

#### **2.6.1.1 Mobility**

Women’s mobility increases for the simple reason that they must travel in order to attend weekly meetings as part of being a borrower. In societies where women “are traditionally isolated at home with little social contact outside of their kin groups” this

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<sup>43</sup> Bellessa, Michelle. "The Effects of Microlending on Women's Empowerment in Bangladesh." 1. Web. 31 Jan 2009. <<http://marriottschool.byu.edu/emp/WPW/Small%20Part%202.pdf>>.

can “expose women to a broader world and to increase their relationships with non-family members.”<sup>44</sup>

### **2.6.1.2 Economic Security**

In Bangladesh, Grameen Bank’s loans “have helped one third of Grameen families to move out of poverty and past basic subsistence levels; another third are close to doing so, as well.”<sup>45</sup> Many MFIs also have compulsory savings requirements as part of their lending program. These requirements force borrowers—97% of which are women in Grameen’s case—to set aside money, thereby making them more economically secure and better able to respond to emergencies. Finally, “Grameen also has housing loans that women can apply for with the provision that the title to the land and home is in their name.”<sup>46</sup>

Bellessa also points out that with mobility and economic security come other benefits. Grameen borrowers are more likely to use contraceptives, make important household decisions, and be politically active, to name a few.

### **2.6.2 Reducing Poverty/Fostering Economic Development**

A 2004 study by FIELD, a program of the Aspen Institute, whose mission is “to identify, develop and disseminate best practices in the microenterprise field . . .”<sup>47</sup> looked at the impact of 17 U.S. microfinance programs. The study came to several promising conclusions. Many participants in the programs came to them in the interest of start or expanding a business, and “at least one year after receiving services . . .80 percent of the

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<sup>44</sup> Ibid. 7

<sup>45</sup> Bellessa, Michelle 8

<sup>46</sup> Bellessa, Michelle 8

<sup>47</sup> "Background." *About FiELD: Background*. FIELD Institute. 31 Jan 2009 <<http://fieldus.org/about/background.html>>.

sample of 813 clients were operating businesses.”<sup>48</sup> More importantly, “nearly three-quarters of the business owners reported drawing income from their businesses to cover household expenses,” and roughly one-third were able to increase their savings, with a “median savings of \$2,000.” Finally, average household income went up by 19%, while there was also “a 36 percent net increase of clients who had incomes above the poverty line.” In short, the 17 programs that participated in the study were able, on average, to increase the income of the borrower and to foster economic development through job creation.

The benefits are equally impressive in the international context. An internal survey conducted by Grameen Bank found that “64% of [their] borrowers who have been with the bank for five years or more have crossed the poverty line.”<sup>49</sup> According to The Consultative Group to Assist the Poor (CGAP), participants in another microfinance program in Bangladesh, the Bangladesh Rural Advancement Committee (BRAC), “increased household expenditures by 28% and assets by 112%.”<sup>50</sup>

Not all economists and experts in the field are in agreement on the exact benefits of microfinance. However, though the statistics vary and arguments are had regarding various statistical and ethnographical methodologies for measuring the social impacts, the

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<sup>48</sup> "Monitoring Client Outcomes: A Report from MicroTest's 2004 Data Collection." *MicroTest: Performance Counts* Sep 2005 4. Web.31 Jan 2009. <<http://fieldus.org/Publications/MToutcomes.pdf>>.

<sup>49</sup> Yunus, Muhammad 54

<sup>50</sup> "What Do We Know about the Impact of Microfinance?." Consultative Group to Assist the Poor. 25 Apr 2009 <<http://www.cgap.org/p/site/c/template.rc/1.26.1306>>.

overwhelming consensus is that microfinance is a cost-effective, powerful tool for achieving a broad array of social benefits.<sup>51</sup>

## **2.7 Existing Research on Environmental Impacts of Microfinance**

The explosion of microfinance—with over 100 million people receiving microcredit worldwide—has raised questions about the environmental impact (positive or negative) of so many people engaging in so many entrepreneurial activities. While the environmental impact of each low-income entrepreneur is minimal, the sheer scale of the global microenterprise sector in aggregate can lead to significant environmental degradation.

After the advent of the United Nation's Millennium Development goals, the microfinance community—in particular, the Microcredit Summit—was “concerned specifically about Goal #1, eradicating extreme hunger and poverty.”<sup>52</sup> However, it didn't take long for people to begin wondering if microfinance could be used to further other Development Goals, including Goal #7, ensure environmental sustainability. Goal # 7 aims to promote sustainable development; reduce biodiversity loss; increase access to clean drinking water and sanitation; and improve the lives of at least 100 million slum dwellers.<sup>53</sup> Two questions immediately arose: is microfinance currently exacerbating

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<sup>51</sup> For more on the topic of how the social impacts of MFIs are measured, see *Measuring the Impact of Microfinance: Taking Stock of What We Know*, by Nathanael Goldberg (December, 2005, Grameen Foundation USA)

<sup>52</sup> Hall, Joan and Lal Abhishek. "How MFIs and their Clients Can Have a Positive Impact on the Environment." *Green Microfinance* Jan 2009 2. Web. 10 Feb 2009. <<http://www.greenmicrofinance.org/Activities/GMf-Publications/gmf-publications>>.

<sup>53</sup> "United Nations Millennium Development Goals." United Nations. 10 Feb 2009 <<http://www.un.org/millenniumgoals/environ.shtml>>.



environmental degradation? And can microfinance continue to alleviate poverty while at the same time promoting environmental sustainability?

Robust studies of the negative impacts of microfinance on the environment have not been undertaken. However, it is indisputable that “. . .both urban and rural microenterprises and income-generating activities, including farming, fishing and livestock-raising, have negative impact on the environment.”<sup>54</sup> Similarly, as the income level of the borrower rises, so does her level of consumption, potentially leading to increasing strain on forests, watersheds and degraded soils. In addition, as microenterprises grow in size and scope, “their sheer ubiquitous presence, extended hours of operation, lack of supervision by regulatory environmental agencies, low technological level, and lack of supporting infrastructure and services (trash collection, enclosed marketplaces) heighten their negative impacts.”<sup>55</sup>

Given the very understandable focus on alleviating extreme poverty, “there [has been] very little, if any, monitoring of the environmental impact caused” by the growth in microfinance programs worldwide. Unfortunately, as climate change, population growth and resource consumption becoming increasingly significant challenges, environmental problems can no longer be viewed as separate and distinct from poverty. This is not to say that the primary goal of MFIs should not be to increase income, and therefore alleviate poverty; rather, it is to say that MFIs must find ways of increasing income without harming (and hopefully improving) the natural world on which the poor often depend for survival.

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<sup>54</sup> Hall, Joan 2

<sup>55</sup> Hall, Joan 3

Environmental problems also present an opportunity for MFIs to expand into new service areas:

Around two billion people around the world use kerosene (paraffin) for household lighting, consuming the equivalent of 1.7 million barrels of petroleum a day, greater than the petroleum production of Libya. Many of these poor people are, or could be, microfinance clients. Recently, new technologies, in particular inexpensive, reliable solar/light-emitting diode (LED) systems, have opened up the possibility of consumer lighting products that are cost-competitive with kerosene lighting, even for very poor people. The market for clean energy products is enormous; there are 200 million households in Africa alone that could switch from kerosene to solar/LED lighting.<sup>56</sup>

Two more points must be made here. First, not all of the environmental impacts of rising incomes are inherently negative. For one thing, “rising incomes tend to be correlated with a greater demand for environmental quality through improved household infrastructure including sanitation and cooking facilities, greater access to safe drinking water, increases in contraceptive use and changes in fuel use.”<sup>57</sup> Group lending programs also enhance the social capital of a community, creating the potential for collective action to protect and profit from natural resources such as forests and streams in a sustainable manner.

Second, MFIs can (and some already do) incorporate sustainability into their lending programs. This can be done internal to the organization or in partnership with an existing environmental NGO. Either way, requirements and education can be built into the loan. These can include guidelines for organic farming, or minimizing reliance on pesticides and fertilizers; encouraging the use of more efficient cooking methods; and requirements for the planting of trees.

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<sup>56</sup> "What Do We Know about the Impact of Microfinance?." Consultative Group to Assist the Poor. 25 Apr 2009 <<http://www.cgap.org/p/site/c/template.rc/1.26.1306>>.

<sup>57</sup> Anderson, Leigh, Laura Lock and Rachel Nugent. "Microcredit, Social Capital, and Common Pool Resources." *World Development* 3-4. Web. 12 Feb 2009.

### **3 The Need For Green Microfinance in the United States**

The idea behind green microfinance is to enable those Americans that have been effectively locked out of the financial system to gain access to that system while at the same time benefiting from and contributing to the emerging green economy. In addition, green microfinance can provide much needed capital and technical assistance to micro and small businesses so that they can improve their energy efficiency, roll out green products and services, quantify and market the benefits of their practices, and create more green jobs—practices and trends that are essential if we are to tackle climate change, water pollution, resource availability, etc.

Because green microfinance would exist at the nexus between social and environmental challenges in the United States, it addresses a range of needs that are not being met by financial institutions, environmental organizations and, in many respects, society as a whole. The focus of this chapter, then, is to identify what those needs are and explain the extent to which they are currently being met. In particular, we will look at the need for more diversity in the environmental movement; look at ways in which a large segment of the U.S. population is not informed about/engaged in environmental issues; identify what financial institutions are doing around environmental sustainability and whether or not those efforts are sufficient toward meeting our goal of creating an inclusive green economy.

#### **3.1.1 Lack of Diversity in the Environmental Movement**

Until very recently the environmental movement has suffered from two fundamental problems when it comes to diversity. First, because some environmentalists have traditionally focused on preserving nature without focusing on also preserving economic growth and helping people, the entire movement has come to be seen as elitist,

middle and upper class, and primarily white. This perception is pervasive and deep rooted. For instance, “a 2006 study commissioned by Earthjustice, a nonprofit environmental-law group, found that the ‘ecological base’—defined as Americans who report the environment as being central to their concerns—is ‘nearly ninety percent white, mostly college-educated, higher-income, and over thirty-five.’<sup>58</sup>” As a result, environmental groups have had a difficult time engaging individuals, communities and organizations that do not fit into those categories. Indeed, one survey of several hundred environmental organizations found that their leaders “feel that the lack of racial and cultural diversity in their own organizations and throughout the environmental movement makes the movement less powerful and less effective in accomplishing its goals.”<sup>59</sup>

Second, environmental organizations themselves have done a poor job of bringing diversity into their own staffs. In fact, “in a study examining diversity in 158 environmental institutions, the Minority Environmental Leadership Development Initiative found that 33 percent of mainstream environmental organizations and 22 percent of government agencies had no people of color on staff.”<sup>60</sup> In other words, the environmental movement has suffered from a perceived lack of diversity and inclusion among the general public, and a real lack of diversity with respect to the internal operations of its organizations.

This lack of diversity is highly problematic given current demographic and political trends in the United States. The election of Barack Obama as President of the

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<sup>58</sup> Kolbert, Elizabeth 2

<sup>59</sup> Jordan, Charles, and Donald Snow. "Diversification, Minorities, and the Mainstream Environmental Movement." *Voices from the Environmental Movement: Perspectives for a New Era* 71-109(1992): Print.

<sup>60</sup> Bonta, Marcelo and Charles Jordan. "Diversifying the American Environmental Movement." *Environmental Diversity* 16. Web. 19 Feb 2009. <<http://www.environmentaldiversity.org/documents/05-Bonta-and-Jordan.pdf>>.

United States is illustrative of the growing voice and size of America's black population. What's more, "by 2020, the population of people of color will rise to an estimated 135 million and comprise 37.5 percent of the nation's citizens."<sup>61</sup> A movement that does not actively embrace such a dynamic, large and growing segment of the population cannot be effective.

The problem, however, is not merely one of efficacy; it is also one of equity. Throughout the world and America, those that are most likely to be affected by the impacts of environmental are the poor, people of color, women, and immigrants. As Hurricane Katrina so powerfully demonstrated, these individuals are the most vulnerable to rising sea levels. Equally importantly, residents in neighborhoods with the highest pollution scores also tend to be poorer, less educated and more often unemployed than those elsewhere in the country."<sup>62</sup> The environmental justice movement was born in response to these trends, and until the advent of the green jobs movement was the most effective environmental organization reaching out to people of color and other vulnerable groups (more on this in chapters 4 and 5).

Because minorities suffer most from environmental degradation, it stands to reason that they should play an integral role in finding solutions, given that those solutions will directly impact their own lives. In addition, moving forward on critical environmental issues will be difficult without the support of a broader swath of society. For instance, any discussion of legislation to place a cap on greenhouse gas emissions will invariably be stymied by social organizations arguing that the resulting rise in energy

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<sup>61</sup> Ibid. 19

<sup>62</sup> Pace, David. "More Blacks Live With Pollution." *Associated Press* Web.04 Apr 2009. <<http://hosted.ap.org/specials/interactives/archive/pollution/part1.html> >.

costs will disproportionately impact the poor. In America, low-income families already pay “17% of their annual income on energy, compared with 4% spent by higher-income households,” and this dynamic will be only exacerbated when a price is placed on carbon.

<sup>63</sup> However, including those organizations and individuals from the start would ensure that mechanisms be put in place to reduce the burden on poor Americans, and would make it more likely that the legislation could be passed and implemented effectively.

Green MFIs could begin to create a more diverse environmental movement by engaging borrowers on environmental issues in a number of ways. First, much as they already provide financial literacy and business mentoring, they could easily incorporate education about environmental issues and how they impact their lives, as well as opportunities for jobs and to save money on utility bills. Second, green MFIs could implement certain requirements around their loans, for instance mandating that borrowers have energy audits done of their business, and working with them to implement a strategic business plan that will benefit the borrower, the business and the environment. Throughout this process the borrower would become actively engaged in learning about and finding solutions to environmental issues. Third, green MFIs could support the graduates of green job training programs who realize or decide they want to start their own green business. Specifically, these MFIs could provide loans and technical assistance. Lastly, green MFIs could specialized loan products, as shall be explained in chapter 6, that can enable homeowners and renters to invest in energy-efficiency with no up-front cost and at no net-cost over the life of the loan.

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<sup>63</sup> Fehrenbacher, Katie. "Weatherization Stimulus: Lots of It, Fast." *Business Week* Web.10 Feb 2009. <[http://www.businessweek.com/technology/content/jan2009/tc20090129\\_222846.htm?campaign\\_id=rss\\_daily](http://www.businessweek.com/technology/content/jan2009/tc20090129_222846.htm?campaign_id=rss_daily)>.

In short, a movement that lacks the creativity, ideas, support and involvement of the target population is an anemic, ineffectual movement. In subsequent chapters we will discuss in detail the ways in which MFIs—and other financial institutions and organizations—can use small loans and technical assistance to help people and protect and preserve the environment at the same time.

### **3.1.2 Financing for Green Informal and Micro Businesses**

Small, micro and informal businesses need access to credit in order to survive, make payments, and grow. And according to the 2003 Survey of Small Business Finances (SSBF) “the banking system is the most important institutional supplier of credit to small firms in the United States. Roughly 60.4 percent of all small firms used traditional credit (i.e. credit lines, loans, and/or capital leases) in 2003; 68 percent of them obtained credit from the banking sector . . .”<sup>64</sup> As we have seen, the target population for microfinance is underserved by the banking system, rendering them incapable of accessing the credit they need to survive. As a result, many of these business owners turn to expensive fringe financial services, and/or are either unable to start or grow their business, or are forced to shut down.

The financial crisis and economic downturn have only served to highlight the extent to which access to credit and technical assistance is essential to the survival and growth of small, micro and informal businesses. In order to address this need, the American Recovery and Reinvestment Act of 2009 provides \$35,000 for struggling small businesses. The law will temporarily allow the Small Business Administration (SBA) to

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<sup>64</sup> Williams, Victoria and Charles Ou. "Small Business and Micro Business Lending in the United States, for Data Years 2006-2007." *SBA Office of Advocacy* June 2008 8. Web.20 Feb 2009. <[http://www.sba.gov/advo/research/sbl\\_07study.pdf](http://www.sba.gov/advo/research/sbl_07study.pdf) >.

“guarantee 100 percent of loans of up to \$35,000 issued by banks to small businesses to make payments on existing debt.” In addition, the Act makes \$6 million available to nonprofits in order to “make microloans of up to \$35,000 to businesses with 10 or fewer employees. An additional \$24 million will be used to provide technical assistance to those companies.”<sup>65</sup>

That small businesses need credit and technical assistance, therefore, goes without saying. However, the need for these businesses to be able to access credit for green purposes is tremendous as well. According to the Center for Small Business and the Environment, “the nation’s 27 million small businesses constitute one-half of the economy” and “consume half of all energy used for commercial and industrial purposes in the United States.”<sup>66</sup> Rising energy prices and public awareness of environmental issues, in particular climate change, are straining the pocket books and hurting the public relations of small firms throughout the country.

President Obama, in his 2009 State of the Nation address to a joint session of Congress, asked the nation’s legislators to “to send me legislation that places a market-based cap on carbon pollution and drives the production of more renewable energy in America.” The President went on to say that “to support that innovation [in renewable energy], we will invest fifteen billion dollars a year to develop technologies like wind power and solar power; advanced biofuels, clean coal, and more fuel-efficient cars and trucks built right here in America.”<sup>67</sup> While small businesses are unlikely to face direct

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<sup>65</sup> "Overhaul in the Offing at SBA." MSNBC.com. 15 Feb 2009  
<<http://www.msnbc.msn.com/id/29258989/>>.

<sup>66</sup> "Small Business and Energy Factsheet." *The Center for Small Business and the Environment*. April 2008. The Tides Center. 15 Feb 2009

<sup>67</sup> Obama, Barack. "Remarks of President Barack Obama--Address to Joint Session of Congress." *The White House Press Office*. 24 Feb 2009. The White House. 26 Feb 2009



caps on emissions under a cap-and-trade system, such a mechanism would increase energy costs and create a plethora of opportunities for providing new products and services.<sup>68</sup> An American economy operating under a cap on greenhouse gas emissions will need companies that can design, install and service renewable energy and energy efficient technologies and systems; service hybrid, plug-in hybrid, electric and natural gas vehicles; take advantage of local and/or organic foods; do energy audits and carbon accounting; maintain an energy-efficient storefront or home; navigate the process of verifying and potentially selling carbon offsets; etc. In Chapter 4 we will look more closely at the sectors of the U.S. economy in which green businesses operate, and how green microlending can specifically support them.

Thus being able to access affordable loans, coupled with technical assistance, in order to become more energy, water or resource efficient and to implement green products and services would do more than lower the operating costs of these businesses: it would also provide positive public relations and enable them to gain a competitive advantage in the marketplace.

Another challenge is that, at present, many small firms are claiming to have “gone green.” However, these claims are often based on faulty baselines and/or a lack of understanding of the relevant issues.<sup>69</sup> This problem—known as greenwashing—has resulted in a situation wherein the general public has a difficult time differentiating businesses that have taken genuine steps to lessen their environmental impact from those

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<[http://www.whitehouse.gov/the\\_press\\_office/Remarks-of-President-Barack-Obama-Address-to-Joint-Session-of-Congress/](http://www.whitehouse.gov/the_press_office/Remarks-of-President-Barack-Obama-Address-to-Joint-Session-of-Congress/)>.

<sup>68</sup> "Climate Change Resources in California." California Green Solutions. 06 Apr 2009  
<<http://www.californiagreensolutions.com/cgi-bin/gt/tpl.h,content=93>>.

<sup>69</sup> Roth, Bill. "Avoid Greenwashing Your Business." *Entrepreneur.com* 20 Aug 2008 Web. 10 Apr 2009.  
<<http://www.entrepreneur.com/management/greencolumnistbillroth/article196596.html>>.

making bogus or exaggerated claims. What's more, many companies are missing out on the chance to quantify, and therefore better understand, the improvements they are making as well as to identify more opportunities for saving and making money.

Unlike large corporations, which have come under fire for intentionally misrepresenting the environmental friendliness of their practices, small businesses are often simply unable to devote the time, or lack the resources, to verify the claims they are making. Green MFIs would serve two functions. First, they would protect the public interest by verifying and quantifying the steps that small businesses are taking. And second, they would support the small business by working with the owner to identify market opportunities, connect them with other organizations, and provide capital to implement the changes they see as beneficial to their business.

Finally, a green economy cannot thrive unless it creates enough jobs and opportunities for entrepreneurship to receive support from all segments of the political spectrum. That much is obvious, but as the U.S. government struggles to save large companies like General Motors for fear that if they were to go into bankruptcy the resulting job losses would be tremendous, it must be remembered that the real engines of job creation and innovation in America are small businesses. The Center for Small Business and the Environment (CSBE) points out that

--According to the U.S. Small Business Administration (SBA), small businesses have generated 60 to 80 percent of net new jobs annually over the last decade. Since August 2003, in fact, American small businesses have created 7.2 million jobs – more than those created in the same period by the European Union and Japan combined.

--Two-thirds of all innovations are produced by small businesses. Entrepreneurial small firms actually produce five times as many patents per dollar as large companies and 20 times as many as universities. About 80% of the clean technology industry consists of small businesses.<sup>70</sup>

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<sup>70</sup> "Small Business and Energy Factsheet." *The Center for Small Business and the Environment*. April 2008. The Tides Center. 15 Feb 2009

Thus as a green economy begins to take shape, it is likely that small business will be leading the way in innovation and job creation, and to do so they will need, as we have seen, outside expertise and financing. Nevertheless, one of the most common arguments against microfinance is that 1) not everyone is entrepreneurial and 2) microloans are sufficient for starting businesses that actually earn significant revenue and create jobs. However, a study by the Entrepreneurial Research Consortium during the late '90s found that in an astounding 37% of U.S. households "someone has founded, tried to start, or helped fund a business." Unfortunately, "African Americans and Hispanics are underrepresented as business owners in the total population, but made up a disproportionately large share of startups."<sup>71</sup> When it comes to the financing needs of startups, one study commissioned by the SBA found "that 63 percent of nonminority males and 78 percent of blacks in [a] sample of business owners responded that they needed less than \$5,000 to start their businesses."<sup>72</sup>

These findings tell us several things. First, while it is indeed true that not everyone is entrepreneurial, a significant percentage of the U.S. population has been involved in an entrepreneurial venture. Second, minorities are having a hard time sustaining their businesses. From what we have seen about the state of the U.S. finance system, we can infer from this that they are failing due to a lack of financing and/or technical assistance. Third, the fact that many businesses needed less than \$5,000 to launch indicates that microfinance institutions have a critical role to play in supporting

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<sup>71</sup> "Early Findings from the Entrepreneurial Research Consortium." *Business Week* (1999) Web.10 Feb 2009. <<http://www.businessweek.com/smallbiz/news/coladvice/trends/tr991028a.htm>>.

<sup>72</sup> Salazar, Maritza. "The Effect of Wealth and Race on Start-up Rates." *SBA Office of Advocacy* July 2007 9. Web.28 Feb 2009. <<http://www.sba.gov/advo/research/rs307tot.pdf>>.

entrepreneurial ventures, especially given that \$5,000 loans are not profitable for mainstream banks. As more startups become focused on sustainability, and established businesses position themselves for a market advantage in a green economy, green MFIs will play a critical role in ensuring that more minority-owned startups are able to succeed, and that the needs of micro entrepreneurs—those with extremely low start up costs—are met.

### **3.2 *What Financial Institutions Are Doing Around Environmental Sustainability***

Another means of demonstrating the need for green microfinance is to look at what financial institutions are currently doing with respect to environmental sustainability, and then to ask whether it is sufficient. We will look at three groups of financial institutions: mainstream commercial banks, green/community banks, and Small Business Administration (SBA) programs.

#### **3.2.1 Mainstream Commercial Banks**

Mainstream commercial banks have been forced, through a combination of public pressure, potential for cost reductions, and existing/pending regulatory mechanisms to implement environmentally friendly practices into their operations. What's unique about banks is that the environmental footprint of their internal operations—the energy and paper used by their branches, etc—pales in comparison to the environmental impact of the loans they make, because those loans are essential to enabling the status quo or, potentially, to spurring a more sustainable economy. Thus any discussion about the environmental efforts of mainstream banks must be broken down into internal operations and lending practices.

### 3.2.1.1 Internal Operations

It isn't surprising that many banks have taken steps to improve the energy-efficiency of their branches and to reduce paper and other waste, for the simple reason that these measures save the banks money and, in turn, make them more profitable. In addition, there is good public relations to be had from making commitments to, for instance, "achieving LEED certification in all new construction facilities and banking centers," a \$1.4 billion initiative Bank of America undertook in March of 2007.<sup>73</sup> Bank of America is also "investing \$100 million in energy conservation measures for use in all company facilities"<sup>74</sup> and has committed "to reducing company-wide greenhouse gas emissions 9 percent by 2009."<sup>75</sup> Yet another program at Bank of America is a hybrid vehicle reimbursement, where "associates who purchase a new hybrid vehicle are eligible for a \$3,000 reimbursement from the bank."<sup>76</sup> As of 2009, the program had led to the purchase of 2,000 hybrids.

Citizens Bank has several programs designed to reduce paper waste. Their GreenSense program uses paperless monthly statements, a debit card made of recycled plastic, and even pays participating customers "10 cents for every paperless payment" they make.<sup>77</sup> Similarly, Wells Fargo has a 10-point environmental commitment that includes a recycled paper-purchasing program; donations to environmental non-profits;

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<sup>73</sup> Gelsi, Steve. "Bank of America Values new green initiative at \$20 bln." *The Wall Street Journal* 06 Mar 2007 Web. 28 Feb 2009. <<http://www.marketwatch.com/news/story/bank-america-values-new-green/story.aspx?guid={F5A152E1-70D6-4152-8568-5E80CC5F4ECC}>> .

<sup>74</sup> "Our Commitment Toward Sustainable Business." Bank of America. 28 Feb 2009 <<http://environment.bankofamerica.com/commitment.jsp>> .

<sup>75</sup> "Reducing Our Own Carbon Footprint." Bank of America. 28 Feb 2009 <<http://environment.bankofamerica.com/article.jsp?articleId=Carbon-Footprint>> .

<sup>76</sup> Ibid.

<sup>77</sup> "Reducing Our Own Carbon Footprint." *Eco-Friendly Programs and Products from an Eco-Friendly Bank*. Citizens Bank. 28 Feb 2009 <<http://www.citizensbank.com/greensense/programdetails.aspx>> .

establishing internal teams dedicated to monitoring progress; and reporting on their progress.<sup>78</sup> These types of initiatives are common among most mainstream banks, and indeed most large corporations.

### **3.2.1.2 Lending Practices**

No amount of paperless billing and reducing energy consumption in bank branches will make up for the emissions caused by banks lending to new coal plants, oil exploration, certain biofuel production, cement factories, and other large producers of greenhouse gases, water pollution and dramatic resource extraction. Recognizing this, in 2002 several banks came together in London to develop The Equator Principles, which are a “framework for addressing environmental and social risks in project financing.”<sup>79</sup> Signatories to the Principles are required to go through a process of identifying, mitigating, disclosing and monitoring the social and environmental impacts of “all new project financings globally with total project capital costs of US\$10 million or more, and across all industry sectors.”<sup>80</sup> Several dozen of the world’s—and America’s—largest banks have signed on, including Bank of America, Citigroup, Credit Suisse and Wells Fargo.

Equally importantly, big banks have begun investing heavily in renewable energy, biofuels and other environmentally friendly technologies. According to a 2008 report by CERES that “analyzed the corporate governance and strategic approaches of 40 of the world’s largest banks to the challenges and opportunities posed by climate change,”

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<sup>78</sup> "Improving Our Environment." Wells Fargo. 28 Feb 2009 <<https://www.wellsfargo.com/about/csr/ea/>>.

<sup>79</sup> "Frequently Asked Questions About the Equator Principles." The Equator Principles. 28 Feb 2009 <<http://www.equator-principles.com/faq.shtml>>.

<sup>80</sup> "The "Equator Principles"." Jul 2006. Equator Principles. 28 Feb 2009 <[http://www.equator-principles.com/documents/Equator\\_Principles.pdf](http://www.equator-principles.com/documents/Equator_Principles.pdf)>.

many banks are making multi-billion dollar investments in renewable energy.<sup>81</sup> For instance, BNP Paribas invested over \$1 billion in eight projects in 2006, Citi has plans to “invest in and finance more than \$31 billion in clean energy and alternative technology over the next 10 years,” and Royal Bank of Scotland provided “2.6 billion of capital” towards renewable energy finance.<sup>82</sup> The same report finds that many large banks are getting heavily involved in carbon trading in three ways: “the brokerage of GHG emissions allowances and credits; the financing and development of carbon offsetting projects; and speculative investing and derivative offerings in emissions credits.”<sup>83</sup>

### **3.2.2 Green/Community Banks**

As environmental stewardship has become more of an economic—and public relations—force, banks specifically dedicated to sustainability have begun springing up. At the same time, community banks, which are defined by the Federal Deposit Insurance Corporation (FDIC) as “banking organizations (bank and thrift holding companies, independent banks, and independent thrifts) with aggregate bank or thrift assets of less than \$1 billion,” as well as credit unions and other regional financial institutions have begun offering new loan products tailored toward customers that are increasingly concerned about environmental issues.<sup>84</sup> Among the more notable of these are Shorebank, based in Chicago, New Resource Bank, in San Francisco, and Wainwright Bank in Boston.

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<sup>81</sup> Cogan, Douglas 7

<sup>82</sup> Cogan, Douglas 33

<sup>83</sup> Cogan, Douglas 36

<sup>84</sup> Critchfield, Tim. "Community Banks: Their Recent Past, Current Performance, and Future Prospects." *FDIC Banking Review: The Future of Banking in America*. Federal Deposit Insurance Corporation. 28 Feb 2009 <<http://www.fdic.gov/bank/analytical/banking/2005jan/article1.html> >.

Shorebank, for example, has been a pioneer in triple-bottom line lending, looking towards social, environmental and economic returns on the money it loans out. To achieve that goal, Shorebank and its sister companies look at the environmental, community and economic impact of their borrowers. What's more, under each of those categories, the bank has "a list of topics that [they] discuss with each borrower to determine if there are alternatives to its current behavior that would enhance its business, as well as improve their community's infrastructure, environmental health or the impact of the business."<sup>85</sup> In other words, Shorebank provides technical assistance in addition to loans to help borrowers mirror the values and goals of the bank itself.

Similarly, New Resource bank offers innovative financial products, such as 'Solar Certificates of Deposit,' that offer market rates and are used to invest in renewable energy projects. New Resource Bank also has a solar home equity financing program that is tailored to the repayment periods and savings associated with solar energy. In much the same way, community and green banks around the country are able to offer more individualized products and services and are more likely to be oriented around lending that is beneficial to the community.

### **3.2.3 SBA Programs**

The United States Small Business Administration (SBA) "does not make direct loans—it works with thousands of lenders and other intermediaries, which generally will make the loan with SBA guaranteeing the lender that the loan will be repaid."<sup>86</sup> SBA

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<sup>85</sup> "An Interview with David Williams of ShoreBank Pacific." *FDIC Banking Review: The Future of Banking in America*. Green Banking Central. 28 Feb 2009  
<[http://greenbankingcentral.typepad.com/green\\_banking/an-interview-with-david-w.html](http://greenbankingcentral.typepad.com/green_banking/an-interview-with-david-w.html)>.

<sup>86</sup> "Intro to SBA Finance." Small Business Administration. 28 Feb 2009  
<<http://www.sba.gov/services/financialassistance/Introsbafinance/index.html>>.



loan programs make financing more affordable—and in some cases possible—for small businesses that lenders would ordinarily charge high interest rates or not lend to at all. As a guarantor of loans, the SBA can make it easier for small businesses to invest in energy-savings measures by enabling them to secure more favorable rates on energy-efficiency, renewable energy and other investments.

Of all the SBA's programs, two in particular, the SBA Certified Development Company (504) loan-program and the SBA 7(a) loan program, stand out as being ideally suited to environmental improvements. In fact, all of SBA's 7(a) loan programs can be used by small businesses to fund green improvements, and the 504 loan program allows businesses to make significant capital improvements including extensive plant/office renovations to increase energy efficiency overall. Both of these loan programs can be used to finance renewable energy, energy efficiency, and fuel-efficient vehicle fleet upgrades and purchases. Unfortunately, at present "the SBA does almost nothing to promote . . . loans for these purposes."<sup>87</sup>

### **3.3 Why It's Not Sufficient**

It is encouraging to see that large financial institutions are beginning to move toward financing environmentally sustainable projects and businesses and that community banks are continuing to engage the community in which they operate with green loan products and services. However, the scale at which these efforts are being undertaken is not matched to the needs of the microentrepreneurs about which this paper

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<sup>87</sup> Kennard, Byron and Scott Sklar. "Why Obama's Stimulus Plan Should Include Clean Tech Startups." *BusinessWeek* 19 Dec 2008 Web.04 Apr 2009. <[http://www.businessweek.com/smallbiz/content/dec2008/sb20081218\\_516056.htm?chan=smallbiz\\_smallbiz+index+page\\_top+small+business+stories](http://www.businessweek.com/smallbiz/content/dec2008/sb20081218_516056.htm?chan=smallbiz_smallbiz+index+page_top+small+business+stories)>.

is concerned. Similarly, a fundamental limitation of all these efforts is that the loans are based on traditional evaluations of risk, namely FICO scores and debt-to-income ratios, and for the most part require collateral to secure the loan. It is true that many community banks are flexible in their requirements, but there are limitations to the flexibility that regulated financial institutions can have in making what regulators and bankers deem risky loans. In addition, for all the success of banks like Shorebank, there are still only a handful of institutions that have the commitment and capacity to provide technical assistance and loan products to truly serve environmental and social goals in communities.

Thus we are still left with a situation in which our target population is unable, or highly unlikely, to be able to secure financing from a regulated financial institution in order to start or expand a green business. As more banks realize the need for green products and services, more small businesses will be able to invest in green upgrades. However, without access to unsecured microloans and technical assistance, green micro entrepreneurs will never grow to the point where they will be able to take advantage of those products and services. That is why green MFIs are essential to the growth of an inclusive green economy.

#### **4 How Green Microfinance Can Support ‘Green Collar Entrepreneurs’**

As we discussed in chapter 3, the environmental movement on the whole has traditionally done a poor job of engaging and soliciting support from minorities, rendering the movement less effective than it could be and painting it as elitist and out of touch with the concerns of average Americans. Thanks to the work of pioneers such as Majora Carter and Van Jones, however, a new concept and movement has emerged that

successfully bridges the gap between environmental and social concerns: green collar jobs. What is so powerful about the idea of a green collar job, which we will define as “blue collar jobs in green businesses—that is, manual labor jobs in businesses whose products and services directly improve environmental quality,” is that they represent a win-win-win situation.<sup>88</sup> Unemployed and underemployed individuals receive training for these jobs, meaning that they are able to support themselves and their families; environmental goals are more readily achieved, in part because politicians have a strong incentive to support policies that will create more work for green employees (such as supporting renewable energy and energy-efficiency programs); and green businesses benefit from an influx of low-wage, motivated employees as well as more demand for their products and services.

In this chapter I will provide a broad overview of the green collar job movement as it stands today, and then propose a new concept that can make the movement even stronger: the green collar entrepreneur. The basic premise behind the green collar entrepreneur is that while it is extremely powerful to provide work for those that most need it, and to ensure that the work is also beneficial to the environment, not everyone wants an entry level job in the green economy. I am asking the following question: why should disadvantaged groups and individuals only be doing entry-level work in the new economy that is being created? Why not provide financing and technical assistance to those that want to become the leaders, the owners, and the entrepreneurs of the green economy? As I will argue, a vibrant, equitable and environmentally sustainable economy depends on receiving the ideas, support and energy of every segment of society, and it is

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<sup>88</sup> Pinderhughes, Raquel and "Green Collar Jobs: An Analysis of the Capacity of Green Businesses to Provide High Quality Jobs for Men and Women with Barriers to Employment." *BusinessWeek* 2007 17. Web.28 Feb 2009. <<http://bss.sfsu.edu/raquelrp>>.

therefore critical that a green entrepreneur who is not considered credit worthy by traditional definitions be supported by MFIs so that her vision can be realized.

#### **4.1 Green Collar Job Movement**

Given the inherent appeal of green jobs, the meteoric rise of the green collar job movement is not all that surprising. The first significant policy success was the passing, in 2007, of the Green Jobs Act, which “authorize[d] up to \$125 million in funding to establish national and state job training programs, administered by the U.S. Department of Labor, to help address job shortages that are impairing growth in green industries, such as energy efficient buildings and construction, renewable electric power, energy efficient vehicles, and biofuels development.”<sup>89</sup> That success, however, paled in comparison to the impact of the American Recovery and Reinvestment Act (ARRA) of 2009, which provided nearly \$100 billion dollars for energy-efficiency, renewable energy, transportation and other infrastructure upgrades that can create green jobs. In addition, the ARRA provides \$500 million for energy efficiency and renewable energy worker training, \$50 million for Youth Build, which is “implementing an ambitious Green Initiative to train participants for jobs building energy efficient buildings with sustainable materials,”; \$4.5 billion for a smart grid investment program, of which \$100 million is earmarked for “worker training for Smart Grid projects,” \$5 billion for the Weatherization Assistance Program (WAP), and numerous other provisions that will necessitate the training and hiring of workers in green fields.<sup>90</sup>

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<sup>89</sup> Melendez, Sonia. "House Committee Passes Solis' Green Jobs Act." 27 Jun 2008. Solis.House.gov. 26 Mar 2009 <[http://solis.house.gov/list/press/ca32\\_solis/wida6/greenjobscomm.shtml](http://solis.house.gov/list/press/ca32_solis/wida6/greenjobscomm.shtml) >.

<sup>90</sup> Fox, Radhika, Jason Walsh, and Shawn Fremstad. "Bringing Home the Green Recovery: A User's Guide to the 2009 American Recovery and Reinvestment Act." *PolicyLink and Green for All* (2009) 26. Web.24 Mar 2009.

In short, the election of President Obama and the passage of the ARRA have cemented the importance of green jobs not only as the a way out of the economic recession, but also as a way forward toward sustainable economic growth in the 21<sup>st</sup> century. The challenge is no longer convincing people of the need for green jobs and green training programs, but rather to ensure that these programs are properly implemented and that the benefits are reaped by all segments of society.

#### **4.1.1 Green Collar Jobs and Training Programs**

Even before the passage of the ARRA, green jobs were becoming increasingly prevalent as more and more companies expanded their products and services to advantage of new opportunities in the green economy; what's more, many companies were already providing green jobs without calling them as such. A 2006 study by Raquel Pinderhughes of green jobs in the Bay Area of California found that “twenty-two different sectors of the U.S. economy currently provide workers with green collar jobs.”

<sup>91</sup> It is worth listing them here, as they provide a good sense of the sectors in which green collar entrepreneurs might operate:

1. Bicycle repair and bike delivery services
2. Car and truck mechanic jobs, productions jobs, and gas-station jobs related to bio-diesel, vegetable oil and other alternative fuels
3. Energy retrofits to increase energy efficiency and conservation
4. Food production using organic and/or sustainable grown agricultural products
5. Furniture making from environmentally certified and recycled wood
6. Green building
7. Green waste composting on a large scale
8. Hauling and reuse of construction and demolition materials and debris (C&D)
9. Hazardous materials clean up
10. Green (sustainable) landscaping

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<sup>91</sup> Pinderhughes, Raquel 7

11. Manufacturing jobs related to large-scale production of a wide range of appropriate technologies (i.e., solar panels, bike cargo systems, green waste bins, etc.)
12. Materials reuse/producing products made from recycled, non-toxic materials.
13. Non-toxic household cleaning in residential and commercial buildings
14. Parks and open space maintenance and expansion
15. Printing with non-toxic inks and dyes and recycled papers
16. Public transit jobs
17. Recycling
18. Solar installation and maintenance
19. Tree cutting and pruning
20. Peri-urban and urban agriculture
21. Water retrofits to increase water efficiency and conservation
22. Whole home performance (i.e. HVAC, attic insulation, weatherization, etc.)

From this list several things become clear. First, it is potentially easy for a company to claim that a job is a green job when it really isn't. To combat this, jobs must meet several standards to be considered green under our definition. Green jobs must require the learning of a new skill or the adaptation of an existing skill (e.g., a green job related to cleaning has to involve learning how to mix, handle and use natural cleaning products); they must provide upward mobility; they must pay a living wage; they must provide safe, healthy working conditions for the employee; they must provide on-the-job training; they must be open to individuals with barriers to employment such as limited education, limited skills or past drug addiction; and they must promote environmental quality.

Second, the 22 sectors demonstrate the wide range of opportunities for green collar entrepreneurs—as we will discuss in sections 4.2-4.4—to start businesses that have minimal capital requirements, are poised for growth, and have the potential to affect positive environmental change. Lastly, the sectors show that there is room for existing companies to adapt their practices to create green jobs and for new companies to spring up to take advantage of the aforementioned opportunities created by the green economy.

To better understand the potential sectors in which green collar entrepreneurs will operate, I have broken down the 22 sectors into four general categories: home-based businesses; landscaping/cleaning/contracting businesses; food businesses; service/other businesses. These categories are based on an analysis of the types of businesses that microfinance tends to cater to around the world, and in particular in the United States. These four categories allow an MFI to more easily determine what practices an entrepreneur can implement into their business in order to be more successful and to achieve environmental benefits. For instance, microloans often support home-based businesses such as day-care, sewing, jewelry making, or any other activity that is done from home. What these businesses have in common is that the primary environmental impact comes from the home itself, with other impacts from the specific product or service offered. As a result, the MFI can focus on the sustainability of the home environment (e.g., removing lead paint, promoting education on behavioral changes to reduce energy consumption and providing financing for basic weatherization).

Landscaping/cleaning/contracting companies present unique and distinct opportunities for the implementation of sustainability. Businesses that fall into this category will need loans for green cleaning products, efficient lawnmowers, equipment for conducting energy-audits, etc., as well as technical assistance so that they can understand the market opportunity, effectively market the benefits of their services, and so on. Another common category of microloan falls into the food-based category. These businesses will need loans and technical assistance for everything from equipment that can handle and process organic foods, to efficient refrigeration, to sourcing, purchasing, pricing and marketing local, organic and fresh food. Service businesses, which include

hairdressing, translating, or any other service that is not provided from the home, present fewer opportunities for going green and thus will have to be addressed on a case-by-case basis.

Green job training programs themselves can take several different forms, much as any other workforce development program. Some provide trainees with job readiness skills and then connect individuals with companies looking to train and then hire people with specific skills. As an example, a training program might provide a trainee with a stipend while she receives job readiness skills and then split the cost with, say, a solar installer to train her to install solar panels and pass any certification exams she may need. Other programs are run entirely or in partnership with community colleges, which have a particularly important role to play in offering certification and other courses to those interested in green jobs. Lastly, some programs, such as the Sustainable Business Network of Rhode Island (SBNRI), run by Mark Kravatz in Providence, Rhode Island, brings in experts in areas including blower door testing and insulation installation to provide mini-seminars on a specific topic, and pays for the students to get several certifications (e.g., from the Building Performance Institute). The specific design of the program depends on the needs of the trainees, the sources of the funding, and the needs of the companies that will potentially hire the graduates. In short, programs run the gamut from providing individuals with specific skills tailored to specific jobs, to providing people with a broad range of skills that can be applied a number of jobs—or, as we shall see, to starting their own green business



## **4.2 *Need To Support Green Collar Entrepreneurs***

So why, if green job training programs are so successful and if there is already so much funding available for expanding these programs, do we need to support green collar entrepreneurs? I believe there are several strong arguments for providing microloans and technical assistance to low to moderate-income individuals who want to start green businesses. As I have argued repeatedly, an equitable green economy is not simply one in which disadvantaged people are given entry-level jobs (that are upwardly mobile and meet all the other criteria of green jobs); rather, an equitable green economy provides opportunities for people to make use of their talent, ideas and passions to better their own lives, improve their communities and protect the environment. Not only is it unfair to assume that disadvantaged people don't want to start their own green businesses, it is also misguided. If green job training programs become one-size-fits all, and don't make room for the varied interests and goals of trainees, then not only will their effectiveness be minimized, but society will be unable to benefit from the energy of some of its most entrepreneurial members.

Second, green job training programs provide extremely important information and skills about the green economy that can spur ideas and provide a basis upon which green businesses can be developed. As Mark Kravatz, the founder and director of the SBNRI, likes to point out, many people come into his program unaware of environmental issues and opportunities—at first, they are just interested in getting a job. But as they go through the program and realize that it's possible to save money on electricity bills and make money in myriad ways, they become excited by the possibilities they see around them. What's particularly exciting, says Mark, is that his students see things from a different perspective; they aren't interested so much in the environmental benefits, nor

are they concerned about the prestige associated with going green. Instead, they are interested in earning money so they can become financially self-sufficient, and they are eager to find ways of benefiting their friends, neighbors and communities. Thus, the businesses that green collar entrepreneurs start not only have tremendous social benefits for the entrepreneurs themselves, but they are more likely to remain local, community-based enterprises that produce other benefits as well.

Lastly, Mark notes that roughly 25% of the students that graduate from his class express a desire to start a green business, and many more come up with new, exciting ideas. The limiting factor, of course, is that as low-income people likely to have a very low credit score (if they have one at all) they know very well that the chances of them actually accessing the capital needed for starting their business are slim. As a result, their excitement is short-lived, and the innovative ideas they generate—some of which might result in the next Google or Microsoft, while others will have much smaller, more local benefits—can't be brought to fruition.<sup>92</sup>

A question that often arises when I describe the concept of green collar entrepreneur is, “what can a low-income entrepreneur do with a loan as small as \$500?” The simple answer is, quite a lot. For example, a 1990 study reported that “. . .63 percent of nonminority males and 78 percent of blacks in this sample of business owners responded that they needed less than \$5,000 to start their businesses.”<sup>93</sup> Many of the entrepreneurs to whom I have presented the idea of microfinance have told me about business plans they have that are perfectly suited to small loans. Often, micro businesses need a loan to cover the cost of incorporating, acquiring insurance or permits, purchasing

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<sup>92</sup> Kravatz, Mark, interview held February 15, 2009

<sup>93</sup> Salazar, Maritza 9

office supplies (including a computer and fax), marking their products or services, etc. A small loan can also enable someone with ideas for a capital-intensive business (such as opening a full-scale restaurant) to scale down their idea and start small, say by initially selling desserts from home. A great example of this is a woman I met who was interested in a loan in order to expand her herb-growing venture. At present, she has a heat lamp and some pots in her garage that she uses to grow herbs; she would like a loan in order to buy several more heat lamps, pots, soil and seeds, and beginning selling the herbs in local farmers markets. As her business grows, she would eventually like to purchase or rent space in an urban greenhouse and get her herbs certified organic by the USDA. A green microloan would start her down that path.

#### **4.2.1 Definition of Green Collar Entrepreneurs**

For our purposes, I am defining a green collar entrepreneur as someone who wants to start—or has started—a business that operates in one of the 22 green sectors listed in section 4.1, or that operates in any other sector that is directly related to improving environmental quality. What separates a green collar entrepreneur from any other entrepreneur, however, is that she comes from the target group for green collar jobs—low-income, minority, ex-offender, etc. These entrepreneurs are likely to have a low or no credit score, and even if their credit score were high enough to qualify for a bank loan, they would find it difficult to offer collateral on the loan. Thus green collar entrepreneurs are perfect candidates for microloans.

#### **4.3 *Technical Assistance to Green Collar Entrepreneurs***

As with any other microloan recipients, green collar entrepreneurs will need additional technical assistance to help them—and their businesses—succeed.

Fortunately, with green job training programs flourishing across the country, now is a great time for MFIs to partner with the community colleges, non-profits, companies, and other entities that are engaged in the training. Such a partnership would ensure that potential entrepreneurs in green job training programs are able to nurture and develop their ideas, and that upon graduation they have a rudimentary understanding of business. Having this understanding doesn't just make it easier for the MFI to effectively assist the borrower; it also means that even if the trainee doesn't start her own business, she will have a better understanding of how business works, making her a better employee, and enabling her to have the confidence that in the future she can launch her own venture.

It is therefore essential that as green job programs teach trainees specific skills like how to conduct an energy audit, they also provide people with a broad enough overview of green issues—water, waste, energy, etc.—that they can begin to understand the challenges and opportunities in the field. Again, not only does this make it easier for an individual to dream up a business idea, but it also means that she is more likely to come up with innovations at work or at home. And while it is perhaps more time consuming and costly to provide this background information—as opposed to simply focusing on the specific skill being taught—the benefits would be enormous. However, as MFIs begin to partner with training programs, they can decide on the most cost-effective and efficient way of providing this information. As I will describe in the next chapter, MFIs can easily incorporate environmental education into their lending programs as part of their ongoing interactions with the borrower; depending on the circumstances, it might be better for the MFIs to do so, while in others the training program itself will be better suited to the task.

### **4.3.1 Entrepreneurship Training**

Another important way in which green collar entrepreneurs can receive technical assistance is through entrepreneurship classes that focus on green issues. At present, there are myriad free or low cost entrepreneurship classes, seminars and consultants available to individuals looking to start or expand small businesses. For instance, Providence, Rhode Island alone has the following: The Center for Women and Enterprise offers free and low cost classes and workshops, and helps package loans for entrepreneurs; the Small Business Development Center offers mentoring and a free business training program called First Step; the Rhode Island Economic Development Corporation (RIEDC) offers loans, workshops and seminars; and the SBA offers loan guarantees, mentoring and advice. However, at present there is a lack of classes and consulting services that focus on the green micro businesses that green collar entrepreneurs are likely to start.

Once again, this shortcoming presents an opportunity for green job training programs to expand their offerings and partner with the SBA, local business development centers, and other entities that provide services to entrepreneurs. This partnership would expose trainees to basic business information (how to start a business, how to obtain financing, how to write a business plan or do financial projection, etc) as well as crucial financial literacy information (how to improve a credit score, open a bank account, etc.). Such programs could be funded through community reinvestment act (CRA) funds that banks are required to grant, foundations, the SBA, volunteers, financial literacy programs, or a number of other sources. Finding funding shouldn't be a challenge, as cities are always looking to improve financial literacy so as to prevent predatory lending and excessive consumer debt, and a range of groups—from businesses to government to

banks—stand to benefit from there being more people that understand what it takes to open and run a business.

At the same time, there is a need to begin developing full-fledged training programs that teach entrepreneurship in the context of green businesses. Existing programs, such as the First Step program developed by the Kaufmann Foundation, are highly effective at providing people the basic skills they need.<sup>94</sup> However, if they were combined with green job training, or taught in the context of environmental sustainability, they would remain equally effective while enabling graduates to explore business in high growth green areas, or to incorporate money saving environmental measures into their business. What's more, these programs could serve as incubators for green business ideas, with individuals debating, refining and pursuing new ideas that solve problems in a more efficient and profitable way than before.

#### **4.4 The Role of MFIs**

MFIs will do much more for green collar entrepreneurs that simply provide a loan. As with any microloan program, the MFI will take a high touch approach, providing continued assistance and support. What's unique in this case is that the support will focus not only mentoring the borrower and connecting her with other services, but also on positioning her business in the marketplace, understanding emerging green trends, products and services, and verifying, quantifying and marketing the environmental benefits of her company. As we have already seen, the problem of greenwashing is insidious, and could undermine a green collar entrepreneur's reputation.

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<sup>94</sup> "Testimonials." *First Step Fund*. First Step Fast Trac. 04 Mar 2009 <<http://www.firststepfasttrac.org/index.asp?sid=18>>.

Therefore, in order to protect the borrower and the public, the MFI must work with the borrower and other groups to ensure that the claims being made are accurate and truthful.

MFI's can also maintain relationships with environmental organizations that can provide additional assistance to borrowers. For instance, in the case of the woman who is interested in growing organic herbs in her garage, a green MFI might put her in touch with the organizers of the local farmers market and help her secure a table, and/or provide her with information on how to become certified organic. Most importantly, these relationships will enable MFI's to keep transaction costs at manageable levels by outsourcing much of the additional training to organizations already providing the requisite information and skills.

## **5 How Green Microfinance Can Promote Environmental Education and Engagement**

Much as MFI's can partner with green job development programs to make them more meaningful and relevant, MFI's can also work with environmental justice organizations, environmental non-profits, and state and local environmental agencies to develop educational materials that can be taught alongside financial literacy and business skills. These educational materials will focus on providing a basic overview of environmental issues *with the aim of arming borrowers with the information they need to empower* themselves and take action to create healthier, cleaner neighborhoods, to start green businesses, to lobby elected officials for legislative changes, and to more effectively fight polluters in their communities. Thus when an MFI incorporates environmental education into its lending program, it is not with the goal of providing academic information; rather, the goal is to provide information and tools that are

relevant to the borrower's life, and to ensure that she is able to take action based on that information.

MFIs are especially well suited to providing educational information that empowers low and moderate-income individuals in ways that go beyond the provision of an affordable loan. This is due in part to the strong relationships that are developed between borrower and lender, the frequency with which they meet, and the fact that providing additional, life stabilizing information and services to borrowers makes it more likely that they will repay loans, become repeat customers, and reap maximize benefits for themselves and their families. As I will discuss in this chapter, Grameen Bank has pioneered the use of education at its weekly borrower meetings to instill in borrowers various goals and practices—such as relate to hygiene, education and empowering women, and I believe that environmental justice—a key concern in many low-income communities throughout America—can be effectively taught (and fought) through MFIs. This chapter begins by outlining the level of environmental education in America at present as well as the need for empowering individuals to take environmental action, then describes the ways in which MFIs currently providing education on various issues, and then ends by proposing some general information that MFIs could effectively provide to borrowers.

### **5.1 *The Need for Better Environmental Education and Engagement***

In chapter 3 we saw how environmental organizations have done a poor job of diversifying their own internal staff, as well as the extent to which the environmental movement is seen as being predominantly white, middle-class, highly-educated and elitist. That perception, however, does not answer the question of the extent to which the



target population for green microfinance is educated and informed about environmental issues, or their level of support for environmental initiatives.

Interestingly, a literature review of environmental attitudes and concerns among minorities shows that awareness of and support for environmental causes is high. In fact, one 2002 poll by the Public Policy Institute of California indicated that “Latinos are more likely to identify ocean and air pollution as a ‘big problem’ and far more likely than non-Latinos (52 percent to 39 percent) to identify the threat of urban sprawl to the Sierra as serious.”<sup>95</sup> Another 2002 poll conducted by the Los Angeles Times looked at, among other things, the percentage of various races/ethnicities that supported “a \$2.6 billion bond issue to provide funds to improve water quality and preserve open space.”<sup>96</sup> As a percentage of people within their race/ethnicity, Blacks (77%), Latinos (74%) and Asians (60%) were all more supportive of the bill than whites (56%).

The difference between white and non-white, or low-income and middle and upper income environmental concerns is not that one group is concerned and the other is not, but rather that non-white and-low income people and groups tend to be more concerned about health and financial issues related to the environment (such as the price of gas and air pollution), whereas wealthier people and groups tend to be more concerned about environmental issues themselves (such as climate change or deforestation). Thus, what is lacking is not environmental awareness so much as something that has been termed the ‘action gap,’ where “minority or low-income groups” expressing a concern for

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<sup>95</sup> Pastor, Manuel and Rachel Morello-Frosch. "Assumption is wrong--Latinos care deeply about the environment." *San Jose Mercury News* 08 Jul 2002 1. Web.10 Mar 2009. <[http://cjtc.ucsc.edu/docs/opened\\_AssumptionIsWrong.pdf](http://cjtc.ucsc.edu/docs/opened_AssumptionIsWrong.pdf)>.

<sup>96</sup> "How Propositions 40 and 45 Fared Among Voters." *Los Angeles Times* 03 July 2002 1. Web.10 Mar 2009. <<http://www.environmentaldiversity.org/documents/LATimesProp40Poll.pdf>>.

the environment are “less able or less willing than their white counterparts to translate their concerns into social or political action (e.g., Mohai 1985, 1990; Jones and Carter 1994; Taylor 1989).” This dynamic arises for the obvious reason that “in order to participate in various types of environmentally friendly behaviors, people must have the resources to participate (Berger 1997).”<sup>97</sup>

Of course, support for a specific bond measure, or stated support for hypothetical pieces of environmental legislation, does not necessarily also indicate a high level of understanding of an environmental issue. However, it must also be kept in mind that merely providing environmental education doesn’t automatically translate into support of environmental causes either. In order for the target population to become effective actors and leaders on environmental issues that they are passionate about or that directly affect them, several things must happen. First, it is difficult to be concerned about an environmental issue when one is struggling to make rent, credit card and utility payments, and must work all day simply to put food on the table. Thus the service that MFIs provide—primarily loans for income generating activities—can, as they increase the earning potential of the borrower, free her up to become concerned about and take action on environmental issues. Second, the MFI must present the information in a way that is relevant, meaningful and engaging. This might be particularly challenging for environmentalists, as one study noted that “there is a sense among environmentalists that, ‘if we can only educate people to understand the importance of the work we do, they will

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<sup>97</sup> Bowler, Shaun, Gary Segura, and Matthew Whittaker. "Environmental Racism and the "Action Gap": Assessing White and Minority Commitment to Environmental Causes." *All Academic* 7. Web. 10 Mar 2009. <[http://www.allacademic.com/meta/p\\_mla\\_apa\\_research\\_citation/0/6/7/7/1/pages67716/p67716-7.php](http://www.allacademic.com/meta/p_mla_apa_research_citation/0/6/7/7/1/pages67716/p67716-7.php)>.

naturally support us.”<sup>98</sup> Such thinking is dangerous and detrimental to the cause of empowering disadvantaged people to improve their lives and communities because it ignores their particular needs, interests and concerns. Lastly, the MFI must provide the information, access to capital, access to legislators and access to other organizations that will enable borrowers to take action. In other words, the environmental education must not resemble a classroom setting wherein the borrowers act as “students” and the loan officers act as “teachers.” Instead, the relationship must be one of collaboration, with everyone involved working together to find solutions.

### **5.1.1 Why MFIs Are Suited to Addressing the Action Gap**

We have already seen that the action gap—rather than environmental awareness and concern—is the most significant barrier preventing minorities from engaging more profoundly on environmental issues. One report on this so-called ‘action gap’ states that “there is evidence to suggest that Latinos and other racial and ethnic minorities hold opinions more firmly pro-environment than their white fellow citizens . . . action, however, is another matter. Even if a group holds attitudes more favorable to the environment, this does not, by extension, suggest that those attitudes translate into action at rates similar to whites.”<sup>99</sup>

Given the unfortunate dynamic in which the ‘Big Ten’ environmental organizations continue to be perceived as out of touch with the concerns of minorities and urban communities, environmental justice organizations have had to step up to begin speaking for these groups. The argument I am making is two-fold: on the one hand, I

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<sup>98</sup> "Building Relationships with Communities of Color." *The Western States Diversity Project* Feb 2005 25. Web.01 Apr 2009. <<http://www.environmentaldiversity.org/documents/TNCDiversityStudy.pdf>>.

<sup>99</sup> Bowler, Shaun 11

believe that MFIs can serve to broaden the environmental justice movement by engaging their borrowers on the issues that environmental justice organizations deal with. On the other hand, I believe that MFIs can enable their borrowers to become actors and leaders on environmental issues in new ways. In particular, I am referring to the ability of MFIs to foster green entrepreneurship and to leverage their large networks of borrowers to set up campaigns, boycotts, local production of foods and goods, raise money for local causes, etc. MFIs can and should encourage their clients to do more than protest and boycott large corporations and polluters. Instead, they can provide the platform for people to demonstrate solutions in ways that are also profitable; they can provide them with the higher income they need to be able to afford to focus on environmental issues; and they can provide a supportive environment in which they can cultivate and develop their leadership abilities to become the new voices of the environmental movement, placing an emphasis on issues that affect low-income, minority and other disadvantaged groups and communities.

MFIs are especially well suited to providing this platform because, unlike environmental organizations, they cannot function without being deeply rooted in a community, which means understanding the people in a community, their needs and the challenges they face. MFIs also provide something that environmental justice organizations do not—namely, access to the capital they would need to start a green business, or to earn enough income to have the time to lobby their elected officials and rally other people to their cause. I want to reiterate that the fundamental problem is NOT that the target population needs to be educated about the environment (although certainly learning basic information on relevant issues will help them become more effective

leaders), rather, they need the resources and supportive structure to be able to act on their existing concerns and take control of their own lives. MFIs are by their nature organizations that promote self-sufficiency and self-empowerment in their customers, and in many ways the promotion of environmental engagement does the same. In other words, the result of a green MFI providing these services would be borrowers who are financially free from loan sharks and other predatory lenders, and who need not depend on other organizations or individuals to help them clean up their homes, their neighborhoods and their places of work because they will be empowered to do it themselves.

## **5.2 *Microfinance as a Tool of Education and Education***

While it may seem like environmental engagement is outside the mission of MFIs, it must be kept in mind that MFIs throughout the world already provide similar services that are pertinent to the context of their borrowers. Once again, the best example is that of Grameen Bank, which in the late 1980's undertook a comprehensive campaign to identify the most important values common to their borrowers throughout Bangladesh.

The results are what Grameen calls the 16 decisions. They are as follows:

- 1) We shall follow and advance the four principles of Grameen Bank --- Discipline, Unity, Courage and Hard work – in all walks of our lives.
- 2) Prosperity we shall bring to our families.
- 3) We shall not live in dilapidated houses. We shall repair our houses and work towards constructing new houses at the earliest.
- 4) We shall grow vegetables all the year round. We shall eat plenty of them and sell the surplus.
- 5) During the plantation seasons, we shall plant as many seedlings as possible.
- 6) We shall plan to keep our families small. We shall minimize our expenditures. We shall look after our health.
- 7) We shall educate our children and ensure that they can earn to pay for their education.
- 8) We shall always keep our children and the environment clean.
- 9) We shall build and use pit-latrines.
- 10) We shall drink water from tubewells. If it is not available, we shall boil water or use alum.

- 11) We shall not take any dowry at our sons' weddings, neither shall we give any dowry at our daughters wedding. We shall keep our centre free from the curse of dowry. We shall not practice child marriage.
- 12) We shall not inflict any injustice on anyone, neither shall we allow anyone to do so.
- 13) We shall collectively undertake bigger investments for higher incomes.
- 14) We shall always be ready to help each other. If anyone is in difficulty, we shall all help him or her.
- 15) If we come to know of any breach of discipline in any centre, we shall all go there and help restore discipline.
- 16) We shall take part in all social activities collectively<sup>100</sup>.

Grameen Borrowers are required to memorize the 16 decisions, and they become a guiding ethic for staff members and clients alike. The Decisions help build self-confidence and self-sufficiency among the borrowers, and respond to specific problems that plague poor Bangladeshis (such as disease from contaminated water and child marriage). Weekly meetings, then, become more than mere opportunities for borrowers to make repayments and receive new loans: they become support groups, and educational sessions at which ideas and problems are discussed and addressed.

### **5.3 What Green Microfinance Could Accomplish**

In a similar way to Grameen's approach with the 16 decisions, green MFIs could raise a number of important issues at meetings with borrowers. This section lays out some of those issues, though each community will find other specific needs that could be addressed:

#### **Recycling**

When we discussed the aforementioned problem of the action gap, one of the questions that we left unanswered was “what kinds of actions *could* minorities undertake?” One of the simplest and most beneficial is recycling, which not only creates jobs—according to the Environmental Protection Agency (EPA), roughly one million in

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<sup>100</sup> "16 Decisions." Grameen Bank. 08 Mar 2009 <[http://www.grameen-info.org/index.php?option=com\\_content&task=view&id=22&Itemid=109&limit=1&limitstart=0](http://www.grameen-info.org/index.php?option=com_content&task=view&id=22&Itemid=109&limit=1&limitstart=0)>.

the United States alone<sup>101</sup>—but also creates revenue for cities and states, and delays the expansion of existing landfills. Recycling also provides one of the simplest ways for an individual to feel like she is making a meaningful contribution to the environment: after all, all one has to do is place an item in the proper bin!

Despite the easy nature of recycling, recycling rates throughout the U.S. remain disappointingly low, a problem that has environmental, social and economic impacts on the country as a whole. As of the early 2000s the national recycling rate stood at 27%, a marked improvement over rates in the past, but a far cry from the “waste reduction levels above 50%” that “hundreds of communities have surpassed . . .”<sup>102</sup> One significant barrier to recycling is that “those who are less knowledgeable about how and what to recycle are less likely to participate, or tend to recycle less material.”<sup>103</sup> A simple solution is to provide a clear and concise overview of what can and cannot be recycled (which many, if not most, municipalities already offer, but given low recycling rates, the message is clearly not reaching consumers) and to then encourage an ethic of conservation and recycling in the home. If recycling is found to be inconvenient (e.g., bins are not large enough for the amount of recyclable material generated), then the appropriate agencies can be informed.

Aside from the obvious environmental/social benefits of recycling, there is another benefit to ensuring that people know what can and cannot go in the recycle bin.

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<sup>101</sup> "Economic Benefits." Environmental Protection Agency. 01 Apr 2009 <[http://www.grameen-info.org/index.php?option=com\\_content&task=view&id=22&Itemid=109&limit=1&limitstart=0](http://www.grameen-info.org/index.php?option=com_content&task=view&id=22&Itemid=109&limit=1&limitstart=0)>.

<sup>102</sup> "Cutting the Waste Stream in Half: Community Record-Setters Show How." *United States Environmental Protection Agency* EPA-530-R-99-013 Jun 1999 11. Web. 01 Apr 2009. <<http://www.epa.gov/osw/conserve/downloads/r99013.pdf>>.

<sup>103</sup> "Recycling: Why People Participate; Why They Don't." 30 Dec 2002 1-4. Web. 01 Apr 2009. <<http://www.mass.gov/dep/recycle/reduce/crbdrop.doc>>.

Throwing non-recyclable material in the recycling bin adds cost to the recycling process, as those items must be sorted, removed and subsequently placed in the landfill. In addition to standard recycling, green MFIs can also focus on the recycling of e-waste and toxic materials that people may have in their homes or apartments. For instance, they can organize collection days among their borrowers and families in coordination with recycling companies. Once again, beyond the obvious benefits of recycling materials, there is the added benefit that some borrowers might decide to create recycling micro businesses, perhaps collecting electronic waste for resale, or collecting recyclables from places that are not serviced by municipal trucks and delivering them to companies that will pay for the raw materials.

### **Overview of Major Environmental Issues**

While major environmental issues such as climate change, air and water pollution and deforestation can have a direct impact on the people served by MFIs, the complexity of these issues can hamper their ability to take a stance and/or take action.<sup>104</sup> Green MFIs can work with environmental and other organizations to develop training materials, and to invite speakers to come to meetings with borrowers to answer questions and provide enough information to enable them to make informed decisions (be it when voting, engaging in discussions with friends, or starting a campaign).

### **Energy Conservation/Efficiency**

We have seen how low-income Americans pay a higher percentage of their income toward energy than do Americans. The problem, however, is that when it comes to taking action, the obvious limitation is that it takes money to weatherize a home, and

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<sup>104</sup> Henderson, Sandra and Steven R Holman. "Climate change education: technology transfer to schools." *Climate Research* 30 Aug 1992 1-4. Web.01 Apr 2009. <<http://www.int-res.com/articles/cr/3/c003p137.pdf>>.



behavioral changes can only do so much. Green MFIs can help inform borrowers on the basic behavioral changes they can make (such as installing a programmable thermostat and using it properly, when to open windows for maximum ventilation, etc) while connecting them with existing services that provide financing for weatherization (e.g., the Low Income Weatherization Program, discussed in depth in the next chapter), or even providing loans themselves for the purposes of energy-efficiency.

These are just three of dozens of examples of how MFIs can incorporate environmental education, awareness and engagement into the services they provide on top of affordable loans. Because the 500 MFIs in the U.S. are found in a wide array of American communities, they are all sure to find different needs among their constituents, and thus will want to tailor their services to meet those needs. For instance, rural communities will have different concerns than urban communities, and so on. Also, MFIs will want to be smart about how they use precious resources; that is, MFIs cannot become focused on environmental issues to the exclusion of their primary mission. Instead, I am proposing that MFIs find the ways in which environmental issues facing their borrowers most intimately integrate with the mission of the MFI, and then develop the requisite partnerships, loan programs and other services that can further that mission.

There is no doubt that environmental degradation and poverty are related. As we have seen, low-income people are more likely to live near polluted factories or breathe unhealthy air. They are more likely to live in drafty, inefficient homes that are expensive and uncomfortable to live in, and they are also more likely to live in unhealthy homes contaminated with lead, asbestos or other toxins. As energy prices and sea levels rise,

they will be the first ones to feel the pain.<sup>105</sup> What's more, given that disadvantaged groups suffer the most from environmental problems and tend to have the least political voice, it stands to reason that the solutions to these problems come from the very groups most affected. I believe that MFIs can play a unique role in enabling disadvantaged individuals to find those solutions, be it through entrepreneurship, activism, lobbying or acts as simple as turning off light bulbs and recycling.

## **6 Microfinance For Energy-Saving Measures**

Thus far we have discussed how green microfinance can be used to help micro and small businesses go green, support green collar entrepreneurs who want to start or expand small businesses, and promote environmental education and engagement. These loans are, in effect, "people-based," in that the loans are going to individuals for the purposes of engaging in an activity that benefits them and the environment. However, green microfinance can have other benefits that don't fall under the people-based category. Microloans of \$35,000 or less can be "project-based" and still meet the requirements of green microfinance—that is, having benefits for underserved individuals and the environment. What's more, the networks that successful microlenders create, as well the relationships with borrowers they establish, can be used for the provision of other services. This chapter deals with how the principles of microfinance can be applied to project-based microloans and details the ways in which those networks and relationships can be leveraged to serve the individual, the community and the environment.

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<sup>105</sup> Howden, Daniel and "Climate Change 'hits minorities hardest'." *The Independent* 11 Mar 2008 Web.01 Apr 2009. <<http://www.independent.co.uk/environment/climate-change/climate-change-hits-minorities-hardest-793990.html>>.

## **6.1 Residential Weatherization and Renewable Energy Loans**

As we have already seen, low-income families pay “17% of their annual income on energy, compared with 4% spent by higher-income households.”<sup>106</sup> The residential sector also accounted for 18% of total U.S. greenhouse gas emissions in 2005, compared with 18.2% from commercial, 35.8% from industrial, and 28% from transportation.<sup>107</sup> Thus the efficiency of the residential sector as a whole needs to be addressed, while low-income families in particular are suffering from leaky homes and high energy costs. In order to address the latter, the United States Department of Energy (DOE) has a low-income Weatherization Assistance Program (WAP) that “enables low-income families to permanently reduce their energy bills by making their homes more energy efficient” and over the last 30 years “has provided weatherization services to more than 5.6 million low-income families.”<sup>108</sup> Families that do not qualify for the WAP have other options for financing efficiency and renewable energy improvements, such as Demand Side Management (DSM) programs through their utility and traditional loans from financial institutions. However, both the WAP and DSM programs have shortcomings that microfinance can address. Finally, microfinance can also eliminate the barriers that prevent homeowners from taking out home equity or personal loans to finance these energy-savings projects.

### **6.1.1 The Weatherization Assistance Program**

The WAP demonstrates the benefits—economic, social and environmental—of residential weatherization. To name just a few of these, according to the DOE:

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<sup>106</sup> Fehrenbacher, Katie 1

<sup>107</sup> Emrath, Paul and Helen Fei Liu. "Residential Greenhouse Gas Emissions." *Housing Economics.com* 30 Apr 2007 Web.01 Apr 2009. <<http://www.nahb.org/generic.aspx?genericContentID=75563>>.

<sup>108</sup> "Weatherization Assistance Program." United States Department of Energy: Energy Efficiency and Renewable Energy. 01 Apr 2009 <<http://apps1.eere.energy.gov/weatherization/>>.

--Low-income families will save an average of \$413 in reduced first-year energy costs, at current prices.

--Taken together, for every \$1 invested in the Program, Weatherization returns \$2.72 in energy and non-energy related benefits.

--Weatherization creates 52 direct jobs and 23 indirect jobs for every \$1 million invested.

--Weatherization measures reduce national energy demand by the equivalent of 18 million barrels of oil per year.<sup>109</sup>

Despite these benefits, the WAP suffers from several limitations that affect its ability to meet the demand for low and moderate-income weatherization. First, until this year, in order to qualify for the WAP a homeowner had to be at 150% of the poverty level or below. The ARRA of 2009 increased the eligibility level to 200% of the poverty level (SOURCE), however millions of homeowners and renters living in old, drafty homes still fall above that cutoff, and are therefore unable to access the funds.

The second problem is that the WAP is an entitlement program, meaning that funds are given away rather than loaned out. As a result, the entire program is dependent on appropriations from the Federal government, with no guarantee of sufficient funding in a given year. Another criticism of the entitlement nature of the program is that even when more funds are added to the WAP—such as has happened with the ARRA—the jobs that are created are likely to be lost if, in subsequent years, the funding level is not maintained.

Yet another shortcoming of a model that involves giving away money for weatherization is that it discourages private investment in low-income weatherization—investment that as we shall see could provide reasonable, secure returns to investors, ensure that energy savings are actually being realized, and leverage far more capital. As

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<sup>109</sup> "Weatherization Assistance Program Overview." Weatherization Assistance Program Technical Assistance Center. 26 Feb 2009 <<http://www.waptac.org/sp.asp?id=1437>>.

a February, 2009 Los Angeles Times article points out, “the [WAP] program serves about 150,000 homes a year” and it is estimated that “the stimulus money could result in weatherization for as many as 400,000 additional homes this year and 700,000 more in 2010.” However, “according to Energy Department statistics, more than 33.8 million households are eligible for weatherization services,” meaning that the program is falling far short of meeting the demand.<sup>110</sup>

Thirdly, because states can choose whether or not to track data on the homes that are weatherized through the program, many, including Rhode Island, lack any information on the specific effectiveness of the work that is done. This is problematic for several reasons. Homeowners have no way of knowing that the installation was done to scope. Policymakers are unable to track savings and are therefore unable to learn from previous mistakes and identify more effective means of spending WAP money. And contractors lack incentives to do the most thorough job possible. Again, all this is to be expected when funds are given away; after all, why should the homeowner really care, given that the work is done for free? And why should policymakers care so long as they are scoring political points?

### **6.1.2 Demand Side Management (DSM) and Rebate Programs**

Other options for homeowners (and renters) interested in energy saving installations are DSM and rebate programs administered through their local utility. These programs are funded through a surcharge on the utility bills of all ratepayers, and can go towards providing rebates for energy-efficient appliances, heating, cooling and

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<sup>110</sup> Gantz, Sarah. "\$5-billion boost for weatherization seen as waste of stimulus funds." *Los Angeles Times* 16 Feb 2009 Web. 28 Feb 2009. <<http://www.latimes.com/news/science/environment/la-na-weatherization16-2009feb16,0,2019094.story>>.

ventilation (HVAC) systems, distributed energy generation (such as solar hot water and solar photovoltaics), weatherization, programmable thermostats, energy audits and efficient new construction, to name a few.

For all the benefits of DSM and rebate programs, they still fall short of meeting the demand for efficiency and distributed power in the residential sector, particularly among low and moderate-income households. A rebate is effective only when the person receiving the rebate can afford the initial up-front cost of the installation, or is willing/able to finance that up-front cost through a loan or on a credit card. Not surprisingly, a low or moderate-income renter or homeowner is unlikely to be able to afford the up-front cost, of, say, a high efficiency on-demand tankless water heater, which costs roughly \$1,000. Even with a rebate of \$300 from National Grid, the purchaser would be stuck with a bill for \$700; a short payback period won't convince someone to spend \$700 if they don't have it in the first place or would rather spend the money on more urgent medical, food, rent or other needs.<sup>111</sup>

For a higher-income individual, this up-front cost need not be a problem, as even if she lacks the funds to make the initial investment, she is more likely to have a high enough credit score to be able to secure a low-interest loan from the bank. As we have seen, however, financial institutions already under-serve the target population. Low or non-existent credit scores mean that even if they did get a loan from a bank, the interest rate would likely be less than favorable. Financing an energy-efficient installation on a credit card is feasible, but the borrower would incur extremely high interest rates and, as a result, be unable to capture the monetary savings from a lower energy bill.

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<sup>111</sup> "Home Energy Audit." National Grid. 28 Feb 2009 <<http://thinksmarthinkgreen.com/service/rigas.html>>.

In order to address the problems with the WAP and DSM programs, several innovative initiatives have been developed, some of which are run through municipalities, others through partnerships between for-profits, non-profits and banks, and still others through for-profit companies. What they all share in common, however, is that not only do they address the aforementioned barriers to increasing the energy efficiency of the residential housing stock, but they are also well positioned to benefit from the principles of microfinance. We will look at the Berkeley model, the SolarCity model and On-bill financing and finally present the Capital Good model, which is an approach that addresses the shortcomings of existing programs. Lastly, we will discuss how the principles of microfinance can strengthen these programs and broaden their appeal.

## **6.2 *The Berkeley Model***

Recognizing that the single greatest barrier to renewable energy and energy-efficiency installations, especially in the residential sector, is their up-front cost, in late 2007 the City of Berkeley, California began exploring an innovative mechanism that addresses that barrier. According to Cisco Devries, the Chief of Staff to the Mayor of Berkeley at the time the program was developed:

Berkeley FIRST (Financing Initiative for Energy Efficiency Renewable and Solar Technology) allows property owners to install solar systems and make energy efficiency upgrades with no upfront cost.

Berkeley pays the upfront costs through the issuance of a new kind of municipal bond. The bonds are repaid from a new line item on participating property owners' property tax bills over 20 years. Participating property owners pay for only the costs of their energy project.

The program is 100% "opt-in" and property tax expenses remain unchanged for those who choose not to participate.

The result: solar and energy efficiency projects are paid for over a long period of time, in bi-annual installments. The interest rate is fixed. Property owners do not need to access their own capital or credit. And if the owner sells the property, the repayment obligation transfers along with the property itself.<sup>112</sup>

Berkeley's model, therefore, goes beyond merely addressing the issue of up-front cost. As Mr. Devries points out, loans can be issued without dealing with the homeowner's credit because, in effect, the loans are made to the property—as long as a homeowner established clear title to the property and is not behind on and property tax payments, they are eligible for participation in the program. The model also ensures that there is no net cost to the homeowner, as the payments are tied to the savings; ideally, the homeowner will actually save money over the life of the loan. Perhaps more importantly, because the loan is made to the property, the homeowner is not obligated to pay off the loan in full in the event of a sale; rather, the new homeowner inherits the more efficient home and the slightly higher property tax. In the meantime, the homeowner gets to enjoy a safer and more comfortable home and higher property values, while the city gets to reduce its emissions at the same time that it creates jobs for its residents. These benefits are not to be taken lightly: “a study soon to be published by a team from the UC Berkeley Renewable and Appropriate Energy Laboratory found the potential for this type of financing to go national -- investing \$240 billion in renewable energy and energy efficiency, reducing 37 million metric tons of CO<sub>2</sub>, saving homeowners an average of \$190 a year, all at no net cost to government.”<sup>113</sup>

Initially, Berkeley is focusing on financing for the installation of solar photovoltaic arrays, however it is important to note that the basic framework of the model

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<sup>112</sup> Devries, Cisco. "Everything you need to know about Berkeley's innovative rooftop solar program." *Grist.org* 3 Nov 2008 Web.01 Mar 2009. <<http://gristmill.grist.org/story/2008/10/31/163854/86/>>.

<sup>113</sup> *Ibid.*



can be applied to energy-efficiency as well as other renewable energy upgrades. For example, the City of Palm Desert, California, is launching a \$2.5 million program that will fund energy-efficiency, renewable energy, a combination of the two, and even custom projects. Unlike Berkeley, which is raising funds through the sale of municipal bonds, Palm Desert has funded the program out of the city's General Fund. However, after the pilot phase "the Energy Loan Fund may be funded from a number of other potential sources, and combinations of sources, which may include but are not limited to additional funding from the General Fund, the issuance of notes, bonds, or agreements with utilities or public or private lenders or other governmental entities and quasi-governmental entities such as CALPERS."<sup>114</sup> This last quote highlights the many ways in which this model can be funded, a critical fact given the challenges of raising money, especially during an economic downturn. For example, Berkeley has had to charge a higher interest rate on its loans than originally anticipated due to the general state of the bond market.<sup>115</sup> An additional drawback of the issuance of bonds for financing solar was that participants in the program weren't eligible for the Federal Solar Tax Credit. Fortunately, thanks to the American Recovery and Reinvestment Act of 2009 "homeowners will now be able to get a federal tax credit worth 30 percent of the cost of their new solar system even if they're also receiving state or local financing."<sup>116</sup>

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<sup>114</sup> "Palm Desert Energy Independence Program Report and Administrative Guidelines." (2008) 6. Web.09 Mar 2009.

<sup>115</sup> Norberg, Sheldon. "What's up with the Berkeley FIRST solar financing program?." 06 Nov 2008. Solar Power Rocks.com. 07 Mar 2009 <<http://www.solarpowerrocks.com/solar-financing/what's-up-with-berkeley-first-solar-program/>>.

<sup>116</sup> Baker, David. "Stimulus adds tax credit for home solar panels." *San Francisco Gate* 17 Feb 2009 Web.01 Mar 2009. <<http://www.sfgate.com/cgi-bin/article.cgi?f=/c/a/2009/02/18/BUHK15VO9T.DTL>>.

The line item on the property tax that Berkeley relies on to facilitate repayment is by no means the only option. Indeed, many municipalities will look to other approaches, especially given the challenge of passing the requisite law allowing the city to place a lien on a property for the purposes of doing an energy-related upgrade. In California, that process has been made easier by the passage of Assembly Bill 811, which “authorized all cities and counties to [finance energy upgrades] using a similar type land-secured finance district, called a Contract Assessment District.”<sup>117</sup> However, the relevant laws differ on a state by state basis, and even in California, the city council of each participating municipality must approve the program, meaning that political realities could stand in the way of environmental and economic necessities.

Several initiatives have found ways of getting around the problems associated with raising funds through municipal bonds and securing repayment through a line item on the property tax. We now turn to these models.

### **6.3 *The Solar City Model***

Private companies have long been turning a profit by providing turnkey solutions to large users of electricity—the military, large corporations and municipalities—interested in ‘going solar.’ One of the largest of these companies, SunEdison, installs, owns and maintains solar arrays that are placed on the rooftops of their customers. The customers pay nothing for the installation or maintenance of the panels; instead, they buy from SunEdison the electricity that is produced from the panels at a fixed rate over the 30-year life of the system. Because SunEdison targets large consumers of electricity who pay high electricity rates, SunEdison is able to offer a price per kilowatt hour (kWh) on

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<sup>117</sup> Devries, Cisco 1

the energy from the panels that is equal to or less than what they are currently paying, and the customer's savings will only increase as the cost of traditional electricity increases. This model has proved so powerful—and profitable—that as of February, 2009 SunEdison owned roughly 70 megawatts (MW) of peak AC solar photovoltaic (PV) capacity on the rooftops of Wal Mart, Whole Foods and municipal buildings, to name a few.<sup>118</sup>

Unfortunately, while SunEdison's approach has been effective in the commercial and industrial sectors, it has yet to be applied to the residential sector. A fundamental premise of this thesis is that in order to get people involved and invested in all things green, they have to be able to literally invest their time and energy in environmentally related jobs, projects and investments. Enabling homeowners to go solar in an affordable way is critical, not only toward reducing greenhouse gas emissions and strain on the electrical grid, but also toward engaging more homeowners and spreading awareness about renewable energy and energy efficiency. After all, what better way to show people the benefits of green technology than for them to see their electricity meter spin backwards and their energy bills go down?

SolarCity, a California-based company, offers 'solar leases' to homeowners that enable them to install PV arrays with \$0 down and a low monthly payment. The lease increases each year at a fixed rate that is roughly equal to the rate at which electricity prices increase, and the payments are structured so that the homeowner either experiences no net cost or immediately begins realizing a savings.<sup>119</sup> And because SolarCity offers a

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<sup>118</sup> "Sun Edison Solar Installed Capacity." Sun Edison. 01 Mar 2009 <<http://www.sunedison.com/dynamic/install-table.xml> >.

<sup>119</sup> "Solar Power Financial Benefits." SolarCity. 15 Mar 2009 <<http://www.solarcity.com/solarlease/SolarCityFinancialBenefits.aspx> >.

turnkey solution—handling everything from project financing and design to installation and maintenance—many of the hassles of going solar are avoided. However, the model has one serious drawback: because approval of the lease is dependent on a homeowner’s credit, much of the target population for green microfinance is unable to take advantage of the program. As a result, the real beneficiaries of the SolarCity model are wealthier homeowners with good credit who most likely could have received a favorable interest rate on a loan from a financial institution to finance a PV installation. What SolarCity provides, then, is a streamlined process that makes it easier for middle and upper-income homeowners to go solar, rather than enabling lower and moderate-income homeowners to do so.

#### **6.4 *On-Bill Financing and The Capital Good Group Model***

Perhaps the simplest and most attractive way to handle the repayment of energy-related loans is through a line item on the borrower’s utility bill. On-bill financing enables an energy saving installation to be done on a property without dealing with the homeowner or renter’s credit history. Much as with a property tax repayment, on-bill financing means that in the event of a sale the repayment stays with the property, but unlike property tax, on-bill financing only requires the agreement of the local utility and, possibly, the Public Utilities Commission (PUC). While gaining the initial approval may prove difficult, once acquired the loans can be made to any customer of the utility.

The Center on Wisconsin Strategy (COWS), which itself is getting ready to pilot an innovative financing program, lists several existing utilities that enable on-bill financing. In 2001, for instance, “the New Hampshire Public Utilities Commission . . . authorized pilot programs to provide no-cash-upfront energy efficiency projects, with

payments incorporated into electric billing.”<sup>120</sup> Similar programs exist in Kansas, Michigan, Hawaii and Massachusetts.

On-bill financing, unlike municipal service charges, can be more readily applied to rental units. Not surprisingly, rentals tend to be far less efficient than homeowner owned and occupied properties, as landlords have little incentive to invest in apartments if they don't pay the utility bills and then cannot recoup their savings unless they raise the rent—a proposition that could deter renters. Thus mechanisms that increase the efficiency of rentals have tremendous potential to reduce greenhouse gas emissions, decrease peak demand and lower renter's utility bills.

Because the landlord pays the municipal service charge on a building, it would be impractical for a municipality to finance energy saving installations in rental units and then raise the property tax by an equal amount to facilitate repayment. This is for the obvious reason that the landlord will not be realizing the savings. Granted, the landlord could pass the additional cost on to the tenant, but that hassle could lead to mistakes and unfair charges on the renter. On-bill financing, on the other hand, can work well with renters as long as they pay their utility bills. If and when a tenant moves out, the new renter will inherit a more efficient home and the same line item for repaying the loan.

I have been involved in developing a model with a non-profit I co-founded, The Capital Good Fund, that will take advantage of on-bill financing to facilitate repayment and leverage the principles of microfinance to maintain extremely low default rates. The problem of default rates in this kind of project-based microfinance model is different than the one experienced in people-based lending, because the loans are tied to a guaranteed

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<sup>120</sup> "Summary of Efficiency Financing Programs." Center on Wisconsin Strategy. 01 Mar 2009 <<http://www.cows.org/me2/me2otherprograms.pdf>>.

savings, as opposed to anticipated revenue from an income-generating activity. Thus as long as the borrower has been able to pay her utility bills in the past she should, in theory, be able to repay the loans because at most her bills will stay the same, and ideally they will decrease. However, unlike a property tax mechanism, where defaulting on payments could easily lead to foreclosure, in most cases the worst that can happen in the event of missing a utility payment is a termination of service, yet even that option is not allowed during the winter months. It is possible to place a lien on the property with the on-bill financing approach, but that adds significant costs and paperwork to the program.

At this point it is worth recalling that Grameen Bank operates without any collateral, guarantees or legal mechanisms for collecting in the event of default, and requires minimal paperwork. Yet despite this the Grameen model works because it taps into human networks and the social capital therein. It also works because it starts with the assumption that the borrower will repay, and this attitude of trust and respect leads to a more natural relationship between the lender and borrower. Thus while any number of legal mechanisms could be implemented in order to minimize the risk to the lender—such as placing liens on the property and asking for collateral—low default rates could be maintained more cost-effectively through a “high-touch,” microfinance approach. Additionally, this approach will make it easier to educate the homeowner about further ways in which he or she can save money through behavioral changes and in general become more engaged in environmental issues.

Initially, the Capital Good (CG) model will focus on low and moderate-income weatherization, although the basic framework can be applied to distributed renewable energy, geothermal, and even non energy-saving, yet environmentally friendly,

installations such as Forest Stewardship Council (FSC) certified wood and low or no VOC paint. According to Ralph Groves, the owner of a Rhode Island based Weatherization Company, in 2008 the cost of an average weatherization was roughly \$4,000.<sup>121</sup> This cost included labor and materials, but excluded the cost of the energy audit, for which Mr. Groves charges \$250. Mr. Groves has found that utility bills can go down anywhere from 20%-50% as a result of weatherization, depending on the inefficiency of the home, and the Department of Energy (DOE) states that “on average, weatherization reduces heating bills by 32% and overall energy bills by \$358 per year at current prices.<sup>122</sup>” However, the DOE numbers are based on the WAP program, which, because of its limitations (especially the limits on the amount of money that can be spent per home), does not yield all cost-effective savings. We will assume that the average single family home spends \$2,000 per year on energy<sup>123</sup> and that the homeowner will realize a 25% reduction in overall energy bills, yielding an annual savings of \$500.

As we have seen, one of the barriers to the implementation of residential weatherization is the hassle of dealing with contractors, the uncertainty about actually realizing savings, and the up-front cost. The CG model streamlines the entire process. First, an energy audit is performed on the property in order to identify the opportunities for increased efficiency. Based on that audit, the auditor and homeowner/tenant will review the options available and how they will affect the repayment schedule. The options available to the homeowner will be limited to what the lender has pre-approved

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<sup>121</sup> Groves, Ralph, interview held 15 March, 2009

<sup>122</sup> "Weatherization Assistance Program." United States Department of Energy: Energy Efficiency and Renewable Energy. 01 Apr 2009 <<http://apps1.eere.energy.gov/weatherization/>>.

<sup>123</sup> "Where Does my Money Go? : Energy Star." Energy Star. 02 Mar 2009 <[http://www.energystar.gov/index.cfm?c=products.pr\\_pie](http://www.energystar.gov/index.cfm?c=products.pr_pie)>.

(e.g., the lender can state that the maximum repayment period on the loan is 10 years). Once the homeowner has signed off on a scope of work, the lender will oversee a competitive bidding process among contractors. Ideally, the program will reach enough homes that contractors will bid on, say, 10 or 50 homes at a time, thereby making use of economies of scale to lower costs.

The lender will require that all participating contractors have a first source hiring requirement and/or consider the graduates of local green job training program for new positions before opening the application to other applicants. Once a bid has been selected, the lender will pay the contractor directly, and the borrower (the homeowner or renter) will enter into a loan agreement with the lender that once the work is complete and verified, he or she will begin making a fixed monthly payment through the utility bill.

After the contractor completes the installation, the lender will have a post audit done to verify that the work was done to scope. This step is absolutely essential, as it helps to ensure that the borrower will actually realize a savings on her utility bills and that, therefore, there will be no net cost to her for participating in the program. At present, no such third-party verification exists in the WAP or DSM programs in Rhode Island, and several environmental non-profits, including People's Power and Light, have been arguing for such verification for years.<sup>124</sup>

The lender will be doing far more than simply issuing a loan. In addition to overseeing the competitive bidding process and third-party verification, the lender will also develop educational materials for the borrower on how to realize further savings

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<sup>124</sup> Conversation with Karina Lutz, Deputy Director of People's Power and Light, March 17, 2009



through behavioral changes such as turning off lights, making efficient use of windows and blinds, and using a programmable thermostat. These behavioral changes can save an additional 5% to, in some cases, as much as 30%, on utility bills.<sup>125</sup> The lender's overhead—which will be much higher than if it were to simply issue the loan in a “hands off” manner—will be rolled into the cost of the loan itself. The cost of the third-party verification, estimated by People's Power and Light to be \$300 per home, will also be rolled into the loan. The Capital Good Fund estimates that it will cost roughly \$700 per home in overhead, meaning that the average cost per home would be \$5,000. This estimate is based on an analysis of the overhead costs in existing, similar programs, conducted by Merrian Fuller of Efficiency Vermont. The study, titled *Enabling Investments in Energy Efficiency: A study of programs that eliminate first cost barriers for the residential sector*, found that overhead costs for similar programs ranged from as low as \$250 to well over \$1,500<sup>126</sup>. The \$700 estimate is conservative given, as we shall see, the way in which microfinance approaches can greatly streamline the program, but also takes into consideration that overhead costs not only include underwriting and servicing loans, but also conducting project management on the homes.

Before we look at repayment periods and terms, a word must be said about the way in which such a program would be funded, as the funding source could potentially alter the interest charged on the loan. If, for example, it was decided that the WAP money would be better spent by creating a revolving loan fund, or if grant or other

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<sup>125</sup> Markowitz, Ezra and Bob Doppelt. "Reducing Greenhouse Gas Emissions Through Behavioral Change." *Climate Leadership Initiative* Jan 2009 14. Web.05 Apr 2009. <[http://www.uoregon.edu/~climlead/pdfs/behavioral\\_change.pdf](http://www.uoregon.edu/~climlead/pdfs/behavioral_change.pdf) >.

<sup>126</sup> Fuller, Merrian. "Enabling Investments in Energy Efficiency: A study of programs that eliminate the first cost barriers for the residential sector." *Efficiency Vermont* Aug 2008 47. Web.26 Apr 2009.

government money was used to capitalize the program, then the loans would likely carry a very low-interest rate—around 2%. On the other hand, if the program were run as a socially minded investment fund then, in order to repay investors and cover the added legal expenses of potentially registering with the Securities and Exchange Commission (SEC), the interest rate would be higher—around 6%. I have chosen these figures based on conversations with politicians and energy experts (to determine what is politically and scientifically feasible) as well as on what financial institutions would likely charge. As we shall see, in either case, the homeowner would be able to realize positive cash flow over the life of the loan, jobs would be created, and property values would go up.

Participants in the program would be able to take advantage of rebates from National Grid and the federal government. National Grid customers are “eligible for an incentive of 50% of the cost (up to \$1,500)” for residential weatherization.<sup>127</sup> Additionally, the Economic Stabilization Act of 2008 allows “consumers who purchase and install specific products, such as energy-efficient windows, insulation, doors, roofs and heating and cooling equipment in the home [to] receive a tax credit of [10% of the project cost] up to \$500 . . .”<sup>128</sup> The National Grid rebate would be paid directly to the contractor, allowing the loan to be made for the post-rebate amount; the tax credit, however would likely have to go directly to the homeowner and would thus be counted as part of the first year’s savings. Thus the \$4,000 worth of weatherization done on the home would, after tax credits and rebates, only cost \$2,100. After adding the \$700 in

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<sup>127</sup> "Home Energy Audit." National Grid. 28 Feb 2009 <<http://thinksmarthinkgreen.com/service/rigas.html>>.

<sup>128</sup> "Federal Tax Credits for Energy Efficiency." Energy Star. 03 Mar 2009 <[http://www.energystar.gov/index.cfm?c=products.pr\\_tax\\_credits](http://www.energystar.gov/index.cfm?c=products.pr_tax_credits)>.

administrative costs, and \$550 for a pre and post energy audit, the average loan would be for \$3,750.

In order to calculate repayment periods I modeled three energy-price scenarios. I based my analysis on a similar study of Berkeley's financing model done by Merrian C. Fuller et. Al, where they modeled "the Energy Information Administration (EIA) forecast of no increase in real energy prices (with 2 percent inflation), a +2 percent scenario, and a +4 percent scenario."<sup>129</sup> The authors point out that "between 2001 and 2006, U.S. nominal electricity rates rose by 4 percent per year, and U.S. gas rates rose by 8.4 percent per year. Increases in energy price are likely to continue over the long run, and these higher-than-forecasted price scenarios represent this possibility."<sup>130</sup> I model these three energy price-scenarios for both the 2% and 6% interest rate cases.

## **2% Interest Rate**

For a loan of \$3,750, with an interest rate of 2% and a term of 10 years, the monthly payment is \$34.51.

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<sup>129</sup> Fuller, Merrian 1

<sup>130</sup> Ibid.

<b>Loan Amount:</b> \$3,750	Yearly Payment*	Monthly Payment:	Interest Rate:
	<b>414.12</b>	34.51	<b>2%</b>
<b>Annual Energy Costs</b>			
<b>Year</b>	<b>Inflation</b>	<b>Savings (I)</b>	<b>Net Savings (less payments)</b>
1	2000	900	485.88
2	2040	510	95.88
3	2081	520	106.08
4	2122	531	116.48
5	2165	541	127.10
6	2208	552	137.92
7	2252	563	148.96
8	2297	574	160.22
9	2343	586	171.71
10	2390	598	183.43
<b>Total</b>	21899	5875	<b>1,733.66</b>

Figure 1—Base Case (energy rises with inflation)

<b>Annual Energy Costs</b>		
<b>Inflation + 2</b>	<b>Savings (I + 2)</b>	<b>Net Savings (less payments)</b>
2000	900.00	485.88
2122	530.40	116.28
2164	541.01	126.89
2207	551.83	137.71
2251	562.86	148.74
2296	574.12	160.00
2342	585.60	171.48
2389	597.32	183.20
2437	609.26	195.14
2486	621.45	207.33
22695	6,073.85	<b>1,932.65</b>

Figure 2—Energy prices rise at inflation plus 2%

Annual Energy Costs		
Inflation + 4	Savings (I + 4)	Net Savings (less payments)
2000	900	485.88
2162	540.60	126.48
2206	551.41	137.29
2250	562.44	148.32
2295	573.69	159.57
2341	585.16	171.04
2387	596.87	182.75
2435	608.80	194.68
2484	620.98	206.86
2534	633.40	219.28
23093	6,173.35	2,032.15

**Figure 3—Energy prices rise at inflation plus 4%**

In Figure 1 we see that assuming a base case wherein energy prices rise with inflation (assumed to be 2% per year), the homeowner realizes a net savings of \$1,733.66 over the 10-year life of the loan. The savings increase to \$1,932.65 in Figure 2, and \$2,032.15 in Figure 3. In all cases there is positive cash flow during each year of the loan term. Savings for the first year are inflated due to the assumed federal tax credit of \$400, however there is still positive cash flow even without the tax credit.

### **6% Interest Rate**

For a \$3,750 loan with an interest rate of 6%, the monthly payment is \$43.54, and the yearly payment is \$522.48.

<b>Loan Amount:</b> \$3,750	Yearly Payment*	Monthly Payment:	Interest Rate:
	522.48	43.54	6%
	<b>Annual Energy Costs</b>		
<b>Year</b>	<b>Inflation</b>	<b>Savings (I)</b>	<b>Net Savings (less payments)</b>
1	2000	900	377.52
2	2040	510	-12.48
3	2081	520	-2.28
4	2122	531	8.12
5	2165	541	18.74
6	2208	552	29.56
7	2252	563	40.60
8	2297	574	51.86
9	2343	586	63.35
10	2390	598	75.07
<b>Total</b>	21899	5875	650.06

Figure 4-- Base Case (energy rises with inflation)

<b>Annual Energy Costs</b>		
<b>Inflation + 2</b>	<b>Savings (I + 2)</b>	<b>Net Savings (less payments)</b>
2000	900.00	377.52
2122	530.40	7.92
2164	541.01	18.53
2207	551.83	29.35
2251	562.86	40.38
2296	574.12	51.64
2342	585.60	63.12
2389	597.32	74.84
2437	609.26	86.78
2486	621.45	98.97
22695	6,073.85	849.05

Figure 5-- Energy prices rise at inflation plus 2%

<b>Annual Energy Costs</b>		
<b>Inflation + 4</b>	<b>Savings (I + 4)</b>	<b>Net Savings (less payments)</b>
2000	900	377.52
2162	540.60	18.12
2206	551.41	28.93
2250	562.44	39.96
2295	573.69	51.21
2341	585.16	62.68
2387	596.87	74.39
2435	608.80	86.32
2484	620.98	98.50
2534	633.40	110.92
23093	6,173.35	948.55

Figure 6-- Energy prices rise at inflation plus 4%

As seen in Figure 4, the 6% interest rate significantly reduces the net savings to the homeowner. Whereas under the base case at 2% the homeowner saves \$1,733.66 over the life of the loan, the 6% rate lowers the net savings to \$650.06. What's more, after the first year, where thanks to the federal tax credit the borrower still sees significant savings, there follow two years during which the loan payments are slightly larger than the savings from the installation. In all other cases, however, the homeowner sees positive cash flow during each year of the loan.

The challenge with the 6% rate case is that removing the federal tax credit means that the first 1-3 years of the loan would actually slightly increase the homeowner's energy bills. This is a problem for several reasons. First of all, a homeowner may forget to apply for the tax credit; file it incorrectly; or simply not qualify. Secondly, the tax credit may be reduced or eliminated in future years. Even in the event that the tax credit isn't available or accessed, however, it is likely that homeowners would still consider energy-efficiency a good long-term investment, especially given the trend toward rising energy prices.

### **Carbon Credits**

Thus far we have neglected to take into consideration another potential source of revenue: the sale of carbon credits (or Certified Emissions Reductions). Aside from saving homeowners money and creating jobs, energy-efficiency programs are cost-effective ways of reducing the emissions of greenhouse gases, which are responsible for global warming. To determine the amount of revenue selling carbon credits would generate, we must first estimate how much carbon is saved per participating household.

To do this, we will use Department of Energy (DOE) estimates for the annual fuel consumption for an average household, and convert the savings into tons of carbon dioxide (CO<sub>2</sub>).

According to a 2005 DOE study, the average New England household uses 7,432 kilowatt hours (kWh) of electricity, 88 thousand cubic feet of natural gas and/or 855 gallons of fuel oil per year (depending on the fuel source used by the home).<sup>131</sup> As of 1999, the national average for emissions of CO<sub>2</sub> per kWh of electricity was 1.34 pounds.<sup>132</sup> Residential fuel oil emits 26.033 pounds of CO<sub>2</sub> per gallon, and natural gas emits 120 pounds per thousand cubic feet.<sup>133</sup> Using these figures, the average household emits 4.97 tons of CO<sub>2</sub> from electricity, 5.28 tons of CO<sub>2</sub> from natural gas or 11.13 tons of CO<sub>2</sub> from heating oil annually. Assuming that the 25% reduction we expect to see in overall fuel consumption occurs in both the electricity and natural gas or heating oil, we can expect a reduction in emissions from electricity of 1.24 pounds, from natural gas of 1.32 pounds and from heating oil of 2.78.

Thus, for homes that use natural gas for heating, we can expect to see a reduction in emissions of roughly 2.56 tons of CO<sub>2</sub>, and for homes that use heating oil, a reduction of 4.02. The difference between natural gas and heating oil is due entirely to the more significant carbon intensity of heating oil. The average cost per ton of CO<sub>2</sub> in the European Union Emissions Trading Scheme (EU-ETS)—the largest and most mature

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<sup>131</sup> "Average Consumption by Fuels Used, 2005." *Energy Information Administration, 2005 Residential Energy Consumption Survey* (2005) 1-4. Web.13 Mar 2009.  
<<http://www.eia.doe.gov/emeu/recs/recs2005/c&e/summary/pdf/tableus8.pdf>>.

<sup>132</sup> "Carbon Dioxide Emissions from the Generation of Electric Power in the United States." *Department of Energy and Environmental Protection Agency* July 2000 1-4. Web.10 Mar 2009.  
<[http://www.eia.doe.gov/cneaf/electricity/page/co2\\_report/co2report.html](http://www.eia.doe.gov/cneaf/electricity/page/co2_report/co2report.html)>.

<sup>133</sup> "Climate Trust-Conversion Metrics." Climate Trust. 01 Apr 2009  
<[http://www.climatetrust.org/solicitations\\_Open\\_Metrics.php](http://www.climatetrust.org/solicitations_Open_Metrics.php)>.



carbon market in the world—has consistently been around \$30. At this price, each home would generate \$76.8 to \$120.6 worth of credits per year. However, the cost of verifying and selling the emissions reductions could be substantial, as it would require establishing a baseline for and monitoring each house. Further complicating matters is that, at present, it isn't clear whether carbon credits could be generated and sold from a residential "group" because the United States is still formulating the specifics of its cap-and-trade program. Once those specifics are determined, a cost-benefit analysis will have to be done to see if the price of the emissions credits is worth the cost of verifying and selling them. Regardless of these issues, however, the carbon savings are real and significant and, if scaled, can lead to an important reduction in emissions from the residential sector.

### **6.5 *Why The Principles of Microfinance Are Essential To The Capital Good Model***

An analysis of existing financing mechanisms for residential energy-efficiency and renewable energy reveals that the principles of microfinance—a high touch approach that uses trust and social collateral rather than fear and traditional collateral, etc—are essential to addressing the barriers that prevent the increased uptake of technologies and practices that can lower energy bills and reduce greenhouse gas emissions. Beyond the aforementioned principles of microfinance, the way in which well-run MFIs like Grameen Bank are operated shows how it is possible to run a self-sustaining organization even when providing small loans to "risky" clients. Thus microfinance not only ensures that a program can be designed in such a way that high repayment rates are maintained without cutting out the moderate-income homeowners most in need of the financing, but also ensures that the organization itself is self-sustaining or even profitable. After all, if

Grameen Bank can make well over 7 million loans to some of the world's poorest women in one of the world's poorest countries and still turn a profit, then surely a lender in the United States can turn a profit by providing loans of several thousand dollars to moderate-income homeowners to weatherize their homes, especially if the loan is revenue-neutral to the borrower.

The Efficiency Vermont report cited previously identified the following limitations to existing financing programs: "...limited applicability for households most in need, low participation rates, the difficulty of assuring savings, limited support for deep energy retrofits, and the inability of most programs to full cover their costs."<sup>134</sup> Despite these limitations, the report concludes that "financing is one of many important tools to overcome barriers to implementing improvements in energy efficiency. It is valuable, but not sufficient on its own."<sup>135</sup> I will go through these limitations and identify how microfinance can overcome them.

### **Limited Applicability For Households Most in Need**

As the Efficiency Vermont report notes, it is not challenging to provide loans to middle and upper-income individuals who are considered credit worthy using traditional criteria. The challenge becomes how to reach low or moderate-income homeowners and renters who are not considered credit worthy. Existing programs "have very limited success in making financing work for low-and moderate-income families, in underwriting criteria, in the repayment term length, and in considering the increased ability to make

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<sup>134</sup> Fuller, Merrian 6

<sup>135</sup> Fuller, Merrian 50

payments due to the energy savings.”<sup>136</sup> Clearly, the way in which traditional financial institutions assess risk is not well suited to lending of this nature. What’s more, utilities (and those that invest in utilities) have traditionally been the most fiscally conservative due to the steady, nearly guaranteed returns that utilities earn as regulated monopolies. Thus programs run through or in partnership with utilities have tended to mirror traditional means of assessing risk and the fiscal conservatism of many utilities.

This is precisely the sort of situation in which microfinance excels. In energy-efficiency lending, risk is determined first by looking at whether or not the borrower has made consistent utility payments (indicating a likeliness to repay the loan due to its no net cost structure), and second by looking at the borrower’s situation on the whole to identify any potential problems that might come up and prevent further repayment. These problems might include the risk of foreclosure, deportation, or collection on debt by unpaid creditors such as credit card companies. What’s important to note is that a microlender doesn’t collect this data for the sole purpose of protecting itself from default: it also does so in order to protect the borrower from taking on debt she cannot afford; to connect the borrower with other resources, such as financial literacy coaches, that can be of assistance; and to have a holistic understanding of the borrower’s financial and personal situation before issuing a loan. If a borrower has a low credit score but has made consistent utility payments and is not in danger of foreclosure, for instance, then the microlender would view the loan as safe, especially given that a relationship will be maintained between the borrower and the lender so that problems can be spotted early on and addressed.

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<sup>136</sup> Fuller, Merrian 40

The microlender will also make use of the social collateral within the community to help secure the loan, avoiding the need for liens or other threats in the event of default that establish a relationship of mistrust between borrower and lender. Dr. Yunus argues that this mistrust—the assumption that when a person comes into a bank everything under the sun must be done to prevent her from defaulting because, otherwise, she will walk away with the money—is what leads to many defaults. Instead, Grameen starts the relationship with the assumption that the borrower will repay and is trustworthy, and uses that human connection to ensure repayments take place. The community-based approach leverages existing networks in a community, such as churches, non-profits, neighborhood associations and libraries, to establish trust, do low-cost, word-of-mouth marketing, and provide additional education and resources to borrowers.

### **Low Participation Rates**

The relatively complex nature of an efficiency-lending program—especially explaining how energy bills will go down enough to cover the monthly loan payment—is one of several barriers to achieving high participation rates. According to the Efficiency Vermont report, other key barriers are the transaction costs and the lack of information about the benefits of energy-efficiency.<sup>137</sup> The Capital Good model addresses this by providing a ‘turnkey solution’ that takes all the hassles of dealing with contractors out of the hands of the borrower. What’s more, it streamlines the application process thanks to the modified underwriting criteria. Lastly, because of the community-based approach, not only is information sharing easier, it is also more likely that a potential applicant will believe the information being provided.

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<sup>137</sup> Ibid. 42

### **Difficulty of Assuring Savings**

If a loan is made to a low-to moderate-income individual on the premise that her utility bills won't increase, it is imperative that the expected savings actually be realized. An entity that is purely focused on maximizing profits and lowering the amount of time spent per project would find it beneficial to avoid the third-party verification of each project that is central to the Capital Good model. Again, because of the community-based, socially-minded approach of the microlender, all possible efforts are made to protect the borrower while still ensuring self-sufficiency or profitability for the lender. Although a post-audit costs roughly \$300 per home, it is the only way to know that the contractor's work was done to scope and that the homeowner should realize the expected savings.

### **Inability of Most Programs to Cover Their Costs**

Currently, all existing programs are run either through state agencies, utilities, or by either of those entities in partnership with a third party financier that does underwriting and loan servicing. As a result, there isn't a strong incentive to cover program costs, because losses can be covered either by taxpayer or ratepayer funds. The other drawback to housing these programs in utilities or state agencies is that bureaucracy and conservatism hamper the rate of innovation and the scalability of the program. Where Grameen Bank makes millions of loans per year, the largest efficiency financing programs makes around 8,000 loans per year, with most in the hundreds. The importance of reaching more homes is not merely one of achieving the volume necessary to cover

costs; it is also one of reducing greenhouse gas emissions sufficiently, and quickly enough, to being to mitigate and potentially reverse global climate change.

Unlike other non-profits (if the MFI chooses to be a non-profit), MFIs need not be perpetually dependent on additional donations due to the fact that their money is lent out rather than give away. An MFI can lower operating costs by hiring staff such as loan officers that are from the communities they intend to serve, and who do not require six figure salaries and are willing to work hard to help their friends, neighbors and community. New software tools such as Salesforce.com, a “Customer Relationship Management” program that is free for non-profits, can further lower costs by streamlining programs and facilitating better communication between staff members, contractors, applicants, borrowers, etc.

## **7 A Vision for Green Microfinance in the U.S.**

An important component of this paper has been my work in developing an organization, The Capital Good Fund (CGF), which can implement the ideas presented here and help realize my vision for green microfinance in the U.S. The Capital Good Fund was incorporated in January of 2009 as non-profit MFI dedicated to providing affordable financial services and technical assistance in order to combat poverty and environmental deterioration and promote sustainable economic development. CGF is launching a pilot phase in the spring of 2009 to test out its lending infrastructure, loan requirements, etc. The pilot phase will consist of two types of loans: the first, \$900, covers the cost of applying for United States Citizenship, and the second, \$500-\$3,000, is for the creation of expansion of any income-generating activity. There will not be a focus

on the environment until after the pilot phase. What follows is my vision for green microfinance in the U.S., as practiced by CGF.

All CGF borrowers, regardless of the type of loan they are receiving (be it a citizenship, credit builder, affordable payday loan or business loan) are required to attend bi-monthly meetings. At these meetings, in to addition making loan repayments and working with financial literacy or business mentors, borrowers will hear from guest speakers on a range of environmental issues. Borrowers will also engage in discussions with their loan officers and one another about how those environmental issues affect them and how they can most effectively work to find solutions. Borrowers will be encouraged to work together on political campaigns, neighborhood cleanup days, and a range of other events, activities and practices that are initiated by the borrowers themselves and that they see as beneficial to themselves, their families and their communities. Thus Bi-monthly meetings will serve to conduct the business of the CGF while also acting as an incubator for ideas and actions.

As CGF grows, its network of thousands of borrowers and their families will become business, political and community leaders, expressing the values, ideals and practices developed through the CGF loan program—fiscal and environmental responsibility, discipline, taking charge of the health of one’s self, household, and environment, etc. These borrowers will be armed with the financial freedom, business skills an understanding of social and environmental issues needed to be powerful forces for change. They will come out of CGF’s loan program with higher credit scores, income and self-confidence, a solid understanding of the financial system, and an ability to act on the environmental issues most relevant to them. They will use loans to start green

businesses, some of which will grow into medium and possibly large enterprises. They will also use CGF loans to make their homes healthier and more energy-efficient; to get through an emergency that requires a sudden influx of funds; and to become legal permanent residents or US citizens. In addition, this network of borrowers will band together in numerous other ways, for instance by using microfinance to make bulk purchases of solar arrays for an entire neighborhood or group of borrowers.

CGF will develop strong relationships with banks, environmental organizations, municipalities, church groups, etc. The partnerships with environmental organizations will be essential to providing the education and empowerment and borrowers to create healthier communities for themselves. Environmental organizations will also work with CGF and its borrowers to develop guidelines for business borrowers to meet, measure and benefit from environmental goals. As the partnership develops and matures, the MFI will outsource an increasing amount of curriculum development and training to these organizations, allowing each to focus on what they do best: lending, in the case of the MFI, and environmental training, in the case of the environmental organization. Banks will provide financial literacy, funds for the loan pool, and bank accounts for the borrowers. Financial institutions will partner with green MFIs because they will view these partnerships as a means of attracting new depositors, reaching communities previously underserved by them, and to improve public relations. Lastly, municipalities will support and promote CGF's programs, in particular those related to energy-efficiency and small business lending.

CGF will become financially self-sufficient by reaching thousands of borrowers while maintaining a default rate of below 3%. CGF will apply to become a community



development financial institution (CDFI), giving it access to technical assistance and funding from the United States Treasury, and eventually CGF may become a community development credit union, enabling it to accept deposits from its borrowers, offering even more financial services to the community and achieving a new level of self-sufficiency. To further expand its product and service range, CGF will accept loans from individuals and organizations to then loan out to its borrowers while offering a small return on investment to the lender.

CGF will develop a model that is replicated by other MFIs and lenders, with green, unsecured microloans becoming commonplace throughout the country. As a result, green will increasingly come to be seen by low and moderate-income people as a way of improving their lives—in other words, as an opportunity rather than a luxury. The message of environmental groups will be made more relevant, and politicians will see an influx of pressure to act on environmental issues from people who were previously silent or whose voices were ignored. Lastly, the dream of an inclusive, vibrant, equitable green economy will, little by little, begin to be realized.

## **7.1 *Scaling Up***

As has been previously mentioned, the ability for an MFI to achieve financial self-sufficiency is dependent on two factors: scale and low default rates. For example, Grameen America, a direct replication of the Grameen Bank model based in Queens, New York, projects that it will become self-sufficient after making 19,000 loans averaging \$2,000 per loan and with a default rate of 1.5%.<sup>138</sup> Scale is important not only because it enables an MFI to wean itself from dependency on donors and foundations, but

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<sup>138</sup> Jorgensen, Vidar. "Grameen America Business Plan." *Grameen America* 15 July 2008 1-35. Web.04 Feb 2009.

also because of the tremendous need for financial services among America's low and moderate income communities. In particular, we have already seen that 40 million households, or 106 million individuals are either unbanked or underbanked.<sup>139</sup> 50 million Americans entirely lack a credit score, shutting them out of the financial mainstream,<sup>140</sup> and in 2007 the poverty rate was 12.5%, meaning that 37.3 million Americans lived below the poverty line that year.<sup>141</sup> What's more, low-income households spend a greater percentage of their income on energy than do higher-income households, and the residential sector is responsible for nearly 1/5<sup>th</sup> of total greenhouse gas emissions in the United States.

Serving these social and environmental needs can only be done through scale. The advantage of integrating energy-efficiency loans into more traditional microloan programs is that, due to their larger size and less risky nature (thanks to the fact that they are revenue neutral to the borrower), they are more profitable and can thus offset and subsidize the costs of smaller, less profitable loan programs.

Because of the importance of the efficiency loans to the overall financial health of the MFI, it is worth looking more closely at the market potential for these loans in a particular state; in this case, we will focus on Rhode Island. As we have seen, these loans will be marketed to those that do not qualify for the Weatherization Assistance Program (WAP) and who would otherwise find it difficult to secure financing through a traditional

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<sup>139</sup> "Fact Sheet: The Unbanked and Underbanked." Center for Financial Services Innovation. 02 Feb 2009 <<http://www.cfsinnovation.com/underbanked-fact-sheet.php>>.

<sup>140</sup> "Lenders Find FICO Expansion Credit Score Delivers Strong Risk Assessment for Millions of Credit-Underserved." FICO. 04 Feb 2009 <<http://www.fico.com/en/Company/News/Pages/11-09-2006.aspx>>.

<sup>141</sup> "Poverty: 2007 Highlights." U.S. Census Bureau. 09 Feb 2009 <<http://www.census.gov/hhes/www/poverty/poverty07/pov07hi.html>>.

financial institution due to barriers of language, culture, inconvenience of credit history. In Rhode Island, residents that are “at or below 60% of RI median income” qualify for the WAP.<sup>142</sup> For the sake of simplicity, we can assume that households that are at or above 200% of RI median income would be able to secure financing for energy-efficiency through traditional financial institutions.

Using these guidelines, we can calculate the percentage of households in Providence that do not qualify for WAP and are also unlikely to qualify or seek out bank financing. According to the 2000 Census, Providence has 62,389 households. Of these, roughly 34% qualify for the WAP (that is, their median income is \$16,120.2 or below). An additional 24.3% are likely to be able to secure financing because they are at or above 200% of median income.<sup>143</sup> That leaves us with 41.7%, or 26,016 households in Providence that make strong candidates for a microloan for energy-efficiency.

Before continuing, it should be noted that Providence has an especially high poverty rate and an especially low median income, making it an ideal city for this loan program. Assuming the program reaches 10% of eligible households with a default rate of 3% and an average loan of \$3,725, the Capital Good model would achieve the following in year 1: reach 2,601 households; reduce greenhouse gas emissions by 6,658 to 10,456 tons of carbon dioxide equivalent per year, depending on the fuel used by the home; loan out \$9,688,725 to Providence households, creating roughly 475 direct jobs (assuming 50 jobs per \$1 million invested in energy-efficiency) and save each household an average of \$587.50 per year, creating total savings to Providence ratepayers of

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<sup>142</sup> "LIHEAP Heating Bill Assistance." Rhode Island Office of Energy Resources. 15 Apr 2009 <<http://www.energy.ri.gov/lowincome/liheap.php>>.

<sup>143</sup> "Profile of General Demographic Characteristics: 2009." *Census Bureau* (2000) 1-4. Web.15 Apr 2009. <<http://local.provplan.org/profiles/ricenprofiles/1604459000.pdf>>.

\$1,528,087.5. In addition, the MFI would earn gross revenue of \$1,820,700 (assuming \$700 in overhead rolled into each loan), and with a profit margin of 10%, the MFI would be left with a profit of \$182,070, which would be rolled into future energy-loan programs, green collar entrepreneur loan programs, the hiring of additional staff, technology improvements, and so on.

The continued success of the model would depend on reaching more households each year, while maintaining low default rates and expanding into other cities and markets; this is due to the fact that the MFI's revenue is largely dependent on the \$700 overhead that is rolled into the initial loan amount, as opposed to the loan repayments. The interest charged on the loan serves to cover loan defaults and to repay investors. Once again, because there is such a large need for efficient and affordable financing for weatherization, not only does the MFI have an internal, financial reason to scale up, it also has an external, mission-related reason for achieving scale.

## **8 Conclusion**

The environmental and social challenges of the 21<sup>st</sup> century cannot be solved using a top-down approach that ignores the input, ideas and entrepreneurial talents of the people suffering from the effects of poverty, climate change, urban blight and other local, regional and global issues. In the United States, the environmental movement has suffered from a lack of diversity in the internal operations of major organizations as well as a perception of elitism on the part of the general public. This dynamic has created the erroneous notion that economic growth and environmental stewardship are at odds with one another.

Fortunately, a new breed of environmental and social leaders has emerged to find innovative ways of solving social problems. These leaders are showing that environmental degradation and economic growth are compatible, and more importantly, in so doing they are rallying previously untapped segments of the population to the cause of sustainability.

Microfinance—the provision of affordable financial services to those deemed unbankable to traditional financial institutions—has proven to be one of the most effective tools for empowering low-income people around the world to better their own lives and take control of their own futures. Though microfinance has now reached hundreds of millions of people around the world, the potential of small loans to unleash the creative power of the poor to lift themselves out of poverty has yet to be fully realized. In the United States, the more than 500 microfinance institutions (MFIs) reach a tiny fraction of the potential market for their services. Yet realizing the potential of microfinance means more than simply reaching more people with more loans.

This paper has set out to show how microfinance in the United States can be used to address poverty and urban blight as well as environmental degradation. In Bangladesh, Grameen Bank has expanded the uses of microfinance to include renewable energy, health insurance, and telecommunications. As the United States, the world's largest consumer of natural resources and, on a per capita basis, the largest emitter of the greenhouse gases responsible for climate change, struggles to rein in its profligate ways and tackle double digit poverty rates, there will be a strong need for innovative tools that can reach and engage people in new ways.

Microfinance in the U.S. can be used to support low and moderate-income entrepreneurs who have ideas for green businesses. Providing support for these ‘green collar entrepreneurs’ means more than giving them the opportunity to realize their dreams and to raise their incomes; it also means creating a new green economy that benefits from the ideas and talents of people from all walks of life. In addition, because MFIs develop strong relationships with their borrowers, they can and should use that relationship to work with all borrowers to help them understand financial and environmental issues, and to empower them with loans, technical assistance and connections to take action on the issues that are most important and relevant to them. The 100 million under banked and unbanked Americans are not only ideal candidates for microfinance—they are potentially a powerful force for positive change, acting as political, business and community leaders.

Lastly, MFIs can take advantage of their strengths to provide innovative loan products that are structured to save borrowers money on their utility bills, create thousands of green jobs and reduce greenhouse gas emissions. These loan products will be streamlined, with criteria tailored to the needs of low and moderate-income renters and borrowers, so that those who pay the largest percentage of their income toward energy will reap the greatest benefits.

As green microfinance becomes more popular in the United States, more research will have to be undertaken to analyze and quantify its social and environmental benefits. Criteria will have to be developed for green microbusiness loans such that a balance is struck between serving the needs of the borrower, the public and the environment. Curricula will have to be developed that engage borrowers on environmental issues in a way that is meaningful and relevant. New products and services will be deployed to meet

the changing needs of borrowers. And finally, MFIs will have to become more adept at leveraging information technology to lower transaction costs, streamline operations and better serve their borrowers.

Green microfinance is not a panacea. It cannot achieve its objectives in the absence of the right laws and funding to support its work. For example, current welfare laws discourage individuals from taking loans for income-generating activities for fear of losing their benefits. Without funding for green job training programs it will be difficult for green MFIs to create partnerships that will allow them to promote green entrepreneurship through loans. And without a regulatory framework such as a cap-and-trade system, the entire notion of a green economy—let alone an inclusive green economy—would be put into jeopardy. However, green microfinance can make existing and future programs and initiatives more powerful by providing a source of financing and technical assistance to enable people to take action. As a case in point, there are numerous free and low-cost business-training programs in Providence, Rhode Island, yet a dearth of MFIs means that many of those that graduate from these programs are unable to make use of their knowledge. In addition, green microfinance can make it more likely that the right laws, regulations and funding streams will be put into place because green MFIs will help create new constituencies of empowered and informed citizens who understand the benefits of these initiatives and can fight for them.

Traditional financial institutions will almost certainly continue to be the main drivers of the economy, yet a significant portion of the U.S. population is entirely cut off from these institutions due to a lack of credit history and a whole host of other barriers including a lack of trust and redlining. In order for this portion of the population to be

able to benefit from the power of the American financial system, they must first receive products and services from MFIs so that they can build their credit scores and financial literacy. At the same time, in order for America's economy to become more sustainable and equitable, it is imperative that as more people move into the mainstream financial system they have an understanding of and an ability to benefit from environmental sustainability. Thus green MFIs have the potential to bring nearly 100 million people into the mainstream system of finance that has made America the wealthiest nation on Earth while also making environmental stewardship and entrepreneurship a mainstay of those people's lives. As these individuals begin to demand more from financial institutions, it will force them to increasingly provide equitable, green products and services. Ultimately, that has to be the goal of green MFIs: to be so successful that all their borrowers can now be served by banks, and for those borrowers to be so inspired and inspiring that they force the rest of America, including its bankers and politicians, to change.

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## **Interviews**

Conversation with Ralph Groves, March 15, 2009

Conversation with Mark Kravatz, February 15, 2009

Conversation with Karina Lutz, Deputy Director of People's Power and Light, March 17, 2009

Conversation with Cheryl Sesnon, Executive Director of Washington CASH, interview held July 18, 2008