SENSREC

Safe and Environmentally Sound Ship Recycling in Bangladesh

PHASE II

Training Strategy

Norwegian Embassy
Dhaka

INTERNATIONAL MARITIME ORGANIZATION

Norwegian Embassy
Dhaka

INTERNATIONAL MARITIME ORGANIZATION

Ministry of Industries
Government of the People's Republic of Bangladesh

SENSREC – PHASE II
Work Package 2

Deliverable 3

REPORT: SCALING-UP STRATEGY FOR TRAINING FOR THE SHIP RECYCLING INDUSTRY

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Abstract

As part of Work Package 2 (WP2) of the IMO-Norway project "Safe and Environmentally Sound Ship Recycling in Bangladesh – Phase II" (SENSREC Phase II) – "Training and its management", this consortium presents a *Strategy for scaling-up training for the ship recycling industry*.

This strategy has been created through a combination of the consortium's expertise and knowledge in vocational education and training provision and the unique insights gained through the training of over 1000 ship recycling workers and managers, along with key industry and government officials.

This report will leverage the lessons learned from the training delivery to propose a series of recommendations in support of the necessary increase in training pace and volume in order to meet the need to train all the workers involved with this industry in the fastest time possible.

This strategy was developed in full cognisance and is in line with the earlier recommendations proposed as part of the training strategy developed as a deliverable to tender ITT2016-04 "Development of Training for Health, Safety and Environmental Compliance - Development of Training Material Work Package 4, Part 2".

Background

Bangladesh ship recycling worker estimates

1 At the end of Phase I of the "Safe and Environmentally Sound Ship Recycling in Bangladesh" project (SENSREC – Phase I), 25,000-40,000 full-time workers[*, †] were estimated to be working in the Bangladeshi ship recycling zone at any one time. In addition, this workforce was identified to be predominately migrants from other regions of Bangladesh and likely to enter and exit the sector frequently over time. Consequently, the estimate of those active within the industry and therefore required to be trained, was assessed as potentially higher than the estimates once the high worker turnover rate had been factored in. As of the second quarter of 2020 and due to the COVID-19 pandemic, this estimate was revised to around 15,000.[‡]

Mandate for ship recycling training[†]

2 The Honourable High Court of Bangladesh has made the stipulation that all those employed in ship recycling activities require to be trained according to the following decree:

> A system of comprehensive training must be introduced to impart training to those who shall be employed for shipbreaking activities. An Institute will be set up for the training purposes byBangladesh Ship Breakers and Recyclers Association (BSBRA) at their cost for training such persons. The training period shall be at least three months duration. The first 20 days shall be allocated for theoretical training, while the rest of the period shall be involved in practical vocational courses. No workers shall be allowed to be employed in the shipbreaking yards without certificates showing completion of the course.[§]

3 In Work Package 4 (WP4), Phase I of the SENSREC project, this was interpreted into an approved curriculum which recommended:

.1 Theoretical training (training-in-training facility); and

.2 Practical vocational training (on-the-job training).

Introduction

4 SENSREC Phase II, funded by the Norwegian Embassy, aims to enhance national capacities for Bangladesh on safe and environmental recycling of ships as well as to guide Bangladesh towards the road to accession to *the Hong Kong International Convention for the Safe and Environmentally Sound Recycling of Ships* (the Hong Kong Convention or HKC).

5 WP2 of SENSREC Phase II consists of the following key activities and tasks:

.1 to establish a training management and delivery system with the control, monitoring, certification and delivery mechanisms necessary for ensuring long-term selfsustainability within internationally acceptable quality standards.

.2 to develop and use information technology (IT) solutions.

.3 to deliver various training activities for around 1000 people, including ship recycling workers, supervisors and government officials, and trainers:

.1 200 train-the-trainer personnel;

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[*] SENSREC WP1 Final Report: *Contributions of Ship Recycling in Bangladesh: An Economic Assessment.*

[†] SENSREC WP4, Part 2: *Strategy for Sustainable Training for the Ship Recycling Industry.*

[‡] Internal SENSREC Phase II: based on informal revised estimates from Ministry of Industries (MOI).

[§] Honourable High Court Verdict of 6 April 2011 regarding workers training

.2 700 general workers (and providing Personal Protective Equipment (PPE) for each trainee); and

.3 100 Supervisory and Government-level individuals.

6 The objective of this strategy document is to provide guidance and options on how to scale up the training activities that were delivered as part of SENSREC Phase II, in support of a national strategy for the Government of Bangladesh (GoB) and the Bangladeshi ship recycling industry.

7 Based on the pilot training and experience gained from SENSREC – Phase II, this document is to complement the *Training Sustainability Strategy* developed under the SENSREC Phase I. It is focused on the scaling-up strategy.

8 A succinct summary of the training approach, training tasks and training modules is given in appendix B, which was incorporated into this strategy document as a point of reference and context.

Approach

9 The scale-up strategy shall address some of the key messages from the strategy recommendations produced as an outcome of SENSREC Phase I, Work Package 4.*

10 It is noteworthy to recall that the ultimate objective of the project is the empowerment of local stakeholders. Therefore, the following recommendations can only be generic in nature. The stakeholders need to work together to identify the best solutions meeting the local context and specificities. In other words, the following recommendations are a framework for national partners.

11 The strategy shall be presented in accordance with the following structure, framing the concept of scalability through the use of:

.1 Flexible and efficient management of training:

.1 supervision and finance mechanism;

.2 modular/flexible management structure; and

.3 controlled worker employment process leveraging a simple IT solution.

.2 Implementation of proactive worker engagement and empowerment policies:

.1 nationally recognized certification;

.2 path to genuine career progression within a structured government scheme; and

.3 a commitment to continuous improvement

.3 Provision of adequate training facilities and infrastructure:

.1 training pool;

.2 physical infrastructure; and

.3 IT infrastructure.

* Reference #4.

1 Flexible and efficient management of training

a Supervision and finance mechanism

1 The Honourable High Court of Bangladesh recognized the need for training to protect the workers from the hazards related to ship recycling activities. Therefore, the implementation of a ship recycling training wing for training management and records (the Office) is necessary to ensure the long-term sustainability of training.

2 The Strategy for Sustainable Training for the Ship Recycling Activities identified the need to establish two distinct, permanent and interconnected entities to ensure training consistency:[*]

> **.1** "A supervisory mechanism or subcommittee developed under the Bangladesh Ship Recycling Board (BSRB), a one-stop service board, would oversee the overall training activities."
>
> **.2** "The subcommittee would be complemented by a permanent and dedicated body/office in charge of day-to-day activities and administration."

3 More precisely, the first recommendation of that document stated "a Ship Recycling Subcommittee on Training and a permanent Ship Recycling Office for Training and Records (SROTR) should be established. The Bangladeshi Ship Recycling Board (BSRB), with the support of the BSBRA, should regulate and control the activities of these bodies. Alternatively, the Government may think of establishing a dedicated training wing under the Office of the Director-General, which will also be known as the Headquarters of the Board/BSRB".

4 To operationalize the Subcommittee and the training Office, BSRB should determine the scope of duties and responsibility of the Office.

5 The BSRB should also be responsible for assessing and allocating budgets for the training wing.

6 The national authorities should validate and support the establishment of such a task force. It would allow the installation of a permanent office and its empowerment. The links and capacities of the Office should be clarified by the task force and validated by the supervisory authority – the subcommittee on training.

7 In addition to roles and responsibilities, it is expected that the BSBR will consult the task force to assess the short-, medium- and long-term financial needs and propose solutions to secure financial sustainability.

8 The national stakeholders assembled in the task force are the best to assess national possibilities and practices to determine financial mechanism. The most important is to ensure that training activities will become independent from external funding. Therefore, national contributions should be discussed and the responsibility of the industry at the core of the discussions.

9 The Office needs financial resources to operate the equipment and premises, to pay the employees, to organize the trainings, and to cover any other justified expenses.

10 It is expected that audit mechanisms under BSRB or the Ministry of Industries (MoI) will be established to ensure proper management of resources.

A Ship Recycling Subcommittee on Training and a permanent Ship Recycling Office/training wing at Board headquarters for Training and Records should be established. BSRB with the support of the BSBRA should regulate and control the activities of these bodies.

[*] Section 4.1 of reference #3.

b A modular, flexible management structure

1 In order to deliver the training within its scope, the SENSREC Phase II Consortium operationalized a training management team (TMT) responsible for the day-to-day management and administration of the training, along with the definition and implementation of the IT solution.

2 The operating policy for the TMT* describes the roles, processes and procedures that structure and enable the day to day activities of the TMT, which align with those allocated, in principle, to the (SROTR).

3 Within such a framework, the organization structure of the SROTR could match that of the TMT as illustrated in Figure 1, which introduces a concept that will need to be adopted by MoI to reflect the reality of resource availability within the government:

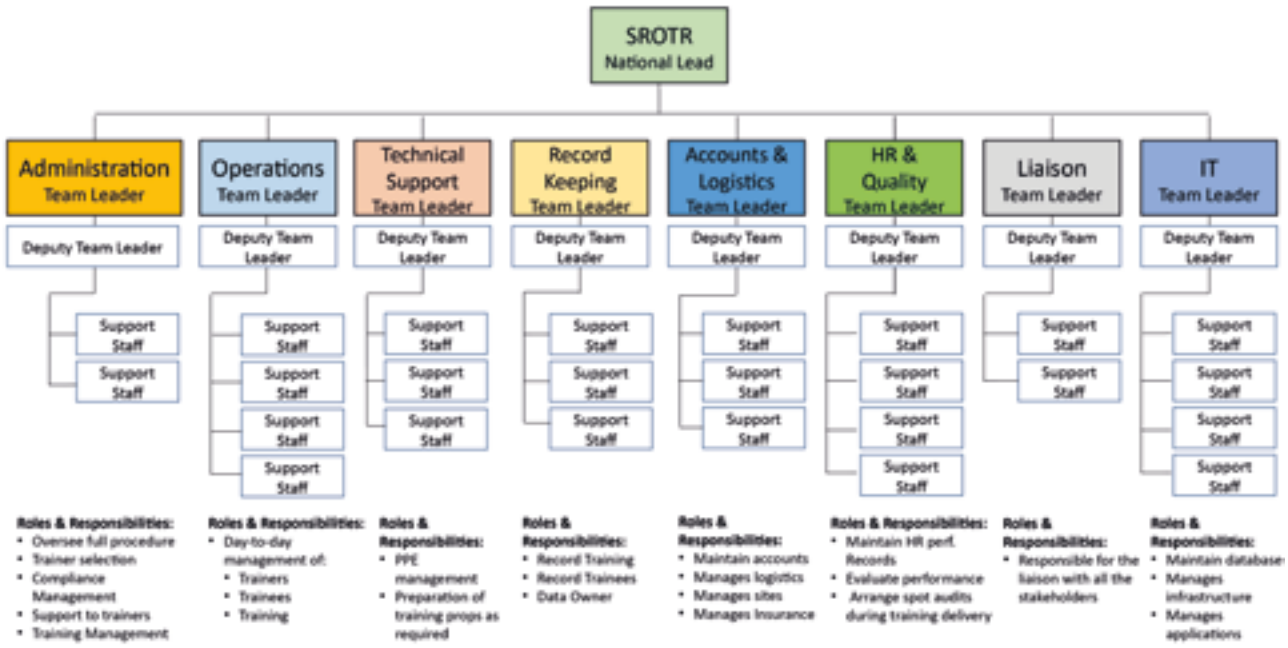


Figure 1 – *TMT as SROTR*

4 The above organogram can be further optimized to reflect the reality on the ground, where, for the short to medium term at least, training might need to be delivered at various locations around Chittagong but also, potentially, elsewhere in Bangladesh.

* Reference #2, paragraphs 7 to 17.

5 The structure proposed in Figure 2 would see the main delivery functions such as operations and logistics organized around small local teams, supported, in a shared services model, by a core centralized team with responsibility for financial accounting, HR and other such matters:

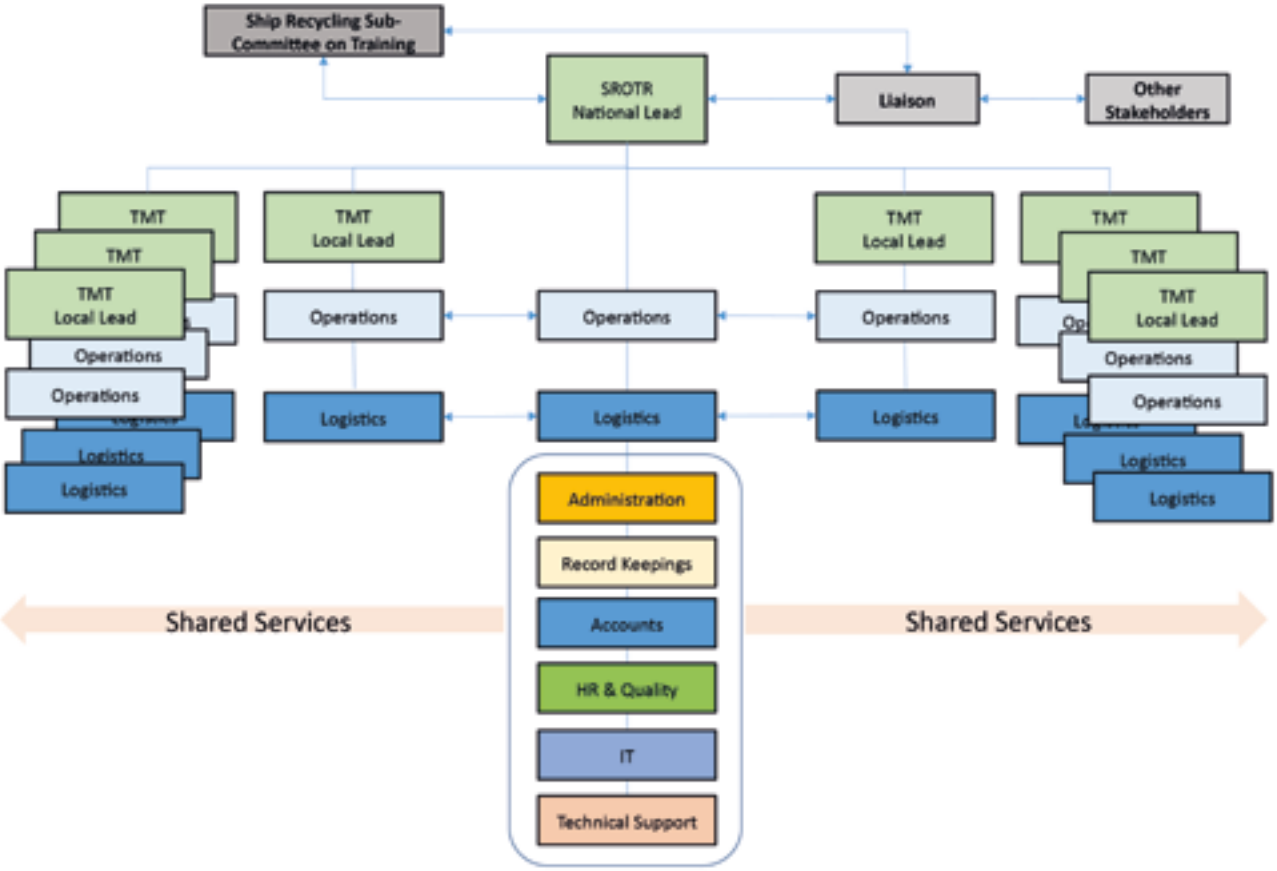


Figure 2 – *Scalable shared services model*

6 While preserving the core functions such as finance, HR and record-keeping, this organizational model is inherently able to be scaled up in terms of resources on the ground, able to deliver the training–leveraging trainers, and support personnel already trained and registered within the database.

7 Reporting into the national lead, local leads could be identified against the database, and under the recommendation of the sub-committee or even the Ship Recycling Board, with input from BSBRA and/or MoI.

8 Strategic direction and policy will remain the domain of the Ship Recycling Sub-Committee on Training, into which the Head of the SROTR (Training Wing) will report.

9 1 and 2 are presented as examples of the type of delivery structure that could be quickly and efficiently implemented by training entities (Relevant training institute, Universities, private organizations etc.), to adapt their training infrastructure to a demand that might be fluctuating, based on market conditions and other externalities.

10 By doing so, those training entities would provide cost-effective support to the Government.

The organizational structure of the SROTR could be modelled on the TMT but will need to be adapted by MoI to reflect the reality of resource availability within government and budgetary constraints.

c A centralized and controlled worker employment process leveraging a simple IT solution

1 This consortium implemented the recommendations for the establishment of "an identification-card (ID card) based worker registration and records database system for ship recycling workers".*

2 The IT solution is handled by the consortium partner who is hosting the code and relevant databases on its business infrastructure.

3 While acceptable in the current context and with a somewhat limited number of records, this setup is not sustainable due to the following considerations:

.1 protection of sensitive personal information – all the data held on the ID card but also, singularly, within the database;

.2 control of the application itself; and

.3 ability to set up and manage a large, complex national solution.

4 The IT function within the core team – as illustrated in Figure 2 – and in its official capacity as a member of the SROTR (Training Wing), should own the database and the application, which should be transferred to the relevant official government infrastructure as soon as possible, ensuring that:

.1 all possible levels of security have been implemented to prevent unauthorized access to the application or the data;

.2 backups and redundancies have been set up as part of a functioning and auditable disaster recovery plan; and

.3 ultimate control of the database lies in government hands, away from commercial or other negative interests.

5 This entire system and infrastructure, as well as setup and maintenance, should be the responsibility of IT, under government control, to ensure total confidentiality of the information and to also ensure adequate supervisory services.

6 The provisioning of the necessary ID cards and their manufacturing will be handled by the central IT and logistics functions of the TMT, under budgetary (and QA) allocation/control from the core finance and accounting function.

7 As the number of trainees increases, so will the size of the database, which will need to be adequately scaled from day 1, with clear options for further upgrades and enhancements.

8 As much as possible, the technology implemented by the consortium will be "future proof" to allow for easy updates/upgrades and other such "unplanned" enhancements. Additionally, integration in existing IT solutions should be envisaged.

Government should establish an ID-card based worker registration and records database system for ship recycling workers.

* Reference #3, section 4.2.

2 Implementation of proactive worker engagement and empowerment policies

a Nationally recognized certification

1 As part of scaling up, it is important that the government (under the aegis of the SROTR) put in place a set of programmes that provide nationally accepted certifications and qualifications that workers will then be able to show within or outside the ship recycling sector to demonstrate their level of proficiency.

2 The current "certification" has not been formally incorporated into a university diploma or other similar qualification, and, as such, and despite its intrinsic value within the immediate world of the ship recycling facilities, it could lack the long term, mass pleasing attraction provided by an actual degree or diploma.

3 Workers wanting to further enhance their chances of professional success through more learning and training should be offered the possibility to enter the national education circuit, having gained recognized credits, certificates or other similar items through their SENSREC training.

The government (under the aegis of the SROTR) should provide nationally accepted certifications and qualifications that workers will then be able to show within or outside the ship recycling sector to demonstrate their level of proficiency.

b Path to genuine career progression within a structured government scheme

1 By being able to see a path to a better life through formal ship recycling training, workers will be more engaged and motivated; they will feel valued and their entourage will react better to them. Their behaviour at work will improve.

2 By encouraging ship recycling worker self-betterment, and by providing a route to nationally recognized qualifications, the Government of Bangladesh will set the foundations of a long-term, sustainable training channel, which is a core objective of the SENSREC initiative.

3 The development of training "mapped in accordance with the appropriate levels within the Bangladesh National Qualifications framework"* shall be lead by the SROTR and done with the full support of BSBRA as representative of the ship dismantling yards, who shall develop a career progression matrix for ship recycling workers that shall align with the tailored government diploma structure.

4 This matrix shall provide an indication of the types of roles and responsibilities that each worker shall be able to aspire to, across all recycling yards, based on the combination of their work experience and level of accredited training.

5 Such a matrix remains to be defined by the national stakeholders who are uniquely qualified to tailor a career progression structure that shall be both meaningful to the ship recycling workers but also founded on a realistic assessment of the situation on the ground.

6 The implementation of this academic and professional structure is fundamental and it shall be a short-term objective of the government.

Workers wanting to further enhance their chances of professional success should be offered the possibility to enter the national education circuit, having gained recognized certificates through their SENSREC training.

* See reference #3, page, 12, section 6.1, paragraph 3.

c A commitment to continuous improvement

1 Recommendation #4 of reference #3, stipulated that: "The Ship Recycling Subcommittee on Training periodically review training materials and implement a process for implementing upgrades/improvements/ edits to the training programme".

2 In effect, any intent of scale-up should be accompanied by a review and revamp of the training material, as necessary:

.1 to confirm the adequacy of content with regards to audience and training objective; and

.2 to take into consideration possible changes in methodology, circumstances, environments that are attached to the scale-up.

3 Periodical reviews of and changes to the training materials will be directed by SROTR/ Training Wing of the Board/BSRB and maybe outsourced to the consortium members (WMU[*], BMA[†], UoC[‡], BUET[§], Capella Consulting Services (CCS) and UoS[¶]), or non-consortium members, as appropriate.

4 GSR Services GmbH and the University of Strathclyde will also be working on regularly updating their training slide decks – whenever requested to do so. However, such work cannot be for free after the completion of the project.

5 For the institutionalization of the training modules prepared under the SENSREC Phase I, MoI should: (1) introduce the SENSREC training modules to the privately run training institutes which operate under the administrative control of the MoI and provide training to the ship recycling workers; (2) ensure, through legislation, that all ship recycling workers have been given initial training by recognized institutes or organizations before they are eligible for employment in the ship recycling yards. As the SENSREC training modules have been proved to be an effective instrument for the skill development of the ship recycling workers, thus, its institutionalization will bring sustainable changes to help ensure occupational health and safety in the industry.

All training material should be kept up-to-date in line with evolving international and national legislation. All ship recycling workers should be given initial training by recognized institutes or organizations before they are eligible for employment in the ship recycling yards.

[*] World Maritime University.

[†] Bangladesh Marine Academy.

[‡] University of Chittagong.

[§] Bangladesh University of Engineering and Technology.

[¶] University of Strathclyde.

3 Provision of adequate training pool, facilities and infrastructure

a Training pool

1 With a pilot run of train-the-trainers (TTT) training of 21 participants under SENSREC Phase I and the initial training of 215 experienced workers to become trainers themselves under SENSREC Phase II, the project has created an initial "pool" of certified, reliable individuals that can be called upon at short notice to support further teaching and coaching activities, as part of the SENSREC initiative or, more globally, across the industry.

2 This a fully scaleable source of qualified training resources and the number of Train The Trainer (TTT) candidates shall be around 236 so as to be sufficient to cover the training needs identified in table 2 of reference #3 through the tiling of shifts and duplication of training activities across multiple sites.

3 A recognized providers of expert knowledge in the field of socially responsible ship recycling, TTT resources work within the ship recycling yards and, as such, they are able to share their knowledge on a daily basis, outside of the formal framework of training sessions, thus furthering the reach and the impact of the SENSREC activities.

4 Each member of this TTT pool shall undertake a refresher training every two years in order to ensure that he/she is up-to-date with the latest developments in terms of legislation but also socially responsible ship recycling best practices.

5 The SROTR shall be responsible for managing the training requirements for each worker in the database, issuing reminder of upcoming training requirements or of renewal of certificates (if applicable).

6 Over time, similar pools of expertise shall be created to cover the need for qualified safety officers or similar quality auditors, employed by SROTR, and therefore independent from the ship recycling yards, who shall undertake regular audits of training standards versus actual practices.

Each member of the TTT pool shall undertake a refresher training every two years.

b Physical infrastructure

1 As stakeholders contemplate the next stage of the SENSREC project, their main preoccupation quickly turns to training venues and as far as increasing the number of trainees and of training sessions.

2 Recent experience has shown that in order to control cost, the use of hotel conference rooms should be avoided.

3 Making use of BMA infrastructure, long term, may not be feasible. It creates too much stress and disruption to the activities of the institution, which, over time, is not ideal but may sometimes support for practical training such as first aid, fire fighting, enclosed space drill and oil pollution emergency response.

4 Efforts should be placed to identify one or two venues near the ship recycling yards that could be secured through a long-term lease or rental agreement and fitted with all the equipment necessary for delivering the theoretical content.

5 One such venue,a ship recycling yard, had been secured to support the training of the final cohorts of general workers; its owners should be approached to explore a longer term agreement.

6 Alongside identifying the venues for theoretical lectures, there is a need to approach a couple of nearby shipyards to secure access to provide low-level strategy advisory.

7 Implementing this approach, by using qualified ship recycling yards (for example, with Statements of Compliance (SoCs) with HKC) will provide the most flexibility in terms of scaling potential available at short notice. It will also allow for rapid de-escalation should the need arise, with no or limited financial loss, compared to a bespoke training facility that would still incur charges etc.

8 This solution also plugs into the management structure proposed earlier in this document, with a very flexible and easy way to keep people interested throughout.

9 Following the success of the project, it will be possible for the SROTR to license the training delivery to a variety of third parties, which will allow for more workers to be trained in a shorter amount of time.

10 Those third parties could be other consortium members like BMA, BUET or UoC, or nonconsortium entities.

11 However, such outsourcing should be properly supervised and approved by the national SROTR. Licence to operate will be subject to the assessment and verification of the training infrastructure by the Office/Board to ensure the quality of delivery.

12 Moreover, the BSBRA should be given the responsibility for establishing and operating training institutes by themselves.

Efforts should be placed to identify one or two venues near the ship recycling yards that could be secured through long-term lease or rental agreement and fitted with all the equipment necessary for delivering the theoretical content.

c IT Infrastructure

1 Section 4.2 of reference #3 states:

- "The Bangladesh Labour Act 2006 requires employers to maintain records (service book) of their workers and to issue a letter of appointment and identity cards (ID cards) (Chapter II of Labour Act)."
- "Effective and strict implementation of such requirements would avoid untrained, undocumented, unidentified workers as well as underage labour to penetrate ship recycling yards."
- "Moreover, the 2011 Ship Breaking and Recycling Rules (SBRR) demands that only trained workers can be employed in ship recycling yards. So, the issuance of ID cards for workers authorized to work in ship recycling yards would be conditioned by the completion of training."
- "Such activities (training and issuance of ID cards) would be conducted by the permanent Ship Recycling Office on Training and Records under SBSRB Subcommittee on Training."

2 As described in section 1.3, the IT solution that was implemented as part of SENSREC Phase II meets the functional requirements defined by the government. Details can be found in the IT solution report.

3 At a high level, the functional process flow of the solution that has been implemented can be captured as follows (Figure 3):

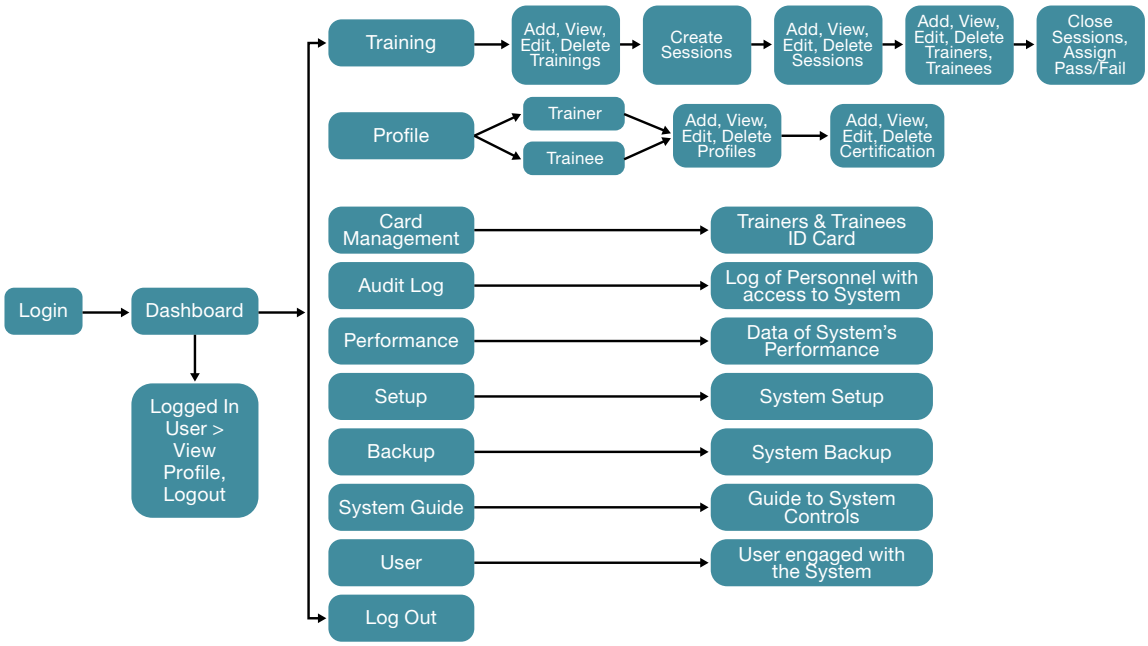
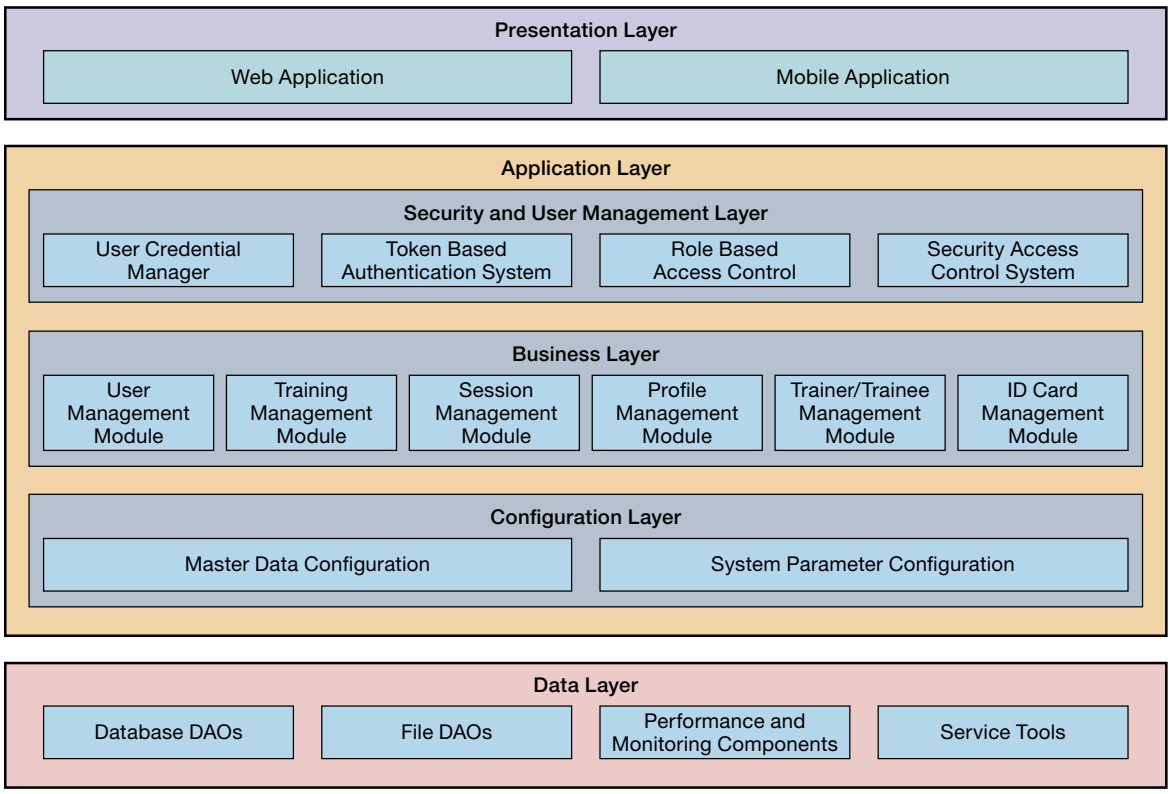


Figure 3 – *Functional overview*

4 In terms of infrastructure, this solution shall consist of the following functional layer (Figure 4), which is independent of the hosting solution and is accessed on a role-based principle with only a limited number of accredited users from SBSRB, SROTR and other pertinent ministries or agencies:



Note: Data Access Object (DAO)

Figure 4 – *Functional software architecture*

5 In terms of technical architecture, this translates in Figure 5, which will need to be refined with technical partners, taking into account actual governmental capabilities and skills:

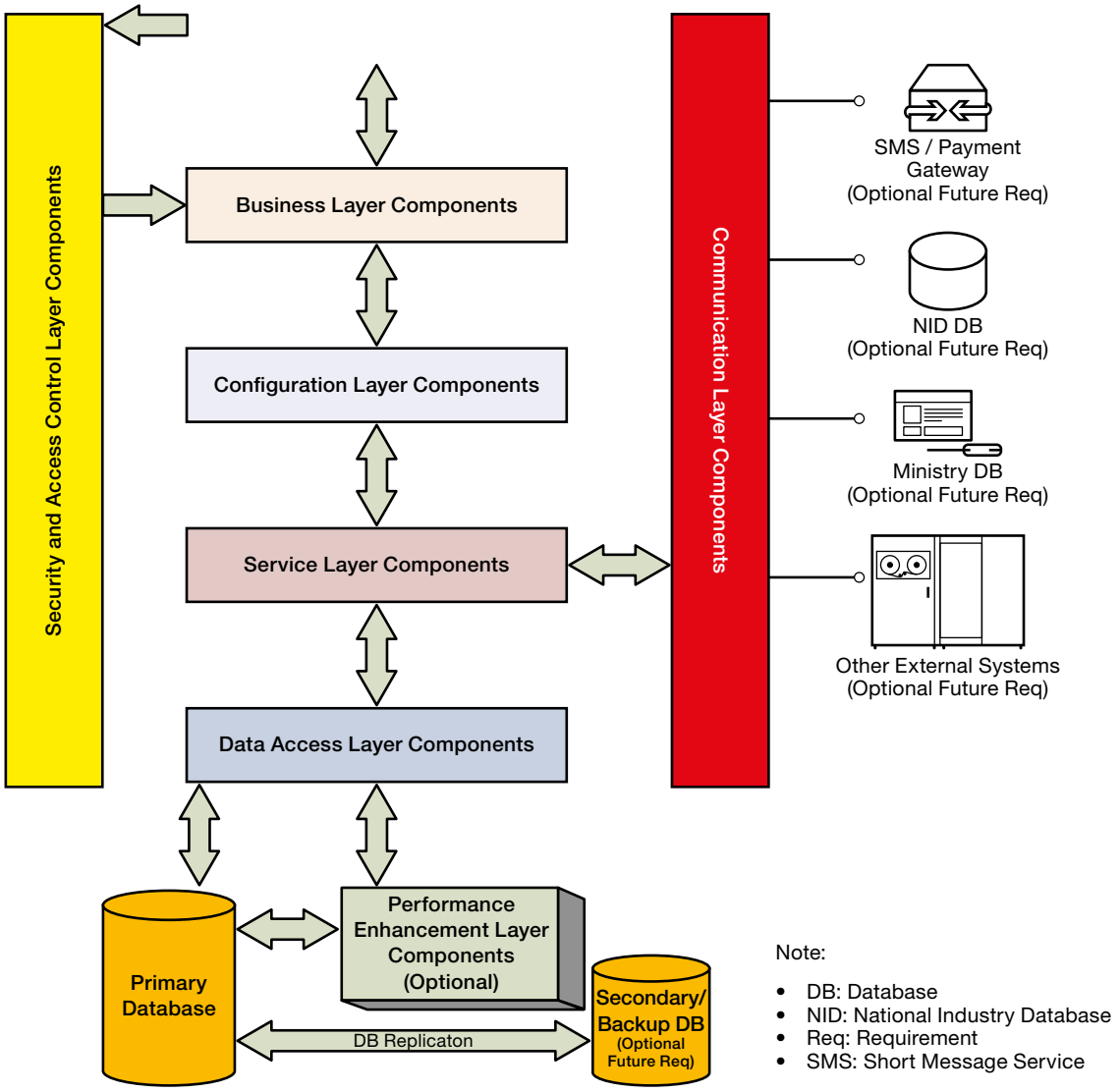


Figure 5 – *Technical software architecture*

6 From a security point of view, as well as implementing role-based access, the custodian and main user of the database shall use best practice, secure data communication protocols such as Virtual Private Network (VPN) or Hypertext Transfer Protocol Secure (HTTPS) for example, with security ensured through the use of Transport Layer Security 1.2 (TLS1.2) and other similar industry standards.

The technology implemented by the consortium should be "future proof" to allow for easy updates/ upgrades and other such "unplanned" enhancements. Additionally, integration in existing IT solutions should be envisaged.

Appendix A
Sources of Information:

The contents of this report are based on the following key sources:

1 SENSREC Phase II_Proposal–20190411.

2 SENSREC Phase II, Work Package 2, Deliverable 1: *Operating Policy for Training Management Team*; To define the roles, processes and procedures that need to be rolled out. Dated December 2019.

3 SENSREC Phase I, Work Package 4, Part 2: *Strategy for Sustainable Training for The Ship Recycling Industry.*

4 Feedback and lessons learned from actual training delivery undertaken in Bangladesh, from 24 September 2019 to date.

Note: Expertise in vocational education and training provision was provided by the academic institutions that are part of the Consortium:

- Bangladesh Marine Academy (BMA),
- Bangladesh University of Engineering and Technology (BUET),
- University of chittagong (UoC),
- World Maritime University (WMU),
- University of Strathclyde (UoS).

Appendix B

Cost considerations

The annex of reference #3, Strategy for Sustainable Training for The Ship Recycling Industry, identified a series of costs for a training cohort of 36 people over 3 weeks (or 15 days) of training.

Of a high-level nature, the cost estimate provided did not take into account the cost of PPE which, with the onset of the COVID-19 pandemic, has experienced large fluctuations and unreasonable increase. Furthermore, additional expenses were incurred that could not have been expected and that had a major impact.

From the experience of Phase II, this Consortium would like to provide the following update to the initial estimate:

Average Venue Hire Cost (per course):	
Training – Waste Mgmt	$3,850/workshop at a UN chosen venue
Training – Workers	$1,800/month to run 3 cohorts in parallel: rented house (may vary)
Training Staff Costs (per day):	
Training coordinator (daily)	There is no fixed tariff - rather a lump sum as proposed in the tender documentation.
Ship recycling trainers	Same as above
Support Staff	Same as above
International training expert (per course):	Ad hoc – depending on requirement.
Additional costs:	
PPE (per worker)	$60/worker
Food (per worker per day)	$10-$15/worker
Transportation (per day)	Subject to distance however $5-$10/P
Hotel Accomodation (per day)	If nearby yards can be used – this expense will not be necessary
Other	Stationary: $10/P

Appendix C

Training for safe and environmentally sound ship recycling

Approach

The training that was delivered as part of SENSREC Phase II leveraged training material developed for SENSREC Phase I, Part 2, WP4 but tailored to the objectives of Phase II, WP2 and organized around eight modules under the responsibility of consortium partners as follows:

Table 1 – *List of Phase 1 training modules*

Module	Module Developer	Module focus	Supervisor	Co-supervisor
Module 1	Prof. Nur Nabi, CU	Legal	WMU	GSR
Module 2	Capt. Shameem, BMA	Risks & Hazards	UoS	WMU
Module 3	Capt. Shameem, BMA	Environment	GSR	WMU
Module 4	Prof. Zakaria, BUET	IHM	GSR	UoS
Module 5	Capt. Mawla, CCS	PPE	UoS	GSR
Module 6	Prof. Nur Nabi, CU	Workers' well-being	WMU	UoS
Module 7	Capt. Mawla, CCS	HAZMAT	UoS	GSR
Module 8	Capt. Shameem, BMA	Vocational & safety training	WMU	UoS

Note: Green Ship Recycling Services (GSR).

Per section 1.3 of SENSREC Phase II_Proposal–20190411, the training activity consisted of three main tasks:

- Task 3.1: Training for selected number of general workers and skilled workers
- Task 3.2: Awareness raising for supervisory and government levels
- Task 3.3: Train the Trainer

Training Material

For Tasks 3.1 and 3.3, the training modules were distributed across the categories of trainees, depending on their relevance to the training objectives of the audience.

The relevance of each training module to its audience was defined and summarized in Table 2:

Table 2 – *Training modules allocation*

Training Module (tailored to the audience)	Managers	Skilled Workers	All Workers
Module 1 – Legal	✓	✓	✓
Module 2 – Risks & hazards		✓	✓
Module 3 – Environment	✓		✓
Module 4 – Inventory of hazardous materials		✓	
Module 5 – Personal protective and safety equipment		✓	✓
Module 6 – Workers' Well–being	✓		✓
Module 7 – HAZMAT		✓	✓
Module 8 – Vocational & safety		✓	✓

Task 3.2, for global legal and regulatory considerations and downstream waste management of hazardous substances, was supported by the delivery of specific training content provided by consortium partners GSR Services and the University of Strathclyde.

In terms of training aims and objectives, the training modules were structured as follows:

Module 1 – Ship recycling administration and regulatory framework

Table 3 – *Training module #1*

	Managers	Skilled workers	All workers
Aims and Objectives	– Understand the framework of ship recycling practices – Reflect on the importance of maintaining Occupational Health and Safety (OHS) principles in ship-breaking yards – Identifying the procedures for importing and dismantling a ship within the national framework of Bangladesh (BD) – Identifying accident investigation procedures and its importance to reduce risk of future events	– Learn the importance of effective management of work activities and competent site supervision – Provide essential skills and tools for maintaining healthy and safe conditions for those under supervision	– Understand the framework of ship recycling practices – Reflect on the importance of maintaining OHS principles in ship-breaking yards – Identifying the procedures for importing and dismantling a ship within the national framework of BD – Identifying accident investigation procedures and its importance to reduce risk of future events
Organization of module	**1** Regulations and shipbreaking framework **2** OHS management principles **3** Accident reporting and notification **4** Accident investigation **5** Facility operations **6** Requirements for worker training	**1** Site management and supervision **2** Management Responsibility **3** Before work starts **4** First time in the yard **5** Ongoing improvement **6** Health and Safety checks **7** Checklists	**1** Regulations and shipbreaking framework **2** OHS management principles **3** Accident reporting and notification **4** Accident investigation **5** Facility operations **6** Requirements for worker training

Module 2 – Risks and hazards: Job hazard awareness

Table 4 – *Training module #2*

	Managers	Skilled Workers	All workers
Aims and Objectives	Not applicable	– Explain the reasons for common accidents and protection measures – Identify and explain potential hazards and hazardous situations related to ship recycling tasks – Assess the identified hazards in a proper manner – Explain the details of behaviour-based safety – Conduct a risk assessment	– Explain the reasons for common accidents and protection measures – Identify and explain potential hazards and hazardous situations related to ship recycling tasks – Assess the identified hazards in a proper manner – Explain the details of behaviour-based safety – Conduct a risk assessment
Organization of module	Not applicable	**1** What is risk **2** Reporting and follow up procedures **3** What is risk assessment **4** Risk assessment methods	**1** Hazard **2** Common accidents and protection measures **3** Main Hazards in a ship recycling yard and ways to prevent **4** After identification – how to behave when facing hazards

Module 3 – Environmental Awareness

Table 5 – *Training module #3*

	Managers	Skilled Workers	All workers
Aims and Objectives	– Provide an overview of environmental awareness – Basic waste management, pollution impact, pollution prevention and response methods	Not applicable	– Provide an overview of environmental awareness – Basic waste management, pollution impact, pollution prevention and response methods
Organization of module	**1** Pollution and environmental impact **2** Waste Management	Not applicable	**1** Pollution and environmental impact **2** Pollution prevention

Module 4 – Inventory of hazardous materials

Table 6 – *Training module #4*

	Managers	Skilled Workers	All workers
Aims and Objectives	Not applicable	– Explain and prepare the Visual and Sampling check – Locate and identify the Hazmat of concern – Collect HazMat sample – Analyse and Evaluate the samples – Develop a HazMat Inventory (Inventory of hazardous materials or IHM) – Utilization of IHM to produce the Ship Recycling Plan (SRP)	Not applicable
Organization of module	Not applicable	**1** Inventory of Hazardous Materials - Definitions **2** IHM Tables A and B **3** IHM Part 1 for existing ships **4** Document review **5** Preparation of IHM for existing ships **6** Location of HazMat and their types and quantities **7** Standard analysis method for HazMat of Part 1 **8** Sampling and on-board activities **9** Interpretation of IHM **10** Preparation of SRP **11** Overview of SRP **12** Planning for inspection **13** Marking of hazardous materials and waste **14** Decontamination and waste management	Not applicable

Module 5 – Personal protective and safety equipment

Table 7 – *Training module #5*

	Managers	Skilled Workers	All workers
Aims and Objectives	Not Applicable	– Understand personal protective and safety equipment (PPE) and its importance in workplace activity – Identify and select proper PPE during ship recycling – Understand the consequences if proper PPE is not used – Assess the condition and required maintenance of PPE – Understand why PPE needs to be used in a correct manner – Use of required PPE in emergencies	– Understand PPE and its importance in workplace activity – Identify and select proper PPE during ship recycling – Understand the consequences if proper PPE is not used – Assess the condition and required maintenance of PPE – Understand why PPE needs to be used in a correct manner – Use of required PPE in emergencies
Organization of module	Not Applicable	**1** Assessment and verification of PPE **2** Control of workers and forcing use of appropriate PPE	**1** What is PPE? Importance of PPE in workplace activity **2** Use of PPE and safety equipment **3** When to use PPE **4** PPE types **5** Identification and description of which PPE are required to be used for ship recycling tasks **6** Case studies **7** PPE in emergency situations

Module 6 – Workers well-being

Table 8 – *Training module #6*

	Managers	Skilled Workers	All workers
Aims and Objectives	– Advocating improvement of workers' health and well-being – Framing principles to pursue while putting effort into raising workers' health and well-being	Not Applicable	– Advocating improvement of workers' health and well-being – Framing principles to pursue while putting effort into raising workers' health and well-being
Organization of module	**1** Occupational Health and Safety (OHS) Practices **2** Psychological health **3** Stress at work **4** Why is mental health important for shipbreaking workers? **5** How to ensure sound mental health for ship breaking workers? **6** The way a mentally disordered worker should be dealt with **7** Relevant national and international law	Not Applicable	**1** What is OHS? **2** What are the benefits of OHS practices? **3** What are/should be the health support facilities in the yards? **4** What are the transmittable diseases? How should workers remain safe?

Module 7 – Awareness and handling of HazMat

Table 9 – *Training module #7*

	Managers	Skilled Workers	All workers
Aims and Objectives	Not Applicable	– Definition of HazMat – HazMat on board and their indicative locations – Identify on-board HazMat, their appearance and health effects – Actions when suspicious and unchecked materials are detected – How to extract and handle on-board HazMat in a safe manner – Equipment (both on board and ashore) to manage HazMat	– Definition of HazMat – HazMat on board and their indicative locations – Identify on-board HazMat, their appearance and health effects
Organization of module	Not Applicable	**1** Extraction and cleaning; handling and transport; storage and disposal **2** Basic precautions with HazMat **3** What to do if suspicious and unchecked materials are detected **4** Sampling of HazMat **5** Asbestos **6** Polychlorinated biphenyls (PCBs) **7** Ozone depleting substances **8** TBT **9** Cadmium and cadmium compounds **10** Lead and lead compounds **11** Mercury and mercury compounds **12** PBDEs **13** Fuel, grease and lubricants **14** Bilge, ballast, grey and black water **15** Paints **16** Other HazMat **17** Equipment on board and ashore to manage HazMat.	**1** Definitions **2** Major hazardous substances found on board **3**

Module 8 – Vocational education and training

Table 10 – *Training module #8*

	Managers	Skilled Workers	All workers
Aims and Objectives	Not Applicable	– Understand the risk related to simultaneous activities in the yard and that may affect the safety of other workers – Understand the need for equipment checks and their use – Understand hot work safety precautions – Understand sorting and segregation techniques – Understand and apply safety precautions – Understand the importance of maintenance – Learn how to apply emergency response techniques – Review of additional hazards depending on category of workers	– Understand the risk related to simultaneous activities in the yard and that may affect the safety of other workers – Understand the need for equipment checks and their use – Understand hot work safety precautions – Understand sorting and segregation techniques – Understand and apply safety precautions – Understand the importance of maintenance – Learn how to apply emergency response techniques – Review of additional hazards depending on category of workers

	Managers	Skilled Workers	All workers
Organization of module	Not Applicable	**1** Hot work for cutter and welder teams **2** The equipment **3** Special equipment **4** Cylinders **5** Pressure gauge **6** Cutting torch **7** Hoses **8** Flashback arrestor **9** Types of hot works and practices / lighting procedure **10** Lighter **11** Cutting objects and protection from falling objects – work practices and precautions **12** Additional operational and safety considerations **13** Required PPE **14** Inspection **15** Supervision of helpers **16** Specific section for cylinder team **17** Specific section for fitter team **18** Specific section for loader team **19** Winch, crane and heavy equipment drivers / operators **20** Wire rope team **21** Electricians **22** Emergency teams (firefighting/ backup team/first aid group)	**1** Risks related to simultaneous activities occurring during the ship recycling process **2** Safety checks and toolbox meeting before work **3** Equipment **4** Safety precautions at work and equipment **5** Importance to report equipment damages / importance of equipment maintenance **6** Hand tools and electrical tools **7** Hot work principles and precautions for all workers **8** Sorting and segregation **9** and environmental training / practical training

Workshops on awareness-raising for managers and regulatory bodies, including workshops on downstream waste management of hazardous materials

Objective

SENSREC Phase I identified that building national capacity through the training of workers would not be effective unless accompanied by a raising of awareness of issues pertaining to safe ship recycling within the communitiies of the major stakeholder and regulatory bodies.

As a result, the objective of the workshops was to engage and educate / grow awareness of supervisors and different levels of government employees to ensure, amongst other things, that requirements of HKC, and their impact on the various aspects of the industry are well understood.

The workshops covered salient points from the formal training material, along with considerations on international treaties and legislation and international best practices, as well as their national interpretation/ impact. They introduced attendees to the important points on Basel, Rotterdam and Stockholm Conventions, IHM: management, survey and removal, and handling of hazardous materials.

The workshops were delivered by national and international experts. They were held in both Dhaka and Chittagong to cover the largest number of stakeholders and regulatory bodies engaged directly and indirectly with this industry.

Participants' feedback

Participants acknowledged that their knowledge and understanding of current and future trends and requirements were not up to date. Moving forward, it was suggested that this training should become a regular occurrence.

Recommendation

Aside from the SENSREC project, the Training Wing should keep such awareness programmes in the future.

National capability-building through train-the-trainer courses

Objective:

The purpose of the TTT courses is to build a pool of approved/certified national resources able to deliver the training courses within the levels of quality and thoroughness required by the programme. The objective for creating such a team of qualified trainers is to support the up-scaling of the training programmes, in response to an expected increase in the volume of general workers who need to be trained; in line with the expectations of the national strategy on ship recycling.

TTT courses combined a theoretical, course-based reviews of / discussions on broad aspects of ship recycling activities, as captured in the course modules described earlier in this section, with practical exercises designed to provide course attendees with hands-on experience of fire-fighting, welding and cutting, first-aid, oil spill response, identifying and building inventory of Hazmat for example.

TTT workshops were delivered to four different categories of participants:

.1 All workers trainer

.2 Skilled workers trainer

.3 Hazmat handlers

.4 Downstream waste management

TTT training was delivered at BMA campus with combination of theoretical and practical exercises designed to to give participants a specific knowledge of the categories mentioned above.

All the participants were provided documentation in the form of a technical module and powerpoint presentations covering all the topics taught in the course.

Participants' assessment was based on continuous, in-class verbal questioning with an end-of-course written test. Individual participation was also greatly encouraged and taken into account.

Participants' feedback

It was suggested by various participants that the nomination of attendees should be more specific to job and module to guarantee most impact from the training itself. However couse participants felt honoured to be a trainer in the industry.

Observations

It was observed during training that the participants' knowledge was varying in nature and some were having difficulties in absorbing the material.

Recommendations

The following recommendations were made:

.1 Selection of participants for the trainer pool to be job-specific and focusing on candidates with good working experience.

.2 Some academic background should also be required: a minimum qualification for trainer pool.

.3 There was no soft skill development module in the curriculum. This should be added to the curriculum for the next phase of training.

.4 Cross-disciplinary courses could be introduced to provide additional skills to workers wanting to switch between yards.

.5 Refresher course to be introduced to ensure sustained validity of the certificates.

This Training Strategy, developed under the Safe and Environmentally Sound Ship Recycling in Bangladesh Project – Phase II (SENSREC Phase II) describes the scaling-up training strategy for the Bangladesh ship recycling industry. The Training Strategy proposes a series of options for increasing the number and volume of training in order to train the majority of workers of the ship recycling industry in the most efficient time period.