

Brief Methodology of Mapped in Bangladesh (MiB)

MiB Project at a Glance

Mapped in Bangladesh (MiB) is a 4-year research initiative (2017-2021) by BRAC University that aims to map the export-oriented ready-made garment (RMG) factories across all garment-producing districts in Bangladesh.

The objective of Mapped in Bangladesh (hereinafter MiB or the project) is to provide accurate, credible and updated RMG factory information to industry stakeholders in a manner that enables greater efficiency, accountability and transparency. This map is a first attempt at a transparency mechanism to support Bangladesh's ready-made garment sector. Designed and built in Bangladesh, MiB serves as a home-grown tool that further strengthens the country's significant and thriving RMG industry.

How to Use this Document

The launch of the Dhaka cluster is the first iteration and it welcomes stakeholder input. This document outlines the methodologies of MiB in summary to provide readers with information on various project activities. BRAC University's Centre for Entrepreneurship Development (BRACU-CED) has developed the methodology for these activities, which was verified by the Project Advisory Committee (PAC) members, consisting of intra-industry stakeholders.

The methodologies have been structured in the following sections as follows:

- Initial Census
- Factory Listing from Initial Census
- Factory Definition for inclusion in MiB
- Main Survey
- Data Verification and Validation Protocol
- Factory Screening for the Map

Initial Census

In the absence of an accurate factory list in the export-oriented ready-made garment industry in Bangladesh, the project conducted an "Initial Census" to list all RMG and related factories. The primary goal of this nation-wide census was to search for and locate as many potential factories as possible all over Bangladesh,¹ and to make a "sampling frame" (factory listing) for the Main Survey. The census cast a very wide net to ensure that all factories that met the criteria for this research intervention were captured.

¹ The Initial Census did not cover factories in any of the EPZ's as BEPZA did not want to participate. The data for this project was collected and verified as per the methodology described in this document. As a response to concerns raised by MiB's strategic partners, the methodology is currently being further reviewed for inclusion in the final version of the map and the research report.

Based on de-duplicated list of RMG factories compiled by BRACU-CED from a dozen secondary sources, information showed that the majority of the factories were located mainly in Dhaka District, Gazipur District, Narayanganj District, and Chittagong District. Any remaining factories were from Mymensingh and other districts. A team of 25 Field Officers covered the country street by street to conduct the Initial Census which required 3300+ man days to complete (January 2018 to April 2018).

The Initial Census collected the following information:

- Factory/Unit Name
- Postal Address (including phone number and business card of contact persons and factories)
- GPS Locations/Coordinates
- Images: Signboard, Banner, Visiting Card, Letterhead, Factory Vehicle, etc.

This research intervention included 1 Field Coordinator, 4 Field Supervisors, and 25 Field Officers. conducted the Census and Survey. The Field Supervisors and Field Officers reported directly to the Field Coordinator.

Each team of Field Officers was designated a particular field area. The Field Coordinator strategized which team would move to which area after assessing field team's progress and in consultation with MiB's project management.

Following the census method, the survey team covered the districts and factory location information were categorized by Police Station, Sub-district and District.

The Field Officers identified/located a factory by using the following approaches:

- Looking for RMG and RMG related factories by walking street by street
- Leveraging the community by asking local people on each street (shopkeepers, tea stall vendors, building owners etc.)
- Contacting administrative personnel [UNO (Upazila Nirbahi Officer) Office or Deputy Commissioner's Office (DCO)] about possible factory locations in each area

Data was generally pulled from sources such as factory signboards/banners, factory vehicles (covered van or truck), business cards of factory officials, receipts, security guards, other security in-charge and information desks.

Field Officers and Field Supervisors also collected information from Government officials, representatives and authorities (UNO, Chairman, Police Station, etc.) regarding factory locations in a particular area.

Field Officers located any possible RMG and RMG related factories in a particular area by also communicating directly with the local community, sourcing any information from local people on each street. Field Officers communicated with factory personnel as well whenever possible; otherwise they collected information for the Initial Census outside the premises of factories.

To capture factory data, a customized electronic survey form was developed by the BRACU CED team using an Open Data Kit (ODK) platform. Fields Officers were able to directly input information through the ODK by using the cost-effective ODK application on their mobile devices.

To ensure full coverage of areas where factories are located, MiB introduced a system of re-checking (done by the same team that conducted the Initial Census in that area) and cross-checking (done by another team) collected information. These standard procedures were

implemented to confirm that no factory was missed, as well as to ensure that data quality was maintained in terms of correct spelling and correct address.

Factory Listing from Initial Census

In order to build an accurate factory listing (or sampling frame), the Initial Census data was reviewed carefully to ensure accuracy and reduce errors caused by duplicates. The team consisting of 5-6 members used data captured from the field, made direct phone calls to factories, referenced secondary source lists, and incorporated any findings from the project's baseline database that was collected by an external consultant.² Based on this information, BRACU-CED designed “a data cleaning software” in-house that helped streamline this process.

The following table describes each data point and how they were assessed. The “Data Point” identifies which field in the survey is being checked. The “Description” described the Data Point. The “Process” explains which methods were used to verify the Data Point. The “Tag Used” is what the Data Point was tagged in the software, identifying whether the information was verified or not and by or with whom.

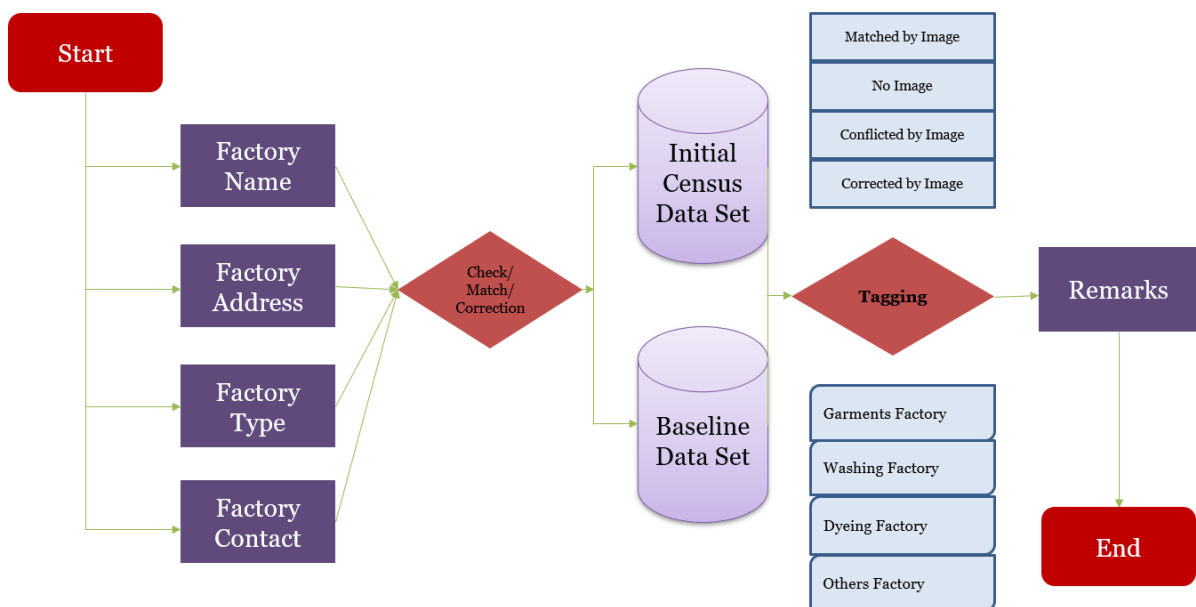
Data Point	Description	Process	Tag Used
Factory name	Name of the factory as collected during the census	Factory name was corrected by images of signboards, banners, letterhead pad, factory vehicle and visiting cards, and further verified by phone call	Baseline <ul style="list-style-type: none"> - Matched by Baseline Survey - Manual Entry Call <ul style="list-style-type: none"> - Verified by Call - Corrected by Call - Conflict by Call Image <ul style="list-style-type: none"> - Conflict by Image - No Image - Matched by Image - Corrected by Image
Factory Sub-name	Any defining characteristic of the factory such as group name, printing factory, label manufacturer, etc.	Verified by phone call	<ul style="list-style-type: none"> - Verified by Call
Factory Type (collected during phone call)	Type of factory/ type of products the factory makes	Phone call	<ul style="list-style-type: none"> - Garments Factory - Printing Factory - Washing Factory - Embroidery Factory - Circular Knit Factory - Woven Fabric Mill - Dying Mill - Textile Mill - Spinning Mill - Boutique Factory - Trims and Accessories Factory - Packaging Factory - Other
Address	Address of the factory	This data is verified by image and/or phone call	Baseline <ul style="list-style-type: none"> - Matched by Baseline - Manual Entry

² A baseline survey was conducted by ARCED Foundation where they compiled all available factory data from secondary sources.

Data Point	Description	Process	Tag Used
			Call - Verified by Call - Corrected by Call - Conflict by Call Image - Conflict by Image - No Image - Matched by Image - Corrected by Image
Phone number	The phone numbers collected by the Field Officers	Verified by phone	- Verified by Call
Remarks	Any type of new information such as exporting or not, factory closed/shifted or not, etc.	Verified by phone	- Verified by Call
Contact	If the factory phone number is verified as a factory contact person's phone number, then name, designation and phone number of this person is recorded in this field.	Verified by phone call	- Verified by Call

The software matched and verified the collected data with primary data such as images, business cards, as well as with secondary data. The team made phone calls to help eliminate spelling mistakes, multiple representations, duplications, and a number of other potential errors. Matching the primary data with the follow-up phone call helped inform whether or not the "factory" is in line with the definition we've set for this project. MiB set clearly defined criteria for this significant research intervention, which is further deconstructed in the Factory Definition section.

Data Cleaning and Tagging Flowchart



After data cleaning and tagging, a list of potential factories for data collection from factories that met the project’s definition was generated. This list contained only factories that were tagged as “Garments Factory” in the cleaning software. The generated list was used to locate factories for conducting the main survey.

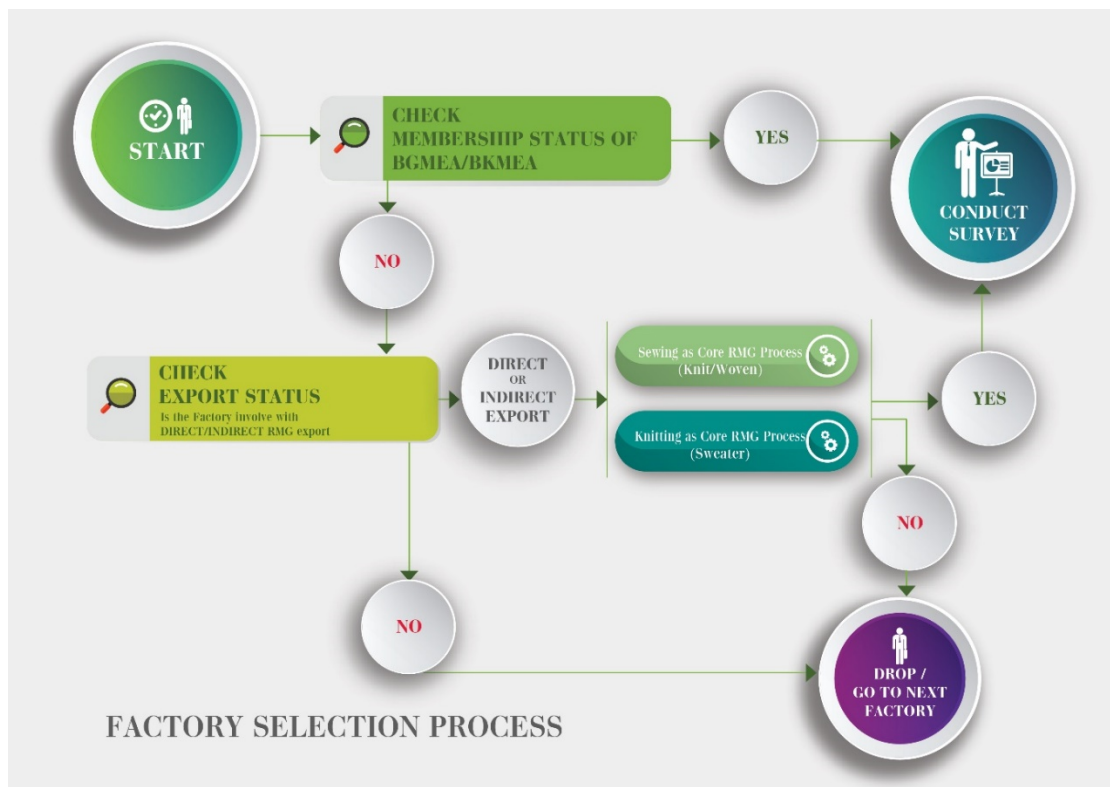
Factory Definition for Inclusion in MiB

Mapped in Bangladesh has defined specific criteria for the selection of factories that are accounted for in the research intervention. These criteria for finalizing the factory selection process (i.e. “Factory Definition”) within the scope of MiB have been designed, modified and approved by the members of the Project Advisory Committee (PAC) which is made up of the intra industry experts and stake holders³.

Which Ready-Made Garment (RMG) factories will be covered in the main survey conducted by the Mapped in Bangladesh (MiB) Project?

- ⇒ Factories that are members of major manufacturer and exporter associations (BGMEA and BKMEA)
- ⇒ RMG factories that are export-oriented (do direct and indirect export) having any of the core RMG processes of garment assembly, such as:
 - Sewing – in case of Knit or Woven factories
 - Knitting – in case of Sweater factories

Flowchart: MiB Factory Selection Process



³ Comprised of representatives from major exporter associations, govt. entity, brand/buyer, including researcher, academician, and sector specialists.

Factories not to be Covered by MiB

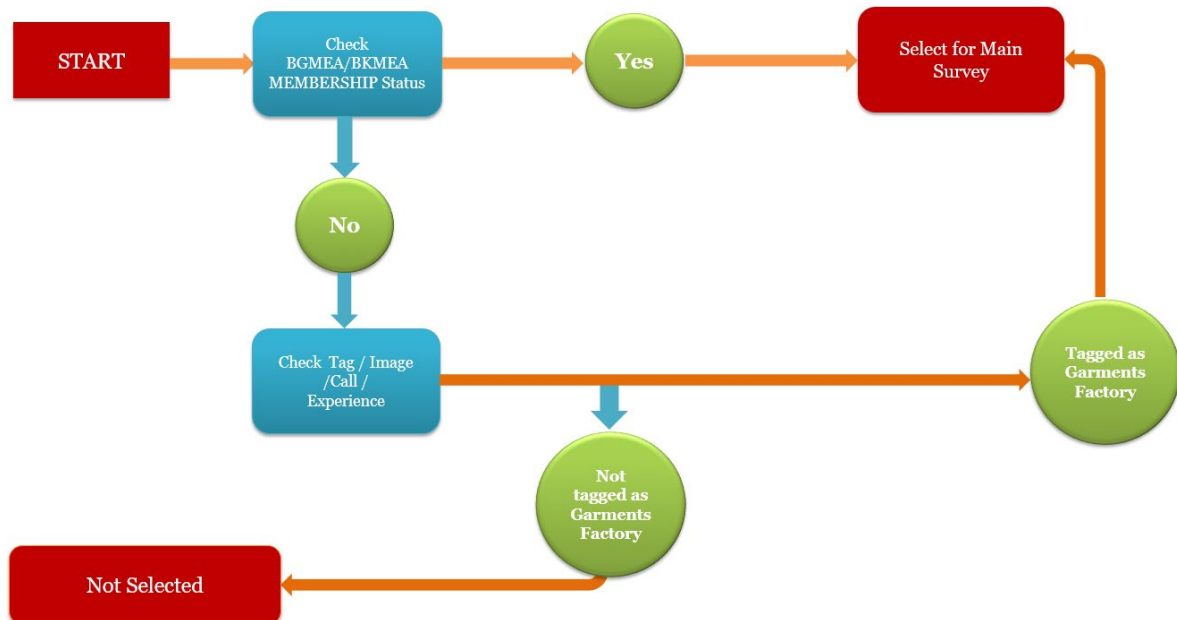
MiB did not cover the factories that are not aligned with the above selection criteria as follows:

- ⇒ Textile factories
- ⇒ Spinning mills
- ⇒ Printing factories
- ⇒ Packaging factories
- ⇒ Accessories factories
- ⇒ Label manufactures
- ⇒ Embroidery factories
- ⇒ Boutique shops and tailors
- ⇒ RMG Factories in Export Processing Zones (EPZs), BEPZA was unwilling to get involved with the project
- ⇒ Washing factories
- ⇒ Dyeing factories
- ⇒ Finishing factories
- ⇒ RMG producers for local/domestic market

Main Survey

The “Main Survey” of the project was conducted based on the “Factory Listing” and “Factory Definition.” Factories that did not meet the project’s factory definition were excluded from this research intervention.

Snapshot of the factory selection process (at office) is given below:



The Field Supervisor led a 24-member team of Field Officers, or enumerators, that conducted the Main Survey by asking Factory Managers to provide responses. Each team had five enumerators and one Supervisor.

The Main Survey has a phased approach based on the cluster of factories that were found across the country. The Main Survey therefore will be divided into the following cluster areas: Dhaka; Gazipur; Naranyanganj; Chittagong; and Mymensingh, Narsingdi, Comilla and Others.

The Field Coordinator used the Initial Census to assign which teams would capture each geographic area, starting with the Dhaka cluster.

Dhaka District was divided into Dhaka Metropolitan area and non-metropolitan areas, using Police Stations (Thanas) as nationally defined geographic demarcation lines, and each team was assigned a set of Police Stations.

Major Data Points	
1	Name, Address and GPS location of the factory
2	Factory Building Type (shared/standalone)
3	Year of Establishment
4	Processes Performed
5	Products Manufactured
6	Number of Workers (with male-female)
7	Certifications (ISO, OEKO-TEX, LEED, SEDEX, etc.)
8	Membership (BGMEA, BKMEA), Registration (EPB) and Affiliation (ACCORD, ALLIANCE)
9	Exporting Countries
10	Brands and Buyers
11	Name and Distance to the Nearest Fire Station and Medical Service Center
12	Workers Participatory Committee (WPC), Safety Committee

One Research Assistant supported the Field Coordinator with logistics and importantly helped to schedule and confirming appointments of the interviews with factory management.

Field Officers most commonly were not able to conduct the data collection during their first attempt, so several attempts to the factory were required. The number of times the field officer needed to visit the factories varied from four to fifteen times.

The data collection process was completed with the responder signing off on the consent form.

Data Verification and Validation Protocol

MiB’s in-house map development team developed a “Data Verification and Validation Protocol” (DVVP) to serve as a customized data verification software for data collected in the Main Survey. In an effort to mitigate discrepancies of the data among industry stakeholders and assure data quality, information collected during the Main Survey underwent a thorough verification and validation process.

MiB has outlined the following rationales for the DVVP:

- Increase the confidence level of the data;
- Correct any spelling mistakes that occurred during data collection;
- Check and remove duplicate data;
- Make the data credible and usable for map users as much as possible; and
- Build rapport with the factories.

The DVVP has been executed in three ways:

1. Field Officers took images of factory signboard, factory building, the label album (which was created to visually aid the responder to select brands’ logo/names),

consent form, filled hard copy questionnaire. Images were uploaded to the internal server of the DVV team and later used by them.

2. The internal server also has a backend database where information from Initial Census and available secondary sources (BGMEA, BKMEA, Accord, Alliance, DIFE and Brands) have been inserted. The DVV application matched the collected data with these secondary data sources.
3. The data verification progresses through verifying the data with the images Field Officers have sent and secondary sources from backend.

The DVVP has been adjusted based on adding factory tags according to different tagging options. The process is outlined in the following table along with sources of verification and validation for each of the data points.

Data Verification and Validation Mechanism for the Main Survey

Data Verification and Validation Protocol (DVVP)		Tag Categories																			
		Matched by Initial Census	Verified by Call	Corrected by Call	Conflict by Call	No Image	Matched by Image	Corrected by Image	Conflict by Image	Working	Not Working	Corrected by Browsing	Conflict	Corrected by Website	Corrected by BGMEA/BKMEA	Verified by Browsing	Not found by browsing	By List	Not in List	By Browsing	Not Found by Browsing
Data Points	Factory Name	√	√	√	√	√	√	√	√												
	Address	√	√	√	√	√	√	√	√					√							
	Contact		√	√	√	√	√	√	√						√						
	Website									√	√	√	√							√	
	Business Group					√	√	√	√												
	Business Group Website									√	√	√	√								
	Business Group Social Link									√	√	√	√								
	Certifications					√	√	√	√							√	√				
	BKMEA Membership																			√	
	BGMEA Membership																			√	
	Accord																			√	
	Alliance																			√	
Brand/Buyer																			√	√	√

Factory Screening for the Map

As MiB research intervention concentrates only on the export-oriented RMG factories, it was deemed necessary to screen all factories before they were approved and uploaded to the digital map.

With this objective, a screening team comprising senior project officials were formed. The team worked with the data set after it was cleaned and passed through the data verification and validation protocol.

During the screening, the factory data was checked by team members. At the same time, a second layer of validation was performed which included phone calls to the factory, visiting factory website and viewing images of the factories.

During the second layer of validation process, the team members grouped the factories in different classes. Broadly, there were two categories: Member of BGMEA and/or BKMEA and non-associated factories.

Factories that are members of BGMEA and/or BKMEA, factories performing subcontracting for export-oriented ready-made garments factories were eligible for the map; while factories producing for the domestic market, factories performing washing, factories performing finishing, and factories performing fabric production were marked as not eligible for the map.

Details of the categories are provided in the table below:

Factory Screening

Type	Factory Class	Class Meaning	Action
BGMEA/BKMEA Membership	BGMEA	Factories that are members of BGMEA	Eligible for the map
	BKMEA	Factories that are members of BKMEA	Eligible for the map
	BXMEA	Factories that are members of both BGMEA and BKMEA	Eligible for the map
Non – BGMEA/BKMEA Member	Subcontract	Factories that perform subcontracting for other RMG factories	Eligible for the map
	Group Subcontract	Factories that are part of a group and performs subcontracting for factories within the group	Eligible for the map
	Subcontract Group	Factories that are not part of any group but perform subcontracting for a particular group	Eligible for the map
	Domestic	Factories that produces mainly for the domestic market and might occasionally export.	Not eligible for the map
Others	Non-RMG	Factories that do not have core RMG processes (sewing/knitting) such as embroidery factories, printing factories, etc.	Not eligible for the map
	Finishing	Factories performing only finishing process	Not eligible for the map
	Washing	Factories that perform garments washing	Not eligible for the map
	Fabric Processing	Factories producing fabric for garments factories	Not eligible for the map
	Aggregator	Factories that work with rejected stock lot	Not eligible for the map