

An Overview of **Microfinance and Environmental Management**

By Abhishek Lal - abhishek_lal@hotmail.com
Research contributions by Elizabeth Israel (AKA Betty Meyer) - betty99@aol.com

Visit - Green Microfinance,
<http://www.greenmicrofinance.org>

Table of Contents

Introduction
Environmental Impacts of Microenterprises
Urban & Rural Environmental Considerations
Policy Tools/Approaches
Measuring Impact
Conclusion
Bibliography
Annex
<http://www.gdrc.org/icm/environ/abhishek.html>

I. Introduction

This paper focuses on options and opportunity's microfinance institutions have for promoting environmentally sustainable development in the developing world.

Microenterprises cover a wide range of business activities - some of which have negative environmental impacts. These impacts range from small-scale industrial pollution to land degradation from agricultural (crop and cattle grazing) activities. Some microenterprises have significant impacts in and of themselves, while others are of concern because of their cumulative ramifications. With the rapid expansion of microfinance and its anticipated future growth there is an increasing need to address the environmental effect of microenterprise activities.

Microfinance institutions have a special opportunity for stimulating economic development while addressing the looming ecological problems that threaten developing countries and the global environment. The potential for contributing to sustainable development is immense. Socioeconomic conditions in many developing nations are quite compelling in this context.

Most third world countries are experiencing rapid population growth. Developing nations are simultaneously undergoing economic growth and industrialization. These countries also contain most of the world's high biodiversity regions. All this combines to create conditions of increased natural resource scarcity and degradation with implications on local, regional and global scales. Based on these realities it is imperative that development planners focus on integrating

conservation and development objectives.

II. Environmental Impacts of Microenterprise

There are a number of areas where small businesses and the informal sector effect the local environment. The scope of impacts varies in urban and rural settings and is caused by many factors. These factors can be intrinsic to the enterprise itself (waste generation, pollution and land/resource degradation) or caused by political structures - such as uncertainty of land tenure. While there are many issues and management concerns it is beyond the scope of this paper to go into great detail on all impacts.

It should be noted that most informal sector activity does not cause significant harm to the environment and in some cases can be very beneficial - as with waste collectors and recycling businesses (Pallen 1997). It is also important to note that many of the harmful effects can be mitigated or reduced without threatening the viability and growth of the businesses. In many cases increased material/production efficiency - which is a key element of conservation - is mutually beneficial since it saves businesses money and increases profits.

Examples of small businesses that can harm environmental quality are listed below:

- Agriculture - crop, and cattle grazing
- Aquaculture
- Metal work and electroplating
- Forest product collectors - including fuel wood and non-timber forest products (NTFPs)
- Pesticide and chemical manufacturers
- Tanneries
- Small-scale mining
- Textiles and dyeing operations
- Automobile and motor repair
- Wood processors - carpentry and construction
- Transportation - rickshaws, taxis, and small buses

Many of these businesses create hazardous waste that gets discarded of in an indiscriminate fashion since there are inadequate disposing facilities and lack of regulation or enforcement.

Urban & Rural Environmental Considerations

Many management considerations are the same for urban and rural enterprises. However, some activities and conditions are unique to the different contexts. Urban environmental issues (mainly pollution) are more likely to immediately affect the residents' quality of life. Urban issues will also be different since many enterprise activities are unique to cities.

A major urban concern is the location of enterprises. This can impact on natural resources if enterprises are located near an urban park or waterway. Business location also affects the aesthetics of urban areas.

Urban settings provide an opportunity for development of environmentally beneficial businesses

dealing with waste collection and recycling. Encouraging these kinds of businesses would benefit city residents by creating a cleaner and safer living environment.

One environmental issue that has reached a crisis stage in many cities around the world is air pollution. This is a high priority concern since air pollution causes very serious health problems. There is a lot of room for improvement since many urban vehicles are very old and poorly maintained, use leaded gasoline, and do not utilize exhaust treatment devices (Environment Canada 1997). MFIs can identify clients whose activities contribute to air pollution (businesses utilizing fossil and wood fuels) and work with them to reduce their emissions. There are many mitigating options that can be promoted. MFIs can encourage efficiency improving technologies and fuel substitution to cleaner alternatives.

Agriculture

Rural issues are more likely to directly involve natural resource sustainability. Many rural enterprises involve cattle and crop agriculture - these have very clear effects on crucial matters of soil quality and biodiversity. Soil erosion from crop agriculture is one of the most devastating environmental impacts since it affects both the land's productive capacity and the area's water quality (turbidity and siltation). When soil erosion reduces the land's productive capacity it also threatens food security.

Improper cattle grazing (overgrazing) causes vegetation degradation, deforestation, soil erosion, water pollution (from erosion, and manure), desertification, and loss of biodiversity (USAID, 1996). This is a major source of ecosystem damage and must be addressed. Techniques to reduce this impact include rotating different types of livestock, and timing of grazing to avoid wet soil (wet soil compacts easily). Since various livestock breeds eat different vegetation rotating will allow recovery of each type of vegetation. Controlling livestock access and proximity to water resources can also alleviate impacts on water quality (USAID, 1996).

Rural farmers obtain credit to finance their pesticide inputs. Improper use of pesticides and fertilizers - by rural farmers - is another concern for health and ecological reasons. While synthetic pesticides and inorganic fertilizers can be very useful in improving crop yields there are often misused. Nutrient/pesticide runoff can affect the water quality and damage aquatic diversity. Proper management techniques must be encouraged. Tremendous environmental benefits can be realized if MFIs promote these management practices. Adopting these techniques is also important in the context of global efforts (and international commitments) to address desertification and loss of biodiversity.

The concern about business impacts is of greater importance with communities in high biodiversity regions or adjacent to natural areas (buffer zones) - especially if economic activities play a part in threatening rare or endangered species of plants and animals.

III. Policy Tools/Approaches

There are many approaches MFIs can take to influence environmental management of client businesses. The first step is to identify the areas that require attention. MFIs could conduct an Environmental Impact Assessment (EIA) to determine the impact of their lending activities.

Another effective way to identify sources of environmental degradation is by using the loan application. Low cost solutions are a prime consideration in formulating these methods so as not to raise MFI operating expenses. Low administrative costs can be maintained by smoothly integrating these techniques into similar existing procedures.

Environmental Impact Assessment (EIA)

Environmental Impact Assessment (EIA) or Environmental Assessment is a key tool in natural resource management. It is a very flexible and effective method that can be adapted to a scale appropriate to the MFI. In most cases it will be inappropriate to use EIA for individual loans, but rather for loan sectors, or on an institutional level.

EIA "is the practice of evaluating and anticipating the environmental impact of a project, identifying mitigation measures and, if necessary mapping out alternatives" (Pallen 1997, p.13). In this context the MFI is evaluating the impacts of a variety of enterprises. To do this efficiently it is best to first identify those enterprises that require attention before embarking on a more detailed process.

In general, the following steps should be observed when conducting the EIA (this is an abbreviated version):

1. Identify the objectives of the assessment.
2. Assess environmental impacts by evaluating the salient features of the existing environment (baseline condition) and by predicting and evaluating the likely environmental implications of the development - use checklist below to identify impacts. If the client is an existing business look at the currently occurring impacts.
3. Identify and evaluate mitigation measures.
4. Choose course of action on the basis of environmental and economic criteria.

A description of the existing environment may include various biophysical parameters depending on the circumstances. Major categories within a broad environmental checklist include:

- Air
- Water
- Geology
- Soils
- Natural vegetation
- Wildlife and fisheries resources
- Heritage resources
- Land use on adjoining property
- Noise pollution
- Solid or liquid waste and disposal

* For a more detailed checklist see annex.

Loan Application Analysis

The loan application can be used to ask prospective clients about their activities. Application questions could be as simple as asking to describe general environmental effects of the enterprise, to detailed questions regarding types and source of inputs, waste and disposal techniques, location and so on. This is a very effective and efficient way to identify sources of environmental impact. A UN sponsored enterprise development program used this method of loan application analysis in the West Bank and Jerusalem.

The data collected from Loan Application Analysis can also be very useful in conducting an EIA (as described above).

Participatory Sub-sector Analysis (PSA)

This is already a well known tool used by MFIs (Pallen 1997, Chen 1996) to help entrepreneurs identify production inefficiencies. Many of these production inefficiencies are themselves sources of environmental degradation. This method can also be used to specifically focus on identifying processes that negatively impact on the environment. Since use of this method is already fairly common it would be advantageous to simply add an environmental component to the existing process.

Training/Environmental Awareness

MFIs provide a variety of training opportunities to their clients. This is often a prerequisite for obtaining loans. Training programs provide an existing infrastructure for imparting environmental awareness and specific management information.

Significant environmental benefits are possible since environmental awareness will be introduced into the community. Spreading environmental awareness amongst small entrepreneurs may have a greater social effect since the said community will influence other sectors of the economy in the present and in the future as well. MFIs are very uniquely placed to promote environmental awareness.

While there are environmental (and health) concerns which will be relevant to almost all entrepreneurs it is best to provide information appropriate to the individual entrepreneur's activities. MFIs should identify those areas which are of greatest environmental concern and have environmental management information available to clients involved in those businesses.

Regulation

MFIs have the ability to directly influence small business activities since their conduct is tied to loan requirements. Of course there are requirements tied to any loan agreement. Where appropriate, environmental management can be made part of these agreements. There are several organizations that employ this method. One such organization is Conservation International, which provides credit to small farmers working around a nature reserve in Costa Rica while requiring that activities be designed to be environmentally benign. This has helped to maintain the

rich biodiversity of the nature reserve.

Regulation could also be employed to induce input substitution or adoption of other environmental management practices. For example, if a (client) carpentry business is utilizing wood from a threatened or endangered tree species, the MFI could require that the business switch to another source of wood.

One key consideration here - and in every other policy area - is that regulation must be sensitive to the needs and concerns of the business. A measure of flexibility can even contribute to more successful regulation.

Incentives

Various incentives can be used for encouraging polluting enterprises to adopt environmental management techniques. Possible incentives include provision of more favorable interest rates and repayment schedules, or the promise of future loans. Another form of an incentive is to create competition whereby the least impacting (pollution or resource degradation) enterprise receives some sort of reward (Feoli 1995).

Partnering/Building Networks

Building networks and partnering is useful in several different contexts. A good reason for networking is to obtain information on environmental management techniques. This can be obtained by working with environmental NGOs and relevant government institutions (Pallen 1997). This is particularly useful if partner organizations are local specialists on the specific issue.

Partner organizations can also help to directly implement environmental management. This could be in terms of training (microentrepreneurs and MFI staff), promoting new technology, or in obtaining environmental certification. The latter could be tremendously important since certification can be value adding to certain products (organic products, and other green certification). MFIs can work with organizations promoting environmentally friendly products in a way that provides the credit or business training needs of the small producers.

Networking with government agencies and environmental groups can also enable MFIs to reach out and support small entrepreneurs involved in recycling and waste management. Another area for cooperation is with small-scale transportation. In many cases governments are requiring small transportation operators to improve their efficiency or to switch to cleaner alternatives. Microfinance could help finance the technology required for upgrading of urban vehicles.

Another type of partnership is between renewable energy providers and MFIs. This has been proven to be very effective in developing the renewable energy market. Government agencies in Nepal are effectively using credit to promote biogas energy. Biogas uses farm wastes and other biomass to create a gas fuel. Solar (photovoltaic) energy also benefits from partnerships.

SELCO is a renewable energy service provider that operates in India. They provide renewable energy and maintenance services to residents and businesses while outsourcing the financing to a

local MFI. The partnership works since each organization brings their specialized expertise to the business - thereby reducing overall costs of service. The result is that residents (and businesses) have solar energy electricity at roughly the same cost they were previously paying for conventional sources.

IV. Measuring Impact

Determining impact of the above policies can be approached in different ways. The main objective is to measure the beneficial impact of said policies on the environment. The policies don't lend themselves to a standard measure of environmental quality but can be examined based on case-specific environmental objectives.

In many situations the scale will not be amenable to directly measuring the environmental improvements. For instance improved air quality from a business reducing wood burning will not be noticed on a city scale, but can be appreciated at the neighborhood level. However, if such an example is reproduced throughout the city then there will be wider cumulative health and environmental benefits.

One approach to measuring impact is to determine the change in required inputs and outputs of the enterprise. For instance, if a SSE's hazardous waste byproduct is reduced this can be measured by volume or weight. Inputs can also be accounted for. For example, if a small business using a threatened plant species switches to alternative plant inputs, the impact (in habitat or wildlife saved) could be easily estimated according to the amount of plant material previously used.

V. Conclusion

Microfinance institutions can play a tremendous role in achieving environmentally sustainable development. This is especially important since developing countries often lack environmental awareness and management while they are experiencing rapid population growth and industrialization.

While there has been a great deal of attention given to identifying methods for mitigating environmental impacts of various small-scale enterprises, not enough has been done with regards to implementation. This document outlines the options available to MFIs to implement environmental management techniques.

Bibliography

Allerdice, April., Rogers, John H. Renewable Energy for Microenterprise. National Renewable Energy Laboratory (NREL). November, 2000.

Chen, Alter Martha, ed. Beyond Credit: A Subsector Approach to Promoting Women's Enterprises. Ottawa: Aga Khan Foundation of Canada. 1996.

Department of Environmental Affairs. Checklist of Environmental Characteristics. South Africa, 1992.

Environment Canada. Preliminary Study of Auto Rickshaw Exhaust Emissions and Potential Control Technologies. Environment Technology Centre, Environment Canada. Ottawa. 1997.

Feoli, Marianella. South-South Information Transfer, at the Enterprise Level on Cleaner and More Efficient Production Options in the Costa Rican Food Industry. Paper presented to the Meeting of Experts on Environmentally Sound Technologies, Organization of American States. Ottawa. November 14-16, 1995.

Jansen, Anicca. Linking Microenterprise Development and the Environment: An Issues Paper and Workshop Proceedings. GEMINI Publications, USAID. 1995.

MSG Environmental Services. Report on Background Study of Industrial Micro-Enterprises and Environment for CIDA Small Projects Environment Fund. India-Canada Cooperation Office, New Delhi, India. February, 1999.

Pallen, Dean. Environmental Sourcebook for Micro Finance Institutions. CIDA Asia branch. 1997.

Pallen, Dean. Reinventing the City: The role of small scale enterprise. CIDA Asia Branch. 2001.

USAID. Environmental Guidelines for Small-Scale Activities in Africa: Environmentally Sound Design for Planning and Implementing Humanitarian and Development Activities. Technical Paper No.18. Office of Sustainable Development, Bureau for Africa. June, 1996.

Annex

The following is a more detailed EIA checklist (Dept. of Environmental Affairs, 1992)

Does the development have a significant impact on any of the following?

Vegetation

- survival of rare or endangered plant species
- diversity of plant communities
- vegetation communities of conservation or scientific importance
- natural replenishment of existing species
- firewood collection
- overgrazing
- overexploitation

Land

- the binding or bonding of soils
- compressive strength of soils
- rates of erosion or siltation by wind or water
- the management of excess soil or spoil material (from mining)
- mobile sand dunes
- other physical degradation of the local environment

- excessive waste from overgrazing

Animals

- survival of rare or endangered animals
- diversity of animal communities
- natural migration of species
- survival of animal communities due to:
- threat from poaching
- overexploitation

Freshwater systems

- run-off as a result of the hardening of surfaces, or loss of the sponge effect of vegetation
- ability to absorb run-off
- changes to floodplains
- the quality or quantity of surface water groundwater or public water supplies
- conservational or recreational value of rivers, streams, lakes, wetlands, dams or islands
- threats to hydrological functioning through existing or altered:
- pollution
- turbidity
- salinity
- chemical processes or nutrient balances
- changes in sediment flows and siltation rates
- canalisation
- impoundment construction
- water extraction

Waste management

- risk associated with waste transport
- adequacy of waste disposal facilities
- risk to the community and the local environment should the facility break down
- hazard of groundwater pollution
- danger of rodents and scavengers at waste sites
- potential for windblown or waterborne refuse pollution
- visual and smell effects of waste sites
- utilisation of treated waste water and recycled materials
- on-site waste management potential