# **Internship Report**

# Title of the report:

Report on Consultant Position at Bangladesh Partnership for Cleaner Textiles (PaCT) Program, International Finance Corporation

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I thank all my professors during my time at BRAC University, for providing me with a memorable learning experience, and my friends and colleagues, whose presence helped me though the MDMP program. I would also like to thank my supervisor at IFC, Ms. Nishat Chowdhury, and the Program Manager Mr. Mohan Seneviratne, for challenging me to push my capabilities, and Mohammad Sirajul Islam, my internship report supervisor, under whose kind guidance this report materialized.

#### Introduction

Upon completion of the coursework requirements for the Masters in Development Management and Practice, I was required to obtain a position as an intern at a suitable development organization, with the objective of putting my learnings to practice. Being employed since May 2015, as a consultant at the Bangladesh Partnership for Cleaner Textiles program at The International Finance Corporation, I found it suitable to continue my work there to fulfill the requirements of the internship. The time period for the internship was equal to an additional semester, and this report covers my assignments at my position over the months of September, October, and November, 2016.

The report is structured in accordance to the guidelines provided by BRAC University. The first part provides background information on the organization and its activities. The second part of the report describes the assignments I had completed in the mentioned time frame, and my learnings from those tasks. The third and final part of the report is a self-evaluation on my internship and discusses the obstacles, conveniences, and opportunities to learn about myself, that I came across during my internship. Additionally, some appendices, that show examples of my work, are provided at the end of the report.

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# Summary of the facts:

### International Finance Corporation and its activities in Bangladesh:

The International Finance Corporation (IFC), a member of the World Bank Group, is focused exclusively on the private sector in developing countries, with the aim of helping them achieve sustainable growth by financing investment, mobilizing capital in international financial markets, and providing advisory services to businesses and governments. In FY15, IFC's investments reached \$18 billion, leveraging the power of the private sector to create jobs, spark innovation, and tackle the world's most pressing development challenges. Having its headquarters in Washington D.C., IFC is owned and governed by its member countries. Since 2009, IFC has set its targets to improve sustainable agriculture, increasing access to finance, including microfinance, health and education, advance infrastructure, and to invest in climate health.

In Bangladesh, IFC provides a combination of investments and advisory services, drawing from its broad global experience. In FY14, IFC invested over \$428 million in 13 projects that broadly focused on expanding the affordability of finance; improving the business enabling environment; promoting clean growth and resource efficiency; and improving worker safety. The Bangladesh office currently has 75 staff members, out of which 33 are permanent staff, 20 office support staff, and 22 short term consultants.

# Partnership for Cleaner Textile (PaCT) Program:

Among the 13 projects being implemented by IFC in Bangladesh, is The Partnership for Cleaner Textile (PaCT) Program. PaCT is a joint initiative, working towards the adoption of best practices in the textile wet processing sector (washing, dyeing and finishing (WDF) units). The program aims to become a leader in driving long-term competitiveness, and environmental sustainability of the sector by addressing critical issues, particularly focusing on the reduction of water, energy, and chemical consumption and wastewater pollution.

PaCT is a USD 11 million program, working in partnership with 12 international clothing retailers, technology suppliers such as DuPont and General Electric, and BGMEA (Bangladesh Garment Manufacturers & Exporters Association) the apex body of the ready-made garment industry. As part of its core activities, PaCT provides Cleaner Production advisory services textile wet processing factories. Baselines assessments are done on resource consumption

patterns and efficiency, and improvement measures are recommended, and the factories are monitored and supported for a period of six months to implement these improvement measures. The program's targets and achievements till date are shown in the table below:

Indicators	Status on 30 November 2016	Target (to be achieved by 30 June 2017)
Water Savings(m³/year)	14.4 million	15 million
Energy Savings (MWh/year)	1,232,361	1,250,000
GHG emission reduction (tons CO₂ eq./year)	188,238	225,000
Wastewater Reduction (m³/year)	10.7 million	12 million
Investments Facilitated (USD)	29 million	32 million
Expected Annual Savings (USD/year)	9.9 million	9 million
Factory assessments completed	163	200

**Table 1:** Program targets and achievements

PaCT is also thoroughly involved in generating an in-depth knowledge base on textile wet processing in Bangladesh by conducting various studies, such as water foot-printing assessments on the major industrial clusters, benchmarking studies on patterns of resource consumption and technology transfer, and feasibility studies for solar power, central power plants, central effluent treatment plants, and etcetera. These studies helps the program itself to be steered in an increasingly informed manner, and also helps stakeholders gain a better understanding of the industrial sector and its market potential.

PaCT has also developed and operationalized a knowledge hub for the RMG industry called the Textile Technology Business Center (TTBC). TTBC acts as a hub for business to business linkages, and effectively leverages the PaCT program's knowledge base in connecting factories with suppliers of resource efficient technologies and equipment, and non-hazardous processing chemicals. TTBC holds regular workshops for factory management, which serve as awareness raising campaigns on cleaner production and process optimization for factories. Currently housed in BGMEA's premises, and supported financially by PaCT, TTBC is currently in the process of

looking into a viable business model which will allow it to become an autonomous and self-sufficient entity.

In short, The PaCT program has four main areas of activity referred to as the PaCT Pillars:

- De-risking the supply chain by helping international clothing retailers adopt environmentally sustainable buying practices
- Supporting factories for the adoption of best practices
- Addressing sector transformation and regulatory policy gaps
- Facilitating investments in resource efficient technologies.

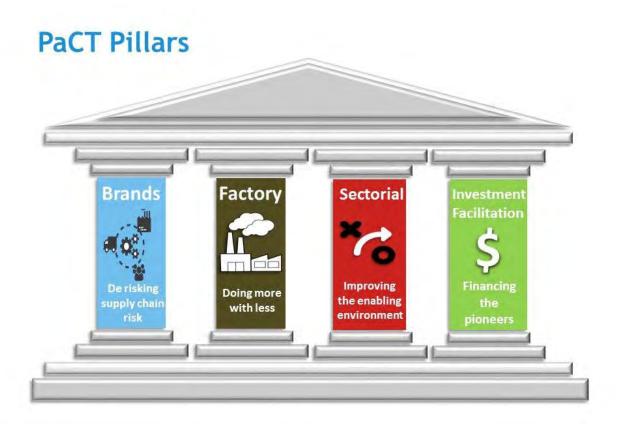


Fig 1: The PaCT pillars showing the program's four main areas of focus

## Narrative of Experience

## Task 1: Development of web-based resource efficiency calculator:

The first assignment that I was given was to develop an interactive projection tool, a 'Resource Efficiency Calculator', that would allow interested factory owners and members of management to enter basic production data for their factory, and be able to select improvement measures that had been recommended to the factories, and generate graphs showing reductions in resource consumption, investments required, and annual payback.

This task required me to go through the structure of how the assessments are conducted, what kind of data is collected from the factories, how the reports are generated, the type of recommended measures that were provided to each factory, and how the program monitored the uptake of these measures in the factories. My supervisor, Ms. Nishat Chowdhury, gave me a brief tutorial on the process through which the factory assessments are conducted. Once I had learned the sequence of data collection, and what kind of data would be available for me to work with, another colleague Mr. Rakibul Haque helped to gather and organize the list of recommendations, 'action plan', for each of the 163 factories, and also to identify the common recommended measures. The action plans were categorized into the 'utility section' which were related to power generation, heating, water extraction and distribution, and wastewater treatment; and the 'process section' which were related to yarn and fabric dyeing, weaving, spinning and knitting, garment washing, and drying. For the utility section, a total of thirteen common recommendations were identified, and nine were identified for the process section. The factories were then segregated into four broad categories according to the type of product they produced: garment washing, vertically integrated knit composite, dyeing and finishing, and denim processing. Segregating the factory types was important because each of these factory types have different setups for machinery and have varying resource consumption patterns. After segregating the factory types, and identifying the common twenty-two improvement measures that were applicable to all the factory types, the baseline resource consumption intensities (unit resource consumed per unit of product) were combined and average values for water, electrical energy, natural gas, and waste streams of wastewater and greenhouse gas emissions were calculated for each factory type. Then for each of the twenty-two recommendations, the projected resource savings for those same parameters were averaged for every factory type. Once

these average values were found and tabulated for baseline values, and for all the twenty-two recommendations, they were divided by the total production (in tons) for each factory type to obtain a set of coefficients that were put into an Excel spreadsheet, and some light programming was done using Visual Basic. This allowed a user of this calculator to select a factory type, put in annual production in tons and their net margin, and the spreadsheet would generate graphs and tables showing baseline annual resource consumption figures. The user could then select each of the recommendations and see the potential impact of implementing these improvement options.

Through the process of developing this calculator, I was able to learn how a technical advisory program manages their databases. The rationale behind the calculator was for it serve as a marketing tool. Even though it was programmed based on actual data from 163 factories, the calculator was only meant to give interested factories an idea of possible business improvement, and thus attracting them to join the PaCT program. Such marketing tools can be quite effective in raising awareness, and increasing participation in the program.

#### Output of Task 1:

A trial version of this calculator was hosted on the program's website. During October, further improvements were added such as a brief description of every improvement measures so the end user could learn about the technology behind it. The net margin value was used to generate a number for the additional revenue that the factory would have to generate in order to make the same amount of profit that they could obtain by optimizing their resource consumption patterns. This calculator was developed as a marketing tool that would allow interested factories, and others, to get an idea of how they could improve their performance and enhance their long term business sustainability by adopting cleaner production, encouraging them to participate in the program. The final version of the calculator was uploaded on PaCT's website in mid-October, and can be accessed by all at: <a href="http://www.textilepact.net/calculate-your-savings.html">http://www.textilepact.net/calculate-your-savings.html</a>. Additionally, two screenshots of the calculator on the website have been provided in Appendix 1.

### Task 2: Monitoring of factory assessments

While working on the calculator in September and October, I was assigned a core task of monitoring the delivery of Cleaner Production assessments at factories. The program hires third part engineering consultancy firms for this, and factories are assigned in batches of around 15 – 20. Each batch is assigned to one international consultancy firm, and one local consultancy firm with the larger goal of building the local capacity for technical consultancy services. Here my role was that of a coordinator, assisting in communication between the consultants and the factories, and communicating the results of the assessments to the respective brands (international clothing retailer). From baseline assessment to the end of the six-month long monitoring period, the entire process of these factory assessments take up to 8 months for each batch, and at any given time, there are at least two groups of consultants working on two batches of factories. Once the baseline assessment is completed and the report is finalized upon agreement with the factories, the monitoring period starts and during this period, resource consumption data for each month is collected, and the progress of the implemented improvement measures is tracked, and the impact on the resource consumption is monitored. I was responsible for verifying the data that was coming in to the program, and taking appropriate action, such as providing feedback on calculations performed. In analyzing and archiving the data, I was able to check and monitor the performance of the consultants who were working directly in the field.

During this assignment, I was able to learn about the process of how a program like PaCT can conduct technical assessments in large batches for multiple clothing retailers (clients), while also meeting the requirements for a program indicator of developing local capacity. Since the factories are nominated by specific clothing retailers, they take the assessments quite seriously as they are keen on retaining their existing customers. Additionally, BGMEA being an implementation partner also increases the effectiveness of coordination with the factories. Concerted coordination between all stakeholders bring about quick delivery of advisory services.

#### Output of Task 2:

Managing and archiving all this data was included in my core task, and during September, I was able to finalize the monitoring reports for a batch of seventeen factories, and compile all the data from that batch and add it to the master file that was used to calculate the program's overall achievement in the form of:

- Ground water use avoided
- Energy use avoided
- Greenhouse gas emissions avoided
- Wastewater discharge avoided
- Investments facilitated
- Annual savings

The current status of the program's achievements can be found on the homepage of the website: <a href="https://www.textilepact.net">www.textilepact.net</a>. A screenshot of the database is included in Appendix 2.

## Task 3: Coordination of feasibility study for a CETP in the Konabari cluster:

A colleague, Ms. Naureen Chowdhury, had recently resigned and one of the assignments that she was looking after was handed over to me. This assignment was a feasibility study for a central wastewater treatment plant (CETP) for the Konabari industrial cluster, located in Gazipur. PaCT had conducted a market segmentation study earlier, in an attempt to identify the total number of existing and operating textile wet processing facilities in Bangladesh, their production capacities, and the major industrial clusters in the country. Konabari was identified as a very important subcluster due to its density of textile wet processing output, high rates of ground water depletion, and intense environmental pollution and degradation. Therefore, the PaCT program had commissioned a feasibility study for a central wastewater treatment plant, in order to assess the techno-economic feasibility of building such a treatment plant. This study was particularly challenging because the 32 textile wet-processing factories present in the cluster had already invested a lot of money in their individual in-house wastewater treatment plants, so, asking them to come on-board and join the initiative for a central treatment plant which would lower their treatment costs per unit wastewater would need to make a robust business case to get their buyin. The draft feasibility report had been submitted by mid-September which identified the business case, appropriate technology, and also proposed feasible construction sites for the plant. Since the cluster was so densely packed with industrial activity, the land sites identified were already owned by two big factories and discussions were started to bring those to factories onboard as equity partners.

An important learning from this assignment was that collective coordinated action is required to bring about significant change in industrial practices through the facilitation of private sector investment. Maintaining public relations is a key component to ensuring success and providing tangible results for an initiative such as the PaCT program.

#### **Output of Task 3**

My role in this assignment was to coordinate correspondence between factories, the consultants conducting the study, BGMEA, and the Department of Environment (DoE). I was also required to organize a Focus Group Discussion with the factories in the cluster, relevant organizations namely BGMEA and DoE, civil society members, and the technology providers, to disseminate the results of the study and to identify the possibility of the factories coming together and getting on board for the initiative. It was found in the study that the 5 biggest factories in the cluster generated over 60% of the total volume of wastewater, and if these 5 factories voted in favor of the CETP, it would be feasible and a staged approach could be taken which would allow future expansion, as the rest of the factories in the cluster would follow the example set by these 5 factories.

#### Self-Evaluation

I was hired for this position due to my background in chemical engineering, and was required to analyze engineering data from textile wet-processing factories. I had been given assignments, such as the development of the interactive calculator, with just a vague idea of the end product. I received little to no instructions on how to go about completing my assignment, I was given freedom as to how I could do it. In one way, this was highly challenging, but on the other hand I was given freedom to accomplish the task however I wanted. This allowed me to dive into the work without any preconceived notions or leads for how I would approach the assignment, and that made me delve deeper into the material that I had for the assignments. Being given no particular instructions for developing the calculator forced me to gain a thorough understanding of the type of data that was available and the methods of collection. I tried out a few different methods of analyzing the data to feed into the calculator, before I decided to make all the data functions based on the production volume. This assignment pushed me to come up with an innovative solution, and to also realize potential in myself that would otherwise not be identified had I been given just simple assignments with clear cut instructions.

Being handed over the assignment on the CETP feasibility study, I had to spend some time studying the background of the study, what had already been done, and what is still required. Again, I was required to step up to the challenge of being responsible for the coordination of an extensive study that had been going on for close to a year, familiarize myself with the technical content, and also understand the business models that were proposed. Bringing together all the factories in the cluster, along with other relevant stakeholders for an FGD was quite challenging. Additionally, the DoE was approached before the FGD, however they were unwilling to get involved in the study because it had been commissioned without their prior consent. Given that if the study produces a viable business case in favor of the CETP in the future, the DoE's approval of the project plan could make or break the initiative, the program should have made efforts earlier to gain the favor of the government body.

A major challenge that I faced during my time at PaCT is that internal management and coordination can be poor at times of heavy workloads. Since the program is conducting multiple streams of work including the technical assessments, studies, stakeholder consultations, etc. using limited staff, short term consultants such as myself have to put in more time than stated in

the contract. Balancing several roles and reporting to several people was challenged me and required me to stay alert at all times in the office. While this might have been stressful, the experience made me deliver more than I would otherwise.

Prior to joining the PaCT program I had spent over 3 years working for a project under the German Development Cooperation (GIZ), which was also focused on the ready-made garment industry. While the scale, scope, and style of delivery were quite different between GIZ and IFC, having had exposure to the garment/textile industry was of good help. At GIZ, the work was more focused on small scale pilot projects and studies and my technical skills were sufficient. However, at IFC I was required to gain a basic understanding of market opportunities, business practices, and the financing of technology transfer as a whole. In essence, my scope was significantly broadened.

The most noteworthy aspect of my time at IFC was that it was a thorough learning experience that allowed me to gain a new perspective on how to position technical knowledge and innovation in the market. I was able to learn how a program such as PaCT requires the collective effort and addressing concerns of all the major stakeholders associated with the relevant industry, and that technical audits are not enough to drive factories to improve their environmental and business sustainability. Their customers need to be brought on board to incentivize them, the associations need to be able to address collective concerns, and the regulatory bodies and financial institutions need to be sensitized on how an enabling environment can be provided for the overall improvement of the industrial sector.

#### Conclusion

With regard to public relations, the program brings together all the key stakeholders and providing a common platform for them to work together for the long term sustainability for Bangladesh's textile industry. For example, the main aim of the factories is to stay in the business by meeting the demands and requirements of their customers. The PaCT program works with 12 'partner brands' (clothing retailers) to bring factories on board to conduct cleaner production assessments. PaCT also works with BGMEA which allows the association to voice collective concerns and address issues in the industry. The program also works with a consortium of technology and equipment providers to facilitate technology transfer that is required to ramp up the performance of the factories. The program also works with several banks in order to increase their capacity to identify and evaluate resource efficiency opportunity and finance projects at factories that will lead to lower resource consumption and waste generation. One of the main focuses, from a coordination standpoint, of the program is to facilitate better public relations between the major stakeholders in the textile industry, to allow for collective drive to improve the long-term business sustainability of the industrial sector.

With a background in chemical engineering, I was familiar with technical content of the program and was able to learn more in that area. However, the real learning experience was to see how such a large development program, engaging so many different stakeholders, could be managed, and how strong business cases drive technology uptake in the industry.

# Appendix 1

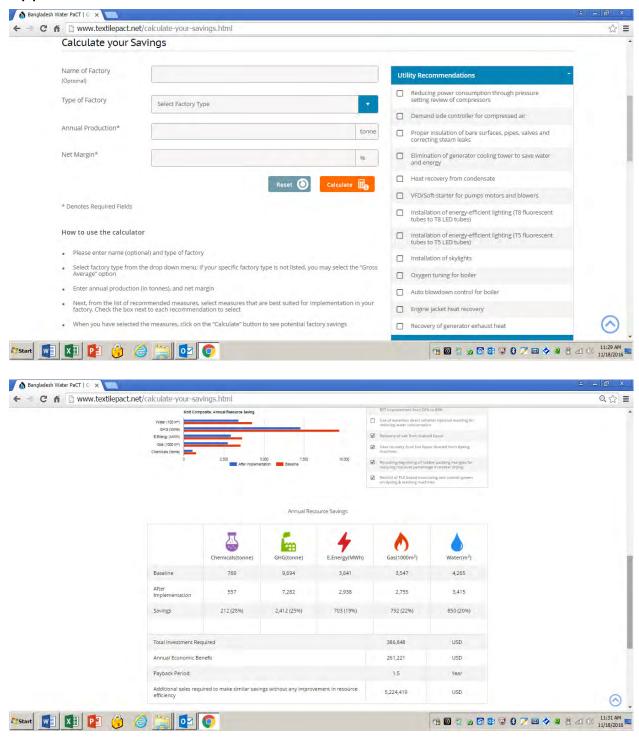


Fig 2: Two screenshots of the web-based calculator that was developed

# Appendix 2

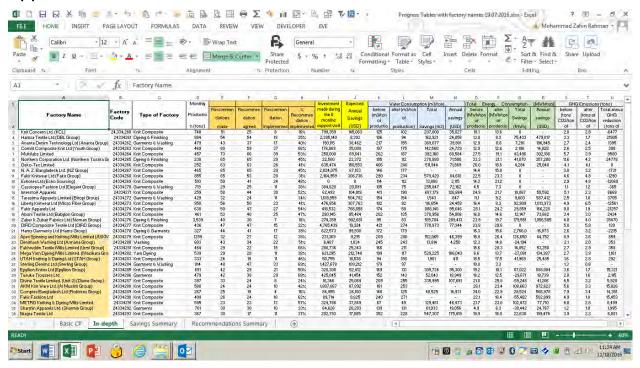


Fig 3: A screenshot of the database of factory assessment information