

Chapter 4

Case Study: Bangladesh. The Demand Side of Environmental Sustainability Through Skills Recognition



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Abstract This country case study examines current practices and issues of skills recognition aiming to improve environmental and occupational health and safety for sustainable development in Bangladesh. More specifically, data was collected to examine environmentally friendly practices in enterprises in three service sectors: automotive, waste management, and catering, with a focus on employer and employee perspectives as an important component of the demand side of environmental sustainability. It also examines how employers and workers “recognise” green skills. Recognition here does not mean only “assessment” through testing or certification in a technical way, but also “social recognition”, implying the benefits that employers and workers see in the promotion of green skills in terms of employability and decent work, lifelong learning, and personal development. Finally, the study seeks to clarify a set of enabling factors contributing to green skills and green practices in enterprises as well as the potential for their inclusion in recognition mechanisms. This study argues that an examination of real workplace roles should be the starting point for linking recognition of green skills to green skill standards. The study concludes that learning outcomes and competences within the qualifications framework do not relate to the realities of green skills and green practices in enterprises.

Keywords Skills recognition · Environmentally friendly practices in enterprises · Bangladesh · Green skills · NTVQF · Recognition of prior learning

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4.1 Introduction

Bangladesh, located in South Asia on the Bay of Bengal, bordered by India and Myanmar, is one of the most densely populated countries in the world. It has 164.6 million people (1,115 per sq km) living in an area of 147,570 sq km (BBS 2019), making it the eighth-largest country by population (UN, World Population Prospects 2019). Bangladesh, mainly a Ganges (Padma)–Brahmaputra Delta, is a low-lying plain land, naturally very fertile for agricultural activities. About 47% of the population work in agricultural activities. Agricultural produce includes rice, jute, sugarcane, tea, wheat, vegetables, tobacco, and fruits. Fish, poultry, beef, and dairy products are also a part of the agricultural sector. About 16% of the country's gross domestic product (GDP) is from agriculture. The aquaculture and poultry sectors are notable for their achievements. Apart from agriculture, mineral resources such as natural gas, petroleum, and coal enhance the economy. In the areas of natural gas use for cooking, transport (cars, auto-rickshaw), fertilisers, and power production, there appears to be a trend towards environmentally friendly practices. However, the use of coal is still prevalent in the production of power.

Major foreign exchange earnings of Bangladesh come from the export of labour, ready-made garments, tea, fish, tobacco, and betel leaves. With a per capita income of US \$1,602 (Star News 2017), the World Bank rates Bangladesh as a lower middle-income country. However, the country envisages attaining an economically and environmentally sustainable middle-income economy status by 2021 by shifting from its traditional agro-based economy towards an industry-based one.

While 35% of Bangladesh's population resides in urban areas as of 2016, which is lower than the world average of about 54%, the country is well along the path of rapid urbanisation according to World Development Indicators (WB 2017). It is, therefore, reasonable to assume that the employment and economic activities will focus significantly on urban areas in the future. By taking advantage of the abundance of (relatively low-/basic-) skilled labour in light manufacturing, Bangladesh has created a great amount of wage employment, providing opportunities for rural migrants too.

Bangladesh's learning system consists of learning in three different settings—formal, non-formal, and informal. Formal education and training in Bangladesh consist of primary, secondary, and tertiary education. Formal technical and vocational education and training (TVET) programmes are mostly government-regulated and rely on a theoretically oriented traditional approach. TVET is becoming increasingly more responsive to market needs through the direct participation of industry. Formal TVET is offered in either publicly or privately run TVET institutions. Although, currently, institutions under private management make up an increasing large share of the formal TVET provisions, they are relatively weaker in terms of their employment and labour market outcomes compared to those under public or NGO management. Tertiary education in Bangladesh is ridden with similar challenges.

Non-formal education and training. In parallel to formal TVET programmes, TVET institutions and companies also provide non-formal and competency-based

training and assessment programmes. These include apprenticeship programmes, which are currently being given priority by the present government. Some non-formal programmes are directed at traditional artisans in the informal sector.

Informal learning. The majority of workers in Bangladesh pick up their skills informally through learning while doing a job and through informal apprenticeships (e.g. with a craftsman that is not organised by formal TVET). Their low levels of general education as well as lack of formal technical and vocational training presents a barrier to formal upskilling programmes in skills for the green economy.

Integrating sustainability and environmental protection issues within the education and training system is being undertaken by the government, though to a limited extent (e.g. inclusion of environmental issues in the Grade 3 to Grade 8 general school syllabus (Mondal et al. 2011)). Furthermore, the government plans to expand the knowledge base of environmental education at the higher levels. However, the mainstreaming strategy is not addressing the vast number of workers working in waste management, catering, and the automotive industry who are involved in environmentally damaging and low-paid work opportunities, predominantly in informal sectors, transporting or picking through the rubbish. While highly skilled jobs are needed to make many industrial sectors and enterprises environmentally friendly, many of these low-skilled workers are unable to access upskilling programmes because they have low general education levels, lacking formal technical or vocational education, and with their existing skills unrecognised.

The TVET Reform Project, which is run jointly by the European Union, the International Labour Organisation (ILO), and the Government of Bangladesh, established a partnership between public-sector training institutions and industrial employers to minimise the gap between skills supply and demand. It also facilitated the role of social dialogue in skills development for a greener economy. However, according to a study by the Bangladesh Development Institute (Mondal et al. 2011), the reform project, although market-driven, did not develop content in skills for green jobs. The study also points to the weak delivery mechanisms of existing education and training institutions. This, they argue, is the result of the absence of any policy agenda and support. Instead, green skills development remains limited mostly to some NGOs, compressed natural gas (CNG), and renewable energy and waste management companies, such as Infrastructure Development Company Limited (IDCOL), Rahima Renewable Energy Limited, Grameen Shakti, Navana CNG, and Waste Concern. Some of these companies deliver on-the-job training funded by NGOs with donor assistance (ibid.).

Notwithstanding these issues, Bangladesh's new National Skills Development System (NSDS 2015) seeks to address some of the challenges related to low-skilled and low-paid workers in many industry sectors such as waste management, catering, construction, and automotive. For example, pre-vocational levels of the NVQF can be used in many industry sectors as they promote the mainstreaming of low-skilled workers into targeted environmentally friendly employment. An ILO project has shown how this can be done through the involvement of industry partners and the active engagement of enterprises and employers (ILO 2013).

Bangladesh has a well-developed set of environmental policies, acts, and rules and regulations that deal with industrial pollution of water, soil, and air as well as climate change mitigation (WB 2016; Hossan 2014; Aminuzzaman 2010; Clemett 2006). However, a study conducted by the Bangladesh Institute of Development Studies points out that Bangladesh has no comprehensive policy for the development and recognition of skills for greening the economy (Mondal et al. 2011), with only isolated and ad-hoc efforts in a few sectors, with little impact. Nevertheless, to respond to climate change and commit to the UN 2030 Sustainable Development Agenda, the government has undertaken several programmes and projects. These include the following:

- Launching the National Capacity Development for Implementing Rio Conventions through Environmental Governance Project (Rio-Project).
- Developing the National Biodiversity Strategy and Action Plan (NBSAP) 2016–2021.
- Developing the Bangladesh Climate Change Strategy and Action Plan (BCCSAP).
- Implementing the project on community-based Adaptation in the Ecologically Critical Areas through Biodiversity Conservation and Social Protection Project (CBA-ECA Project).
- Launching pilot projects adopting a “3R” (reduce, reuse, and recycle) strategy for waste management at some selected areas in the cities of Dhaka and Chittagong.
- Implementing the programmatic “CDM Project using Municipal Organic Waste of 64 Districts of Bangladesh” for producing compost fertilisers.
- Implementing the programme for reducing air pollution by using low fuel-consuming and environmentally friendly modern technology in brick-manufacturing fields (Mondal 2017).
- Developing a comprehensive master plan for the wastewater management and sanitation system of Dhaka city, which has the primary goal of reducing/eliminating the pollution arising from unhygienic disposal of wastewater of industrial, commercial, and domestic origin (Das 2017).

The key concerned state agencies for Sustainable Development, Skills recognition, and Green skills are as follows: the Department of Environment, Directorate of Technical Education (DTE); Bangladesh Technical Education Board (BTEB); Bureau of Manpower, Employment, and Training (BMET); the Ministry of Education and the Ministry of Labour and Employment (MoLE); and the Ministry of Environment and Forests. They all address environmental issues. However, more collaborative actions are required to overcome the challenges that hamper green skills recognition for a transition to the green economy.

4.2 Context

The main structural shifts towards an environmentally friendly economy and labour market in Bangladesh have taken place in renewable energy, manufacturing, waste

management, construction, telecommunication, transportation, and trade. Based on these structural changes, the ILO (Mondal et al. 2011) commissioned case studies to identify skills and occupations that will or have become obsolete because of climate change as well as the new demands for greening the economy.

The term “green-collar occupation” is used sometimes to refer to carbon trading, solar energy engineers and technicians, mechanical engineers, and compressed natural gas (CNG) conversion technical persons. These occupations have emerged because of efforts to adapt to climate change. These new green-collar occupations are mainly concentrated in the energy and transport sectors and are expected to increase substantially (ibid.).

In Bangladesh, the notion of “greening existing occupations” refers to new types of competences and skills in existing occupations, which may range from automobile workshop workers, machine operators in the tannery, brickfield workers, managers, and architects or civil engineers to designers and masons in green construction. The notion also includes skill gaps required for more environmentally friendly practices in occupations (such as leather manufacturing) and emphasises that changes in employees’ knowledge and practices are necessary to reduce environmental pollution. The green skills that are needed for the future of the three industry sectors (automotive, catering, and waste management) as well as other sectors more generally include life skills, problem-solving and critical thinking, and assessing and developing ideas that inform and change our actions towards a green society.

4.3 Research Objectives and Primary Data Collection

With the increasing use and depletion of land, water, and other natural resources, environmental issues have become more and more important all over the world. Rapid urbanisation, industrialisation, and the increasing use of pesticides and other chemicals are posing a huge threat to the ecosystem as well as to human health from polluted air, water, and land. Bangladesh, like many other countries in the region, has been endeavouring to reach a higher middle-income status by 2021, and as a result, enjoying higher living standards than ever before. However, it is important to remember that the economy of this country is still largely dominated by informal-sector economic activity. Therefore, the outcomes of this study are primarily intended to understand the contribution of the non-formal and informal sectors to the achievement of the country’s sustainable development goals in the context of the United Nations 2030 Agenda. The objectives of this study are aligned with the aims of the overall regional study stated in Chap. 1. They are to identify environmental policies, rules, regulations, and legislation; assess the level of stakeholders’ awareness, as well as environmentally friendly practices in selected service enterprises of the informal sector; and identify mechanisms in use to recognise/assess, validate, and accredit (RVA) existing competences of employees and the potential of including them in recognition mechanisms. The outcomes are intended to be useful for policy-makers, curriculum/training programme developers, employers, and employees.

In the context of this case study, the focus is on the environmental challenges of the two industry sectors described in detail below, namely automotive and waste management.

The automotive service sector

Bangladesh has no automotive plant producing vehicles, except for a few private-sector automotive assembling companies and one government-owned assembling plant. The local assemblers use mostly imported parts and components. According to the Bangladesh Road Transport Authority (BRTA 2020), Bangladesh had about 4.47 million registered vehicles as of 30 June 2020. This figure included passenger cars, buses, trucks, motorbikes, cycles, etc. These are mostly imports from all over the world and most of them are reconditioned second-hand vehicles, which require maintenance and repair services soon after they are on the road. Automobile repairing and servicing is a growing business sector in Bangladesh. It is labour intensive, employing a workforce with knowledge and skills in diagnosing, repairing, and servicing vehicles. Automotive service enterprises not only provide services but also generate employment.

Waste management

There is a growing waste management problem in Bangladesh. The city of Dhaka, with about 16 million people, is one of the most polluted cities in the world. It generates about 150 kg of waste per person per year. The public municipal authorities have the responsibility to collect waste and dispose it. However, it often outsources the work or sub-contracts private enterprise(s) or recruits daily-wage labourers for manual work such as cleaning/sweeping and transporting. Several authors have drawn attention to the fact that residential and commercial waste is usually difficult to manage (Kreith and Tchobanoglous 1994), and solid waste is the most common, dangerous, and hazardous. If not well managed, it can generate health problems or environmental pollution.

Solid-waste management refers to the process of gathering, transportation, and disposal of garbage from domestic houses to a disposal unit in a scientific way. It is pivotal to the protection of the environment. The impacts of poor waste management in Bangladesh include bad smells along roadsides or residential areas; blockages of the drainage system resulting in wastewater overflow; spread of various diseases such as hepatitis; and fire hazards and physical injuries to workers (Metin et al. 2003). The main purpose of waste management is to ensure that the waste products go to the right place. Starting from on-site handling and storage to collection, transportation, recycling, and ending with disposal in sites such as government dumping grounds. This stage of the waste management process is a matter of great concern for Bangladesh (Matter et al. 2013). In urban areas, waste workers (usually daily-wage labourers) sort the waste manually into plastic or metal bins; in rural areas, they sort it into concrete bins or rubbish pits.

The study uses a convenience sample in which 13 enterprises in the formal sector and 17 in the informal sector—covering all the three sectors mentioned—were included in the survey. In this descriptive type of study, we gathered both qualitative

and quantitative data, interviewing stakeholders by using a questionnaire consisting of 44 items in eight sections including general information about the participating company, environmental policies and regulations, respondents' conception about green skills and their demand, RPL, and inclusion of green skills in RPL and workplace learning and training programmes. Thirty companies in automotive, catering, and waste management service sectors that participated in this study were located in Dhaka and nearby cities. In the automotive sector, six enterprises were from the formal sector and seven from the informal sector. In the catering sector, five were in the formal sector and ten were informal enterprises. In the waste management sector, two formal enterprises were operated by the city municipal corporation.

4.4 Results and Discussion

The study has shown that while many of the employees working at operation levels have no formal qualifications, they have the technical expertise and they make up a vital part of the workforce. While governmental environmental policies, regulations, and legislations in these service sectors are in place, much of the workforce is not aware of them. "Caring for the environment" is not as important for employees in the informal sector as for the employees in the formal sector, particularly at higher management levels.

The study found that the majority of employees working at operator levels have no formal qualifications, but make up the vital part of the workforce. They have technical skills and work expertise in their respective service sectors, which they acquire informally at their workplaces or technical workshops. The following sub-sections present findings concerning employees' educational level; level of awareness about environmental policies; regulations; the role of (local) authorities; how much importance the employees/employers put on green skills; and the potential of including green skills RPL mechanisms.

Educational levels of employees

As Table 4.1 shows, of 176 employees in the automotive service sector, 33 (18.8%) had higher education, 17 (9.7%) had technical/vocational qualifications, 30 (17%) had general secondary (Grade 10 or International Standard Classification of Education [ISCED] Level 2) education, and 96 (54.5%) had below-secondary or no schooling. The number of higher educated employees is extremely low in the waste management sector (0.8%, respectively) compared to the automotive sector.

Relating educational levels to awareness about environmental policy and regulation

The interviewees (mainly the top- or mid-level management of each enterprise) were asked if they (both employers and employees) were aware of environmental policies and regulations for their industry/service sector. Although the management of enterprises and some of the employees with higher qualifications, about 25% of the total respondents, were aware of the environmental policies and regulations,

Table 4.1 Sector-wise educational level of employees

	Higher education (university degree)	Technical vocational education	Secondary education (Grade 10)	Below secondary education (below Grade 10)	Total number of employees
Automotive					
Formal	33 (25.4%)	16 (12.3%)	26 (20%)	55 (42.30%)	130
Informal	0 (0%)	1 (2.1%)	4 (8.7%)	41 (89.2%)	46
Total	33 (18.8%)	17 (9.7%)	30 (17%)	96 (54.5%)	176
Catering					
Formal	6 (5.6%)	7 (6.5%)	37 (34.6%)	57 (53.3%)	107
Informal	0 (0%)	5 (6.7%)	25 (33.7%)	44 (59.6%)	74
Total	6 (3.3%)	12 (6.6%)	62 (34.3%)	101 (55.8%)	181
Waste					
Formal	5 (0.8%)	3 (0.5%)	7 (1.1%)	602 (97.6%)	617
Total over three service sectors	44 (4.5%)	32 (3.3%)	99 (10.2%)	799 (82.0%)	974

Source Authors

the majority (above 75%) of employees, particularly the skilled workers/employees with education levels below secondary education, as well as those who received no formal skills training but were involved in performing actual occupational tasks in the enterprises, were not aware of them. Almost none of them could state or name any of the relevant policies and/or regulations that their company follows. The respondents who were aware of environmental policies and regulations were all registered in enterprises in the formal sector.

Role of local authorities in assessing environmental impact

There are several governmental directorates or agents under respective ministries' bodies responsible for monitoring the environmental impact of enterprises in Bangladesh. However, the survey results showed that supervision was extremely poor or in some cases absent. In the automotive service sector, for example, engine oil (mobil) is often reused. The leftover oil is then sold to street vendors who ultimately sell it to the brick manufacturers who use it as fuel, generating and emitting carbon dioxide (CO₂). Through interviews with automobile service centres, the study found that leftover oil is also often simply thrown onto the ground and/or into the nearby city-roadside drain, where it mixes and directly flows with household wastewater into canals and rivers, without treatment. Low-skilled workers with low levels of education usually do not have any knowledge of the consequences of this kind of air and water pollution. The food waste from catering services (hotel restaurants) and other types of waste, such as from road cleaning, households, and medical waste, are in most cases not transported or disposed of in an environmentally friendly way.

Solid (and mixed) waste is often burned inefficiently, thereby generating methane (CH₄) gas, which is a far more potent greenhouse gas than CO₂.

In Bangladesh, the automotive service enterprises provide general vehicle servicing, including engine overhauling, denting, welding, washing, and reconditioning. Study results show that, during their activities, workers do not strictly follow workplace procedures to minimise environmental impacts. In many cases, however, they do follow the “3R” principle. In addition, interviewees said that, due to huge traffic jams in the city, the average fuel consumption per kilometre was much higher than in other places where traffic jams were fewer and less obstructive.

Box 4.1 Case study of a Dhaka-based automotive company

Speed Track, a Dhaka-based company regulated by labour law (formal sector), provides automotive/vehicle repair and maintenance services and sells motor/engine spare parts and garage equipment. The company has 52 employees, of whom 13 have a university degree in engineering and in other business-related fields. Four have upper-secondary non-tertiary level vocational education and training, and the rest have secondary and below-secondary education.

The company’s chief executive officer (CEO) mentioned that although the company management is mainly responsible for implementing policies and regulations regarding environmentally friendly production practices, most of the employees are not aware of these policies and regulations. The DoE, Water Supply Authority (WaSA), and the Electric Supply Authority are responsible for assessing compliance, but they do not supervise the company’s activities regularly.

The company has installed an Effluent Treatment Plant (ETP) and it encourages other service workshops to do the same by promoting and selling ETPs. However, due to a lack of supervision by the proper authority and/or lack of environmental awareness, service providers, particularly those who operate in the informal sector, are reluctant to use them.

When the company recruits low-level workers, it places importance on a candidate’s competences rather than on the certificate he or she brings. But in the case of managerial or complex engineering positions, a formal qualification is required. The company has no in-house training or a registered assessment centre, but it puts value on staff development where novice workers learn from experienced technicians/engineers. Nevertheless, the company provides no certificates nor maintains any job cards for their employees.

Enterprises in the waste management sector have not taken up any initiatives to introduce the concept of green skills. The participants (mainly employees) said that they did not pay specific attention to green skills, but that the industry as a whole is implementing a few measures to deposit solid waste in a conventional

(not using modern technology) way. The survey revealed that enterprises in waste management services do not follow specific practices to minimise negative impacts on the environment or human health. However, observations provided as part of the survey and throughout the study showed, for example, that some enterprises supplied polythene bags or circulated notices at animal slaughtering sites during a recent Eid festival to keep solid waste in a specific place. And yet very few people followed the notice due to the absence of awareness about the importance of these green practices.

The survey also indicated that the waste management industries did not introduce any training to improve this situation, to introduce skills in general, nor more specifically to introduce green skills.

Box 4.2 Case study in the waste management sector

Bangladesh has not employed appropriate and coordinated procedures for storing and managing waste. As a result, health problems and environmental pollution are rampant. This case study presents a comparison between the different stages of the waste management sector in Bangladesh and other developed countries in the world. In Dhaka, waste is manually disposed. In districts other than Dhaka—for instance, Tangail or Gazipur—there are no manual techniques to dispose of waste: the public authority carries the waste directly to the disposal site, where it is kept for a long time and then dumped.

The processes and steps of collecting, storing, and dumping household wastes in Bangladesh do not follow a specific strategy for separating different kinds of waste. For example, recyclable paper is not separated from the non-recyclable paper or separated from other types of waste. These different forms of waste are all collected, transported, and dumped together (see above). In developed countries like Australia or Germany, by comparison, a machine-based scientific method is used for dumping waste, and in many cases (for specific waste), waste is recycled to minimise harm to the environment.

In interviews on the importance of green skills and environmentally friendly practices, enterprises participating in this study responded on a ten-point Likert-type scale, where 1 implies “this issue is ignored” and 10 implies “close attention is paid to green skills and environmentally friendly practices, and work practices are adjusted accordingly”. The responses were between 1 and 3 for informal enterprises and between 3 and 9 for formal enterprises.

A set of skills/competences (interpreted in a broad sense, Pavlova 2015, 2018) which may be required to sustain environmentally friendly practices (see Box 4.3) were presented to the enterprises participating in this research. Almost all the participants in all three sectors agreed on the importance of these competences.

Box 4.3 Skill requirements to sustain environmentally friendly practices
Cognitive competencies

- Environmental awareness and a willingness to learn about sustainable development.
- Systems and risk-analysis skills to assess, interpret, and understand both the need for change and the measures required.
- Innovation skills to identify opportunities and create new strategies to respond to green challenges.

Interpersonal skills and technological skills

- Strategic and leadership skills to enable policy-makers and business executives to set the right incentives and create conditions conducive to cleaner production, cleaner transportation, and so on.
- Coordination, management, and business skills to facilitate holistic and interdisciplinary approaches that encompass economic, social, and ecological objectives.
- Communication and negotiation skills for dealing with conflicting interests in complex contexts.
- Marketing skills to promote greener products and services.
- Networking, IT, and language skills to enable participation in global markets; consulting skills to advise consumers about green solutions and to spread the use of green technologies.

Intrapersonal competencies

- Adaptability and transferable skills to enable workers to learn and apply the new technologies and processes required to green their jobs.
- Entrepreneurial skills to seize the opportunities of low-carbon technologies.
- Specific skills such as the use of specific equipment, following specific practices, applying new technology, and mastering the processes required for the new task.

- Attitudes (e.g. adaptability; environmental, social, and cultural sensitivity; and enthusiasm).
- Behaviour (e.g. participating in projects and tasks, working with others, and taking part in courses).

Authors, based on the study questionnaire (Pavlova 2015, 2018, for more details, see Chap. 1).

4.5 Conclusions and Recommendations

Although Bangladesh has developed the National Technical and Vocational Qualification Framework (NTVQF) based on learning outcomes, the competences and learning outcomes related to green skills are only visible in the generic unit of competency referred to as “occupational safety and health” (OSH). Hence, there is still a great deal of work that needs to be done in identifying green tasks in enterprises, translating them into NTVQF units of competency, and classifying these units of competency under different certification levels in the NTVQF.

Bangladesh has a well-developed system of RVA linked to its NTVQF; however, currently, it is being implemented only in some selected priority sectors such as transport, electrical wiring, agricultural food processing and catering, garments, and IT. RVA takes place through competence tests undertaken at registered RPL assessment centres, which are often attached to VET institutions rather than to industries or enterprises. The qualifications obtained through RVA are awarded by the Bangladesh Technical Education Board (BTEB). None of the enterprises participating in this study have their own competence-testing centres; however, they recognise and accept qualifications obtained through RVA. They recruit workers/operators mainly by testing or proving through demonstration the competences, skills, and knowledge workers have. Employers do not provide any certificate, nor have they developed any job card system. It is different for employees at higher levels: they usually must have their occupational/professional qualifications recognised. The study reveals that the existing recognition standards do not explicitly include industry or sector-specific green skills, but a generic unit of competency standards—occupational health and safety (OHS)—which is obligatory to acquire a NTVQF qualification at any NTVQF level.

Together with the vocational competences acquired through formal TVET and/or through informal/non-formal learning at workplaces, a learner at any level of education and training should be provided with opportunities to acquire the knowledge and skills needed to promote sustainable development, including environmental and OSH, as well as to establish a culture of practising it in their occupations and in society.

With the development of national qualification frameworks in several countries worldwide, there is a growing trend to subsume recognition, validation, and accreditation of outcomes from non-formal and informal learning in workplaces under NQFs. Informal/non-formal learning at workplaces in many countries, including Bangladesh, is now certified through a process of recognition, validation, and accreditation (RVA), also called recognition of prior learning (RPL). However, the study revealed that RVA/RPL standards exist only for a very limited number of occupations in Bangladesh, and they do not explicitly include industry or service sector-specific green skills but a generic unit of competency standard covering OSH issues.

This study examined the current green practices and the potential of including green skills in RPL. The study found that the majority of the employees/operators from both formal and informal MSMEs working at operation levels—the core workforce in the sectors we investigated—have no formal qualifications (ranging from 42 to 97%). They do have technical skills and work expertise in their respective service sectors, which they mainly acquire informally at their workplaces or technical workshops. Therefore, it is understandable that although Bangladesh has strong environmental and natural resource management policies, acts, and regulations, there is a huge deficit in the level of awareness, and hence a tendency not to practise or follow them. There are several governmental agencies, including the Directorate of Environment, who are responsible for assessing and monitoring the environmental impact of the economic activities of the enterprises in Bangladesh. Nevertheless, the survey results show that supervision is extremely poor, and in some cases entirely absent.

Regarding the importance of green skills, the responses of the enterprises in the informal sector were between “the issue is completely ignored” and “little attention is paid”, whereas the enterprises in the formal sector paid greater attention to green skills.

Based on the findings of this study, the authors recommend the following:

- Green skills should be included explicitly in every education and training course/curriculum as well as in every certification process through RVA.
- Enterprises should regularly organise green skills training for their employees and disseminate existing policies, acts, and regulations related to environmental safety and health.
- Special attention should be paid to the employees and employers of micro, small, and medium enterprises (MSMEs) by the government and international development partners, since the majority of the workforce do not bring formal qualifications but rather learn at their workplaces (informal learning).
- Environmental institutions, i.e. the DoE, should closely monitor industries/enterprises and transparently assess the environmental impact of their economic activities, especially to respond to Bangladesh’s rapid urbanisation, industrialisation, and growing pollution.

Acknowledgements The authors wish to thank Dr. Margarita Pavlova, The Education University of Hong Kong, and Dr. Madhu Singh, UNESCO Institute for Lifelong Learning, who have contributed

a great deal in different ways and encouraged us to write this chapter. We also wish to thank Prof. Dr. Intiaz Hossain, Professor of Bangladesh University of Engineering and Technology (BUET) and former Vice-Chancellor of Islamic University of Technology (IUT); Prof. Dr. Ashrafal Hoque, Professor and then Head of Research, Extension, Advisory Services and Publications (REASP) of IUT; Prof. Dr. Che Kum Clement, Head of TVE Department, IUT; and others, for their support of team's work during the project.

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