
Introduction

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This sector briefing is 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) 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 with the capacity of identifying, assessing, mitigating and monitoring all of the diverse potential adverse environmental impacts of MSEs. Rather, these guidelines are intended to familiarize readers with

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

These guidelines also provide readers with

- a strategy for screening high-priority MSEs for regulatory compliance concerns and for best management practice opportunities;
- and tools and information to institutionalize environmental capacity (most specifically Cleaner Production) into their business practices.

It is anticipated that users of these guidelines may need or wish to rely upon environmental expertise (either inside or outside their own organizations) to design appropriate mitigation strategies, particularly in matters of regulatory compliance.

Implementation of the guidelines. It is anticipated that BDS and/or credit providers may be able to encourage improved environmental performance among MSEs in at least three ways:

1. by demonstrating the "cleaner production" links between improved resource efficiency and cash flow,
2. by encouraging the implementation of environmental mitigation opportunities and providing or facilitating financing to do so, and/or

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. Beyond manufacturers or resource-exploiters (such as miners), even small-scale informal marketplaces typically create health and environmental worries because of a paucity of sanitation and waste disposal facilities.

Purpose of Guidelines

The purpose is to familiarize Business Development Service providers and intermediate credit institutions with:

- Information on the environmental effects of micro and small enterprises (MSE)
- Mitigation actions that can be implemented by MSEs
- The benefits of the cleaner production (CP) approach to environmental mitigation

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 BDS and credit provision, and many different kinds of MSEs that are supported. Hence, as will be discussed later, 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 structured in 4 main sections:

1. MSEs and the Environment
2. Mechanisms for MSEs to Mitigate Environmental Impacts
3. Integrating Environmental Considerations into MSE Assistance Activities
4. Sub-sector 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 MSE environmental performance. Chapter 2 introduces techniques for controlling and mitigating specific environmental impacts. Chapter 3 describes the framework, information, and tools necessary for integrating environmental concerns into assistance practices. Chapter 4 contains fact sheets that provide additional understanding of adverse environmental impacts from particular MSE subsectors (e.g., leather processing/tanneries), and present mitigation opportunities with a particular emphasis upon methods that may improve the profitability of the enterprise. In addition, the fact sheets offer substantial annotated resource lists for those seeking more detailed information. Chapter 5 provides sample screening forms and other tools that may help credit/BDS providers to integrate these guidelines into their daily work.

MSEs and the Environment

What are MSEs and what is their role in development?

MSEs are defined here 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 and create wealth among lower income populations, and frequently offer otherwise unavailable market opportunities to traditionally disadvantaged groups within African society—including women and ethnic minorities. In many cases, MSEs are the sole source of income for entrepreneurs and their workers. 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.¹ The organization of production ranges from single entrepreneurs working with their families out of a household to larger, independently sited facilities with dozens of permanent workers.

Promotion of MSEs is an important poverty reduction strategy for USAID. USAID's MSE development activities typically include providing loan guarantees, direct loans, and/or grants to intermediate credit institutions (ICIs), direct MSE lending institutions, and business development services (BDS) providers. In 1999, the agency spent nearly 70% of its \$153.5 million of funding for microenterprises on microfinance, with the remainder going toward BDS.² As noted by USAID's "Policy on Microenterprise Development", this financial and non-financial support to MSEs focuses 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.³ 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 relative to large enterprises that usually produce more aggregate pollution than smaller enterprises? The answer, simply stated, is yes. Although many MSEs have relatively little direct adverse environmental impact, and some may even have beneficial impacts, others can have significant adverse environmental and related public health consequences, which vary as broadly as the types of enterprises. Beyond manufacturers or resource-exploiters (such as miners), even small-scale informal marketplaces typically create health and environmental worries because of a paucity of sanitation and waste disposal facilities.

Small enterprises and plants are often more pollution intensive than larger enterprises (per unit of production),⁴ and their prominence and concentration in particular economies or industries can create environmental problems of alarming proportions. For example, while small enterprises account for an estimated 40% of all industrial production in India, they release an estimated 40-60% of the country's industrial pollution.⁵ Examples of MSE subsectors

¹ For organizational and conceptual purposes, certain common income-generating activities are excluded from consideration as MSEs for this section. In particular, the information here will have varying relevance to farming, livestock grazing, and fisheries management. However, the processing of agricultural and other food products has been considered in preparing these guidelines. Specific guidance for farming, livestock, and fisheries is covered elsewhere in the *Environmental Guidelines for Small-Scale Activities*.

² USAID 2000.

³ USAID 1996.

⁴ World Bank 1999.

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

with particularly high potential to damage the environment include the following:

- 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 created by MSEs in turn impose profound social and economic burdens on MSEs' 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.

Types of Adverse Environmental Impacts of MSEs

Depending upon their individual characteristics, MSEs can have quite a variety of adverse environmental impacts. The bullets below present and briefly explain some of the most common and significant problems observed among MSEs.

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
- **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 substantial care in their use and disposal. Failure to properly use or dispose of chemical and hazardous wastes can lead to substantial soil contamination, ground and surface water contamination, and air pollution, all of which can cause serious health problems for adults, children, and livestock.
 - **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 near and distant environments when pollutants in the air are deposited in the soil or water supply. Pollution from rock dust can lead to silicosis, digging disease that affects lungs and breathing with long-term and even fatal effects.
 - **Water pollution** – Chemicals used in production processes may be present in wastewater. If such 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. Soil erosion can lead 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 leads to deforestation and the resultant degradation of arable lands. Excessive or wasteful water extraction from surface and groundwater sources can deplete water sources for future production or community use. Excessive groundwater use may also lower the water table and lead to saltwater contamination of groundwater bodies in coastal areas, and irreversible land subsidence. Overall, waste in production processes will result in higher costs for energy, water, and raw materials.
- **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 create more important problems if not disposed of properly. For instance, waste from food processing operations may attract disease-causing rodents and insects that threaten public health, and 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 indicated above.
- **Odor** – Waste from production processes can have a strong odor that can affect quality of life around the MSE site. 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 the community around the working site. This may also work against the enterprise's ability to expand production in the future.
- **Health & safety** – One of the most immediate and significant adverse environmental impacts of MSEs can be on the health of workers and family members who live on the premises, particularly when affected persons are already weakened by conditions such as HIV/AIDS. For example, touching or breathing of hazardous chemicals can cause poisoning, skin irritations or burns or lung disease -- including conditions which may not become apparent for years. Excessive heat caused by operating machinery and poorly ventilated areas are also hazardous to 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 are sometimes called "green" enterprises. The positive benefits green businesses create can result from cleaning up or preventing environmental problems, or creating incentives to protect environmental resources. The accompanying box presents a list of examples of such enterprises. It may be desirable to target assistance toward such kinds of enterprises, if financially viable and sustainable. However, support organizations should be aware that such enterprises might still have adverse environmental impacts requiring mitigation. For instance, ecotourism operations must guard against overuse and problems with human and solid waste that are typically

"Green" Enterprises

A number of different kinds of MSEs may generate positive environmental impacts, 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

associated with tourism operations worldwide, and improper or excessive harvest of rain forest products can result in degradation of the ecosystem.

Causes of Environmental Damage

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

Decisions by MSE with potential for environmental harm

- Location decisions.
- Purchasing decisions
- Processing/manufacturing method decisions
- Housekeeping and maintenance decisions
- Waste disposal decisions

- **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 ecologically sensitive area, in an area lacking proper or adequate waste treatment/disposal infrastructure, or in a place where other industries are already polluting or rapidly consuming natural resources. In addition, locating in an undeveloped area may require the construction of roads and other infrastructure that may have adverse secondary environmental impacts.
- **Purchasing Decisions.** MSEs may be unaware of the availability and potential financial advantages of more efficient or less hazardous inputs and production equipment. For example, brick-making MSEs may be able to use biological waste as a fuel instead of wood products.
- **Processing/Manufacturing Decisions.** The choice of methods by which an MSE manufactures its products is among the most important factors in determining the extent to which an MSE adversely impacts the environment. For example, a common problem among MSEs is a lack of knowledge on the proper amount of chemical inputs to utilize in their processes (such as fabric dyes) or the use of energy-inefficient machines. Insufficient knowledge frequently results in MSEs using significantly more inputs than necessary, increasing both their own costs and environmental risks.
- **Housekeeping Decisions.** Where orderliness and cleanliness in MSEs is weak, increased waste/spillage of inputs and environmental contamination is likely to occur unnecessarily.
- **Waste Disposal Decisions.** Improper disposal of waste byproducts may lead to unintentional toxic contact with community members and/or the contamination of water and air.

Overall, adverse impacts are often caused by poor practices that go uncorrected because of the lack of appropriate 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 & safety problems in particular are compounded both by lack of awareness of protective devices that are generally easy and inexpensive to obtain and by ignorance of industrial safety and environmental standards.⁶

⁶ IADB 1997

Why development agencies need to address MSE impacts

While all or most MSE development organizations recognize that something must be done to arrest the environmental degradation by MSEs, some will ask, “Why should my organization address this issue?” Essentially, these guidelines argue that at least four reasons justify the integration of 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 MSE behavior; (3) better environmental performance is increasingly linked to better financial performance of businesses; (4) mitigating adverse environmental impacts can enhance the long-run sustainability of development.

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) designed to ensure the incorporation of environmental concerns into USAID projects, when USAID has been aware of the specific activities or loans that would have an environmental impact.

However, the regulations do not explicitly require an environmental review or mitigation measures when intermediaries will be designing the specific activities and/or making the specific loans.⁸ For credit activities to qualify for a categorical exclusion under Regulation 216, missions must affirm (1) that their purpose is the equivalent of capitalizing an ICI (e.g., capitalizing a guaranty facility, as contrasted with the making of each guaranty); (2) that 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. This is the case regardless of whether USAID’s funds are used for loan guaranty or for direct loans.

Even when a categorical exclusion is appropriate under Regulation 216, however, the following reasons still argue for MSE credit and service providers to institutionalize their own environmental reviews of credit and service projects and individual activities.

Leverage Opportunity. In the traditional models created for environmental protection in many developed and developing countries, legislatures have created stringent standards. Environmental protection agencies, independent and distinct from economic agencies, have been responsible for assuring compliance with those standards. These standards are important, and complete environmental protection may not be achievable without strong environmental protection institutions. However, reliance solely upon these institutions is unwise—particularly in developing countries.

⁷ Intermediate Technology Consultants 1997d.

⁸ 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 development agencies 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

As many readers are aware, many developing countries are only beginning to put in place environmental, legal and regulatory standards and/or enforcement institutions—either for their entire economies, or for particular industries such as brickmaking, mining, and textile dyeing.⁹ In addition, not all small plants may be regulated even in countries with strong legal and regulatory institutions, because of competing political and economic pressures or fear of detrimental effects on employment, income and profits. Those MSEs that are regulated are much more costly for regulatory agencies to oversee than larger plants, because of their sheer number and dispersion.

Under these circumstances, it is vital for both short- and long-run environmental protection that environmental protection incentive mechanisms be integrated into day-to-day economic development initiatives. 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). To this end, governments can utilize economic instruments, such as emissions charges or taxes on pollution or on the purchase of chemicals or energy. However, effective economic instruments are predicated on an effective regulatory structure to ensure compliance and payment. As mentioned above, most developing countries are only beginning to develop this capacity.

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

Positive links between environmental performance and financial performance. The primary mission of economic development organizations is typically to ensure the economic success of the enterprises they support—as measured by profitability, productivity, income generation, employment, and/or long-term enterprise 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 with these traditional missions.

For instance, as will be discussed in Section 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."¹⁰ Specifically, the implementation of a resource efficiency strategy known as "cleaner production" can actually result in measurable benefits for both the enterprise and the environment.

It follows that BDS providers may in many cases be able to help MSEs improve their profitability while improving environmental performance. Likewise, by incorporating environmental considerations, credit institutions develop a better sense of their risk and may increase the enterprises'

⁹ Intermediate Technology Consultants 1997d.

¹⁰ Jeucken and Bourma 1999, citing World Business Council on Sustainable Development 1997.

potential for success.¹¹ The consideration of so-called "non-business" factors is not new to MSE credit providers, either: many of these institutions have long recognized that, similarly, giving credit to women isn't just socially beneficial, but makes more business sense—because 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 enhanced program sustainability and positive community development can be achieved by increasing the understanding of MSEs about their own environmental profiles, and by encouraging them to improve their performance. As already described, unmitigated MSE environmental impacts may have substantial and long-lasting deleterious effects on the quality of community health and the value, availability, and productivity of important environmental and economic resources (such as clean water). Such effects significantly undermine any attempts to alleviate poverty.

How implementing these guidelines aids development goals

The implementation of these guidelines should complement a primary mission of BDS and credit organizations and of USAID's MSE development activities: facilitating short- and long-term MSE economic and financial success in order to alleviate conditions of poverty. The table on the next page illustrates how these guidelines are expected to assist BDS providers, direct lenders, intermediate credit institutions, and USAID staff. It outlines how the consideration of environmental issues aligns with the development Mission, and steps each organization can take to contribute to that mission.

¹¹ For example, several private European banks (UBS, BOA, Deutsche Bank, and ING Group) have integrated environmental risk into their credit risk assessments. (Jeucken and Bourma 1999).

¹² For example, several private European banks (UBS, BOA, Deutsche Bank, and ING Group) have integrated environmental risk into their credit risk assessments. (Jeucken and Bourma 1999).

¹³ The project is currently on hold due to unrelated circumstances.

¹⁴ Jeucken and Bourma 1999, citing World Business Council on Sustainable Development 1997.

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"> • Provide MSEs with skills to effectively mitigate certain adverse environmental impacts, particularly those that reduce costs or improve quality • Improve sustainability of MSE assistance programs • Improve net community benefits of MSE assistance programs 	<ul style="list-style-type: none"> • Integrate resource-efficiency strategies into BDS activities • Assist MSEs in meeting specific environmental mitigation requirements instituted by lenders (or other entities, such as regulatory agencies) • Ensure that MSE assistance activities meet USAID regulations • Incorporate general environmental management skills into training provided to MSEs • Help connect MSEs with environmental service providers
MSE Direct Lenders	<ul style="list-style-type: none"> • Improve long-term MSE performance and, consequently, improve the likelihood of repayment. In particular, the most cost-effective environmental measures often have a direct positive impact on profitability and/or quality. • Improve sustainability of MSE assistance programs • Improve net community benefits of MSE assistance programs 	<ul style="list-style-type: none"> • Ensure that MSE assistance activities meet USAID regulations • Require selected environmental mitigation measures of certain MSEs receiving loans • Incorporate general environmental management skills into training provided to MSEs • Offer financing to MSEs for environmental projects, including those that have a direct positive impact on business performance • Help connect MSEs with environmental service providers • Provide environmental management skills training to MSEs (directly or by contract)
Intermediate Credit Institutions (ICIs)	<ul style="list-style-type: none"> • Improve the performance of direct lenders by enhancing the economic and environmental sustainability of MSE lending programs. • Improve sustainability of MSE assistance programs • Improve net community benefits of MSE assistance programs 	<ul style="list-style-type: none"> • Ensure that direct lenders' MSE assistance activities meet USAID regulations • Provide training and guidance to direct lenders (directly or by contract) • Ensure that MSE direct lenders actively promote better environmental practices among MSEs
USAID	<ul style="list-style-type: none"> • Improve the performance of all MSE development activities, and reduce the negative impacts of MSE activities on other development activities. For example, MSE pollution can have come over time, a significant negative impact on public health and agriculture. As such, MSE programs sustainability and positive community impacts are increased. 	<ul style="list-style-type: none"> • Provide oversight on all MSE development activities, to reduce environmental impact and abide by Regulation 216 • Identify and fund training needs of USAID and PVO staff • Facilitate coordination between different development actors, including BDS providers, direct lenders, intermediate credit institutions, and environmental and resource efficiency experts