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# Introduction

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These guidelines are intended to help improve the environmental performance of micro- and small enterprise (MSE) development activities supported by USAID in Africa. It has been developed for staff who work with:

1. business development services (BDS) providers, which offer services such as management training or marketing support to MSEs, and/or with
2. intermediate credit institutions (ICIs) and direct lenders that work to provide credit to MSEs.

**Purpose of the guidelines.** The purpose of these guidelines is not to turn readers into environmental experts capable of identifying, assessing, mitigating and monitoring all of the diverse environmental problems MSEs may cause. Rather, these guidelines are intended to familiarize readers with

- the kinds of adverse environmental impacts that may be expected from MSEs;
- simple methods of identifying those impacts;
- the continuum of mitigation approaches that MSEs can implement;
- the business benefits of the preferred mitigation strategy: **Cleaner Production (CP)**.

These guidelines also provide readers with

- a strategy for screening high-priority MSEs for possible problems with regulatory compliance, as well as opportunities to introduce best management practices;
- tools and information to build environmental capacity (most specifically CP) into their business practices.

Users of these guidelines may need or wish to rely on people with environmental expertise (either inside or outside their own organizations) to design appropriate mitigation strategies, particularly in matters of regulatory compliance.

**Implementation of the guidelines.** BDS and/or credit providers may be able to encourage better environmental performance among MSEs in at least three ways:

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***MSEs are particularly important contributors to the African economy, providing wealth and opportunity for many—including women and ethnic minorities. Do such small entities really have environmental problems worth worrying about? The answer, simply stated, is yes.***

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## Purpose of Guidelines

The purpose is to familiarize business development service providers, intermediate credit institutions and direct lenders with:

- Information on the environmental effects of micro- and small enterprises (MSEs)
- Mitigation actions that MSEs can perform
- The benefits of the Cleaner Production (CP) approach to both business success and environmental mitigation

1. by demonstrating the “cleaner production” links between more efficient use of resources and improved cash flow,
2. by encouraging the MSEs to take advantage of opportunities to mitigate of environmental problems and by providing or helping to arrange financing to do so, and/or
3. by potentially requiring certain mitigation activities as a condition for access to financial or other services in some cases.

Of course, there are many different models for the provision of BDS and credit, and many different kinds of MSEs that are supported. Hence it is expected that USAID-funded BDS and credit providers will use these guidelines to work with USAID staff to develop customized, effective approaches that best fit their circumstances.

**Structure of the guidelines.** The guidelines are divided into four main chapters:

1. MSEs and the Environment
2. Mechanisms for MSEs to Control Environmental Impact
3. Institutionalizing Environmental Capacity
4. Subsector-Specific Cleaner Production Briefings

Chapter 1 introduces MSEs as a sector targeted for development assistance, explains their impact on the surrounding environment, and argues for credit/BDS providers to play an active role in improving MSEs’ environmental performance. Chapter 2 introduces techniques for controlling and mitigating specific environmental impacts. Chapter 3 describes the tools, information, and framework needed to integrate environmental concerns into practical assistance to MSEs. Chapter 4 contains fact sheets that (1) further discuss environmental problems caused by particular MSE subsectors (e.g., leather processing/tanneries), and (2) present opportunities to mitigate these problems—with a particular emphasis on methods that may improve the profitability of the enterprise.

Two final chapters offer substantial annotated resource lists for those seeking more detailed information, as well as sample screening forms and other tools that may help credit and BDS providers to integrate these guidelines into their daily work.

## **MSEs and the Environment**

### **What Are MSEs and What Is Their Role in Development?**

We define micro- and small enterprises (MSEs) as enterprises with 50 employees or less. This size distinction is equivalent to what many other authors term “small and medium enterprises” (SMEs). USAID defines a micro-enterprise as “an informally organized business activity which:

- is owned by and employs poor people;

- employs 10 or fewer people, including the microentrepreneur and any family workers;
- and is not engaged in crop production” (USAID 1996).

MSEs are particularly important contributors to the African economy. They provide income and create wealth among lower-income populations, and frequently offer market opportunities (which would otherwise be unavailable) to traditionally disadvantaged groups within African society—including women and ethnic minorities. In many cases, MSEs are the sole source of income for both entrepreneurs and the workers they employ. MSE activities range from informal commerce, such as selling food or crafts on the street, to the production of export-quality goods, such as garments or processed foods and beverages.<sup>1</sup> The organization of production ranges from single entrepreneurs working with their families out of their home to larger, independently sited facilities with as many as 50 permanent workers.

Promoting MSEs is an important part of USAID’s poverty reduction strategy. USAID’s MSE development activities typically include providing loan guarantees, direct loans and/or grants to ICIs—institutions that lend directly to MSEs and to BDS providers. In 1999, the agency spent nearly 70 percent of its \$153.5 million worth of funding for microenterprises on microfinance, with the remainder going toward BDS.<sup>2</sup> As noted in USAID’s “Policy on Microenterprise Development,” this financial and non-financial support to MSEs is focused upon

- assisting women and the very poor,
- improving the market and policy environment in which microenterprises operate,
- supporting the institutional and financial sustainability of MSE-support organizations, and
- enhancing partnerships with local organizations.<sup>3</sup>

In Africa, USAID particularly targets countries with a high level of food insecurity for MSE development activities.

## Why Are MSEs an Environmental Issue?

Do such small entities really have environmental problems worth worrying about, particularly compared to large enterprises that usually produce more aggregate pollution than smaller enterprises? The answer, simply stated, is yes. Although many MSEs do relatively little direct environmental damage,

***Per unit of production, small enterprises and plants are often more pollution-intensive than larger ones.***

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<sup>1</sup> For organizational and conceptual purposes, certain common income-generating activities (in particular, farming, livestock grazing and fisheries management) are excluded from consideration as MSEs here. However, the processing of agricultural and other food products has been considered in preparing this section. Specific guidance for farming, livestock and fisheries is provided elsewhere in the *Environmental Guidelines for Small-Scale Activities*.

<sup>2</sup> USAID 2000.

<sup>3</sup> USAID 1996.

and some may even have beneficial effects, others can cause significant environmental and related public health difficulties, which vary as broadly as the types of enterprises. Of course, there are the obvious problems caused by manufacturers or resource exploiters (such as miners). Yet even small-scale informal marketplaces typically create health and environmental worries because of a lack of sanitation and waste disposal facilities.

Small enterprises and plants are often more pollution-intensive than larger enterprises (per unit of production).<sup>4</sup> When they are numerous and/or concentrated in particular areas, they can create environmental problems of alarming proportions. For example, while small enterprises account for an estimated 40 percent of all industrial production in India, they release an estimated 40 to 60 percent of the country's industrial pollution.<sup>5</sup> Examples of MSE subsectors with particularly high potential for environmental damage include:

- leather processing (tanneries)
- wet textile operations (e.g., bleaching and dyeing of cloth)
- food processing
- brick and tile manufacturing
- small-scale mining
- metalworking
- wood processing and furniture-making

The adverse environmental impacts of MSEs impose heavy social and economic burdens on their communities—degrading the ecosystem and food sources, undermining the health of neighbors and workers, and consuming fuel and resources beyond the point of renewability. These burdens in turn place significant costs upon not only the culpable MSEs but also other businesses—costs of procuring fuel, costs of lost worker productivity due to sickness or injury, costs of procuring clean water (such as for fabric processors or farmers), etc.

### **Environmental Problems caused by MSEs**

- Chemical and hazardous waste
- Air pollution and particulate dust
- Water pollution
- Soil erosion
- Natural resource depletion
- Solid waste
- Odor
- Noise
- Health and safety risks

### ***Types of Adverse Environmental Impacts of MSEs***

Depending upon their individual characteristics, MSEs can have quite a variety of environmental problems. Here are some of the most common and significant ones:

- **Chemical and hazardous waste.** Production processes may use chemicals such as acids and metals. These chemicals may be toxic, explosive or otherwise hazardous, and require considerable care in their use and disposal. If chemicals are used carelessly, or if their wastes are not disposed of properly, they can seriously pollute the air and contaminate soil, groundwater and surface water. All these can cause serious health problems for adults, children and livestock.

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<sup>4</sup> World Bank 1999.

<sup>5</sup> Crow 1999, citing Gulati 1997 and B.M. Prasad (no date).

- **Air pollution.** Air pollutants—such as chemicals, dust or smoke—can be created by burning fuel (such as wood, charcoal, gasoline or oil), by evaporation of chemicals such as solvents, or from by-products of a production process. Air pollutants can cause or exacerbate respiratory illnesses such as asthma, and can damage both near and distant environments when they are deposited in the soil or water supply. Pollution from rock dust can lead to silicosis, a sometimes fatal “digging disease” with long-term effects on lungs and breathing.
- **Water pollution.** Chemicals used in production processes may be present in the firm’s wastewater. If untreated wastewater is released into the environment, the chemicals can contaminate community water sources and poison irrigated crops.
- **Soil erosion.** Mining, land-clearing or digging can leave an area vulnerable to soil erosion, leading to damaging landslides or floods. Over time, soil erosion can greatly reduce the replenishing of local aquifers, leading to dangerous water shortages.
- **Natural resource depletion.** Fuelwood use creates deforestation, which degrades arable lands. Excessive or wasteful extraction of water from surface and groundwater sources can deplete water sources for future production or community use. Too much groundwater use may also lower the water table and lead to irreversible land sinking; in coastal areas, it may allow salt water to contaminate groundwater bodies. Overall, waste in production processes frequently results in higher costs for energy, water and raw materials for the entire community.
- **Solid waste/garbage.** Inefficient production techniques reduce productivity and create excessive solid waste. Even if such waste is not toxic or otherwise hazardous, it is unsightly and can lead to more serious problems if not disposed of properly. For instance, waste from food processing may attract disease-carrying rodents and insects, and it can contaminate water supplies if washed away by rain. In urban areas, solid waste may also take up valuable space. Burning solid waste can cause air pollution, as noted above.
- **Odor.** Waste from MSEs’ production processes can have a strong odor that can damage the quality of life nearby. Odors may also reduce or destroy community support for further production or expansion.
- **Noise.** Production can involve equipment that is very noisy or causes strong vibrations. This can affect workers’ hearing and health, as well as that of the local community. This may also work against the enterprise’s ability to expand production in the future.
- **Health and safety risks.** One of the most immediate and significant adverse impacts of MSEs can be on the health of workers and of family members who live on the premises, particularly when the affected persons are already weakened by conditions such as HIV/AIDS. For example, touching or breathing hazardous chemicals can cause poisoning, skin irritations, burns or lung disease—including conditions that may not become apparent for years. Excessive heat caused by operating machinery in poorly ventilated areas is also hazardous to

## "Green" Enterprises

A number of different kinds of MSEs may be environmentally helpful, although even these should be managed carefully to avoid unintentional adverse impacts. “Green” enterprises offer a wide range of goods and services including the following:

- Sale of solar energy
- Sustainable agriculture/forestry
- Ecotourism
- Harvesting rain forest products
- Commercial production of “wild fruits”
- Production of fertilizer from organic waste
- Latrine service
- Waste collection and disposal
- Recycling, repair and remanufacturing
- Manufacture of pollution control equipment or resource-efficient machinery
- Manufacturing bicycle carts or other forms of non-automotive transport

workers' health. Poor maintenance and housekeeping can increase the risk of fires and accidents.

Of course, some MSEs can have positive impacts on the environment. Such MSEs, sometimes called “green” enterprises, may create benefits by cleaning up or preventing environmental problems, or by creating incentives to protect environmental resources. (See the box on the previous page for a list of examples of such enterprises.) It may be desirable to target assistance toward such enterprises, if they are financially viable and sustainable. However, support organizations should be aware that these enterprises might still cause environmental problems requiring mitigation. For instance, ecotourism operations must guard against overuse of facilities, trails and scenic areas, as well as problems with human and solid waste that are typical of tourism operations worldwide. Improper or excessive harvest of rain forest products can also degrade the ecosystem.

### ***Causes of Environmental Damage***

How does environmental damage occur? Most decisions made by MSEs have the potential to harm the environment and public health. Specific examples include:



Even “green” enterprises, like trade in non-timber forest products, can cause environmental problems if they use unsustainable production methods, such as felling yohimbe trees (pictured) for their bark. As harvests shrink, non-“green” uses of forestlands—e.g., logging or clearing for farms—grow more attractive to local communities.

- **Location decisions.** Where an MSE decides to locate its operations may have a profound impact on the environment. For example, an MSE’s pollution and resource impacts, even if small, will be magnified if it operates in an area that is ecologically sensitive, that lacks proper or adequate infrastructure for waste treatment/disposal, or where other industries are already polluting or rapidly consuming natural resources. Locating in an undeveloped area may require the construction of roads and other infrastructure with secondary environmental impacts.
- **Purchasing decisions.** MSEs may be unaware that more efficient or less hazardous inputs and equipment are available and may save them money. For example, brick-making MSEs may be able to use biological waste instead of wood products as a fuel.
- **Processing/manufacturing decisions.** An MSE’s choice of manufacturing methods is among the most important factors determining how heavily it affects the environment. For example, many MSEs lack knowledge about the proper amount of chemical inputs (such as fabric dyes) to use in their processes. Another common difficulty is the use of energy-inefficient machines. Such problems frequently lead MSEs to use significantly more inputs than necessary, increasing both their own costs and the risks to the environment.
- **Housekeeping decisions.** MSEs that are not clean and orderly enough are apt to waste or spill inputs needlessly, and environmental contamination is likely to occur.
- **Waste disposal decisions.** Improper disposal of waste byproducts may unintentionally poison community members and/or contaminate water and air.

Overall, adverse impacts are often caused by poor practices that go uncorrected because people don’t have the right technical information.

Insufficient knowledge can lead to improper use of chemicals, inadequate treatment or disposal of solid and liquid waste, uncontrolled chemical air pollution, and production techniques that make intensive use of nonrenewable resources. Health and safety problems, in particular, are compounded by ignorance of industrial safety and environmental standards, as well as by lack of awareness of protective devices that are generally inexpensive and easy to obtain.<sup>6</sup>

## Why Development Agencies Need to Address MSE Impacts

While all or most MSE development organizations recognize that something must be done to arrest MSEs' degradation of the environment, some may ask, "Why should *my* organization address this issue?" Basically, at least four reasons justify integrating environmental considerations into the activities of BDS and credit providers: (1) development agencies may be required by USAID regulations to mitigate adverse environmental impacts; (2) development agencies may be the actors with the best opportunity to alter MSEs' behavior; (3) for businesses, better environmental performance is increasingly linked to better financial performance; (4) mitigating environmental problems can enhance the long-run sustainability of development efforts.

**Regulatory requirement.** At the donor level, USAID staff are required to review all proposed programs, including MSE development programs, to ensure that they comply with Federal environmental regulations (22 CFR 216). These regulations are designed to ensure that environmental concerns are incorporated into USAID projects, when USAID is aware of the specific activities or loans that would have an environmental impact.

However, the regulations do not explicitly require environmental review or mitigation measures when *intermediaries* will design the specific activities and/or make the specific loans.<sup>7</sup> For example, some credit activities may qualify for a "categorical exclusion" under Regulation 216. This is a judgment that an activity is inherently exempt from USAID environmental review. For a credit activity to qualify, a USAID mission must affirm that (1) the activity's purpose is the equivalent of capitalizing an ICI (e.g., capitalizing a guaranty *facility*, as contrasted with the making of individual guaranties); (2) USAID does not retain the right to review and approve each loan (or equivalent) by the ICI; and (3) USAID does not know what kinds of activities are being funded. The exemption is available whether USAID's funds are used for loan guaranty or for direct loans.

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<sup>6</sup> IADB 1997

<sup>7</sup> The regulations state that an Initial Environmental Examination and/or Environmental Impact Statement are generally not required for projects in which "A.I.D. does not have knowledge of or control over, and the objective of A.I.D. in furnishing assistance does not require, either prior to approval of financing or prior to implementation of specific activities, knowledge of or control over, the details of the specific activities that have an effect on the physical and natural environment for which financing is provided by A.I.D." (22 CFR 216.2(c)(ii)).

## Why Do Assistance Providers Need To Address Mse Environmental Issues?

- Regulatory requirements
- Opportunities to integrate environmental protection into everyday MSE operation
- Positive link between environmental and financial performance
- Promoting sustainable development

Even when a categorical exclusion is appropriate under Regulation 216, however, the following reasons show why MSE credit and service providers should build their own environmental reviews into their credit and service projects and activities.

**Leverage opportunity.** Traditionally, legislatures in many countries, both developed and developing, have created stringent standards and regulations for preserving the environment. Environmental protection agencies, independent and distinct from economic agencies, have been responsible for assuring that people comply with those standards. The standards are important, and complete environmental protection may not be achievable without strong environmental protection institutions. But relying solely upon these institutions—particularly in developing countries—is unwise.

As many readers are aware, a large number of developing countries are only beginning to put environmental, legal and regulatory standards and/or enforcement institutions in place—either for their entire economies, or for particular industries such as brickmaking, mining and textile dyeing.<sup>8</sup> In addition, not all small plants, even in countries with strong legal and regulatory institutions, may be regulated because of competing political and economic pressures or for fear of undermining employment, income and profits. Moreover, when MSEs are regulated, they are much more costly for regulatory agencies to oversee than larger plants because of their sheer number and geographic dispersion.

Under these circumstances, it is vital to integrate incentives for both short- and long-run environmental protection into day-to-day economic development efforts. Doing so can help bring about gradual, institutionalized change in the private sector. This may be the most viable way for MSEs to improve their environmental performance—in part because such institutionalization may also bring with it efficiency gains (discussed later) that can directly benefit the MSE. To provide incentives, governments can use economic tools, such as emissions charges or taxes on pollution or on the purchase of chemicals or energy. However, such tools need an effective regulatory structure to ensure compliance and payment. As mentioned above, most developing countries are only beginning to build this capacity.

Thus, integrating environmental concerns into MSE credit and BDS operations is vital, because existing, frequent interactions with MSEs create an opportunity for positive change.

**Links between environmental performance and financial performance.** The primary mission of economic development organizations is to ensure the success of the enterprises they support—as measured by profitability, productivity, income generation, employment and/or long-term sustainability. This success not only achieves public policy objectives, but also ensures that credit institutions remain solvent through healthy loan repayment rates and that MSEs continue to seek services from BDS providers. Incorporating environmental concerns fits well with these traditional missions.

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<sup>8</sup> Intermediate Technology Consultants 1997c.



For instance, as will be discussed in Chapter 2, environmental measures are not necessarily costly. Worldwide, banks and other service providers increasingly recognize that “good environmental performance is often linked to good financial performance.”<sup>9</sup> Specifically, following the “cleaner production” resource efficiency strategy can actually result in measurable benefits for both the enterprise and the environment.

It follows, then, that BDS providers may in many cases be able to help MSEs improve their profitability while they also improve their environmental performance. Likewise, incorporating environmental considerations into the process of reviewing aid applications gives credit institutions a better sense of the investment risk and may increase the enterprises’ potential for success.<sup>10</sup> Moreover, it’s nothing new for MSE credit providers to consider so-called “non-business” factors. For example, many of these institutions have long recognized that giving credit to women is socially beneficial. More recently, they have come to realize that it makes business sense as well, since women have a better repayment rate than men and thus provide a better return on investment.

**Opportunities to promote sustainable development.** In large part, USAID believes it is important to aim for environmentally sound MSEs by:

- increasing MSEs’ understanding of their own environmental profiles, and
- encouraging them to improve their performance.

USAID recognizes that this is critical both to making MSE programs sustainable and to helping communities to develop overall. As already described, unaddressed MSE environmental impacts may do substantial and long-lasting harm to community health and to the value, availability, and productivity of important environmental and economic resources (such as clean water). Such effects undermine any attempts to alleviate poverty.

## How Implementing These Guidelines Aids Development Goals

Implementing these guidelines supports the primary mission of BDS and credit organizations, and of USAID’s MSE development activities: facilitating MSEs’ short- and long-term economic and financial success in order to alleviate poverty. Table 1 (next page) shows how these guidelines can assist BDS providers, direct lenders, ICIs, and USAID staff. It outlines how the consideration of environmental issues aligns with the development mission and the steps each organization can take to contribute to that mission.

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<sup>9</sup> Jeucken and Bourma 1999, citing World Business Council on Sustainable Development 1997.

<sup>10</sup> For example, several private European banks integrated environmental risk into their credit risk assessments (Jeucken and Bourma 1999).

**Table 1: Contribution of Guidelines to Development Goals**

Development Actor	Alignment with Mission Goals	Steps to Contribute to Mission
Business Development Services (BDS) Providers	<ul style="list-style-type: none"> <li>- Provide MSEs with the skills to effectively mitigate certain adverse environmental impacts, particularly using methods that reduce costs or improve quality</li> <li>- Improve the sustainability of MSE assistance programs</li> <li>- Improve net community benefits of MSE assistance programs</li> </ul>	<ul style="list-style-type: none"> <li>- Integrate strategies for efficient resource use into BDS activities</li> <li>- Assist MSEs in meeting specific environmental mitigation requirements instituted by lenders (or other entities, such as regulatory agencies)</li> <li>- Ensure that MSE assistance activities meet USAID regulations</li> <li>- Incorporate general environmental management skills into training provided to MSEs</li> <li>- Help connect MSEs with environmental service providers</li> </ul>
MSE Direct Lenders	<ul style="list-style-type: none"> <li>- Improve long-term MSE performance and, consequently, improve the likelihood of repayment.</li> <li>- Improve sustainability of MSE assistance programs</li> <li>- Improve net community benefits of MSE assistance programs</li> </ul>	<ul style="list-style-type: none"> <li>- Ensure that MSE assistance activities meet USAID regulations</li> <li>- Require or encourage selected environmental mitigation measures before certain MSEs receive loans</li> <li>- Incorporate general environmental management skills into training provided to MSEs</li> <li>- Offer financing to MSEs for environmental projects, including those that have a direct positive impact on business performance</li> <li>- Help connect MSEs with environmental service providers</li> <li>- Provide environmental management skills training to MSEs (directly or by contract)</li> </ul>
Intermediate Credit Institutions (ICIs)	<ul style="list-style-type: none"> <li>- Improve the performance of direct lenders by enhancing the economic and environmental sustainability of MSE lending programs.</li> <li>- Improve net community benefits of MSE assistance programs</li> </ul>	<ul style="list-style-type: none"> <li>- Ensure that direct lenders' MSE assistance activities meet USAID regulations</li> <li>- Provide training and guidance to direct lenders (directly or by contract)</li> <li>- Ensure that MSE direct lenders actively promote better environmental practices among MSEs</li> </ul>
USAID	<ul style="list-style-type: none"> <li>- Improve the performance of all MSE development activities, and reduce MSEs' harmful effects (such as pollution) on other development priorities such as public health and agriculture.</li> </ul>	<ul style="list-style-type: none"> <li>- Provide oversight on all MSE development activities, to reduce environmental impacts and abide by Regulation 216</li> <li>- Identify and fund new training needs of USAID and private voluntary organization (PVO) staff</li> <li>- Facilitate coordination between different development actors, including BDS providers, direct lenders, intermediate credit institutions, and environmental and resource efficiency experts</li> </ul>