

## Waste Management of Microenterprises in the rural area of Bangladesh

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### **Introduction**

Microenterprises (MEs) in Bangladesh are playing a vital role to stimulate economic development including alleviation of poverty through employment generation. Microenterprises cover a wide range of business activities some of which have negative environmental impacts (ROPME/GC-1992). With the rapid expansion of micro-finance and its anticipated future growth, there is an increasing threat to local environment. Moreover, the workers of the enterprises are also exposed to various health and safety risks.

The project is aimed at enhancing livelihoods (higher income from self-employment, business profit and wage employment and food security) of the moderate and extreme poor project participants (men and women) in a sustainable manner. The development objectives are to improve profitable business opportunities for micro entrepreneurs and create wage employment for extreme and moderate poor people.

Due to inadequate disposal site facilities and lack of regulation or enforcement many MEs are dispose their waste in indiscriminate way, which affect the local environment. The location of microenterprises is a major concern, which can affect natural resources especially if enterprises are located near park, hospital, educational institution, residential area or waterway.

Most of MEs activity under PKSF do not cause significant harm to the environment and in few cases can be very beneficial – as with waste collectors, recycling and disposal businesses (Pallen, 1997). Some of the businesses create hazardous waste and disposed in carded in an indiscriminate fashion since there are inadequate disposing facilities and lack of regulation or enforcement.

PKSF intend to comply the environmental management and ensures the sustainable mitigation of the harmful environmental effects of MEs. The objective of the study is to assess environmental related threats and risks of micro-enterprises and provide suggestions for mitigation measures. in light with the Department of Environment (DoE) guidelines for environment-friendly enterprise development

## Objectives

The overall objective of this study is to carry out comprehensive environmental assessment of the different farm and non-farm microenterprises under trade, farming, processing and services. In order to ensure the emission from the production process and outputs of environmental aspects have complied with the policies, guidelines and strategies of the Government of Bangladesh. With this information, mitigation measures are suggested to abate the impacts on the existing environment of the project area.

The main objectives of the study are to:

- assess the physical environment of the processing and manufacturing factories under microenterprises;
- assess the overall environmental risks in different microenterprise activities in trade, farm, processing and service sectors;
- assess the types of waste released by the microenterprises;
- evaluate existing waste management systems in different microenterprises under processing/manufacturing sector; and
- Suggest effective mitigation measures to mitigate the adverse impact (waste management) in various microenterprise activities.

## Methodology

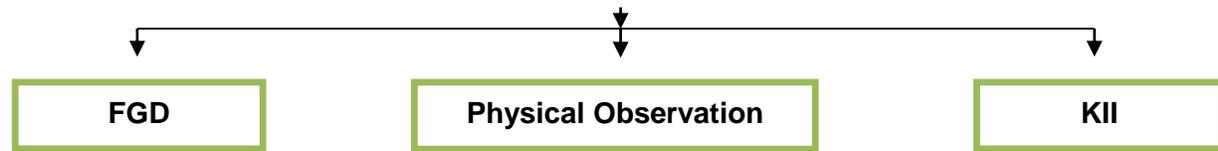
The consultant has review data and information gathered from secondary sources for having an overall understanding of the environment related issues of the sector and communicate with the DoE to collect policy guidelines related to the concerned business. The consultant has also review existing waste management system of different microenterprises. The following methodologies have been practiced for data collection of the study.

- (i) formal and non-formal interviews;
- (ii) semi-structured interviews by means of focus group discussions and
- (iii) field survey through structured questionnaire
- (iv) collection of secondary information
- (v) review available policy, guidelines, reports and a series of reconnaissance field visits by a team of consultants to the project area.

Quantitative method-survey has been used widely for data collection. Qualitative methods are being increasingly used in social assessments as credible and reliable method of data collection. They provide clear insights into people's perceptions and deeper understanding of local contexts, complex coping strategies, major priorities and solutions used by the people. Qualitative techniques have been used primarily to collect in depth/ perceptual information on selected indicators related to the study.

The most appropriate tools used in this analysis, are as

**Qualitative Analysis**



### **Major FINDINGS**

Microenterprises are an existing running activity in whole country and running the small-scale industries of Bangladesh. These microenterprises are contributing in national economy to save significant amount of imported material and items. A team consists of highly qualified entrepreneur and skill technicians are engaged in production and quality control to ensure quality of various product, which is consistent to customer's desire and satisfaction.

During field visit, it was found that the microe

ing

1. During the study out of 88 MEs only 4 microenterprises (MEs) have Environmental Clearance Certificate from DoE.
2. From the study 34 MEs found green category, 44 MEs found Orange A, 5 are Orange B and rest 5 are Red category.
3. Most for the ME owners are not aware of environmental regulation and compliance and there is no waste management plan (WMP).
4. 19 MEs are aware about the health and safety measure and rest 69 MEs are not using PPE.
5. Only one ME have the capacity to produce biogas from cow dung and duck dropping. Generated biogas used as cooking fuel. Composted dung also used as fertilizer.
6. From jewelry industry acid fume including toxic gases and dust are emitted from the molding process. Women are most vulnerable with this toxic gas.
7. Acid fume that is generated from the battery is harmful for the health. Melting of lead cell generate lead emission to the atmosphere which is harmful to the health and the environment.
8. The process of lime production is found unhealthy due to hazardous lime powder generated from the process. It also pollutes the surrounding environment.
9. Collection of solid waste was not done properly on regular basis and was not separated properly like green, yellow and red dustbin.
10. Non-hazardous and hazardous waste was not collected separately from the clinic. Hazardous waste should autoclave every day for germ free.
11. The food waste, vegetable waste can be stored and used as a biogas and composting. This biogas can be used in household purpose, which is produced from food waste.
12. Pesticide production is possible from cow urine
13. Bio gas generation from cow dung and poultry dropping
14. Compost can use as organic fertilizer for safe vegetable and crop cultivation
15. Reduce greenhouse gas emission
16. Recycle and reuse the old battery, applies as 3R
17. Recycle the waste paper, cartoon hard board etc.

environmental compliance including occupational health and safety measure. Most of the microenterprises do not have environmental clearance certificate and no one maintain the waste management plan (WMP). Due to lack of awareness and technical knowhow the worker involve with the microenterprises business are facing health problem, create nuisance, fume and dusty of the working areas mainly process and farm activities. But for trading and service sector microenterprise business found is less environmental hazards. A WMP has been prepared for the existing running microenterprises according to the requirement of DoE for necessary environmental clearances as it is made mandatory in ECA '95, for any existing industrial set up. This report has been prepared through identifying the physical condition of all the microenterprises, potential impacts, assessing them and recommending the possible mitigating and enhancing measures for negative and positive impacts, respectively.

The present study shows that air pollution, solid, and liquid waste disposal are major problem due to the operation of the microenterprises. There is minor water pollution problem. On the other hand, the microenterprises have a positive impact in terms of employment and earning of money in the operation phase. The ETP is not required as the effluent is not produced at the enterprise level. The related owner of the microenterprises has taken initiative to mitigation fume, and dust generated from the furnace and grinding machines.

The proponent has informed that they have no idea of protection of devise to protect all the workers from noise and dust emission and sell the solid waste to the small trader, which has secondary use. There are no installations of sensitive nature nearer to the microenterprises, which might face serious ill effects to existing microenterprises.

However, no microenterprises development projects can be expected without any adverse impact on environment. The beneficial impacts on the nation as well as human beings are only be meaningful and sustainable development are only be possible if the impacts are minimized through proper management and taking appropriate control measures as existing and recommended for this microenterprise. All this is need vigilant care and subsequent monetary involvement.

## **RECOMMENDATION**

Most of the microenterprises do not have environmental clearance certificate and no one maintains the waste management plan (WMP) and occupational health and safety. The consultants recommend the following for sustainable development of the microenterprises:

1. For ensuring sustainable development of all the microenterprises require environmental clearance certificate from DoE.
2. The potential environmental hazards should be identified and take the mitigation measures accordingly. The positive impact should also be identified and promoted/scaled up among microenterprises.
3. The major environmental pollution is dust and gases. To minimize the health hazards, the entrepreneurs and workers should use musk and spraying water to keep the environment healthy.

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4. Every enterprise should perform the waste management system for their enterprises
5. The personal hygiene should be maintained for all the microenterprises.
6. Existence of child labour in the factory is one of the indications of breaching law and ignoring the child rights. Use of child labour must not be supported.
7. It is recommended that PKSF need to setup an environmental cell for monitoring of environmental compliance within existing MEs bower and field staff as part of general and on-going project management.
8. Monitoring and follow-up activities by the Environment Group has been developed enterprise-wise.
9. PKSF should have own environmental policy for providing loan to microenterprises and prohibited certain activities which are against the law.
10. The provided environmental checklist may be considered for processing loan.