

Evaluation of STWI Projects 2014-2018

Final Report

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Abbreviations and acronyms

CEO	Chief Executive Officer
CSR	Corporate Social Responsibility
EMS	Environmental Management System
EU	European Union
IDH	the Sustainable Trade Initiative
IFC	International Finance Corporation
ILO	International Labour Organization
MSEK	Million Swedish <i>kronor</i>
MSP	Multi-stakeholder Platform
OECD	Organization of Economic Cooperation and Development
PPDP	Public Private Development Partnership
ROI	Return on Investment
SAC	Sustainable Apparel Coalition
Sida	Swedish International Development Cooperation Agency
SIWI	Swedish International Water Institute
STWI	Swedish Textile Water Initiative
SWAR	Sustainable Water Resource Management for Textile Industries in Delhi and Jaipur Areas
TSEK	Thousand Swedish <i>kronor</i>
ToR	Terms of Reference
ZDHC	Zero Discharge of Hazardous Chemicals Programme

Executive Summary

This document constitutes the final report of the Evaluation of Sweden Textile Water Initiative Projects ('STWI Projects' from here onwards) 2014-2018 commissioned by the Swedish International Water Institute (SIWI). Sweden Textile Water Initiative (STWI) is a private sector network with a membership of some 30 predominately Swedish textile and leather companies ('Brands'). STWI Projects was implemented 2014-2018 with the aim of improving water efficiency in production processes for suppliers and sub-suppliers to STWI member Brands in production hubs in Bangladesh, China, India, Ethiopia and Turkey. The programme was structured in four components: 1) capacity building and investment support in textile factories; 2) improving industrial water governance in production countries; 3) harmonisation of the STWI guidelines on resource use for the textile sector and influence of international processes; and 4) communication and outreach. SIWI implemented the programme and Sida provided almost all financial funding amounting to 49.3 MSEK to what Sida defined as a Public Private Development Project (PPDP). The main data collection methods used in the evaluation were a document review, key information interviews, surveys to factories and Brands, and factory visits to Bangladesh and India.

STWI Projects can be considered a highly relevant response to the challenges facing the textile sector, which faces significant and mounting challenges in reducing its environmental and social impact and becoming more sustainable. The programme's four components complemented each other to contribute to this work. However, it was very ambitious and even unrealistic to target the governance level, in addition to servicing a large number of factories, in five complex production countries. This inherent challenge became evident during programme implementation as the programme ended up focusing on resource savings at factory levels, after recognizing that the governance impact proved far more difficult than anticipated. The programme was fundamentally an innovative factory level project, combining support to resource reduction investment, with capacity building in the form of training of management and staff, in addition to exchanges between factories.

The main results within the project were the resource savings at factory level within Component 1, which are generally considered to be very impressive by most programme stakeholders and have been published widely. With limited resources it has been challenging for the evaluation to assess and validate these results, particularly since the savings data has not been available in any accessible form or reported and analysed consistently within the programme. Instead the evaluation demonstrated that considerable variations between countries, resource types and factory types hide behind the aggregate data. Most of the planned outputs were produced within Component 2, Component 3 and Component 4, but the evaluation found little evidence that these quite limited efforts have contributed in any significant way to systemic change within the textile sector at national or international levels. Despite being included in the original project document cross-cutting issues were actively considered in the STWI Projects to any considerable degree, beyond environmental sustainability, which is the main focus of the project.

The PPDP set-up was fundamental in allowing the project to get up to speed rapidly and generating significant resource savings at factory level in a short period of time; Brands contributed by engaging factories, SIWI by providing a platform for implementing the support and Sida with its financial resources. Overheads and capacity building activities made the project more expensive than pure market-based consultancy, but this can partly be motivated by the way the project included capacity building and exchange of experience at factory level. The possibilities for the evaluation to assess whether the results justify the cost were limited. Efficiency was impacted by weaknesses in the project management and supporting systems within SIWI. A particular issue is that there were significant limitations in how the investment and savings

data was collected, stored and analysed during the programme, which makes ex-post evaluation and learning difficult.

It is overall difficult to assess the programme's systemic impact since the results were mainly at factory level. It is likely that the project benefitted factories' long-term profitability, workers and surrounding communities, but systematic evidence is lacking. Since the programme achieved significant resource savings it seems reasonable that this also benefitted the natural environment. Our limited consultations with local communities confirm that the impact on them is indirect at best, given that many factories are located in industrial zones and communities may not be directly concerned by the resource use of individual factories.

The factory investments, but also to some extent the increased awareness and capacity at factory level, are likely to be sustainable. However, the way STWI Projects were focused and managed may have reduced the chances of building on the results achieved, promoting sustainability and achieve greater long-term impact. This is due to lack of results at systemic level, limited analysis of results and dissemination of lessons-learned, staff changes within SIWI and disagreements on follow-up modalities within the STWI network. If these issues are not remedied, important lessons generated by the project risk being lost. A central contentious issue concerns the size of the financial contribution of Brands to a follow-up project. There is a common understanding that a financially viable model needs to be found, which does not rely on Sida funding. The challenge is that the level of funding needed per factory to continue operations proposed by SIWI has proved unacceptable to Brands, because they are unwilling or unable to pay for this kind of sustainability work in their supply-chain. These issues have not been resolved at the time of writing. SIWI has now been granted a no-cost extension by Sida to use the remaining funds to conduct a feasibility study of a digital platform aimed at finding a more cost-effective way forward for STWI.

The evaluation issues the following recommendations regarding follow-up work to STWI Projects:

SIWI

Recommendation 1: SIWI should immediately secure the raw investment, savings and contact data for all supported factories for all three years and put it in an accessible form such as Excel.

Recommendation 2: SIWI should also produce or commission a high-quality synthesis and analysis of the results and experiences from STWI Projects. This should be followed up by a reflection on how the experiences gained from STWI Projects can be used to inform the development of practical implementation guidelines for Brands and factories.

Recommendation 3: SIWI needs to continue to address the weaknesses in its project management and support systems and implement more comprehensive results-based management, since unresolved these issues may have consequences for future programmes.

Recommendation 4: In the follow-up of STWI Projects, SIWI should focus on its core business in water governance, experience sharing and relationships with national and international processes, while remaining relevant to the textile industry. SIWI should not engage in direct service delivery (such as coordinating consultancy support to factories as was done in STWI Projects), as such work is far removed from the core remit and capacities of the organisation. The recommendations of the SWAR evaluation remain relevant.

Brands

Recommendation 5: In view of the sustainability challenges within the sector, Brands should continue their collaboration to find ways to work pro-actively and adapt their core operations towards social and environmental sustainability within the textile sector in production countries, Sweden and globally.

Sida

Recommendation 6: Sida should ensure that PPDPs consider poverty impact and systemic change, and incite Swedish and international private sector partners to integrate sustainable development within their core operations.

1 Introduction

1.1 Background and purpose of the evaluation

This document constitutes the final report of the Evaluation of the Sweden Textile Water Initiative Projects ('STWI Projects' hereafter) 2014-2018 commissioned by the Swedish International Water Institute (SIWI). The evaluation is based on SIWI's Terms of Reference (ToRs) for the evaluation (dated 28 March 2018, see Appendix 1). According to the ToRs the purpose or intended use of the evaluation is to:

- Help SIWI and its partners to assess progress and results of on-going STWI to learn from what works well and less well. The evaluation will be used to inform decisions on how project implementation may be adjusted and improved;
- Provide SIWI and its partners with an input to upcoming discussions concerning the preparation of a new phase of STWI;
- Serve as an input for SIWI to the decision on whether STWI programme in any shape or form could receive continued or renewed funding or not.

1.2 STWI Projects

Sweden Textile Water Initiative (STWI) is a private sector network with a membership of some 30 predominately Swedish textile and leather companies ('Brands'). STWI started in 2010 as a cluster group under Swedish Water House within SIWI. STWI Projects were implemented 2014-2017 (with extension to 2018) with the aim of improving water efficiency in production processes for suppliers and sub-suppliers to STWI Brands in production hubs in Bangladesh, China, India, Ethiopia and Turkey. The programme also aimed to influence a wider base of decision-makers, industry associations and other stakeholders in Sweden, the production countries and internationally. The programme was implemented by SIWI with participation of 24 of the STWI network's Swedish member Brands. STWI Projects is a scaling up of an earlier pilot project - the 'Sustainable Water Resources Management for Textile Industries in Delhi and Jaipur Project (SWAR) - that was implemented as a pilot project in India 2012-2014. The SWAR aimed to implement and review the textile industry's first joint guidelines - developed by STWI - for improved water efficiency, chemical pollution prevention, and resource recovery at factory level.

The outcome objective for STWI Projects is: "*To improve water efficiency in production processes for textile and leather manufacturers in major production hubs: Bangladesh, China, Ethiopia, India and Turkey.*" The programme is structured in four components:

- *Component 1: Capacity Building and Direct Impact Project Implementation* is the main component and focuses on promoting investment in and building capacity on sustainable resource use of factories that have direct business relations with Swedish Brands. A total of 276 factories were supported by the programme in Bangladesh (59 factories), China (90), Ethiopia (2), India (79) and Turkey (46).
- *Component 2: Improving Industrial Water Governance* focuses on informing and influencing the national level.
- *Component 3: Harmonisation of STWI Guidelines and Global Multi-Stakeholder Programmes* promotes the sharing of knowledge among the global textile industry and related international processes focused on sustainability.
- *Component 4: Communications and outreach* communicates the results from the programme primarily in Sweden.

Sida's decision to fund STWI Projects was taken on the grounds that the programme contributes to the Swedish 'Results strategy for global action on economically sustainable development 2014–2017', and in particular to the area of sustainable business practices. Sida categorises the programme as a Public Private Development Partnership (PPDP) between Sida, SIWI and STWI member Brands. The PPDP is a specific method that Sida has developed to mobilise the private sector to contribute to the sustainable development in low income countries. The total budget of STWI Projects was originally 171.5 MSEK, with Sida contributing 49.3 MSEK (29%), factories (32%), STWI Brands (38%) and SIWI (0.4%). The contributions of factories and STWI Brands to the project were mainly in-kind, beyond a 25 TSEK participation fee paid by each factory and the STWI network membership fee paid by Brands.

The SWAR programme was evaluated in September 2015 and was generally considered highly successful. The final evaluation report concluded:

As a pilot project, under Sida's strategic Public Private Development Partnership framework, SWAR has managed to develop a systematic approach to optimize water, energy and chemical usage and reduce pollution in the textile industry. Via awareness raising, capacity development and demonstration of the financial gains achievable through resource optimization and pollution control measures the project has managed to set in motion a process of change in the participating factories.

Building on the learning from SWAR, the new 'STWI projects' are well positioned to collectively drive the needed changes towards more sustainable practices in the industry. A single company cannot do it alone but, together, the 'STWI partners' have the chance to be 'game changers' that can contribute significantly to the transformation of the industry.¹

The SWAR evaluation report also made the following recommendations:

1. Systematize continuous awareness raising and capacity building of staff at production unit level
2. Set up a knowledge management and learning system for internal learning in STWI.
3. Extending the multiplier effect beyond the SWAR circle – by creating an online platform for dialogue on issues pertinent to a sustainable textile industry
4. Develop and showcase business cases to demonstrate how resource optimization can improve the bottom line and add to the branding value of the various actors in the textile industry
5. Connect with key organizations that are shaping the textile industry in the STWI countries.
6. Consider working with the rest of the industry to come up with a standard for environmental compliance – which could render a universal 'green textile stamp'.
7. Include in the STWI approach a commitment to global initiatives that address human rights and social issues in the industry.

¹ PEMconsult, Independent Evaluation of "Sustainable water management for textile industries in Delhi and Jaipur areas (SWAR)", Final Evaluation Report, 22 September 2015, p.

2 Evaluation approach and methodology

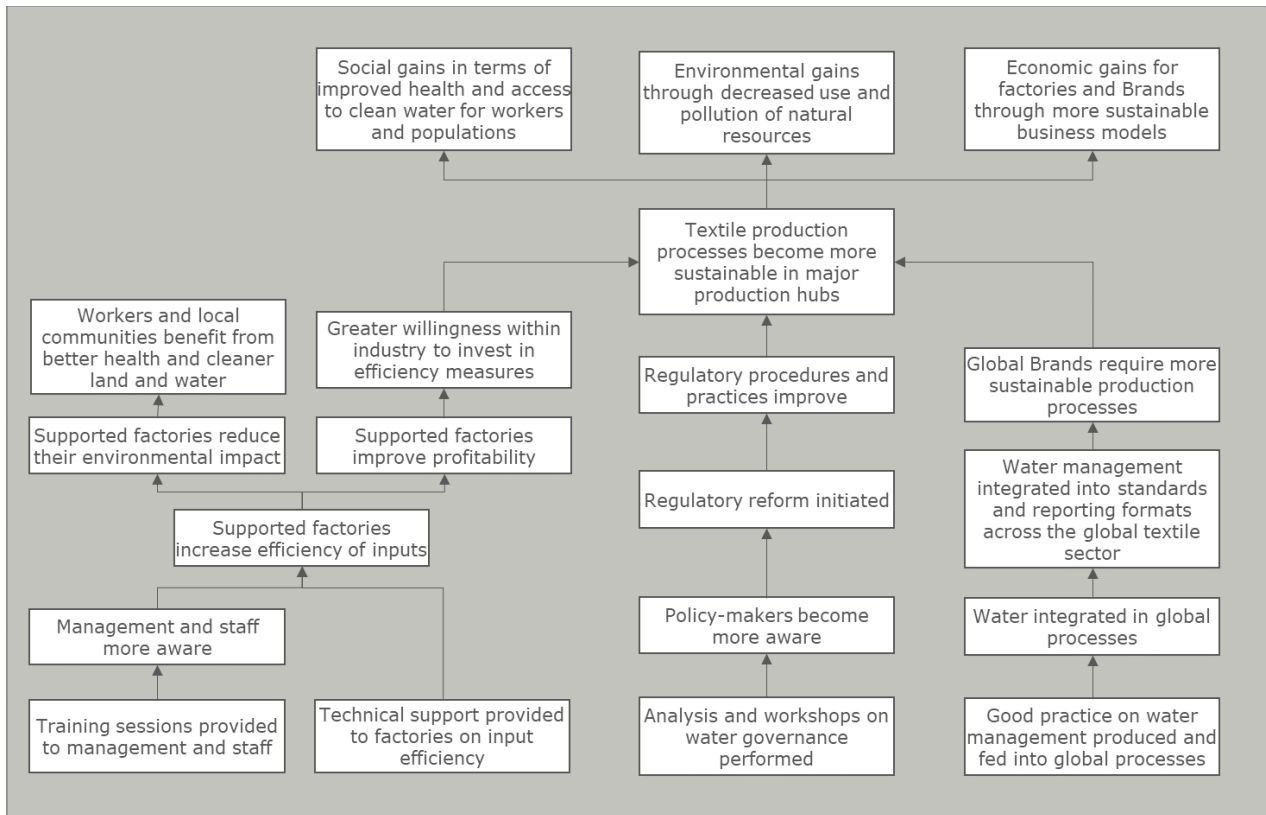
2.1 Overall approach

This evaluation is mainly of summative nature to assess whether the project has reached its objectives and/or produced unexpected results. This means tracking changes that have occurred and the way the programme has contributed to those changes. It also involves developing an understanding of the process of change and what works, what doesn't, and why. A mix of quantitative and qualitative methods are used. The strong learning aspect of the ToRs also calls for integrating a formative evaluation mind-set into the evaluation. In practice this means including forward-looking questions into the evaluation design and preparing the ground for recommendations aimed at improving future programme design and implementation, mostly through qualitative methods.

It is generally difficult to attribute with precision programme activities to observed changes and higher-level results since so many factors come into play. Consequently, a theory-based approach was adopted to assess results. Such an approach uses a pre-conceived Theory of Change that spells out the various expected steps linking inputs and activities to various results levels (usually expressed as outputs, outcomes and impact). The advantage of this approach is that it allows for prior agreement on what the intervention is expected to achieve and how to get there, while simplifying often complex contexts and processes in a way that is easy to understand. Since a Theory of Change was not developed for STWI the evaluation team developed a preliminary Theory of Change for the evaluation Projects based on the existing results framework of STWI Projects that was shared and after some modifications endorsed by SIWI (Figure 1). The preliminary Theory of Change shows two important issues. First, there is a long and complex chain leading from STWI Projects activities and results to higher-level results. Second, the three main programme components (improvements at factory level, national water governance and global multi-stakeholder programmes) complement each other in potentially contributing to the overall objective, which is to achieve more sustainable production processes in major production hubs.

The ToRs of the evaluation list a set of evaluation questions that were reviewed during the Inception Phase; the final set of evaluation questions is included in the evaluation matrix in Appendix 2. The matrix shows how the response to each evaluation question is based on the findings coming out of more than one data source (in a process of triangulation) in order to enhance the reliability of the evaluation.

Figure 1 Preliminary Theory of Change for STWI Projects



2.2 Limitations

It important to be clear about the limitations of this evaluation:

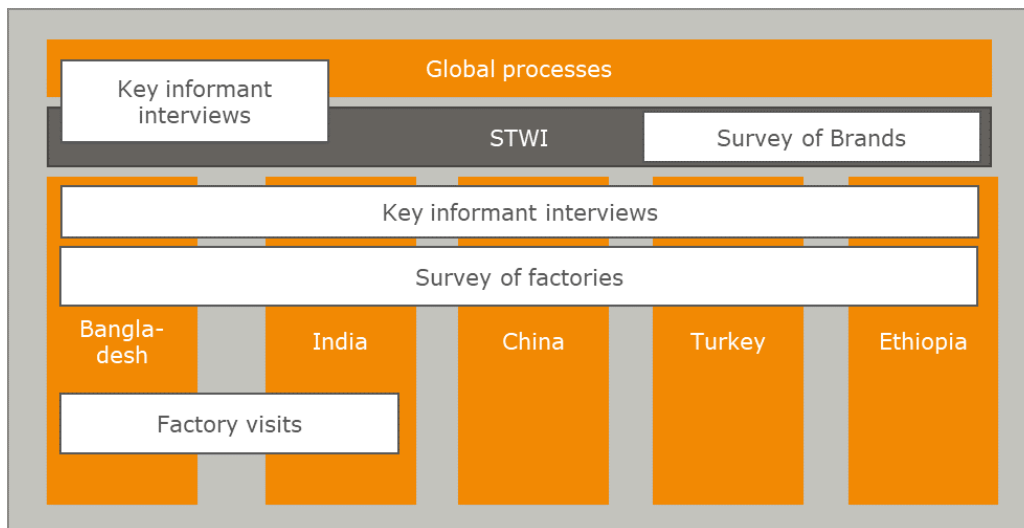
- STWI Projects is a highly complex programme with a broad geographical scope, covering several geographic regions within five countries, several hundred factories and multiple stakeholders at local, national and international levels. The programme involved probably thousands of different activities and generated massive amounts of data. With limited means the evaluation had to be highly selective in its primary data collection and work at a level of analysis that reflected the whole programme and its main components/features, which means that some perspectives and details may have been covered less thoroughly.
- Staff turn-over, contracting issues and time constraints, combined with insufficient systems of documentation, monitoring and reporting within SIWI, have affected the institutional memory within SIWI and the possibility of the evaluation to get access to key individuals and information.
- A particular issue was that contact and results data at factory level have not been stored and compiled by SIWI in a way that the evaluation could access, validate and analyse. This reduced the coverage of the factory surveys and visits and hampered the possibility to assess the factory resource savings achieved by factories (which are the key results of the programme).
- The factory surveys and visits are likely to be subject to positive bias, meaning that factories are more likely to respond to surveys and agree to visits if they have an existing and relationship with and a positive attitude towards STWI Projects. This means that some care is needed in interpreting the feed-back from factories.

- During factory visits it was sometimes difficult to get a fair picture of changes made at the factory level and among beneficiaries, because of limitations in time, and difficulties in accessing good informants due to their unavailability or employee turnover.

2.3 Data collection methods

The evaluation methods and data collection tools that were used during the evaluation are summarised in Figure 2. The figure shows the different levels of STWI Projects: the global level, the programme level, the national level and the local/factory level. The evaluation methods and tools have been calibrated to the evaluation questions, the resources available to the evaluation and the context of STWI Projects. Additionally, various types of desk study work were performed.

Figure 2 Coverage of the data collection methods used by the evaluation



2.3.1 Document review

A review of project documents was conducted to trace the activities, outputs and key phases of the programme, in addition to governance, organisational, technical and financial issues. The list of main documents used by the evaluation is included in Appendix 3.

2.3.2 Key informant interviews

Key informant interviews were performed with a selection of programme stakeholders, including key SIWI staff, selected Brand representatives in Sweden, Sida desk officers, representatives of international initiatives and some other stakeholders. The list of interviewed people is included in Appendix 4. The interviews were based on a semi-structured questionnaire and performed through skype or telephone or e-mail. The interviewees were predominately selected by the evaluation team from lists of stakeholders received from SIWI.

2.3.3 Surveys

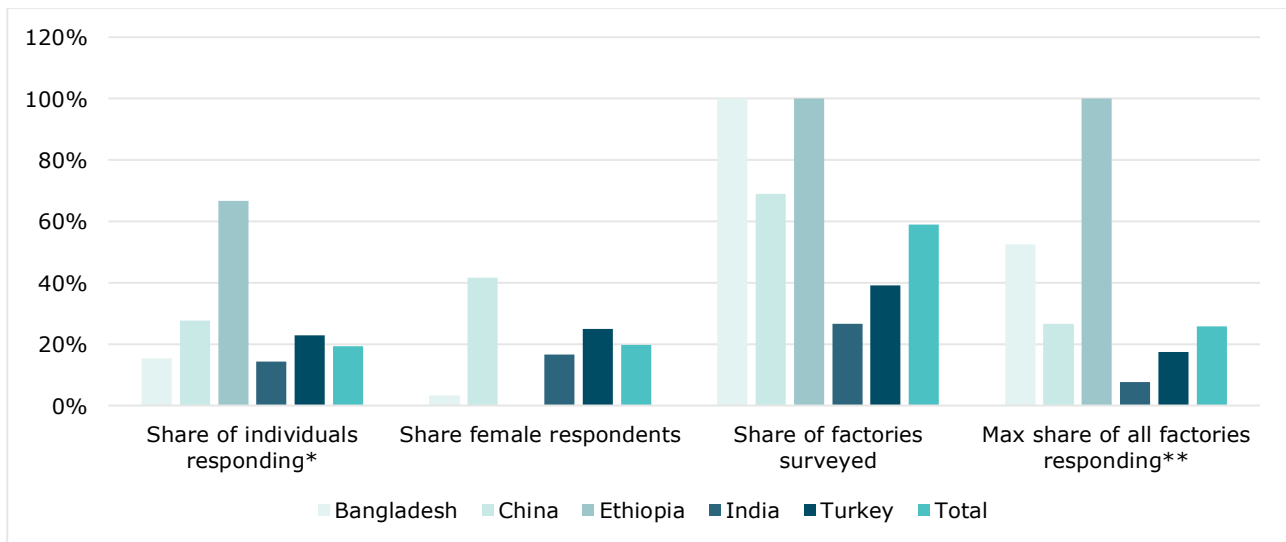
Surveys were sent out to individuals working in STWI members companies and the supported factories. The surveys were purposely held very short and included mainly multiple-choice questions to increase the response rate and facilitate the data analysis. The Brand survey focused on the performance of the STWI Projects, while the factory survey also asked about the state of factories' sustainability work. Both surveys included forward-looking questions on future needs for support. The full descriptive data for the surveys is included in Appendix 5. The

contact data was provided by SIWI. It should be noted that SIWI was not able to retrieve the contact data for all supported factories. This meant that only around 60% of the population of supported factories was surveyed, with attrition being highest in India (27% of the factories surveyed) and Turkey (39%).

A total of 71 responses were received to the factory survey from the 380 surveyed individuals (particularly for Bangladesh multiple individuals were included from each surveyed factory). This corresponds to a response rate of 19% (excluding the 11 e-mails that bounced). Under the strong assumption that only one individual responded per factory this translates into a response rate at factory level of 44% of the surveyed factories or 26% of all supported factories. These percentages can be compared to a survey of supported factories in Bangladesh, China and India in 2017 sent out by SIWI in January 2018, which yielded a 30% response rate, while a survey conducted during the previous SWAR evaluation reached a much lower 10% response rate. More responses were received from Bangladesh (31 responses) and China (24) than the other countries – Ethiopia (2), India (6), and Turkey (8). This translates into the percentages shown in Figure 3. All indicators considered, the survey responses are more likely to be representative in Bangladesh and China than in India and Turkey. In Ethiopia, it is difficult to draw firm conclusions with only two factories supported.

The Brand survey was sent to SIWI's STWI sending list of 112 individuals from Brands and some external stakeholders and consultants. 37 people responded to the survey, which corresponds to a response rate of 33%. Representatives from 23 Brands responded, which means that around two thirds of the STWI members participated in the survey – a good result.

Figure 3 Coverage of the factory survey.



Note: * = excluding bounced mails. ** = under the strong assumption that responding individuals are from different factories.

2.3.4 Factory visits in Bangladesh and India

Factory visits were organised in Bangladesh and India. They were conducted by evaluation team-member Mr Reza Patwar based in Bangladesh. The missions prioritised factory visits, but also included complementary interviews with local policy makers and the technical consultants engaged by STWI Projects. SIWI facilitated contacts with factories, technical consultants and other relevant stakeholders. For practical reasons the mission to Bangladesh was conducted as a pilot during five working days in July and August, based on SIWI's preliminary acceptance of

the Inception Report in the first half of July. In Bangladesh nine factories in Savar sub-district of Dhaka, and Narayanganj and Gazipur districts were visited. The visit to India was conducted on 17 to 28 September. It included visits to six factories in Delhi national capital region (e.g. Noida), Panipat in Haryana, Ludhiana in Punjab, and Badohi near Varanasi in northern India; while two factories were visited in Ranipet near Chennai and Tiruppur near Coimbatore in southern India. During the factory visits a semi-structured questionnaire was used to collect data and conduct interviews. Interviews were primarily conducted with management and technical staff. The mission reports of the factory visits are included in Appendix 8 (Bangladesh) and Appendix 9 (India).

The sample of factories to be visited was determined in close dialogue with SIWI staff to arrive at a good distribution based on the following preliminary criteria:

- Type of process/production (dyeing, etc) and place in the value-chain (suppliers and sub-suppliers);
- Size (small, medium, large);
- Maturity/performance (good, bad);
- Year of involvement in STWI Projects (2015-2017);
- Location (should cover 2-3 clusters, but within the clusters the factories should not be located too far apart, so that several factories can be covered in a day).

The possibility to visit factories was limited by social unrest in Bangladesh and logistical challenges in India. Additionally, some factories were not available due to on-going audits or unwillingness among some of the factories to meet consultants that were not directly relevant to sales. This meant that the final set of factories visited was dominated by factories with a positive pre-disposition towards the project, thus introducing a positive (and for practical reasons probably unavoidable) bias to the findings. In southern India there were limited (or no) possibilities to communicate with factory staff below senior management and surrounding communities because of language issues. During the factory visits it was possible to meet representatives of the communities surrounding four factories in Bangladesh and four factories in India to discuss how they were affected by the nearby textile industry. This information was gathered through unstructured questions directed to individuals/groups after completing the visits to the factories.

2.3.5 Debriefing workshop

A debriefing and validation workshop was organised with SIWI and Sida on 11 September to discuss preliminary findings based on the key informant interviews that had been conducted and the findings of the Bangladesh mission.

3 Findings

3.1 Relevance

3.1.1 To what extent has STWI projects been and continues to be relevant to the different priorities and contexts of stakeholders in China, India, Bangladesh, Turkey and Ethiopia?

There is no doubt that the issues STWI Projects aimed to address were and continue to be highly relevant. The Brand survey found high agreement among Brands that STWI Projects were relevant to the challenges of the textile sector (94% agreed or strongly agreed), the needs of their companies (81%) and to the STWI network (97%). Several recent reports have showed that the environmental challenges of the textile industry are indeed daunting and growing:

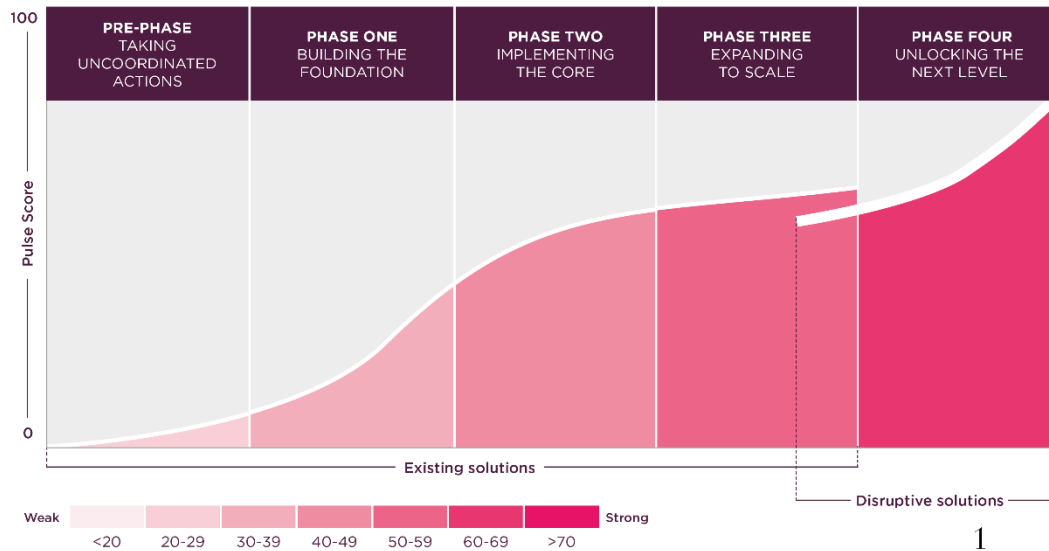
The current system for producing, distributing, and using clothing operates in an almost completely linear way. Large amounts of non-renewable resources are extracted to produce clothes that are often used for only a short period, after which the materials are largely lost to landfill or incineration.²

According to the same report, textiles production (including cotton farming) uses around 93 billion cubic metres of water annually, 20% of industrial water pollution globally is attributable to the dyeing and treatment of textiles and the greenhouse gas emissions from textiles production totalled 1.2 billion tonnes of CO₂ equivalent, more than from international flights and maritime shipping combined. The industry also has multiple negative social impacts in the form of dangerous working environments and poor working conditions and negative environmental impact on local communities. On current trend, the textile industry's resource consumption is set to triple between 2015 and 2050, while the industry's share of the carbon budget associated with a 2°C pathway could increase to 26%. This would put the profitability of the industry at risk and with it the important economic role it is playing in countries such as Bangladesh and other low-income countries. At the same time the industry has proven slow to address these challenges with especially small and mid-sized companies lagging behind. The latest Pulse Report gives the industry a sustainability 'health' score of 38 out of 100.³ Albeit an improvement from the previous year, it is still far from the transformational innovations and disruptive business models that are necessary to address the industry's sustainability challenges (Figure 4). It is also interesting to note that consumers are getting increasingly aware of sustainability issues when buying clothes – in a recent Swedish web-panel a majority of the respondents state that they would like to lower their environmental impact when shopping.⁴

² Ellen MacArthur Foundation, A New Textiles Economy: Redesigning Fashion's Future, 2017, p. 19.

³ Global Fashion Agenda and The Boston Consulting Group, Pulse of the Fashion Industry, 2018

⁴ www.kuriren.nu/nyheter/konsumenter-prioriterar-miljon-framfor-mode-nm4940510.aspx accessed 17 October 2018

Figure 4 The Pulse Curve⁵

According to the original project document of STWI Projects, the five project countries were selected both because they are important suppliers to STWI Brands and because of the production areas are in a medium or higher water risk category. The five project countries are quite different in terms of income. They can be categorised as in Figure 5. The five countries are also in different levels of maturity in terms of textile production and water governance, with China and Turkey being more advanced than India, which in turn is more advanced than Bangladesh. In Ethiopia the industry is in rapid expansion, but capacity is low. There is also diversity between country regions, e.g. southern India has tended to have more stringent legislation and enforcement than northern India, although this may be shifting over time. In all countries there is a trend towards greater government attention to the environmental impact of the textile sector, the case of China being particularly cited during the evaluation.

⁵ www.globalfashionagenda.com/initiatives/pulse/# , accessed 13 October 2018

Figure 5 Categorisation of the five focus countries.

A. Lower-middle-income India, Bangladesh	B. Upper-middle-income China, Turkey	C. Low-income Ethiopia
<ul style="list-style-type: none"> • Abundant human resources • Pressure on sustainable water management to serve the population • Lack of standardization • Catered to mass production • Occupational safety and health issues • Weak governance / inspection mechanism to enforce water / environmental laws and regulations • Climate-induces situations e.g. long drought, heavy rains, flash floods, underground salinity. 	<ul style="list-style-type: none"> • Relatively greater standardised production • Premium technology • Catered to upper end brands and straight route to compliance certification • Strong governance but relatively weaker equity mechanism 	<ul style="list-style-type: none"> • Somewhat new entry into textile and garments sector • Increased level of investment in the textile and garment sector • Ownership from already established textile sector entrepreneurs from outside. • Weak governance

Because of the increasing global and national attention to sustainability in the sector it is not surprising that the factory survey shows that factory respondents believe that the topics addressed by the STWI Projects remain relevant to their needs (99% of respondents agree or strongly agree). Relatively low drop-out rate from the project also seems to corroborate this finding. The factory visits made clear that the Swedish Brands had a key role in enrolling factories, although some factories recognised the potential environmental benefits.

However, there are indications that the programme had challenges in adapting its approach to the different circumstances, needs and expectations of different factories. The approach of STWI Projects was based on the experience from the SWAR project and a more homogenous group of factories based in Delhi and Jaipur in India. Early in the implementation of STWI Projects it became apparent that with a broadening of the geographic scope also came higher diversity in terms of contexts, levels of interest and maturity of factories and the main resource challenges (whether water, energy or chemicals). This was an issue that SIWI recognised and tried to address during implementation, but the limited evidence suggests that this remained an issue throughout, which is understandable given the diversity of the supported factories. For example, the factory visits to India indicate that the project did not sufficiently distinguish between different categories of factories, which meant that differences in expectations could not be handled and high-end factories were not used as learning cases or engaged to sensitise sub-contractors.

The support to factories provided in STWI Projects built on a standardised one-year cycle approach, which although adapted to individual factories cannot cater to every need. Based on the suggestions by the technical consultants and the nature of production process i.e. wet-processing and cut-and-pack processing (another term for tailoring), factories made their own priorities on whether to invest in energy, water or energy saving measures. As a result, differences regarding preferred investments emerged between countries and factories. In India, for

example, water appeared as less relevant because of high degrees of pre-existing water recycling. Overall factories tended to focus on energy savings rather than water, which could be explained by short pay-back times for such investments. There are, however, also clear linkages between the water, energy and chemicals.

STWI Projects also aimed to influence national policy-makers (Component 2). Overall, this is entirely relevant as there are great gaps in water governance in all the five countries. However, the ambition to have an impact on national policy making in five countries within a project clearly focused at the factory level proved unrealistic. Consequently, Component 2 became down-prioritised during implementation, despite some interest from local stakeholders in e.g. Bangladesh.

Another group of local stakeholders that was not targeted directly by the project was local communities. For this group the potential relevance of the project is both direct in the form of training and better working conditions as factory employees and indirect in the form of reduced environmental impact around factories. An important strength of the STWI Projects is the way it aimed to integrate training for all factory employees, not only management. There are other support programmes such as Clean by Design that also work at factory level, but at least according to the interviewees Clean by Design does not have the same capacity building approach as STWI Projects.⁶ In practice the relevance for local communities is unclear since the programme did not explicitly integrate this aspect in its activities or monitoring, despite being emphasised in the cross-cutting issues.

3.1.2 Are the activities, outputs and outcomes of STWI Projects consistent with the overall goal of the programme?

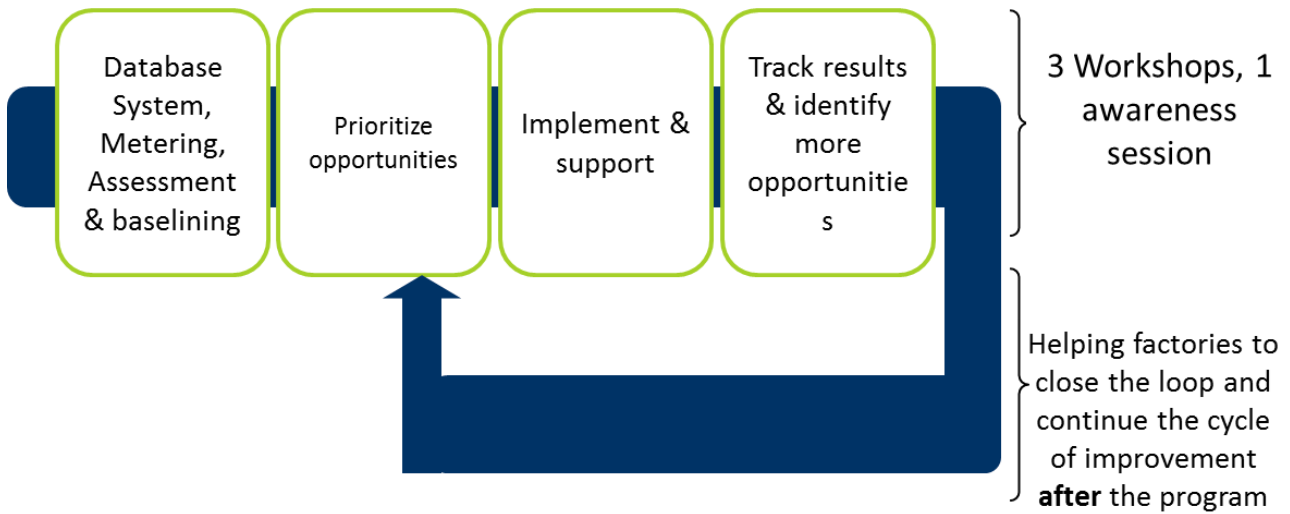
The overall objective of STWI Projects is *"to improve water efficiency in production processes for textile and leather manufacturers in major production hubs - Bangladesh, China, Ethiopia, India, and Turkey"*. If this is interpreted as only targeting supported companies it is quite a limited objective, while it becomes more ambitious if widened to whole sectors, regions or even countries. Components 2 (governance) and 3 (international processes), which primarily aim at system change, do not really fit into the first more narrow interpretation. In addition, there is an implicit goal from Sida to have an impact on local communities, but no specific objectives or activities were included in the programme to this effect.

For Component 1 the outcome is *"Production companies have reduced their environmental impact quantitatively and qualitatively"*. This objective focuses on the external environmental impact of the factories, which is not monitored within the programme and that can also be considered a higher-level objective than the overall objective, focuses on internal water efficiency. The activities and outputs of Component 1 are consistent with the focus on internal efficiency. The project cycle at country level is summarised in Figure 6. The main elements of Component 1 are:

- Working in partnership with Brands, which have a key role in nominating factories;
- Concrete technical assistance at factory level with measurable and quantifiable results with high potential returns on investment;
- Focus also on mind-set change, capacity building for all staff and exchange of experiences between factories; and
- A common reporting mechanism.

⁶ <https://www.nrdc.org/resources/clean-design-apparel-manufacturing-and-pollution> accessed 18 October 2018

Figure 6 STWI Projects project cycle



The project is thus fundamentally a factory level project, with Components 2-4 being down-prioritised both in the original project document and then further during programme implementation. This means that expecting to contribute to Outcome 2 *“Build institutional capacities for improved decision making in managing industrial water risks at the national level”* by producing outputs in the form of a report and organising a couple of workshops in each country seems unrealistic, given that the project targeted large and complex countries and all what we know about the challenges of developing institutional capacities at various levels even in much more narrow contexts. A comparison can be made to another SIWI project targeting water security project in Ethiopia. In this project SIWI has applied for 23.3 MSEK in funding from Sida for capacity building and advocacy work over three years in only one country.⁷

Outcome 3 *“Raise the water profile in global processes concerned with improving the environmental impact of the textile industry”* seems more realistic and in line with SIWI’s overall mandate as an organisation. Outcome 4 *“Information about STWI Projects, its working modules, results, are communicated to non-partners in Sweden and abroad”* is more of a description of the component than a sharp outcome. Overall, although there is an underlying complementarity between the components from a Theory of Change perspective (see Figure 1) there are significant inconsistencies in how this was carried out in practice, which reduced the possibilities of the programme to contribute to systemic change and impact outside the factory gates.

3.1.3 What are the strengths and weaknesses of the project’s theory of change, and the effectiveness of the project design (PPDP) in reaching intended results?

Figure 1 illustrated that the three main components of STWI Projects can be seen as complementary. The factory work is valuable in itself, but also by potentially serving as an ‘artefact of change’ for stakeholders and the system more widely, while components 2 and 3 target national governance and international levels. However, a Theory of Change of the programme was not developed during the design phase. Such an exercise would have revealed that impact

⁷ <https://openaid.se/sv/activity/SE-0-SE-6-10822A0101-ETH-14050/> accessed 18 October 2018. The comparison is not perfect, since the textile component is only one third of the project in Ethiopia, which also has a lower level of development.

and sustainable change is complex, difficult and takes time. Working one year with a factory or organise a governance workshop may be worthwhile, but unlikely to be transformational.

Given these challenges, the scope of the project was very ambitious, covering multiple locations in five countries and several hundred factories, while being managed by a small team in Stockholm. These ambitions may be explained by the good results reached with SWAR and a willingness to attract the interest of brands, which created an inherent logic within the project towards quantitative results (in terms of standardised short-term savings in a broad range of factories) as opposed to quality (context-specific long-term mind-set change, capacity and governance). This created a major risk to spread efforts and resources thinly.

The PPDP set-up was fundamental in producing savings at factory level in a short period of time. Brands contributed by engaging factories, SIWI by providing a platform for implementing the support and Sida with its financial resources. However, there were also apparent weaknesses with this design. As will become clear below, Sida has largely financed a service delivery programme that with seemingly good results has provided technical advice and capacity building to textile factories. Systemic, poverty and cross-cutting dimensions have been largely downplayed or ignored. The public subsidy makes it difficult to replicate and scale the programme, without finding alternative and financially sustainable solutions. Additionally, there were no real demands on Brands to change the way they do business within the programme. The PPDPs are largely focused on addressing development problems in beneficiary countries, but Swedish companies have an important role in addressing these challenges in a sustainable way.

3.2 Effectiveness

3.2.1 To what extent has the project produced intended outputs and contributed to outcomes? (Component 1)

The focus in this section is on Component 1, while Components 2-4 are considered in the subsequent three sections. The full results framework for Component 1 is included in Appendix 5.

Outputs

The main outputs produced by Component 1 are shown in Table 1. A total of 276 factories were supported in five countries. The importance of the capacity building component is reflected in the training of more than 1 300 management and 37 000 staff, corresponding to 5 managers and more than 130 staff per factory on average. In total, almost 3 500 investment projects were proposed to factories, 13 projects per factory on average, of which 60% were completed. This is an impressive scope achieved over only three years.

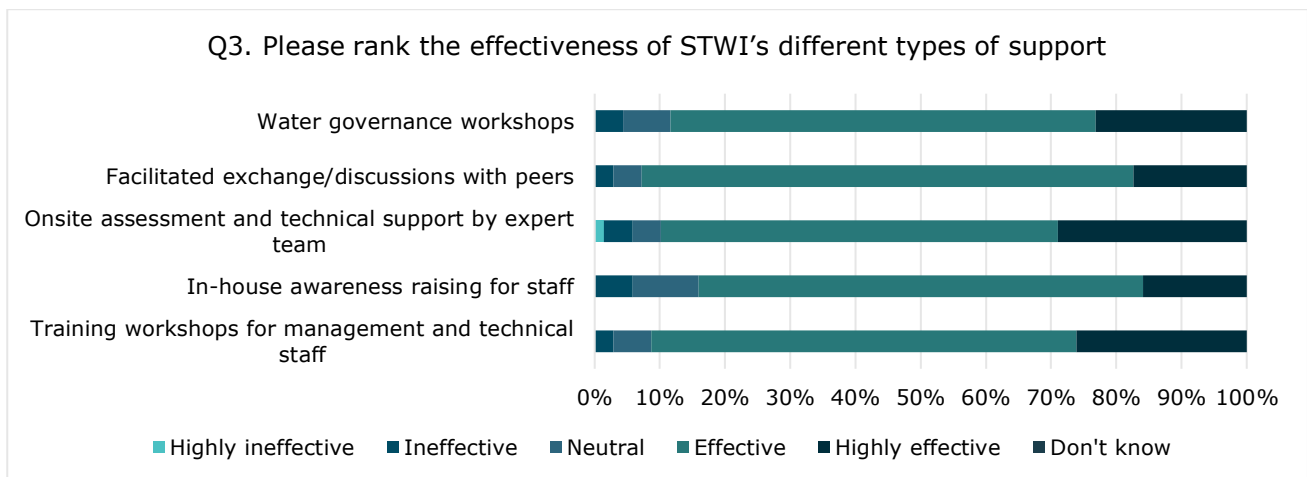
Table 1 Main outputs of Component 1

2015-2017 Outputs	Bangladesh	China	Ethiopia	India	Turkey	Total
Number of factories	59	90	2	79	46	276
<i>Number of Brands (Annual average)</i>	<i>5</i>	<i>10</i>	<i>1</i>	<i>6</i>	<i>4</i>	<i>18</i>
Number of trained managers	545	244	0	275	303	1 367
Number of trained staff	7 685	8 604	0	17 550	3 615	37 454
Number of projects proposed	941	1 108	32	800	614	3 495
Number of projects completed	706	641	13	357	366	2 083

The quality of outputs within Component 1, in terms of e.g. structured end of intervention or training surveys or back to office reports, has not been monitored consistently by the programme. The exception is use of feedback forms during capacity building workshops in Bangladesh, China and India in 2017, but this information has not been compiled or used in reporting. The factory survey shows that the different types of support within the project were considered effective, all being ranked effective or highly effective by around 90% of respondents (Figure 7). There is some variation between the countries. Turkey is the least satisfied with e.g. in-house awareness raising for staff, only being considered effective or highly effective by 50% of respondents (based on a small sample). The factory visits also reveal strong appreciation of the different types of support in Bangladesh and India, with the interesting difference that networking opportunity with industry professionals was considered less relevant in India, in sharp contrast to Bangladesh where the survey and country visit showed that factory staff were enthusiastic about sharing their stories and learning from others and felt the need to promote and manage the network after the closing of the programme. Overall, the evidence shows that the awareness and training workshops served to help factory professionals to discuss different water and utility saving measures which could be brought back to the factory management and turned into successful implementation. The technical consultants reported that factory uptake improved if the factory counterpart was an engineer who could understand the investment options:

No entrepreneurs in the world would say 'no' to do something that would eventually save cost. While some investments have longer payback period, many investments can also experience recovery in a short time. This is the role of the contact person assigned to us to explain that eventually to management at the end of the day. Without proper understanding of the matrices, no one can convince the Senior Management who would ultimately make the decision. – Technical consultant

Figure 7 Factory survey – perceived effectiveness of support



Outcome

The investments undertaken by factories based on suggestions by the technical consultants resulted in the key results of the programme - the factory level resource savings. These savings can be considered outcomes since they depend largely on decisions at factory level and are thus outside the immediate control of the programme. The total reported savings in total vol-

umes achieved are shown in Table 2. These results are generally considered to be very impressive, both by SIWI, Brands and other stakeholders and have been published widely. Progress is also reported on other metrics within the programme, e.g. there are reports that 100% of factories improved their management practices related to Environmental Management System (EMS).

Table 2 Total reported savings

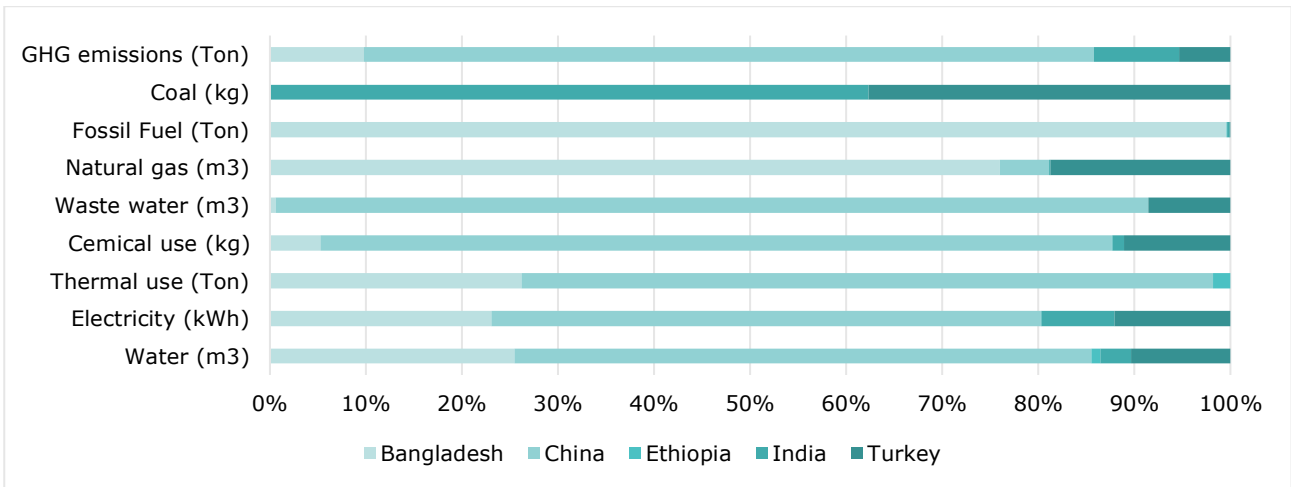
2015-2017 Total savings	Bangladesh	China	Ethiopia	India	Turkey	Total
Water (m3)	2 680 005	6 316 597	99 323	339 659	1 085 973	10 521 557
Electricity (kWh)	18 364 890	45 526 706	21 780	6 074 612	9 599 713	79 587 701
Thermal use (Ton)	1 708 103	4 695 729	115 881	0	0	6 519 714
Chemical use (kg)	1 187 505	18 611 056	5 185	281 635	2 497 178	22 582 559
Waste water (m3)	16 319	2 435 680	0	0	229 860	2 681 859
Natural gas (m3)	20 798 126	1 407 313	0	24 514	5 130 815	27 360 768
Fossil Fuel (Ton)	702 334	0	444	1 904	625	705 309
Coal (kg)	0	1 002	0	6 319 396	3 823 737	10 144 135
GHG emissions (Ton)	45 365	353 277	0	41 274	24 850	464 766

These results indeed appear impressive, but it has been very difficult for the evaluation to assess and validate these results. This is due to several factors, including:

- i) The limited time of the evaluation to analyse large amounts of data and the lack of appropriate comparators;
- ii) The fact that the raw savings data has not been available in any accessible form to the evaluation, which made it impossible to validate the individual observations and conduct statistical analysis of the factory portfolio. Additionally, the savings made have not been reported in a consistent way between countries and years in programme reports;
- iii) The large variations that hide behind the aggregated results. There is generally quantitative information on savings at portfolio, country, Brand and factory levels in programme reports, but there is limited analysis of how these savings depended on factory contexts, maturity and type of production; and
- iv) Issues and questions related to the reliability and validity of the resource data itself (see section 3.3.6).

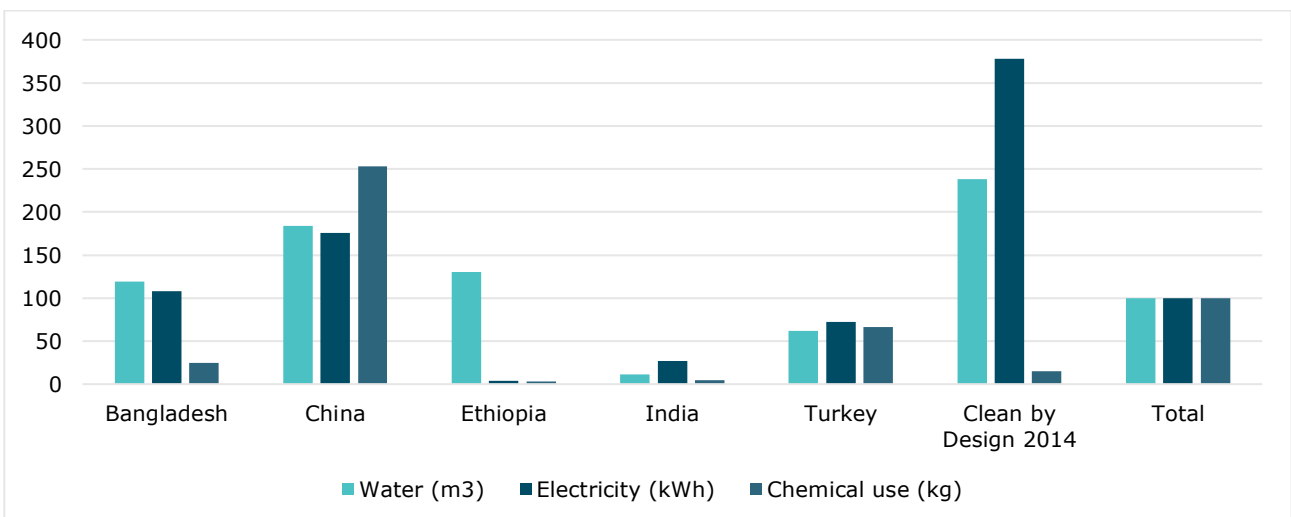
What follows in this section is therefore a preliminary attempt to go beyond the aggregates and look at some factors that have driven the savings, while highlighting the considerable variations in resource savings between countries, factories and within countries. A limitation of the analysis that follows is that the savings have not been related to any measure of the size of factories or output (for example based on initial resource use, production volume, or number of employees), so that we do not know if it is simply certain factories that drive the savings. The variation in savings between countries, which is also noted in the project reports, is shown in Figure 8. In fact, most of the savings in water, electricity, thermal use, chemical use, and GHG emissions took place in China (the country with most supported factories), while Bangladesh dominates fossil fuel and natural gas savings. India dominates coal, followed by Turkey.

Figure 8 Distribution of savings per resource and country



Absolute number do not say much since the number of supported factories differed between countries, however there are considerable variations in terms of savings per factory between the countries. This is shown in Figure 9, in which the savings per factory have been translated into an index with the total in each resource given the value 100. The figure shows that the Chinese factories consistently outperform the other factories, while Bangladesh is on the averages for water and electricity, but low on chemical use. Turkey and particularly India appear as clearly lagging. The main savings in India primarily took place in coal. Diagram 9 also shows a comparison with the Clean by Design programme mentioned in section 3.1.1. While many factors may complicate such comparisons, what can be seen is that Clean by Design (which focused on China) on average generated higher savings than STWI Projects in water and electricity, but considerably less in chemicals, which was not covered by Clean by Design.

Figure 9 Distribution of savings per factory per resource and country (index: 100 = total)



There are also considerable variations within countries, an issue that is not really discussed in the project reports. As mentioned, the available project data does not allow for a systematic

analysis of these variations and their reasons. In some of the annual country reports it is possible to extract some relevant data, but there has not been room within the evaluation to do this for the whole portfolio of factories. As a first example, Figure 10 reports the share of big savers in Bangladesh among the factories supported in 2017 (25 factories). What we see is that in terms of steam almost all savings are generated by one factory. For diesel and wastewater reduction, one single factory also represents high proportions. In no area is the share of the three top savers below 40%.

One reason is that different types of production use different resources. For example, sewing factories use very little water as opposed to dyeing. This variation is shown in Figure 11 using the same sample as in Figure 10. Composite factories represent a lot of the electricity savings, while readymade garment saved much on natural gas. Water was mainly saved by washing facilities. Looking even closer at the savings data for India in 2017 (19 factories), we see in Figure 12 that the documented resource reduction varies very much between individual factories. A third of the factories reduced resource use in two areas, while for almost half there were no documented resource reductions at all, which may be explained by expansion in overall production or test-running new equipment. This shows that it is important to have a profound analysis of the drivers of savings between factories to understand what has worked where, how and why?

Figure 10 Share of big savers among supported factories in Bangladesh in 2017

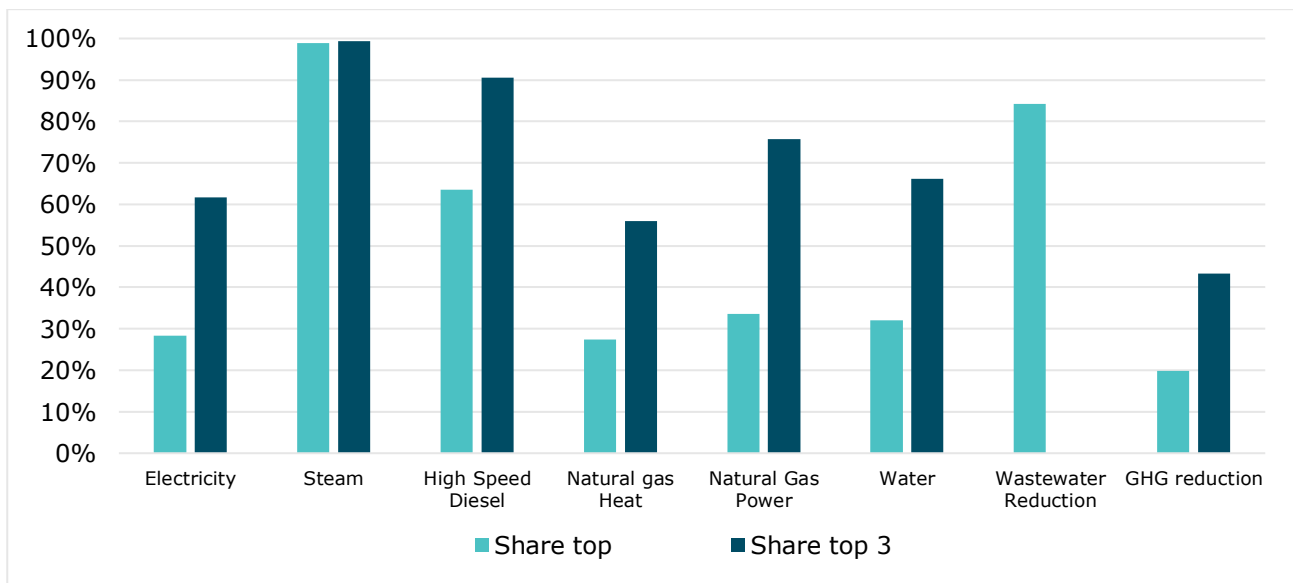


Figure 11 Savings per factory per factory type among supported factories in Bangladesh in 2017

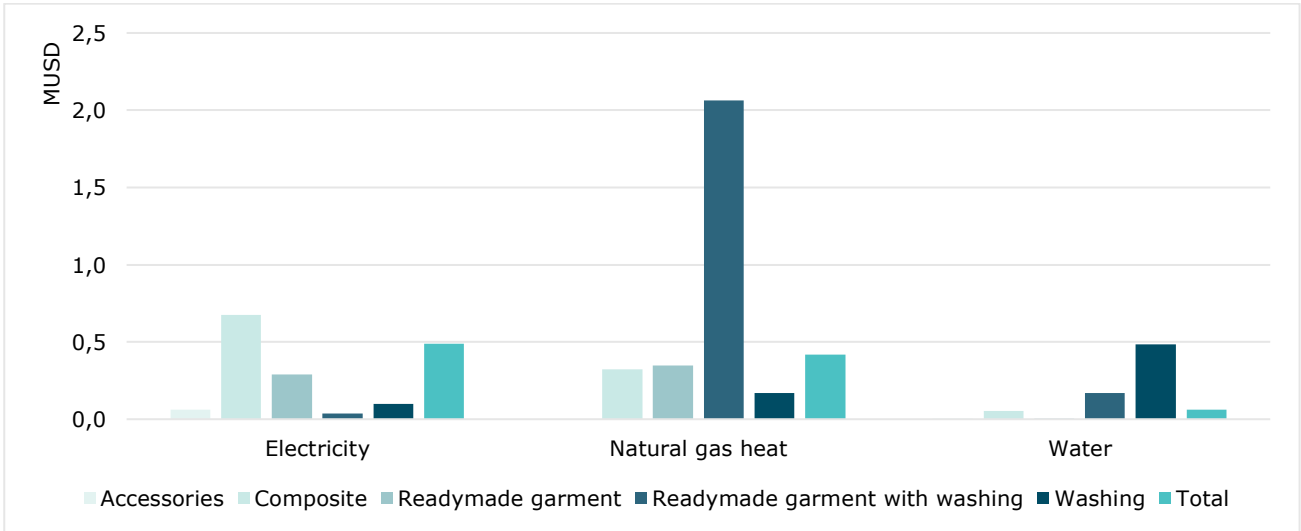
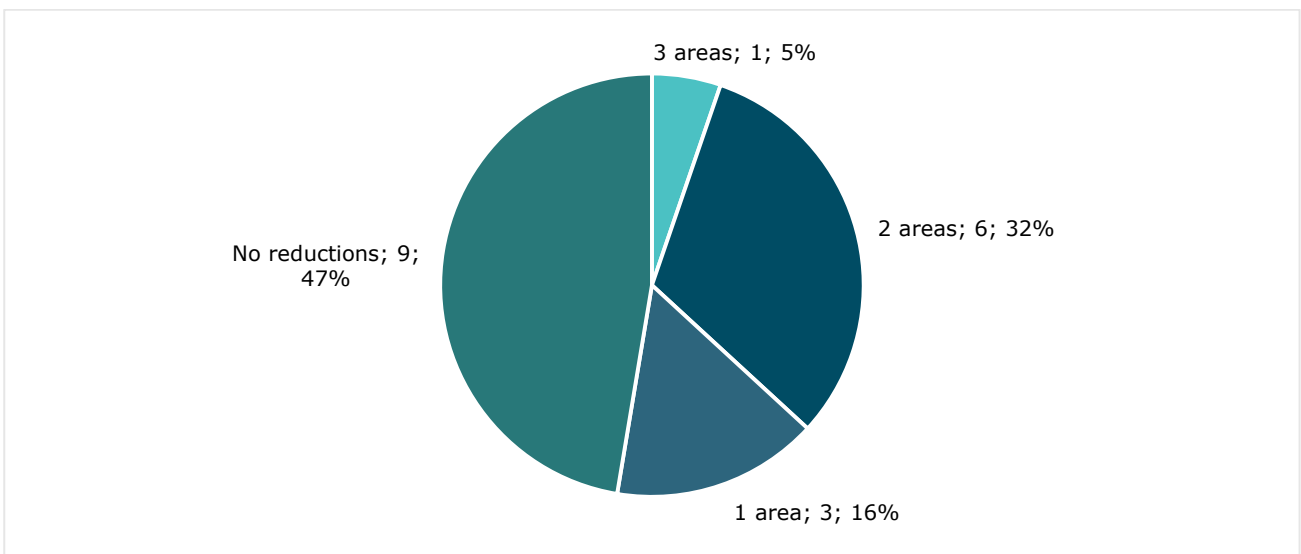


Figure 11 Savings per factory by resource area among supported factories in India in 2017



3.2.2 To what extent have the relevant stakeholders in each project geography been informed of or involved in the programme? (Component 2)

The focus on this sub-section is on Component 2, which is the governance component. The full results framework for this component is shown in Appendix 6. The component objective was to build institutional capacities for improved decision making in managing industrial water risks at the national level, by producing water governance reports for the five programme countries in collaboration with local actors, disseminating these reports to local stakeholders and assessing to what extent the reports were used in local policy making processes.

Outputs

The five water governance reports were finalised in 2016. Due to the scale of the country, significant differences of policies related to textile water use at sub national level and the autonomy of the provincial or state governments, the water governance mapping reports focused on Zhejiang Province in China and Haryana State in India. SIWI adopted the following basic approach to produce the reports:

- i) Collaborate with at least one stakeholder as a local partner;
- ii) Comprehensive desk research and data review of international and local sources;
- iii) Interviews with a number of stakeholders including public actors - government agencies, researchers, experts, and civil societies – as well as private actors – business associations, suppliers, and solution providers; and
- iv) Feedback from the stakeholders on the results of the report.

The 2014-15 annual report state that this methodology was basically followed in all countries, except in Bangladesh where only desk research was used to complement existing studies and research at the advice of the local partner. A questionnaire was developed for consultations with stakeholders covering three main parts:

- i) Stakeholders' perception on water risks, opportunities and barriers;
- ii) Institutional roles, responsibility of challenges of each stakeholder; and
- iii) A rapid assessment of the performance of good water governance, looking into three main principles of water governance: transparency, accountability, and participation.

The main challenges to produce the reports reported by SIWI in the annual reports were:

- i) Finding a suitable stakeholder organisation as a local partner to produce the outcome;
- ii) Finding the focus area for water governance mapping;
- iii) Variation in terms of stakeholder engagement and the number of stakeholders that could be approached for the mapping exercise; and
- iv) Gather feedback on current good water governance, since some stakeholders did not feel comfortable to give their assessment due to lack of knowledge about a particular focus area, the area not being within their institutional roles and responsibility, and concern that assessments could backfire.

The local partners are shown in Table 3. In three of the countries the local partner was a public actor, while in India it was a private company and in Ethiopia an individual consultant. SIWI reports that the strongest engagement was in China, which was made possible because of SIWI's pre-existing strong network and relationship with water stakeholders in China. For Ethiopia, a problem with a non-performing local partner and political instability made it impossible to conduct stakeholder interviews and organise a governance workshop as initially planned. As a result, the water governance mapping was produced based on desk research. A list of stakeholders consulted during the production of the reports was annexed to the 2014-15 annual report and included a total of 78 public and 40 private stakeholders.

Seven capacity building workshops on textile industry water governance and risk assessment were organized in 2016 and 2018 in China, India, Bangladesh and Turkey, with 327 participants representing different local stakeholders (Table 4). No workshops were organized in Ethiopia in 2016 due to political instability and in Turkey in 2018 due to the inability of the local consultant to prepare such a workshop in Ankara. Assessing the quality and appreciation of the workshops is difficult since no end-of-workshop surveys or other feedback mechanisms seem to have been established and the evaluation had limited means to collect feedback from

participants. Factories do, however, display satisfaction with these workshops in the survey (Figure 7).

In terms of expected outputs under Component 2 it should be noted that the water governance briefs and a global report building on the five national reports do not seem to have been produced.

Table 3 Local stakeholders involved in the water governance reports

Country	Local partner	Stakeholder type	Competence area
India	cKinetics	Private actor, consulting company	Catalyzing sustainability
Bangladesh	2030 Water Resources Group	Public actor, international organisation	Public-private-CSO collaborations on water resources reform
China	Zhejiang Industrial Economy Research Institute Zhejiang University Chinese Academy for Environmental Planning	Public actor, government's research institute at the provincial level Public actor, university Public actor, government's research institute at the national level	Leading similar initiative on sustainable textile industry Water policy and management Experts behind China Water 10
Turkey	Sustainable Development and Cleaner Production Center, Bogazici University	Public actor, university	Research on cleaner production and sustainable textile industry
Ethiopia	Water governance expert working with MetaMeta	Public actor, CSO	Research and consultancy in water governance

Table 4 Actors consulted during producing the governance reports and in capacity building workshops

Country	Consulted during report writing Public/private actors	2016/17 capacity building workshops participants	2018 capacity building workshops participants
Bangladesh	6/4	49 participants from public and private sector	83 participants from public and private sector
China	33/8	50 companies and representatives from public sector	39 participants from public and private sector
Ethiopia	15/6	<i>Not organised</i>	<i>Not organised</i>
India	14/18	38 participants from public and private sector	35 participants from public and private sector
Turkey	10/4	33 participants from public and private sector	<i>Not organised</i>

Outcome

The work on the water governance report generated some spin-offs at country level, but their wider impact has not been assessed by the evaluation:

- **Bangladesh:** STWI Projects was engaged in the process of launching a Bangladesh Water Multi-stakeholder Platform (MSP) by SIWI's local mapping partner 2030 Water Resources Group that served as the MSP secretariat.
- **China:** SIWI partners Zhejiang Industrial Economy Research Institute organised an expert workshop to review their contribution to the mapping report and discuss the issues related to water governance and the textile industry.

- **China:** SIWI became formal partners of the Switch Asia programme in Zhejiang province in China. The programme aimed to provide capacity building to local stakeholders based on lessons learned from the European experience in shifting toward sustainable textile industry
- **Ethiopia:** SIWI has been helping Swedfund in understanding the realities, challenges and needs of the textile production sector in Ethiopia, ahead of preparation of an intervention in the textile sector in Ethiopia.
- **India:** cKinetics and SIWI collaborated and submitted a bid to the American apparel company GAP regarding a pilot project on resource efficiency, focusing on water with four of their suppliers in India.
- **India:** The SWAR-alumni, India Textile Water network was launched at Annual Summit of the Sustainable Business Leadership Forum on October 15th 2015 in New Delhi, India. The launch invited SWAR alumni, STWI factories and a wider audience of nearly 140 people representing 100 companies attended these sessions. The activity of the network currently seems low.

It is by the nature of the activities (analysis and advocacy) and in the absence of monitoring mechanisms within the programme, impossible to assess the wider results of the outputs produced under this component. A large number of actors have undoubtedly been reached during the production of the mapping report and the seven workshops. However, the component activities seem to largely have been one-off and not embedded in national policy-making processes. The programme had an opportunity to engage with a local public-private partnership in the case of the Bangladesh Water Multi-Stakeholder Platform, but for unclear reasons SIWI decided to withdraw from that process. In interviews with SIWI staff and Brands it was largely recognised that the focus of the project has been on Component 1. Overall, the evaluation team finds it reasonable to conclude that there is no evidence that Component 2 has contributed in any tangible way to policy-making or water governance in the five countries.

3.2.3 Have international platforms or similar platforms/initiatives invited STWI projects to participate in meetings, share knowledge and shape content? (Component 3)

Component 3 aims to raise the water profile in global processes concerned with improving the environmental impact of the textile industry through sharing of experiences and advocacy. The results framework and achievements are shown in Appendix 6.

Outputs

By and large the outputs that can be said to have been produced under this component are related to contributing to international processes on sustainable textile under the remit of Sustainable Apparel Coalition (SAC), Zero Discharge of Hazardous Chemicals Programme (ZDHC), OECD, and EU. This contribution was mainly realised by sharing STWI results and learnings in various meetings and workgroups. SIWI is a member of both SAC and ZDHC and is in consultations with several other key initiatives in the sector, notably Apparel Impact Institute, the Sustainable Trade Initiative (IDH) and Clean by Design, in addition to IFC/Partnership for Cleaner Textile, Solidaridad/Better Mills, ILO/Better work and Partnership for Sustainable Textiles. The main output that has not been achieved is the updating of the STWI guidelines. There have been on-going discussions within the STWI network on what to do with the guidelines that have been inconclusive, since issues of cost and scope have not been settled.

Outcome

In terms of outcome, the available evidence indicates that SIWI through STWI Projects has managed to establish itself as actor in the ecosystem of sustainable textile. What this means in

terms of actual influence of STWI Projects or network is difficult to assess. There are indications that the water issue is gaining traction within the textile sector, e.g. there is a section on water in the OECD Due Diligence Guidance for Responsible Supply Chains in the Garment and Footwear Sector published in 2018. The document references OECD's Initiative on Water Governance, in which SIWI has actively participated as an organisation. A more concrete example of influence is that the STWI guidelines are cited and benchmarked at length in the Textile Industry Wastewater Discharge Quality Standards Literature Review produced by ZDHC in 2016 in preparation of the ZDHC Wastewater Guidelines. ZDHC also had a joint session with STWI at the World Water Week in August 2018. SAC reports that SIWI was very active in the Task Team that provided input to updating their Higg Facility Environmental Module.

3.2.4 Has the outreach and communication of the project been appropriate and well received by industry representatives? (Component 4)

This component was described as a "cornerstone" for STWI Projects in the 2014-15 annual report as it "... aims to enable the dissemination of results, raising awareness of the award-winning STWI sustainable business model and supporting the elevation of water knowledge in popular dialogue on sustainable supply chains. It is a component with a great deal of ambition as well as possibility for truly elevating Swedish and global awareness of the Sweden Textile Water Initiative project." However, the results framework for the component does not reflect these ambitions as it was limited to building and updating a Website, presenting STWI in meetings and organise two media campaigns per annum (Appendix 6).

The 2014-15 report also reports that there were challenges in performing the communications work from the start of the project. In 2015 the communication efforts suffered from insufficient dedicated resources and frequent change of staff and consultants. The situation during subsequent years is less clear since the annual report does not contain this kind of information, but some work was pursued with modest participation of SIWI communication staff in 2016 and by an external consultant in 2017.

In terms of results under this component, they can only be described as modest compared to the potential external interest that the STWI and STWI Projects could generate. The Website has a modern design but contains very limited information about the STWI network and Project and appeared to be largely inactive at the time of writing. On the Website there is a short YouTube video, a blog with 40 entries (including on SWAR), the last of which was posted in January 2018 and possibilities to download the water governance reports. Procurement for the Global Reporting System (2016) and a Global Report on sustainability (2015) are also published on Website, but there is no separate menu heading for documents (or results/impact), making documents and publications difficult to find. Web-statistics for the STWI Website shared by SIWI to the evaluation team shows the following development of visitors:⁸

- 2015 (June-September): 1 625 unique visits (bounce rate 46%)
- 2016: 5 087 unique visits (bounce rate 62%)
- 2017: 3 186 unique visits (bounce rate 53%)
- 2018 (January – October): 2 902 unique visits (bounce rate 59%)

STWI appears to have been quite active on Twitter during the whole period of implementation. The STWI twitter account was started in February 2015 and had by the time of writing produced 374 tweets with a total of 410 followers. The activity level has gone down radically since

⁸ The 'bounce rate' is the percentage of all visitors who viewed only a single page and did not click a single link on the Website.

the end of the project, with a tweet gap between 31 January and 9 August 2018 (World Water Week).

STWI Projects has also been presented at several meetings, but these are not systematically recorded in the annual reports. Two media campaigns were organised as planned in 2015 and 2016 respectively, but not in 2017 as "...*uncertainty regarding the future reigned and was the focus of activities.*" (2017 annual report, p. 27). The 2015 and 2016 campaigns focused on:

- A press breakfast meeting with Odd Molly, Indiska, Lindex, SIWI and Sida discussing their experiences from STWI in May 2015;
- Participation in a selection of PR activities during the World Water Week and Fashion Week in August 2015;
- Making the 2015 results public with a press-release and the production of a 2015 results report; and
- A panel discussion hosted by SIWI, STWI and GAP at the World Water Week in August 2016 to highlight the role of collaboration to deal with the water challenged the textile sector.

Additionally, STWI was highlighted at the SIWI inspiration day in February 2016 and a SIWI-organised seminar at a Swedish high-profile regular political event ('Almedalen') in the summer the same year. A book produced on STWI authored by Renee Andersson and Jan Peter Bergqvist, two of the founders of the network, should also be mentioned.

All these activities generated media attention in newspapers, news sites and in the Swedish Radio. The 2014-15 annual report provides press statistics for 2015 with 26 Swedish press pieces, including prestigious media outlets such as Affärsvärlden, Dagens Industri, and Ekot (news programme of the national Swedish radio) and 23 global editorial pieces in outlets such as Eco-Business.com, Eco Textile News, and Fashion Forum. Both the 2014-15 and the 2016 annual report give some examples of media attention in the form of web-links, while the 2017 annual report gives some examples of storytelling.

3.2.5 How have the roles and responsibilities of different partners functioned and how has this contributed to project results?

The main roles and responsibilities of the main partners within the project are shown in Table 5 based on the Sida application and the call for tenders of local consultants. Overall, this basic division of labour seems to have functioned and allowed the project to produce its outputs. Strengths of this model observed during the evaluation include the following:

- Brands have been important in engaging factories in the programme. Brand representatives argue that they have spent much time on this task and had to overcome challenges related to being small buyers at factory level;
- Once engaged, factories have generally gone through the annual project cycle with few drop-outs, although this issue has not been analysed at depth by the evaluation;
- The technical consultants have generally performed their tasks at factory level in an expedite manner and have been replaced in the cases they have not been performing (see section 3.3.5 for further discussion);
- Sida has supported the programme financially; and
- SIWI has implemented and reported on the programme, in addition to continue to coordinate the STWI network.

Weaknesses observed during the evaluation include the following:

- Brands' involvement in programme implementation varied. Brands with local staff were able to engage more than Brands that lacked such representation. Overall, the interviews indicate that involvement of Brands could have been stronger and reveal a certain degree of disengagement among Brands;
- The variations in factory contexts and needs posed challenges to a programme that built on standardisation and reliance on technical consultants;
- SIWI has not been able to integrate STWI Projects into its organisation, with the implication that programme implementation has been conducted in a vacuum with insufficient support from and link to SIWI's management, core business and support functions. In addition to the challenge of managing a global programme from Stockholm, which eventually led to the recruitment of country coordinators in 2017;
- Given these constraints and with a focus on short-term factory level efficiency savings, SIWI has overall not been able to fully fulfil the three mandates of its role and responsibilities, relating to capacity building at governance level, business intelligence and knowledge development; and
- Tensions within SIWI and between SIWI and Brands emerged during programme implementation, clearly revealed by the rejection of SIWI's Board to accept the follow-up proposal to STWI Projects in the autumn 2017 and interviews conducted during the evaluation. Beyond individual differences in opinions, the interviews expose a feeling of frustration and disappointment within the STWI network. In particular, there is distrust between SIWI and Brand representatives, where the former believe the Brands are unwilling to pay for sustainability and the latter arguing that SIWI has to demonstrate the value-added of proposed follow-up and be more realistic about the financial realities of the Brands.

Some underlying reasons for these weaknesses and for the glitches in the division of labour include:

- The daunting scope and complexity of a multi-country programme to be managed from Stockholm over only three years;
- The lack of clarity as to the requirements of the Brands to engage and, above all, change the way they operate to make business models more sustainable;
- Inadequate managerial and operational capacity within SIWI to implement a programme of this nature (see section 3.3.7 and 3.3.8); and
- The reliance on public subsidies in a market driven environment and the difficulties to transition to a model independent of Sida support.

Table 5 Roles and responsibilities of different project partners

Partner	Role and responsibility
Brands	<ul style="list-style-type: none"> • Members of STWI and participate in member meetings • Represented in Project Steering Group • Recruitment of factories • Contribute through membership fees, in-kind time contributions and travel costs
Factories	<ul style="list-style-type: none"> • Participate in workshops and awareness sessions • Implement projects suggested to them by SIWI and its sub-contractors with their own investment and time • Provide data and set-up measurement systems as recommended / asked by SIWI, project sub-contractors and/or the brands.
Technical consultants	<ul style="list-style-type: none"> • Carry out a baseline assessment and propose action plan for each participating factory • Implement the support to factories by organising workshops, awareness sessions for staff and conduct follow-up visits at factories

Sida	<ul style="list-style-type: none"> • Supports project implementation by providing catalyst funding covering a part of costs for SIWI and sub-contractors • Participates in yearly review meetings with SIWI, and advisory meetings with SIWI and brands • Facilitates policy dialogue in the project countries
SIWI	<ul style="list-style-type: none"> • Implements, manages and drives project activities as agreed with Sida and the brands • Builds the capacity of brands, suppliers, sub-suppliers, consultancies, and institutions to continue improving the environmental impact of the textile industry • Provide business and policy intelligence and reports for public and private decision makers • Develops a global bank of knowledge on industrial water challenges, risks, and solutions • Provides a neutral platform for continuous capacity development in the textile sector on water and environmental issues
Other consultants	<ul style="list-style-type: none"> • Responsible for a range of supporting tasks, including reporting databases, network facilitation, communication
National and international stakeholders	<ul style="list-style-type: none"> • The ultimate target audience for STWI Projects to achieve its higher-level objectives.

3.2.6 To what extent have relevant cross-cutting issues been integrated into project design and implementation?

The Sida application listed four cross-cutting themes: i) environmental sustainability; ii) gender equality; iii) poverty reduction; and iv) democracy, transparency and integrity. In the 2014-15 annual report SIWI reports that the programme has made significant contributions on these themes without providing any evidence to back up such claims. Cross-cutting issues are not mentioned in the 2016 annual report, while in the 2017 annual report, the text on cross-cutting themes is mainly cut and pasted from the 2014-15 report.

There are many potential direct and indirect benefits and challenges related to these four cross-cutting issues that could have been worth considering within the programme. The textile sector is obviously an important source of jobs and livelihoods for poor populations, employees are largely females in certain types of factories, the industry has considerable environmental impact and corruption is a major problem in terms of enforcing public regulations in the production countries. Overall, it can be concluded that cross-cutting issues have not been considered in the STWI Project to any considerable degree, which seems to have been a conscious decision by the programme management at the start of the programme, despite interest among SIWI staff and Sida.

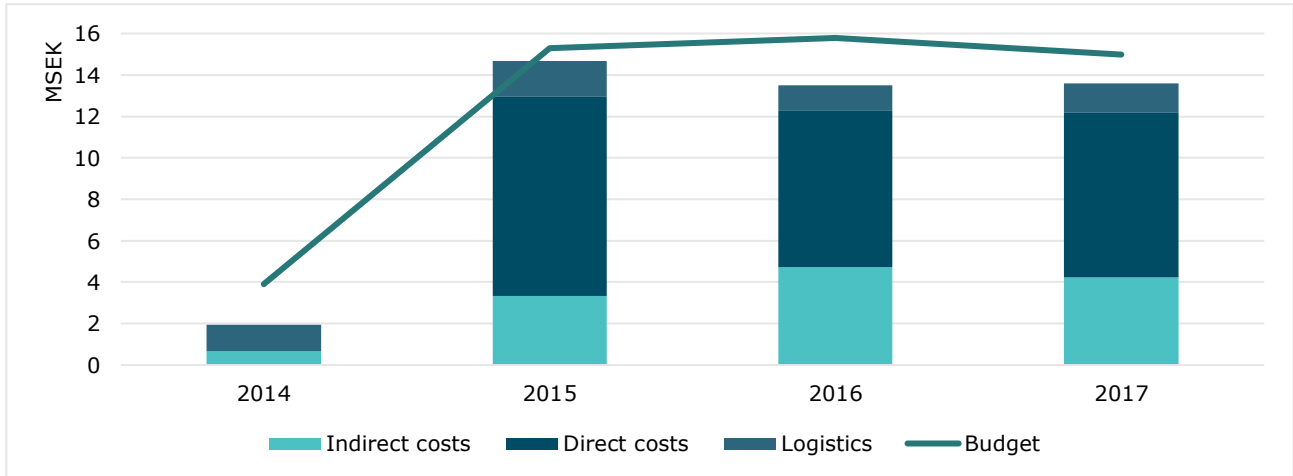
3.3 Efficiency

3.3.1 To what extent do the results justify the costs of the project?

The main results were reviewed under effectiveness, why the focus in this section is on the spending of Sida funds, while results and broader resource use are discussed in conjunction in section 3.3.2. The full financial outcome for 2014-17 is included in Appendix 7. The first point to note is that the project got up to speed already by the first year and then spent somewhat under budget the two remaining years (Figure 12). This relatively quick start is quite a feat, given that it is not unusual for projects to have a marked start-up phase with lower spending

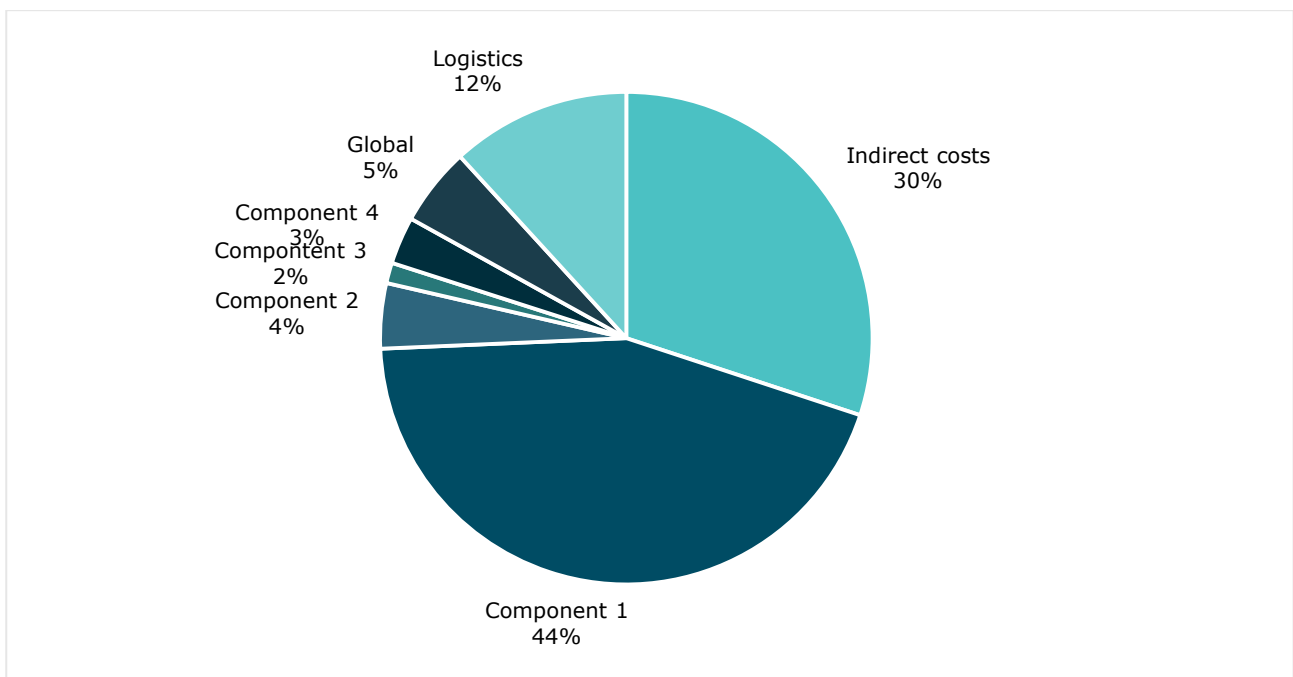
then planned. For the full four-year period, spending was 16% under budget, 43.2 MSEK compared to a budgeted 50 MSEK. There was money left for the extension during 2018. By August 2018 an additional 3.9 MSEK had been spent, bringing the total to 47.1 MSEK.

Figure 12 Spending against budget (Sida funding)



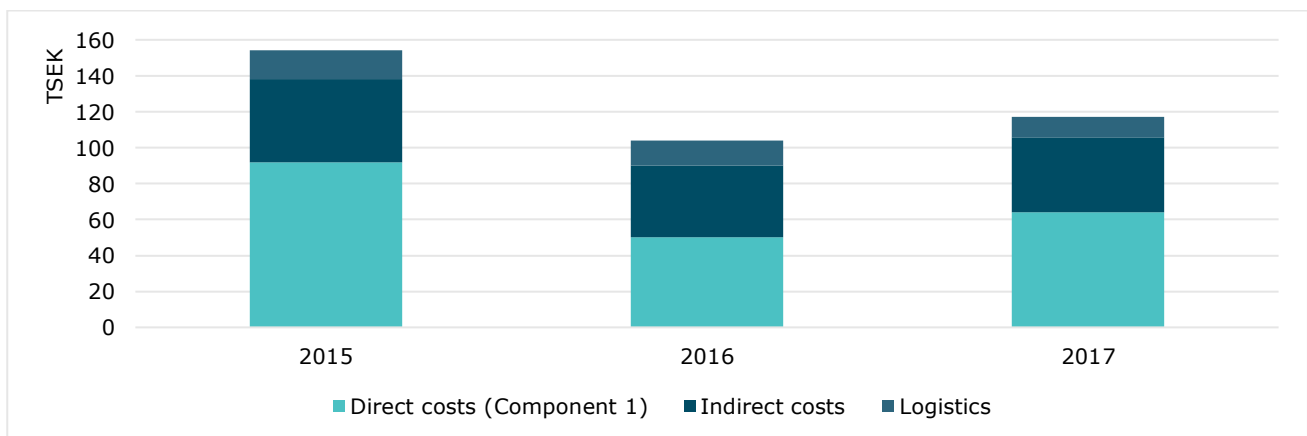
For the 2014-17 period, the distribution of expenses is shown in Figure 13. Indirect costs (salaries to SIWI project management) made up 30%, while direct costs of component activities (inclusive global – spending across components) made up almost 58%. The rest, or 12%, was spent on logistics, mainly to pay for flights, accommodation and workshop venues. Among the components, Component 1 is unsurprisingly the most important, absorbing 44% of total spending and 76% of direct spending. At a total of around 19 MSEK, spending on Component 1 was 5 MSEK below budget. The shares of the other components are low. It can be noted that only 40 TSEK was spent on each of Component 2 and Component 3 during 2017.

Figure 13 Distribution of spending (Sida funding) 2014-17



Do the results of the project then justify these costs? Since there was so little action under Components 2-4, the focus will here be on Component 1. There is no absolute metric to answer this question, without embarking on extensive benchmarking and cost allocations beyond the scope of this evaluation. It also depends on what costs that are included in the equation. Figure 14 shows the cost per factory if the direct costs of component 1, the indirect costs and logistics are divided by the number of factories. This gives a range between only the direct costs (50-90 TSEK) and total cost per factory including overheads (100-150 TSEK). The Annual Report 2014-15 reports that consultancy costs per factory varied greatly between 50 TSEK in Bangladesh to more than 250 TSEK in Turkey. The Annual Report 2016 reports that SIWI managed to negotiate down the price per factory to an average of 90 TSEK in Turkey and in the other 50 TSEK, which reduced the costs of consultancies. This may of course also have had implications for the quality of services and follow-up, but this has not been possible to verify during the evaluation. An interesting comparator for the cost per factory is again Clean by Design, which in China offers support to factories at a participating charge of 32 TSEK (25 TRMB) or 45 TSEK (35 TRMB) depending on the service level. One explanation for this low cost is that the scope of Clean by Design is narrower than that of STWI Projects. One activity within STWI Projects that does not seem to have justified its cost is the development of the Global Reporting System (see section 3.3.6).

Figure 14 Cost per factory (Sida funding)



3.3.2 To what extent is STWI value for money for STWI projects partner brands and factories?

The discussion under 3.3.2 only concerned the Sida funding. Since these public funds paid for the consultancy services and the results at factory level are considered good STWI Projects seems to be obvious value for money for the private sector actors. However, the alert reader may have noticed in the introduction that the total project budget includes significant contributions from Brands and factories. These contributions have been in-kind and included in the financial project reporting in separate columns, based on fixed hourly rates and assumptions about how much time Brands and factories dedicated to the project. If these in-kind contributions are included, the cost per factory shown in Figure 14 increases dramatically from a level that was not low to start with. In 2016, for example, the contribution of 20 Brands is valued to some 20 MSEK and that of 119 factories to 13.6 MSEK, compared to Sida's 14 MSEK, although it is unclear whether Brands dedicated so much time to the project. In the Brands survey only 46% of the respondents agree or strongly agree that they were able to dedicate sufficient time/resources to contribute to the work of STWI Projects.

Firm conclusions about the efficiency and value for money of STWI Projects are thus difficult to make since it depends on how the results are valued and what costs that are considered. What

seems clear is that when the cost of SIWI's management of the project and the resources Brands needed to dedicate to recruiting factories are included, the cost per factory naturally ended up much higher than the market price for consultancy in the beneficiary countries. The question then is what additional benefits that were generated by the project that can justify the additional costs. These benefits would include engaging factories that would otherwise not have worked on sustainability, using an established methodology, factories having access to capacity building and experience-sharing, and the possibility to use the experiences and lessons extracted from the factory level work to develop methodologies and advocacy tools to promote wider change in local governance, Brands and the international textile sector. The assessment of the project's effectiveness shows that there is clear evidence that the project produced added value particularly in relation to capacity and exchange of experience at factory level, but whether this justified the costs is difficult to determine.

3.3.3 What is the return on investment (ROI) for the participating factories, separating between dry and wet processing?

Generally, the project documentation and reports do not explain well how the return on investment (ROI) is calculated. Sometimes the ROI is reported as a percentage and sometimes as a payback period in years or months. Whether this data reflects actual or assumed savings is unclear, but probably it is based on the same mix of methods as used to calculate overall savings within the project. In the SWAR project, the total ROI was an impressive 762%, which is explained in the 2014-15 Annual Report by a very low-baseline which made it possible for the suppliers to pick "low hanging fruits" in a short time. The ROIs for STWI Projects reported in the Annual Reports are more reasonable: 89% for 2015, 63% (20-month payback time) in 2016 and 15-18 month payback time for 2017.

Overall, the programme claims that around 46 MUSD (392 MSEK) was invested by factories during the programme's lifetime, which generated savings corresponding to 37 MUSD (235 MSEK). Again, as with the overall savings data it is difficult to have a clear picture of what hides behind these numbers. Figure 14 shows the variation in reported payback periods between the five countries. Only for 2016 has a break-down by type of factory been included in the reports, which is shown in Figure 15. It is difficult to detect a clear difference between factory types, instead it is the much longer payback periods of Turkey that stands out. The 2016 country report for Turkey shows that energy savings have shorter payback periods, making them attractive to factories, while water investments have much longer payback periods.

Figure 14 Payback periods per country 2015-2017 (years)

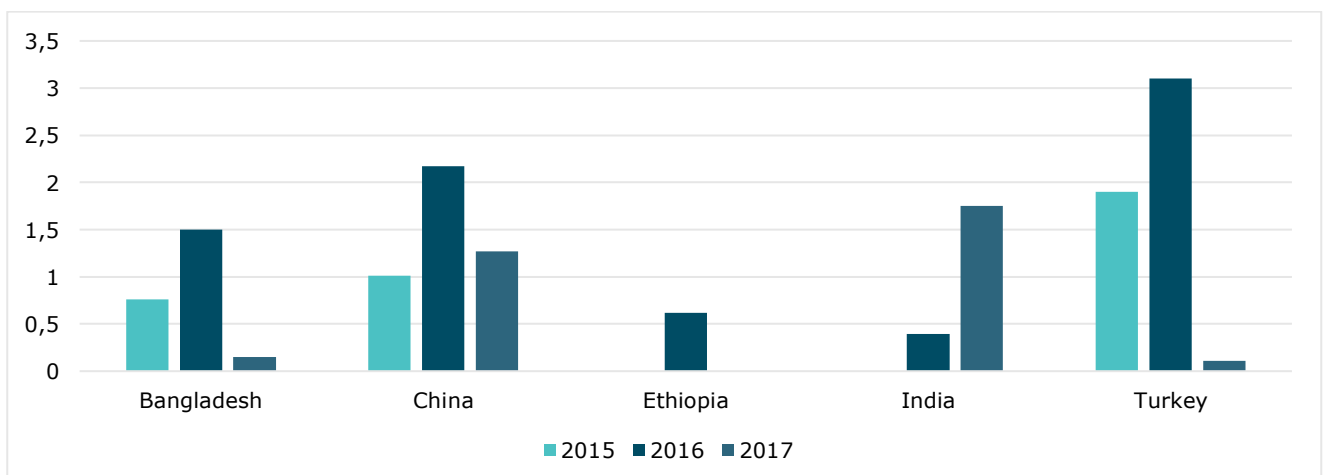
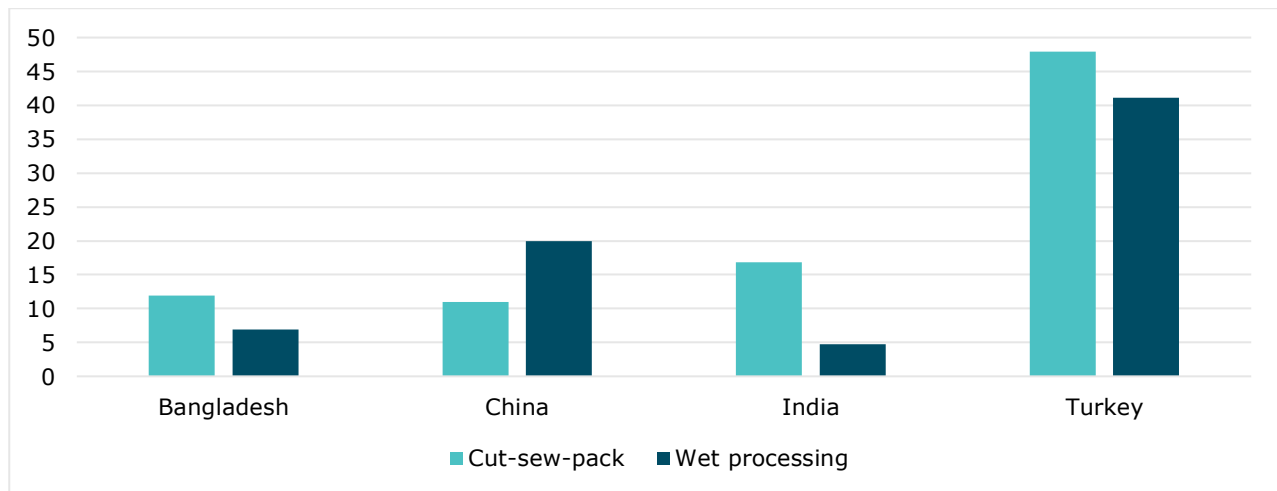


Figure 15 Payback periods per country and factory 2016 (months)



3.3.4 Has the distribution of costs between participating stakeholders been adequate, in relation to benefits?

The interesting question here is about the adequacy of Sida's financial contribution. In its decision on contribution from December 2014 Sida gives the following concluding motivation for funding the project:

This initiative uniquely opens up cooperation on environmental sustainability issues with local industry in participating countries. The model has proved successful in the SWAR project (pilot project in India 2013-2014). Sida sees in this project a model for cooperation for increased business engagement to contribute to economically sustainable development. (p. 3)

By funding STWI Projects Sida foregoes its usual focus on local capacity and poverty reduction to directly fund interventions in the private sector aimed at both environmental and financial savings. By doing so Sida has leveraged significant in-kind contributions from the Swedish and local private sector, which would have been highly unlikely in a traditional development project, and contributed to generate almost ten times as much as its contribution in investments and significant resource savings at factory level. This would seem as a very worthwhile investment for Sida at least for a pilot. However, there are two principal issues to consider when reflecting on the possibilities of a more sustained participation of Sida in this kind of activity. First, the potential distortion of incentives of the private sector to invest in environmental sustainability, as the use of public funds may replace private initiatives. Second, the importance of Sida ultimately aligning with its overall objectives in terms of systemic change and poverty reduction. On both these accounts there are weaknesses within STWI Projects, which at the end of the day reduce the developmental benefits that are central to Sida.

3.3.5 Has the performance of technical consultants contracted within the programme been sufficient?

The technical consultants played a central role in delivering the project activities at country level, since they assumedly had the technical expertise, contextual knowledge and local presence required. The use of local consultants was laudable and may have constituted local capacity development in itself, although this is difficult to assess. There are also challenges involved.

Consultants in five countries needed to be contracted, trained and monitored from Stockholm in the first years of the project, before the country coordinators came on-board. This set-up inevitably created a potential for significant so-called 'principal and agent' problems, meaning that the agents (the country consultants in this case) are motivated to act in their own best interests, which may be contrary to those of their principal (SIWI Stockholm). To counter this and ensure consistency SIWI organised training of technical consultants at the start of the project. Another broader disadvantage of relying on consultants is that much of the knowledge, experience and network stay with them and is lost to SIWI when the project ends. With these caveats and despite issues in all countries except Bangladesh, overall, the performance of the technical consultants seems to have been quite satisfactory and fundamental in order to achieve the scale and results that was possible within the project in a short period of time.

The initial set of technical consultants was engaged through a public tender process. One consultant was procured for implementation in each project country and two consultants were procured to provide global technical support consultancy – including database systems. According to the 2014-15 Annual report at least three qualified bids (financial and technical) were received for each tender and evaluated by the SIWI team. The exception was Ethiopia, where the tender was ultimately cancelled because of lack of qualified local consultants and institutions that could implement the project. It was later decided that SIWI should run the Ethiopia programme locally in collaboration with the Ethiopian Textile Industrial Development Institute on an in-kind basis. The consultants used during programme implementation are shown in Table 6. It should be noted that cKinetics was the implementation partner in the SWAR project, which means that STWI Projects could benefit from established relationships and implementation systems. The consultant in China was changed in 2016 because it was unable to adapt its methodology to that of STWI Projects, while the local partner in Ethiopia was not performing well. The only other issue reported regarding the technical consultants was that the consultant in Turkey was not able to organise a water governance workshop during the spring 2018 as was done in Bangladesh, China and India. In 2017 the consultant in India was replaced, but this is not mentioned in the project reports. The reasons seem to have been a combination of quality of service and cost.

Table 6 Technical consultants used for implementation

Area	Partner
Global support	cKinetics with their ComMIT database systems E-cube was commissioned to develop the Global Reporting System in 2016/2017
Bangladesh	Engineering Resources International (ERI)
China	Intertek Green Initiatives Replaced in 2016 by New Asia LTD
Ethiopia	SIWI with the Ethiopian Textile Industrial Development Institute
India	cKinetics Replaced by E-cube in 2017
Turkey	A consortium consisting of cKinetics and Escarus

During the factory visits, factories generally appreciated the performance of the technical consultants, although some informants had issues with the lack of experience of individual consultants. In India, the factories were more critical – half of the factories found the technical assistance less relevant, which may partly be because these factories had already implemented the basic investments and that the consultants did not have time to support the factories in assessing more advanced investments. Overall, however, the survey results reported in Figure 7 show that factories in all countries express great satisfaction with the on-site technical assistance and capacity building. The Brands are more critical with only 43% of respondents agreeing that the local technical consultants engaged by STWI Projects were competent and supportive.

3.3.6 Have the data collection and reporting, data base functions and the generation of tailored reports been appropriate and met the requirements of the stakeholders?

This question is central to STWI Projects since it has such a focus on measuring and communicating quantitative cost savings. The interviews with Brands indicate that they are satisfied with the reporting arrangement, which is confirmed by the Brands survey with 75% of respondents agreeing that they were well informed about the results of STWI Projects. The project did produce quite detailed largely quantitative reports at Brand level, and Brands seem thus to be relatively satisfied with this. However, Brand informants express more discontent with the overall transparency of the project, with only 43% of Brand respondents agreeing that they were well informed about the management and implementation of STWI Projects. Only 39% agree that the data collection and reporting system used in STWI Projects were appropriate, with a third of respondents not having an opinion on this issue. Sida staff also express issues with the progress and results reporting.

From an evaluation perspective the project reporting is very challenging to assess. While the annual and country reports follow a reasonable structure, they are dominated by massive amounts of quantitative data at different levels that to a large extent lack explanations or analysis. The quantity and quality of the narrative in the annual reports also seem to have declined over the years. While the 2014-15 annual report is quite informative, the 2017 annual report is very succinct. In the 2017 report there is a general lack of analysis and synthesis of progress and lessons learned, and thus very little information about what works where and why.

In section 3.2.1 it was shown that there are large variations behind the savings aggregations made. Additionally, there are several issues with the reliability and validity of the resource savings data:

- The savings calculations are based on a mix of methods involving both estimates and actual measurements;
- The reported savings are one-off within the year of support and are not followed up beyond the year(s) factories have been participating in the project;
- The data does not seem to consider variations in production or other factors that have influenced resource use beyond the project. Total resource use may not have gone down if production volume has expanded. Arguably, other measures, such as efficiency (per unit production) may at least have complemented absolute numbers;
- Control groups or other statistical methods have not been used to demonstrate formally the causality between the project activities and the observed savings, which in theory could be due to other factors, such as industry trends; and
- There is also the issue of the reliability of the data, which has been generated by factories and consultants. What have been their capacity and incentives to accurately measure/calculate savings? Interviews with SIWI staff reveal that their possibilities to monitor and verify the data declined between the first and second year as the number of factories increased. This capacity may have been redressed by the recruitment of local country coordinators.

A major issue is also how the data was collected and stored. The 2015-2016 data was collected using a system developed by cKinetics. The data is allegedly stored in Excel sheets with the consultant, but it is unclear to what extent SIWI has access to the data. In any case the data has not been shared with the evaluation team, which of course made systematic validation and analysis of that data impossible. Relatively late in the project (autumn 2016) a decision was taken by the programme management to procure a new Global Reporting System (GRS), for which Indian consultancy Ecube was contracted. It is unclear how much money that has been spent on the GRS, but around 1 MSEK was mentioned during interviews. As can be expected

the development of such a complicated system (involving massive amounts of variables and four countries, activities in Ethiopia having ceased by then) has taken time and involved a lot of trial and error. The system currently contains the 2017 data, but is not able to generate usable portfolio reports or even export the data to e.g. Excel. Much more development seems necessary to arrive at a fully functioning system. The future of the system is currently unclear.

The introduction of a digital tool can be seen as a form of capacity building for factories that lack such systems. However, it is clear that these data issues generated much frustration during project implementation at factory level as shown in the factory visit reports. For example, the GRS system was built in a way that all data entry needed to be done and saved a screen at a time. A partial saving option was not available, causing the users to start all over if they failed to add all inputs into the system in one session. One person needed to spend quite a few hours to collect and input all the data. In a factory environment, that proved to be challenging as everyone is assigned with specific tasks on the floor and it also absorbed much time for the technical consultants to provide support to the factories to adapt to the system. The consultants that developed the system are highly aware of these issues:

When I look back on the development phase of GRS, I think we certainly would have benefitted from having a longer duration of time. That would have allowed us to take into consideration the customisation needed for different industries and to offer enough of training necessary for the factory officials to get the most out of this system. – representative of technical consultant

A last issue is that there is no consistent information in the reports on the precise type and frequency of resource investments at the factories. The level of detail provided in the reports also tend to fall over the years. Here follows a brief analysis of the information on investments included in the annual reports.

During 2015 the consolidated analysis in the annual reports show that the implementation of STWI suggested interventions mainly focused on electricity and heating (thermal). When it comes to the data for water, there is no distinction between process water and water used for other purposes such as handwashing etc. (where tap water is used). The plumbing optimisations have mainly been carried out for taps and for lowering of water pressure in pipelines (where the latter has most of its effect on tap water). The data for measurement systems for water covers not only water, but also electricity, energy, fuel and chemicals. When looking into the data for each country, interventions for saving process water such as the "One bath method" in China and in Bangladesh where reuse of process water has been implemented. In India reuse of discharge water from STP (Sewage Treatment Plant) has been carried out, however if this is both process water and water for other purpose is not stated.

During 2016 there is no consolidated analysis for the four countries, but here we can see more focus than in 2015 on parameters for process water and its chemical content, even if interventions in electricity and heating still are a large part. Optimisation of processes and machinery, final bath recovery, recovery of caustic and salt, waste water treatment are some of the investment that have been made.

For 2017, no percentages of the most implemented projects have been included. Here China stands out with several interventions concerning process optimisation to improve water efficiency and installation of low liquor rate dyeing machine, with installation of automatic weighing and dispensary system, reduced chemical consumption and reclamation of caustic soda. In Bangladesh reported projects are not about water savings in wet processing, but more about push taps and water trigger nozzles. In India process optimisations have been done for water efficiency and to reduce chemicals. For Turkey nothing is reported about water issues, except

for reducing soft water use. For all four countries electricity and heating (thermal) are still big parts of the most popular resource saving projects.

There are some specific interventions reported related to processes (China) e.g. installation of dyeing machine with low liquor ratio which saves water, but is this the only machine investment that has been done and is the installation of dyestuff and auxiliary agent automatic weighing and dispensary system made in the same unit? In Turkey optimization of process machinery is reported, but in which way/s? It would have been of help if it had been possible to rank the maturity of the units in the project.

Since STWI Projects is a water initiative project, it would have been preferable that more details about the implemented interventions related to water had been added to the annual reports to facilitate the assessment of the achieved results concerning water, including:

- i) Distinguishing between garment units and units for wet processing;
- ii) Distinguishing between process water and water used for other purposes; and
- iii) Providing more information/details about the interventions carried out when talking about "Process optimisation".

3.3.7 How has the governance of the project in terms of contracts and procurement with project partners functioned?

This question can be broadened to look at how the support systems within SIWI worked in relation to STWI Projects. This is an issue for on-going discussion between SIWI and its core-funder Sida. The reason is that a review of internal management and control systems in September 2015 gave 25 recommendations to address weaknesses within SIWI. Several of the most urgent recommendations concerned SIWI's work with projects and partners, such as procurement policy, reporting and financial management. A follow-up of the recommendations in April 2017 revealed that only four of the recommendations had been implemented, nine partially implemented and twelve had not been implemented. Potential explanations given in the 2017 report are that SIWI went through a major reorganization process in 2016 which resulted in fewer staff resources and an increased focus on streamlining the project management process. Part of this process has involved the establishment of a new controller position and recruitment of a new chief financial officer.

This background is of interest because these broader weaknesses may explain some of the observations made during the evaluation. First, the financial reporting is quite rudimentary and much manual work seems to be involved to extract project-level financial information from the current accounting system. The evaluation has not been able to get information on e.g. the cost of the water governance workshops organised in 2018 or the Global Reporting System. Second, while the key project documents and reports were available from the start of the evaluation, they do not well describe how programme management progressed and other programme documentation does not seem to be centralised and easily accessible to SIWI staff (the factory data is a case in point). Third, there have been weaknesses in the overall project and results-based management, which meant that decisions were taken regarding programme priorities and resources that do not seem to have been well-anchored in SIWI as an organisation.

As regards procurement, the external 2017 follow-up report mentions that SIWI has developed general procurement guidelines, but that they have not been implemented. Within STWI Projects all major consultancies at country level seem to have been publicly procured in competition. The evaluation has seen examples of procurement documentation, but not made any comprehensive assessment of the processes employed, nor looked at how the other consultancies that were engaged during the project, particularly for communication, were engaged.

Lastly, the set-up of STWI Projects was highly intense in terms of contracting. Within the programme SIWI has managed contracts with the technical consultants and individual factories in each country, in addition to fees paid by factories and Brands. This has to a large extent been done manually, which overall has worked, but been time-consuming.

3.3.8 How effective have the decision-making mechanisms been?

The functioning of the STWI networks is shaped by a set of Network Principles (dated 10 May 2015). It also outlines STWI's governance and management structure:

- Host and Secretariat – SIWI
- Steering Committee - Ten members of which three members may be SIWI representatives. The chair is held by a process secretary (external facilitator). The Steering Committee meets three times per year to discuss network activities related to expanding and strengthening the Initiative.
- Members' Meetings – Brands meet three times per year under the Chatham House Rule.

In interviews, Steering Committee representatives state that they have had limited insight into project implementation, even though there are detailed Steering Committee minutes (which may be the best source for following how the project progressed) showing that information on STWI Projects was a standing agenda point. Brands also give relatively low scores to the quality of management of STWI Projects (50% agreeing or strongly agreeing that management was of high quality).

The overall impression from interviews and the Brand survey is that STWI Projects was managed in some isolation from SIWI and the Brands, which may be explained by several factors, such as high work pressure on project staff and the need for frequent international travel, the decentralised project management culture and weak support structures within SIWI, a certain detachment on behalf of Brands, and personal management styles within SIWI. Only 39% of the respondents to the Brand survey agreed that the STWI Project had sufficient human resources to manage the project. While this entrepreneurial approach certainly yielded results at country level, it resulted in weaknesses in monitoring, documentation, transparency and lesson-learning, which is likely to have affected the long-term value of the project negatively.

3.4 Impact

3.4.1 What is the overall impact of the project in terms of direct or indirect, negative and positive results?

Assessing impact is generally a challenging task as it depends on many factors, to which a project can only contribute. Going back to the reconstructed theory of change in Figure 1, the kind of impact we can expect from STWI Projects is of social, environmental and economic nature. When reflecting on this the first thing to consider is scale. What should be clear from the discussion so far, is that STWI Projects has primarily worked at factory level, but largely been ineffectual at systemic level. This means that any impact is most likely to be localised in and around factories, benefitting the long-term profitability of factories, its workers and surrounding communities. We do not have any systematic data on any of these variables, since the project did not include any follow-up mechanisms at this level. However, it is not unlikely that the project has had an impact on all three accounts. The factories that responded to the survey certainly believe this to be the case. Figure 16 shows that factories are overwhelmingly positive on a host of aspects and conditions that are necessary for impact. Since there inevitably is a positive bias here we need to be cautious in our interpretation, but these responses indicate that STWI's contribution was valuable not only to the factories but also externally.

This sentiment was echoed during the factory visits in both Bangladesh and India as the structural and technical changes made are likely to stay, as are the increases in capacity. There is evidence that the implemented recommendations have made the working conditions better for the workers, particularly for the women in the operating sections who suffered from increased heat and dust. Since the project has achieved significant resource savings it does not seem unreasonable that this also has benefitted the natural environment. Our limited consultations with local communities confirm that the impact on them is indirect at best, given that many factories are located in industrial zones and communities may not be very concerned by the resource use of individual factories. For example, the factories visited both in the north and south of India were mostly located in the established industrial clusters or economic zones. As such, the communities lived far from the industries and were understood as not having major troubles about the pollution. Other important links may be economic in nature as communities work in and provide services to factories:

I am 59 and I lived here most of my life with my family now also with my grandchildren. The factories here are a good source of income for me and I cater to a large number of customers from my tea-stall. I have not seen or heard of about pollution in this area. – Tea stall operator in Noida

Much more evidence is needed to demonstrate the links between factories, local communities and the programme, which also are likely to vary between locations. Brands seem very positive about the effects of the project on factories (and the STWI network) as shown by the Brand survey results in Figure 18. They are, however, more hesitant about the wider impact at factory level and externally, with only a third of respondents agreeing that factories have continued to invest in sustainability and that the project has benefitted communities living close to the factories.

Investments in sustainability may also be a necessity for factories who want to stay competitive given that pressure is increasing from both local authorities and global markets. In this perspective it is worrying that factories state that in relative terms they have not been able raise prices thanks to their sustainability work (only 46% agree or strongly agree with such a statement – a result that stands out in the factory survey). This result can be combined with the Brand survey finding that only 37% of responding Brand representatives agree or strongly agree that STWI Projects has contributed to changing the way companies work with suppliers. This sentiment is confirmed in interviews – it is a great challenge for Brand sustainability managers to get other parts of the companies to consider sustainability, since the core business staff tend to lack adequate incentives and knowledge in this area. In both Brands and factories, during the evaluation we have seen how the interest from CEOs is central for this work. Larger companies are likely to have an advantage here as small- and medium-sized companies may lack resources and are less visible. We also see a potential limitation of STWI Projects, and perhaps the PPDP overall, in that changing the behaviour of Brands has not been an explicit objective, which limits further the direct systemic impact of the project on the textile industry. Instead, this impact may have been more indirect in stimulating the work of the STWI network, which primarily engages sustainability managers.

Figure 16 Factory survey – contribution of STWI and factories work on sustainability

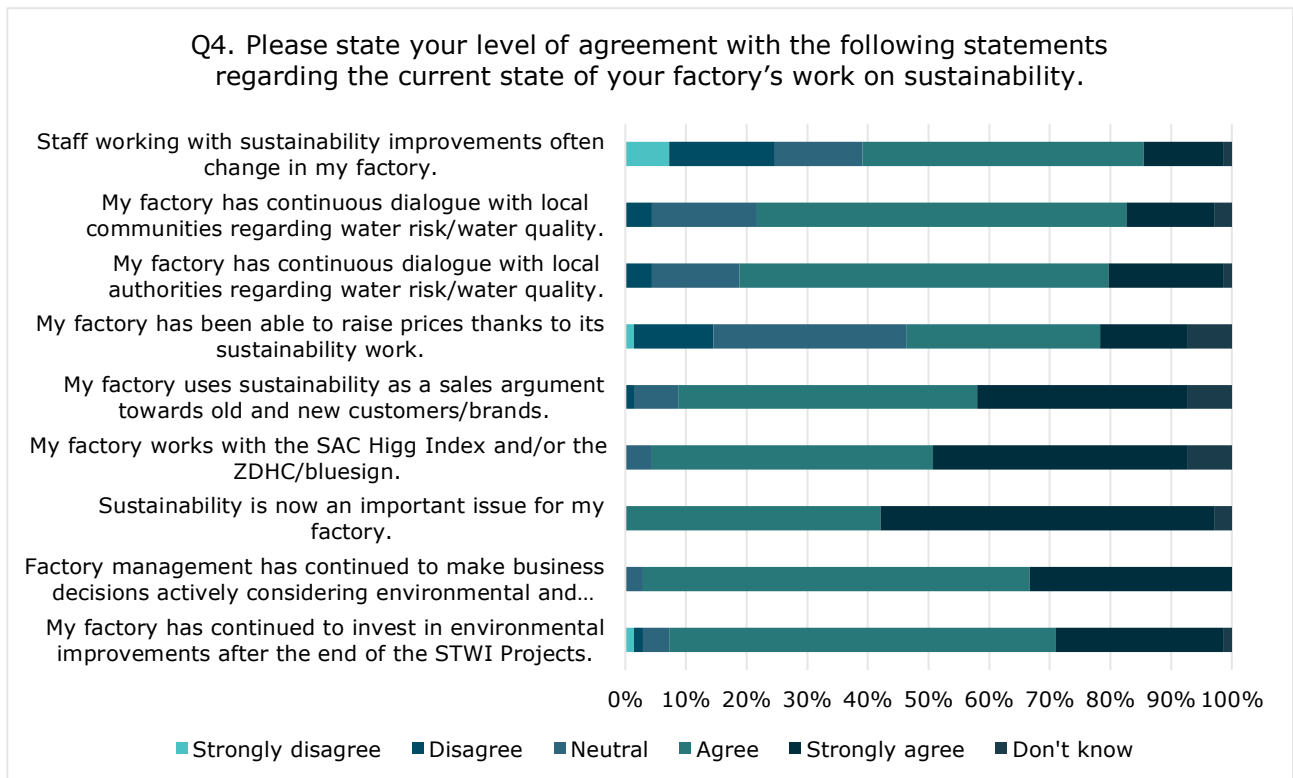
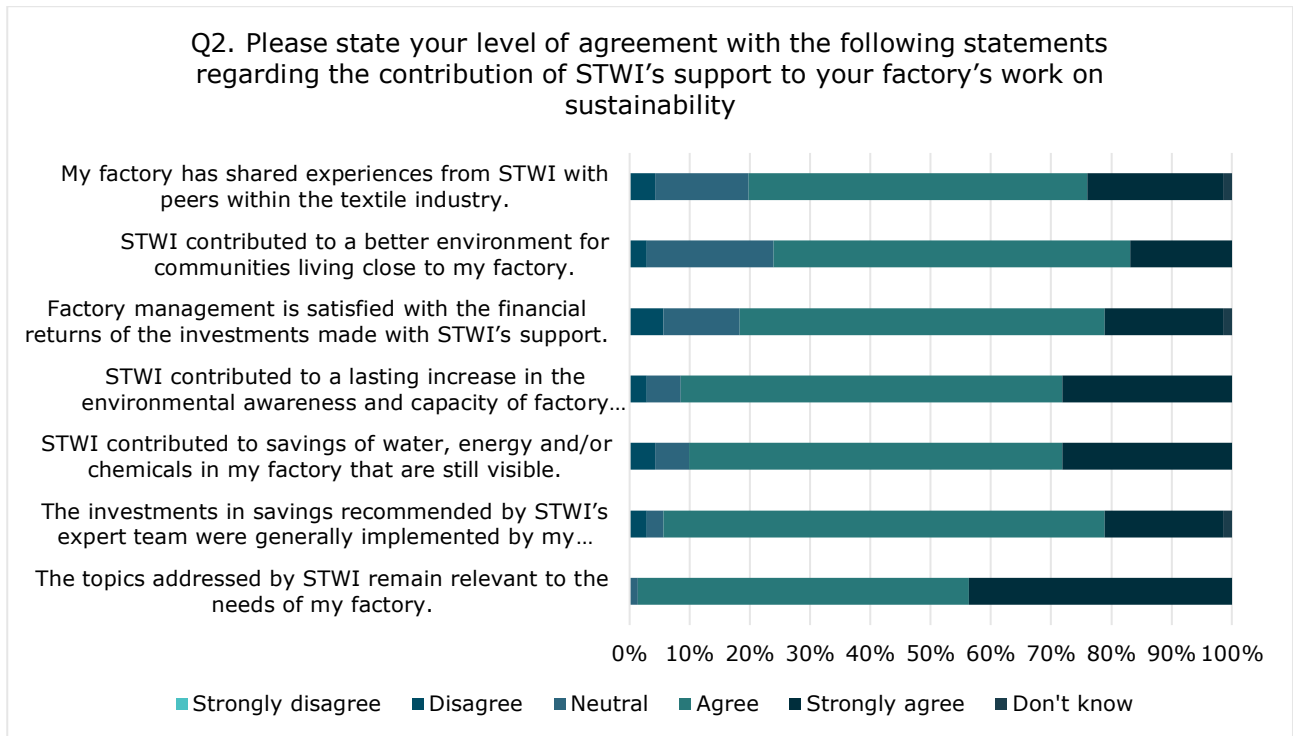
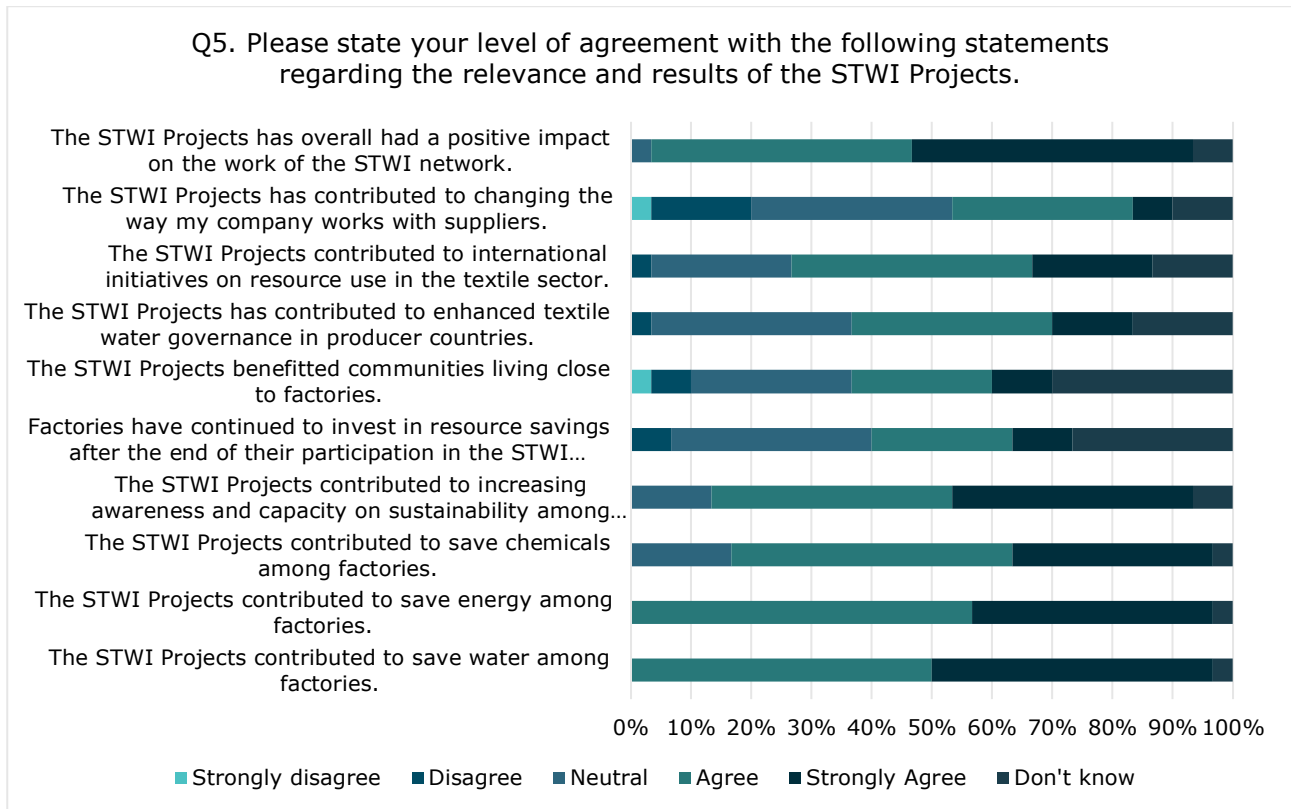


Figure 17 Factory survey – contribution of STWI and factories work on sustainability



3.4.2 Other impact questions

To what extent have mills owners/managers/workers changed production procedures and continue to invest as a result of STWI projects?

See section 3.4.1.

Have stakeholders shared results with or initiated dialogue with local communities? Have local communities reacted to any positive change in the local environment during the project period that can be attributed to STWI projects?

As shown in shown in Figure 16 most of the factories responding to the survey state that they are in dialogue with local communities. During factory visits the evaluation encountered instances of dialogue between the factories and the communities in Bangladesh, concerning access road widening, settling disputes with trucks carrying textile inputs and finished goods. For instance, Friday prayer time is usually avoided to facilitate people travelling to mosques. Other dialogues involved CSR-linked initiatives. One factory restored and donated books in a school library in the community and a few others arranged Ramadan gifts to poorer community members. However, there is a tendency in factories not to engage with community leaders except for security issues. In India the evaluation team saw an example of a factory CSR program in the nearby villages aimed at educating the youth with IT training and increase their employability. Most of the community members interviewed claimed that they did not see any problem in the quality of drinking water or living standards linked to textile factories. Many have been

living in places like the newly industrialised areas of Noida for 10-15 years. Overall, the evaluation found no direct evidence that local communities reacted to any positive (or negative) change in the local environment that can be attributed to STWI projects.

Have any regulation or government actions been enforced during the project that have in any way been influenced by STWI projects?

There is no evidence that STWI Projects has contributed to any such actions.

Have participating private sector stakeholders shared and communicated their engagement in and results from STWI projects?

Casual browsing of the websites and sustainability reports of Brands participating in STWI Projects show that members overwhelmingly refer to STWI Projects. This is an indication that the project is visible for people working with sustainability within the Swedish textile sector.

3.5 Sustainability⁹

3.5.1 How are the achieved results, especially the positive changes generated by STWI projects going to be sustained after the programme ends?

The discussion on impact in section 3.4.1 shows that there have been results that are likely to be sustainable at factory level. There is anecdotal evidence that the supported factories have taken steps to continue sharing experiences among themselves. There is an active chat group in China – which proved effective in enhancing the response rate to the factory survey – and there is talk of plans to start one in Bangladesh. However, the way STWI Projects was focused and managed may have reduced the chances of building on the results achieved, promoting sustainability and achieve greater long-term impact:

- The three components that were aimed at reaching systemic change were downplayed during the project, basically focusing the project on service delivery;
- There have been inadequate efforts to systematically document and disseminate good practice within the project;
- Staff changes within the project and inadequate documentation have meant that SIWI has lost institutional memory and relationships with many of the supported factories, something which became very clear during the preparation of the factory survey and visits; and
- Disagreements on the appropriate follow-up between project stakeholders has led to a lost year, with low levels of activity and loss of trust and energy within the STWI network.

These issues mean that arguably SIWI missed an opportunity to use the project results and experiences to inform the textile community at different levels on what works where and why. The project experiences would also have had great potential to inform the development of down-to-earth manuals, guidelines and fact sheets on sustainability for both factories and Brands. If nothing is done, there is now a risk that important lessons learned generated by the project will be lost.

⁹ Evaluation question 26. "What level of awareness and knowledge remain at different levels of stakeholders, incl. CEO, DFO, dye masters, seamstress levels?" will not be treated separately since so little data was collected at this level of detail.

3.5.2 Will there be continued willingness by factories to invest in water efficiency after graduation from STWI projects? How will the incorporated changes be financed after the funding ends? Will there be a demand for follow up support?

The factory and Brand surveys indicate that there is a clear willingness to continue investing in sustainability and a need for continued support at least among the factories surveyed, which is unsurprising given the great challenges confronted by the sector. In Bangladesh two of the visited factories stated that they have set aside separate funds to fund future green projects, while two factories planned for future construction of rain water harvesting facility. The factories that have been awarded for their performance with the STWI project, remain great advocates in support of the program. Two thirds of the visited factories in Bangladesh stated that they were willing to continue using the services of the technical consultants.

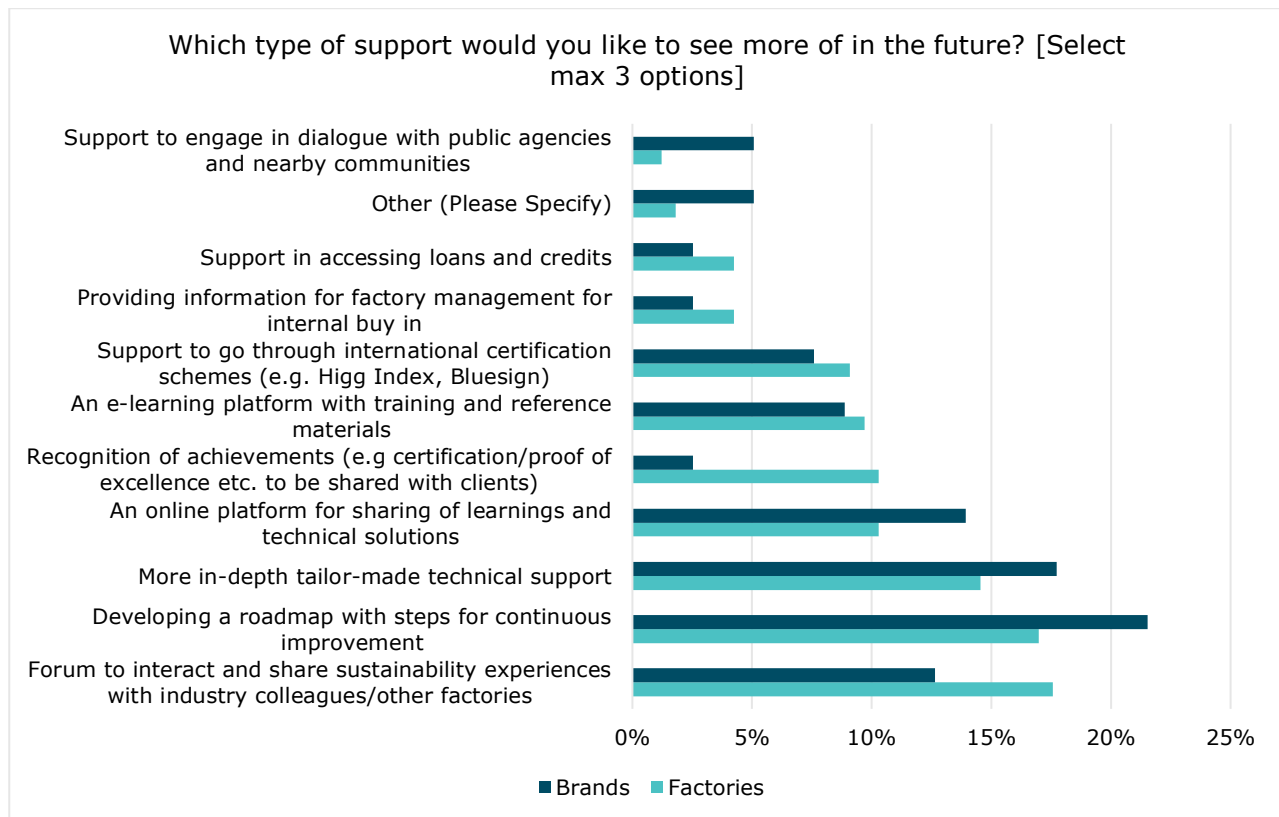
During the factory visits to India the evaluation team noted that there are compelling signs that changes made toward achieving energy and water sustainability in the factories are there to stay and to scale-up. In conversation with two factories in north India, it was understood that retrofit financing or green financing should be more widely available to the textile units as Government of India has different schemes to support new green projects but such facilities with often privileged interest rates are not accessible to existing factories. This opens up a new advocacy front for the development partners to encourage businesses, particularly in the textile and leather sectors, to campaign for government initiatives to respond to the financing need among the existing textile units who are struggling to cope with the compliance issues connected to water and environment.

When asked to select a maximum of three among a list of different types of follow-up support in the surveys there was some agreement between factories and Brands. Both actors prioritised:

- Creation of a forum to interact and share sustainability experiences with industry colleagues/other factories;
- Developing a roadmap with steps for continuous improvement;
- More in-depth tailor-made technical support; and
- An online platform for sharing of learnings and technical solutions.

Tailor-made support and sharing of experiences are thus high on the industry list. There are some differences between the project countries. While factories in all countries favour an exchange forum, the roadmap was mainly preferred by Bangladesh and Turkey and tailor-made support by Bangladesh and China. Factories in Turkey were less interested in an online platform. Interestingly, support in accessing loans and credits comes very low on the wish list for future support in all countries. Reverting back to the results presented in Figure 17, it may be that the greater concern is to be awarded with higher prices for sustainability work by buyers, something that does not seem to be a given. Close and long-term relationships between factories and Brands may be a facilitating factor, as this may increase trust and even involve financial contributions in making sustainability investments. Developing such relationships may of course be difficult to small to medium Brands, which absorb a small share of factory output and have less resources.

Figure 18 Factory and Brand survey - Type of preferred future support



3.5.3 Is there willingness to invest in STWI related activities from Swedish and Nordic member brands (i.e. development, travels, meetings)?

A central contentious issue that emerged in the interviews with SIWI staff and Brands concern the size of the financial contribution of Brands to a potential follow-up project. It seems to be generally recognised that a financially viable model needs to be found, which does not rely on Sida funding. The challenge is that the level of funding needed per factory to continue operations proposed by SIWI has proved unacceptable to Brands. There are financial reasons for this unwillingness to pay, but also questions about the value-added of SIWI compared to procuring cheaper consultancy services on the open market (see section 3.3.1). These issues have not been resolved at the time of writing. SIWI has now been granted a no-cost extension by Sida to use remaining funds (around 785 TSEK) to conduct a feasibility study of a digital platform aimed at finding a cost-effective way forward for STWI. The study will be finalised in November 2018.

4 Conclusions and lessons learned

4.1 Relevance

There is no doubt that the problems STWI Projects aimed to address were and continue to be highly relevant. This is clear from reports on sustainability in the sector, in addition to the Brand and factory surveys and interviews. Despite progress, the textile sector has a long way to go to reach sustainability. The five project countries were selected based on production quantities of relevance to the STWI Brands and the local level of water risk – all the production areas are in a medium or higher water risk category. The poverty relevance of the project ap-

appears to be indirect as local communities were not directly targeted. The programme was fundamentally an innovative factory level project, combining support to resource reduction investment, with capacity building in the form of training of management and staff, in addition to exchanges between factories. Components 2-4 that targeted local governance, international processes and communication had limited scope and were down-played during implementation. The scope of the project was very ambitious, covering multiple locations in five countries and hundreds of factories. This created a major risk to spread efforts and resources thinly. The initial expectation to contribute to improved national water governance in the supported countries was unrealistic, which would have been clear if an explicit Theory of Change had been developed.

The PPDP set-up was fundamental in generating significant resource savings in a short period of time. Brands contributed by engaging factories, SIWI by providing a platform for implementing the support and Sida with its financial resources. However, there were also weaknesses with the design that has become apparent primarily related to the distortive incentives of the public subsidy provided by Sida and lack of requirements on Brands to change the way they do business.

4.2 Effectiveness

The main results within the project were produced at factory level in Component 1. This work generated resource savings within factories that are generally considered to be very impressive by SIWI, Brands and other stakeholders and have been published widely. It has been challenging for the evaluation to assess and validate these results, partly because the amount of data is massive, but also because the raw savings data has not been available in any accessible form to the evaluation. Instead the evaluation has been confined to illustrating the considerable variations between countries, resource types and factory types that hide behind the aggregate data.

Component 2 generated water governance reports for each of the five countries and seven capacity building workshops. These activities have reached an impressive number of stakeholders, but the evaluation has found no convincing evidence that these largely isolated outputs have contributed to any higher-level objectives, beyond a few spin-offs. Component 3 has mainly involved participation in meetings within international processes. The available evidence indicates that SIWI through STWI Projects has managed to establish itself as an actor in the ecosystem of sustainable textile, however what this means in terms of actual influence is difficult to assess. Initially described as a cornerstone of the project, the ambitions of Component 4 – communications – were limited to building and updating a Website, presenting STWI in meetings and organise two media campaigns per annum. These outputs have largely been achieved, which has generated some external attention, but a strategic approach has been lacking and the broader influence has not been consistently monitored. Cross-cutting issues have not been actively considered in the STWI Project to any considerable degree, beyond environmental sustainability which is the main focus of the programme, despite being included in the original project document.

4.3 Efficiency

The project got up to speed already by the first year and then spent somewhat under budget the two remaining years. Indirect costs (salaries to SIWI project management) made up 30%, while direct costs of component activities (inclusive global – spending across components) made up 58%, with 12% dedicated to logistics. Component 1 is unsurprisingly the most important, absorbing 44% of total spending and 76% of direct spending. There is no absolute metric to assess whether the results justify the cost. There was large variation in the cost per factory between the countries. This cost fell over time, which may also have impacted quality. The original budget also included in-kind support from Brands and factories. Overheads and

capacity building activities made the project more expensive than pure market-based consultancy. If these in-kind contributions are included, the cost per factory increases dramatically. The assessment of the project's effectiveness shows that there is clear evidence that the project added value in relation to capacity and exchange of experience at factory level, but this is much less clear in terms of methodologies and advocacy at governance level. High return on investment for factories is reported within the project, but it is difficult to have a clear picture of what is behind these numbers.

There were issues with the technical consultants in all countries except Bangladesh, but, overall, their performance seems to have been quite satisfactory and fundamental in order to achieve the scale and results that was possible within the project in a short period of time. The project results reporting and data collection were generally adequate to meet the requirements of Brands. However, there are significant limitations in how the investment and savings data was collected, stored and analysed during the programme, which makes ex-post evaluation and learning difficult. Sida has in a separate process paid attention to weaknesses in SIWI's internal management and control systems. This is also apparent in the project management, financial management and administration of STWI Projects.

The overall impression from interviews and the Brand survey is that STWI Projects was managed in some isolation from SIWI and the Brands, which may be explained by several factors, such as high work pressure on project staff and the need for frequent international travel, the decentralised project management culture and weak support structures within SIWI, a certain detachment on behalf of Brands, and personal management style. While this entrepreneurial approach certainly yielded results at country level, it resulted in weaknesses in monitoring, documentation, transparency and lesson-learning, which we will see below limited the way the results achieved at factory level could inform policy-makers and global processes.

4.4 Impact and sustainability

What should be clear from the discussion so far is that the project has primarily worked at factory level, but largely been ineffectual at systemic level. This means that any impact is most likely to be localised in and around factories, benefitting factories' long-term profitability, workers and surrounding communities. We do not have any data on any of these variables, since the project did not include any follow-up mechanisms. However, it is not unlikely that the project has had an impact on all three accounts at least indirectly. Since the project has achieved significant resource savings it does not seem unreasonable that this also has benefitted the natural environment. Our limited consultations with local communities confirm that the impact on them is indirect at best, given that many factories are located in industrial zones and communities may not be very concerned by the resource use of individual factories. Factories state that in relative terms they have not been able raise prices thanks to their sustainability work and there is evidence that the programme has struggled to influence the core work of Brands.

The discussion on impact shows that there have been results that are likely to be sustainable at factory level. However, the way STWI Projects was focused and managed may have reduced the chances of building on the results achieved, promoting sustainability and achieve greater long-term impact. This is due to lack of results at systemic level, limited dissemination of lessons-learned, staff changes and disagreements on follow-up modalities. If this is not remedied, important lessons learned generated by the project risk being lost.

A central contentious issue that emerged in the interviews with SIWI staff and Brands concerns the size of the financial contribution of Brands to a potential follow-up project. There is a common understanding that a financially viable model needs to be found, which does not rely on Sida funding. The challenge is that the level of funding needed per factory to continue opera-

tions proposed by SIWI has proved unacceptable to Brands. These issues have not been resolved at the time of writing. SIWI has now been granted a no-cost extension by Sida to use remaining funds to conduct a feasibility study of a digital platform aimed at finding a cost-effective way forward for STWI.

4.5 Lessons learned

A number of valuable lessons can be extracted from STWI Projects:

- The PPDP can be an innovative and powerful approach to reach scale and produce results in limited time, in areas that are difficult or impossible to reach by standard aid programmes;
- However, the PPDP should not only target an isolated development problem, but also aim to initiate systemic change within industries in beneficiary countries, Sweden and globally;
- Country and factory contexts are highly variable, meaning that a standard approach is unlikely to fit all, and contextualisation may often be needed;
- There is a need to be realistic about the scope of a programme and not forget that social change is a highly complex process that may require repeated long-term engagement;
- Project management needs to be inclusive and transparent to engage stakeholders during implementation;
- The implementing organisation needs to have adequate human resources and strong management and support systems;
- Monitoring, analysing, reporting and disseminating results is particularly important in a programme relying on quantitative indicators and that aims to use lessons learned to achieve systemic change;
- It is important to agree from the start what should be measured and the definitions, methodologies and systems to be used for this; and
- Discussions on sustainability of results and follow-up activities need to be initiated already at the programme design phase and be conducted in an inclusive and transparent manner during implementation.

5 Recommendations

The evaluation issues the following recommendations:

5.1 SIWI

Recommendation 1: SIWI should immediately secure the raw investment, savings and contact data for all supported factories for all three years and put it in an accessible form such as Excel. In anonymised form this data should be made available to academics.

Recommendation 2: SIWI should produce or commission a high-quality synthesis and analysis of the results and experiences from STWI Projects, focusing on what worked where and why. This should be followed up by a reflection on how the experiences gained from STWI Projects can more systematically be used for advocacy and national and global levels and to inform the development of practical implementation guidelines for Brands and factories.

Recommendation 3: SIWI needs to continue to address the weaknesses in its project management and support systems and implement more comprehensive results-based management, since unresolved these issues may have consequences for future programmes.

Recommendation 4: In the follow-up of STWI Projects, SIWI should focus on its core business in water governance, experience sharing and relationships with national and international processes, while remaining relevant to the textile industry. SIWI should not engage in direct service delivery (such as coordinating consultancy support to factories as was done in STWI Projects), as such work is far removed from the core remit and capacities of the organisation. The recommendations of the SWAR evaluation remain relevant.

5.2 Brands

Recommendation 5: In view of the sustainability challenges within the sector, Brands should continue their collaboration to find ways to work pro-actively and adapt their core operations towards sustainability within the textile sector in production countries, Sweden and globally.

5.3 Sida

Recommendation 6: Sida should ensure that PPDPs consider poverty impact and systemic change, and incite Swedish and international private sector partners to integrate sustainable development within their core operations.

Appendix 1: Terms of Reference

Terms of Reference for the Evaluation of Sweden Textile Water Initiative 2014/2017 (extension 2018) implementation in India, China, Bangladesh, Turkey and Ethiopia

Date: 2018-03-28

1. Evaluation object and scope

Programme background

In 2014 the textile industry accounted for USD 400 billion in global exports annually, and 8 percent of world trade in manufactured goods.¹⁰ The industry is expected to grow by about USD 100 billion a year, reaching the trillions by 2020. Since the industry is one of the largest water users, ideally the industry needs to become 40 per cent more water efficient by 2020 in order not to increase its water impact as the market grows. Little has been done, almost halfway to this deadline. In many production countries in Asia, the textile industry is the fourth largest industrial water user. Furthermore, the World Bank estimates that 20 per cent of industrial freshwater pollution is caused by the textile industry, positioning it in many production countries as the single largest industrial water polluter.

Swedish fashion companies have understood that there is an immediate need for action to address water risk. Since 2010, about 30 major Swedish brands have worked collaboratively with Stockholm International Water Institute (SIWI) to develop the industry's first joint guidelines for improved water efficiency, chemical pollution prevention, and resource recovery in the textile and leather supply chains. The guidelines aim, by referring to best practices, to build capacity on sustainable water use within brands and through the first tiers of their supply chain. The guidelines were implemented and reviewed in a pilot project in India (the SWAR project), co-financed by Sida and three Swedish brands (Lindex, Indiska and KappAhl) (Audit report in Annex E).

Based on the positive results from the SWAR pilot programme - Sida and Stockholm International Water Institute (SIWI) and 24 Swedish brands collaborated in scaling up the programme "Sweden Textile Water Initiative Projects 2014-2017" (henceforth referred to as "STWI Projects") - a programme to improve water efficiency in production processes for suppliers and sub-suppliers to STWI brands in production hubs of India, China, Bangladesh, Ethiopia and Turkey. In addition, STWI Projects extends its impact to a wider base of stakeholders

¹⁰ Reuters Research and Markets: Business and Market Analysis for the Global Textile and Apparel Industry. October, 2014. http://www.researchandmarkets.com/reports/508819/textile_outlook_international_business_and#pos-0

including relevant authorities, industry associations, media, etc. in Sweden, the production countries and internationally.

STWI Projects has been a partnership between Sida, SIWI, STWI network brands and suppliers and sub-suppliers in major production hubs. You will find a summary of STWI Projects outcome objective and theory of change. For a detailed description including suggested interventions, plans, baselines, targets, and budget, please refer to Annex D: Project proposal: “STWI Projects: Improving water efficiency in production processes for suppliers and sub-suppliers to STWI brands in India, China, Bangladesh, Ethiopia and Turkey 2014-2017”. The development of STWI is summarised in Figure 1 below.

STWIs evolution



FIGURE 1: EVOLUTION FROM SWEDISH BRAND NETWORK TO GLOBAL SCALE-UP PROJECT

SIWI believes that sustainable water use in production is possible through capacity building and the practical experience at different managerial levels as it improves the knowledge base for decision-making among brands, suppliers, sub-suppliers, technical consultants, sector associations, and public-sector authorities. Having tested this approach in SWAR, the results showed that companies have a willingness to adapt to changes if they “learn by doing,” and that practical learning leads to positive results in the company’s productivity.

Outcome objective and project Components (local, national and international)

The outcome objective defined for all STWI projects (2014-2017) components is: ***“To improve water efficiency in production processes for textile and leather manufacturers in major production hubs: Bangladesh, China, Ethiopia, India, and Turkey.”***

The textile industry is one of the most polluting industries in the world and transfers externalities from developed to developing countries that have weaker implementation, a limited regulatory framework, poor or no monitoring, or weaker implementation. The STWI programme was structured in four components with the aim of influencing textile industry representatives to invest in industrial improvements.

1. **Component 1: "Capacity Building and Direct Impact Project Implementation"** (local outcome objective) is the main component and focuses on building capacity of the factories that have direct business relations with Swedish brands.
2. **Component 2: "Improving Industrial Water Governance"** focus on informing and influencing the national level.
3. **Component 3: "Harmonisation of STWI Guidelines and Global Multi-Stakeholder Programmes"** (international outcome objective). The third component directs to the global scale and promotes the sharing of knowledge among industry and harmonization of CSR standards, which is a tangible issue for many suppliers.
4. **Component 4: "Communications and outreach"** (local, national and international outcome objective). Communicates the results from the programme and address' the stakeholder's concerns.

Theory of change

The theory of change has its main emphasis on building the capacity and awareness of resource savings at the factory level. The methodology starts with the low hanging fruits, such as preventing leakage, changing to LED lights, continuing to more advanced projects that require larger investments. The improved activities are only achievable as the level of awareness is raised and opportunities generated by the return of investment is recognised. The project cycle is annual and continues for two years.

The process can be visualized as follows (in annual cycles):

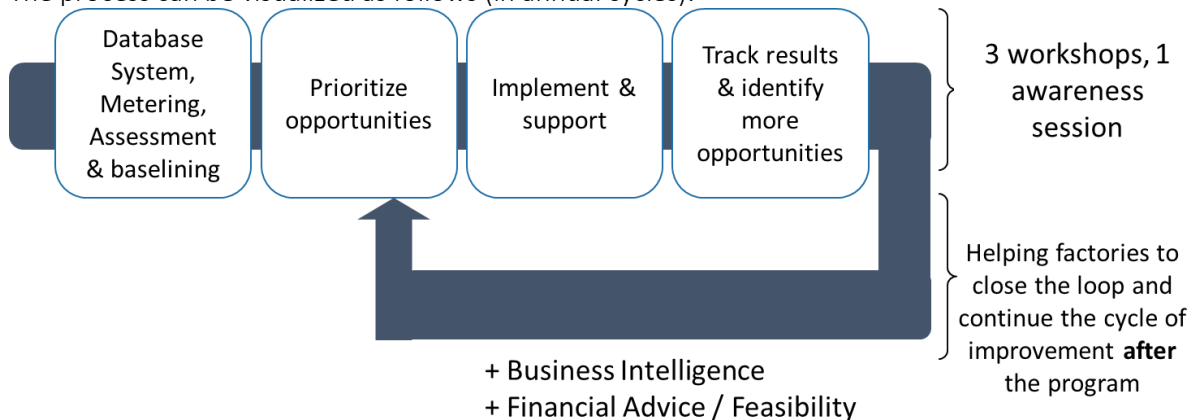


FIGURE 2: COMPONENT 1 IMPLEMENTATION PROCESS AT THE PRODUCTION COMPANY LEVEL

STWI Stakeholders

Brands: Brands, together with SIWI, developed and designed the project. Brands nominate suppliers and sub-suppliers to the project. Brands pay membership fees to the STWI network and contribute in-kind time and travel costs for follow-up visits. Brands spend about 4-14 working days per nominated supplier to follow-up on project implementation. Brands participate in quarterly and annual review meetings to jointly steer programme implementation with the other project proponents.

Factories: Participate in workshops and awareness sessions, implement projects suggested by SIWIs technical consultants/ sub-contractors at their own cost (possible investment and time), provide data and set-up measurement systems as recommended/asked by SIWI technical consultants and/or the brands.

Technical consultants: Contracted by SIWI to do factory assessments and report back data to the STWI database from which reports are generated at the end of the activity period.

Sida: Support project implementation by providing funding covering SIWI project management and technical consultants. Sida will participate in yearly review meetings with SIWI, and advisory meetings with SIWI and brands, to synchronise efforts towards improved outcomes following an assessment of project implementation during the year. Sida helps to facilitate policy dialogue through the embassies in the countries where the project operates.

SIWI: Develop proposals, report, manage and drive project activities as agreed with Sida and the brands. Ensure that environmental goals are set and met in project design and throughout implementation. Build the capacity of brands, suppliers, consultancies and institutions/policymakers to continue improving the environmental impact of the textile industry. Provide business and policy intelligence and reports for public and private decision makers. Develop a bank of knowledge on industrial water challenges, risks, and solutions. Provide a neutral platform for continuous capacity development in the textile sector on water and environmental issues. Responsible for reporting and administration (including contracting and agreements) required by the project.

The scope of the evaluation and the intervention logic or theory of change of the project/programme shall be further elaborated by the evaluator in the inception report.

2. Evaluation rationale

STWI projects has run from 2015, with inception funding 2014 and with a no-cost extension 2018. With the significant results achieved in driving global change towards more sustainable textile and leather production, STWI has gained increasing reputation for providing an excellent platform for the stakeholders to learn and share sustainability results and practices, and access to necessary capacity for making the changes happen.

Dialogue with a range of stakeholders has shown that there is both a need and an interest for scaling up the impacts of STWI and making the knowledge and learning available and accessible to a broader group of stakeholders. Bearing this in mind, SIWI will commission an external independent evaluation to reflecting upon the success and lesson learned from the 3-year STWI projects design and implementation and providing input to develop a programme model which address' cost efficiency, outreach and impact. It is also a major programme set-up as a PPDP for SIWI and Sida, and specific learnings from this type of partnership is desirable.

Evaluation purpose: Intended use and intended users

The purpose or intended use of the evaluation is to:

- help SIWI and its partners to assess progress and results of on-going STWI to learn from what works well and less well. The evaluation will be used to inform decisions on how project implementation may be adjusted and improved;
- provide SIWI and its partners with an input to upcoming discussions concerning the preparation of a new phase of STWI;
- serve as an input for SIWI to the decision on whether STWI programme in any shape or form could receive continued or renewed funding or not.

The primary intended users of the evaluation are:

- The project management team of STWI
- The SIWI executive management team
- Sida
- Current, and potential members of STWI (i.e. brands/private sector/factories) and the STWI steering group
- Participating factories
- Other stakeholders who are informed of the programme and contributed to STWI activities
- Potential donors

The evaluation is to be designed, conducted and reported to meet the needs of the intended users. Tenderers shall elaborate in the tender how this will be ensured during the evaluation process. Other stakeholders that should be kept informed about the evaluation include:

- The Swedish embassies in the concerned countries
- Regional, relevant authorities in the concerned countries
- Other relevant stakeholders involved in water governance in the concerned countries

During the inception phase, the evaluator and the users will agree on who will be responsible for keeping the various stakeholders informed about the evaluation.

3. Evaluation criteria and questions

The evaluation object is “Sweden Textile Water Initiative Projects (STWI Projects) 2014-2017” which is a public private development partnership project funded by Sida and 24 Swedish textile brands, implemented by Stockholm International Water Institute, SIWI.

The programme has relied heavily on *Component 1: Capacity Building and Direct Impact Project Implementation*, both in developing the methodology of STWI, sharing of best practices and data collection. The theory of change is that by building the capacity in the first and second tier of the supply chain leads to resource savings benefitting local communities and the environment. The emphasis of the evaluation should therefore be to evaluate and find room for improvement, without excluding the other components.

The focus of the evaluation will be on relevance, effectiveness, efficiency, impact and sustainability. In line with the scope of the evaluation, main evaluation questions have been formulated below. Throughout the evaluation we need to take into account that the findings may differ between the different stakeholder groups outlined above. The evaluator is requested to optimise these questions in the inception report and describe which stakeholder groups will be included in answering the specific main questions.

The specific objectives of this evaluation are to:

- **Evaluate the effectiveness of the implementation of all components of STWI projects at all levels (local, national and international).** The aim is to establish the extent to which STWI programme attains or is likely to attain its objectives and delivered results. This includes an assessment of influencing factors for achievements and /or failure.
- **Evaluate the impact and sustainability of STWI projects.** The aim is to establish the extent to which the positive and negative changes are produced by STWI interventions, directly or indirectly, intended or unintended, and to what extent the effects and changes in management and behaviour of STWI projects are sustained at factory level after the intervention at factory level has ended and if/how this can be optimised.

- Evaluate to what extent STWI Projects have influenced cross-cutting issues such as poverty reduction and transparency and integrity issues.

More specifically it could include questions below:

Relevance

- To what extent is STWI projects relevant to the priorities of stakeholders in China, India, Bangladesh, Turkey and Ethiopia?
- To what extent do achieved results (project goal, outcomes and outputs) continue to be relevant to stakeholders?
- Are the activities, outputs and outcomes of STWI Projects consistent with the overall goal of the programme?
- Has the distribution of costs between participating stakeholders been adequate, in relation to benefits?
- Assess the strengths and weaknesses of the project's theory of change, and the effectiveness of the project design (PPDP) in reaching intended results.

Efficiency

- Do the results justify the costs of the project?
- To what extent is STWI value for money for STWI projects partner brands and factories?
- What is the return on investment (ROI) for the participating factories (taking into account the programme and the improvements implemented resulting from the programme)?

Effectiveness

- To what extent does STWI projects attain or is likely to attain its objectives, directly or indirectly, intended or unintended?
- To what extent has the project contributed to intended outcomes? If so, why? If not, why not?
- Have the relevant stakeholders in each project geography been informed of or involved in the programme? Have they been interested in participating?
- Have international platforms or similar platforms/initiatives invited STWI projects to participate in meetings, share knowledge and shape content?
- Has the outreach of the project been established and well received by industry representatives?
- Has the performance of technical consultants contracted within the programme been sufficient?
- Has the data reporting, data base functions and the generation of tailored reports been efficient and met the requirements of the stakeholders?
- How has the governance of the project in terms of contracts and procurement with project partners functioned?
- How effective have the decision-making mechanisms been?
- Please document the roles and responsibilities of different partners and how they have contributed to project results. What in the set-up has contributed positively to project results? What aspects could or should be developed further or designed differently?

Impact

- What is the overall impact of the project in terms of direct or indirect, negative and positive results?
- To what extent have mills owners/managers/workers changed production procedures as a result of STWI projects?
- How much of the recent investments are a result of suggestions from STWI projects/ STWI capacity building efforts?
- Have stakeholders shared results with or initiated dialogue with local communities?
- Have local communities reacted to any positive change in the local environment during the project period that can be attributed to STWI projects?
- Have any regulation or government actions been enforced during the project that have in any way been influenced by STWI projects?
- Have participating private sector stakeholders shared and communicated their engagement in and results from STWI projects?

Sustainability

- How are the achieved results, especially the positive changes generated by STWI projects going to be sustained after the programme ends?
- Will structures be in place, allowing activities to continue after the programme end? Will there be local “ownership” of the results of the activities?
- How will the incorporated changes be financed after the funding ends? Will there be a demand for follow up support?
- Sustainability of projects and continued willingness to invest after graduation from STWI projects by factories.
- Willingness to invest in STWI related activities from Swedish and Nordic brands that are members (i.e. development, travels, meetings).
- Awareness and knowledge generated at different levels of stakeholders, incl. CEO, DFO, dye masters, seamstress levels.

Questions are expected to be developed in the tender by the tenderer and further developed during the inception phase of the evaluation.

4. Evaluation approach and methods for data collection and analysis

It is expected that the evaluator describes and justifies an appropriate evaluation approach/methodology and methods for data collection in the tender. The evaluation design, methodology and methods for data collection and analysis are expected to be fully presented in the inception report. A clear distinction is to be made between evaluation approach/methodology and methods.

The evaluator should facilitate the entire evaluation process with careful consideration of how everything that is done will affect the users uptake of the evaluation. It is therefore expected that the evaluators, in their tender, present i) how intended users are to participate in and contribute to the evaluation process and ii) methodology and methods for data collection that create space for reflection, discussion and learning between the intended users of the evaluation.

Evaluators should take into consideration appropriate measures for collecting data in cases where sensitive or confidential issues are addressed and avoid presenting information that may be harmful to some stakeholder groups.

Consultants are free to use well established techniques and methodologies for organisational strategy assessments. The review will primarily be based on discussions and interviews with key SIWI staff, consultants and boundary partners. It will be required to analyse various programme documents, budgets, outreach channels etc. In addition, surveys can be used as appropriate. SIWI will make available relevant annual reports, publications, materials, contact lists etc. required for an effective review. SIWI will facilitate access to boundary partners as applicable.

The analysis is primarily a desk top study. Interviews through skype and phone as well as e-mail exchange is deemed sufficient. SIWI welcomes tenders with offices or strategic partnerships in India, China and Bangladesh.

For mill interviews it is suggested that three units in each of the countries, and employees at four different levels are included in the analysis of the material, preferably across the value chain, head office, regional purchase office, first tier supplier, second tier supplier on manager and worker levels.

5. Organisation of evaluation management

This evaluation is commissioned by SIWI, in dialogue with Sida.

The intended users are; the project management team of STWI at SIWI, the SIWI executive management team, Sida's global unit responsible for STWI. Current, and potential, members of STWI represented by the STWI steering group and other potential donors to the project. The intended users of the evaluation form a steering group which has contributed to and agreed on the ToR for this evaluation. The role of the steering group is to evaluate tenders and approve the inception report and the final report of the evaluation. The steering group will be participating in the start-up meeting of the evaluation as well as in the debriefing workshop where preliminary findings and conclusions are discussed.

6. Evaluation quality

The evaluation shall conform to OECD/DAC's Quality Standards for Development Evaluation¹¹. The evaluators shall use the Sida OECD/DAC Glossary of Key Terms in Evaluation¹². The evaluators shall specify how quality assurance will be handled by them during the evaluation process.

8. Time schedule and deliverables

It is expected that a time and work plan is presented in the tender and further detailed in the inception report. The evaluation shall be carried out from 1 May and is expected to be completed by end of November 2018. The timing of field visits, surveys and interviews need to be settled by the evaluator in dialogue with the main stakeholders during the inception phase.

The table below lists key deliverables for the evaluation process. Deadlines for final inception report and final report must be kept in the tender, but alternative deadlines for other deliverables may be suggested by the consultant and negotiated during the inception phase.

¹¹ DAC Quality Standards for development Evaluation, OECD, 2010.

¹² Glossary of Key Terms in Evaluation and Results Based Management, Sida in cooperation with OECD/DAC, 2014.

Deliverables	Participants	Deadlines
1. Start-upmeeting, Stockholm	SIWI, SIDA, Evaluator	1 June 2018
2. Draft inception report		Tentative 29 June 2018
3. Inception meeting, Virtual	SIWI, SIDA, Evaluator	Tentative 9 July 2018
4. Comments from intended users to evaluators		Tentative 30 July 2018
5. Final inception report		20 August 2018
6. Debriefing workshops	SIWI, SIDA, Evaluator	17 September 2018
7. Draft evaluation report		Tentative 8 October 2018
8. Comments from intended users to evaluators		Tentative 29 October 2018
9. Final evaluation report		19 November 2018
10. Seminar, Stockholm	SIWI, SIDA, Evaluator, Brands	Tentative 30 November 2018

The inception report will form the basis for the continued evaluation process and shall be approved by Sida before the evaluation proceeds to implementation. The inception report should be written in English and cover evaluability issues and interpretations of evaluation questions, present the evaluation approach/methodology, methods for data collection and analysis as well as the full evaluation design. A clear distinction between the evaluation approach/methodology and methods for data collection shall be made. A specific time and work plan, including number of hours/working days for each team member, for the remainder of the evaluation should be presented. The time plan shall allow space for reflection and learning between the intended users of the evaluation.

The final report shall be written in English and be professionally proof read. The final report should have clear structure and follow the a clear report format preferably using the Sida Decentralised Evaluation Report Template for decentralised evaluations. The executive summary should be maximum 3 pages. The evaluation approach/methodology and methods for data collection used shall be clearly described and explained in detail and a clear distinction between the two shall be made. All limitations to the methodology and methods shall be made explicit and the consequences of these limitations discussed. Findings shall flow logically from the data, showing a clear line of evidence to support the conclusions. Conclusions should be substantiated by

findings and analysis. Recommendations and lessons learned should flow logically from conclusions. Recommendations should be specific, directed to relevant stakeholders and categorised as short-term, medium-term and long-term. The report should be no more than 50 pages excluding annexes (including Terms of Reference and Inception Report). The evaluator shall adhere to the Sida OECD/DAC Glossary of Key Terms in Evaluation¹³.

9. Evaluation Team Qualification

In addition to the qualifications already stated in the framework agreement for evaluation services, the evaluation team shall include the following competencies:

- Relevant university degree (Masters)
- At least 10 years of proven experience in leading and conducting similar evaluations in Asia
- Demonstrated experience in qualitative and quantitative methods of data collection and analysis
- Demonstrated familiarity with supply chain / value-chain development, environmental evaluation, industrial development, particularly chemicals, water and energy.
- Familiar with (trends in) the textile sector and good understanding of its various stakeholders, roles and positions.
- Ability to interpret and analyse complex qualitative and quantitative data and to present findings and recommendations clearly and concisely
- Strong analytical and report writing skills
- Excellent intercultural and interpersonal communication skills, including coordination, facilitation and presentation
- Fluency in English, spoken and written

It is desirable that the evaluation team includes the following competencies

- Good understanding of the textile value chain in Asia and its sustainability challenges in general and textile wet processing specifically.
- Local partners or network that can take part in the evaluation on location.
- Working knowledge of Swedish.
- References from similar, previous evaluations

A CV shall be included in the call-off response for each team member and contain full description of the evaluators' qualifications and professional work experience.

It is important that the competencies of the individual team members are complimentary. It is highly recommended that local consultants are included in the team if appropriate.

The evaluators must be independent from the evaluation object and evaluated activities and have no stake in the outcome of the evaluation.

10. Resources

The maximum budget amount available for the evaluation is SEK 500 000.

¹³ Glossary of Key Terms in Evaluation and Results Based Management, Sida in cooperation with OECD/DAC, 2014

Contact details to intended users (cooperation partners, Swedish Embassies, other donors etc.) will be provided by SIWI.

The evaluator will be required to arrange the logistics, including booking interviews, preparing visits etc., including any necessary security arrangements.

11. Annexes

Annex A: List of key documentation

1. Project proposal: "STWI Projects: Improving water efficiency in production processes for suppliers and sub-suppliers to STWI brands in India, China, Bangladesh, Ethiopia and Turkey 2014-2017" (annex D)
2. STWI annual report 2016 (narrative and financial)
3. STWI global results 2015 & 2016
4. STWI website (www.stwi.se)
5. STWI video (<https://www.youtube.com/watch?v=JWf5XoXFEeQ>)
6. Evaluation criteria, scorecard (Annex C)
7. SWAR Audit Report 2015 (Annex E) sent separately.

Annex B: Data sheet on the evaluation object

Information on the evaluation object (i.e. project or programme)	
Title of the evaluation object	STWI Projects: Improving water efficiency in production processes for suppliers and sub-suppliers to STWI brands in India, China, Bangladesh, Ethiopia and Turkey 2014-2017
Activity period (if applicable)	2014-2017, with no-cost extension till June 2018
Agreed budget (if applicable)	
Main sector	Environment
Name and type of implementing organisation	SIWI, NGO
Information on the evaluation assignment	
Commissioning unit/Swedish Embassy	Sida's global unit responsible for STWI
Contact person at unit/Swedish Embassy	Mats Åberg
Timing of evaluation (mid-term, end-of-programme, ex-post or other)	End of programme

Annex C: Scorecard for procurement

Evaluation criteria	Weight	Score evaluation	Points	Score
Proposal describes ways to analyse issues and find potential solutions based on the OECD criteria	30%	30 to 10 points for solution description		0

Availability of tenderer within given timeframe	30%	30 points for delivery within given time frame, -5 points for every week later		0
Service costs	20%	more than 10% cheaper than average = 30 points; 5 or 10% cheaper than average price = 25 points; near average price = 20 points; 5 or 10% over average price = 15 points; more than 10% over average price = 10 points		0
References for similiar services available	10%	more than three references = 15 points; at least 3 references = 10 points; at least one reference 5 points		0
Local presence in China, Bangladesh, and or India	10%	all three countires = 15 points; at least 2 countries = 10 points; at least one country 5 points		0
		Total/Fit	0	0

Annex D: Project/Programme document

Sent separately.

Annex E SWAR Audit Report 2015

Sent separately.

Appendix 2: Evaluation Matrix

Evaluation question	Methods				
Relevance	Factory vi-sits	Surveys	Interviews	Document re-view	Database analysis
1. To what extent has STWI projects been and continues to be relevant to the different priorities and contexts of stakeholders in China, India, Bangladesh, Turkey and Ethiopia?	X	X	X	X	
2. Are the activities, outputs and outcomes of STWI Projects consistent with the overall goal of the programme?	X	X	X	X	
3. What are the strengths and weaknesses of the project's theory of change, and the effectiveness of the project design (PPDP) in reaching intended results?			X	X	
Effectiveness					
4. To what extent has the project produced intended outputs and contributed to outcomes?	X	X		X	X
5. To what extent have the relevant stakeholders in each project geography been informed of or involved in the programme?			X	X	
6. Have international platforms or similar platforms/initiatives invited STWI projects to participate in meetings, share knowledge and shape content?			X	X	
7. Has the outreach and communication of the project been appropriate and well received by industry representatives?		X	X	X	
8. How have the roles and responsibilities of different partners functioned and how has this contributed to project results?		X	X		
9. To what extent has relevant cross-cutting issues been integrated into project design and implementation?	X	X	X	X	
Efficiency					
10. To what extent do the results justify the costs of the project?			X	X	
11. To what extent is STWI value for money for STWI projects partner brands and factories?	X	X			
12. What is the return on investment (ROI) for the participating factories, separating between dry and wet processing?				X	X
13. Has the distribution of costs between participating stakeholders been adequate, in relation to benefits?			X	X	
14. Has the performance of technical consultants contracted within the programme been sufficient?	X		X	X	
15. Have the data collection and reporting, data base functions and the generation of tailored reports been appropriate and met the requirements of the stakeholders?		X	X	X	X
16. How has the governance of the project in terms of contracts and procurement with project partners functioned?			X	X	
17. How effective have the decision-making mechanisms been?		X	X	X	

Impact					
18. What is the overall impact of the project in terms of direct or indirect, negative and positive results?	X	X	X	X	
19. To what extent have mills owners/managers/workers changed production procedures and continue to invest as a result of STWI projects?	X	X			
20. Have stakeholders shared results with or initiated dialogue with local communities? Have local communities reacted to any positive change in the local environment during the project period that can be attributed to STWI projects?	X	X	X	X	
21. Have any regulation or government actions been enforced during the project that have in any way been influenced by STWI projects?			X	X	
22. Have participating private sector stakeholders shared and communicated their engagement in and results from STWI projects?		X	X		
Sustainability					
23. How are the achieved results, especially the positive changes generated by STWI projects going to be sustained after the programme ends?	X		X		
24. Will there be continued willingness by factories to invest in water efficiency after graduation from STWI projects? How will the incorporated changes be financed after the funding ends? Will there be a demand for follow up support?	X	X			
25. Is there willingness to invest in STWI related activities from Swedish and Nordic member brands (i.e. development, travels, meetings)?		X	X		
26. What level of awareness and knowledge remain at different levels of stakeholders, incl. CEO, DFO, dye masters, seamstress levels?	X		X		

Appendix 3: List of main documents

1. SWAR Final Evaluation Report, 2015
2. Application to and Agreement with Sida, 2014
3. Narrative Result and Financial Reports to Sida covering 2014-2015, 2016, 2017
4. Summary outputs 2015-2017
5. Independent Auditor's Reports 2014-2015, 2016
6. Country reports for Bangladesh, China, India, Turkey covering 2015, 2016, 2017
7. Water governance mapping report Bangladesh, China, Ethiopia, India, Turkey, 2016
8. Reports on Water Governance Workshops in Bangladesh, China, India, 2018

Appendix 4: List of people consulted

Name	Organisation
Alok Alamban	SIWI
Andrea Djurle	SIWI
Elin Weyler	SIWI
Emilio Gúzman	SIWI (former H&M)
Frank Zhang	(former) SIWI
Harsh Sheth	SIWI
Jenny Grönwall	SIWI
Johan Karlsson	SIWI
Johanna Sjödin	SIWI
Katarina Veem	SIWI
Lin Zhao	SIWI
Mats Eriksson	SIWI
Mona Bostarius	SIWI
Phillia Restiani	SIWI
Rami Narte	(former) SIWI
Rowena Barber	SIWI
Shubra Bhattacharjee	SIWI
Stefan Heilscher	SIWI
Torgny Holmgren	SIWI
Anna-Karin Dahlberg	Lindex
Christiane Dolva	Fjällräven
Christina Muljadi	Filippa K
Eva Kindgren	Kappahl
Renée Andersson	(former) Indiska
Lena Berger-Andersson	Ellos
Petra Pettersson	Hemtex
Anne Kullman	Sida
Mats Åberg	Sida
Clara My Lernborg	Stockholm School of Economics
Jan-Peter Bergkvist	Sleepwell
Madelene Trang	Swedish Embassy Beijing
Sibbe Krol	IDH
Veronique Tjon	Sustainable Apparel Coalition

Appendix 5: Survey descriptive data

	Bangladesh	China	Ethiopia	India	Turkey	Total
Factories supported	59	90	2	79	46	276
Factories receiving survey	60	62	2	21	18	163
Total share	102%	69%	100%	27%	39%	59%
Share 2015	100%	0%	n/a	0%	0%	16%
Share 2016	100%	70%	100%	10%	26%	47%
Share 2017	100%	98%	n/a	100%	100%	103%

	Bangladesh	China	Ethiopia	India	Turkey	Total
Survey language	English	Chinese	English	English	Turkish	
Individuals receiving survey	204	92	3	44	37	380
Mails bouncing	2	5	0	2	2	11
Individuals responding	31	24	2	6	8	71
- of which women	1	10	0	1	2	14
- of which men	30	14	2	5	6	57
Share of surveyed individuals responding*	15%	28%	67%	14%	23%	19%
Max share of surveyed factories responding**	52%	39%	100%	29%	44%	44%
Max share of all factories responding**	53%	27%	100%	8%	17%	26%

Brands	
Survey language	English
Individuals receiving survey	112
Mails bouncing	0
Individuals responding	37
- of which women	24
- of which men	13
Share of surveyed individuals responding	33%
Number of Brands responding	23
Non-Brand representatives responding	3

Appendix 6: Results matrices and consolidated results

Component 1 (2015-2016 only, 2017 was unavailable at the time of report writing)

Out-come	Outputs:	Indicators:	Global			
			Baselines	Target	Results 2015	Results 2016
Component 1: Production companies have reduced their environmental impact quantitatively and qualitatively	1.1. Build systems to increase the efficiency of water, energy, and chemicals use at 120 factories each year	Water use reduced in % (kL)	47 305 433	10% a year	9% in total (8% per kg)	3351170 (7.08%)
		Energy use reduced in % (Electric kWh)	1 001 185 970	5% a year	3% in total (11% per kg)	27650006 (2.76%)
		Energy use reduced in % (Thermal Gj)	7 923 347.73	5% a year	3% in total (11% per kg)	553748 (6.98%)
		Chemical use reduced in %(kg)	153 867 854.90	5% a year	4,07% in total (6% per KG)	5198496 (3.37%)
		Legal compliance	70%	100% of all units improved	Achieved, all units improved on the STWI minimum level	77%
		Benchmark improvement	Water: 96.71 ltrs/Kg Energy: 28.35 Mj/Kg Chemicals: 325.12 grams/kg	Benchmarks for efficiency keep moving up in a linear manner	Achieved	Water: 88.59 ltrs/Kg (8.4%) Energy: 24.22 Mj/Kg (14.57%) Chemicals: 294 grams/kg (9.55%)
		Cost savings	73.02 Million SeK (target savings)	5% of resources costs have been saved per unit	21.89%	85.91 Million SeK (actual savings) 118% as compared to target
	1.2. Capacity Building: 1 Awareness session at each participating factory	Staff trained	39070	50% by end of project	57%, more than 12000 workers	15930
	1.3 Capacity Building: 3 workshops on cleaner production per region	Management trained	409	At least 2 decision makers at each unit	65%	176
	1.4 Environmental Management Systems: Establishing a resource efficiency monitoring system	Number of units who are connected to a resource efficiency monitoring system in place	32%	25% of units	88%	68%
1.5 Production companies have gone through four stages (see note 3)	Number of units who graduate out of stage 3 into stage 4	2	25% of units	22%	57	

- 1) KPI's are normalised with production type and production volumes for Turkey, India and Ethiopia. i.e. the average of all factories is not the country average since every factory has a different volume of production.
- 2) The financial saving baseline for global result is the total potential savings possible from all projects recommended to all factories, the result for global is the actual reported financial savings for all implemented projects on an annualised basis. The baseline should not be confused with the total cost of the factory's resource consumption.
- 3) Stage 1: Awareness of sustainable water use practices; Stage 2: Low-Hanging Fruits "low cost – high ROI" projects have been implemented; Stage 3: Resource use is optimised in production processes; Stage 4: Innovation Stage (Alumni).

Component 2 (2015-2018)

Outcome	Outputs	Indicators	Global Targets	Results 2015	Results 2016	Results 2017 (prel)	Results 2018 (prel)
2. Component 2: Build institutional capacities for improved decision making in managing industrial water risks at the national level.	2.1. Mapping of stakeholders of industrial water governance in 5 countries are created. (2015)	number of policy briefs	4 policy briefs are published yearly	80% of 5 reports are ready. First draft reports ready by end of March 2016	Water governance mapping reports for the five programme countries produced.	None	N/A
	2.2. Capacity building workshops on textile industry water governance and risk assessment are held in 5 countries. (2016)	number of participating organization	at least 1 key organization participating in each country	N/A	Capacity building workshops conducted in China, India, and Turkey.	A stakeholder meeting hosted by Bangladesh Water Multistakeholder Platform took place in Bangladesh in February 2017.	Capacity building workshops organized in China, Bangladesh and India.
	2.3. Industrial water governance and risk assessments are conducted by SIWI in collaboration with national, Swedish and international stakeholders. (2017)	Reports developed and communicated to stakeholders as an input for decision making processes	Examples of how these reports were used in key decision making processes	N/A	Risks assessments are captured in the water governance mapping reports	N/A	N/A

Component 3 (2015-2018)

Outcome	Outputs	Indicators	Targets	Results 2015-18
Component 3: Raise the water profile in global processes concerned with improving the environmental impact of the textile industry	3.1. The STWI Guidelines are continuously upgraded and are internationally recognised and applied in practice beyond the STWI partnership (i.e. by none Swedish brands).	STWI Guidelines updated once a year	STWI guidelines republished with new knowledge	The guidelines were updated in 2014. There have been on-going discussions on guideline revision, but these were inconclusive.
		STWI Guidelines are used by non-STWI companies	1 new company a year is using STWI Guidelines	Varner, Bestseller, Eurosko joined the STWI network in 2016. The STWI guidelines have been introduced to international brands such as Burberry, Zara, Adidas and Target.
	3.2. Cases are developed for applicability of global processes at the factory level	ZDHC Chemical List Reports	1 Report is created	STWI contributed to the OECD Due Diligence in the footwear and garment supply chain work ¹⁴ and the ZDHC Wastewater Guidelines. ¹⁵ Consultations with UNDP and WHO on water and pharmaceuticals.
	3.3. SIWI is contributing water knowledge to multi-stakeholder global textile sector processes such as the Sustainable Apparel Coalition.	Citations of SIWI in multi-stakeholder process documents, manuals or standards	Higgs or similar systems adds a chapter on water featuring SIWI knowledge	SIWI participated in 6 global forum meetings (3 SAC meetings and 3 ZDHC). SIWI/STWI presented at three separate times at EU level for a possible Flagship Initiative for the textile and garment industry on request by Directorate General for International Cooperation and Development (DG DEVCO). ¹⁶ STWI results and lessons were shared with the high-level Chinese delegation from the Ministry of Environmental Protection of China during their visit to the Swedish Environmental Agency on 29 November 2017. Recent dialogues with Apparel Impact Institute (in January, April and May 2018) and other initiatives such as Better Mill Initiative (BMI), PaCT/IFC, Clean by Design (CBD), Race to the Top and IDH on collaborative actions.
3.4. International benchmarks are created for sustainable water use in the textile industry	Benchmarks from 120 factories in 5 countries	Benchmarks are used in all progress report	Benchmarks were used in all reporting across component 1 (per factory, country, brand, and global)	

¹⁴ See <https://mnequidelines.oecd.org/responsible-supply-chains-textile-garment-sector.htm>.

¹⁵ See <https://www.roadmaptozero.com/news/post/zdhc-releases-wastewater-guidelines-to-coordinate-industry-efforts-eliminate-hazardous-chemicals/>.

¹⁶ See <http://www.europarl.europa.eu/sides/getDoc.do?type=REPORT&reference=A8-2017-0080&language=EN>.

Component 4 (2015-2018)

Outcome	Outputs	Indicators	Targets	Results 2015-2018
Component 4: Information about STWI Projects, its working modules, results, are communicated to non-partners in Sweden and abroad	4.1. Build STWI Website	Launching of Website	1 website	Website launched in 2015.
	4.2. Publish resource efficiency related intelligence from the five different STWI Project countries	Continuous update of web-page per country	4 updates a year	Data not available
	4.3. Spread awareness about STWI Projects in Sweden	Number of Sweden based meetings, non-STWI meetings, where STWI Projects is presented	10 meetings a year	2015: STWI presented at a number of meetings. Details in the narrative report. 2016: 13 meetings and STWI was presented 5 times at external meetings.
	4.4. Drive two media campaigns each year to communicate continuation / closure, and results of the past year	Number of media campaigns per year	2 campaigns per year.	2015: 2 campaigns were held at the launch of the programme and in conjunction with the award-winning of SWAR 2016: 2 campaigns: making the results for 2015 public and running up to the STWI seminar with GAP, Sida and USAid during WWW.

Appendix 7: Financial outcome (Sida contribution)

	2014	2015	2016	2017	Total
Indirect costs					
SIWI Overall Project Management, junior staff		845 244	772 570	691 689	2 309 503
SIWI Overall Country Coordinators, consultants				716 363	716 363
SIWI Overall Project Management, senior staff		2 482 597	3 963 626	2 827 088	9 273 310
Total	688 141	3 327 841	4 736 196	4 235 140	12 987 317
Direct costs					
Component 1		6 616 494	5 959 627	6 538 643	19 114 764
Component 2		645 223	1 165 732	40 243	1 851 198
Component 3		340 310	201 322	40 026	581 658
Component 4		382 111	320 017	642 659	1 344 787
Generic		1 636 960	-101 417	687 415	2 222 958
Total	0	9 621 098	7 545 281	7 948 986	25 115 365
Logistics					
Workshop venue	211 438	0	615 306	163 046	989 790
Workshop technical equipment	13 755		0		13 755
Printing of workshop material		0	27 286		27 286
Local transport and logistics	21 618	100 993	55 962	123 547	302 120
Flights for SIWI and sub-contractors	452 077	590 897	549 705	469 049	2 061 728
Accommodation for follow-up visits	369 993	249 562	244 973	266 158	1 130 686
Per diems for workshops (SIWI staff)		85 270	89 600	57 035	231 905
SIWI Seminar World Water Week	28 578	58 199	12 000	65 000	163 777
Visa costs (SIWI staff)	1 420	12 122	493	1 621	15 656
Financial Audit + system revision + other		50 000	64 400	43 100	157 500
Total	1 098 879	1 147 043	1 659 724	1 188 557	5 094 204
Grand total	1 787 020	14 095 982	13 941 201	13 372 683	43 196 886

Appendix 8: Bangladesh field mission report

1.0 Background and Methodology

STWI evaluation (2018) was designed to include field visits in factories in Bangladesh and India. Bangladesh was considered to form the pilot field visit in the evaluation which covers STWI phase 1 (2016-17) and phase 2 (2017-18) partner factories. Findings from the pilot will then be used to revisit the tools used to capture results and to design the field mission to India [Figure 1] covering partner factories both in the north and south of the country.

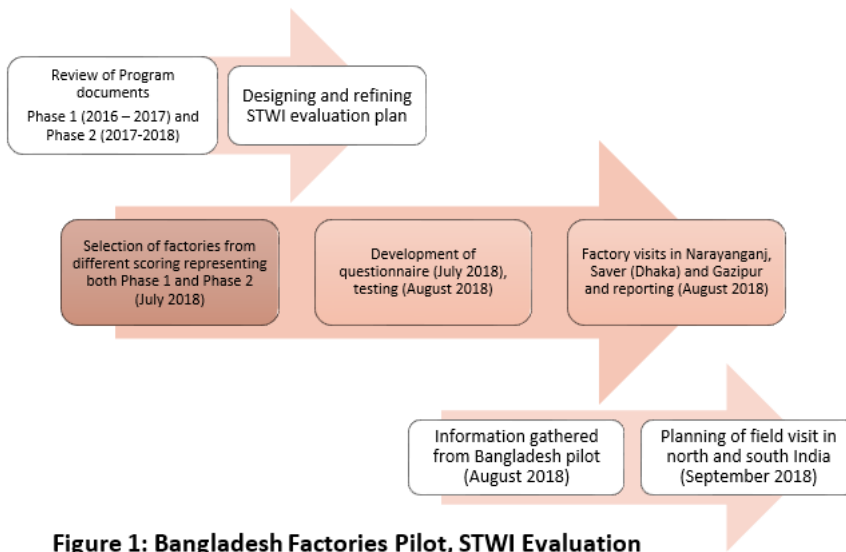


Figure 1: Bangladesh Factories Pilot, STWI Evaluation

The field visits in factories in Bangladesh took place in Savar sub-district of Dhaka, and Narayanganj and Gazipur districts on 29 and 31 July and 1, 2 and 4 August, 2018. Apart from interviewing factory professionals and communities surrounding factories, SIWI consultants and professionals working in the similar projects were also interviewed. The days, when field visits were conducted in Bangladesh, were interrupted by nationwide student protests blocking the roads and highways, making the

trips to and between the factories longer and making it impossible to conduct more than two factories a day. Altogether, nine factories were visited – one in Narayanganj, four in Savar, and remaining five in Gazipur. While the sampling of the factories was largely purposive, the selection of factories was made keeping in mind the guiding criteria: i. inclusion of three performance categories of factories as recorded by STWI: low, medium and good performers; looking at their size of investment and number of recommendations made by the technical consultants to reduce water and energy uses and the number of recommendations that were actually implemented; ii. inclusion of factories that participated both in STWI phase 1 and phase 2; and, iii. inclusion of factories operating in three main locations around Dhaka.

Confirmation with the factories for a visit was somewhat difficult due to incidental audits or unwillingness among some of the factories to meet consultants that were not directly relevant to sales. This caused delays in factory visits by a week. The number of respondents that formed the Bangladesh field pilot include: factory contact persons (20) with STWI project, technical consultants and industry stakeholders (4), and members of the community (14) living in and surrounding the areas of the factories.

2.0 Background of Factory Locations

Narayanganj (population: 1.8 million, 2012) has been an important trade and processing centre for jute since British colonial time. This district is also one of the oldest industrial cities in Bangladesh, currently hosting a large number of textile units in the country. With two adjacent rivers: Shitalakkha and Meghna, the city remains an important shipping and industrial centre. Most workers engaged in the textile units in Narayanganj are residents and exert a

good amount of influence in factory affairs. According to experts, the water level in Nrayanganj has already come down to 1200-1400 feet from the ground, having been extensively extracted for industrial use for decades.

Gazipur (population: 1.2 million, 2011) is a district located north of Dhaka in central Bangladesh. This is comparatively a new industrial zone in post-independence Bangladesh, and has rapidly expanded with textile and garments units from mid- to late-eighties and continues to grow, sacrificing much of its indigenous *Saal* forest. The district has traditionally been sparsely populated and hosted a number of agricultural institutions and research centres. Most workers engaged in Gazipur industrial units are usually migrants from poorer northern districts and also other parts of Bangladesh. Gazipur is a large district occupying most of highlands near Dhaka and is destined to host more industrial units in the years to come. However, experts say the underground water level has come down to 300-400 feet from the land surface by now.

Savar (population: 1.4 million, 2011) is a sub-district of Dhaka located northwest of Dhaka city. Savar is also a comparatively new industrial zone with a good number of textile and garment units. The industrialisation of Savar that includes a massive flood-plain started after government of Bangladesh established its first ever export processing zone in the country in early 80s. A large number of professionals working in the textile units in Gazipur and Savar, commute from Dhaka.

3.0 Findings from Technical Consultants

Engineering Resources International (ERI) has experience of working with both WaterPact (the IFC-managed similar water-saving program) and STWI. The firm started with 11 factories as a pilot in Bangladesh partnering with STWI and afterwards started working with 23 factories in 2016 and another 25 (including a few repeat contracts) in 2017. ERI continued with the STWI program till May 2018. The second phase of STWI program added a new feature like Global Reporting System with data continuity (documents back-up) which kept track of incremental chemical water use.

3.1 Relevance

ERI experts believe that the design of the programme was made in such an order that it gives water savings the top-most priority followed by energy and then chemicals. However, ERI observes a general rule that water consumption is directly related to consumption of energy and chemicals. Large amounts of chemicals leads to large amounts of waste water to treat and also a large amount of energy to heat the water in the production process.

According to ERI, apart from cost savings, investments have also been made by the factories when recommended by concerned Brands as a part of their advocacy campaign in water saving technology that led to concerned factories' increased interest. Response rate was higher among factories of Brands that have traditionally been influential over factories forcing them to comply with different social and environment standards. In addition, Senior Management of the factories was involved through signed contract with SIWI which yielded better results. To attain the initial number of 26 factories in 2017, 60 factories were approached by ERI and 70 – 75% of them were well responsive. The factories, where initial contact persons were engineers, committed interest in partnerships with SIWI by 80%. The factories, where contact persons were non-technical staff, was roughly 20% responsive in partnerships with SIWI. In ERI's opinion, factories were split between 50-50 in terms of assigning technical or non-technical staff in communicating with ERI and disseminating the message back to the Senior Management. According to the opinion of ERI staff, had the factories assigned technical staff with an understanding of the cost savings impact in the production process through the investment, the success rate among the approached factories for SIWI partnership would have been much higher.

Quote 1: Engaging top management at factories

"No entrepreneurs in the world would say 'no' to do something that would eventually save cost. While save investments have longer payback period, many investments can also experience recovery in a short time. This is the role of the contact person assigned to us to explain that eventually to management end of the day. Without proper understanding of the matrices, no one can convince the Senior Management who would ultimately make the decision".

- Representative, ERI

3.2 Effectiveness

In conversation with ERI, it was understood that the factories took part in the programme when the savings amount and impact were clear to them and again it was the assigned technical person (in comparison with the non-technical persons) who could demonstrate the savings in the production process to the Senior Management of the factories. In addition, Brands also played a strong role in finalising the deal between the factories and SIWI. Roughly, 40% of the factories, signed on to this partnership, did not quite employ their own analyses in investment and just followed Brand's instruction, mostly driven by the desire to score better in Higg Index on part of the Brands.

ERI's approach was to: first, assess the factory and then derive different calculations of savings against particular investments. This was later also verified by the factories while interviewing them. It was endorsed by the factories as a good practice by ERI to raise awareness at the factory level with convincing calculations. In later steps, ERI demonstrated operation of new technology after investment was made and supported targeted workshops and trainings for the participating factories – all of these, together with constant support to the Global Reporting System, proved to be effective in supporting factories in making the desired investments towards saving water and energy for the concerned factories.

3.3 Efficiency

In ERI's opinion, factories were facing difficulties with the Global Reporting System. The system was built in a way that all the content of a screen had to be populated and saved in order to move to the next screen. A partial saving option was not available, in effect, causing the users to start all over if they fail to complete all inputs into the system at once. It required one person to spend quite a few hours to collect all the data together. In a factory environment, that proved to be challenging as everyone was assigned with specific tasks on the floor. ERI claimed to be responsive to the clients requirement (which were also later verified with the clients) even after business hours. This again cost ERI much of their time as the data imputing function was solely to be done by the factories, and being responsive to the extensive queries by the factories, ERI had to line up experts for the desired period of time. In the end, the Global Reporting System that was installed to make the processes more efficient was actually causing troubles to the technical experts in supporting the concerned factories. It was understood that the systems needed to be amended to support the factories in adapting to the system.

3.4 Impact

The physical changes in the factories including push-tap, energy-saving lights, needle-lights, heat saving measures and daylight usage, among others, seem to stay in place in the long run as factories could assess the cost saved by introducing those measures. Not all of the water saving and utility measures involve similar size of investments. Many factories initially chose those technical and physical upgrades that required moderate investments but showed greater impact in terms of immediate savings. In this case, factories considered value for money that could show immediate results while leaving larger value-investments for later consideration. There are factories who opted for larger investments including rain-water harvest and storage tanks what they believe would secure them of water reserve and can save utility through pumping water from the underground. ERI was also convinced that through this initiative participating factories made an inner circle of factories who often would share their advices and

opinions about technical requirements and procurements, and investment analysis, as well as, management of their compliance for the common Brand(s).

4.0 Findings from Participating Factories

Out of nine factories, eight factory-contacts interviewed were directly involved with the implementation of STWI project in their respective factories while one of them was not. In the latter, the STWI contact had to meet a compliance team from a prominent buyer, assigning another colleague who was distantly managing the project, occasionally replacing him.

While answering the reasons for joining the STWI programme, all the first timers (the factories who partnered with STWI for the first time in 2017 and did not have any history of cooperation with STWI either through themselves or their sister concerns) mentioned about Brand's call for joining while later they all got convinced about the benefits of joining the STWI program. However, three STWI program repeaters mentioned about visible savings in water and utility that encouraged them joining the program in the first place. Out of the three program repeaters, one factory found the partnership very helpful that they wanted to remain in partnership for another year while implementing other recommendation made for their factory. Another repeating factory mentioned that the engagement started with STWI three months late, not convenient to properly understand, let alone implement all the important recommendations. It was just appropriate for that factory to extend the cooperation by a year to continue implementing the recommendations. The other factory that repeated the partnership agreement was for another production unit, a separate legal entity. In this case, the company felt that this was just the way to bring the changes in water and energy savings in their other factories with the help of technical consultants since ERI was not able to get engaged into separate agreements outside of STWI collaboration for some time.

The factories mentioned a range of support from the program in the beginning, including different options with calculations for upgrading different hardware and systems in the introductory awareness training sessions, on-spot demonstrations, and on-call advisory supports.

Working with many Brands, factories found it necessary to show improvement in certain areas in environment and social standards. Initially, factory management in general, were not concerned about the benefits unless advised by the Brands. However, later in the trainings, the factory representatives analysed operational costs with other participating textile units and they became aware of the cost differentials between different adopted technologies. A view shared by many was that without Brands' involvement, it was unlikely that the factories would have been interested to engage into these partnerships.

4.1 Relevance

Depending on the nature of production process i.e. wet-processing and cut-and-pack processing (another term for tailoring), factories make their own priorities in energy saving, water saving or chemical saving measures. Overwhelmingly most factories talked about water savings as the most relevant while some tied the water savings priority together with energy mentioning that the two are very much related to each other. Most cut-and-pack factories found it more useful to invest in energy savings, day-light use and general factory management practices that ultimately reduce energy savings.

Factories in Bangladesh are dependent on underground water. While use of underground water is not forbidden by laws, permissions are needed for pumping out underground water what understandably are not tightly monitored. The cost of pumping water is dependent on electricity and electricity supply can often be interrupted. In the present reality, there is often power cuts across the industrial zones in the country. Underground water is stored in a underground and/or over-head tanks for ensuring supply to dying and washing units. It is the uncertainty of energy supply and not the water reserve that led to most factories opting for partnerships with SIWI.

Most factories found the awareness training and external focused trainings most relevant while some others felt they have already been aware of the environmental sustainability issues from other Brands-directed programs and found training and networking through STWI partnership more relevant. There was practically no platform for networking for the factory floor engineers. This program brought together professionals from the participating factories (25 of them) and they had the opportunity to discuss about their own factory contexts with participants from other factories. In this regard, knowledge sharing among the participants remained valued benefits. Participants, to a large extent, also mentioned about factory based or on-spot training by the technical consultants. However, this came with either 2nd or 3rd importance level in their responses.

While discussing consistency in factory-support, most factories found the activities they were engaged in relevant to overall objectives of the program. Some factory professionals mentioned that the Global Reporting System was not completely understood by them. They also added that they did not know if they could continue using them. While in principle they agree on payment for using such systems, they were unsure whether they were ready to pay for the current version of the systems as the system required uninterrupted dedicated hours of involvement to complete the data requiring fields.

The theory of change and project design was understood by the majority of factory respondents. Several respondents could explain how their work activities supported by the programme is beneficial to the community and the environment and many of the professionals could connect the idea that water, utility and chemical saving is dependent on each other [Quote 2].

Quote 2: Water, utility and chemical uses are linked

“If we use more water, we use more energy extracting the water. If we could re-use some of the grey or treated water in toilet and car washing, we are actually saving both water and energy. If we are using less chemicals or dyes, we are actually using less water and saving energy for running the ETP and also releasing less amount of waste in the environment”.

- Senior Management (Compliance), factory

4.2 Effectiveness

The STWI partnership with factories has clearly been effective as unanimously agreed by the participating factories. While similar level of effectiveness could not be ensured for all the factories comprehensively, the factories decided what and where to invest and received desired benefits. The popular initiatives taken by the factories to reduce utility costs include: lighting system improvements, salvo motors instead of traditional motors, EFD compressor, push-tap, flow meter, insulation, water-leakage measures, water flow meter, air-leakage measures, air-trigger nozzle installations, boiler efficiency measures and so on.

It was understood by the factory management that some investments would involve a longer payback period while some investments would take shorter time to show the savings. The awareness and training workshops helped the factory professional to discuss about different water and utility saving measures with factory management which turned into successful implementations.

The STWI project itself was not found to be running much outreach activities except technical consultants making their efforts to discuss the terms of the partnerships with the factories. A similar program known as Water-Pact, funded by the Netherlands and managed by IFC was more familiar among the stakeholders. The reason is Water Pact has been a multi-year project and they had several recruitment circulars and managed several round-table discussions and seminars. However, STWI outreach was partially fulfilled by the connected factory staff, particularly when they got engaged with professionals from other factories. It was also learned from one respondent that they were planning to open a closed online group where relevant factory professionals would be allowed to join to ask questions and share experiences.

While in garments (less so in textile) factories women are overwhelmingly employed in the assembly lines, the technical contacts for water and energy saving approach was understood as 100% male dominated. An explanation could be that women trained in environmental compliance issues are less employed / interested in factory environment travelling from Dhaka. However, the measures initiated by the factories have largely benefitted women working inside and outside factories. The women working inside factories could avoid extra heat and dust and could access better working conditions as the overall factory environment improved. Women working in the sewing sections could now work easily compared to earlier situations after adding needle-light to their sewing machines. Needle-light was supportive to some of the women

Quote 3: Water saving in pre-prayer wash

"Muslim prayers begin with udju or ablution to cleanse face, hands and feet before prayer. During the time spent in factories two prayer times pass: one around mid-day and the other in mid-afternoon. While the ablution takes 2-5 min, the traditional taps allow water to flow while the user washes themselves. This push taps could now save 40% water spent during ablution"

- Mid-level Management, factory

Quote 4: Use of Heat as Wasted Energy to re-heat the Boiler

"We never thought that the heat we generate in factory floor that made ourselves hot inside could actually be used for heating the boiler saving electricity. What can be a better deal while we needed to run generation for the whole power generation?"

- Mid-level Management Compliance, factory

who found it difficult to work with inadequate light. Many factories introduced needle-light for all of its sewing machines. Also to women living in the surrounding areas, the reduced waste water by the factories can be translated into greater access to clean water who are severely affected by the non-compliant factories.

4.3 Efficiency

The factories received many of the eye-opening analyses from the technical consultants. Even though some of the factories have not invested enough in the technical upgradation, they did implement the low-key investments including day-light use, re-use of some of the water etc. what they have found most cost effective and requiring smaller amount of investment. Two of the factories were preparing for future rain-water harvesting technologies while two other factories made a plan to start about that time. Bangladesh, a recipient of large amount of monsoon rain could easily support filling of the water tanks for prolonged use by factories saving the energy cost of pumping out the underground water, as well as, saving the underground water itself for securing future drinking needs.

The factories have incorporated the itemised water and energy savings in their reporting system. However, one feedback received from the factories was that since the Global Reporting System does not show the calculations in the background, the factories sometimes have a hard time to check which sections / units were using what amount of water and energy or how efficiently they are managing their energy and water requirements. This is particularly a concern to those factories who partnered with STWI in 2016-17 before the implementation of the Global Reporting System and continued the partnership for the same factory or other factories under the ownership of a same group.

Factories as a whole spoke positively about the performance of the technical consultants. However, a few talked about the technical consultants who were relatively young and recently graduated from private university (in Bangladesh some public funded engineering and technical universities are more prestigiously and competitive to get enrolled into) and might show greater recognition and respect to elder engineers employed in the factories while presenting their recommendations. Some of the consultants also did not have experience in factories and factory staff found they lacked experience of factory contexts on the part of the consultants. However, it is of the evaluation consultants' opinion that this idea about young consultants offering technical assistance belongs to a very few representatives of the factories.

A few of the factory respondents were with the opinion that data collection and reporting, even when managed through Global Reporting Systems, needs to be monitored to be authentic. For instance, technical professionals may have an incentive to under-report expenses and over-report savings what may not be easily tracked by the management. Factory professionals may do it to make those findings (caused by the investments what often they themselves had been the advocates for) look better. Some sort of mechanism of internal cross-checking needs to be in place to authenticate the data and to counter against those practices.

The value addition of the partnership remains at a critical point at some of the factories where water uses are not segregated and all uses come from a common source of water i.e. pumped out underground water that are stored in a large tank. This is also the source of water in case of construction / renovation work which require a lot of water and what garments / textile units often encounter. If these factors are not taken into consideration, it is likely that the baseline could be overstated (if carried out during the construction work) or understated (if carried out before the construction work).

The factory respondents are often found to be unaware of the cooperation contracts signed between the factories and the STWI and were not able to discuss whether it was working well for the partnerships. However, in few cases, representatives from the top management were also present in the meetings or made a courtesy call during / after the discussions and none of them seem to have any objections to any particular clause of the contract.

Decision making mechanisms about the water and utility saving partnerships differ in factories. Generalists who often may be closer to management may not understand all the savings mechanisms very well and calculations may not be representative of the savings modality while technical persons who understand the issues may not be close enough to the management to convince them of the importance of water and utility savings and its financial implications.

Quote 5: Water use in construction

"I think one flaw that can remain in water and utility assessment is distinguishing the use of water in production and in construction. While there is technical assessment and there is construction going on then it will always give a positive effect afterwards because construction work was over. It will give just opposite (and not true) signal if there was no construction work going on during technical assessment".

- *Mid-level Management ECR, factory*

4.4 Impact

The overall impact of the STWI partnership looks positive. The structural and technical changes (not change of production process itself) made to reduce water consumption and reuse water for toilet-use and car-wash are there to stay as each factory had spoken out in favour of the adaptation to save water and energy and reduce cost. The amount of waste water that is released in the nature has also reduced and the factory staff had also spoken about their intention to share among the colleagues in other factories. As one factory technical contact put it, "what we have learned from this program will go with us and wherever we go, we will implement these arrangements to save on water and energy cost". Factory staff also mentioned about reusing the generator-heat in heating the boiler which will not only reduce the cost but also reduce total emissions. Use of lesser amount of electricity and / or natural gas, efficiency of boiler (auto tuning), flow gas analysis, oxygen percentage can also contribute to compliance with the environmental regulations advocated by the government and also by the Brands. There were compelling reasons to believe that the impact of this partnership will also impact the communities in all three locations where people depend on the underground water for drinking purposes.

4.5 Sustainability

STWI has achieved its results to a considerable extent depending on the factories concerned and the number of recommendations implemented. It was understood that STWI could have partnered with more factories if they would have promoted the program through different forums. Two of the factories informed the evaluation team that they have put aside separate funds to start financing future green projects while two factories planned for future construction of a rain water harvesting facility. The factories that have been awarded for their performance with the STWI project, remain great advocates in support of the program. Nearly 70% of the factories informed about their willingness for accessing the services from the technical consultants. While the ERI, the technical consultants informed that they were barred by the contract with SIWI that they would not engage with any factories in three years after signing the contract. However, if the project winds up, those clause of the contract with ERI may be revised to allow a market-driven approach in ensuring sustainability in the textiles and garments units in Bangladesh.

Quote 6: Sustainability for all of us

"I am sure we all are being benefitted from this program. While it reduced our cost in water, energy and chemicals, it also benefitted the community because we extracting less water and releasing lesser amount of waste".

- Senior Management (Fabrics), factory

5.0 Findings from Communities

Due to bad traffic during the field visits, communities could not be consulted in all factory locations. Communities were consulted in two factories in Savar and two factories in Gazipur. Around 50% of the people interviewed among the communities informed that one or more of their family members work in the surrounding factories.

Communities from all locations of Savar and Gazipur are dependent on underground water extracted by tube-well. Members of the community engaged in discussion did not use any purifying tablet or filtering system, rather drank the water directly. Communities informed they have not been sick and were not aware of anyone getting sick by drinking the water. This gives an indication that in these two locations, underground water has not been contaminated. However, there might be people living close to canals who might have a different experience. Both

in Savar and Gazipur water layer is found under 300-400 feet of the ground, as a general estimate.

Almost all garments and textile units in Savar and Gazipur are dependent on underground water. The government rules and regulations do not ban use of underground water but require permission for extracting it and limit the diameter of the water pipes etc. No members of the community have heard of any incidence of releasing untreated waste water underground as a way to hide the waste from visibility.

None of the respondents spoke about contracting skin diseases or getting exposed to chemical-mixed water. The canals where the waste water released, are usually not used for any domestic purpose in those two years.

There are 4-5 instances of dialogue between the factories and the communities. The dialogue involves widening of access roads, settling disputes with trucks carrying textile inputs and finished goods. For instance, Friday prayer time is usually avoided to facilitate people walking to mosques. Other dialogues involved CSR-linked initiatives. For instance, one factory restored and donated books in a school library in the community and few others arranged Ramadan gifts to poorer community members.

However, there is a tendency in factories not to engage with community leaders except on security issues.

The majority of the community members suggested that they did not see any problem in the quality of drinking water or living standards that they might consider to leave at some point. Many have lived here in the newly industrialised areas of Savar and Gazipur for last 15-20 years and constructed their new homes.



Photo: Conversation with the community in Savar

Appendix 9: India field mission report

1.0 Background and Methodology

Based on learning from the pilot field visit in Bangladesh, the evaluation tools were modified to interact better with the stakeholders from India in connection with STWI evaluation (2016-18). Out of the nineteen partner factories in India, several factories have already shut their operations either due to ownership disputes or as a result of having failed to comply with textile industry regulations particularly enforced in south of India. The selection of factories roughly represented 90% of the total number of partnerships in India (June 2018). Six factories were visited in the north while two factories were visited in the south. The factories represented a diverse nature of production units STWI entered into partnership with including textile dyeing units, ready-made garments factories, carpets / special textiles and leather (tannery). The factories were also chosen from both established industrial clusters and rural areas. The selection of factories in India also included factories that entered into partnership with SIWI during 2016-17 (some of which continued for additional years or initiated new partnerships for other units under the same management / ownership). The locations covered in India field visits included Delhi national capital region (e.g. Noida); Panipat in Haryana, Ludhiana in Punjab, and Badohi near Varanasi in northern part of India while Ranipet near Chennai, and Tiruppur near Coimbatore were visited in southern India.

Though primarily it was anticipated that a few other additional factories would also be covered, it was not possible at the end partially owing to the unavailability of the entrepreneurs during the field mission. In addition, the distance between the factory locations required extensive train and car trips since the factories were located far away from the major cities even though it was anticipated from the factory profiles that they were likely to be closer to the cities. The field visit in India covering interviews and meetings with factories and technical consultants took place between the period from 17-29 September, 2018. The factories, technical consultants and the members of the community were interviewed through a set of questionnaires, previously tested during the Bangladesh field visit and adjusted to be more effective during the India mission.

Receiving confirmations from the factories in India ahead of the visits were difficult due to incidental audits or unwillingness among some of the factories to meet consultants that were not directly relevant to sales. This caused a delay in finalising the factory visits by a week. The number of respondents that formed the India field visit included factory contact persons (17) with STWI project, technical consultants and industry stakeholders (5), and members of the community (7) living in and surround the areas of the factories. Attempts made to contact designated officers at the Swedish Embassy in Delhi and were unfortunately not available during the stay in and around Delhi.

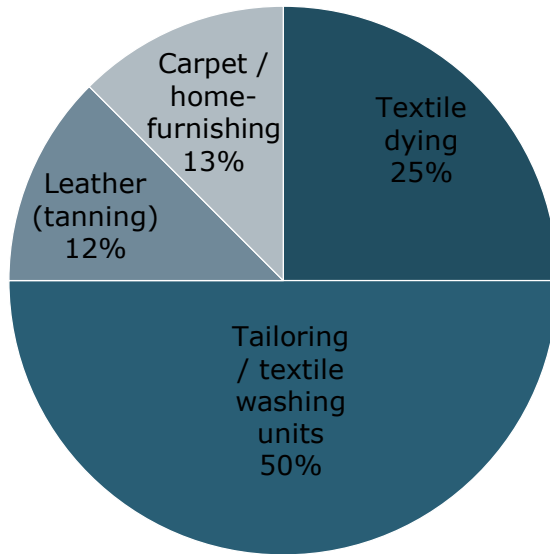


Figure 2: Distribution of visited STWI partner factories

The questions directed to factory personnel, technical consultants, communities were mostly qualitative in nature. While qualitative questions were not an issue to the adequately trained technical consultants serving the textile / leather units, and the HR Managers and Senior Managers based in the factories, they were often a challenge to the factory managers / engineers who were assigned to speak with the team. The Country Coordinator for STWI project in India supported with translating and explaining responses in Hindi in northern Indian factories. In the south, however, language difficulties remained, as there was no one in the team who spoke Tamil and in rural areas English is limited among the residents / communities.

Like the Bangladesh Field Report, the India Field Report has been arranged with analyses of grouped responses by:

i) technical consultants i.e. E-cube staff and senior Management in Kolkata and a trainer who facilitated training sessions to factory staff, based in Tiruppur; coordinators / management of eight different textile and leather units based out of locations in north and south India; and members of the community living in the surrounding areas. In addition, comparative analysis of findings from India and Bangladesh has also been presented focusing on factory management practices, national and local governance, technological upgrade, focus on water and utility savings, and encounters with technical consultants and the Global Reporting Systems. The analysis of the program modalities shows that the project is centred on private sector actors and aimed at achieving efficient water, utility and chemical uses through partnerships between brands and suppliers, leaving policymakers e.g. relevant Ministries and Departments in both countries partially or fully unaware about the STWI project. While national and local authorities in India hold the factories accountable for industrial water governance and waste management, the same cannot be said for Bangladesh where agencies are teaming up to influence policies and inspection mechanisms to make them more robust, as informed by the Head of Programs in Textile Cluster in GIZ Bangladesh.

3.0 Findings from Technical Consultants

E-cube Energy is a Kolkata-based software development and energy consultancy concern that was primarily contracted for developing Global Reporting System (GRS)-an online platform to manage the water, utility and chemical saving initiatives of the STWI program and to control the process by the factory management. The online platform is made accessible to the brands and participating production units. E-cube was later contracted to offer technical consultancy services to the factories in India that partner with the STWI project and e-Kinetic was replaced. The dual role played by E-cube in STWI-India put E-cube in a special situation: firstly completion of the system development on time taking into consideration of technological, managerial and cultural realities experienced in the production centres within the countries of STWI implementation, including India; and, secondly regular response to the capacity constraints of the factories in India who needed to implement GRS in their factories and make progress on the recommendations made by E-cube. Based out of Kolkata, E-cube experts literally travelled all over India to cater to the factories with time-efficient schedules covering multiple locations in one itinerary. And in at least one large factory in the south of India, they were expected to offer better recommendations or at least clarify the expectations of the concerned factory, an advanced level water and energy saving technology adopter even before initiating partnership with STWI project.

Quote 1: Partial agreement with factories Encountering Difficulty

"Many of the SIWI concerns connected with the GRS are related to environment and water. So those forms can be understood as long by the staff at the production units who perhaps did not see all that relevant to their regular operations. In addition, without digitization of much of the process flow at the concerned units, it can be considered a long process by some factories who have not completed the digitization of their production process and of course needed greater training and familiarity with the system."

- Senior Management, E-cube Energy

Quote 2: Resistance from factories were inevitable

"We had to deal with many different ground realities of the production units operating in different countries. For instance, boilers in Bangladesh used all different kinds of fuels which perhaps would be impossible in some part of India as the fumes generated by all different fuels may not be permitted by authorities here. However, different fuels have different parameters that needed to be integrated in the system which again takes time and may lead to resistance. 4 out of 19 factories in India did not use water in their system, they of course would find the extensive data with water a problem to avoid. "

- Senior Management – Advisory Services, E-cube Energy

Quote 3: What would have been different with the contract now?

“When I look back at the development phase of GRS, I think we certainly would have benefitted from having a longer duration of time. That would have allowed us to consider the customisation needed for different industries and offer enough of training necessary for the factory officials to get the most out of this system”.

- Senior Management, E-cube Energy

In January 2017, E-cube started working with developing GRS, an initiative taken by STWI based on their learning from partnerships with factories in several countries in Asia and Africa. According to the E-cube team, GRS was necessary to develop for several reasons: most important of all there was no transparency in reporting which was making it increasingly difficult for the STWI project to carry out interventions effectively. Without a permanent solution, the sustainability of the cooperation between the Brands and the factories was threatened. In addition, the platform would make it possible to exercise distant monitoring and ensure reduction of monitoring costs. Working with the development of the system, E-cube faced challenges like understanding sequences of the work-flow and sometimes following a standard sequence for the factories; translation services for Chinese textile units who were technically more updated than Bangladeshi and Indian textile units; and finally, phase by phase implementation of the system integrating all the sequences of somewhat diverse sectors (e.g. leather, textiles and special textile) at different technological set-up's and focus areas (e.g. Bangladeshi units focused more on energy security and energy savings than others). The development phase itself took a few months each to complete and then an addition of few weeks to learn from

the piloting and testing – during a period of time many users at factories felt they were forced to deal with a semi-standard system. The first or the investigative phase for developing GRS started in January 2017 while the work on the integration of different sectors started in September 2017 and can be regarded as the second phase of the development of GRS. The implementation of the system in different phases and technical flaws being solved gradually also generated annoyances in different textile units both in Bangladesh and India which was clear from the responses received from the factory counterparts in both countries. Reflecting on the two simultaneous contracts signed with STWI, E-cube thinks that it was not necessarily stepping into trouble, as they have offered similar services to the Dutch-funded Water Pact, an IFC-managed water and energy saving programme implemented in Bangladesh. E-cube deployed two different teams coordinated by two different advisors to offer GRS-related services to the participating factories in India as well as technical services including factory diagnostics and specific recommendations based on the analyses – all of which can lead to greater compliance with the Higg Index.

3.1 Relevance

Recommendations related to energy saving was of the utmost importance to most factories as only 3 out of 19 factories in India were concerned about water use efficiency. However, 2 of the factories using water were already mature in their production processes, saving / re-using water even before the start of STWI programme. Chemical use is also more connected to water use and there was no significant relevance in partner Indian factories about saving chemical use. As the developer of the GRS, E-cube responded to a number of reactions [Table 1, below] received mostly from Bangladeshi factories, while some of the criticisms were also echoed by a number of Indian partner factories.

According to E-cube consultants, a generic project like STWI is not suitable to all. For instance, water savings may not be a focus for a partner factory, while productivity may be. To make the interventions appropriate to all factories, the project needed to offer contextualised solutions to a particular sector / sub-sector. For instance, appropriate chemical use can be an important issue to a tannery and / or a textile dyeing unit but not to other types of factories. Besides, these factories may have already been at a mature stage in water saving measures. Energy consumption may be relevant to all factories while those not using water much in their production process may complain about spending a long time in

responding questions concerning water saving measures on the GRS platform.

Quote 4: Technical Consultants Not Expected to Carry Out Business Development Activities

"Our approach to serving the factories in India was limited to offering technical recommend-actions with financial implications. We interacted with those factories only which were channelled out by STWI and recommended by Brands. The factories assigned to us were willing to participate in the program and we did not have to motivate them into partnering with us".

- *Mid-level Management, E-cube Energy*

Table 1: Response of E-cube to Reactions to the Global Reporting System (GRS) by the Participating Factories

SL	Arguments Against Global Reporting Systems (GRS) by factories in Bangladesh and India	Agreements / Defences made by E-cube Energy, Kolkata
1	"GRS is time consuming and it takes long time to complete the required fields".	The system was developed based on the ToR though it might be the case that data that are relevant for a sector may turn out to be redundant / unnecessary for another. Improved capacity was needed at the top management to understand the GRS requirements and benefits.
2	"We often found the system not responding and again wasted our time. Sometimes, the system went down even during data imputing	There can be an agreement with the notion that the system was both in the development and trial / implementation. Factories were the beneficiaries, not the client, so

	time and we could not save our data for that screen”.	there can be incidences of misunderstanding.
3	“We could not operate the system several of us simultaneously”.	With one user account there can be one person working with the system at a time.
4	“We had to wait for one screen to be complete to move on to the next. It took a lot of time for us and many of us needed to stand-by”.	“It was necessary to ensure the integrity of the process and quality of data so that one step precedes another. To some new factories this may turn out to be a problem to get used to”.
5	“We did not have enough training on GRS”.	“More training could be needed but there was a time pressure to develop pilot and implement the system in a very short time”.
6	“While we were using manual system we could trace all savings from each of the interventions and from each of the departments. After introducing GRS, we can no longer trace them and it has become difficult for us to report the specific savings to our management and convince them of further investment”.	“Each recommendation has its own savings and it is of course possible to trace the calculation of savings in system. All we can say, they (concerned factory staff) were perhaps not aware of the feature or have missed the training sessions or part of the sessions. We cannot comment on the training sessions supported by ERI as we were not present in those sessions”.
<p>Note: Compiled from the comments made by the factory staff in Bangladesh (and later endorsed by some factories in India) and the responses from E-cube Consultants in Kolkata.</p>		

3.2 Effectiveness

Start-ups or the factories in their early stages of technology were more responsive looking at the saving opportunity and in some instances, looking at the productivity boost while adopting the new technological upgrade. Echoing their Bangladeshi counterpart, ERI, E-cube felt that engineers are better equipped in understanding the cost differentials and long term impact in the production process and can persuade the management better in making necessary investments.

The main results of the support at the factory level depended on the priority placed on them by the concerned factory management. The factories looked at the size of investment, comparative importance of water and energy savings; and amounts of immediate savings, among others.

In line with the experience of ERI in Bangladesh, E-cube believed that overall effectiveness of the project connected to specific recommendations made was largely dependent on the level of

involvement of the Senior Management of the concerned factories. In addition, Brands also played a strong role in finalising the deal between the factories and STWI.

STWI Project arranged six workshops – three in north India and three in south India - one for each of the functional areas: water, energy and chemicals. One of the trainers facilitating key sessions expressed that the selection of the staff by the concerned factories was appropriate and that the participants had the opportunity to learn and develop awareness about cleaner production. He personally found a good amount of enthusiasm among the participants at the seminars, trainings and workshops arranged by SIWI.

3.3 Efficiency

An E-cube consultant expressed that factories gave high importance to the payback period and/or immediate impact while investing in the specific recommendations. In this regard, most of the participating factories invested in online control systems because it supported the combined control over energy use coming from their previous and immediate investments planned in energy saving recommendations. Despite factories having expressed plans to invest to increase savings, investments made that required several years of payback were slow in making progress. E-cube believes that the support to the factories were organised in a logical manner but the time to implement or just to oversee implementation of the recommendation was too short.

While responding to the contract and procurement issues, E-cube had two different stories to share. Working with the product, i.e. GRS was like working with a vision. It was clear in the vision that the platform would strengthen the private sector through supply chain wide partnerships for the better of the environment and the society. However, contracting for the consultancy was not that straight forward as the factories were diverse in sectors / sub-sectors, locations and experiences leading to very different expectations on their side and challenges on ours.

3.4 Impact

E-cube believes, the programme interventions had the inherent qualities to benefit the local community in many different ways, e.g. ensuring cleaner air and water, greater access to underground water while factories re-use / reduce their own water consumption in the production process, controlling heat in the production process which also results in better quality of air accessible in the surrounding areas.

The partner factories benefited largely by adopting updated report formats on energy and water consumption which were made more readily available to qualify for Higg Index. The adopted reporting system also helped them in achieving better compliance with government regulations as national and local authorities are tracking non-compliant factories in India. Some factories voluntarily worked with their sub-suppliers to improve their production processes.

According to E-cube experts, roughly 60% of the recommendations made by E-cube to each factory were implemented during the project or were in the process of implementation at the time of closure of the project at the end of June 2018.

4.0 Findings from Participating Factories

Out of the preliminary selected factories in India, roughly 45% factories were either unavailable or non-responsive about meeting for feedback echoing similar pattern of behaviour from

some of the factories in Bangladesh as factories in general tend to attach less importance to evaluation of a project / initiative that has formally been closed down. Out of the remaining few factories in India, however, there have been continued negotiation for a meeting on time. In discussion with the Country Coordinator – STWI, India, it became apparent that factories showed less enthusiasm for another meeting within a short interval of closing meetings and it would have been a good idea to initiate the evaluation before the closing of the program and even tagging the evaluation with closing activities.

Out of eight visited factories in India, 100% of the factory-contacts interviewed, were directly involved with the implementation of STWI project recommendations made by E-cube and thus have been a good source of information for the evaluation team.

While answering the reasons for joining the STWI programme, 25% (2 factories) mentioned about their own compliance issues with environment and water use as the prime reason for joining the project, in addition, their desire to progress through Higg Index. The remaining



Box 2: Gendered Productivity and Empowerment

The notion that technological upgrade in the factories may not have a clear impact on gender empowerment has been rather difficult to uphold as the evaluation team found. "After installing the new lighting system and upgrade of machines, I am experiencing an increased level of productivity. There have been fewer instances lately that my work was found with faults and that I needed to rework them. I also feel happy that the factory is enjoying a lower number of rejections from the workers overall as I heard from our line supervisor", Floor Operator, factory, Delhi NCR

75% (6 factories) spontaneously mentioned that advice from respective Brands as the primary reason for why they sought cooperation with the STWI project. 50% (4 factories) repeated the cooperation with STWI projects for the second consecutive year either for the same unit or for another sister unit under same ownership. Roughly 75% has overwhelmingly spoken in support of the STWI project and mentioned the contribution of the technical consultants and the Country Coordinator, while 25% of factories spoke short of praising the program and only one factory spoke negatively of the cooperation / consultancy services offered by the technical consultants.

The factories mentioned a range of support from the project in the beginning, including different energy and energy saving options with calculations for upgrading different hardware and systems in the introductory awareness training sessions, on-spot demonstrations, and on-call advisory support.

Working with many Brands, factories found it necessary to show im-

provement in certain areas in environment and social standards and particularly becoming compliant with Higg Index. Initially, factory management in general, were not concerned about the benefits unless they were advised so by the Brands. However, later in the trainings, the factory representatives analysed operational costs with other participating textile units and they became aware of the cost differentials between the different adopted technologies. A view

shared by many was that without Brands' involvement, it was unlikely that the factories would have been interested to engage in these partnerships.

4.1 Relevance

Depending on the nature of production process i.e. wet-processing and cut-and-pack processing (another term for tailoring), factories make their own priorities in energy saving, water saving or chemical saving measures. None of the factories mentioned much about use of chemicals. As it was understood in Indian context, use of chemicals are managed and monitored by the respective technical/chemical experts. The 4 dyeing units comprising both textile and specialised textile and leather-tanning mentioned water saving as the first or closely second priority. However, 50% of the dyeing units were already recycling 80-90% of their used water while the remaining 50% reusing more than 60% of their used water after some form of advanced treatment even before the start of the STWI project, meaning a water savings approach was less relevant to them. Besides, enforcement of national laws and regulations by the authorities forced the medium and large factories to comply with water use and treatment and the factories now require a formal permit from the local authority to extract and use underground water. Having said that, energy saving recommendations were of much relevance to the factories. The energy saving strategies looked into: energy used in water treatment plant (e.g. use of number of rotators depending on the amount of dissolved oxygen in the water), real-time heat monitoring and control, insulation of heat and using it in the boiler, switch to energy saving devices and technology, and switch to bio-degradable fuels (e.g. use of biomass, rice husks and wood-particles instead of coal) and others.

While analysing support from E-cube, no particular pattern of responses emerged from talking to the factories who were almost equally split between: training, awareness-raising, and on-site support. Networking opportunities with the industry professionals on the other hand, were much less spoken off – a sharp contrast to findings in Bangladesh where factory staff were very enthusiastic about sharing their stories and learning from others and felt the urge of promoting and managing the network into the future after the closing of the project.

Roughly 50% (4 factories) of the respondents found the technical assistance partly or overwhelmingly impractical citing some of the recommendations made by E-cube not practically implementable and/or demanding further analyses. One factory in the south was particularly negative about the programme because of the mismatch of expectations which could have been solved by the project by introducing a more scrutinised selection categorising factories along different sectors and existing technological and managerial status in improving in the area of water and utility savings. The only leather unit visited in the south, however, mentioned the Global Reporting System, stating that many of the parameters and data were not really relevant to the leather sector and the system needed customisation so that time required to imputing data into the system could be managed within a shorter time. While through observation, the evaluation team found out that the partner factories who implemented a good number of recommendations made by E-cube consultants. The factories who have implemented a significant number of factories toward water and energy savings also made progress in gendered productivity and gender empowerment as new technologies improved working conditions directly related to female workers' area of work [Box 2] or supported maintaining a cleaner environment which has traditionally been messy e.g. washing section [Box 3].



Box 3: Better Working Condition for Female Workers

A STWI partner factory in Punjab experienced enrolment of a number of female workers in the washing section that are traditionally reserved / allocated to male workers. The factory implemented water saving measures as well as occupational safety and health measures while handling textiles and clothes. The evaluation-team were told that better working conditions including temperature of the area and cleaner floors in the washing section were preferred by some female workers over other sections.

4.2 Effectiveness

Quote 5: Appropriate Solutions to Mature Industry

"We already started re-using 90% of water before the arrival of STWI, what could they possibly do more for us in water saving?"

Some suggestions of E-cube were not even possible to implement, so why would we even waste time on those?

The technical consultants were here just for a day. I don't think that was enough to understand the requirements for my factory, let alone about suggestions.

We do not look for social visits, we are after purposeful visits.

- Senior Management, factory, Tiruppur, Tamil Nadu

The STWI partnership with factories has clearly been effective as unanimously agreed by the participating factories. While similar levels of effectiveness could not be ensured for all of the factories systematically, the factories decided what and where to invest and received desired benefits. A common area of investment made by the factories is boiler automation with oxygen analyser which has been evident in more than 50% of the participating factories. Some of the significant result oriented investments found among the partner factories in India include: upgrade from 2-to-3-staged treatment facility (one unit), reduction in boiler fuel (several units), automatic data from every circuit (several units).

It was understood by the factory management that some investments will involve a longer payback period while some investments will take a shorter time to show the savings. The awareness and training workshops helped the factory professionals to discuss about different water and utility saving measures with their factory management which turned into successful implementations.

Echoing the findings in Bangladesh, while in garments (less so in textile) factories women are overwhelmingly employed in the assembly lines, the technical contacts for water and energy saving approaches was understood as 90% male dominated which stands slightly better than the findings for Bangladesh. In two visited factories in Noida, near Delhi, women working in the sewing sections could now work easily compared to earlier situations after adding needle-light to their sewing machines. The effectiveness of the STWI programme in different textile and leather units were not uniform as there are instances of warm cooperation, and also 'not so warm' experiences between the technical consultants / programme staff and the factories.

4.3 Efficiency

Among the factories visited in India, roughly 75% factories were found at a relatively advanced level of professional management and moderate to high environmental compliance. While considering efficiency of resource employment, the high end factory could be seen as a learning case and set an example to others but in the project itself there was no visible categorisation among the factories. The categorisation of factories could have helped identifying the strong factories and working with their sub-contractors (known as 'sub-suppliers' in the Indian context) in close cooperation with the principal factories instead. In absence of this, several factories developed different levels of expectations about the project and were hoping that the project would train their people in compliance issues in their own factories. If factories from different technological set-up are all treated as 'participants' there may arise some sort of discomfort as the sharing of experience would be one sided. However, a status like 'privileged / learning partner' could reduce that discomfort.

Factories expressed their discomfort about the volume of data required to input in the GRS. Referring to the comment mentioned earlier by E-cube staff, factories had to automate their factory to receive the full advantage and efficiency of working with GRS. In addition, factories also need to build their capacity about the use of different data, particularly water, in ensuring environmental compliance. The situation in India is significantly different than the reality in Bangladesh because of the presence of strong governance practiced by both national and local authorities to safeguard surrounding environment and the communities concerned.

Though partner factories situated in the rural areas spoke loudly about their commitment to environment and the communities that are likely to be affected and even though the factories implemented advance level treatment facilities in the rural areas, in at least one occasion, the evaluation-team found traces of coloured / dirty water outside the factory boundary, in the ditch bordering otherwise green area (i.e. adjacent to a mango orchard) in a rural set-up in Uttar Pradesh. Though there was response from the concerned factory staff it may have come from neighbouring textile units, the evaluation-team did not find any textile units that close. The amount of dirty water did not seem like a regular incident and was more likely to have originated from a 'spillage' or incidental 'dump'.

Factories were particularly asked about the performance of the technical consultants where the responses varied from good to moderate observing only 40-60% of their recommendations were relevant. However, it would need deeper conversation and analyses why some of the recommendations seem irrelevant or impractical. The possible observations may lead to the fact that, at least 50% of the factories who have already implemented usual recommendations made by STWI did not find much relevance in other recommendations considering the amount of money to be saved. Secondly, some factories were hoping that if they had already implemented most of the usual recommendations, then perhaps the project would support them in staff training to get the most out from the technology they were already using. The third possible reason could be that E-cube could not allocate enough time to some of the larger units that would have been necessary to assess their factories and make useful recommendations. And finally, when the advanced level technological recommendations along with water and energy savings required more long term investment while not seeming to generate a significant saving, factories would find them unrealistic / irrelevant to pursue.

Quote 6: Role of Local Authorities

"Local Authorities here are very strong in enforcing their rules. Though northern India is not legally bound to comply with 'zero liquid discharge' as in the south, the local authorities sometimes use their own mechanism to enforce environmental compliance. There have been instances that factory chimneys are covered by smart cameras that can analyse the fumes and indicate the quality of the fuel and whether that is allowed to use in the concerned factory. Our factory is in rural setting and we really cannot afford to anger the communities with non-compliant environmental and waste management as most of our workers are local hires."

- Senior Management, factory, Ludhiana, Punjab

4.4 Impact

Echoing the findings in Bangladesh, the overall impact of the STWI partnership looks positive. The structural and technical changes (not change of production process) made to reduce water consumption and increase reuse of water for toilet-use and car-wash are there to stay as each factory has spoken out in favour of the adaptation to save water and energy and reduce costs. The amount of waste water that will be released in the nature has already been minimised, if not phased out ('zero liquid discharge' enforced in the south of the country and promoted by several local authorities in the north). One factory has already initiated discussion with a private investor to allow the factory premise of 6 acres of land to be covered by solar panels and to purchase the electricity at a 40% reduced rate than they are currently paying. It shows the gradual advanced understanding of environmental and business analysis of the factories and the options they are considering to excel both in compliance and also in innovative financing. The implemented recommendations have also made the working conditions better for the workers, particularly for the women in the operating sections who suffered from increased heat and dust.

4.5 Sustainability

50% of the factories visited in India informed about their willingness for accessing the services from the technical consultants as many of the factories have their own established in-house capacity or nationally contracted consultants working with the factories for a long time. One factory in Badohi, in particular, expressed their satisfaction about the local consultant from the area assigned by the E-cube office in Kolkata to provide technical services. A technical consultant speaking the local language was of rejoice to the factory's management and enabled them to get the best out of the cooperation with STWI / E-cube.

Another considerable sustainability issue captured by the evaluation team was with a factory in Noida, near Delhi. Here, the factory campaigned for sustainability measures particularly installing energy-saver lights to save on energy cost and they had success with 7 of their sub-suppliers. This has been treated as a healthy sign of cooperation between the prime contractor and the sub-suppliers to ensure supply chain-wide sustainability. Owing much to the strong governance practiced in India, there are compelling signs to believe that changes made toward achieving energy and water sustainability in the factories in India are there to stay and to scale-up. The alternative here is the closure of business as experienced in their masses in south India. The evaluation team is hopeful that similar enforcement may also come to north India as the local authorities there started their own compliance measures.

In conversation with two factories in north India, it was understood that retrofit financing or green financing should be more widely available to the textile units as Government of India has different schemes to support new green projects but such facilities with often privileged interest rates are not accessible to existing factories. This opens up a new advocacy front for development partners to encourage businesses, particularly in textile and leather sectors, to campaign for a government initiative to respond to financing needs among the existing textile units who are struggling to cope with the compliance issues connected to water and environment.

Quote 7: Green financing should also be offered to existing factories

"Green financing require large investment which are not directly related to sales. It's sometimes difficult to allocate resources in those projects leaving the requirement of raw materials, storage and expansion. We are aware of subsidised financing to new projects / factories but why such financing opportunities are not also offered to existing facilities so that we could use that to switch to upgraded technology more easily? "

- Mid-level management
factory, Badohi, UP

5.0 Findings from Communities

The factories visited both in the north and south of India were mostly located in the established industrial clusters or economic zones. As such, community lived a little far from the industries and were understood as not having major trouble with pollution as the industrial clusters were regularly monitored by the local authorities. Community members were interviewed / approached at 4 factory locations and 2 other factory locations were closely observed to identify any visible effect caused by pollution.

The factories in the south such as in Ranipet and Tiruppur were located both in designated sector as well as in the rural or semi-urban centres. Due to the language difficulty it was not possible to interact with the community around Tiruppur as they were found to speak only Tamil or not interested in talking to the consultant team. However, it was understood from multiple sources that garments and textile factories in this part of Tamil Nadu need to comply with 'zero liquid discharge' and as such both factories visited were recycling more than 85% of their water and serving Brands like H&M or Varner are likely to observe the waste compliance.

Interviews conducted at Noida, locations of two factories of the same company. Here, it was understood that water distribution was supported by local authorities so that villagers around can access good quality drinking water. It was not to suggest that the water was polluted in the environment; rather the area is a little dry. The factories visited did not have any wet-processing in their production process and it was convincing to the evaluation team that the compliant factories are not causing any harm through their production process. The company on the other hand carry out their own CSR program in the nearby villages through their institutional arrangement to provide youth with IT training and increase their employability. The majority of the community members suggested that they did not see any problem in the quality of drinking water or living standards in a way that they would consider leaving this place at some point. Many have been living in places like the newly industrialised areas of Noida last 10-15 years.

Quote 8: Good Quality Drinking Water

"I am 59 and I lived here most of my life with my family now also with my grand-children. The factories here are a good source of income for me and I cater to a large number of customers from my tea-stall. I have not seen or heard of about pollution in this area".

- Tea stall operator, near RADNIK, Noida, Delhi NCR



Box 6: Temporary Workers from the Community

"Handwork with needles or embroidery, often in need, though not on a regular basis, require temporary workers recruited from the community the factories work in. As such, many of these workers are on a roster to respond to the temporary need for such work. As identified in conversation with the temporary workers, the factories at Noida, near Delhi, do not use water and there is no such water discharge. The waste is also managed through a service provider as is done by all other factories in this area. Echoing their opinion, the factory staff informed the role of the community and the local authorities are very strong. The factory also informed that many of the young people from the community are beneficiaries of a factory CSR programme offering IT education and increasing employability

among the youth in the area to support them in finding work and ensuring peace and sustainability in the area.