

**A STUDY ON COMMON SERVICES ACTIVITIES, TECHNOLOGICAL INTERVENTION,
ENVIRONMENTAL INTERVENTIONS AND ACCESS TO PREMIUM MARKET REQUIREMENT
FOR MACHINERIES AND EQUIPMENT SUB-SECTOR**

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By

Prof. Dr. Mohammad Washim Dewan
Consultant, Package No. PKSf/SEP/S-14.5

PALLI KARMA-SAHAYAK FOUNDATION (PKSF)

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Executive Summary

Background

Machinery and equipment is an important sub-sector of the overall manufacturing sectors in Bangladesh and it is fueling the growth of many other industries in the country. PKSf in collaboration with the World Bank has designed a microenterprise development project titled “Sustainable Enterprise Project (SEP)” to support the micro-enterprises (MEs) by expanding user-friendly technologies which might be helpful to boost the productivity of the micro-enterprises (MEs) and improve the existing environment of the sub-sector. In this context, an in-depth sub-sector study is required to know the existing status with ongoing practices along with identifying revenue and non-revenue generating activities, environment-friendly technological interventions, and branding strategies for premium market requirements.

Objectives:

The main objective of this study is to identify common services activities, technological intervention, environmental interventions, and access to the premium market requirement of the machinery and equipment sub-sector in Bangladesh. The study covers micro-enterprises from five different sub-sectors including machinery and spare parts, electric products, imitation jewelry, eco-friendly construction materials, and metallic utensils. The objectives of the sub-project are to- (i) study revenue-generating common service activities and non-revenue generating common physical activities, (ii) analyze requirements for access to a premium market, (iii) evaluate certificates related to environment and product/service, (iv) analyze sustainable enterprise management: influencing factors and their potential conflict, (v) assess environmental and technological interventions, (vi) investigate best practices in sustainable enterprise management, (vii) study cluster map and key actors, (viii) prepare result chain, and (ix) develop specific tools, methods, and approaches for sustainable enterprise.

Methodology:

The study was carried out by both qualitative and quantitative approaches. Primary data was collected from five different machineries and equipment sub-sector (i.e., machinery and spare parts, electric products, imitation jewelry, eco-friendly construction materials, and metallic utensils) in Bangladesh. The quantitative survey data was collected from 541 MEs located in Dhaka, Bogura, Savar, Shariatpur, and Thakurgaon from February- March, 2022 through a structured open-ended questionnaire with a set of questions. Stratified sampling scheme with probability proportion to size was employed to determine sample size considering standard statistical measures (95% confidence interval, error margin 5% and design effect 1.5) for the total population. A total of 18 qualitative survey data was collected through in-depth interview with selected manufacturers and focused group discussion with NGO and association leaders. Both quantitative and qualitative data were then summarized to supports the objectives.

Key Findings:

Revenue-generating common services and nonrevenue-generating common activities: From the summary of survey data, it is noticed that more than 90% of the workshops cannot access any revenue-generating common services. Similarly, on average 60-70% of the workshops cannot access nonrevenue-generating common activities.

Access to a premium market: Most of the manufactured products are sold to local customers based on their demand and they have to compete with the imported products. Maximum of the locally manufactured products don't have product specification sheet, product quality certificate, product traceability or documentation, standard production procedures, etc. which are required for Good Manufacturing Practices (GMP).

Certificates: According to the survey data, most of the manufacturers do not have product and environment certificates. Proper authorities can be assigned for handling environmental and product certification.

Sustainable enterprise management: From the survey data analysis, it is found that the manufacturers are not maintaining product documentation, catalog, certificates, etc. which are important for product branding. Most of the customers are not familiar about products.

Environmental and technological interventions: Most of the manufacturers are using old technology adopted in 1950 - 60s. Therefore, productivity of the clusters is lower than that of their competitors. It results on the quality of the products as well as production cost. Moreover, workshop safety facilities need to be improved.

Best Practices for sustainable enterprise management: A large and growing number of manufacturers are realizing substantial financial and environmental benefits from sustainable business practices. The manufacturers usually have solid waste which they sale to others and few of them recycle it.

Sub-sector map and key actors: Machinery and spare parts sub-sectors mainly sited in three districts: Dhaka, Bogra, and Jashore. Dhonia or Keraniganj can be selected as a hub for electrical and electronic manufacturing sector. Manufacturers associations, government organizations, and NGOs are working to upgrade the sub- sectors.

Conclusions and recommendations

Micro-Enterprises (MEs) is an important sub-sector of the overall manufacturing sectors in Bangladesh. MEs are playing a very important role in employment generation, resource utilization and income generation to a large segment of the society. From the study and survey data analysis, following general recommendations are made for the manufacturers:

- The manufacturers should work with the corresponding association to standardize the raw materials they frequently utilize.
- The manufacturers should improve the work environment and facilitate training to upgrade their skills.
- Manufacturers should invest in modern machinery to upgrade their manufacturing facilities.
- Manufacturers should improve safety facilities in their workshops.
- Manufacturers should follow environmental regulations and receive environment-related certificates.
- Manufacturers should follow good manufacturing practices (GMP) and invest to receive product quality certificates.
- Manufacturers should maintain specification sheets, products catalogue and work on the branding of their products.
- Manufacturers should maintain energy-efficient technology and reduce manufacturing loss.
- Manufacturers should invest in innovative and quality product development to access the premium market.

Following action plans can be taken by the PKSF for Machineries and Equipment sub-sector in Bangladesh which are related to common services activities, technological intervention, and environmental interventions:

- Develop a common design and testing facility center for each sub-sector and funding for modern machinery
- Develop hygienic toilet and potable water facilities for the employers as well as for the visitors
- Establish a common product display and information center for each subsector where potential buyers can receive all information about the products in the clusters and see actual products under one umbrella
- Establish an online platform with the help of ministry of commerce or a2i where the manufacturers can upload their profile and products catalog
- Develop 3 to 5 model workshops at each cluster for different sub-sector
- Develop a system that will supply raw materials with a certified quality
- Develop environmental and safety policy for the MEs and help the MEs to receive environmental and safety certificate
- Develop a guideline following national and international standards and codes for the product quality certification
- Help MEs to access soft and flexible long and mid-term credit facilities for capital machinery and working capital.