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National Implementation Strategy

Globally Harmonised System of Classification and Labelling of Chemicals in Barbados

April 26, 2013

Executive Summary

The Environmental Protection Department (EPD) is undertaking a project to support capacity building for the Globally Harmonized System of Classification and Labelling of Chemicals (GHS) in Barbados. This National Implementation Strategy (NIS) for the GHS builds on the findings of a situation analysis, legal analysis, comprehensibility testing, and gap analysis.

Barbados has a number of distinct advantages. It has a small chemicals industry; pesticides and international transport of chemicals are well regulated; companies ensure that SDS are available and accessible to relevant staff members; and technical capacity for developing SDS exists in some companies. The Comprehensibility Testing survey revealed that labels are a popular means of hazard communication and respondents from industrial workplaces in particular are familiar with and understand safety data sheets. However, there are still some critical areas to be addressed. These include:

- Streamlining of existing legislation and standards
- Inadequate legislation.
- Inadequate standards.
- Lack of enforcement of existing standards.
- Limited capacity for hazard classification.
- Lack of awareness of procedures and protocols.
- Lack of a chemical waste processing facility.
- Lack of public education and training.
- Limited involvement of CSOs.
- Lack of data collection and monitoring.

Therefore the NIS presents a series of strategies with attendant objectives and activities to address these weaknesses. These strategies are as follows:

Cross cutting strategies:

Strategy 1: Amend legislation and standards to facilitate implementation of the GHS
Strategy 2: Strengthen institutions across all sectors to implement the GHS
Strategy 3: Develop a database of chemicals at all stages of the lifecycle
Strategy 4: Improve institutional arrangements for disposing of hazardous waste materials
Strategy 5: Implement a broad based public awareness campaign
Strategy 6: Enhance the capacity of stakeholders in all sectors to implement the GHS

Industrial workplaces:

Strategy 7: Build capacity within the industrial sector
Strategy 8: Strengthen industrial institutions to implement the GHS

The agriculture sector:

Strategy 9: Build capacity in the agriculture sector to implement the GHS
Strategy 10: Strengthen agricultural institutions to implement the GHS

The transportation sector:

Strategy 11: Enhance capacity within the transportation sector to implement the GHS

Strategy 12: Strengthen the institutional framework to support the implementation of the GHS

Consumer Products:

Strategy 13: Strengthen capacity of consumer protection CSOs

Strategy 14: Implement a consumer focussed awareness campaign

Each strategy comprises a set of objectives and action plans to achieve those objectives. These action plans contain the activities required to achieve the objectives; the expected outputs; as well as the suggested agencies responsible for implementing the action plan. The timeframe and the budgets have been determined based on guidance received from key stakeholders at the National GHS Workshop. Participants reviewed, discussed, amended, agreed and prioritised the draft strategies put forward by the consultants. They also developed timeframes, and outlined budgets for implementing the activities under each strategy. The timeframes put forward have been reviewed and organised to develop a full implementation strategy that suggests a completion date of 2017 with a preliminary estimate of a budget requirement between $1.7 and $4.5 million.

National Implementation Strategy

Globally Harmonised System of Classification and Labelling of Chemicals in Barbados

Contents

Acronyms

BANGO.....Barbados Association of Non-Governmental Organisations
BCCI.....Barbados Chamber of Commerce and Industry
BHL.....Banks Holdings Limited
BIEP .....Barbados Institute of Environmental Professionals
BMA.....Barbados Manufacturing Association
BNS .....Barbados National Standards
BNSI .....Barbados National Standards Institution
BSS .....Barbados Statistical Services
CBI.....Confidential Business Information
CBO.....Community Based Organisation
CDEMA.....Caribbean Disaster and Emergency Management Agency
CHC.....Chemical Hazard Communication
CMAG.....Chemicals Management Advisory Group
CPDC .....Caribbean Policy Development Centre
CSOs.....Civil Society Organisations
CT.....Comprehensibility Testing
EPD .....Environmental Protection Department
FAA.....Federal Aviation Administration
FAO .....Food and Agriculture Organisation
GHS.....Globally Harmonized System of Classification and Labelling of Chemicals
HCS .....Hazard Communication System
HS .....Harmonised Commodity Description and Coding System
HSCB.....Hazardous Substance Control Board
IICA.....Inter-American Institute for Cooperation on Agriculture
IMDG Code.....International Maritime Dangerous Goods Code
ISO .....International Organization for Standardization
ISSCO .....Industry Safety Steering Committee
MSDS .....Material Safety Data Sheet
NCSA.....National Council on Substance Abuse
NGOs.....Non-Governmental Organisations
NIP.....National Implementation Plan for the Management of Persistent Organic Pollutants

NIS.....National Implementation Strategy for the Globally Harmonized System of Classification and Labelling of Chemicals

OSFA.....One size fits all

PAHO .....Pan American Health Organisation

PCB .....Pesticides Control Board

PCBs .....Polychlorinated biphenyls

POPs .....Persistent Organic Pollutants

PPE .....Personal Protective Equipment

SAICM .....Strategic Approach to International Chemical Management

SBRC.....Sustainable Barbados Recycling Centre

SDS .....Safety Data Sheets

SSA .....Sanitation Services Authority

UNEP.....United Nations Environment Programme

UNITAR .....United Nations Institute for Training and Research

WHMIS .....Workplace Hazardous Material Information System

1 Introduction

The Environmental Protection Department (EPD) is undertaking a project to support capacity building for the Globally Harmonized System of Classification and Labelling of Chemicals (GHS) in Barbados. The GHS is a logical and comprehensive approach for defining hazards of chemicals, applying hazard criteria (using an agreed methodology to classify chemicals) and communicating hazard information on labels and Safety Data Sheets (SDS). The ultimate goal of the GHS is to ensure that information on chemical hazards is made available to workers and consumers in a harmonized and comprehensible format in countries around the world.

This National Implementation Strategy for the GHS (NIS) builds on the findings of a situation analysis, legal analysis, comprehensibility testing (CT) survey, and gap analysis. The situation analysis (Hutchinson & Cumberbatch, 2012) reviewed relevant documents such as the National Profile on Chemicals Management in Barbados to assess the existing environment for hazard communication and the GHS. This information was supplemented through interviews with relevant stakeholders. The EPD completed a legal analysis (EPD, 2012a) that examined Barbados' existing legal infrastructure, offering a comparison between that and the legal framework required for the implementation of the GHS. It was based on a literature review of existing statutes with input from key stakeholders and a local magistrate. The CT survey (EPD, 2012b) assessed the ease of comprehension of GHS communication tools by persons in agriculture, transport, industrial workplaces and consumer product sectors. The findings of each of these components have been collated in a gap analysis (Hutchinson & Cumberbatch, 2012b), which presents the issues that must be addressed in this National Implementation Strategy.

The UNITAR guidance document 'Developing a National Implementation Strategy' indicates that the implementation of the GHS should be assessed across all four sectors (industry, transport, agriculture and consumer products) and cover all three of the actor groups (government, business and trade, and civil society) (UNITAR-ILO, 2010). This sectoral approach recognises that the sectors have different hazard communication needs and will implement the GHS in different ways. For example, consumers are unlikely to undertake hazard classification, but must be able to use the GHS labels. Therefore, the development of sectoral implementation plans is an important element of capacity building for the creation of a NIS.

This NIS has therefore been divided into 5 sections with separate objectives and action plans identified for each of the four sectors. The first set of objectives and action plans target the cross cutting issues. These enabling plans focus on the issues that can build and secure a strong foundation for chemicals management in Barbados.

Within each action plan the roles and responsibilities of the various stakeholders are described with suggested lead agencies and partner organisations, as well as a break-down of the activities required to achieve each objective. These action plans were reviewed at a two-day national GHS workshop with relevant stakeholders from government, industry and the civil society. Participants refined the draft Strategy and agreed on concrete action plans for each sector based on the knowledge of their existing work plans, priorities and budgets. In cases where the work falls within the existing work plans of the stakeholders, separate budgets have not been identified in the strategy tables. Budgets are only indicated where additional funds over

and above department budgets are required. The workshop also included a prioritization exercise that has facilitated the development of a final NIS for the GHS, with a target date of 2017 established for full implementation.

2 Summary of current GHS situation

Barbados is at a distinct advantage in many of the following ways to implement the GHS:

- With only a small chemicals industry and a highly literate population, implementation of the GHS should be relatively easy compared to other countries.
- The government of Barbados has expressed commitment to improving the sound management of chemicals in Barbados by signing on to a number of and implemented various projects related to chemicals management.
- In January 2013 the Safety and Health at Work Act was officially proclaimed; this Act will facilitate the implementation of elements of the GHS in workplaces.
- Some agencies already work collaboratively on oversight committees in their day-to-day activities. There are also government agencies with mandates that can be revised to include chemical hazard communication and labelling.
- Pesticides and international transport of chemicals are well regulated.
- Many businesses already train their staff in areas relevant to the GHS and are aware of the need for careful storage and handling of chemicals including hazard communication.
- Companies ensure that SDSs are available and accessible to relevant staff members and technical capacity for developing SDS for mixtures and formulations exists in some companies.
- There are academic, professional and other regional and international institutes with expertise that could be called upon for assistance and the Labour Unions undertake work on occupational health and safety that could be expanded to include information on the GHS.

In spite of the existing strengths, there are a number of areas where work must be done if the GHS is to be implemented effectively in Barbados. These areas include:

- **Inadequate legislation.** There is no overarching legislation or policy related to chemicals management and no statutes that directly address the requirements of the GHS. The legislation that does exist contains weak punitive measures and does not address, amongst other things, industrial chemicals or national transportation of chemicals. Industrial chemicals are not regulated beyond the labelling requirements of the Barbados National Standards (BNS) and as a result retailers have no need to standardize labels. The lack of official procedures for transporting chemicals locally, places workers, emergency responders, the wider public and the environment at risk.
- **Inadequate standards.** There is no systematic approach for classifying and labelling chemicals and the existing Barbados National Standards (BNS) do not promote effective hazard communication. In some areas the BNS conflict with the requirements of the

GHS. Consequently, chemical users and handlers might be at risk because hazards are not effectively communicated.

- **Lack of enforcement of existing standards.** The inadequate number of staff to enforce existing standards will impact on the ability to enforce the requirements associated with the GHS. This lack of enforcement is a recurrent theme across sectors and actor groups.
- **Limited capacity for hazard classification**. There is very limited capacity to undertake hazard classification, especially for new chemicals. Some businesses do however have access to expertise for classification of formulations.
- **Lack of oversight entity.** Cabinet has proposed an oversight committee, but it has not yet been convened. In its absence, there is a fragmented approach to chemicals management that spans multiple Ministries. This makes implementation of a harmonised system such as the GHS both necessary and more difficult.
- **Lack of consensus on procedures and protocols**. Based on interviews with stakeholders for the Situation Analysis, there is a lack of consensus on protocols and procedures as well as a lack of clarity regarding the roles of the different agencies with regard to chemicals management generally and especially for chemical waste disposal. This is a result of the limited information sharing between and within Ministries and other agencies.
- **Lack of chemical waste processing facility.** Under the GHS, hazard communication needs to take place at all stages of the chemical lifecycle in an effort to safeguard human health and the environment, but the absence of a facility for the disposal or handling of chemical wastes prevents this. It also leaves the public with few options: store the chemical in perpetuity, ship overseas pursuant to the provisions of the Basel Convention or send to the landfill in the household refuse. The latter situation places sanitation workers and the wider community at risk should the chemicals be released on route to the landfill or trigger a fire at the landfill. Sanitation workers and workers at the Sustainable Barbados Recycling Centre (SBRC) are also at risk when handling these chemicals as existing labels may not clearly communicate the hazards.
- **Lack of public education and training**. There are a number of gaps in public awareness of chemical hazards and their understanding of the value of chemical labels. This can be attributed in part to the limited public education and training activities that have taken place. Based on the CT survey, most respondents were able to identify a chemical using a sample GHS label. However, interpreting the pictograms caused some challenges particularly for the oxidizing, compressed gas and health hazard pictograms.
- **Limited involvement of CSOs.** There are few CSOs involved in chemicals management issues generally. Labour unions also have incomplete coverage of companies using chemicals, therefore limiting their ability to reach all relevant stakeholders with GHS training initiatives.
- **Lack of data collection and monitoring**. There are no formal data collection mechanisms for chemical import/export, manufacture, use, storage and disposal. This makes it extremely difficult for regulators to determine who is at risk and from which chemical hazards and therefore who should be targeted in awareness or training initiatives. It also makes monitoring the implementation of the GHS extremely difficult,

since regulators will not know which companies are importing/manufacturing, storing and using chemicals and therefore where inspections should be targeted.

Establishing procedures for hazard communication and making them publicly known is one aspect of a wider awareness raising and training initiative that is urgently needed to ensure that all actor groups and members of the public who come into contact with chemicals understand the information that is presented on the label, and more importantly use that information for safe handling, use and disposal of chemicals. This is something that need not wait on government to be initiated, but where both the private sector and civil society could collaborate and start the process.

The strategies presented in the following sections strive to address the aforementioned issues.

3 Cross cutting issues

Implementation of the GHS in Barbados is considerably more straightforward than it would be in more industrialised nations because there is no manufacturing of new chemicals. Rather, the chemical industry in Barbados involves the development of formulations and mixtures for which hazard information already exists for the ingredients/components. The Gap Analysis identified six main cross cutting areas that need to be addressed in the implementation strategy. These were:

- the legal and policy framework;
- governance;
- data management;
- waste disposal;
- awareness raising; and
- capacity building.

Other gaps that were discussed in the Gap Analysis namely emergency response, resources and level of priority are also addressed within these six main areas.

3.1 Legal and policy framework

Full implementation of the GHS needs to be supported by legislative instruments that not only specify the necessary legal requirements, but also carry the power of enforcement that ensures compliance. The legal analysis revealed that Barbados has no systematic approach for classifying and labelling chemicals and no statutes that directly address the requirements of the GHS. Additionally, there is an absence of a single clear legislative Act or policy on chemicals management and in particular on hazard communication. The legal analysis further indicated that harmonization is needed in existing laws, as well as among those state bodies responsible for various spheres of chemical management. It was also suggested that attention be paid to addressing loopholes in enforcement.

There are legislative instruments in development that although they do not directly address the requirements of the GHS in their current form, they would address a number of the legislative and policy gaps that could strengthen the institutional framework to facilitate implementation of the GHS. These instruments are listed below:

1. Environmental Management Act
2. Solid Waste Management Act
3. Hazardous Substance Management Policy

However, the fact is that these proposed instruments have been in progress for some time and have not yet been enacted. Therefore, it is recommended that the implementation of the GHS should not hinge substantively on the improvement of the legislative framework, but rather, creative ways be found to move forward, while awaiting the legal support. Additionally, continual assessment of the existing legislative environment is needed to facilitate adjustments when required and to reinforce the building of a culture of efficient chemicals management in Barbados.

3.1.1 Options for addressing the GHS in legislation and policy

According to the UNITAR guidance document entitled, "Developing a National GHS Implementation Strategy: A Guidance Document to Support Implementation of the Globally Harmonized System of Classification and Labelling of Chemicals (GHS)" (UNITAR-ILO, 2010) legislative deficiencies could be addressed in a number of ways, for example:

1. Creating new laws encompassing all GHS sectors
2. Creating new laws, regulations and standards by sector
3. Amending existing laws (for example, incorporating GHS elements by reference), regulations and standards.
4. Creating a single consolidated Act
5. Amending existing legislation to incorporate GHS elements
6. Amending existing legislation to incorporate GHS elements by reference
7. Amending standards with corresponding amendments to legislation (for example, for compliance and enforcement)
8. Consolidating and amending existing standards with corresponding amendments to legislation (for example, for compliance and enforcement)

The first option, creating a new law that would encompass all GHS sectors would be the ideal situation and would help address the issue of fragmented chemicals management that currently exists. However, this can be a very long process taking several years to draft and pass new legislation. More practical solutions would be:

- Option 3 - "***Amend existing laws (e.g., incorporating GHS elements by reference), regulations and standards, etc."*** This would mean that each statute that is relevant to the implementation of the GHS would refer to the GHS and the "Purple Book" directly.
  AND
- Option 8 - ***"Consolidate and amend existing standards with corresponding amendments to legislation."*** This option would amend the existing BNS so that they are compliant with the GHS, consolidating them where appropriate and then amending the legislation so that it refers to the new, consolidated and GHS compliant local standard.

Taking the approach of Option 3, referencing the GHS in standards, regulations and legislation rather than incorporating elements directly into a country specific standard, means that an

element of flexibility is built in. Therefore, as the GHS is updated, the relevant department or authority could simply inform stakeholders of the changes without having to re-visit the legislative instruments themselves. In this way the Control of Standards Act could simply refer to the need to label chemicals and develop SDS according to the GHS and could use the authority under the Act to ensure that GHS compliant SDS arrive with imported goods. This approach would address the fact that:

- none of the existing cross-cutting standards or legislation adequately matches the labelling requirements of the GHS; and
- there are no standards or legislation that stipulate the specific requirements for Safety Data Sheet content and layout.

Other legislation may also need amending to reference the GHS, such as the Consumer Protection Act, Pesticides Control Act, Carriage of Goods by Sea Act and the new Safety and Health at Work Act (to address signage and training of staff).

This option would be the simplest to pursue since most legislation contains provisions that empower a Minister to develop regulations. These provisions could facilitate the implementation of the GHS, as regulations could be developed with requirements that are consistent with the GHS.

Option 8 would involve the amendment of existing standards to make them compliant with the requirements of the GHS. For example, the BNS labelling standards could be amended to make them compliant with the GHS and as a result, any regulation that requires compliance with the national standards will automatically be compliant with the GHS. The Barbados National Standards Institution (BNSI) is reportedly undertaking a review of the GHS labelling format towards amending the existing national standards, and amendment of the relevant BNS is not considered to be a problematic task. An additional standard is needed for the development of SDS and guidance can be obtained from both the GHS and the International Organization for Standardization (ISO) standard for Safety Data Sheets to ensure consistency in the provision of information on safety, health and environmental matters for chemical products (UNITAR-ILO, 2010). Similarly, ISO 14020 presents a guide for the development and use of environmental labels and declarations (EPD, 2012a).

Some element of consolidation should also be considered given the large number of legislative instruments that currently exist across sectors. This would allow for greater control over the implementation of the GHS. For example, the Sale of Poisons Act uses the term “poison”, which is not used by the GHS. However, given the familiarity of the Barbadian public with the term “poison”, significant awareness raising will be needed to ensure that they are sufficiently aware of the meaning of replacement terms such as acutely toxic, Section 3.5 . Participants at the national workshop also felt that there was a need to strengthen consumer protection legislation as it relates to chemical labelling and hazard communication.

The reality is that elements of both Options 3 and 8 will be needed. The benefit of Option 3 is that when the GHS is updated or amended there would be no need to further amend the standards and legislation because they refer directly to the GHS and the Purple Book rather

than including the elements of the GHS in national standards. However, pursuing Option 3 alone would not help to address the existing gaps in legislation and standards, such as the absence of standards and legislation for the classification of chemicals, managing industrial chemicals and governing national transport of chemicals. The benefit of Option 8 would be the reduction in the fragmented nature of the multiple standards and pieces of legislation. Both options would result in consistent use of terminology by stakeholders across sectors.

Therefore, despite the fact that an obvious challenge presented by both options is the lengthy process involved in amending or enacting legislation in Barbados, it is clear that a critical step in implementation of the GHS is the amendment of the relevant laws and standards. These amendments must be accompanied by extensive educational programmes which target transport, agriculture, industry and consumers to raise awareness of persons in these sectors to their legal obligations. Awareness raising is addressed in Section 3.5. Additionally, consideration should be given to phasing in any legislative changes, so that manufacturers do not need to change all of their labels at one time, which could be costly. Considerable efforts will be needed to consult the affected businesses and ensure that changes are acceptable to them.

3.1.2 Addressing gaps in policy, punitive measures, monitoring and enforcement in legislation

There is no overarching policy that addresses chemicals management in Barbados. However, it is possible to extract relevant information from the draft Policy Paper on Hazardous Substances Management, and use this to create a new Chemical Management Policy paper.

In addition to referencing or incorporating GHS elements in policy and legislation, other amendments are needed to address areas such as punitive measures, monitoring, and enforcement of the corresponding legislation. Indeed this was the recommendation of the legal analysis:

> *Among the most pertinent recommendations is to consolidate existing legal instruments that specifically regulate hazard communication and all aspects of the chemical lifecycle. It is imperative that such instruments also endow competent authorities with legal authority to enforce and prosecute where necessary. (EPD, 2012a)*

The existing legislation should therefore be reviewed to assess the suitability of existing fines. In particular the Pesticides Control Act and the Harbour Regulations must have the punitive measures assessed and amended. Similarly, the National Profile recommends that greater authority should be given to officers/inspectors of the various regulatory bodies (Government of Barbados, 2009).

Effective monitoring of the implementation of the GHS can only be achieved if a requirement for reporting and improved access to information is incorporated into the legislation. Reporting provisions already exist under the Accidents and Occupational Diseases (Notification) Act Cap 338, which requires notification to the Chief Labour Officer of incidents resulting in loss of labour for more than three days or resulting in fatalities. In addition to this, the new Safety and Health at Work Act requires that companies inform various agencies, including the Fire Service that they intend to store and use explosive or highly flammable chemicals. This requirement can

contribute to helping emergency responders plan for hazardous materials incidents and increase their safety and security during such incidents.

However, changes to the existing legislation are also required to address the issue of confidential business information (CBI). The Gap Analysis revealed that there are legislative barriers that prevent information from being released by the Barbados Statistical Service in a form that allows for identification of an individual business or activities related to the business. Similarly under the Health and Safety at Work Act, no inspector or other person shall, except for the purposes of civil or criminal proceedings, disclose to another person any information respecting any factory or any process carried on in a factory The guidance provided by UNITAR recommends that provisions for CBI should not compromise health and safety and should be limited to chemical names and concentrations (UNITAR, 2004), i.e. hazard management information should not be considered to be CBI. Further discussion of CBI is contained in the Gap Analysis (Hutchinson & Cumberbatch, 2012b).

If regulators are to have a better understanding of how chemicals are being used and who is using them, so that they can monitor the implementation of the GHS and safeguard workers, there needs to be improved access to information. Existing legislation must be amended in one of two ways:

1. Require businesses to provide information on the chemical formulation of manufactured substances. The amendment can indicate to whom and under which circumstances the information could be disclosed to ensure the protection of the proprietary rights of companies. For example, information should be disclosed to emergency workers, who may need to attend a chemical fire. The Freedom of Information Bill may provide an opportunity to address this issue.

OR

2. Require businesses to carry out the classification themselves and provide the relevant agencies with the necessary hazard information on SDS and labels, withholding the details of the formulations as CBI. The classification must be certified as having being done in accordance with the GHS and without prejudice or bias. The veracity of the classifications could be checked by an appropriate inspectorate, with guarantees of confidentiality for the business.

An obvious barrier to reducing the types of information that can be considered CBI is the fact that such a move may prove unpopular with some of the businesses involved, who may in turn lobby against these changes. However, it was suggested at the workshop that in practice in Barbados it would be very difficult to keep the ingredients of a formulation secret, since most competing companies would be using the same suppliers and shipments.

3.1.3 Roles and responsibilities for addressing changes within the legal and policy framework

The Government has demonstrated its recognition of the importance of sound chemicals management through the signing of international agreements and support of various chemical management projects. However, the legislation listed in Section 3.1 must be given greater

priority for enactment to strengthen the existing framework for chemicals management generally.

The Attorney General is the principal legal advisor to the Government and responsible for the administration of the legal system. Within the Office of the Attorney General, the drafting of amendments to legislation is the responsibility of the Chief Parliamentary Counsel (CPC).

The EPD is the environmental monitoring and pollution control department of the Government of Barbados and the Solid Waste and Hazardous Substances Section is responsible for[1]:

1. Identifying hazardous waste;
2. Monitoring the storage and, in some instances, use of hazardous materials;
3. Regulating hazardous materials disposal;
4. Developing policies for hazardous materials management; and
5. Implementing local requirements of hazardous materials Multilateral Environmental Agreements.

The Department can advance the process of amending legislation by providing all of the relevant reports and documentation such as the legal analysis to the CPC.

The Barbados National Standards Institution (BNSI) is responsible for, amongst other things, the preparation, promotion and adoption of standards relating to structures, commodities and services offered to the public commercially. The BNSI would therefore take the lead on amending existing National Standards should this be deemed necessary by the stakeholders.

Responsibility for implementing Barbados National Standards lies with the seller/distributor of the product, but is enforced by the Department of Commerce. Due diligence by businesses has already contributed to ensuring people are aware of their obligations and are appropriately trained, but more can be done by the private sector to ensure that standards are met from importation through to use or export.

The Barbados Manufacturers Association (BMA) and the Barbados Chamber of Commerce and Industry (BCCI) have important roles to play in this Implementation Strategy by representing the interests of the chemical industry, whilst at the same time educating those businesses on the importance of the changes for ensuring the safety of workers, rapid emergency response and targeted training opportunities. Labour Unions also have an important role in ensuring that workers are also aware of the changes and their possible impacts on the working environment.

3.1.4 Proposed Strategy

The proposed strategy with respect to enhancing the existing legal and policy framework for hazard communication and the GHS is to amend and consolidate existing legislation and standards. This will involve activities that seek to:

- Consolidate and amend existing laws with reference to the GHS
- Consolidate and amend existing standards

[1] http://www.epd.gov.bb/category.cfm?category=6

- Create a Chemicals Management Policy Paper
- Strengthen consumer protection legislation

The following tables outline the activities associated with this strategy along with those responsible for the activities, outputs, timeframes and budgets.

STRATEGY 1: AMEND LEGISLATION AND STANDARDS TO FACILITATE IMPLEMENTATION OF THE GHS

Objective 1:	**Consolidate and amend existing laws with reference to the GHS**			
Activities	Output	Timeframe	Responsibility	Budget
Develop project proposal to secure funding **Develop project proposal** **Identify potential funding agencies** **Forward proposal to selected funding agency(ies)**	Funding secured	Feb-August 2014	**Lead**: EPD **Partners**: Solicitor General, Chief Parliamentary Counsel, CMAG	$10,000
Select project consultant **Request expressions of interest** **Short list at least 3 consultants** **Request full proposals** **Evaluate and select a consultant**	Consultant contracted	Sept 2014 to March 2015	**Lead**: EPD **Partners**: Solicitor General, Chief Parliamentary Counsel, CMAG	Nil
Develop updated legislation to: (i) reflects appropriate punitive, monitoring and enforcement measures; (ii) address the release of CBI to pertinent stakeholders, e.g.	Requirement amendments to existing legislation identified	April 2015 to September 2016	**Lead**: EPD **Partners**: Solicitor General, Chief Parliamentary Counsel, CMAG	$200,000

Fire Service				
Engage in consultation with all stakeholders to solicit input into the updated legislation	Input received from stakeholders	April 2015 to September 2016	**Lead**: EPD **Partners**: Solicitor General, Chief Parliamentary Counsel, CMAG	
Prepare cabinet paper(s) to Parliament	Cabinet paper prepared	September 2016 to November 2016	**Lead**: EPD	Nil
Cabinet reviews proposed legislative amendments and passes to Parliament	Cabinet approval granted	November 2016 to April 2017	**Cabinet**	Nil
Parliament enacts legislation	Existing laws consolidated and amended to reference the GHS	April 2017	**Cabinet**	Nil

Objective 2:	**Consolidate and amend existing standards**			
Activities	Output	Timeframe	Responsibility	Budget
Send request to BNSI to amend existing standards including justification for changes and suggested amendments	Request made to amend national standards	April 2013	**Lead**: BNSI **Partners**: EPD, Dept. of Commerce, BMA, BCCI	Nil
BNSI create standards	Revised standards prepared	By July 2013	**Lead**: BNSI **Partners**: EPD, Dept. of Commerce, BMA, BCCI	Nil
Standards circulated to stakeholders for comment	Stakeholder input solicited	August to October 2013	BNSI	Nil
Comments incorporated into standards as relevant	Stakeholder comments incorporated in revised standards	November to December 2013	BNSI	Nil
Standards circulated again	Stakeholder input	January to	BNSI	Nil

to stakeholders	solicited	February 2014		
Final standards provided to division council for approval	Updated standards approved	March to May 2014	BNSI	Nil
Standards published	Consolidated and/or revised, GHS compatible labelling standards in place	June to July 2014	BNSI	$5000

Objective 3:	**Create a Chemicals Management Policy Paper**			
Activities	Output	Timeframe	Responsibility	Budget
Convene a meeting of the proposed CMAG (Section 3.2.1) **Review the draft Policy Paper on Hazardous Substances Management for relevant information**	Required amendments identified	September 2014	**Lead**: CMAG	< $5000
Revise the draft Policy Paper on Hazardous Substances to create a broader Chemicals Management policy.	Draft chemical management policy paper prepared	October 2014 to December 2014	CMAG	<$5000
Consult with stakeholders from various sectors	Stakeholder input solicited	January to March 2015	CMAG	$20,000
Review process with stakeholders and amend document if necessary	Stakeholder comments incorporated in revised standards	April to June 2015	CMAG	$10,000
Prepare a Cabinet Paper seeking endorsement of the policy by Cabinet	Finalised Chemicals Management Policy Paper in Barbados		**Lead:** EPD **Partner:** Members of CMAG	Nil

Objective 4:	**Strengthen consumer protection legislation**			
Activities	Output	Timeframe	Responsibility	Budget

Create ToR and hire legal consultant to prepare draft amendments	Consultant contracted	January to April 2016	**Lead**: CMAG **Partners**: Solicitor General's office and CSOs	$5,000 to $50,000
Identify relevant consumer protection legislation and the gaps	Requirement amendment identified	May to August 2016	Consultant	
Prepare a draft document of amendments for submission to Chief Parliamentary Council after approval by CMAG	Report submitted	May to August 2016	Consultant	
Hold stakeholder consultations on proposed amendments	Stakeholder input solicited	October 2016	**Lead**: Consultant **Partners**: CMAG	$5000 to 50,000
Preparation of cabinet paper for cabinet approval	Cabinet paper developed and submitted	January 2017	EPD	Nil
Parliamentary approval and proclamation of amendments	Strengthened consumer protection legislation in place		Parliament	

3.2 Governance

Currently, the management of various chemicals is divided amongst various Ministries. As a result there are instances of overlap, as well as areas that are not being addressed for the sound management of chemicals, and consequently for classification and labelling. There is no mechanism for effective information sharing; therefore, many stakeholders in both the public and private sector report that they do not know about documents that are being produced or initiatives that are being undertaken by various agencies. Hence opportunities are lost to create synergies and to make better use of resources. There is also limited collection and analysis of data related to chemical use.

At the level of civil society, the research revealed that chemicals management is not currently a priority for many of the CSOs. Capacity building would be required to facilitate greater involvement from this sector.

The proposed strategies to address these issues are: establishing an oversight committee; designating a champion for the implementation of the GHS; identifying human resources to support the oversight committee and the champion; and establishing a private sector and CSO network.

3.2.1 Oversight committee

The absence of an overarching coordinating mechanism is one of the greatest challenges facing chemicals management in Barbados. In recognition of this, Cabinet has approved the establishment of a coordinating committee (called the Chemicals Management Advisory Group or CMAG) to help rectify the issues facing chemicals management in Barbados and the EPD is currently working to formulate this committee.

With respect to the implementation of the GHS, the United Nations Institute for Training and Research (UNITAR) suggests the establishment of a National GHS Implementation Committee, which takes on the responsibility for establishing the protocols and procedures necessary for the implementation of the GHS as well as monitoring their effectiveness and undertaking public education and training (UNITAR-ILO, 2010). The actual application of the GHS (meaning classification, labelling and SDS creation) falls largely within the remit of the private sector that imports, manufactures, re-packages and distributes chemicals.

To avoid further fragmentation, it is suggested that the EPD consider incorporating the functions of the National GHS Implementation Committee within the design of the CMAG. Therefore, in addition to its other functions, the CMAG would play a role in the following:

- Developing guidelines on labelling and hazard communication.
- Advising on developments and changes with the GHS.
- Identifying gaps and making recommendations to improve institutional frameworks for communicating hazards to different users.
- Developing robust and transparent criteria to assist the relevant authority to determine whether permission should be granted for the importation of a chemical into Barbados.
- Developing educational programmes such as training to sensitize the public to hazard communication tools.
- Monitoring and evaluating the implementation of the GHS.

In addition, the oversight committee would need to make recommendations to rationalise the roles and responsibilities of the various Ministries and agencies with responsibility for chemicals management; investigate the feasibility of establishing facilities for chemical waste disposal or storage; and provide input to the database of chemicals on the island (Section 3.3).

The membership of the oversight committee would have to represent all sectors and actor groups to facilitate communication and outreach. Once it is constituted and is up and running, the committee must also make its presence known and publicise information on its role and planned initiatives to all stakeholders if it is to be successful in implementing those initiatives. There must also be a mechanism to allow stakeholders to provide feedback regarding the role of the committee and its initiatives. Communication between the committee and stakeholders

should be considered a priority and could be achieved through the establishment of a simple e-mail list of interested parties from private, public and civil society entities.

When establishing the oversight committee, the EPD and other stakeholders should be guided by previous research undertaken in the preparation of documents including, but not limited to, the proposed Environmental Management Act (EMA) and the draft Hazardous Substances Policy Paper. The draft EMA outlines policy considerations that could guide the oversight committee and the Policy Paper outlines an administrative framework that could aid the organization of the coordinating committee. Unfortunately, since the committee has not yet been established, delays can be expected as the committee is constituted and the members begin to participate, understand and carry out their roles. In addition, although the proposed CMAG is Cabinet approved, it does not have jurisdiction over the various agencies currently involved in chemicals management. It can only offer advice, make recommendations and liaise with relevant agencies. Therefore, while it may be able to make recommendations for change, it has no enforcement capacity to make them happen.

3.2.2 GHS Champion

A major risk for the implementation of this GHS strategy is that while it is important, it could easily be put aside for other urgent matters. In addition, even though the CMAG has been approved by cabinet, the details of how it will be constituted and how it will function still have to be determined. Therefore, in order for the implementation of the GHS to remain a priority, it first of all requires the identification of an influential champion who can advocate and lobby for the necessary legislative and policy changes and financial resources. The champion would help to garner and maintain support of the GHS as was the process of policy and legislative change required to support the GHS and ensure that the GHS is placed on the agenda of relevant meetings across Ministries and lobby for it to be placed in the work programmes of appropriate departments. He or she would also address the GHS at the tripartite level to ensure discussion by the private sector and civil society.

3.2.3 Human resources to support the GHS

While the champion would be the main advocate to lobby for the implementation of the GHS, there is also the need to ensure that all of the day-to-day operational activities necessary for the initiation and sustainability of the GHS, take place expeditiously. These tasks include but are not limited to:

- Support for the champion – including identifying opportunities for the champion to lobby for the GHS and providing the speeches and presentations; undertaking follow up on any commitments made at those meetings.
- Support for the oversight committee – assisting with the finalisation of the design of the CMAG; setting up and implementing meetings; ensuring that there is follow up on the decisions made at the meetings.
- Ensuring that action plans laid out in the implementation strategy are initiated across the sectors and actor groups.
- Providing mentorship to all actor groups during the transition period in the GHS implementation.

As it stands, these tasks are likely to be distributed to a number of officers in the EPD and other relevant government agencies. Unfortunately, human resources in these sectors are already under strain. For example, during the surveys, both BNSI and the Department of Commerce reported a lack of staff and financial resources to fulfil their current duties thereby restricting their ability to monitor and enforce existing labelling standards. Therefore, two possible ways of addressing this human resource shortage could be considered. The first would be to secure additional posts within the relevant government departments; this would have to be funded from central government. The other would involve the employment of temporary staff to assist in the initial phases of the implementation of the GHS. This second option could be financed through external sources.

With regard to the second option, it is recommended that a proposal for external funding be put forward to agencies such as the UNITAR, IDB, EU, and UNEP amongst others. A central component of this proposal would be the hiring of a resource person for a period of 3 – 5 years to ensure that the day-to-day operational activities necessary for the initiation and sustainability

of the GHS takes place expeditiously. This resource person would operate out of the EPD and would be the operations manager for the proposed oversight committee. An obvious challenge that this presents is the fact that this work crosses many jurisdictions across Ministries and the private sector and civil society. Therefore, some form of memorandum of understanding would have to be agreed upon to facilitate the work.

3.2.4 Private sector and CSO network

The discussion so far has concentrated on the need for an oversight committee within the public sector, but there is also an opportunity for a similar initiative in the private sector and among the CSOs. An oil industry interest group (Industry Safety Steering Committee – ISSCO) already exists and addresses and coordinates safety issues in that sector. The ISSCO came about following work on the Marine Oil Spill Action Plan and comprises representatives from each of the main oil companies. The companies work together to agree on safety issues that should be applied across the industry, such as only allowing gas to be taken from gas stations in appropriate containers.

A similar network could be established for all chemical manufacturers and large users of chemicals. This network could then advocate for the chemical industry, for example in the area of hazardous waste disposal, and be a conduit for training and information sharing. The network would also have an important role to play in monitoring and evaluating the implementation of the GHS. The Chair of this network could, for example, be invited to sit on the oversight committee.

The main benefit of a voluntary private sector and CSO network is the voluntary implementation of standards for hazard communication even before the public sector legislation and regulations are in place. The network could facilitate collaboration on training initiatives, so that smaller companies could benefit from the experiences of larger more established companies, and at the same time the limited resources could be maximised by sharing costs for training and shipments of waste. The network could also assist in implementing the GHS by engaging transport providers and smaller entrepreneurs as well as sharing information and experiences on labelling and classification. Some of the smaller companies or individual entrepreneurs are unlikely to enrol in a formal organisation, but by making the network a voluntary and inclusive one there is no reason that e-mailed notices and information or Facebook pages, could not be accessed by all who are interested. These activities can be undertaken, even before the public sector determines the best way to amend standards and legislation.

The inclusion of CSOs such as the tertiary education institutions and the professional organisations of environmentalists and engineers would ensure that human resources and other technical expertise are available for the training efforts.

A potential barrier to the creation of a private sector and CSO network is that there may be limited interest from the relevant companies. Although the private sector has already demonstrated significant corporate social responsibility with regard to hazardous chemicals management, the establishment of a sector wide committee is most likely to be successful if there is an identified and well-respected champion that could lead and drive the process. A number of companies have demonstrated experience and have implemented significant safety

procedures and there may be others, among CSOs that would be equally (or more) suitable and willing to drive this strategy forward.

3.2.5 Compliance incentives

The point was made at the workshop that incentives should be provided to encourage compliance with the GHS. However, these would be time limited in an effort to stimulate rapid implementation and reduce the need for enforcement.

3.2.6 Roles and responsibilities

The EPD is the proposed chair of the CMAG, but each member of this proposed committee, which comprises persons from government, the private sector and CSOs, must commit to staying engaged in the process and contribute wherever needed if the committee is to prove effective. Many of the gaps that the proposed CMAG will address will need to be implemented by Government, but the private sector can certainly support through pro-active engagement as described in 3.2.4. For example, sellers of chemicals could agree to take responsibility for accepting the return of chemicals for safe disposal from individual or householders. The committee should identify and utilize resources that are available in the private sector wherever feasible. For example, where expertise exists for the creation of SDS and labels, those companies could be invited to share their knowledge and experience with the committee members, and through committee organised training events to a wider group of stakeholders.

There are CSOs that can assist in a number of areas. For example, both of the academic institutions interviewed are interested in developing a protocol on hazardous wastes and the Caribbean Policy Development Centre is involved in a Caribbean Disaster and Emergency Management Agency project about safe chemical storage in the event of a natural disaster. This type of experience and expertise should be tapped wherever possible to reduce the burden on government departments.

3.2.7 Proposed Strategy

The proposed strategy with respect to enhancing governance for hazard communication and the GHS is to strengthen the institutions across all sectors. This will involve activities that seek to:

- Establish an oversight committee
- Establish a chemicals management network
- Develop guidance materials on roles of different government agencies with regard to the GHS
- Establish a champion for the implementation of the GHS
- Either create new chemical's management post(s) in relevant government departments; OR employ temporary human resources to support implementation of the GHS
- Establish a private sector/CSO network
- Develop a mechanism for providing compliance incentives
- Provide technical assistance to encourage compliance

The following tables outline the activities associated with this strategy along with those responsible for the activities, outputs and timeframes.

STRATEGY 2: STRENGTHEN INSTITUTIONS ACROSS ALL SECTORS TO IMPLEMENT THE GHS

Objective 1:		**Establish an oversight committee**		
Activities	Outputs	Timeframe	Responsibility	Budget
EPD to research committees involved in chemicals management and review their structure **Identify the stakeholders in the chemicals management process and determine/select possible members of the committee** **Organise a meeting to draft the TOR and finalise the plans for the CMAG and incorporate the requirements of the GHS implementation committee.** **Develop a draft 5 year work plan including activities for hazard communication and the GHS.**	Committee on hazard communication and labelling established. 5 year work plan developed and publicised Stakeholders aware of the CMAG and their relationship with it.	May 2013 to February 2014	**Lead**: EPD **Partners**: PCB and NAFCHA	<$5000
Organise a press launch of the committee and disseminate information on how to engage the CMAG	Increased awareness of the CMAG	March 2014		<$5000
Implement the activities of the workplan.	Improved chemicals management			Not specified

Objective 2:	Establish a chemicals management network			
Activities	Output	Timeframe	Responsibility	Budget
Establish a mailing list from sign-in sheet from the National GHS workshop	Network established	April 2013	**Lead**: EPD **Partners**: Stakeholders and CMAG	Nil
Ascertain emailing address from stakeholders who could attend the national GHS workshop and including them in the mailing list		April 2013	CMAG	Nil
CMAG identifies a moderator from within the committee to moderate and stimulate discussion		April 2013	CMAG	Nil
Moderators rotated every 6 months		Every 6 months	CMAG	Nil

Objective 3:	Develop guidance materials on roles of different government agencies with regard to the GHS			
Activities	Output	Timeframe	Responsibility	Budget
Review the current roles and responsibilities of the various departments and agencies with responsibility for chemicals management	Rationalization of the roles and responsibilities of the various agencies .	April 2014	**Lead**: CMAG	<$5000
Meet with agencies to coordinate roles and responsibilities and obtain approval for any change	Stakeholder input solicited	August 2014	CMAG	<$5000
Develop guidelines that clarify the roles and responsibilities for labelling chemicals and general hazard classification and communication	Draft guideline prepared	September 2014	CMAG	<$5000
Prepare draft materials including contact information for relevant departments and personnel	Public awareness material prepared	October to November 2014	CMAG	
Approve guidance materials for dissemination	Guidance material approved from dissemination	December 2014	CMAG	
Disseminate information to all stakeholders	Information brochure on the different roles and responsibilities of government agencies with regard to hazardous	January 2015	CMAG	$5000 to $50,000

	materials. Stakeholders aware of the roles and responsibilities of the various agencies			

Objective 4:	**Establish a champion**			
Activities	Output	Timeframe	Responsibility	Budget
Identify criteria for identification and selection of a champion for the GHS	Identification and selection criteria developed	By end of July 2014	**Lead**: CMAG **Partners**: PCB and GIS	<$5000
Create a prioritised short list of potential champions	List of potential champions	September 2014	CMAG	Nil
Evaluate and select an appropriate candidate	Candidate selected	End of September 2014	CMAG	Nil
Invite top ranked nominee to be champion to a meeting	Meeting with selected candidate held	October 2014	CMAG	Nil
Media launch to introduce the champion to the public	Media launch held	November 2014	CMAG	<$5000
Evaluate effectiveness of the champion	Evaluation completed	December 2015	CMAG	Nil

Objective 5:	Create Chemicals Management Post(s) within relevant government departments			
Activities	Output	Timeframe	Responsibility	Budget
Write a strong Cabinet paper to justify the post(s) and submit to Cabinet	Cabinet paper prepared and submitted to Cabinet	March 2014 – February 2016	**Lead**: EPD **Partners:** CMAG committee members	<$5000
Cabinet approves creation of post(s)	Advertisements developed and run; interviews completed; resource person hired		Cabinet	Nil
Person carries out responsibilities to ensure functioning of CMAG	Work plans of the CMAG and the action plans from the NIS initiated.		Consultant	$50,000 - 100,000

Objective 5 (alternative):	Employ temporary human resources to support the GHS			
Activities	Output	Timeframe	Responsibility	Budget
Prepare a proposal document to submit to a funding agency for a resource person for 5 years	Proposal for funding completed and sent to funding sources	March 2014 – February 2016	**Lead**: CMAG	<$5000
Secure financing	Funding secured			
Advertise for, interview and hire resource person	Advertisements developed and run; interviews completed; resource person hired			
Resource person works to facilitate the implementation of the GHS priorities identified	Work plans of the CMAG and the action plans from the			

by the CMAG	NIS initiated.

Objective 6:		**Establish a private sector/CSO network**		
Activities	Output	Timeframe	Responsibility	Budget
Convene a meeting of private sector and CSO stakeholders **Establish an interim committee to develop the framework for the network.** **The interim committee sets up the network.**	Network established	August 2014	**Lead**: EPD as chair of CMAG **Partners:** Stakeholders and CMAG	Nil
First meeting of the network is convened and a work plan is decided and approved. **Execute work plan**	Work plan completed and implemented	February 2015	**Members of the network**	Nil

Objective 7:	Develop mechanism for providing compliance incentives			
Activities	Output	Timeframe	Responsibility	Budget
Identify incentives for recommendation by brainstorming e.g. insurance, recognition awards, time limited tax incentives	Incentives identified	November 2014	**Lead**: CMAG Partners: Labour Department Ministry of Finance	Nil
Coordinate discussion with stakeholders to finalise compliance incentives	Input solicited from stakeholders	December 2014 to February 2015	**Lead**: CMAG Partners: Ministry of Finance	< $5,000
Develop compliance incentive policy paper based on recommendations received from discussions with stakeholders and technical requirements identified in objective 8. Include these recommendations in a national policy paper.	Policy paper developed.	March to May 2015	**CMAG**	Nil

Objective 8:	Provide technical assistance to encourage compliance			
Activities	Output	Timeframe	Responsibility	Budget
Audit all sectors to identify technical capabilities	Audits completed and technical capabilities of each sector identified	April to December 2015	**Lead**: CMAG **Partners:** Labour Department Ministry of	Nil

			Finance
Develop criteria by which persons can request technical assistance	Criteria developed	April to December 2015	Nil
Identify human resource(s) for provision of technical assistance.	Human resources identified	January 2016	Nil

3.3 Data management

A number of data gaps were identified in the gap analysis and these must be addressed to improve overall chemicals management, but more specifically to facilitate the implementation of the GHS. The effective implementation of the GHS cannot be achieved without knowing which chemicals are being imported, how and where they are being stored and used, and most importantly by whom. Without this information relevant agencies will not know who to target in awareness raising initiatives, or determine what information and technical assistance might be needed to ensure full implementation of the GHS. All stages of the chemical life cycle should be recorded from import/manufacture to disposal.

Within the transport sector, regulators will be unable to plan the appropriate mechanisms for safe transportation of chemicals without knowledge of the type and quantities of chemicals being transported, the routes they are taking and how they are being handled (Section 5). Similarly, emergency responders (both fire and ambulance) will be unable to plan for all contingencies without knowing which chemicals are in the island and what the associated hazards are.

The EPD is the government agency most suited for collecting and compiling chemicals information into a central database. Under Section 4 of the Marine Pollution Control Act the Director of the Environmental Protection Department is required to maintain a Register of Pollutants that contains data identifying the quantity, conditions or concentrations relevant to each pollutant. Any person who engages in the handling of any of those listed pollutants can then be required to provide the information deemed necessary by the Director. Other departments and agencies will have their own role to play in gathering and providing information. The EPD can build on their existing work, auditing potential polluters under the Marine Pollution Control Act, to develop a central clearing house. These audits look at all environmental hazards, including wastewater and storage of chemicals. EPD has also undertaken inventories of all POPs as part of the work completed for the Stockholm Convention.

The proposed CMAG, Section 3.2.1, should identify the overall data needs for national chemicals management. For example, the fire service requires the following information:

- Location of hazardous substance

- Quantity stored
- Name of chemical
- UN number if applicable
- Chemical name and trade name
- Emergency contact persons names and numbers

Although a response plan exists, responders must be able to access information on the chemicals being stored including hazards posed by those substances. This will not always be possible through labelling of the containers alone, since in case of a fire, responders will not have the opportunity to stop and check labels and the labels may be destroyed by the fire; hence the need for the database. It was also suggested at the Inception and Training workshop for the GHS that emergency responders would need more information than what is available on the GHS label and they might even require more than the SDS. In short, responders should have access to a database that not only stipulates what chemicals are present, but also what interventions are required in the event of an accident – e.g. spill, fire, ingestion or inhalation – in order to be prepared to respond accurately and swiftly to safeguard both the human and natural environment. In the absence of an official poison centre in Barbados, the Ministry of Health could also use the information in the database to ensure that appropriate capacity is available to address potential poisoning incidents in Barbados based on the inventory of chemicals being used in the country.

Once the data needs have been established and the database designed, EPD would need to establish data sharing agreements with the relevant agencies. For example, the Customs and Excise Department would be responsible for collecting the information on chemical imports and exports. This information is currently passed to the Barbados Statistical Services (BSS) for collation, so the agreement could be that the BSS would deliver a certain type of information in a specified format and at a specified frequency to the EPD. Similarly, agreements would be needed between the EPD and the various chemical manufacturing companies to capture locally manufactured formulations.

The data management system could build on existing sources of information such as:

- Import and export data from the HS.
- Household surveys completed by the Chemical Substances Technical Working Group (CSTWG) in 1999.
- Earlier efforts by the PCB to collect information on the use of pesticides and herbicides.
- Data on ozone depleting chemicals that require permits from the Department of Commerce under the Customs Order that is collected for annual reports submitted to the Montreal Protocol Secretariat.
- Records that are kept on hazardous chemicals inadvertently received at SBRC.

The development of the database would be supported by other initiatives. As described in Section 3.1, the recent proclamation of the Safety and Health at Work Act will result in information being provided on the storage of chemicals to the Chief Labour Officer, Chief Fire Officer, Commissioner of Police, Accident and Emergency Unit at the Queen Elizabeth Hospital and the Chief Medical Officer. The Ministry of Agriculture is also working on a monitoring system

which should allow persons to easily retrieve information on the volume and rate of use of pesticides and expiry dates amongst other things, with the aim of improving monitoring and control, as well as disposal issues.

Other initiatives that would also assist with collection of information include:

- Establishing a central disposal point for chemical waste possibly at the Sustainable Barbados Recycling Centre (SBRC), so that waste would be catalogued regarding who and where it came from (see Section 3.4).
- The National Agriculture, Health and Food Control System, which will include a monitoring programme that might involve some elements of chemicals monitoring.
- Chemical use information could potentially be collected from the various points of sale across the island.
- The Barbados Statistical Services has reported a desire to expand into environmental statistics.

The coordinating committee can assist in identifying and establishing easily implementable mechanisms for further data collection.

The efficient and accurate documentation of all chemicals, through their life cycle from import or manufacture to disposal, in a centrally located database would facilitate effective monitoring and enforcement of the GHS. It would also address the long overdue need to provide emergency responders, especially fire fighters, with information to undertake effective planning for hazardous materials incidents, thereby leading to improved safety. The collation of this data would immediately clarify areas for capacity building across the actor groups in each sector.

However, a major challenge to the establishment of this database is the fact that there are legislative Acts that prevent information from being released in a form that allows for identification of an individual business or activities related to the business, Section 3.1. For example, under the Safety and Health at Work Act no inspector or other person shall, except for the purposes of civil or criminal proceedings, disclose to another person any information respecting any factory or any process carried on in a factory. It must be emphasised however, that Confidential Business Information (CBI) will not be harmonized under the GHS, but left to the national authority responsible to establish appropriate mechanisms for CBI protection. In this regard UNITAR does indicate that:

- CBI provisions should not compromise the health and safety of users;
- CBI claims should be limited to the names of chemicals and their concentrations in mixtures;
- Mechanisms should be established for disclosure in emergency[2] and non-emergency situations for the purposes of consumer or worker protection (EPD, 2012a; UNITAR, 2004).

[2]The Safety and Health at Work Act addresses some of these requirements regarding the storage and use of chemicals.

At the National workshop there was some discussion on the issue of CBI. It was determined that where an ingredient is present in sufficient quantities to potentially pose a hazard, as stipulated by the GHS standards, then the name of the chemical ingredient must be disclosed.

3.3.1 Roles and responsibilities

As indicated in Section 3.3, the EPD would be most suited for collecting and compiling chemicals information into a central database and to maintain a register of toxic substances. Various public and private sector agencies would be responsible for providing the information to the EPD in formats appropriate to the software supporting the database to effect swift and regular updating of records. This data sharing would be achieved through data sharing agreements with Barbados Statistical Services, the Ministry of Labour, the Pesticides Control Board, private sector businesses, CSOs such as labour unions and other important data providers.

3.3.2 Proposed Strategy

The proposed strategy with respect to data management to facilitate hazard communication and the GHS is to develop a database of chemicals that include hazard information. The following table outlines the activities associated with this strategy along with those responsible for the activities, outputs and timeframes.

STRATEGY 3: DEVELOP A DATABASE OF CHEMICALS

Objective 1:	**Establish a database of chemical data**			
Activities	Outputs	Timeframe	Responsibility	Budget
Conduct an assessment of existing data.	Database set up and accessible to stakeholders	September to November 2014	Lead: EPD Partners: BSS, Customs & Excise, CMAG	<$5000
CMAG establishes protocols for collecting and sharing non-protected data among stakeholders	Protocols established	September to November 2014	CMAG	<$5000
Forward report on data sharing protocol and draft Memoranda of Understanding outlining the data sharing agreements to Chief Parliamentary Counsel	Report on amendment submitted to Chief Parliamentary Counsel	December 2014 to February 2015	EPD as chair of CMAG	<$5000
Chief Parliamentary Counsel prepares amendments to relevant Acts to facilitate enhanced data sharing.	Amendments to relevant legislation made	Not Specified	Chief Parliamentary Counsel	Nil

EPD sources external funding to acquire hardware and software for a hazardous materials database.	Funding secured	March to May 2015	Lead: EPD Partners Members of CMAG	$50,000 to $100,000
Advertise for, interview and select consultant to develop database (hardware, software, setting up database).	Interviewed held	June to August 2015	Involves EPD, private sector and CSOs	$50,000 to $100,000
Negotiate fees, hire consultant, consultant develops database	Consultant selected and database developed	June to August 2015	Lead: EPD Partners Solicitor General	$100,000 to $500,000
EPD inputs data from a range of sources into the database.	Data inputted to database	September to November 2015	EPD	$5000 to $50,000

3.4 Hazardous waste disposal

The GHS requires that hazard communication take place throughout the lifecycle of chemicals. However, there is no chemical waste disposal facility in Barbados and no clear, regulated procedures for disposal of chemicals. This means that the implementation of the GHS at this stage of the lifecycle cannot be monitored. Where possible, EPD advises neutralization before disposal locally. If this is not possible, the public has few options available to protect themselves and the environment from the hazards associated with un-used or obsolete chemicals. Available options include:

- Indefinite storage;
- Inappropriate disposal; and
- Shipping for disposal overseas (this may be prohibitively expensive).

Systems must therefore be put in place to facilitate safe disposal of un-used or expired chemicals with formal procedures agreed and publicized, which include requirements for hazard communication. It was suggested in the stakeholder interviews for the Situation Analysis that EPD should certify any neutralised or diluted chemical, before sending the people who are trying to dispose of them to the SSA for final disposal. The need for clear procedures has already been identified as a priority in the National Profile and both the proposed Environmental Management Act and the Solid Waste Management Act provide some guidance in this area.

Given Barbados' limited resources, a possible approach to overcoming the issue of chemical disposal is the establishment of a central facility for handling chemical waste. A central waste handling facility would allow persons to safeguard the environment by disposing of obsolete

chemicals and chemical containers in an environmentally sound manner. It was anticipated that the Sustainable Barbados Recycling Centre (SBRC) would include such a facility and serve to safely process and store the hazardous wastes until adequate volumes had been collected for shipment overseas to minimise shipping costs. Guidelines for the operation of the facility have been developed and are reportedly awaiting approval. It was also reported that contractual issues are holding up the operations of the chemical storage aspects of the SBRC facility.

It is noteworthy that if a central handling facility is established, the implementation of the GHS would help to reduce risk to human health at that facility through improved hazard communication and contribute to safer chemical storage due to improved segregation. It would also contribute to less indiscriminate dumping, and therefore assist in safeguarding the environment.

The provision of a safe disposal option for waste chemicals is likely to become increasingly in demand as implementation of the GHS raises awareness of consumers to the importance of safe disposal. However, the strategy is an expensive one, but resources might be available through the Basel Convention, even if only in terms of technical assistance. It would appear that although the SBRC was originally intended to handle chemical wastes and physical space has been included in the construction of the facility, there are some operational/contractual issues that remain to be resolved. These outstanding issues should be addressed as soon as possible to facilitate the wider public's safe disposal of chemicals.

3.4.1 Roles and responsibilities

The safe disposal of waste products should be the responsibility of the user (Hutchinson & Cumberbatch, 2011). However it is the responsibility of Government to provide the disposal sites.

The EPD, as the regulatory agency for issues of environmental protection and focal point for the Basel Convention, would take the lead with consultation from stakeholders, on preparing the procedures for the safe disposal of hazardous wastes, including the requirements for hazard communication. This information would be incorporated into the various public awareness and training exercises that are to be undertaken.

The Sanitation Service Authority would establish the facility with EPD operating as the regulatory agency.

3.4.2 Proposed Strategy

Proposed activities to improve institutional arrangements for disposing of hazardous materials and facilitating implementation of the GHS at the end of the chemical lifecycle aim to:

- Raise awareness about procedures for hazardous waste disposal; and
- Establish a functional hazardous waste handling facility.

The following tables outline the activities associated with this strategy along with those responsible for the activities, outputs and timeframes.

STRATEGY 4: IMPROVE INSTITUTIONAL ARRANGEMENTS FOR DISPOSING OF HAZARDOUS WASTE MATERIALS

Objective 1:	Raise Awareness About Procedures for Hazardous Waste Disposal			
Activities	Outputs	Timeframe	Responsibility	Budget
Identify procedures to be taken	Information on the process and procedures that must be followed to dispose of hazardous waste formulated	April-June 2014	**Lead**: EPD **Partners:** Members of CMAG	**<$5000**
Conduct hazard waste disposal consultation	Consultation conducted to solicit input regarding hazard waste disposal	April-June 2014	**Lead**: EPD **Partners:** Members of CMAG	**$5001 to $50,000**
Agree on procedures including hazard communication requirements	Procedures agreed upon	April-June 2014	**Lead**: EPD **Partners:** Members of CMAG	**< $5000**
Prepare draft educational materials including contact information for relevant departments regarding procedures and operations of the disposal facility	Public education materials developed	July to September 2014	**Lead**: EPD **Partners:** Members of CMAG	**$5001 to $50,000**
Review draft and make necessary amendments	Revised public education materials available	July to September 2014	**Lead**: EPD **Partners:** Members of CMAG	**< $5000**
Approve educational materials for dissemination	Final public education materials approved by committee	July to September 2014	**Lead**: EPD **Partners:** Members of CMAG	**$5001 to $50,000**

Disseminate materials	Public education materials disseminated through various channels	Oct to December 2014	CMAG	**$50,000 to $100,000**
Post evaluation	Effectiveness of public education campaigned evaluation and lesson learned identified	Oct to December 2014	**Lead**: EPD **Partners:** Members of CMAG	**$5001 to $50,000**

Objective 2:	**Establish a functional hazardous waste handling facility**			
Activities	Outputs	Timeframe	Responsibility	Budget
Review the proposed functioning of the SBRC with regards to the disposal/storage of chemical waste **Evaluate transfer station at SBRC relative to functionality**	Operations of the SBRC rationalized	April to June 2015	**Lead:** SSA **Partners**: Solid Waste Project Unit (SWPU), CMAG, EPD, Ministry of Health, Town and Country Planning	**<$5000**
Revise contractual agreements regarding chemical storage/disposal in light of existing national needs	Required amendments to existing contract identified	July to August 2015	**Lead:** SSA **Partners**: Solid Waste Project Unit (SWPU), CMAG, EPD, Ministry of Health, Solicitor General	**$5000 to 50,000**
Finalise contractual arrangements for setting up the handling facility at	New/revised contract signed	September 2015 to January 2016	**Solicitor General**	**$5000 to 50,000**

the SBRC			
Implement a manifest system to document chemical waste handling	Waste handling facility open and receiving materials	February to April 2016	**Nil**
Acquire additional human resources for effective operation of the facility (if necessary)		May to June 2016	**<$5000**
Acquire equipment for effective operation of the facility if necessary		July to September 2016	**<$500,000**
Create operational manual		October to November 2016	**<$5000**
Training of personnel		December 2016 to January 2017	**<$5000**

3.5 Public Awareness

Raising the awareness of all the actor groups across the four sectors is critical to implementing the GHS and improving the sound management of chemicals in Barbados. This is consistent with the advice provided in the UNITAR guidance document which states that: "*As a priority, countries may wish to conduct awareness raising and training activities that would increase the understanding of the GHS among relevant groups in government, business and industry and civil society, as well as the public*." (UNITAR-ILO, 2010)

There is a general absence of public awareness activities in the area of chemical hazards. This is possibly the most fundamental problem underlying the weaknesses in chemicals management overall, and hazard classification, labelling and communication specifically in Barbados

Basic awareness-raising pertaining to GHS labelling can certainly be addressed in the immediate short term. However, it is highly unlikely that a "one size fits all" (OSFA) approach would be the most impactful one. Unfortunately, OSFA, typified by flyers and general public service announcements, tends to be the most pervasive approach to raising public awareness about social and environmental issues. Public awareness and training would be most effective if it could involve the most vulnerable stakeholders, or the sectors and actor groups that need it most. Moreover, stakeholders must have input into the process. Limited resources may be wasted if activities are delivered in a form that does not appeal or is not appropriate to the audience.

If real impact is desired, then one option is that the oversight committee leverage funds to hire a marketing and communications firm or individual to create a public awareness programme for the GHS. The specialist(s) would be required to identify and assess the various target groups and create messages that would be specific to their characteristics. They would also identify the correct channels to reach each group. For example, consideration could be given to the use of social media and the internet as a medium for public education.

Information to advance the design of these messages and the identification of target groups can be obtained from the Comprehensibility Testing (CT) survey. The purpose of this CT survey was to inform the situation and gap analysis and help identify the areas where capacity building is most needed to improve understanding of the GHS hazard communication elements. Indeed, the CT survey showed that people are familiar with the labels, but are not using them for all areas of chemical handling. Similarly, people are less familiar with the SDS.

In addition, awareness campaigns must also educate the public about any proposed changes to the legal and institutional framework in support of GHS implementation. This would enable the public to raise any concerns about the proposed changes. One particularly important aspect of legislative change that will require public awareness activities is the replacement of the word "poison", which is well understood in Barbados, with acutely toxic or other classification.

Existing initiatives should also be enhanced. For example:

- The local print media can include more information on chemicals management and labelling in editions such as Better Health and the Green Pages.
- Industry stakeholders should continue or increase their existing efforts at raising awareness about information on labels among their staff. Some potential opportunities that would support this include the BNSI lecture series, and the workshops that are implemented by organisations such as the BCCI and BMA.
- Health and Safety training and exercises can place more emphasis on chemical labelling.
- The private sector should also increase its outreach to neighbouring communities on emergency procedures for chemical incidents.
- Improved signage in industrial spaces could also help emergency responders.
- Expansion of the emergency response simulations that are already carried out for mass casualty and disaster response situations to include a simulation of a chemical incident. Particular emphasis could be placed on how the public should co-operate and respond in such an event.

It is also suggested that age and developmentally appropriate modules be prepared for insertion into relevant subjects such as integrated science and chemistry at the primary, secondary and tertiary level. This would begin to build up the familiarity of children and youth with critical chemical hazard statements and pictograms. The National Council on Substance Abuse has a successful schools campaign related to drugs that could be adapted and expanded to include typical hazard symbols. Similarly, the Solid Waste Project Unit (SWPU) has already developed a guide on general waste management that has been incorporated into school curricula, but which could be expanded to incorporate the GHS. The SWPU has also produced a colouring and activities book for primary schools using images generated by secondary school students as well as a game called Waste Buster “the game that puts waste in its place”.

A well designed and implemented public awareness programme would address many of the gaps that currently plague chemicals management in Barbados, contributing:

- Specially targeted interventions for policy makers to heighten their awareness of the importance of chemicals management to the achievement of national development goals, with the desired outcome of attributing higher priority to the amendment, finalisation and enactment of legislation such as the Environmental Management Act and others.
- Broad based interventions to increase comprehensibility among the population for chemical labels, with a special focus on stakeholders across the three actor groups who handle chemicals in bulk as part of their day-to-day activities.
- Improved knowledge of appropriate chemical disposal practices.
- Interventions for sanitation workers regarding hazard identification and labelling to increase their safety on the job.

- Greater awareness of appropriate responses to chemical emergencies (including the existence of the National Oil Spill Contingency Plan and the Hazardous Materials Emergency Response Plan) and first aid responses.

One of the indirect benefits of raising the general awareness of the public to the hazards that chemicals present, will be the empowerment of the public to undertake risk assessments of their surroundings and neighbourhoods. This will mean that where there are risks from agricultural sprays or automobile bodywork shops for example, the neighbours will be more aware of the risks and be able to lobby and campaign for the chemical user to implement better procedures to reduce the impacts. Moreover, this heightened awareness may result in increased membership of relevant CSOs and a greater interest in lobbying Government on chemical management issues.

However, the proposed marketing programme is likely to be costly. Many CSOs are already struggling to fulfil their mandates, private sector entities do not receive external funding to undertake such activities and government resources are also limited. Therefore, this should be pursued as a joint public private sector venture, in which all parties, especially those involved in chemicals management, leverage funds to contribute to increasing public awareness and safety. In addition, external sources of funding should also be investigated.

3.5.1 Roles and responsibilities

The coordinating committee would take the lead on sourcing funds for the public awareness campaign and for preparing the TOR for the various consultants.

Private sector companies could be doing much more to raise awareness of and train their neighbouring communities for emergency situations rather than relying on the emergency services.

3.5.2 Proposed Strategy

Proposed activities to implement a broad based public awareness campaign and therefore facilitate wide implementation of the GHS aim to:

- Undertake a cross-sectoral awareness campaign
- Develop age appropriate education modules for incorporation into curricula

The following tables outline the activities associated with this strategy along with those responsible for the activities, outputs and timeframes.

STRATEGY 5: IMPLEMENT A BROAD BASED PUBLIC AWARENESS CAMPAIGN

Objective 1:	**Undertake a cross-sectoral awareness campaign**			
Activities	Outputs	Timeframe	Responsibility	Budget
Prepare terms of reference for a consultant that includes consideration of the use of various forms	Terms of reference prepared	September 2013	**Lead**: EPD **Partners**: CMAG, private sector chemicals companies,	**<$5000**

of media including social media and the internet			CSOs, BCC, GIS, Labour Department	
Advertise job, select and hire consultant	Consultant selected to conduct public awareness campaign	October to December 2013	**Lead**: EPD **Partners**: Member of CMAG	**<$5000**
Develop materials in accordance with the terms of reference	Public awareness materials developed	January to March 2014	**Consultant**	**$50,000 to $100,000**
Approve and Disseminate materials	Multi-faceted awareness campaign launched	April 2014	**Lead:** CMAG **Partners:** **Media houses** **GIS**	**$100,000 to $500,000**
Evaluate effectiveness by survey	Effective of campaign evaluated	October 2014	CMAG	**$5000 to $50,000**

Objective 2:	**Develop age and developmentally appropriate education modules for incorporation into curricula**			
Activities	Output	Timeframe	Responsibility	Budget
Prepare terms of reference for consultant requiring, among other things, that the consultant identify and review existing initiatives with a view to expand them or create a new curriculum	Terms of reference prepared	June 2015	**Lead**: EPD **Partners**: CMAG, private sector, chemical companies, CSOs, NCSA, UWI, BCC, Ministry of the Environment, BARNOD, NDU, Ministry of Education	**<$5000**
Advertise, select and hire consultant	Consultant selected	July to September 2015	**Lead**: EPD **Partners**: CMAG, Ministry of Education	**<$5000**
Consultant prepares training	Training modules	October to December 2015	Consultant	**$5000 to $50,000**

modules	developed			
Approval of training modules	Training modules approved	January 2016	**Lead**: Ministry of Education **Partners**: CMAG, EPD	**<$5000**
Training modules pilot tested in a sample of education institutions	Required amendments and lesson learned identified	February to March 2016	Ministry of Education	**<$5000**
Evaluate pilot tests and revise programme if necessary	Revised training modules available	February to March 2016	Consultant	**<$5000**
Fully implement programme in educational institutions	Modules prepared and used in local schools	September 2016	Ministry of Education	**$5000 to $50,000**

3.6 Capacity building

Capacity building as presented here is the planned development of personnel and organisations to increase the available knowledge, skills and effectiveness through training and acquisitions.

There are two key gaps that must be addressed through capacity building:

1. The need for increased emphasis on hazard communication in health and safety policies and training initiatives across the three actor groups.
2. The need for greater enforcement of existing standards for chemical labelling and related health and safety issues.

However, one other gap in capacity also exists and requires discussion. The capacity to undertake chemical hazard classification and create labels and SDS is required under two scenarios:

1. A new chemical or formulation is developed within the country; or
2. An un-labelled waste chemical is found and needs to be identified and labelled for shipment overseas for safe disposal.

As outlined in the Gap Analysis, the existing laboratory capacity is inadequate to support the identification of the intrinsic properties of new chemicals or identify unknown chemicals, which is the first step in the classification process. At present there is no need for the assessment of intrinsic properties of new chemicals because manufacturers are only developing formulations from chemicals whose properties are known. In addition, samples of unidentified chemicals are sent overseas for testing, after which the data on intrinsic properties would be available from online sources. It is anticipated that once the GHS has been implemented both nationally and

appropriate measures are in place for enforcement, then the occurrence of unknown chemicals needing identification should be infrequent. It is therefore suggested that given the considerable expense involved in strengthening the laboratories in this area, the existing practice of testing overseas be continued in the short term to facilitate the preparation of labels and sourcing of SDS. Labels and SDS are required to facilitate disposal, whether through neutralisation locally or by storage and subsequent shipment for disposal overseas.

3.6.1 Training initiatives

Given the diversity of stakeholders involved in the implementation of the GHS, it is recommended that the EPD work with UNITAR to conduct a "training of trainers" workshop. The resultant cadre of trainers from different actor groups would then be available to conduct the training that will be required in the four sectors. An annual training programme comprising a range of workshops should then be developed to meet the needs of the various stakeholders in each sector. Moreover, this training should be mandatory, but this would need to be specified in the legislation.

There are 3 main areas to be covered in the training:

1. classification of hazards in accordance with the GHS.
2. development of labels and SDS; and
3. interpretation and use of labels, SDS and other communication tools.

With regard to item #2 it should be noted that the Comprehensibility Testing survey showed a need to use a larger font for the signal word and position the pictogram(s) in the top left corner since English speakers read left to right and top to bottom. This would ensure that these two rapid communication elements will be more noticeable. Particular focus is also needed on the health effects communicated in hazard statements.

In addition to the workshops, companies that currently have access to technical support for development of labels and SDS should put arrangements in place to share these resources and make them available to other companies that need assistance. This could be facilitated through the private sector and CSO network described in Section 3.2.4.

The on-going training would increase capacity to carry out classification and labelling; and there would be increased comprehensibility across the sectors, particularly with reading and using SDS. It would eliminate the need for persons in the Industrial Workplaces and Transport sectors to teach themselves about chemicals, and the formal training would also empower them to handle chemicals appropriately. However, the training programme could be costly and would necessitate inclusion in the budgets of the various departments of the public and private sector, NGOs and CSOs. It is possible that grant funding could be sourced.

3.6.2 Increasing enforcement capacity

Enforcement is an area that could also benefit from capacity building. A number of gaps and weaknesses in enforcement have been identified in the Gap Analysis either manifesting through inadequate numbers of inspectors, or insufficient technical capacity of existing personnel. A recommendation put forward in the draft Policy Paper on Hazardous Substances Management is the training of the existing inspectorate on chemicals issues. This is expanded here to

suggest that by training all relevant inspectors, regardless of their department, on all relevant areas of enforcement (labelling, storage, transport etc.) there would be many more personnel able to identify and report those issues to the appropriate authorities. For example, an inspector under the Road Traffic Act who spotted someone transporting chemicals with no labels could make a report to the Department of Commerce for further investigation. Similarly, Environmental Health Inspectors could report concerns to labour officers and so on. This may require amendment to relevant legislation. The specific requirements of departments will be addressed in the relevant sectoral strategies that follow.

By having many more inspectors aware of the standards and requirements for chemicals throughout the lifecycle there will be greater surveillance, potentially resulting in greater enforcement. However, the legislative changes required to permit the sharing of information between sections of the inspectorate may delay this initiative. Inspectors may also perceive this as an increase in their workload.

3.6.3 Roles and responsibilities

The EPD would work with UNITAR to set up the training of trainers programme. Critical support in this process could be provided by the private sector personnel currently responsible for training staff. In addition, support could be found from the Barbados Institute of Environmental Professionals (BIEP), which is a collection of environmental professionals who would have amongst them the requisite expertise to assist in classification and labelling and the design of materials for technical capacity building and training.

PAHO could also be approached for technical assistance. They would be well positioned to offer advice on matters relating to environmental quality and environmental health, as well as developing and implementing training and capacity-building programmes in the region. PAHO is also a repository of useful information and guidance on issues related to sound chemicals management, and they seek avenues to facilitate the dissemination of this information to other stakeholders (Government of Barbados, 2009).

3.6.4 Proposed Strategy

Proposed activities to enhance the capacity of stakeholders to implement the GHS aim to:

- Establish a cadre of GHS trainers in Barbados
- Strengthen capacity of the various inspectorates for chemicals management

The second activity involves possible changes to inspectors' job descriptions and must therefore be carried out with the close involvement of the Labour Unions.

The following tables outline the activities associated with this strategy along with those responsible for the activities, outputs and timeframes.

STRATEGY 6: ENHANCE THE CAPACITY OF STAKEHOLDERS IN ALL SECTORS TO IMPLEMENT THE GHS

Objective 1:	Establish a cadre of GHS trainers in Barbados			
Activities	Outputs	Timeframe	Responsibility	Budget
Prepare and enter into a Memorandum of Agreement with UNITAR to provide training utilizing materials from UNITAR's GHS Advance Training Course	GHS training team established	January 2013	**Lead**: UNITAR EPD	Already budgeted under the project entitled, " Strengthening Capacities for SAICM Implementation and Supporting GHS Capacity Building in Barbados"
Conduct train the trainers workshops	Training implemented for the various stakeholders	May 2013	**Lead**: EPD **Partners**: All agencies with inspectors, BMA, Labour Unions UNITAR	
Roll out annual training programmes conducted by UNITAR trained trainers	Annual training schedules developed Cadre of GHS professionals maintained	May 2014		Not specified

Objective 2:	Strengthen the capacity of the various inspectorates			
Activities	Outputs	Timeframe	Responsibility	Budget
Develop TOR and recruit consultant to evaluate the current duties and capacities of each inspectorate	Terms of reference prepared Consultant hired	June to December 2015	**Lead**: EPD **Partners**: All agencies with inspectors, Labour Unions	**$5000 to $50,000**
Identify surveillance requirements.	Requirement identified		Lead: Consultant **Partners**:	

			All agencies with inspectors, Labour Unions	
Highlight existing gaps and overlaps in existing inspectorate **Assess capacities of existing staff (SWOT)** **Identify capacities needed by inspectors** **Investigate the feasibility of cross training inspectors**	Gaps identified		Lead: Consultant **Partners**: All agencies with inspectors, Labour Unions	
Consultant drafts and submits a report which includes: **(i) areas for consolidation of duties (ii) amended descriptions of duties and responsibilities (iii) identified training needs; and (iv) other recommendations for enhancement of surveillance and enforcement** **Distribute approved report to stakeholders**	Report developed and report disseminated to stakeholders		Consultant	
Streamline resources across all inspectorates	Resources streamlined	January to June 2016	Consultant	**Nil**
Train the various inspectors	An expanded chemical management surveillance team	July to December 2016	Inspectorates	**$50,000 to $100,000**

4 Industrial workplaces

At the Inception and Training Workshop it was suggested that the lack of systems and procedures in most workplaces speaks to a culture of general indifference towards chemicals, which only comes into focus when accidents or near misses occur. As a result, workers bear the responsibility for their actions as well as management's inaction. In contrast, the Situation Analysis revealed that some companies have taken significant steps to provide PPE, install first aid stations and undertake general health and safety training. The reality is therefore likely to lie somewhere in between these two reports. The observed and reported variations speak to the lack of consistency across the sector.

Therefore, commitment is needed to provide the necessary resources in terms of time and money to ensure people across the sector are better trained and more aware of the requirements of proper chemicals management. This section will therefore focus on the specific sector training and institutional strengthening needs within industrial workplaces.

4.1 Training

The industrial sector in Barbados needs to receive training in the development of labels and SDS as well as the interpretation and use of labels, SDS and other communication tools associated with implementation of the GHS.

Improving the capacity of workers in industrial workplaces to develop GHS compliant labels and SDS will facilitate entry of Barbadian products to export markets. Some companies are already developing labels and SDS for chemical mixtures and formulations. During interviews for the situation analysis those companies that do not rely on external expertise requested additional assistance in using the "Purple Book". Larger companies with more experience and access to additional support from parent companies could provide assistance and expertise to smaller companies. This type of network also enables the sharing of best practices. Similarly, as described in Section 3.2.4, the creation of a private sector and CSO network of chemical manufacturers and users could also facilitate the sharing of resources for training and capacity building.

As already discussed in Section 3.6 there has been very little formal training on the use of chemical labels and SDS and there is also limited use of signage and other communication tools. Additionally, the effectiveness of health and safety committees[3] is somewhat varied across the sector. Raising the awareness and capacity of inspectors will improve enforcement. In addition, workers who are able to utilise the information on labels and SDS effectively will be less likely to have accidents.

There must be increased emphasis on hazard communication in health and safety training initiatives undertaken in this sector. Once guidance that focuses on reading and understanding the information is available in a user-friendly format, it can be more easily disseminated to a

[3] Under the Safety and Health at Work Act organisations are required to establish health and safety committees who will be responsible for informing employees of workplace hazards and other matters relating to the work environment.

wider audience of varying abilities. The training programmes designed for this sector should address the following areas:

- Training for labour officers on chemical hazard communication issues and the requirements of the GHS.
- Training for health and safety committees in order to increase use of signage and other communication tools (other than labels and SDS) in the workplace.
- Increasing the ability of industry stakeholders to read and understand labels, especially health hazard information; and on-going training regarding the use of PPE.
- Empowerment of workers in this sector.

It is anticipated that those companies requiring training on label and SDS preparation would identify staff members to participate in the train the trainers workshop (Section 0). These individuals would be expected to share their knowledge with other personnel at their respective companies. Companies that do not participate in the trainers workshop would be expected to contract other trainers to facilitate their in-house training initiatives. It is noted that companies that do not receive external financial assistance for training may be reluctant to participate in any extensive training sessions, especially smaller companies with limited human resources.

4.1.1 Roles and responsibilities for addressing the need for training

Businesses must get involved in these initiatives and commit to implementing the GHS as well as to on-going training. The recent enactment of the Safety and Health at Work Act reinforces the roles and responsibilities of the workforce and management in safety issues. If necessary, businesses will need to strengthen the disciplinary actions available for not using PPE that is provided, in order to send a clear signal to negligent workers that they are responsible for their own safety.

A number of CSOs already have an interest in chemical hazard communication from a health and safety perspective and these resources can be used for additional sector specific training. Some of these organisations have already been mentioned in Section 3.6.3. Unions can support the training of health and safety committees on the implementation of the GHS by identifying personnel within their organisations who can attend the train the trainer workshops and then train their membership's health and safety committees. Similarly, the BCCI and BMA should consider identifying individuals from the organisations to attend the training sessions so that they can advise their membership on the requirements of the GHS.

4.1.2 Proposed Strategy

The proposed strategy with respect to addressing the limited training for hazard communication and the GHS in the industrial sector is to build capacity through regular and consistent training activities.

The following table outlines the activities associated with this strategy along with those responsible for the activities, outputs and timeframes.

STRATEGY 7: BUILD CAPACITY WITHIN THE INDUSTRIAL SECTOR

Objective 1:	**Undertake regular and consistent training within the industrial sector**			
Activities	Outputs	Timeframe	Responsibility	Budget
Identify Health and Safety Officers (however titled) in each sector for inclusion in the train the trainer programme – ensuring that each sector is represented	Training conducted Stakeholders with improved ability to implement the GHS Improved safety in the workplace	January 2013	**Lead**: Individual companies, CSO/Private sector network, BEC	**Not specified**
Establish a sector-specific training database		September 2013		**Nil**
Develop a sector-specific training programme which: • **Captures baseline data** • **Includes training of newly hired persons** • **Includes annual training of existing staff** • **Includes biennial training of trainers**		October 2013 to December 2013	**Lead:** CMAG Partners: GIS, BCCI, TVET, Accreditation Council, UWI Open Campus	**$50,000**
Co-ordinate implementation of training programme		January to April 2014	EPD	**$100,000**
Develop evaluation matrix based on rates of accidents and near misses		May to June 2014	CSO/Private	**Nil**

Evaluate effectiveness of training based on above matrix at 3 month intervals.	Every 3 months	CSO/Private	
Co-ordinate discussion amongst TVET, BEC, BCCI and Barbados Accreditation Council to move the training towards accreditation	January 2014 to December 2014	CMAG	**<$5000**

4.2 Institutional strengthening

Institutional strengthening aims to improve the effectiveness of existing structures, processes and systems, through training and/or the allocation of financial, human and material resources.

Monitoring and enforcement within industrial workplaces must be increased to ensure that there is appropriate signage in place; that correct labelling is being used; and that workers receive the necessary training. One strategy for achieving this improved level of enforcement is the training of the inspectors as described in Section 3.6, but there is also a need to address the inadequate numbers of inspectors. Other identified institutional weaknesses are the lack of procedures in workplaces to obtain up-to-date SDS and the limited coverage of chemical companies in the existing Union membership.

In order to improve enforcement of the newly proclaimed Safety and Health at Work Act, there would need to be an increase in the number of Safety and Health Officers in the Labour Department, to carry out inspections across the number and diversity of industrial businesses on the island. Improved enforcement will reduce the risk of chemical related incidents and the improved use of signage will make workers and visitors more aware of the hazards faced. According to the stakeholders interviewed, monitoring of sites with potentially PCB containing equipment under the POPs NIP, including ensuring that sites have appropriate signage, has been hindered by resource constraints.

As already mentioned, financial constraints make the creation of new positions in the public sector unlikely. Therefore an alternative suggestion has been made in Section 3.6, for all inspectors across all related departments to be trained to notice transgressions thereby increasing the level of surveillance, which would potentially increase the level of enforcement. This may be a more practical solution. Additionally, workers unions can assist as they already make reports to the relevant authorities when they observe problems that threaten the health and safety of workers. This strategy has already been detailed in Section 3.6.4.

The establishment of procedures for ensuring that up-to-date SDS are obtained and made available should be a fairly straightforward initiative to implement in the workplace. It would also

ensure that workers have continuous access to accurate information. Incorporating these procedures into existing routines will help ensure that the task is completed and not forgotten. Additional value can be gained by communicating any changes to the workforce, which would reinforce the importance of hazard communication and awareness. Two options that could be considered are:

1. The person responsible for making purchases would simply make a routine request for SDS to be sent with every delivery or e-mailed as part of the confirmation of the order. Once the SDS are provided they would be distributed in accordance with the companies' policies and procedures.

OR

2. The Health and Safety Committees could undertake a periodic review of all SDS information to ensure they are up-to-date as a regular part of their responsibilities.

Sharing relevant best practices and experiences between companies could be achieved through the private sector and CSO network described previously, but in the absence of substantive legislation for managing industrial chemicals, implementation would need to be on a voluntary basis. There are a number of health and safety management systems that can be referred to for guidance such as the Canadian Workplace Hazardous Material Information System (WHMIS)[4].

Expanding the membership base of Unions into relevant areas such as cleaning companies, oil companies, pest control companies amongst others, would give Unions improved access to workers across all industrial workplaces that manufacture or use chemicals. This would enable the Unions to provide training to a wider variety of personnel, facilitate a wider assessment of safety and health practices and bring in additional resources through the increased membership fees to support these activities. It may however, prove difficult to engage many of these companies since they are currently unwilling to recognise the role of the Union. Furthermore small entrepreneurs who work with chemicals will be unlikely to seek out Union membership. Gaining access to these companies for the sharing of information and training opportunities could be facilitated through the proposed private sector and CSO chemicals network.

4.2.1 Roles and responsibilities

This is an area that can be implemented immediately, i.e. the private sector and the relevant CSOs can begin to implement the necessary activities to strengthen their institutions to address the signage, availability of SDS and training initiatives. Ultimately, these actions will be enforced through the new Safety and Health at Work Act.

Companies can commit to: incorporating more training on chemical handling and use in existing health and safety training; establishing protocols for maintaining up-to-date SDS; improving use

[4]WHMIS is the Canadian Hazard Communication Standard. The requirements place an onus on employers to ensure that controlled products are used, stored, handled or disposed of in the workplace are properly labelled, MSDSs are made available to workers, and workers receive education and training to ensure the safe storage, handling and use of controlled products in the workplace.

of signage; and providing training for Health and Safety committees. CSOs can support these initiatives by providing advice and technical support.

Unions also have a role in monitoring and can report concerns to the relevant authorities.

4.2.2 Proposed Strategy

The proposed strategy with respect to addressing weaknesses in the institutions of the industrial workplaces sector for hazard communication and the GHS is to amend and consolidate existing legislation and standards. This will involve activities that seek to:

- Establish voluntary guidelines for workplace management of SDS

The following tables outline the activities associated with this strategy along with those responsible for the activities, outputs and timeframes.

STRATEGY 8: STRENGTHEN INDUSTRIAL INSTITUTIONS TO IMPLEMENT THE GHS

Objective 1:	**Establish voluntary guidelines for workplace management of SDS**			
Activities	Outputs	Timeframe	Responsibility	Budget
Hire consultant	Consultant contracted	January 2015	**Lead**: CMAG **Partners**: EPD, Ministry of Labour, Ministry of Commerce, Private sector and CSO network	
Undertake survey to identify current procedures in different workplaces: Customs, manufacturers, distributors, retailers	Report on existing practices prepared	February to March 2015	**Lead:** Consultant **Partners:** Private sector and CSO network	**$5000 to 50,000**
Draft guidelines based on best practices & international norms & local context	Draft guidelines developed	April to June 2015	**Lead:** Consultant **Partners:** Private sector and CSO network	
Distribute via emailing list for comment	Draft guidelines circulated for comment	July 2015	CMAG	
Revise draft guidelines to incorporate comments received	Revised guidelines available	September 2015	Consultant	
Undertake training in rationale and use of guidelines	Cadre of workers trained	October 2015 to January 2016	Consultant	**$5000-50,000**
Distribute and promote	Procedures for ensuring that up-to-date SDS	February 2016	CMAG	**$5000**

guidelines	are obtained and made available in place and being utilised

5 Agriculture

As indicated in the Gap Analysis, this sector is one of the better regulated sectors when it comes to chemical hazard communication and labelling because of the Pesticide Control Act that governs the import/export of pesticides and provides regulations for labelling. Barbados has also endorsed the Food and Agriculture Organisation (FAO) Code of Conduct on the Distribution and Use of Pesticides. Article 10 of the Code specifically addresses "Labelling, packaging, storage and disposal" of pesticides, and FAO is in the process of integrating the principles of the GHS into its guidelines (UNITAR-ILO, 2010). Moreover, with re-packaging of agro-chemicals being carried out in industrial workplaces, there is no need for agricultural workers to be able to develop labels and SDS; the capacity to read and interpret the information provided is what is important. Therefore, only a few strengthening initiatives are needed.

5.1 Training

Special training should be scheduled for the Pesticides Control Board (PCB) to enhance their capacity in very specific areas and also for stakeholders in the sector, inclusive of the Extension Officers, farm and plantation owners and workers.

The PCB training would focus on enhancing the Board's ability to understand the GHS classification system as well as understand and use the GHS pictograms, labels and SDS. Extension officers in the Ministry of Agriculture should also be trained to identify problems associated with inappropriate or missing labels and report to the requisite inspectors. They can also assist in training farmers and workers on the interpretation and use of the GHS labels.

Training should also be conducted for agriculture stakeholders so that they can read and understand pictograms, labels and SDS, especially related to communication of health hazards, storage and transportation information. In addition, there should be on-going training for farmers regarding the use of personal protective equipment (PPE). This would enable agriculture workers to operate more safely and efficiently. In this sector general health and safety training is conducted, but there is room for increased emphasis on label use. Reinforcing actions such as offering incentives to encourage positive practices and discipline to discourage negative habits such as not using PPE would be beneficial, especially since persons who have operated in a particular way for a long time (that is, not using labels for information) will initially find it difficult to change their behaviour.

5.1.1 Roles and responsibilities for addressing training

The PCB would take the lead in ensuring that the training is scheduled and implemented across the sector. Plantation owners and other employers must ensure that farm workers receive training on chemical hazard interpretation. The FAO and/or Inter-American Institute for Cooperation on Agriculture can provide assistance with training. Any training initiative should be on-going especially where the labour force is constantly changing due to high numbers of casual or migrant workers.

5.1.2 Proposed Strategy

The proposed strategy with respect to addressing gaps in training for hazard communication and the GHS is to build capacity in the agriculture sector through targeted training of agricultural stakeholders.

The following table outlines the activities associated with this strategy along with those responsible for the activities, outputs and timeframes.

STRATEGY 9: BUILD CAPACITY IN THE AGRICULTURE SECTOR TO IMPLEMENT THE GHS

Objective 1:	**Undertake targeted training of agricultural stakeholders**			
Activities	Outputs	Timeframe	Responsibility	Budget
Identify and contract consultant to conduct GHS training and develop a training programme for persons in the agricultural sector		September to December 2013	**Lead**: PCB **Partners**: Agriculture stakeholders	**<$5000**
Schedule and conduct training sessions for members of the PCB	Training for members of the PCB, extension officers and agriculture stakeholders completed. PCB members better able to conduct their duties Extension officers better able to assist in hazard	September to December 2013	**Lead**: Consultant **Partners**: PCB	**$5000 to $50,000**
Schedule and conduct training for extension officers		April to May 2014	**Lead**: Consultant **Partners**: Ministry of Agriculture	
Select target groups in the agricultural		June to July 2014		

sector	management		
Undertake a needs assessment for target groups	Improved practices among agriculture stakeholders re. hazard communication	June to July 2014	Consultant
Develop training programme for target groups		June to July 2014	Consultant
Deliver training programme with evaluation and certification. Consider location, timing and resources.		August 2014	Consultant

5.2 Institutional strengthening

In order to effectively implement the GHS in the agriculture sector, the PCB, as the regulatory body for agro-chemicals, needs strengthening. The PCB is generally considered to be doing a good job. However, while the Board has the authority to control entry of certain chemicals, they do not currently have the capacity to control the use of chemicals. This is in spite of the fact that the legislation gives them the authority.

Inspectors at the Ministry of Agriculture monitor the practices within the sector and enforce the Pesticides Control Act. However, there are insufficient personnel at the Ministry of Agriculture for undertaking inspections and surveys. In particular there is a need to regulate unregistered people selling banned or not yet approved products and those marked 'not for resale'. In addition, more comprehensive enforcement should reduce the likelihood that pesticides will end up with illegible labels, as found in the POPs assessment. By increasing staffing levels at the PCB their ability to enforce their mandate, including regulations pertaining to pesticides labelling, would be improved. Once the regulations have been amended to reflect the requirements of the GHS, this will also mean improved monitoring and enforcement of the implementation of the GHS in the sector. The principle barrier to achieving an increase in staff for monitoring and enforcement is the financial constraints faced by government.

5.2.1 Roles and responsibilities for addressing institutional strengthening

Businesses must implement the legal requirements of the PCB. CSOs can fulfil an effective "watch dog" role by assisting inspectors through the reporting of bad practices.

5.2.2 Proposed Strategy

The proposed strategy with respect to institutional strengthening for hazard communication and the GHS is to strengthen the PCB through increased staffing.

The following table outlines the activities associated with this strategy along with those responsible for the activities, outputs and timeframes.

STRATEGY 10: STRENGTHEN AGRICULTURE INSTITUTIONS TO IMPLEMENT THE GHS

Objective 1:	**Increase staffing of PCB**			
Activity	Outputs	Timeframe	Responsibility	Budget
Assess additional staffing requirements for PCB in light of policy developed by coordinating committee	Improved ability to monitor and enforce existing laws	April to June 2014	**Lead**: PCB **Partners**: Ministry of Civil Service CMAG	**Nil**
Chairman of PCB makes application to the Department of Civil Service for staff	Additional staff approved	April to June 2014	**Lead**: PCB **Partners**: Ministry of Civil Service	**Nil**

6 Transport

Within the transport sector the GHS requires that all chemicals are appropriately labelled with the relevant transportation labels and that workers are aware and trained on the safe practices for transport of chemicals and how to respond in the event of an accident.

At the national level there is very little monitoring and regulation of the local land transport of chemicals generally and the use of hazard communication specifically, with only a few private sector companies able to outline any specific procedures that are followed. Too many companies rely on the hauler or transport worker to take the necessary precautions. Responsibility for ensuring that packages being transported are appropriately labelled for transport lies with the Department of Commerce, however the inspectors in the Ministry of Transport can also play a surveillance role as part of their normal inspection duties, Section 3.6.

Maritime and aviation transport of chemicals is well regulated through the adoption of international standards by Government and the private sector. These international standards and the international conventions that also deal with international transportation of hazardous chemicals are either part of the GHS or are in the process of being brought into line with the requirements of the GHS (Hutchinson & Cumberbatch, Situation Analysis, 2012). However government agencies reported some institutional issues in administering and regulating these standards and that there is a lack of awareness by companies and industries in Barbados of the requirements for labelling for international transport of hazardous materials.

The CT survey revealed a general lack of appreciation of the need for hazard information when transporting chemicals - only 5% of transport responders in the CT indicated that they looked for information on the label when transporting materials. Therefore, in addition to the data collection and legislation gaps already discussed in Section 3, there are gaps in the capacity and the institutional framework of this sector.

6.1 Training

It was noted in Section 3.3 that there is a need to improve the collection, analysis and use of data on chemicals to improve the ability of regulators to monitor the implementation of the GHS and target awareness and training initiatives most effectively. Significant amounts of data on chemical imports and exports are collected through the Harmonised Commodity Description and Coding System (HS). The reporting procedures of this tariff system provide a useful opportunity to collect more valuable information on hazards. However, there are reports that the system is not being utilised as accurately as it could be.

In order to improve the quality of data collected through the HS reporting mechanism, shipping agents and Customs Officers must receive training on the correct use of the system to ensure that commodities are correctly identified. This will enable regulators to improve knowledge about the types of chemicals entering and leaving the country as well as provide an indication of the types of chemical formulation and manufacturing occurring in the country. In addition, by training customs officers on the GHS labelling system they will be empowered to assist other departments with the enforcement process, and be better able to protect themselves from harm in the event that packaging is damaged. More stringent use and enforcement of the HS by the Customs and Excise Department will also reduce the opportunity for businesses to inaccurately report on the content of shipments.

In addition, training on the GHS must be conducted for personnel in the Customs and Excise Department; the Department of Labour; and the management and drivers in local transport companies (including independent truckers). The training should include a focus on the protocols and requirements for hazard communication in international and national transport of hazardous goods with special emphasis on the importance of hazard labelling in a transport situation. Improving the capacity of multiple transport stakeholders to read and use chemical labels in a transport setting will increase their awareness of the safety issues associated with handling and transporting chemicals. This should lead to more careful transportation procedures and refusal to carry goods that are not appropriately packaged. Similarly, improved use of chemical labels on packaging and awareness of the drivers will assist emergency responders in

the event of an accident. Ideally this should ultimately result in a number of transportation companies undertaking wider hazardous materials training and possibly achieving some level of certification.

6.1.1 Roles and responsibilities in addressing training

The Barbados Statistical Service in collaboration with the Customs and Excise Department and EPD should ensure that the existing HS reporting mechanism is being used accurately and that the data collected is analysed in a way that will lead to improved understanding of chemical use in the country. However, the shipping agents and their clients (companies actually importing and exporting the chemicals) are responsible for filing accurate paperwork.

Training on the GHS has already been covered in Section 3.6 and these trainers would be able to assist stakeholders in the transport sector.

Although the Department of Commerce is assigned responsibility for ensuring that goods entering the country are appropriately labelled, the Customs and Excise Department must be encouraged to take greater ownership of their role in chemicals management in Barbados. The reports of banned agro-chemicals being sold locally would suggest that weaknesses in the system are being exploited.

Businesses must ensure that workers are trained and use their knowledge to append appropriate hazard labels to packages that are being transported.

6.1.2 Proposed Strategy

The proposed strategy with respect to training for hazard communication and the GHS is to enhance capacity. This will involve activities that seek to:

- Improve accuracy and utility of information collected by the HS
- Improve the capacity of stakeholders to implement the GHS

The following tables outline the activities associated with this strategy along with those responsible for the activities, outputs and timeframes. The second objective would be linked with the train the trainers programme outlined in Section 3.6.

STRATEGY 11: ENHANCE CAPACITY WITHIN THE TRANSPORTATION SECTOR TO IMPLEMENT THE GHS

Objective 1:	**Improve accuracy and utility of information collected by the HS system**			
Activities	Outputs	Timeframe	Responsibility	Budget
Identify training needs to ensure accurate usage of the HS	Training needs identified	January to March 2014	**Lead**: EPD **Partners**: Barbados Statistical Service, Customs and Excise Department, the shipping agents, brokers and Port Inc.	**< $5000**
Identify and facilitate training of persons including resource personnel (consolidations brokers, Port Inc, Customs, Shipping agents)	Participants determined	January to March 2014	**Lead**: EPD **Partners**: Barbados Statistical Service, Customs and Excise Department, the shipping agents, brokers and Port Inc.	**< $5000**
Identify and contract a consultant conduct training	Consultant contracted		**Lead**: EPD **Partners**: Customs and Excise Department	**Nil**
Implement training programme which includes continuous assessment	Improved use of the HS system Better knowledge of the chemicals that are imported and exported	April to September 2014	**Consultant**	**$50,000 to $100,000**
Evaluate effectiveness of training	Required amendments to training	October to December 2014	**Consultant**	**< $5000**

programme	programme identified

Objective 2:	**Improve the capacity of stakeholders to implement the GHS**			
Activities	Outputs	Timeframe	Responsibility	Budget
Identify the training needs to ensure effective implementation of the GHS	Training needs identified	September to December 2013	**Lead**: EPD **Partners**: Transport inspectors, police, independent haulers, Customs and Excise Department, drivers in local transport companies	**<$5000**
Identify persons to be trained including resource personnel in the Customs and Excise department; the Department of Labour; and the management and drivers in local transport companies; independent haulers; transport inspectors; and the police.	Participants determined	January to March 2014		**<$5000**
Identify and contract a consultant conduct training	Consultant contracted		**Lead**: EPD **Partners**: Customs and Excise Department	**Nil**
Implement training programme,	Transport stakeholders trained	April to September 2014		**$50,000 to $100,000**

which includes continuous assessment.	Improved safety in the transportation sector		
Post evaluation	Required amendments to training programme identified	October to December 2014	**<$5000**

6.2 Institutional strengthening

A number of the gaps and weaknesses in the transport sector for implementing the GHS cannot be addressed through training alone. Some of the institutional issues related to chemical hazard classification and communication have already been addressed in Section 3, where it was recommended that the roles and responsibilities of the different agencies be rationalised and clarified and that legislation be developed that supports data collection and sharing. However inadequate staffing in various agencies and the collection of additional data through the HS reporting mechanism are addressed here.

Firstly, the usefulness to regulators of the information collected through the HS reporting mechanism could be improved by collecting the following data:

- The actual name of the chemical
- Basic hazard information (possibly just the transport pictogram) and
- The intended use of the chemical.

These additions should be simple to collect, and would greatly improve the utility of the data collected for targeting hazard communication training at the most vulnerable and exposed groups. By collecting this information, Customs officers will be obliged to check that hazard information is provided and verify that the items are therefore correctly labelled for transport. It will also significantly enhance the quality of data on the actual chemicals being imported, rather than the existing situation where chemicals are grouped in commodity classes. Finally, it will begin to provide some information on how the chemicals are being used, thereby enabling the regulators to identify the stakeholders that must be targeted for education and training on hazard communication. This level of interpretation will only be achieved if systems are in place to regularly collate and analyse the data as indicated in Section 3.3.

By making these amendments to an existing data collection system it is anticipated that the change should be implemented more quickly than trying to develop a new, additional system for collecting the same information. Similarly, chemical importers and exporters are already reporting under the HS to Customs and therefore providing the extra information should not be too onerous for them. Once the system of reporting is established and in use it will provide these additional benefits:

- Improved assessment and monitoring of the HS data to ensure accurate reporting of chemicals which require permits from the Pesticides Control Board. However, there may

be some concerns about providing information on the intended use of a chemical where people have been attempting to import pesticide components as industrial chemicals to avoid the licensing process of the PCB.

- Improved analysis of the import/export information that is already being collected to allow regulators to infer the nature of chemical processing activities in the island as well as estimate the volume and types of chemicals that are being used in the island. This will then allow authorities to identify the priorities for hazard communication and labelling initiatives as well as identify stakeholders that may need assistance with label and SDS creation to meet international standards for export.
- Improved controls on the collection, collation and communication of data relating to the import, export, and use of chemicals.
- Improved data collection will also facilitate the implementation of a number of international agreements that require careful monitoring of pre-cursor chemicals. For example, under the Chemical Weapons Convention, technical assistance, training of personnel, and legal assistance aimed at capacity building are provided by the Technical Secretariat of the Organisation for the Prohibition of Chemical Weapons (OPCW). Adjusting the reporting mechanism and establishing a database to improve the capacity for reporting to the OPCW would be a legitimate technical assistance project.

Inadequate staffing levels impact a number of public sector agencies and reduces their ability to implement or monitor the GHS. For example, a Health and Safety officer is needed at the SSA to help address chemical hazard concerns for sanitation workers. The Civil Aviation Department must ensure that certified hazardous materials personnel are in place as a matter of some urgency to monitor and enforce the requirements of international standards. Civil Aviation should also take a more pro-active approach in assessing and licensing companies rather than relying on FAA approvals. This should then motivate local haulers to ensure that they have the appropriate certification to work with the large airlines that must be FAA approved.

It has already been suggested in Section 3.6 that the wider group of inspectors should receive training on all chemicals issues, including hazard communication, to provide improved surveillance. Particular issues in the transport sector relate to denying entry of inadequately labelled goods under the Control of Standards Act and ensuring that goods transported locally are marked with the appropriate labels. This is not happening consistently, because of the inadequate staffing levels in the Department of Commerce.

The final area that must be addressed is the definition of procedures for safe transport of chemicals, including procedures for hazard communication, at the national level, i.e. not for import and export. Substantial guidance on this area is available in the draft Policy Paper on Hazardous Substances Management, but progress can also be made even before the official policy or legislation is put in place. There are standard practices and procedures that can be adopted and implemented by chemical businesses and transportation companies to protect workers and the wider public. This is another initiative that could be implemented by the private sector and CSO network described in Section 3.2.43.2.4, drawing on the experiences of the ISSCO. Haulers could also consider establishing a support group to share information on procedures and safe practices, amongst other things, such as registration/certification and

insurance negotiations. A group of haulers would also be able to share the costs of hazardous materials training. Once the standard procedures have been agreed upon, they can be shared with all relevant companies including the independent haulers. This strategy is also relevant to the discussion on procedures for chemical waste disposal in Section 3.43.4.

6.2.1 Roles and responsibilities for institutional strengthening

The Government, through the Customs and Excise Department will need to implement the amendments to the HS data collection mechanism and allocate sufficient resources to departments that are currently lacking personnel or skills.

As described, the establishment of standard procedures for hauling chemicals does not need to wait on Government, but could be established by businesses either individually or through some form of network or consortium. Businesses must take responsibility for informing shipping agents, including local haulers, of the nature of the hazards of the commodity being transported and label containers correctly. Businesses that carry chemicals for export must already meet the international standards for packaging and labelling if they are delivering those packages to FAA approved carriers.

There is room for greater involvement of CSOs, including Unions, in the transport sector. They have an opportunity to lobby for tighter regulation of national chemical transportation in order to protect the wider public who are currently oblivious to the nature of chemicals being transported by road around the country. Unions can also target their efforts to engage more with transport workers.

6.2.2 Proposed Strategy

The proposed strategy with respect to institutional strengthening for hazard communication and the GHS is to strengthen the institutional framework by enhancing the value and accuracy of the HS data. The information to be captured as part of an import licensing procedure includes the chemical composition, trade name and generic names and intended storage location. Ideally, a central authority would be responsible for issuing licences for importation of all hazardous chemicals, (Section 3.2). Until such an arrangement is put in place, it is recommended that the HS paperwork be amended to capture additional relevant information pertinent to the implementation of the GHS.

The following table outlines the activities associated with this strategy along with those responsible for the activities, outputs and timeframes.

STRATEGY 12: STRENGTHEN THE INSTITUTIONAL FRAMEWORK TO SUPPORT THE IMPLEMENTATION OF THE GHS

Objective:	**Enhance value and accuracy of the HS data**			
Activities	Outputs	Timeframe	Responsibility	Budget
Amend HS paperwork to incorporate hazard information	Improved monitoring and enforcement Improved ability to implement various international agreements	September-December 2013	**Lead**: Customs and Excise Department **Partners**: BSS, Foreign Affairs	**<5000**

7 Consumer products

A number of concerns have been raised that relate to the consumer products sector and in particular the awareness of consumers of the hazards posed by chemicals and the appropriate methods for storing, handling, using and disposing of chemicals. The Situation Analysis and the CT survey revealed that the general public: can access a wide range of industrial chemicals in stores; are not familiar with the labels; and engage in many unsafe practices including “smelling” the chemicals in order to determine whether they are hazardous. It is also reported that some housekeepers in hotels and some homeowners have a practice of mixing bleach with other cleansers, which could be potentially hazardous through the release of hazardous gases. Additionally, shops are able to store large quantities of these chemicals without a licence and emergency responders are not informed about the chemicals being stored. Businesses rely heavily on the label to communicate hazard information and do not ensure that SDS or other guidance material is provided with purchases.

There is currently very little CSO involvement in chemicals management, and therefore no specific non-governmental agency can be readily identified to take the lead in addressing chemicals management from the consumer perspective.

There is legislation such as the Consumer Protection Act that addresses the labelling of consumer products. However, this piece of legislation references the BNS which do not comply with all of the GHS requirements. Moreover, the Fair Trading Commission, the agency that governs the Consumer Protection Act, only becomes involved with issues pertaining to the GHS if a consumer bought a product that was inappropriately labelled and was injured as a result.

7.1 Capacity building

Building capacity is a critical starting place for local CSOs. Although these initiatives should be CSO led, the fact remains that chemicals management and implementation of the GHS is not a priority for this sector at this time. Therefore, the EPD will have to partner with key CSOs to convene a training workshop specifically focused on the following areas:

- GHS comprehensibility.
- Provision of the information and skills required to lobby for legislative changes to address problems such as ensuring that the labelling elements of the GHS are used consistently on goods imported, sold and exported.
- Provision of information and skills to facilitate monitoring the accessibility of hazard communication materials and labels on goods purchased in Barbados.

7.1.1 Roles and responsibilities

Distributors are responsible for ensuring that labelling remains consistent from manufacturer to consumer (UNITAR-ILO, 2010) and Government is responsible, through the Department of Commerce, for monitoring and enforcing the use of labelling standards. The inability to adequately enforce existing legislation because of personnel issues has already been discussed in Section 3.2 and therefore there is an important role for consumers and a consumer protection organization to play in lobbying for improvements and monitoring implementation of standards.

7.1.2 Proposed Strategy

The proposed activities aim to strengthen the capacity of consumer protection CSOs in support of the implementation of the GHS.

The following tables outline the activities associated with this strategy along with those responsible for the activities, outputs and timeframes.

STRATEGY 13: STRENGTHEN CAPACITY OF CONSUMER PROTECTION CSOS

Objective 1:	**CSO capacity building training workshop**			
Activities	Outputs	Timeframe	Responsibility	Budget
Identify relevant CSOs and create a database of relevant info inclusive of mandate **Identify and contract consultant**	Database of CSO created Consultant contracted	October 2014	**Lead**: EPD **Partners**: CMAG, NGOs, UWI, BCC, BNSI, Labour Department	**<$5,000**
Conduct a gap analysis to establish how their existing mandate can be expanded/ complimented by activities related to the GHS	Needs of CSOs assessed	October 2014	Consultant	**<$5,000**
Adapt training materials to suit the specific CSO requirements	Training materials prepared	November 2014 to January 2015	Consultant	**$5,000 to 50,000**
Plan & conduct training workshops	Training of CSOs conducted Increase ability of CSOs to advocate for proper labelling of hazardous materials	February to April 2015	Consultant	**$5,000 to 50,000**
Identify focal points within CSOs to follow up with guidance on mainstreaming consumer protection	Greater involvement of CSOs in the implementation of the GHS	May 2015	**CSOs**	**<$5,000**

activities into the organisations' activities

7.2 Public awareness

Members of the public receive limited information and training on how to store, use and dispose of the chemicals that are freely available to purchase. The CT survey showed that while consumers are aware of and familiar with labels, they are not using them. Many of these issues have already been addressed in Section 3.4. Some of the most common recommendations from CT respondents were: (i) to educate the public about the GHS, its communication tools and about SDS; (ii) and where necessary, provide relevant training.

A broad based consumer awareness programme should be implemented on chemical hazards that could include the following:

- Attractively designed posters that explain the GHS words and pictograms could be strategically placed adjacent to areas where chemicals are sold, in hardware stores and supermarkets. It could also be mandatory to provide a pictogram chart that explains the symbols and words, to consumers who purchase certain categories of chemicals.
- Implementation of a chemicals awareness week, which can include a diversity of activities, including:
    - Competitions where members of the public can win prizes if they correctly identify the various pictograms and words of the GHS. This could be done using multiple media – television, radio and social media such as Facebook.
    - Chemical safety public service announcements that discourage unsafe practices such as smelling chemicals to identify contents and mixing of household chemicals. Also announcements that demonstrate the utility of information on the label and SDS such as storage and precautionary statements.

By raising awareness of the importance of labels and the utility of information on the label and in the SDS it is anticipated that more people would use the information to engage in safer chemical handling and use, rather than rely on their own knowledge or experience. At the same time, it is possible that the increased awareness will result in greater demand for a consumer protection advocacy organisation.

7.2.1 Roles and responsibilities

Government can build on the larger awareness campaign described in Section 3.5 to ensure that direct consumers of chemicals receive the information they need or are well informed to ask for the information. There is an important opportunity for businesses to be more pro-active in sharing information rather than relying solely on the labels or only providing information when requested. SDS or shortened versions of the SDS could also be made available and signage can be installed in shops.

The Barbados Association of Non-Governmental Organisations (BANGO) is an umbrella organisation for local NGOs and the Caribbean Policy Development Centre (CPDC) is an umbrella organisation for regional NGOs. These agencies would be well placed to facilitate networking and alliances to spread information on the GHS generally and also among NGOs. They could also lobby the government to accelerate the implementation of the GHS, and participate in the monitoring of the implementation process. Consequently, such agencies will have to be closely involved in the activities surrounding the implementation of the GHS.

7.2.2 Proposed Strategy

The activities put forward aim to raise awareness of consumers to the requirements and use of the GHS.

The following tables outline the activities associated with this strategy along with those responsible for the activities, outputs and timeframes.

STRATEGY 14: IMPLEMENT A CONSUMER FOCUSSED AWARENESS CAMPAIGN

Objective	**Consumer focused public awareness campaign**			
Activities	Outputs	Timeframe	Responsibility	Budget
Prepare TOR, tender and hire a consultant to prepare a broad based awareness programme	Consultant contracted	January to April 2014	**Lead**: CMAG/EPD **Partners**: GIS, Academic Board, BEC, Electronic and print media organisations	
Creates/prepares broad-based programme in accordance with the TOR and inclusive of materials in varied formats for print and electronic media for schools etc.	GHS awareness programme developed	May to July 2014	Consultant	**$55,000 to $100,000**
Obtain approval from CMAG for awareness programme	GHS awareness programme approved	August 2014	Consultant	**Nil**
Launch of	Consumers with	September 2014	Consultant	**$100,000**

programme in phases	improved ability to read labels on hazardous materials Improved safety practices when handlings hazardous materials			**to $500,000**
Independent survey to assess efficacy of programme	Required amendments to awareness programme identified	March 2015	EPD	**$5000 to 50,000**

8 Conclusion

This National Implementation Strategy presents the activities required to facilitate implementation of the GHS in Barbados. Inevitably, some of the activities address wider chemicals management issues that must be dealt with in order to facilitate implementation of the GHS. The timeframes proposed by the stakeholders at the National Workshop have been reviewed and organised in conjunction with the results of the prioritisation exercise which was also completed at the National GHS Workshop. The final action plan therefore suggests a completion date of 2017. This is shown graphically in the Gantt chart below.

The timeline shows that the next logical step is the train the trainers event, which has already been initiated and is scheduled for early 2013. Training in the other sectors can commence as soon as the train the trainers has taken place. The national standards can also be amended to comply with the GHS as soon as possible since this is not dependent on any other activity.

The proposed oversight committee has been identified as the lead for a number of the activities, and must therefore be established and convened as a distinct priority. Once the oversight committee has been established, the EPD will have a more structured body to work with to determine responsibilities and share the workload.

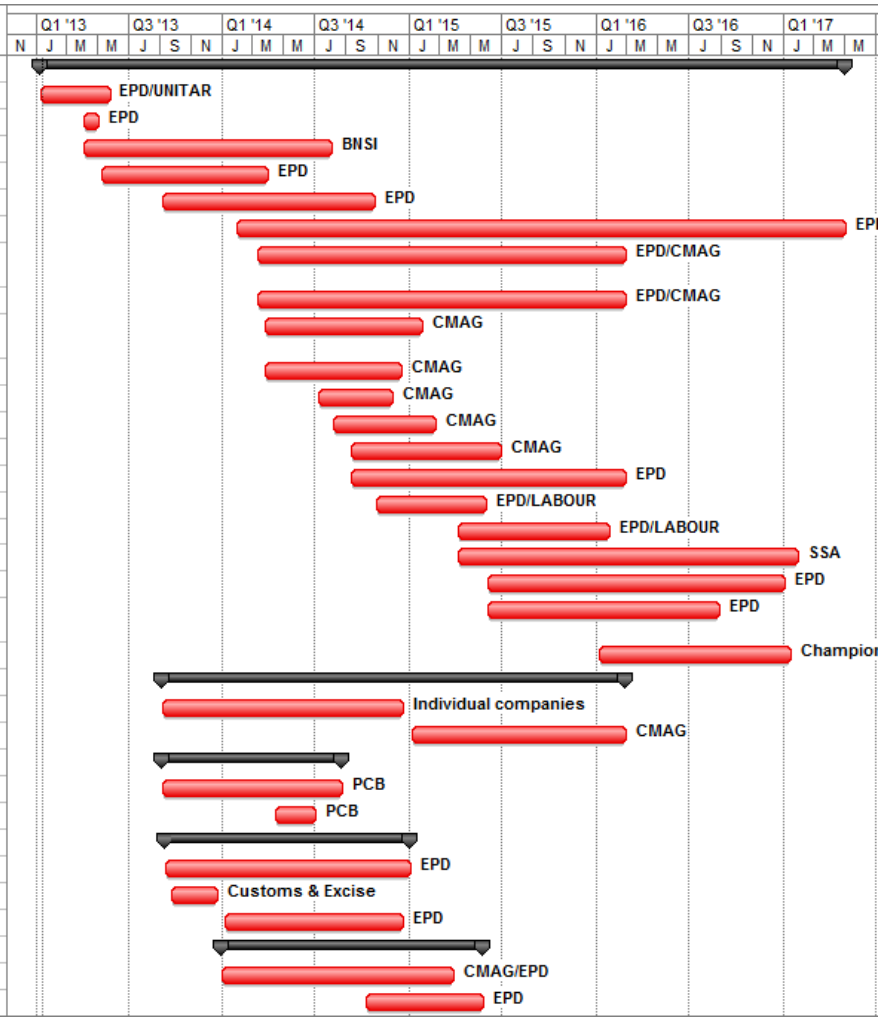
It has been acknowledged throughout this process that legislative change in Barbados is slow and therefore activities have been identified wherever possible that do not rely on legislation in order for progress to be made. Some legislative changes will however still be required, and therefore this activity should commence as soon as practicable, even though it can be expected to take the longest for completion.

Public awareness has effectively commenced with this process as well as other activities being carried out by the EPD. Efforts can however become more intense once the training and capacity building activities take place within the various sectors and must be continued throughout the implementation process and beyond implementation.

The budget estimates put forward by the participants suggest that between $1.7 and $4.5 million is needed over the four years of the implementation phase to implement all activities. This may seem like a considerable amount of money, but it must be remembered that many of the activities will have other, far reaching benefits in terms of: improved health and safety;

improved chemicals management, especially for chemical waste disposal; and improved control of chemicals entering Barbados which will help in the implementation of other relevant international conventions.

Task Name
Cross sectoral
Establish a cadre of GHS trainers in Barbados
Establish a chemicals management network
Consolidate and amend existing standards
Establish an oversight committee
Undertake a cross-sectoral awareness campaign
Consolidate and amend existing laws with reference to GHS
Create chemical management post(s) within relevant government departments
Identify temporary human resources to support the GHS
Develop guidance materials on roles of different government agencies with regard to the GHS
Raise awareness about procedures for hazardous waste disposal
Establish a champion
Establish a private sector/CSO network
Create a chemicals management policy paper
Establish a database of chemical data
Develop mechanism for providing compliance incentives
Provide technical assistance to encourage compliance
Establish a functional hazardous waste handling facility
Strengthen the capacity of the various inspectorates
Develop age and developmentally appropriate education modules for incorporation into curricula
Strengthen consumer protection legislation
Industry
Undertake regular and consistent training within the industrial sector
Establish voluntary guidelines for workplace management of SDS
Agriculture
Undertake targeted training of agrocultural stakeholders
Increase staffing of the PCB
Transport
Improve the capacity of stakeholders to implement the GHS
Enhance value and accuracy of the HS data
Improve accuracy and utility of information collected by the HS system
Consumer products
Consumer focussed public awareness campaign
CSO capacity building training workshop



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