Developing a National GHS Implementation Strategy

A Guidance Document to support implementation of the Globally Harmonized System of Classification and Labelling of Chemicals (GHS)

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International Labour Organization

IOMC
INTER-ORGANIZATION PROGRAMME FOR THE SOUND MANAGEMENT OF CHEMICALS
A cooperative agreement among FAO, ILO, UNEP, UNIDO, UNITAR, WHO and OECD

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Foreword

The GHS is a key tool for improving chemicals management, for the implementation of international agreements, and for sustainable development).

GHS is the true backbone of chemicals management and its importance cannot be underlined enough! As a system that ensures chemical hazards are identified and classified consistently, it sets universal standards for protective measures that prevent exposure. Through product labels and safety data sheets, the communication of hazards helps to ensure chemicals can be used safely, and safeguards people's health and the environment. As a recognised, globally-agreed framework, GHS is also integral for reducing international trade barriers and the administrative burden on companies.
(Bjorn Hansen, Executive Director, ECHA, January 2022)

UNITAR and ILO, through the Global GHS Capacity Building Programme, have long-emphasised the importance of the implementation of the GHS and have been actively involved since the GHS was adopted in 2002. In that same year, Heads of State and Government at the World Summit on Sustainable Development encouraged countries to implement the GHS with a view to having the system fully operational by 2008.

In addition, at the International Conference on Chemicals Management (ICCM4) in 2015, an overall orientation and guidance for achieving the sound management of chemicals and waste was endorsed, with one of the 11 basic elements being:

- Collection and systems for the transparent sharing of relevant data and information among all relevant stakeholders using a life cycle approach, such as the implementation of the Globally Harmonized System of Classification and Labelling of Chemicals

Furthermore, the High Ambition Alliance for chemicals and waste (in 2019) stated that it is essential that the GHS be implemented by all countries.

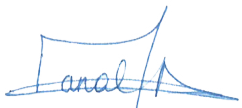
Moreover, the ILO (2021) states that "the continued implementation of the GHS as well as International Labour Standards on chemicals and occupational safety and health in general, are important steps towards achieving the 2030 Sustainable Development Goal 8 on Decent Work and Economic Growth".

FAO, in their 2022 update to the Guidance on good labelling practice for pesticides notes that "the GHS has become the international standard for classification and labelling of chemicals, including pesticides... This guidance recommends use only of the GHS for pesticide labelling". Further to this, "FAO and WHO therefore strongly recommend progressive adoption of the GHS for classification and labelling of pesticides".

The global community continues to promote implementation of the GHS, with some 70 countries implementing the system in legislation, by early 2022. ILO and UNITAR are committed to increasing implementation of the GHS around the world.

This guidance document was first developed in 2005, and offers a comprehensive guide to "Developing a National GHS Implementation Strategy", as a key step on the journey to implementing the GHS.

We would like to thank our donors – including the Governments of Germany and Switzerland – for their support for this revision, and the Programme Advisory Group (PAG) for their continued expert feedback and support.



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About this Guidance Document

This document is intended to provide guidance for countries that choose to develop a National GHS Implementation Strategy through a systematic, country-driven process. The document has three parts. Part A provides a background and context for the GHS. It first introduces the concept of chemical hazard communication and provides an overview of key GHS provisions including an overview of the hazard classes and details on hazard communication. Part B introduces issues related to coordinating GHS capacity building and implementation, from the key sectors affected by GHS implementation (i.e. workplaces, agriculture, transport and consumer products) to the key actors involved in GHS implementation at the national level (i.e. government, business and industry, and civil society). Part C provides guidance on developing a National GHS Implementation Strategy. A number of annexes provide further details on the context of the GHS and additional resources for further information on the system.

Within the document, suggestions are provided to assist in conducting a situation and gap analysis, comprehensibility and awareness raising, legal analysis and developing a legal implementation framework, and sector-specific implementation plans. These elements may then be combined to create a National GHS Implementation Strategy (NIS) document. Information on GHS implementing activities and regional cooperation are also covered.

The guidance is flexible in nature – it is not meant to be prescriptive. Each country can consider and make decisions regarding the issues raised in accordance with its own preferences, priorities and national circumstances. While each activity is explained in detail, the actual process of GHS implementation will vary depending on each country's situation. Therefore, not all steps may be appropriate for each country, and some steps can be adapted or modified as necessary. It is hoped that users will find that this guidance plays a constructive and practical role in implementing the GHS at the national level.

PART A

Background to the GHS

Part A of this document introduces the Globally Harmonized System of Classification and Labelling of Chemicals (GHS) and chemical hazard communication. Information is also provided on the relationship of the GHS to sustainable development and for relevant international chemicals management agreements.

1. Introduction to the GHS

The production and use of chemicals are fundamental economic activities and important for the development of all countries. Directly or indirectly, chemicals affect the lives of all humans and are essential to our food supply (e.g. fertilizers, pesticides, food additives, packaging), our health (e.g. pharmaceuticals, cleaning materials), and our daily existence (e.g. appliances, fuels). However, there are potential adverse affects to human health and the environment from use of and exposure to these chemicals.

The first step in safe chemical use is to identify the hazards they may pose such as physical hazards or hazards to human health and the environment (e.g. if they are flammable, or can cause cancer or be hazardous to aquatic environments) and to communicate appropriate precautions and measures to be taken to handle or use the chemical safely or in the event of an accident (i.e. transferring information through hazard communication). This inherently complex knowledge must be organised so that essential information on the hazards and corresponding control measures can be identified and conveyed to the user in a format that is easy to understand. The hazard classification and labelling process, along with appropriate training and education, is a primary tool for establishing effective information transfer. Understanding the degree of hazard a chemical represents leads to the correct control action(s) and safe use. This knowledge should be available within reasonable effort and cost.

Chemical hazard information can be conveyed in a variety of ways, for example, in the form of a label on a container; in the form of safety data sheets (SDS) provided with the hazardous chemical; or through placards, posters or markings. This information generally includes an indication of the hazard(s) in text form and/or with symbols. In addition to the hazard information, information may also include statements regarding safe use or handling, or other types of precautionary measures.

In the workplace, for example, it is the responsibility of the employer to provide safety data sheets (SDS) to workers, and ensure correct understanding by providing worker trainings. In the transport sector, documents supplement the information on placards or markings: information is contained in the transport document and emergency response may be derived from the "UN" number indicated on packages or on placards through consultation of specific booklets or databases adapted to the mode of transport. In the context of most workplace and transport chemical hazard communication systems, user training to access the information and take proper steps for protection is also routinely provided. In consumer settings, however, the label may be the most valuable communication mechanism available to provide information to promote safe handling and use.

One important tool for addressing the need for safe chemicals management is the GHS. The GHS is an international standard for chemical classification and hazard communication[1]. It is also a tool that countries can use as a basis for establishing comprehensive national chemical safety programs. The GHS is a logical and comprehensive approach for:

» Defining chemical hazards;
» Applying hazard criteria, using an agreed methodology, to classify chemicals; and
» Communicating hazard information on labels and Safety Data Sheets (SDS).

The GHS has the ultimate goal of ensuring that information on chemical hazards is made available to workers and consumers in a harmonized and comprehensible format (on labels and in SDS) in countries around the world. It represents an important effort to harmonize national systems worldwide, in order to improve chemical safety across all relevant sectors and enhance the protection of human health and the environment. Countries have been encouraged to use GHS as a key resource for activities on chemical hazard communication, in accordance with their own needs and capabilities.

1.1 The GHS as a foundation for chemical safety

The GHS can play a central role in conveying information about chemical hazards for workers and consumers along the entire chemical supply chain, provide all countries with a consistent means of classifying and labelling hazardous chemicals, and help to ensure that coherent information is provided on all imported and exported chemicals worldwide.

Figure 1: GHS contibuting to chemical safety

The GHS classification and hazard communication elements can be seen as a key, first step in programmes to ensure the safe use of chemicals, as shown in Figure 1. This step underscores the importance for the safe use of chemicals of 1) identifying intrinsic hazard(s) (i.e. classification) and then 2) to communicate that information.

[1] The GHS document – sometimes referred to as the "Purple Book" – in all six UN languages, as well as meeting documents and other information for the SCEGHS, can be found at the GHS Secretariat website at: https://unece.org/transport/standards/transport/dangerous-goods/ghs-rev9-2021 and https://unece.org/about-ghs

1.2 International management of the GHS

Responsibility for the maintenance, updating and promotion of the GHS at the international level rests with the United Nations Sub-Committee of Experts on the GHS (UNSCEGHS), and the United Nations Subcommittee of Experts on the Transport of Dangerous Goods (UNSCETDG).[2] The UNSCETDG also continues to manage the United Nations Recommendations on the Transport of Dangerous Goods (UNRTDG). The two groups are managed by an ECOSOC "parent" committee called the Committee of Experts on the Transport of Dangerous Goods and the GHS (UNCETDGGHS). This group is responsible for strategic issues and provides administrative and oversight functions. The UN Economic Commission for Europe (UNECE) provides the Secretariat functions for both instruments. Countries may participate in the work of the UNSCEGHS and UNSCETDG as full members or as observers. Membership is decided by ECOSOC, and observer countries may apply to become full members of those subcommittees when they are committed to provide expertise on a regular basis.[3] UNITAR and ILO are the designated focal points for capacity building on the GHS. At the national level, countries will need to identify a "competent authority" responsible for implementing the GHS and determining how the various elements of the GHS will be applied.

1.3 Benefits of the GHS

Prior to implementation of the GHS, the global situation was a patchwork of sometimes conflicting and diverse national and international requirements, particularly among major chemical producing countries. Additionally, some countries – or certain sectors in some countries –lack an appropriate system. The result was increased costs to industry (needing to comply and re-label products for different markets) and government (needing to regulate), as well as potential increased risk to workers and consumers regarding the various hazards due to the differences in hazard communication methods. The GHS was created to harmonize the different or lacking hazard classification and communication systems within a country and between countries and regions.

Implementation of effective chemical hazard communication based on the GHS provides benefits for governments, companies, workers, and members of the public. The GHS has maximum value if accepted in all major regulatory systems for chemical hazard communication. If the GHS is implemented globally, consistent information will be communicated on labels and SDS with a number of benefits for human health and the environment, as well as for business and industry.

Global benefits

- Improved consistency and comprehensibility of hazard information to reduce harmful exposure to chemicals and chemical related accidents;
- Decreased global inconsistencies in the information provided to users;
- Greater confidence in the quality and content of chemical information received from other countries;
- Improved transparency for international trade in chemicals whose hazards have been identified on an international basis;
- Protection of workers from hazardous substances, leading to reductions in work-related diseases, deaths and injuries, as well as industrial accidents;

[2] For more information: https://unece.org/transport/dangerous-goods/un-model-regulations-rev-22

[3] Interested countries should contact the UNECE for further information at: https://unece.org/contact-us-22

- More effective use of scarce resources (e.g., reduced animal testing, avoiding the need for testing and evaluation against multiple classification systems, regulatory authorities not having to repeat the work of other authorities);
- Assurance of consumers and workers' "right to know" about the hazards and identities of chemicals; and
- Improved global environmental management and protection.

Benefits to governments

- Lower health care costs;
- Improved protection of workers and the public from chemical hazards;
- Avoiding duplication of efforts in creating national systems;
- Reduction in the costs of enforcement; and
- Improved reputation on chemical issues both domestically and internationally.

Benefits to industry

- Safer work environments and improved communication with employees;
- Increased efficiency and reduced costs in compliance with hazard communication regulations;
- Maximization of expert resources with minimum labour and costs;
- Fewer accidents and illnesses; and
- Improved corporate image and credibility.

Benefits to workers

- Improved safety and health for workers through consistent and simplified communications on chemical hazards and practices to follow for safe handling and use;

Benefits to civil society

- Greater awareness of hazards, resulting in safer use of chemicals in the workplace, everyday life and in the home.

1.4 Contributions of the GHS to Sustainable Development

Implementation of the GHS may also have broader benefits related to international and national issues of sustainable development. The United Nations' 2030 Agenda for Sustainable Development has the sound management of chemicals and waste integrated within it. Most notably, Goal 12.4 (aligning with the goal of the World Summit on Sustainable Development in Johannesburg, South Africa from 2002) seeks to "...achieve the environmentally sound management of chemicals and all wastes throughout their life cycle, in accordance with agreed international frameworks, and significantly reduce their release to air, water and soil in order to minimize their adverse impacts on human health and the environment". [4]

Global policy initiatives have resulted in binding conventions (see section 1.5), voluntary schemes (e.g. GHS and SAICM) and capacity building efforts. Along with providing a tool for achieving international sustainability goals, GHS implementation can help to protect water supplies, ensure safe transport of chemicals and facilitate trade. Further information on the contributions of GHS to sustainable development can be found in Annex 2.

1.5 The GHS and other chemical management initiatives

A number of international management efforts and agreements exist that are relevant to sound chemicals management and GHS implementation.

Numerous ILO Conventions, which are normative, binding instruments, deal with addressing chemical risks and hazards at the workplace. The Chemicals Convention, 1990 (No. 170) and Chemicals Recommendation, 1990 (No. 177), are the main ILO instruments addressing this issue. They are both general in scope in order to cover all risks and hazards relating to chemicals. Convention No. 170 provides for a comprehensive national framework for the safe use of chemicals at work, including the formulation, implementation and periodic review of a coherent national policy. The Convention also refers to the importance of evaluating chemical hazards and providing hazard information, especially in the workplace. ILO Chemicals Recommendation 177 aims to protect workers against the risks associated with the use of chemicals in the workplace and include requirements for classification and labelling. Both instruments also provide for the responsibility of employers and for the duties and rights of workers at the level of the undertaking, as well as specific responsibilities of suppliers and exporting states.

A policy framework for international action on chemicals management is the Strategic Approach to International Chemicals Management (SAICM).[5] The importance of implementing the GHS is recognised in the Overarching Policy Strategy (OPS) of SAICM. The GHS is also included as a SAICM work area in the Global Plan of Action, as well as the Overall Orientation and Guidance to guide implementation:

> *"Collection and systems for the transparent sharing of relevant data and information among all relevant stakeholders using a life cycle approach, such as the implementation of the Globally Harmonized System of Classification and Labelling of Chemicals"*

[4] https://www.un.org/sustainabledevelopment/sustainable-consumption-production/

[5] http://www.saicm.org

The Rotterdam Convention, which allows countries to monitor and control trade in certain hazardous chemicals, has close links to hazard identification and communication issues, and the GHS. The Convention requires countries to ensure that listed chemicals used for occupational purposes have a safety data sheet that follows an internationally-recognised format.

Additionally, the Stockholm Convention encourages parties to use SDS, reports and other means of communication.

The Basel Convention, which deals with transboundary movement of hazardous waste, has established a correspondence working group with the UNSCEGHS in order to promote further synergies between the two bodies.

As the UNSCEGHS and the UNSCETDG cooperate closely together, the UN Recommendations on the Transport of Dangerous Goods and the Model Regulations annexed thereto take full account of the GHS with respect to hazards that have to be regulated under transport legislation. As a result, all agreements and conventions that have been developed by organizations or other entities of the UN system to regulate international transport of dangerous goods by air, sea, road, rail, inland waterways, as well as national regulations when they are based on the UN Recommendations, ensure implementation of the GHS in the transport sector-

Further information on relevant international agreements can be found in Annex 2.

2. Important provisions of GHS

The GHS document, known informally as "the Purple Book", outlines the provisions of the GHS in four parts and with a number of annexes. The text is updated regularly with the agreement of the UN Sub-Committee of Experts on the GHS; traditionally, every two years. Therefore, new editions will continue to be published on a regular basis to reflect changes agreed within the sub-committee. The subsections below provide a brief overview regarding key provisions of the GHS. Further explanations can be found in the UNITAR companion guide to the Purple Book, "Understanding the Globally Harmonised System of Classification and Labelling of Chemicals (GHS)" available at: https://unitar.org/sustainable-development-goals/planet/our-portfolio/globally-harmonized-system-classification-and-labelling-chemicals or upon request from UNITAR.

2.1 Scope

The GHS covers all hazardous chemicals. For hazard communication, the mode of application of hazard communication elements may vary by product category or stage in the life cycle. Pharmaceuticals, food additives, cosmetics, and pesticide residues in food are not covered by the GHS in terms of labelling at the point of intentional intake. However, these types of chemicals are covered where workers may be exposed, and, in transport if potential exposure warrants.

2.2 Data and testing

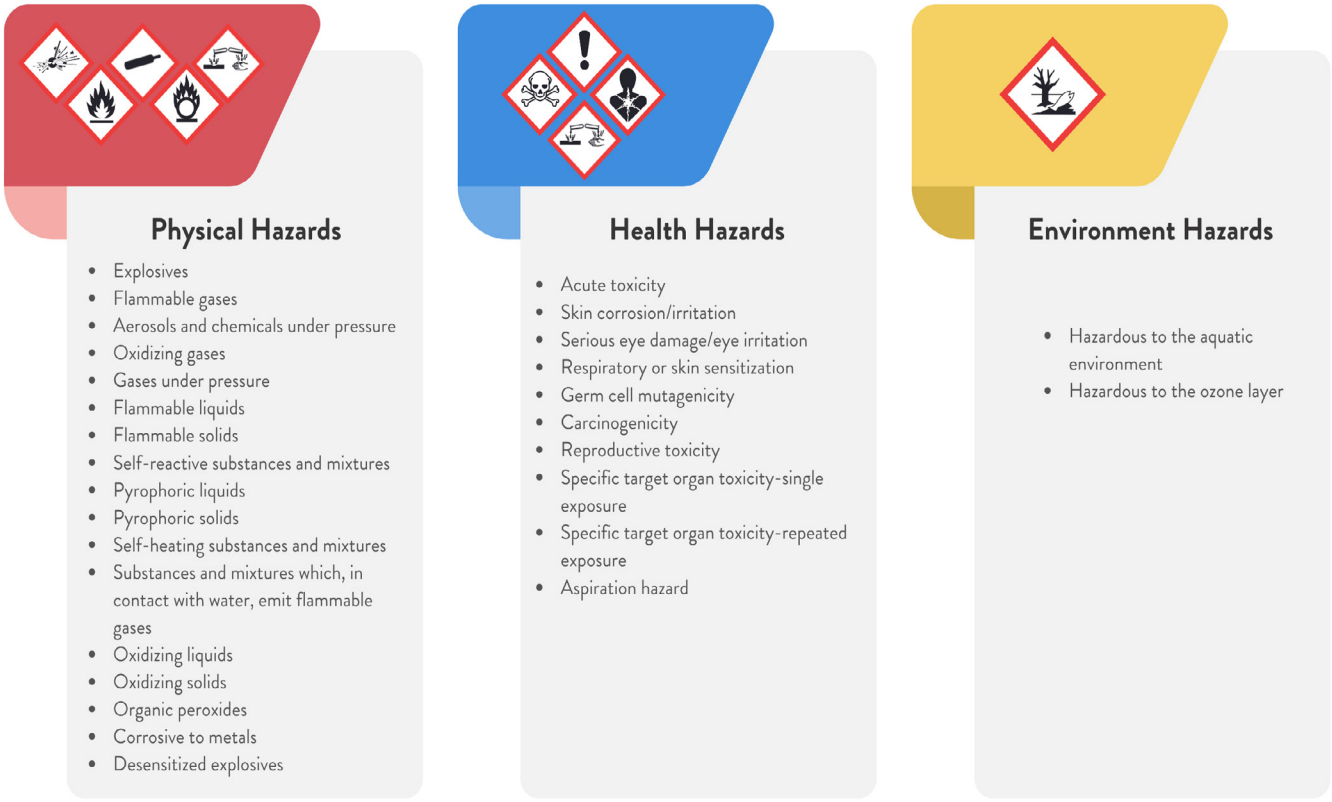
Since the harmonised classification criteria of the GHS are developed based on existing data, using the GHS does not require re-testing chemicals for which accepted test data already exists. The information for classification may be obtained from tests, practical experience, literature, or the information found in other systems, such as that provided directly by industry or found in the international rules on the transport of dangerous substances. Therefore, in principle, the GHS does not require any additional testing and can be applied using already-established data.

2.3 Classification requirements

The GHS describes hazard classification as generally involving three steps:

1. Identification of relevant data regarding the hazards of a substance or mixture;
2. Subsequent review of data to ascertain the hazards associated with the substance or mixture; and
3. A decision on whether the substance or mixture will be classified as a hazardous substance or mixture and the degree of hazard, where appropriate, by comparison of the data with agreed hazard classification criteria.

The types of hazards classified by the GHS are divided into the classes shown in Box 1.



Box 1: Classification hazard classes in the GHS (as per the 9th revision)

2.4 Chemical hazard communication tools included in the GHS

Once a substance has been classified (e.g., substance X is found to be toxic or flammable), its hazards need to be communicated to target audiences. The main tools of chemical hazard communication are labels and safety data sheets (SDS). These tools contain hazard information in the form of hazard pictograms, signal words and other communication elements.

Labels

A label is an appropriate group of written, printed or graphic information elements concerning a hazardous product, selected as relevant to the target sector(s), that is affixed to, printed on, or attached to the immediate container of a hazardous product, or to the outside packaging of a hazardous product. It is designed to provide information on the inherent dangers of that chemical to persons handling or using the chemical. The label is the basic tool to keep the user informed of the hazards posed and basic safety precautions. The label can be regarded as a snapshot of the chemical hazard(s) to be used as a primary message or alert for the worker who is then directed to the SDS for more detailed information. This pattern should be reinforced through training in the hazard communication system. Finally, in communicating the potential hazard of consumer products, the label plays the major role in the provision of information. It is designed to provide the user with information about the potential physical, health and environmental chemical hazards of the product and basic advice on using the chemical safely.

Safety Data Sheets (SDS)

The chemical supplier (e.g., a manufacturer, importer or formulator) should be able to provide detailed information about the substance in a document called the safety data sheet (SDS). In certain countries, the supplier has the obligation to provide information in an SDS on chemicals' physical, health and environmental hazards, labelling, safe use and handling, among other things. SDS have been prepared on many hazardous substances and mixtures and should go together with the product to the user in the workplace.

The SDS should provide comprehensive information about a chemical substance or mixture for use in a workplace setting. It can be used by both employers and workers as a source of information about hazards, including environmental hazards, to obtain advice on safety precautions, and most importantly to identify appropriate risk reduction messages for the use in question. Advice by the supplier on the safe use of the chemical by the user requires information on the workplace situation of the user and expected exposures. The information in an SDS therefore acts as a reference source for the effective management of hazardous chemicals in the workplace.

The SDS is product related and, sometimes, may not be able to provide specific information that is relevant for a specific use. In other cases, the SDS may be specific and detailed for a particular use. The SDS is a resource that enables an employer to undertake worker and environmental protection activities, including training, that are specific to the individual workplace.

In the context of the GHS, the SDS should be produced for all substances and mixtures that meet the criteria for physical, health or environmental hazards under the GHS.

2.5 Visual elements of hazard communication

GHS labels and SDS contain pictograms, for a substance or mixture, that represent the hazard and are assigned to a specific category(ies) within a hazard class. Box 2 provides a table of pictograms with corresponding hazard classes.

Box 2: GHS Pictograms and Hazard Classes

2.6 Capacity building provisions of the GHS Purple book

The importance of comprehensibility

The Purple Book notes in section 1.4.4 that comprehensibility of the information provided was an important issue in developing the system. The purpose of providing chemical hazard information is to encourage the user to follow appropriate precautionary measures and avoid the occurrence of an adverse effect from handling or using the chemical. Comprehensibility refers to the ability of the individual reading a label, warning, or safety data sheet to understand the information sufficiently to take necessary action. Comprehensibility is different from 'readability' because the latter is simply a measure of the sophistication of the written material, while the former is a measure of how well the receiver of the information understood it. For example, a label should be developed with a specific target audience in mind, given differences in education levels and experiences of potential chemical users.

Achieving comprehensibility does not ensure that the informed individual will take the actions prescribed in the warning or label. The reason is that behaviour is affected by a complex mix of attitudes, experiences, motivations and potential consequences that are specific to each individual in a particular situation. Moreover, users of chemicals in diverse countries may have very different cultural backgrounds or socio-economic conditions from those countries where many hazard communication tools have been developed, and thus particular attention should be paid to the use of appropriate tools and training.

Training and awareness raising to ensure effective hazard communication

In addition to providing labels and SDS, a number of supportive measures need to be considered and implemented to ensure the success of an effective chemical hazard communication system. For example, the GHS refers in section 1.4.9 to the importance of training all target audiences to recognize and interpret label and/or SDS information, and to take appropriate action in response to chemical hazards. Training requirements should be appropriate for and commensurate with the nature of the exposure. Key target audiences include emergency responders, those using chemicals in the workplace, involved in label and SDS preparation, and the transport and supply of hazardous chemicals, and the general public. Consequently, training requirements for producers and users will differ

Important to remember!

Any GHS capacity building or implementation efforts should include awareness raising and training elements in order to inform stakeholders about the importance of the GHS and chemical safety. In UNITAR/ILO GHS project countries, partners are encouraged to engage relevant business and industry, workers and civil society groups to promote understanding of GHS elements.

Consumers should be subject to educational programmes regarding the interpretation of label information on products they use. Other tools, such as awareness raising campaigns, the use of posters, brochures and the media, can all assist in ensuring that the chemical hazard communication process improves chemical safety.

PART B

Coordinating National GHS Implementation

Part B of this document introduces the key sectors affected by GHS implementation at the national level (i.e. workplaces, agriculture, transport, and consumer products) as well as important actor groups involved in, and responsible for, GHS implementation (i.e. government, business and industry, workers' organisations and civil society). Further, issues related to coordination of stakeholders and activities are also addressed.

3. Considerations for national GHS implementation

Although the GHS is a tool that harmonizes chemical classification and hazard communication worldwide, implementing the GHS is likely to have different implications for different countries, depending on a number of factors, such as existing industrial infrastructure, legal frameworks and implementing capacities.

3.1 Differences in industrial development

A non-chemical producing country would not need to develop the depth of GHS implementing capacity in comparison to other countries. For example, significant progress towards GHS implementation can already be made by introducing import control measures requiring GHS-based labelling and SDS, as well as occupational GHS requirements. A country with major chemical production capacities, however, would need to develop a more comprehensive approach to GHS implementation, including development of capacity for hazard identification and hazard assessment. Review of a National Profile and preparing a situation analysis would assist in the process to understand the level of complexity that may be required.

3.2 Differences in existing capacity across countries

For a country which has no national chemical hazard communication system in place, implementation of the GHS provides an opportunity for (and may even require) development of basic infrastructure for chemical hazard communication, including development of basic legislation for classification, labelling, SDS preparation and training. A country with an existing regulatory scheme for classification and labelling would need to align legal criteria for classification with criteria provided by the GHS, and making sure that requirements for preparing SDS and labels are GHS-compatible.

3.3 Differences in capacity across sectors

Existing capacities for GHS implementation may, within the same country, be different in each of four sectors identified in the scope of the GHS. For example, a country may have a chemical hazard communication system in place for the transport sector, while relevant requirements for consumer product chemicals may be lacking. Thus, a differentiated approach is warranted where each of the four sectors affected by the GHS are addressed separately, while not ignoring important potential cross-sectoral issues.

3.4 Engagement of relevant institutions and stakeholders

Each of the four sectors affected by GHS implementation often have different institutions and stakeholders. Thus, addressing sector-specific considerations would involve identification of the appropriate actors in government, business and industry, and civil society. For example, ministries of transport are typically taking the lead for the transport sector, while ministries of health often are concerned with the consumer product sector. In addition, ministries of labour have an important role in ensuring the application of GHS across workplaces, Similarly, the chemical industry is sometimes divided into associations that deal with industrial chemicals and agricultural chemicals respectively. Civil society groups, workers' organisations, consumer groups and NGOs can also be divided by sectors, or may cover multiple sectors. Thus, careful attention should be given to identifying the appropriate actors for each of the sectors affected by the GHS.

4. Key sectors affected by GHS implementation

Although the GHS is a tool that harmonizes chemical classification and hazard communication worldwide, implementing the GHS is likely to have different implications for different countries, depending on a number of factors, such as existing industrial infrastructure, legal frameworks and implementing capacities.

4.1 Workplace

Chemicals produced in factories and used in workplaces are a central component to many countries' economies. However, they may pose dangers to those at risk of exposure, whether directly in the factories or in surrounding communities, and may be a hazard to the environment if released. Workers are among those most exposed to hazardous chemicals and waste in various sectors around the world, and particularly in developing countries, countries with economies in transition and in the informal economy.

It is important to emphasize that workers are not only exposed to hazardous chemicals in chemical production facilities. Rather, they can be exposed throughout all sectors, from agriculture, to mining, to manufacturing, to construction, among others. Moreover, workers are exposed to hazardous chemicals along the entire length of the supply chain, from production, to handling, to storage, to transport, to disposal and treatment of waste chemicals. Workers in factories, storage facilities, construction sites, drilling sites and at small and medium-sized enterprises (SMEs) can be at risk of exposure to

chemical hazards, for example, through a leak from barrels in storage or through airborne contamination in a factory using a particular chemical to produce another product.

The objective of hazard communication in this sector is therefore to ensure that appropriate actions are taken to provide information about these hazards and train target groups in appropriate precautionary behaviour. Employers and workers need to know the hazards specific to the chemicals used and or handled in the workplace, as well as information about the specific protective measures required to avoid the adverse effects that might be caused by those hazards. The tool most commonly used for providing this information is the label. However, the label is not the sole source of this information. It is also available through the SDS and workplace hazard and risk management systems. Workplace hazard and risk management systems should also provide training in hazard identification, precautionary measures and the use of SDS. The nature of training provided and the accuracy, comprehensibility and completeness of the information in the SDS may vary. However, compared to consumers for example, workers can develop a more in-depth understanding of hazard symbols and other types of information when properly trained.

Governments usually have the role of passing legislation to facilitate chemical hazard communication, usually via labour laws or standards, although legislation may also exist through laws relating to industrial facilities. Some countries may have also developed systems based upon other international classification and hazard communication systems, for example, via ILO Convention No. 170 and Recommendation No. 177 concerning safety in the use of chemicals at work. Key ministries typically involved include the ministries of labour, trade and industry. The private sector, such as the companies producing chemicals or managing factories that use them, are responsible for ensuring proper classification and use of labels and SDS, as appropriate. Employers are responsible for regularly training workers that may be exposed. Workers' organisations may have activities related to ensuring companies are providing appropriate information and they may conduct awareness raising and training for workers.

Scope of ILO Chemicals Convention, No . 170: Selected Articles related to the GHS

- **Art. 6, Classification:** Competent bodies must establish systems and specific criteria appropriate for the classification of all chemicals, and mixtures of chemicals, according to the type and degree of their hazards
- **Arts. 7 and 8, Labels and SDS:** Chemicals must be labelled. The labelling of hazardous chemicals must easily explain their hazards. Employers must be provided with safety data sheets (SDS) for hazardous chemicals. The format and content of labels and SDS must be prescribed by the competent body.
- **Art. 9, Suppliers:** Chemical suppliers must ensure that the requirements of Arts. 6-8 are met for the chemicals they supply.
- **Art. 10, Identification:** Employers must ensure that all chemicals are properly labelled and have SDS and that only chemicals for which a classification, labelling and SDS have been prescribed by the authority are used. In the event that they receive unlabelled chemicals and chemicals without SDS, employers must obtain the relevant information from the suppliers before using the substances. Employers must also maintain an open register of all hazardous chemicals in use, cross-referenced with the SDS. They must furthermore ensure that chemicals are used in accordance with the prescribed safety precautions.
- **Art. 11, Transfer of Chemicals:** Employers must ensure appropriate labelling when chemicals are transferred to different containers.
- **Art. 12, Exposure:** Employers must assess, monitor and record the exposure of workers to hazardous chemicals and ensure that exposure limits are not exceeded.
- **Art. 15, Information and Training:** Employers must inform workers of chemical hazards they are exposed to, instruct them on how to obtain and use the information on the label and SDS, develop safety instructions based on the SDS and train the workers on safety procedures on a continuing basis.
- **Art. 17:** Workers must comply with chemical safety instructions of employers and must cooperate as closely as possible with employers in the discharge of their responsibilities. They themselves must take all reasonable steps to eliminate or minimize chemical risks
- **Art. 19:** If parties export chemicals which are prohibited in their country for OSH reasons, they must communicate this information, and the reasons for the prohibition, to any importing country.

4.2 Agriculture

Pesticides are in widespread use around the world and may pose hazards to those producing or using them, as well as to the environment in which they are used. Agricultural workers are at risk from exposure through the use of different agricultural chemicals, such as pesticides and fertilizers. A report submitted to the UN Human Rights Council indicates that pesticides are "responsible for an estimated 200,000 acute poisoning deaths each year"[6]. Barrels containing pesticides, for example, may not be properly labelled (or repackaged without labelling) or the hazard information on the label may not be comprehensible due to linguistic reasons. Distributors or farmers spraying crops with a pesticide may not have access to, or understanding of, an SDS on that particular chemical.

The objective of hazard communication in the agriculture sector is therefore to provide appropriate information related to chemicals (e.g. pesticides, insecticides) used in this sector and to relevant target audiences (e.g. workers). The key tool used to communicate hazard information in the agriculture sector is the label. As distributors may repackage pesticides, ensuring that labels are consistent at all stages is also important. As with all sectors, training on the proper understanding and use of the label information and the chemicals is important.

Governments usually have the role of regulating chemicals use in the agriculture sector via legislation or standards related to use of pesticides, insecticides, etc. or pest management programmes. Government agencies may also provide guidance on various issues such as safe practices (e.g. for pesticide storage and disposal on farms). In some federal systems, enforcement of relevant laws may be a state of provincial responsibility. Some countries may use existing international standards as the basis for their national codes and regulations, for example the WHO Recommended Classification of Pesticides by Hazard, and the Food and Agriculture Organisation's (FAO) and WHO's International Code of Conduct on Pesticide Management (and the associated Guidance on Good Labelling Practice for Pesticides). Industry, often pesticide industry associations and individual companies that produce pesticides and other chemicals used in the agriculture sector, is responsible for appropriate labelling following national laws and standards and may provide training on the proper use of these products. Agricultural workers unions, and in some cases NGOs (e.g. concerned about negative side-effects of pesticides on the environment), may undertake activities to train farmers and farm workers on the safe use of pesticides and undertake awareness raising campaigns on the effects of pesticide use on the water supplies, plants, animals and humans that may be exposed (including unintentionally).

4.3 Transport

Chemicals and products containing chemicals are transported around the world via road, rail, water and air and may pose a hazard not only to those directly involved in their transport, but also to communities on the transit route and the environment in the case of an accident. The objective of hazard communication is therefore to ensure that those involved in the transport sector, such as workers, have information concerning general safe practices that are appropriate for transport situations. For example, a driver will have to know what has to be done in case of an accident irrespective of the substance transported (e.g. report the accident to authorities, keep the shipping documents in a given place, protect her/himself). Drivers require information concerning specific hazards in the event of

[6] https://www.ohchr.org/EN/NewsEvents/Pages/DisplayNews.aspx?NewsID=21306 accessed 25/10/2019

an accident and additional information if they also load and unload packages or fill tanks. Workers who might come into direct contact with dangerous goods in transit, for example on board ships, require detailed information. In all cases, proper markings, labels, placards and transport documents are key tools. SDS are not usually required to accompany shipments of dangerous goods in packaged form, but they may be required when the dangerous goods are carried in bulk when the crew may be involved in loading/unloading operations, e.g. on board chemical tankers. SDS established by the manufacturer are also useful to consignors and freight forwarders who have to prepare transport documentation and ensure proper marking/labelling/placarding.

The transport sector has long been a focus of international efforts on hazard communication, primarily through the UNSCETDG. This body elaborated the first internationally recognised classification and labelling system for the purpose of transporting dangerous goods; the UN Recommendations on the Transport of Dangerous Goods (UNRTDG). This means that the implementation of the GHS in the transport sector is in the form of the UN Recommendations on the Transport of Dangerous Goods, UN Model Regulations and international or national legal instruments that are based on the UN Recommendations. The UNRTDG model regulations are updated regularly, similar to the GHS updates.

The UNRTDG caters to a wide range of target audiences, although workers involved in transporting chemicals and emergency responders are the principal ones. Containers of dangerous goods will be marked with pictograms that address acute toxicity, corrosivity, physical hazards, and environmental hazards. Some elements of the GHS that address these hazards, such as signal words and hazard statements, are not required in the transport sector.[7]

Governments typically regulate hazardous chemicals in the transport sector via specific regulations related to the transport of dangerous goods, and the key authority is usually departments of transport. For international transport, legally binding international instruments apply for countries which are parties thereto, and these are usually based on the UNRTDG. Some countries also base national regulations on existing national standards such as the UNRTDG, International Maritime Dangerous Goods Code, the International Civil Aviation Organization Technical Instructions for the Safe Transport of Dangerous Goods by Air, Agreement Concerning the International Carriage of Dangerous Goods by Road (ADR), European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways (ADN), Regulations concerning the International Carriage of Dangerous Goods by Rail (RID). For domestic traffic, governments have developed their own regulations. In countries which are economically interested in or concerned by international trade of chemicals, these are usually fully in line with the UNRTDG or the related international instruments mentioned above. Nevertheless, for domestic inland transport in many developing countries, regulations for transport of dangerous goods are often not in place, obsolete or based on old editions of the UNRTDG, which causes problems for effective multisectoral application of the GHS in such countries. In some of these countries, the private transport sector (e.g. oil companies) apply the UNRTDG or ADR on a voluntary basis. For air transport, airlines which are members of the International Air Transport Association (IATA) apply the IATA Dangerous Goods Regulations, which, for legal reasons, must be consistent with the ICAO Technical Instructions, though can sometimes be more restrictive-Industry associations for specific transport modes (e.g. trucking associations, IATA) may provide members with information about compliance with national and international regulations. According to UNRTDG (Chapter 1.3), all persons engaged

[7] For more information, visit the RTDG website at: https://unece.org/transport/dangerous-goods

in the transport of dangerous goods should be trained in the contents of dangerous goods requirements commensurate with their responsibilities. This is mandatory under all international legal instruments mentioned above Unions representing transport workers may monitor the training of workers (including emergency responders) regarding relevant hazard communication tools or community groups in transit areas may conduct awareness campaigns regarding precautions to be taken in the case of an accident or emergency.[8]

4.4 Consumer products

Consumers are exposed to a wide variety of hazardous chemicals in their daily lives, such as certain bleaches, paints, dyes, garden pesticides and cleaning products. Children may also be exposed to chemical hazards via products used in the home. Ensuring the provision of comprehensible information on consumer products so that they are used appropriately is the objective of hazard communication in this sector. In the consumer sector the label in most cases is likely to be the sole source of information readily available to consumers. The label, therefore, needs to be sufficiently clear and relevant to the use of the product. Providing sufficient information to consumers in the simplest and most easily understandable terms presents a considerable challenge. The problems of making readily comprehensible information available to consumers are also made more difficult by the wide range of chemicals and uses in the home. Some products contain many dozens of chemicals all with different properties. The issue of comprehensibility is therefore of particular importance for this sector, since consumers may rely mainly on label information and would benefit from education and awareness.

Government has the responsibility to regulate consumer products, sometimes through the use of general consumer product legislation or specific regulations for food, drugs and cosmetics. Specific regulatory agencies (e.g. consumer product safety commissions) or ministries of health may be empowered and responsible for this sector. The GHS recognizes that some competent authorities may allow assessments of the risk or likelihood of injury when determining whether to convey chronic health hazards on consumer product labels. Annex 5 of the Purple Book discusses this possible narrow exception to labelling based on hazard, and the general principles that may be used to guide this process.

Companies that produce consumer products that contain hazardous chemicals are required to label their products in line with national regulations; specific consumer product industry associations (e.g. representing soaps and detergent products or paints or printing substances) may provide information about compliance to member companies or develop consumer awareness materials regarding appropriate use of their products. Consumer protection associations, environmental NGOs, women's and children's advocacy groups and other civil society organizations may undertake awareness raising and education campaigns about the safe use of consumer chemical products or lobby governments and industry regarding the status of legislation or providing information about these products.

[8] The Emergency Response Guidebook (ERG 2020) was developed jointly by Canada, the US and Mexico for use by fire-fighters, police, and other emergency services personnel who may be the first to arrive at the scene of a transportation incident involving dangerous goods. It is primarily a guide to aid "first responders" in quickly identifying the specific or generic hazards of the material(s) involved in the incident, and protecting themselves and the general public during the initial response phase. For further information, please visit: www.tc.gc.ca/eng/canutec/guide-menu-227.htm or https://www.phmsa.dot.gov/hazmat/erg/emergency-response-guidebook-erg (Also available as a Mobile App). Similarly, the European chemical industry has developed "ERICARDS" for use by emergency responders in case of incident or accident involving dangerous goods in transport, available in all European languages online and as a Mobile App. See http://www.ericards.net/. For maritime transport, the International Maritime Organization (IMO) has developed "The Emergency Procedures for Ships Carrying Dangerous Goods (EmS) Guide". For air transport. ICAO has developed "Emergency Response Guidance for Aircraft Incidents Involving Dangerous Goods"

5. Key sectors affected by GHS implementation

Implementation of the GHS and sound chemical hazard communication requires initiatives, activities and capacities for three distinct actors: government, business and industry, and civil society. Each of these groups has their distinct roles and responsibilities, as briefly outlined below. Through a partnership approach their activities can be complementary and thus facilitate the coherent implementation of the GHS in all four sectors.

5.1 Government

Government is typically responsible for establishing and maintaining an effective legal and institutional infrastructure for chemical safety. This can include laws covering all aspects of the GHS, including classification, hazard communication (labels and safety data sheets) and training and enforcement, and the administrative and institutional infrastructure to implement and enforce these laws or regulations, including the role of customs and inspectorates (e.g. for worker health and safety, the environment, farms, transport, consumer safety). In particular, governmental authorities need to determine the obligations for classification and labelling throughout the supply chain and for the various sectors (which may have different requirements). This could include, for example, ensuring legislation specifies how to classify, who is responsible for classification and outlining responsibilities throughout the supply chain or providing labelling requirements for import or information databases on chemicals placed on the market. Governments also typically consult business and industry, and civil society on their proposals for legislation, implementation and monitoring, such as via public hearings or comment periods, or inform the public via education and outreach programmes.

A number of types of government bodies are typically involved in GHS implementation. While some ministries are particularly interested in a specific sector (e.g. the ministry of transport is usually responsible for chemical hazard communication in the transport sector), other governmental partners may have an interest in more than one sector (e.g. ministries of industry, health, environment, customs authorities, international affairs). Others, such as the coast guard (if it exists), ministries of fisheries or natural resources, and research institutes or occupational safety and health centres within government may also make a strong contribution.

In some countries, sub-national governments (e.g. local/regional/provincial) or regulatory agencies may also participate as partners. For example, if worker safety training is typically the responsibility of a provincial regulatory agency, then the national government may be unable to develop a successful GHS implementation strategy without the cooperation and participation of these entities.

5.2 Business and industry

Business and industry have the responsibility for applying the classification and labelling requirements for chemicals at the workplace and throughout the supply chain or life cycle. Companies that produce chemicals and/or place them on the market therefore need to ensure that they have the necessary expertise available to identify and collect information on the chemicals they are responsible for, to apply the classification criteria and to develop labels and safety data sheets. Manufacturers

and suppliers are responsible for providing this information. Distributors may repackage products and therefore need to ensure the appropriate continuity of labelling.

Employers and companies (both producers and users) also have a responsibility to train their staff in the correct interpretation and use of applicable hazard communication tools, such as labels and SDS. Companies will also need to have in place systems to collect information from the supply chain (e.g. on the effects of particular chemicals on workers) that may lead to revised hazard communication efforts and recommendations for risk management interventions.

Companies also often have a wider responsibility to ensure the safe use of the chemicals they produce or place on the market. This may be a result of "corporate social responsibility", product stewardship, liability for damage to human health and the environment, or the application of industry standards such as Responsible Care®. Such a responsibility may mean that information on the effects of, and exposure to, chemicals, in addition to that already available, may need to be generated. Any additional data should of course be applied to the various hazard communication tools covered by GHS.

Some groups in business and industry that may be involved with GHS implementation include, industrial chemicals associations, pesticides producers' associations, transport industry associations, consumer product associations, major companies, including multi-national corporations, and user industries (e.g. paint, plastics, detergents).

SMEs may have special challenges in implementing the GHS, due to limited resources for changing over to a new system. However, in the long run it is expected that the GHS will provide a cost-efficient means of hazard communication. Governments and industry associations may wish to develop specific programmes to support GHS implementation in SMEs.

Case study: Stakeholder Involvement in the Philippines

In the Philippines, during the awareness raising and training phase, a number of key business and industry and civil society groups were actively involved, including:

- Philippines Chemical Industry Association (SPIK)
- Croplife
- Pesticides Action Network
- Trade Union Congress
- Nationwide Association of Consumers

5.3 Workers and Workers' Organisations

Workers and workers' organisations are especially important in GHS capacity building because they are often the first to feel the ill effects of hazardous substances. They are a crucial source of information about the workplace and have direct knowledge of the actual situation in the workplace, in agricultural settings and along transport routes.

Workers have first-hand experience in workplace practices and problems related to the use of hazardous chemicals. Workers' organisations represent workers and already play a crucial role in protecting

and improving working conditions including health and safety in the workplace. They articulate the concerns and issues of workers and are accountable to their members. Workers' organisations also play an important role in integrating sustainable development within occupational safety and health (OSH) for workers and to strengthen the basis for promoting forms of Decent Work[9] and the well-being for workers and communities.

As one objective of the GHS is to improve chemical safety, workers' organisations have an important role to play in the process of GHS awareness raising and implementation. Workers' organisations operate at enterprise, industrial, national, regional and international levels and interact with key social partners (government, and business and industry). However, workers' organisations will intervene and directly participate in the implementation of GHS in their respective countries in different ways depending on their own priorities, capacities and resources. The different ways in which workers' organisations and the respective national labour and OSH laws are structured will also influence the approaches adopted.

5.4 Civil society

Civil society groups represent the interests of individuals joined together for a common purpose, such as environmental or human health protection. While the role of civil society groups is less clearly defined in implementing the GHS, they play an integral part in capacity building and awareness raising. In the context of the GHS, these groups represent individuals who are exposed to chemicals and affected by ineffective chemical hazard communication. Thus, civil society should play an important role in GHS capacity building and implementation.

Civil society groups that may be interested to participate in GHS capacity building represent a broad range of constituents. These people and issues are represented by environmental NGOs, consumer and human health advocacy groups. Other groups, such as women and children's groups, academia, and community organizations may also be interested in participating in GHS implementation activities as a means to achieve their objectives.

Civil society groups have a key role in gathering information on the current status of hazard communication among constituents and other members of civil society. They can further influence the development of a GHS implementation strategy by informing government and industry decision makers on the priorities of the people they represent, as they may be more attuned to the risks and exposures that consumers face. This can be through working with government to shape appropriate legislation for implementing the GHS or demanding more compliance from industry. Through training and awareness raising activities, civil society can contribute to on-the-ground implementation of the GHS.

[9] https://www.ilo.org/global/topics/decent-work/lang--en/index.htm

For organisations, involvement in the GHS does not necessarily require the creation of a separate portfolio on chemical issues and chemical hazard communication but can simply involve the integration of the GHS into their present objectives (e.g. protecting the environment, women's support, health care). GHS issues are relevant for many of the issues and topics that are already priority areas for organizations.

An NGO working on HIV/AIDS could see the promotion of chemical safety as a way to protect HIV/AIDS individuals' where health is compromised by exposure to hazardous chemicals either in the workplace or as a consumer, thus potentially exacerbating the negative effects of HIV/AIDS.

In academia, many of the departments and research divisions of universities and institutes are already related to the GHS, including chemistry, agriculture, environmental studies, international affairs, public policy and health, law and business.

Through integration of the GHS into their areas of focus, academia can help to educate not only the opinion makers or leaders of tomorrow, but can also help produce research and information that can directly influence GHS implementation in all the four sectors.

6. Organizational considerations

Countries undertaking GHS capacity building and implementation should consider the most effective means for coordinating the various activities and efforts necessary for introducing and integrating the GHS into the national system. This section describes the formation of a National GHS Coordinating Committee, its function, and potential structures to facilitate GHS implementation.

6.1 National GHS Coordinating Committee

Successful implementation of the GHS can be facilitated by effective coordination of relevant sectors and stakeholders and the activities in which they are involved. This can reduce duplication of efforts and serve to improve consistency and coordination in overall chemical hazard management in a country. Because of the number of people potentially involved in GHS implementation, establishing a coordinating infrastructure is a helpful way to frame the development of a GHS implementation strategy. This infrastructure serves to ensure that communication is ongoing between the actor groups (government, business and industry, and civil society); across the four sectors (including consideration of cross-sectoral issues); and between stakeholders.

Key to the success of the GHS implementation strategy is ensuring sound coordination of the many tasks and activities involved in strategy development. Therefore, it may be useful to form a national GHS coordination or implementation committee (or designate a relevant existing committee to include GHS implementation in their work programme). The committee can include representatives of stakeholder groups and government ministries representing the four sectors (workplace, agriculture, transport and consumer products), as well as other related ministries essential to the implementation process (such as environment, foreign affairs, health, standards, finance, trade and customs, among others). The exact composition of the committee will depend on each country's particular circumstances.

The committee should meet early on in the implementation strategy development process and among its first orders of business draft and reach agreement, as appropriate, on tools that can guide their work. These may include:

» A work plan for the process, outlining project activities, milestones and dates;
» A budget for the development of implementation strategy; and
» Terms of Reference (TOR), including guidance on how decisions will be made; and the roles, commitment and expectations of the various participants

To aid in national coordination, countries might find it useful to identify a lead institution to act as the coordinating agency for GHS implementation activities. The lead institution usually comes from one of the government ministries representing the four key sectors, or may be a separate ministry or agency that can act as a coordinator.

The coordinating institution may perform the following types of functions:

» Convene meetings of the GHS coordinating or implementation committee;
» Provide secretariat support for activities and sectoral working groups; and
» Coordinate participation of national representatives at GHS-relevant regional and international meetings, as appropriate.

In addition to a main GHS coordinating committee, it may be useful to establish a number of subcommittees or groups to address particular needs in GHS capacity building within the sectors (workplace, agriculture, transport and consumer products), stakeholder groups (government, business and industry, workers and workers' organisations and civil society) or focusing on cross-sectoral issues. This could include, for example, subgroups focusing on legislation, comprehensibility, training and awareness raising.

6.2 Sectoral working groups and stakeholder committees

In order to facilitate the discussion of sectoral considerations, countries may want to consider establishing sectoral working groups. Sectoral groups would specifically focus on the implementation of the GHS in the four key sectors affected by GHS.

Further, committees can be developed to address the particular needs of non-governmental stakeholders. For example, these committees could focus on the engagement of civil society and industry groups through awareness raising, training and the organisation of relevant stakeholder workshops. Both sectoral work groups and stakeholder committees are usually comprised of representatives from a range of sectoral and actor groups.

6.3 Coordinating cross-sectoral issues

Some important issues in the implementation of GHS cut across the four sectors. These include, for example: comprehensibility testing, legislation, technical training and awareness raising. Countries may choose to address these within a national coordinating committee or form specific working groups or committees. The exact way of addressing these issues will depend on the individual needs and circumstances of a country.

Figure 2 depicts a possible organizational chart for GHS coordination, though other organizational arrangements to suit national needs and circumstances may be more appropriate.

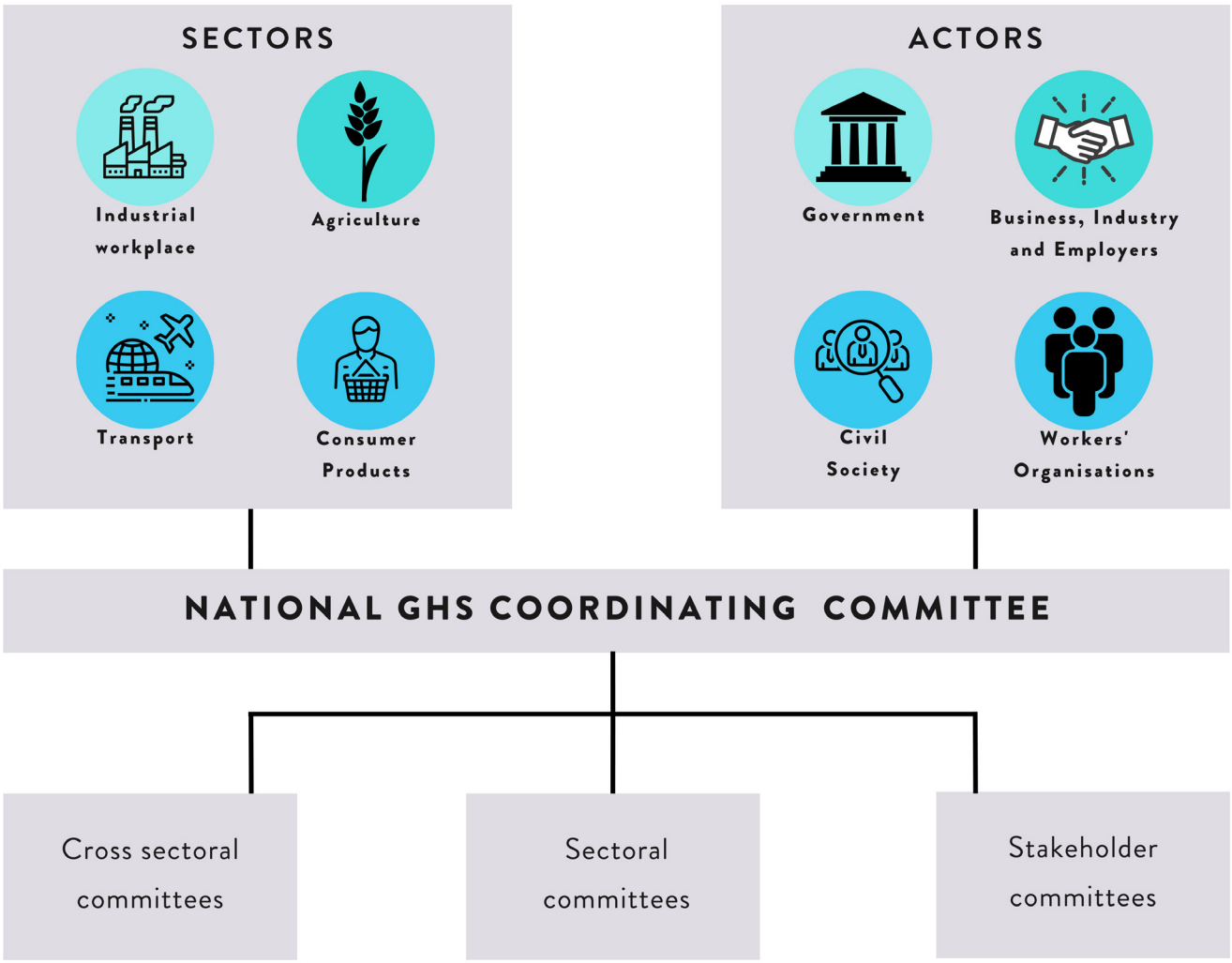


Figure 2: National GHS Coordinating Structure

6.4 Ensuring Effective Stakeholder Participation

Involving key non-governmental stakeholders should be given special emphasis in GHS planning and implementation, as it is of practical relevance (since their actions and commitment will be essential to the implementation and success of the implementation strategy). The types of business and industry and civil society groups involved, as well as the type of involvement, will vary depending on a number of factors, including the nature and context of the issue, the time frame for developing the strategy, the legal mandate within which the lead organization(s) operates, and the availability of resources. It is advisable that countries think through, up front, how best to incorporate multi-stakeholder involvement.

The following are a few questions to consider when addressing the issue of stakeholder involvement:

» What types of groups are relevant for involvement?
» What is the nature of participation by business and industry, and civil society?
» What types of resources are available for supporting the involvement of these groups, in particular those that do not have sufficient resources themselves?
» How will lead organizations/points of contact be identified?

Stakeholders could be involved in GHS activities, for example, through:

» Information and awareness raising meetings and campaigns
» Industry or civil society-specific workshops
» Provision of or participation in training and information-sharing
» Participation in committees
» Reviewing and commenting on draft policies and legislation
» Developing GHS and/or chemicals safety networking and alliances
» Involvement in the UN Sub-Committee of Experts on the GHS
» Ensuring labels are appropriate for target populations
» GHS in the context of right-to-know

Case Study: Coordinating National GHS Implementation in Brazil

On 26 June 2007, the President of the Republic of Brazil signed a Decree formalizing a national GHS Working Group ("GT-GHS-Brasil"), which is the responsible body for elaborating and proposing strategies, guidelines, programmes, plans and actions for implementation of the GHS in Brazil. This group was made up of more than 40 governmental and non-governmental institutions from Ministries, Agencies, Institutions, Industry and Foundations. The GHS Working Group included sub-groups on Confidential Business Information, Publicity, Implementation, and Training. In parallel, the Study Committee about Information of Safety, Health and Environmental related to chemicals of the Brazilian Chemistry Committee (CB-10) of the Brazilian Association of Technical Standards (ABNT), formed of stakeholders from the Government, industry and civil society (more than 30 participants that has been meeting monthly), published in 2009 the review of standard NBR 14725 which internalized hazard classification, label and SDS according to the GHS in Brazil.

PART C

Developing a National GHS Implementation Stategy

Part C of the guidance document provides suggestions to countries for developing a National GHS Implementation Strategy (NIS). Following an introduction to the proposed methodology, suggestions are provided for organizing the strategy development process at the national level, featuring questions considered relevant for preparing a situation and gap analysis and issues that countries may want to consider in preparing the National Implementation Strategy.

The process of developing a National GHS Implementation Strategy comprises a number of activities. Taking into consideration the discussions in Parts A and B, an NIS features – for each of the four sectors concerned – actions that will be undertaken by government, business and industry, and civil society respectively to ensure effective GHS implementation.

In order to achieve this goal, as a first activity, stakeholders collect information about their existing GHS-related infrastructure and activities and prepare a situation analysis covering all target sectors. This is known commonly as the national chemicals profile. This baseline information allows the comparison of existing capacities against what should be in place for effective GHS implementation – the gap analysis. A gap analysis, in turn, serves as the basis for identifying required action to be included in sectoral implementation plans. These analyses should be complimented by awareness raising and a legal analysis. The results of these activities can then be presented and discussed, for example, at a national GHS workshop. Further or more specific training and awareness raising activities can be organised for stakeholder groups. Finally, an NIS report can be completed which summarizes all agreed actions in government, business and civil society, and resource issues. A flowchart of these activities is provided in Figure 3. GHS implementation can be considered an ongoing process, requiring resources, monitoring and evaluation to ensure that planned activities are carried out and that the GHS implementation process is constantly being updated based on the current situation within a country. This cycle is represented in Figure 5.

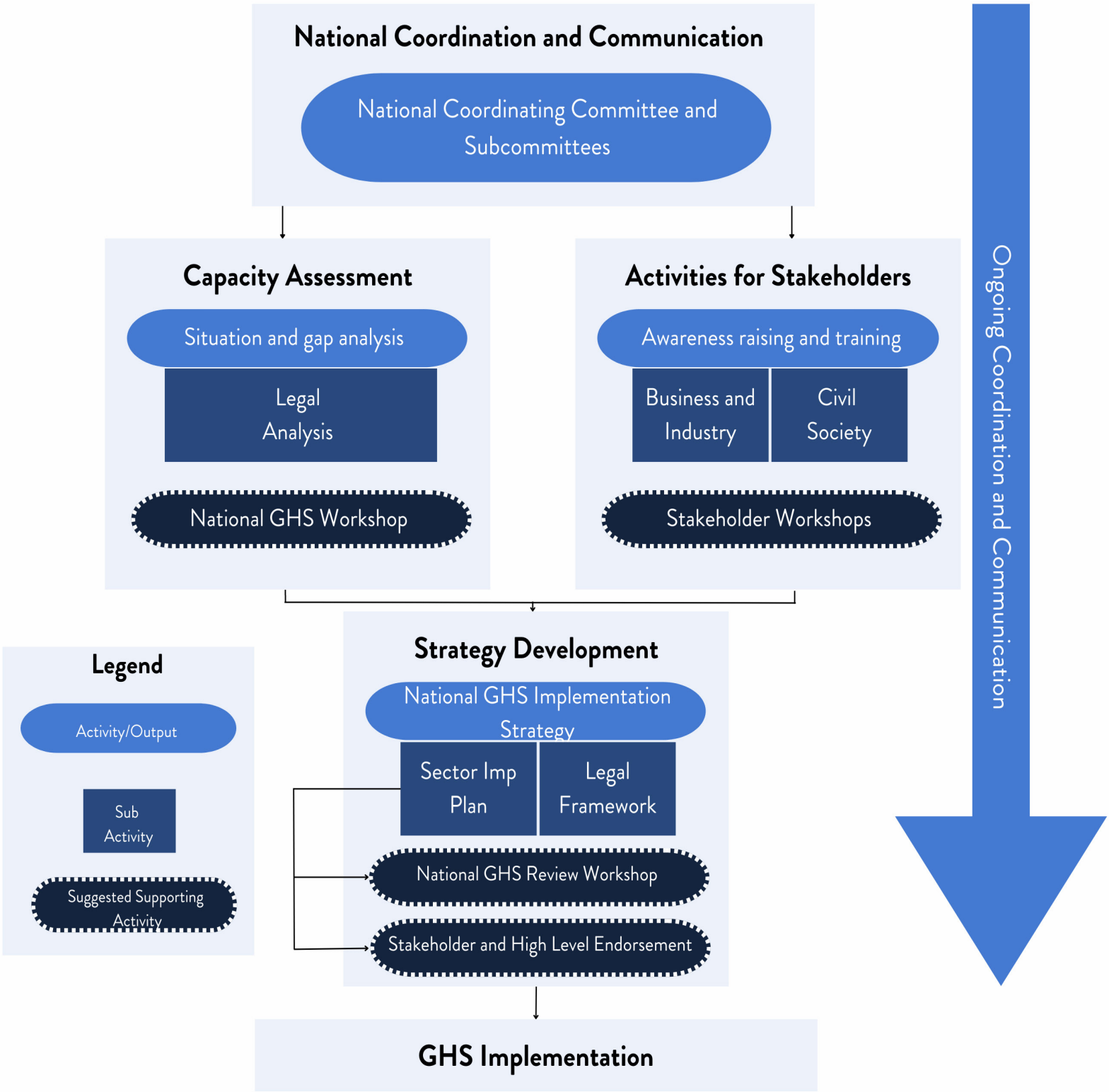


Figure 3: Overview of GHS Implementation

7. Assessing national capacity for GHS implementation

An important initial step when preparing a National GHS Implementation Strategy involves undertaking a GHS situation and gap analysis. Information should address existing activities and capacities in government, business and industry and civil society, as appropriate, and in all target sectors: workplaces, agriculture, transport and consumer product chemicals.

Due to the importance of legislation in GHS implementation, a full legal analysis should also be conducted to assess the existing legal framework related to the GHS within a country. This can be considered a separate activity from the situation and gap analysis, but supports the overall understanding of the current status. Further information on conducting a legal analysis is found in section 7.5.

7.1 Reviewing the current situation

The GHS Situation Analysis is conducted to collect baseline information and document the existing national infrastructure and capacities for chemicals classification and hazard communication. The following sections highlight information to be included in the situation analysis. These sections are divided by actor group (government, business and industry, and civil society). Guidance questions are provided for each topic area to assist in gathering the necessary information and to ensure that the key issues are addressed. Some questions may not be relevant for all countries (e.g., for countries that do not produce chemicals). Countries should also feel free to determine and address other questions not listed here.

Box 3 provides a list of potential existing sources of information that could possibly be used as a starting point for analysis.

Box 3: Existing Information for Preparing a GHS Situation Analysis

A number of resources may already exist which could provide useful information for developing the GHS Situation Analysis.

1. A National Profile provides a comprehensive overview and assessment of a country's existing national legal, institutional, administrative and technical infrastructure related to the sound management of chemicals. Countries all over the world have prepared National Profiles with the involvement of a wide range of national stakeholders, following the recommendations in the UNITAR/IOMC National Profile Guidance Document. Those wishing to view national profiles can find more information at the following address: http://cwm.unitar.org/national-profiles/nphomepage/np3_region.aspx.

2. National Implementation Plans of the Stockholm Convention provides a framework for a country to design and implement, in a systematic and participatory way, the various measures necessary to meet the obligations of the Convention. http://www.pops.int/Implementation/NationalImplementationPlans/Overview/tabid/565/Default.aspx.

3. SAICM Implementation Plans serve as a tool to provide an infrastructure for the effective implementation of SAICM. The document addresses the needs of each stakeholder for overall implementation and outlines a range of actions needed for successfully integrating SAICM into national, regional or international chemicals management. In many cases, parties will have identified the GHS as a major priority in the plan. Guidance on developing a SAICM Implementation plan can be found at: http://cwm.unitar.org/publications/publications/inp.aspx.

Background information

An introductory section of the situation analysis provides some general background information related to issues of chemical use and hazard communication within national infrastructure. It can be important to have an understanding of these issues when beginning development of a National GHS Implementation Strategy. This information should be obtainable in the National Profile, if one is available. Some useful baseline information may include:

» National production of chemical substances and/or mixtures (types);
» Information related to import or export chemical substances and/or mixtures (which products and with what trading partners);
» Current national levels of chemical production, import and export (as appropriate);
» National trends in chemicals use;
» Groups (e.g. factory workers, farmers, transporters, consumers) exposed to chemical hazards;
» Level of participation in the development of the GHS and/or in the work of the UN Sub-Committee of Experts on the GHS (UNSCEHGS); and
» Sources of available information on chemical risk management, chemical hazard communication and the GHS (e.g. national and international approaches).

Situation analysis - Government

This component of the situation analysis identifies and documents the existing national situation with regard to legislative infrastructures, institutional responsibilities and administrative capacities relevant to chemical hazard communication. Government institutions play an important role in collecting and documenting relevant information. All relevant levels of government should be considered, if appropriate, if they have responsibility for related legislation, including national (federal), provincial and local, as well as any applicable regional standards upon which national legislation may be based.

The following questions are meant to guide such efforts:

» What government agencies and departments are responsible for chemicals management, worker safety, environment or any other sector relevant to GHS implementation?
» What national policies are supported by GHS implementation, including obligations of international conventions, development priorities?
» What activities are conducted by government to implement, monitor and enforce existing legislation?
» Do customs authorities play a role in enforcement of the national system? If so, how and with what training?
» What trading regimes (neighbouring countries, regional trade organisations or international frameworks) and borders affect the trade of chemicals, and how would they affect implementation of the GHS?
» How is training on chemical classification and hazard communication undertaken, if at all?
» Are there poison information or control centres, toxicological or national CIS (occupational safety and health information) centres that can provide advice in the case of a poisoning accident or

incident? Do they undertake any other related activities?
» Which government agencies are concerned with emergency preparedness and response and what are their relevant functions and activities?
» What resources are available to deliver the activities identified above?

Situation analysis - Business and industry

This section of the assessment documents the activities of the private sector that could potentially contribute to the development and implementation of an effective national GHS implementation strategy. The activities of the private sector can be an invaluable source of information and expertise for the development of the GHS implementation strategy.

The following types of questions may assist with the information to be collected:

» What is the structure and size of the chemical industry in the country (e.g. major multinationals, national industries, mostly SMEs)?
» What knowledge and capacities exist concerning how to classify chemicals and mixtures? Where are these capacities located and where do the responsibilities lie?
» What criteria are used by companies undertaking classification (if any)?
» What knowledge and capacities exist concerning how to prepare SDS and labels? Where are these capacities located and where do the responsibilities lie?
» What label and SDS formats are in use?
» How are labels and SDS developed and by whom?
» What awareness raising and training activities or programmes are undertaken by companies who produce and market chemicals and those who use them?
» Which other initiatives, if any, have been taken through companies or industry associations related to chemical hazard communication (e.g., voluntary use of labels; worker training on SDS; etc.)? Outline those initiatives.
» What resources are available to deliver the activities identified above?

Situation analysis - Civil society

This section will document the role and activities of civil society, including labour organizations, NGOs, and consumer protection associations that contribute to effective chemical hazard communication at the national level.

The following types of questions may assist with the information to be collected:

» What labour unions, public interest groups, consumer protection associations or other NGOs (e.g. representing women's and children's health) have (or may have) an interest in chemical hazard communication?
» What activities do these groups undertake related to chemical safety and hazard communication?
» What incidents of misuse have been reported which occurred as a result of faulty or missing hazard communication?
» How are activities funded and what levels of resources are available for civil society activities?

» What relevant activities are undertaken in the academic sector (e.g. research and training) or by the media (e.g. awareness raising)?
» Are any community or school organizations active on issues related to chemical safety and hazard communication? If so, how?
» What resources are available to deliver the activities identified above?

7.2 Identifying gaps to GHS implementation

The purpose of the gap analysis is to compare the existing situation, collected in the situation analysis, against what should be in place in order to implement the GHS. This also involves a comparison of existing requirements (if applicable) in all sectors to the provisions of the GHS. Again, information should be collected and analysed by government, industry and civil society for each of the four sectors (workplaces, agriculture, transport and consumer product chemicals).

Gap analysis - Government

An institutional and administrative gap analysis has the objective to reveal to what extent existing ministerial responsibilities and programmes are sufficient to provide for sound chemical hazard communication in the four sectors affected by the GHS.

The following questions are meant to facilitate such an analysis.

» Is division of responsibilities across government ministries ensured or are mandates overlapping within and across the four sectors?
» Is there sufficient government staff knowledge about legal and technical aspects of GHS implementation in all four sectors?
» Do government agencies have sufficient funding to ensure appropriate government action in all four sectors concerned (e.g. facilitating regulatory reform)?
» Does government have sufficient capacity to facilitate enforcement of relevant national regulations on chemical hazard communication based on the GHS?
» Does the mandate for regulatory reform in each sector reside at the national level, or at a different level (e.g. is regulation coordinated at a regional level?)?

Gap analysis - Business and industry

In the long term, much of the work to implement the GHS will be undertaken by business and industry. The following questions are meant to serve as a starting point for a gap analysis in the business and industry sector concerning effective implementation of the GHS:

The following questions are meant to facilitate such an analysis.

» Is there sufficient knowledge and capacity in industry concerning how to classify chemicals and mixtures in accordance with the GHS?
» Is sufficient capacity in place to prepare GHS-based labels and SDS?
» To what extent are chemical hazard communication tools used by business and industry already

compatible with GHS provisions (e.g. SDS and label formats)?
» Does business and industry implement sufficient complementary activities to facilitate effective hazard communication (e.g. training of workers)?
» To what extent do affected business and industry entities effectively implement chemical hazard communication programmes? Are there any groups of business and industry entities where this is not the case and which require particular attention?
» What additional awareness-raising and training activities will be required by business and industry to facilitate effective GHS implementation?
» Does sufficient capacity exist to make the required changes in order to implement the GHS in business and industry effectively? If not, how will capacity be developed?
» How can existing industry programmes, such as product stewardship, be used to facilitate GHS implementation?

Gap analysis - Civil society

Civil society organizations have important potential functions to assist the government and business and industry in effective GHS implementation, ranging from awareness raising activities to watchdog functions in order to ensure enforcement of relevant regulations. The following questions are meant to serve as a starting point for a gap analysis in civil society organizations:

» For each of the four sectors concerned, is there sufficient interest and capacity in labour groups and NGOs to contribute to GHS implementation?
» How can sustainable funding of NGO activities in support of GHS implementation be ensured?
» Is their sufficient interest and capacity in the academic sector to support GHS implementation via research and training?
» What additional programmes could be initiated and implemented by civil society organizations (including the media) in order to promote effective GHS implementation?
» How can community or school organizations assist with awareness raising and education?

7.3 Preparing a situation and gap analysis report

The output from the situation and gap analysis should be a concise report, complemented by summary tables of the sector-specific findings. However, there are a number of ways a country may choose to present its findings. The situation and gap analysis can be presented as two separate sections or documents (a situation analysis report and a gap analysis report). One consolidated report can be divided by section based on the four sectors, or by actor group. Other options also exist and each country will decide what is best.

Countries should use the information gathered in the initial situation and gap analysis to provide a starting point for developing implementation plans. It may also be helpful for countries to discuss the results at a National GHS Workshop to initiate the transition from analysis to planning for implementation.

Case Study: Situation and Gap Analysis – Key outcomes in Nigeria

A previous situation and gap analysis in Nigeria revealed a number of weaknesses in the system of chemicals management in the country. In particular, it was found that:

- There was a lack of national legislation for GHS implementation.
- The institutional arrangements did not ensure clear responsibilities across relevant government ministries with resultant overlaps of functions within the different sectors.
- Very low-level knowledge of government personnel on the legal and technical aspects of GHS implementation for industrial production.
- Inadequate funding to ensure appropriate government action in facilitating necessary regulatory reforms and initiatives.
- Lack of necessary capacity for effective enforcement of relevant national regulations on chemical hazard communication based on the GHS for workplaces.

Based on these results, Nigeria made the following recommendations that were then integrated into their National Implementation Strategy:

- Establishment of chemical pollution response and poison-control centers in all the six geopolitical zones.
- Delineation of functions and streamlining of mandates among the various ministries/agencies regulating chemicals.
- Establishment of a platform for cooperation and coordination of activities amongst the key ministries and agencies regulating chemicals at the highest level of Authority.
- Fostering of synergies and partnerships among the relevant regulatory and civil societies.
- Simplifying and translating the GHS and SDS into different local languages at the national level.
- Display of hazard communication elements as appropriate – e.g. in industrial production, transportation.

7.4 Comprehensibility testing

To inform the situation and gap analysis, countries may consider undertaking comprehensibility testing of GHS hazard communication elements in all four sectors. Comprehensibility testing (CT) is a survey-based method for obtaining information on the understanding of GHS hazard communication elements among the public. Comprehensibility testing is therefore a key tool for assessing the understanding of chemical hazard communication pictograms and/or key statements and provides important feedback for developing a chemical hazard communication system and targeted training. Further information on the importance of comprehensibility is found in section 2.6.

The results of comprehensibility testing can be used to inform the situation and gap analysis in the four key sectors of GHS implementation: workplaces, agriculture, transport and consumer products. This can help countries subsequently to identify areas where capacity building interventions are needed in order to improve understanding of GHS-based hazard communication elements, thereby improving protection of human health and the environment. The actual process of CT also serves as a means to raise awareness on chemical hazards and the GHS.

The UNITAR/ILO CT methodology is based on a questionnaire administered in person to various target audiences. It starts with a training workshop at which the GHS and CT are explained and where surveyors have an opportunity to learn about and practice administering the CT questionnaire. Often countries choose to designate an academic institute or other research organisation to conduct CT. Once the surveyors are trained, they are disbursed to various field-testing sites to test comprehensibility of the GHS. It is important to choose samples of the population that reflect the sectors and actor groups related to the GHS. Once the information has been collected, the information should be analysed to identify the areas of greatest capacity building need, and the results should be reported as appropriate.

Case Study: Comprehensibility Testing in Thailand

Comprehensibility testing was conducted in 2006 in several parts of Thailand including Bangkok and its suburban areas, where most industrial areas are located. The five sectors in this study included 1) Consumer product sector 2) Industrial sector 3) Agriculture sector 4) Transport sector and 5) Public health service and emergency response sector. These five sectors were categorized as those in which daily life and working life involve the use of chemicals. The overall number of the respondents who participated in this study was 721. Based on the data collected from the CT, it was found that:

- The occupation of the respondents is related to the level of knowledge and awareness to chemical hazards. From the study, the industrial and transport sector have the highest level of chemical knowledge, are more aware of the GHS and can mostly interpret GHS pictograms and hazard statements. On the other hand, the consumer and agriculture sector have a medium level of knowledge and awareness.
- With regard to pictogram recall, most respondents can recall the skull and crossbones and flame pictogram because these pictograms are easy to understand, highly visible and mostly seen in many places in other social contexts such as in petrol stations or on chemical labels.
- Pictograms least recalled are gas under pressure and the exclamation mark pictogram because these pictograms are difficult to understand as reported by most respondents.
- The understanding of hazard statements requires both comprehensibility in reading the statement and comprehensibility in understanding scientific terms such as mutagenicity, carcinogenicity, and reproductive toxicity. Lack of understanding in these terminologies might alter comprehensibility.

Based on these findings, Thailand developed targeted awareness raising and training activities to improve the understanding among stakeholders of GHS hazard communication elements.

7.5 Legal analysis and development of a legal GHS implementation framework

While the GHS itself is not legally binding, countries that implement the GHS will want to develop legally binding implementation measures to ensure full implementation of the GHS.

Countries may first wish to conduct a legal analysis, much like the situation and gap analysis; this would focus on understanding the current legislation or regulations for hazard classification and communication, and the changes needed to implement the GHS. Based on the results of the analysis, governments can examine the potential options for the development of a legal implementation framework. Competent authorities adopting the GHS may thus choose different implementing instruments according to their circumstances, needs and already existing legal framework.

Legal analysis

A legal analysis provides an overview of the existing regulatory framework, and a context for policy decisions on implementation. The analysis is conducted in two parts, first looking at the current situation, then comparing it with what should be in place to implement the GHS.

The legal analysis can reveal areas for legal or regulatory reform in order to ensure that the national legislative and regulatory framework for chemical hazard communication is compatible and consistent with the GHS. This involves a comparison of existing requirements (if applicable) in all sectors to the provisions of the GHS, identification of GHS requirements not provided in national regulatory system, identification of conflicts between GHS and national requirements, and determination of potential implications of GHS implementation.

The legal analysis can result in a number of scenarios, for example: countries may, for a given sector, find out that a legislative and regulatory framework addressing the above issues is already in place. In this case, the identified gaps would highlight the need to make existing legislation compatible with the GHS (e.g., ensuring the various classification criteria, pictograms, and SDS format are aligned with GHS provisions). The analysis should thus address classification criteria, as well as labelling and SDS requirements for all four sectors affected by the GHS, taking into consideration which elements are appropriate for each. Alternatively, the legal analysis may reveal that for a given sector a regulatory framework for chemical hazard communication is absent, thus pointing to the need for development of new legislation, regulations or standards.

Case Study: Legal Analysis for the GHS in Canada

A historic GHS legal analysis in Canada revealed the then key pieces of existing legislation and regulations that may be affected by the GHS:

- Hazardous Products Act (PART I; now repealed and replaced by the Canada Consumer Product Safety Act), Consumer Chemicals and Containers Regulations, 2001
- Hazardous Products Act (PART II), Controlled Products Regulations (for workplace chemicals; now repealed)
- Pest Control Products Act, Pest Control Products Regulations
- Transportation of Dangerous Goods Act, 1992, Transportation of Dangerous Goods Regulations

A legal review was conducted in order to determine the optimal means for implementing the GHS in Canada, whether by revising current legislation, creating new legislation, consolidating legislation, or a combination of options. It was determined that for workplace chemicals the optimal approach was to:

- Amend the existing Hazardous Products Act (the amendments to implement GHS were published in the Economic Action Plan 2014 Act, No. 1, on June 19, 2014; see https://laws-lois.justice.gc.ca/eng/acts/E-0.8/index.html) https://laws-lois.justice.gc.ca/eng/acts/h-3/
- Repeal the Controlled Products Regulations (repealed February 11, 2015)
- Implement the Hazardous Products Regulations (published in the Canada Gazette, Part II, Vol. 149, No. 3 on February 11, 2015; see http://www.gazette.gc.ca/rp-pr/p2/2015/2015-02-11/pdf/g2-14903.pdf) https://laws-lois.justice.gc.ca/eng/regulations/sor-2015-17/index.html

This further required amendments to the Hazardous Materials Information Review Act, as well as the Canada Labour Code (see Economic Action Plan 2014 Act, No. 1, https://laws-lois.justice.gc.ca/eng/acts/E-0.8/index.html) and seven other regulations:

- Food and Drug Regulations
- Hazardous Materials Information Review Regulations
- Hazardous Materials Information Review Act Appeal Board Procedures Regulations (repealed March 18, 2020, due to legislative modernization not related to the GHS)
- Consumer Chemicals and Containers Regulations, 2001
- Safety of Human Cells, Tissues and Organs for Transplantation Regulations
- New Substances Notification Regulations (Chemicals and Polymers)
- Export of Substances on the Export Control List Regulations

The amendments listed in these bullets are described in more detail in the Canada Gazette, Part II, Vol. 149, No. 3, February 11 2015 http://www.gazette.gc.ca/rp-pr/p2/2015/2015-02-11/pdf/g2-14903.pdf.

The following are some relevant questions to guide the analysis:

Understanding the current legal environment for chemicals management

- What laws, regulations or standards (if any) exist which address requirements relevant to chemical hazard classification and communication (e.g., data collection, classification criteria, labelling and SDS preparation)?
- Which sectors are covered by the existing legal framework? If transport sector is covered by the existing system, is it consistent with the internationally harmonized UN transport model regulations? Are any sectors, such as agriculture/pesticides, under the remit of regional institutions rather than purely domestic regimes?
- Does the existing legal framework assign clear ministerial responsibilities to cover all four sectors affected by the GHS?
- What health, safety, environment or other legislation exists which are related to the GHS?
- What hazard classification and communication elements are covered by the existing system?
- Are there import and export control laws (e.g., application of the Rotterdam Convention) relevant to controlling the entry of and information about chemicals?
- Is there any legislation or standard related to training for chemical hazard communication?
- Are there any requirements to report information on the effects and/or exposure (human and environmental) to chemicals?
- Do existing legal instruments related to chemicals management include compliance and enforcement provisions?
- What parts of the chemicals lifecycle is covered by existing legal instruments? (This could be different for different sectors.)
- What are current legislation or regulations regarding access to information and protection of confidential business information (CBI)?

Considerations for developing the legal framework

- If regulatory requirements exist, to what extent are relevant provisions compatible with the requirements of the GHS?
- Which regulatory adjustments need to be made to ensure compatibility?
- Are there any duplicative existing regulations that should be addressed?
- Do existing legal instruments provide a clear mandate and framework to ensure support for relevant government agencies to implement chemical hazard communication programs and the GHS?
- If a legal framework for sound chemical hazard classification and/or communication in a given sector is not in place, what specific reform measures need to be undertaken to ensure that national regulatory framework provides for comprehensive and effective implementation of the GHS?
- Which GHS sectors are not covered by the existing legislative framework?
- What are the deviations for hazard classification and communication between the existing system and the GHS requirements?
- What timeframe (including provision for transition periods) should be used in implementing new or amended regulations?

Legal implementation of the GHS

Based on the outcomes of the legal analysis, countries may wish to focus their efforts on a GHS legal implementation framework. This could be a plan that would include actions required for legal GHS implementation.

There are a number of options for legal implementation of the GHS, including:

- New law encompassing all GHS sectors
- New laws, regulations and standards by sector
- Amending existing laws (e.g., incorporating GHS elements by reference), regulations and standards
- Single consolidated Act
- Amend existing legislation to incorporate GHS elements
- Amend existing legislation to incorporate GHS elements by reference
- Amend standards with corresponding amendments to legislation (e.g., for compliance and enforcement)
- Consolidate and amend existing standards with corresponding amendments to legislation (e.g., for compliance and enforcement)

The legal analysis and development of the legal implementation framework can be conducted in a number of ways depending on a country's individual GHS capacity building process. In some cases the legal analysis will be included within each sectoral working group, where legal issues are reviewed in the situation and gap analysis and recommendations are developed for regulatory changes or new legislation as part of the sectoral implementation plans. In other cases, countries may consider establishing a multi-sector working group on legislation to ensure coordination and a coherent approach to regulatory changes.

Case Study: Legal Implementation of the GHS in the EU

The Classification, Labelling and Packaging (CLP) Regulation ((EC) No 1272/2008) is based on the United Nations' Globally Harmonized System (GHS) and its purpose is to ensure a high level of protection of health and the environment, as well as the free movement of substances, mixtures and articles. CLP is legally binding across the Member States and directly applicable to all industrial sectors. It requires manufacturers, importers or downstream users of substances or mixtures to classify, label and package their hazardous chemicals appropriately before placing them on the market. One of the main aims of CLP is to determine whether a substance or mixture displays properties that lead to a hazardous classification. In this context, classification is the starting point for hazard communication. Once a substance or mixture is classified, the identified hazards must be communicated to other actors in the supply chain, including consumers.

Through the implementation of CLP there are two different classification approaches; one approach is by companies themselves, and another that is called "harmonised classification and labelling" and listed in Annex VI to the regulation, which are set classifications to be used throughout the EU. Where a harmonized classification and labelling exists, this must be used. The classification and labelling of certain endpoints of hazardous chemicals is harmonised to ensure adequate risk management throughout the EU. Member States and manufacturers, importers or downstream users may propose a harmonised classification and labelling (CLH) of a substance. Only Member States can propose a revision of an existing harmonisation, and submit CLH proposals when a substance is an active substance in biocidal or plant protection products.

The CLP regulation includes a notification obligation which requires manufacturers and importers to submit classification and labelling information for the substances they are placing on the market to the C&L Inventory held by ECHA. These are made publicly available through ECHA's dissemination portal. In addition, a new Annex VIII was added to the CLP Regulation in 2017, implementing harmonised information requirements for notifications under Article 45. This information is submitted to the appointed bodies in the Member State and is used for emergency health response (the Poison Centres). For more information, visit:

Understanding CLP: https://echa.europa.eu/regulations/clp/understanding-clp
Search for Chemicals:
https://echa.europa.eu/search-for-chemicals?p_p_id=disssimplesearch_WAR_dissearchportlet&p_p_lifecycle=0
C&L Inventory: https://echa.europa.eu/information-on-chemicals/cl-inventory-database
Guidance on CLP: https://echa.europa.eu/guidance-documents/guidance-on-clp

8. Engaging stakeholders in GHS capacity building

Supporting Activity 1: Stakeholder Workshops

Stakeholder workshops specifically addressing the needs of particular actor groups, such as labour or business can be an effective way to reach large audiences to share information about the GHS. These workshops are often organised during the assessment or development phase of the national GHS implementation strategy in order to inform stakeholders about the GHS and planned GHS capacity building projects. These workshops can also be used as a forum for stakeholders to provide specific input into the National GHS Implementation Strategy and can be used to help identify more specific training needs from the various actor groups involved.

It is suggested that countries actively engage all relevant sectors and actors in all parts of the GHS planning and implementation process. However, in order for these various groups to take an active role in GHS implementation, it is often necessary to raise awareness and train stakeholders on the technical and policy details of the system. 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. Many of these activities could already be initiated during the beginning stages of planning and assessment within GHS implementation, while others can be integrated as part of a National GHS Implementation Strategy.

Through these activities, the specific needs and required actions of industry or civil society groups can be further addressed and they can effectively contribute to the successful implementation of the GHS.

8.1 Awareness raising

Countries may wish to consider how to reach the widest audiences to inform constituents about the GHS and its benefits to the country. These could complement sectoral awareness raising activities. In previous projects, countries have organised very successful awareness raising campaigns through the development of TV commercials on the GHS produced by a local theatre group, and the development of a Youth GHS Awareness Week, highlighting important aspects of the GHS to schoolchildren through classroom programmes. Box 4 provides samples of materials developed by various countries.

Case Study: Using video and theater to raise awareness in the Gambia

In the Gambia, GHS awareness raising videos were developed by theatre groups to inform the public about the GHS. The theater group acted out a marketplace scenario - in two different local languages - where vendors and customers discussed the meanings of various GHS symbols. This video, and other GHS awareness raising activities, were demonstrated during the National Chemical Awareness Week, a country-wide event to increase public understanding of chemical use. The videos were also played on local television stations.

Excerpt from a Consumers Brochure in Senegal

Philippines Poster for the Workplace

Cover of the Thai Awareness Raising CD

Box 4: Samples of GHS Awareness Raising Materials

8.2 Technical training

Technical training is an integral part of improving capacities to implement the GHS. Countries may choose to work with industry or civil society partners, and workers' organisations or pesticides education groups to conduct the training and to ensure that information reaches a wider audience. While training activities to assist GHS implementation will vary across sector and target audience, countries may wish to consider developing an integrated approach to technical GHS training that addresses core needs in all four sectors. Countries can also take advantage of internationally-agreed and available training materials available through international organisations. UNITAR and ILO have developed an advanced, online GHS training course that provides technical details on GHS classifications and hazard communication.[10]

Supporting Activity 2: National GHS Workshop

During an initial phase of developing a national GHS implementation strategy, countries may consider organizing a National GHS Workshop, with participation of relevant government ministries, business and industry representatives, and civil society. The workshop could provide an opportunity to:

- Learn about technical aspects of the GHS, as well as infrastructure which needs to be in place to ensure effective GHS implementation;
- Review the situation/gap analysis, as well as results from comprehensibility testing;
- Review the roles, responsibilities and necessary activities of business and industry, and public interest and labour organizations in GHS implementation;
- Initiate development of required legislative reform for GHS implementation;
- Initiate development of sectoral implementation plans, outlining specific activities, responsibilities, timeframes and targets; and
- Discuss next steps to develop a National GHS Implementation Strategy

There are several options as to when a country may want to hold the National GHS Workshop and this depends in part on the goals of the workshop and the stage of implementation of the country. For example, some countries may choose to hold their workshop in the initial stages of capacity building. This would provide a forum to raise awareness and learn about the GHS and to discuss initial steps and division of responsibilities for conducting the situation and gap analysis, comprehensibility testing, legal analysis and other relevant activities. In other cases, countries may find it more effective to hold the National GHS workshop after these activities have been completed in order to discuss in-depth the development of the National GHS Implementation Strategy and its elements, including the sectoral implementation plans and legal framework.

[10] For further information, please contact UNITAR or visit https://www.unitar.org/event/event-pillars/planet

9. Developing a National GHS Implementation Strategy

A National GHS Implementation Strategy document is a means to consolidate the results of GHS activities thus far, and should provide detailed information on the next steps for GHS implementation. The report may be seen as a "road map" for GHS implementation by a set target date. As outlined in Figure 3, the National GHS Implementation Strategy can be seen as the core document in guiding capacity development for GHS implementation, and serves as the framework for continued GHS implementation. In particular, the report should include the situation and gap analysis, consideration of cross-sectoral issues, as well as outline the objectives, activities and tasks, responsible parties, budgets and suggested implementation mechanisms for remaining actions. It should be prepared taking into account all necessary elements for implementation. Some important general information that should be included are:

- The target date for full GHS implementation, given international, regional and national factors (including provision for transition periods, as appropriate)
- An organigram of the National GHS Implementation Committee and relevant subcommittees
- Priority implementation issues
- Means for implementation (e.g., phase in periods, starting with pilot projects)
- Activities needed to ensure GHS implementation by the target date
- Necessity of and means for acquiring resources necessary to carry out activities
- Possible synergies with other international agreements (e.g., Rotterdam and Stockholm Conventions, ILO Convention No. 170)
- Description of cross-sectoral issues
- Role of stakeholders in raising awareness and training.

The following sub-sections outline how to develop a framework of specific actions for the GHS NIS.

9.1 Implementation strategy framework: objectives, tasks, responsibilities, timeframes and budgeting

Based on the outcomes of the situation, and in particular, the gap analysis, the necessary steps for implementing the GHS should then be identified. In order to convey this information, the next step is to outline in detail for each gap identified, exactly what actions are necessary to fulfil a particular aspect of GHS implementation. In most cases, the basis for these actions can be described in the form of an objective. Based on the objectives and activities, tasks should be outlined in a step-by-step form that would detail exactly how a particular objective would be met. Next to each activity/task should be a timeline for completing the task, a proposed budget allocated for its completion and a person or party identified as responsible for that particular component. Figure 4 provides a flowchart of how this information can be developed.

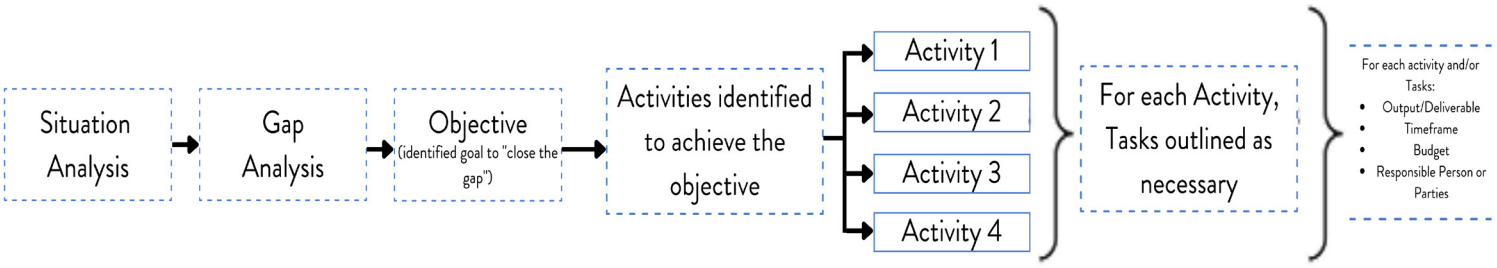


Figure 4: Suggested Framework for NIS Actions

Objectives, activities and tasks

Objectives can be considered a description of the goal identified to "close the gap" between the current situation (situation analysis) and what is needed in order to implement the GHS (gap analysis). Based on the objective, a set of concrete activities can be outlined which describe the necessary steps to achieve this objective. In most cases, activities themselves can still be quite broad and may require further detail in the form of specific tasks and outputs needed to complete a particular activity. It may be the case that a particular task could support multiple objectives, and this should be duly noted within the NIS.

Output/Deliverable, timeframe, budget and responsibilities

For each activity or task a concrete output or deliverable should be identified which indicates the activity has been completed. Providing an estimate of the resources necessary for completing a particular activity or task is key to overall planning and is essential for coordinating the various actions detailed in the NIS. First, each activity and/or task should have an estimated timeframe for completion in order to set concrete, time-limited goals for when particular tasks should be completed. While the estimated timeframes should reflect as accurately as possible a realistic amount of time needed to complete project activities, there should also be mechanisms built in to adjust the schedule as necessary and to avoid any bottlenecks of activities that are unable to continue because one is not complete. Further, an estimated budget should be identified in order to have an idea of how much money should be allocated to each task. This budget should be broken down to include items such as estimated amounts dedicated to facilities, equipment, travel and human resources. Budgeting is also important to demonstrate to donors and other parties involved what resources are currently available and what resources are still needed in order to complete a particular project activity. Therefore, it can serve as an important means of communicating expected project resource constraints for fundraising and resource mobilization. Finally, the responsible person and/or parties should be agreed in order to designate who will ensure that each identified activity will be completed.

For an example of how these could be visually developed, please see the example from Cambodia.

Case Study: Actions for GHS Implementation in Cambodia

1) **Strategy 1: Develop legislation and other regulations for implementing GHS.**

- **Objective:** Develop Sub-Decree on the GHS.
- **Executive Agencies:** MoE, MAFF, MIME, MoPWT, MoC
- **Cooperation Agencies:** MEF, MoJ, MoLVT, Private Sector, and Civil Organizations
- **Actions:**

Code	Activities Description	Timing												Resources
		2009				2010				2011				
		1	2	3	4	1	2	3	4	1	2	3	4	Budget (US$)
1.	Form inter-ministerial legal and technical team and select national legal expert. to advice on draft regulations of relevant institutions and in order to advice on procedure relation GHS in Cambodia.				√									-
2.	Review and assess existing legal instruments related to the GHS.				√									4,000
3.	Identify need regarding the future implementation of sub-decree on the GHS of classification and labelling of chemicals.				√									5,000
4.	Develop first draft of sub-decree on the GHS.				√									5,000
5.	Organize consultation workshop on the first draft of sub-decree on the GHS of classification and labelling of chemicals.				√									5,000
6.	Review and revise the first draft and produce the second draft of sub-decree on the GHS.				√									4,000
7.	Organize consultation workshop on the second draft of sub-decree on the GHS of classification and labelling of chemicals.				√	√								5,000
8.	Review and revise the second draft and develop final draft of sub-decree on the GHS and submit to the office of the council of minister for adoption and approval.				√	√								4,000
9.	Disseminate the sub-decree on the GHS to all stakeholders and to the public.					√	√							4,000
10.	Develop ministerial regulations and procedure for implementation of the sub-decree on the GHS in each sector (Industrial workplace, agriculture, transport, and consumer product).					√	√							10,000

Using the example from Cambodia's NIS above, based on the results of their earlier assessments, one identified objective was the development of a sub-decree on GHS. In order to accomplish this goal, they identified several activities. In each case, there were multiple steps in order to complete each of the activities. For example, for activity 4: Develop First Draft of Sub-Decree on GHS, it would be necessary to further detail the tasks necessary for this activity. While this information is not provided in the box above, we could imagine that this includes, 1) identify legal expert to draft decree, 2) convene legal review sub-committee to agree on terms of draft legislation. Based on the agreed activities, Cambodia then identified a timeframe for each activity, as well as an estimate of resources needed for each activity. In order to support effective planning, Cambodia could also break down each estimated budget line by the necessary costs for a particular activity, including costs of human resources, equipment, office rental and supplies. In the top section of the action, Cambodia has also identified the coordinating agencies and the partner agencies and organisations. Further detail on exactly which agencies and organisation are responsible under each activity would further facilitate project planning.

9.2 Preparing Sector-specific GHS Implementation Plans

As a means to structure the objectives, timelines and responsibilities of GHS implementation among the key sectors, countries may choose to prepare sector-specific implementation plans. Dividing implementation into sector-specific sub-sections provides more flexibility to take into consideration different baseline situations and the results of the situation and gap analyses within each sector. These sectoral plans would subsequently be reviewed and integrated into the national GHS implementation strategy report.[11] Each sector-specific implementation plan should reflect input from government, business and industry, and civil society.

9.3 Endorsement of the National GHS Implementation Strategy

As a complement to the implementation report, countries may also wish to elaborate a resolution among all stakeholders (government, business and industry, and civil society) and sectors to confirm commitment of specific goals for GHS implementation and the remaining activities, and to move forward with agreed actions as outlined in the NIS. This resolution could be endorsed, for example, at a GHS Review Workshop (see Supporting Activity 3).

Supporting Activity 3: GHS Review Workshop

As countries near completion of developing their National GHS Implementation Strategies, they may find it useful and timely to convene a National GHS Review Workshop at which the NIS report can be made available for final discussion and endorsement by high-level government decision-makers and concerned stakeholders.

[11] A guidance package on sound planning/Action Plan Development is available from UNITAR. This includes: Guidance on Action Plan Development for Sound Chemicals Management, Guidance Document and Action Plan Skills-Building Workshop and Training Modules.

10. Putting the National GHS Implementation Strategy into action

Once the NIS has been agreed and finalised, the next phase is to begin actual execution of the strategy. In many cases, some of the activities identified within the NIS, such as awareness raising and training for stakeholders may already be in process. However, a systematic approach, following the terms agreed in the NIS, provide a framework for step-by-step action for the most effective implementation of the plan. Figure 5 lays out the cycle of ongoing GHS implementation.

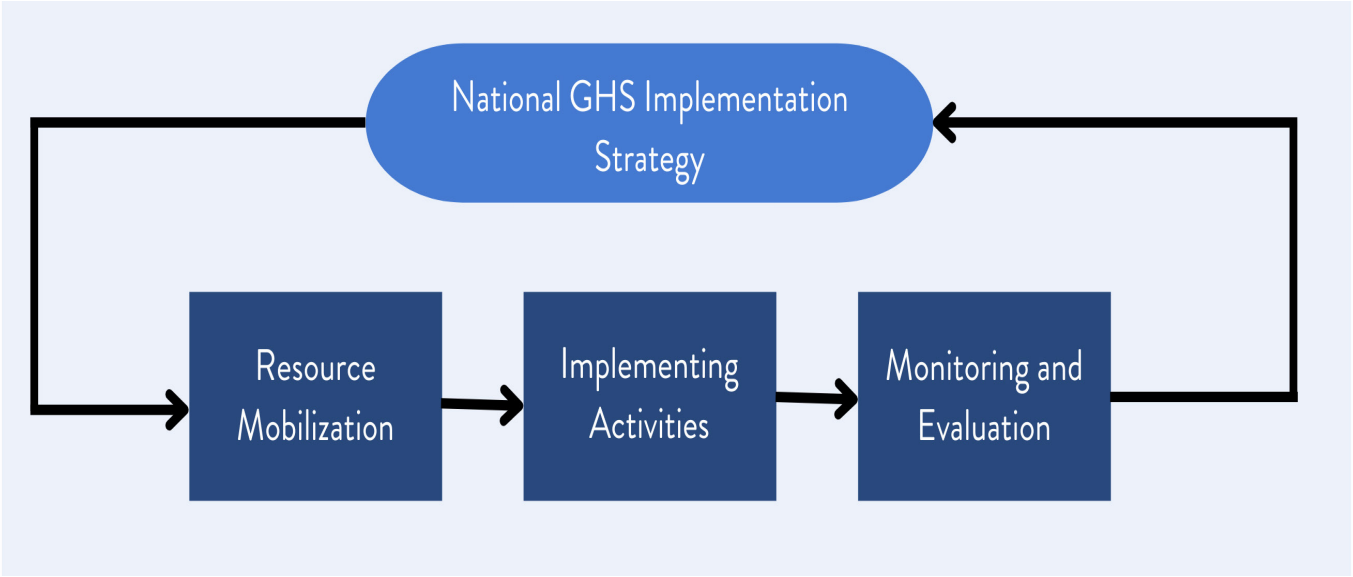


Figure 5: National GHS Implementation as an Ongoing Process

10.1 Resource mobilisation

Mobilising the necessary resources for putting the NIS into action can be vital to the potential success of the project. While resource mobilisation should be considered from the very early stages of capacity building and should be an ongoing process, it is often once the NIS is completed that countries can provide concrete evidence of actions planned for GHS implementation. This completed plan can then be presented to national authorities and decision-makers, and submitted to donors and aid agencies for support of NIS implementation. Countries should also consider sources of support within the country, such as from the Ministries of Finance or Planning, or as part of the budgets of related sectors, such as trade, transport, agriculture, labour, health and environment. External sources of support from international organisations, aid agencies, partner countries and regional organisations can also be considered. Further information and guidance on resource mobilisation can be found in UNITAR's "Guidance for Developing SAICM Implementation Plans[12]".

[12] http://cwm.unitar.org/national-profiles/publications/inp.aspx

10.2 Implementing activities

As an essential element of the NIS, countries will have identified and agreed on activities to carry out in the implementation phase. The following sub-sections describe activities that are key to implementation. The exact details of how these will be carried out will depend on each particular country's circumstances. Countries will also want to add other activities (such as further training – see section 8.2) as appropriate.

Communication and outreach

While the NIS is normally agreed among key stakeholders and is developed taking into account the results of initial assessments and careful discussions and planning, once the NIS is initiated, countries may choose to initiate or continue wide-spread awareness raising and outreach about national GHS implementation. This would include further informing the diverse groups of stakeholders of upcoming project activities that they could be involved in, or that could affect them. For example, governments may want to send out fliers or letters to businesses and industry to inform them of potential upcoming changes to regulations or chemicals management standards. Labour unions and public interest groups may be involved in setting up workplace posters or distributing brochures to audiences informing them of GHS symbols and other hazard communication elements.

International dialogue

At every stage of the GHS capacity building and (especially) implementation process, countries may wish to communicate with key multilateral groups such as the UNSCEGHS in order to inform the international community of progress on GHS within a particular country, to share experiences, get feedback and request further resources to support implementation. This could include participation in the UNSCEGHS as an observer, applying to become a member and passing information through another agency (such as UNITAR and the ILO) that regularly attends the meetings. Once a member, countries may choose to submit informal documents to the UNSCEGHS or provide informational interventions to make others aware of the status of GHS implementation.

Ongoing stakeholder involvement

Although it is expected that business and industry, and civil society representatives will participate in the key GHS planning and implementation activities, stakeholder groups may find it helpful to undertake specific activities to address the needs of particular user groups. These activities could be a continuation of the stakeholder workshops held in the initial phases of capacity building specifically addressing the needs of particular actor groups or stakeholder groups within sectors. Ongoing stakeholder input should also be considered for any governmental decision-making on legal or regulatory structures for GHS implementation.

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Legal implementation of the GHS

Based on the outcomes of the legal analysis and the agreed legal framework within the assessment phase of GHS capacity building, countries will want to carry out the necessary legislative actions for implementing the GHS. The way this is done will depend significantly on the legal structure in each country for developing, reviewing and agreeing on new rules.

Enforcement

The main way to ensure that the GHS is being used correctly is through enforcement. While the UNSCEGHS is responsible for implementation and maintenance of the GHS at the international level, as a voluntary standard available for adoption by countries, the GHS is expected to be implemented via national regulations, legislation or administrative procedures at the national level. Thus, once a country legally adopts the GHS, an effective system for monitoring and enforcing the national system will be the responsibility of relevant government authorities, including worker, health and safety, consumer inspectorates and customs agencies. This will help ensure that the new legal infrastructure dealing with the GHS is correctly and efficiently implemented and followed.

Emergency response

Emergency responders are those involved in responding to chemical emergencies such as spills, leaks or explosions. Whether in a factory setting, storage facility or in a road accident, they need several types of hazard communication tools. In the case of an industrial accident, for example, workers and emergency responders need to know what mitigation and control measures are appropriate. In such a situation, they may require information that can be seen from afar. They may also then require expert assistance with regards to how to treat a particular chemical emergency, such as a spill in a given environment (e.g., knowledge of factory design can be used to help contain a chemical spill in a particular facility).

Case Study: Emergency Response Cooperation in the Americas

In June of 2009, several emergency response centers in the US and South America signed a Memorandum of Agreement (MOA) of cooperation to enhance the ability of emergency responders to effectively and efficiently deal with incidents involving dangerous goods. Their agreement was based on the recognition that, with the growth in the global dangerous goods market, there is increased interest in enhancing the information available to emergency responders globally, particularly where such capabilities may not be well established. The MOA facilitates the sharing of dangerous goods information and cooperation in the event of a chemical spill, leak, fire or exposure where necessary information is quickly needed to protect personnel, property, and the environment. Based on the MOA, it was agreed that signatory centers would share emergency response information, as well as SDSs, and other hazard communication tools relevant for chemical safety.

Fire fighters and those first at the scene of a transport accident also need information that can be distinguished and interpreted at a distance. Such personnel are highly trained in the use of graphical and coded information. Labels are required to provide immediate summary information regarding the chemical at hand, while detailed information found in an SDS regarding the chemicals should be available beyond the immediate emergency. For agricultural or consumer poisoning incidents, the information needs of medical personnel responsible for treating victims may differ from those of fire fighters. In this case, the role of poison control centres and others with toxicological expertise is important. Countries may wish to consider how to involve these experts in the development of the national GHS implementation strategy.

Case Study: Firefighting and the GHS- the USA

NFPA OSHA® QUICK CARD™

Comparison of NFPA 704 and HazCom 2012 Labels

	NFPA 704	HazCom 2012
Purpose	Provides basic information for emergency personnel responding to a fire or spill and those planning for emergency response.	Informs workers about the hazards of chemicals in workplace under normal conditions of use and foreseeable emergencies.
Number System: NFPA Rating and OSHA's Classification System	0-4 0-least hazardous 4-most hazardous	1-4 1-most severe hazard 4-least severe hazard • The Hazard category numbers are NOT required to be on labels but are required on SDSs in Section 2. • Numbers are used to CLASSIFY hazards to determine what label information is required.

In the USA, the Occupational Safety and Health Administration has developed a comparison "Quick Card" to assist with identification of firefighting labels and the information related to the GHS.
https://www.osha.gov/Publications/OSHA3678.pdf

10.3 Monitoring and evaluation

The importance of monitoring and evaluation of GHS implementation should not be overlooked. According to the SAICM Quick Start Programme Trust Fund (QSPTF) guidelines, "Monitoring is considered to be the continuous process of assessing the status of project implementation in relation to the project work plan. It is considered as a means to suggest performance improvements and the achievement of results. Evaluation is a way of determining as systematically and objectively as possible the relevance, efficiency, effectiveness and impact of the project's activities in relation to its objective." It continues by asserting that, the purpose of monitoring and evaluation is to "assess [ ] project implementation, to identify project achievements and challenges, to measure project performance against objectives and to provide indications of progress. The monitoring and evaluation should be undertaken using evidence-based information that is credible, reliable and useful, thereby permitting the incorporation of conclusions, recommendations and lessons." Whether required by an external donor or for internal auditing and review, consistent monitoring and evaluation of the NIS is key for assessing progress with GHS implementation and for continued feedback and coordination of GHS implementation among the various stakeholders. This review can also be used to ensure that GHS implementation is progressing in the right direction and that the actions undertaken and planned are meeting the specific objectives set by the NIS. Monitoring and evaluation should take place regularly throughout the implementation process and can be done by a neutral party. It can be considered an ongoing feedback loop to improve and refocus the NIS based on the results of ongoing and completed activities.

11. Coordination with regional and trading Partners

As the trade in chemicals between regions and countries increases, a regional approach to GHS can be an important mechanism for facilitating GHS capacity building and implementation and for coordinating time-plans and phase-in periods. Regionally coordinated implementation can facilitate trade and commerce, help reduce illegal trafficking of chemicals, and increase access to information. Given limited resources in many countries, a regional approach to GHS implementation could also provide an efficient and effective way to support and enhance country efforts, as it could provide a means to further share information and resources on the GHS. Furthermore, many of the national activities and recommendations could also be applied at the regional level. Countries may decide to form regional or trade-related committees to coordinate and discuss their respective GHS implementation approaches. Further activities are described below.

11.1 Regional coordination

Coordinating with regional and trading partners is an integral part of GHS capacity building and implementation. To coordinate GHS implementation activities in a region, a Regional GHS Coordinating Committee could be established based in one of the regional organisations or GHS implementation activities can be added to the agendas of existing regional committees. Further regional technical sub-committees could be established, by sector, if appropriate to coordinate sector-specific GHS activities and to address the particular needs of each sector. Subcommittees could include a Harmonised Chemicals and Pesticides Registration System or an emergency preparedness and response committee, inspectorate, and a rapid alert system for chemicals emergencies that could function at a regional level.

11.2 Regional policy initiatives

In any given region, there may already exist a number of regional efforts that are related to the GHS. Wherever possible, the GHS should be integrated into existing workplans and programmes in a region. For example, GHS is related to a number of policies already developed by the Economic Cooperation of West African States (ECOWAS), including their Environment, Agriculture and Water Policies. Similarly, the Southern African Development Community published a regional GHS policy which was agreed and signed by the Ministries of Trade and Industry in 2012 for GHS implementation. A further example is the Comunidad Andina (ANDEAN Community) which has established the GHS for pesticides of agricultural use across the Member States.

The GHS could be included into existing policy or regional agreements, or regions may choose to formulate and enact common GHS-implementing legislation to be approved by a regional body. Regions may wish to develop a regional implementation strategy and workplan for GHS.

11.3 Existing regional organisations and initiatives

The GHS can also be promoted through existing regional organisations and integrated into existing regional initiatives. This could include the use and involvement of regional economic organisations such as the North American Free Trade Agreement (NAFTA), Association of South East Asian Nations (ASEAN), Mercosur; civil society groups such as Consumers International, International POPs Elimination Network (IPEN), Pesticide Action Network (PAN), and International Trade Union Confederation (ITUC); and business and industry associations such as Croplife and the International Council of Chemical Associations (ICCA). Regional organisations can support GHS implementation through coordination, training and awareness-raising of GHS among the member countries. Many regions have existing cooperative agreements or initiatives related to trade, health, labour and environment and the GHS can be used as a tool for supporting these efforts. This is also an important consideration for funding from regional organisations and international donors.

11.4 Information sharing and exchange

A key means of regional GHS capacity building and implementation is the development of information sharing and exchange networks. In particular, regions may consider:

- In countries where poison control centres exist, sharing information with countries without centres through exchange and cooperation programmes;
- The development of information exchange networks, in the form of websites and databases, to enhance information dissemination on chemicals safety and management;
- Promotion of institutional cooperation within the region, such as with research institutes, universities and national laboratories;
- Coordinating experts, for example, by developing exchange programmes, establishing a roster of experts and taking advantage of train the trainers;
- Regional or bilateral training for border and customs officials to coordinate and ensure safe cross-border transport.

Case Study: Collaboration between the U.S. Department of Labor and Health Canada

The United States (U.S.) Department of Labor (US DOL) and Health Canada have had a long history of informal collaboration throughout the GHS process. In 2011, the United States-Canada Regulatory Cooperation Council was created to reduce unnecessary differences between their regulatory frameworks. Through this initiative, US DOL and Health Canada developed a workplan that included developing a Memorandum of Understanding (MOU) to formalize the collaboration between US DOL and Health Canada. Specifically, the MOU was designed to promote ongoing collaboration on implementation of updates to the GHS for workplace chemicals in their respective jurisdictions. The objective of this collaboration is to ensure that the Canadian and U.S. requirements for hazard classification and communication remain aligned to the greatest extent possible with each other and with the GHS as it is updated. Where possible, the objective is to have one label and one safety data sheet (SDS) that would be acceptable in both countries, while respecting the legislative and regulatory requirements of each country and without reducing the level of safety or protection to workers. This collaboration includes developing a mechanism to maintain alignment as the system is updated and modernized or new requirements or standards are put in place, exploring innovative methods to engage stakeholders as well as enhanced collaboration on common interpretation and guidance materials. This work is conducted by establishing and maintaining work plans, as well as through meetings of the joint Working Group for Workplace Chemicals co-chaired by Health Canada and the U.S. Occupational Safety and Health Administration.

11.5 Regional GHS workshops

To initiate and improve coordination and dialogue on the GHS, regions may wish to organize a Regional GHS Workshop. This event could provide detailed information on the GHS, as well as background on the current state of classification and labelling in specific countries and in a region. Countries already undertaking steps towards GHS implementation could share their experiences and lessons learned to countries just starting the process. Special focus should be given to existing differences and future challenges of hazard communication and GHS implementation for government, business and industry, and public interest and labour organizations in the four sectors of workplaces, agriculture, transport and consumer products. The workshop could include working groups focused on identifying appropriate ways and means, at the national and regional levels for GHS implementation.

Case Study: Regional GHS Capacity Building in Southeast Asia

From 2005-2007, the project "Strengthening National and Regional Capacities to Implement the GHS in ASEAN", supported GHS implementation at the regional and national levels within the Southeast Asia region. Regional GHS capacity building activities involving all ten ASEAN countries and relevant regional organizations resulted in a regional commitment to GHS implementation. In particular, the project included:

- A broad range of awareness-raising and training materials developed, in national/local languages, including 39,000 brochures, posters, and other materials produced and distributed thus far in pilot countries
- Regional GHS capacity assessment report prepared
- Regional GHS implementation strategy for ASEAN developed and adopted at a major regional conference
- Regional capacity assessment for public interest and labour organizations developed
- Regional expert workshop for public interest and labour organizations completed and a network of public interest and labour organizations (SEApChemNet) for GHS implementation and chemical safety established
- A total of 1,584 government, industry, and non-governmental beneficiaries trained to prepare for GHS implementation in ASEAN.

The results achieved through this project provide a sound basis for possible future activities and cooperation throughout the region.

Conclusion

A key aspect of sound chemicals management is the identification of the hazards they pose and the communication of relevant precautionary information and handling measures for their safe use. In order to facilitate a consistent and comprehensive approach to chemical hazard identification and communication, the GHS was created. The overall 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 (on labels and in SDS).

Around the world, countries and regions are working to implement the GHS. However, implementation through the development of legal instruments, the consistent use of GHS by industry and general comprehension of the system by the public takes extensive coordination among the various sectors and actors affected by chemicals management as well as continued cooperation between countries, regions and the international community.

Implementation of the GHS is an ongoing process and the Purple Book continues to be revised and updated to incorporate the most recent international discussions and feedback. To support countries and as part of the Global GHS Capacity Building Programme, UNITAR/ILO created this guidance document to provide a detailed description of possible steps for developing a national GHS implementation strategy. While it can be useful to read the document from beginning to end, users can also draw from and focus on specific sections pertinent to their particular circumstances. Furthermore, the IOMC toolbox can assist in directing interested parties to specific elements of GHS implementation: https://iomctoolbox.org/.

The eventual outcome of global collective efforts will be the consistent and comprehensive worldwide implementation of the GHS for improved chemical safety across all relevant sectors, and enhanced protection of human health and the environment.

Annex I: List of Acronyms

ADN	European Agreement Concerning the International Carriage of Dangerous Goods by Inland Waterways
ADR	Agreement Concerning the International Carriage of Dangerous Goods by Road
ASEAN	Association of Southeast Asian Nations
CAS	Chemical Abstract Service
CSD	Commission on Sustainable Development
CWC	Chemical Weapons Convention
DESA	Department of Economic and Social Affairs (UN)
EC	European Commission
ECOSOC	Economic and Social Council (UN)
ECOWAS	Economic Cooperation of West African States
FAO	Food and Agriculture Organization
GHS	Globally Harmonized System of Classification and Labelling of Chemicals
GPA	Global Plan of Action
IATA	International Air Transport Association
ICCA	International Council of Chemical Associations
ICSCs	International Chemical Safety Cards
IFCS	Intergovernmental Forum on Chemical Safety
ILO	International Labour Organization
IOMC	Inter-Organization Programme for the Sound Management of Chemicals
IPCS	International Programme on Chemical Safety

IPEN	International POPs Elimination Network
ITUC	International Trade Union Confederation
MOA	Memorandum of Agreement
NAFTA	North American Free Trade Agreement
NEPAD	New Partnership for Africa's Development
NGO	Non-governmental organization
NIS	National implementation strategy
OECD	Organisation for Economic Cooperation and Development
PAN	Pesticide Action Network
POPs	Persistent Organic Pollutant
SAICM	Strategic Approach to International Chemicals Management
SDS	Safety data sheets
SMEs	Small and Medium Size Enterprises
UN	United Nations
UNECE	United Nations Economic Commission for Europe
UNITAR	United Nations Institute for Training and Research
UNRTDG	United Nations Recommendations on the Transport of Dangerous Goods
UNSCEGHS	UN Subcommittee of Experts on the GHS
UNSCETDG	UN Subcommittee of Experts on the Transport of Dangerous Goods
WHO	World Health Organization
WSSD	World Summit on Sustainable Development

Annex II: GHS in relation to other international chemicals management efforts

While the GHS is an important international system in itself that countries may integrate into national and regional legislation and regulations, implementation of the GHS also facilitates the implementation of other international agreements concerned with chemicals management.

ILO Chemicals Convention No. 170 and its accompanying Recommendation No. 177

The purpose of ILO Convention 170 and Recommendation 177 concerning safety in the use of chemicals at work, adopted by the International Labour Conference (77th Session, 1990), is to protect workers against the risks associated with the use of chemicals at their workplace. It applies to all branches of economic activity in which chemicals are used. It covers all chemicals without exception and provides for specific measures in respect of hazardous chemicals. The Convention sets out the responsibilities of competent authorities, suppliers of chemicals, employers and workers. The Convention came into force in November 1993, and to date (January 2022), 22 countries have ratified it.[13]

The Convention requires that classification systems be established. In addition, it states that all chemicals should be marked to indicate their identity and that hazardous chemicals should be labelled so as to provide essential information on their classification, their hazards and the safety precautions to be observed. It also requires that chemical safety data sheets for hazardous chemicals be provided to employers. Chemical suppliers are responsible for ensuring that chemicals have been classified, marked and labelled and have chemical safety data sheets.

In 1993, ILO elaborated a "Code of Practice for the Safety in the Use of Chemicals at Work", which provides guidance on the implementation of Convention 170. The practical recommendations of the Code cover all the elements necessary to ensure an efficient flow of information from manufacturers or importers to users of chemicals, and enable employers to formulate measures to project workers, the public and the environment. The subjects covered include classification systems, labelling and marking, chemical safety data sheets, design and installation, control measures, work systems, personal protection, information and training, medical surveillance, emergency procedures, monitoring and reporting, and confidentiality.[14]

ILO Chemicals Convention No. 170 and its accompanying Recommendation No. 177

The purpose of this Convention is the prevention of major accidents involving hazardous substances and the limitation of the consequences of such accidents. It came into force in January 1997, and to date (January 2022), 18 countries have ratified it[15].

The Convention requires the competent authority, or a body approved or recognized by the competent authority, shall, after consulting the most representative organizations of employers and workers and other interested parties who may be affected, establish a system for the identification of major hazard installations as defined in Article 3 (c), based on a list of hazardous substances or of categories

[13] https://www.ilo.org/dyn/normlex/en/f?p=1000:11300:0::NO:11300:P11300_INSTRUMENT_ID:312315

[14] More recently, the 89th session of the International Labour Conference adopted in June 2001 a Convention and Recommendation on Safety and Health in Agriculture. The Convention (No. 184) and Recommendation (No. 192) address a range of chemical safety issues including: importation; classification; packaging and labelling; disposal of chemical waste, obsolete chemicals and empty containers; risk assessment; and provision of adequate and appropriate information.

[15] https://www.ilo.org/dyn/normlex/en/f?p=1000:12100:::NO:12100:P12100_INSTRUMENT_ID:312319

of hazardous substances or of both, together with their respective threshold quantities, in accordance with national laws and regulations or international standards. Systems of major hazard control should include provisions for the identification and analysis of hazards and the assessment of risks including consideration of possible interactions between substances.

The GHS in the World of Work: Mapping synergies between ILO instruments and the GHS

In 2021, the ILO published a report[16] exploring critical synergies between the GHS and the ILO's instruments on chemicals and occupational safety and health, with an aim to further promote GHS implementation and an even greater engagement of the world of work in global efforts towards the safer management of chemicals.

The suggested action points from the report were:

1. All States should fully implement the GHS, as a matter of urgency, and as part of their implementation of International Labour Standards.
2. States that have or are in the process of implementing the GHS should ratify and implement Convention No. 170, Convention No. 174, Convention No. 155 and Convention No. 187, among others, capitalizing on the clear synergies between the GHS and these ILS.
3. To help countries with less resources and to take advantage of lessons learnt from implementation, national labour authorities may wish to consider enhancing international cooperation, both bilaterally and regionally. To this end, international organizations serve as a resource for GHS implementation, which States may consider in their implementation plans.
4. Businesses should strive to ensure that hazard communication and training procedures are GHS compliant and consider including due diligence responsibilities.
5. Employers and other businesses should ensure that chemical hazard information is available in workplaces and workers are properly trained in understanding health and safety hazards and precautionary measures to be taken.
6. Governments, employers organizations and workers organizations should engage in social dialogue on GHS implementation, as it is an "essential element" of occupational safety and health.

The Strategic Approach to International Chemicals Management (SAICM) and the sound management of chemicals and waste beyond 2020

An overarching policy framework for international action on chemicals management is the Strategic Approach to International Chemicals Management (SAICM), which runs to 2020. The importance of implementing the GHS is recognised in the Overarching Policy Strategy (OPS) of SAICM–GHS implementation is identified under the overall objective of "knowledge and information": (h) To promote implementation of the common definitions and criteria contained in the Globally Harmonized System of Classification and Labelling of Chemicals. GHS is also included as a SAICM work area in the Global Plan of Action (GPA), including eight distinct activities. In particular, SAICM GPA activity 250 states "Make available sufficient financial and technical resources to support national and regional GHS capacity-building projects in developing countries and countries with economies in transition." Participants at ICCM stressed importance of training and capacity building for implementing the GHS as

[16] https://www.ilo.org/global/topics/safety-and-health-at-work/news/WCMS_818523/lang--en/index.htm

part of SAICM, indicating further international recognition of the importance of countries and regions moving forward to include the GHS capacity building and implementation into overall chemicals management strategies and national SAICM implementation programmes.

In 2015, the ICCM agreed on overall orientation and guidance for implementation to 2020. This included one basic element (of 11) of sound management of chemicals and waste as "Collection and systems for the transparent sharing of relevant data and information among all relevant stakeholders using a life cycle approach, such as the implementation of the Globally Harmonized System of Classification and Labelling of Chemicals".

Discussions on the "beyond 2020" framework are ongoing, but look set to include the GHS as a key indicator of progress and possibly a specific target for action.

FAO/WHO International Code of Conduct on Pesticide Management[17]

The 1985 International Code of Conduct, last updated in 2014, was developed to address a number of difficulties associated with the use of pesticides in developing countries where adequate regulatory infrastructures are frequently lacking. It was recognized that in order to remain relevant the Code must evolve in order to reflect changing needs of countries and be updated with recent developments in the area of pesticide and chemical management (e.g. new international Conventions) and that there was a need to monitor progress in the observance and implementation of the Code. The objectives of the Code are to set forth responsibilities and establish voluntary standards of conduct for all public and private entities engaged in or affecting the management of pesticides throughout their entire life cycle. The Code suggests how to distribute the responsibilities between government, industry and others. The 12 articles of the Code are supported by a set of more than 40 detailed technical guidelines that provide guidance on their implementation. Article 10 of the Code specifically addresses "Labelling, packaging, storage and disposal" of pesticides.

The FAO has integrated the principles of the GHS into its guidelines for pesticide evaluation, registration and labelling and into other documents and tools, where appropriate.

FAO/WHO Guidance on Good Labelling Practice for Pesticides

The FAO "Guidance on Good Labelling Practice for Pesticides" gives guidance on the preparation of labels and specific advice on content and layout. It is intended for use by those in industry involved with label preparation and also by national regulatory personnel involved with the review and approval of labels design and contents. The Guidance contains six main sections with appendices. Section two specifically introduces the GHS and key elements. A 2022 version of this Guidance will be published, including further emphasis of the importance to adopt the GHS and to use it for pesticide labelling.

[17] https://www.fao.org/pest-and-pesticide-management/guidelines-standards/faowho-joint-meeting-on-pesticide-management-jmpm/guidelines-tools/en/

The WHO Recommended Classification of Pesticides by Hazard

This document sets out a classification system to distinguish between the more and the less hazardous forms of selected pesticides based on acute risk to human health (that is, the risk of single or multiple exposures over a relatively short period of time). It takes into consideration the toxicity of the technical active substance and also describes methods for the classification of formulations. The document lists common technical grade pesticides and recommended classifications together with a listing of active ingredients believed to be obsolete or discontinued for use as pesticides, pesticides subject to the prior informed consent procedure (Rotterdam Convention), limitations to trade because of the Stockholm (POPs) convention, and gaseous or volatile fumigants not classified under these recommendations (but with information on inhalation toxicity from other sources). The WHO Hazard Classes have been aligned in an appropriate way with the GHS Acute Toxicity Hazard Categories for acute oral or acute dermal toxicity as the starting point for allocating pesticides to a WHO Hazard Class. The classification of some pesticides has been adjusted to take account of severe hazards to health other than acute toxicity. The GHS Acute Toxicity Hazard Category for each pesticide is now presented alongside the existing information. The latest edition was published in 2019 and is also available in Spanish and French (Spanish and French pesticide names listed alongside the English names) at https://www.who.int/publications/i/item/9789240005662.

The WHO International Programme on Chemical Safety

The World Health Organization's International Programme on Chemical Safety (IPCS) has an established and internationally recognized leadership role in the preparation of risk assessments on specific chemicals and for developing and harmonizing hazard and risk assessment methods. These products include Concise International Chemical Risk Assessment Documents, International Chemical Safety Cards, and Poisons Information Monographs These products are of particular benefit to countries that may lack high levels of toxicological expertise. IPCS now incorporates GHS hazard classification information in its information products on chemicals in order to enable national governments to use these products more effectively in implementing the GHS at the national level.

It is also a goal of IPCS to more effectively engage health professionals in its chemical assessment activities. This has significant practical benefits for the implementation and further development of the GHS particularly in relation to arrangements for precautionary statements and first-aid instructions that are found on both labels and safety data sheets. Also important is maintaining and continuing to develop the GHS to take account of hazards where there is a wealth of existing information on human exposures to chemicals in the home, in the workplace and via environmental media. Health professionals are often the first responders in cases of chemical exposures. These professionals have a long-standing practical experience of treating chemically exposed individuals and specific expertise in the recognition of symptoms and signs, their evolution and in the development and evaluation of cost-effective first aid and emergency medical management. This expertise and experience should be taken into account when harmonizing precautionary statements and safety sheets. See: https://www.who.int/health-topics/chemical-safety.

International Chemical Safety Cards (ICSCs)

The International Chemical Safety Cards (ICSCs) are data sheets intended to provide essential safety and health information on chemicals in a clear and concise way. The primary aim of the Cards is to promote the safe use of chemicals in the workplace. The main target users are workers and those responsible for occupational safety and health. The ICSCs project is a common undertaking between the International Labour Organization (ILO) and the World Health Organization (WHO), with the co-operation of the European Commission. These cards provide information in over 12 languages on over 1,700 chemicals, which are being updated to reflect GHS standards.

ICSCs are prepared and peer-reviewed in English by a consortium of scientists from specialized scientific institutions concerned with occupational safety and health in different countries. Subsequently, national institutions translate the Cards into different languages.

The process of peer review ensures the authoritative nature of the information provided in the Cards. Existing ICSCs are updated periodically to take account of the latest scientific developments. New Cards are proposed by countries or stakeholder groups.

Information provided in the ICSCs:

1. Identity of the chemical
2. Fire and explosion hazards
3. Fire fighting
4. Acute health hazards and prevention
5. Preventive measures
6. First aid
7. Spillage disposal, storage and packaging
8. Classification and labelling
9. Physical and chemical properties and dangers
10. Short-term and long-term health effects
11. Regulatory information and occupational exposure limits
12. Environmental data

The information provided in the Cards is in line with:

- ILO Chemicals Convention, 1990 (No. 170)
- ILO Chemicals Recommendation, 1990 (No. 177)
- European Union Council Directive 98/24/EC
- United Nations Globally Harmonized System of Classification and Labelling of Chemicals

The international peer-review process followed in the preparation of ICSCs ensures the authoritative nature of the Cards and represents a significant asset.

ISO 11014:2009: International Standard for Safety Data Sheets

In 1994, the International Organization for Standardization (ISO) developed a standard format for safety data sheets to create consistency in providing information on safety, health and environmental matters for chemical products. In order to establish uniformity, certain requirements are laid down as to how information on the chemical product shall be given (for instance the wording, numbering and sequence of the headings). To be in line with international efforts, the ISO has adopted the SDS 16-section format of the GHS.

The standard was updated in 2009, based on the second revised edition of the GHS, 2007. It was reviewed and confirmed in 2014 and 2020. It contains instructions for the compilation and completion of an SDS which are globally consistent with those contained in Annex 4 of the GHS although some information required in Annex 4 of the GHS is sometimes missing in the standard, or is much less detailed. In addition, the standard has not been updated in order to take account of the amendments to Annex 4 of the GHS published by the United Nations since 2009.

Therefore, it is highly recommended, when preparing an SDS or developing national requirements for SDSs, to consult the guidance provided in Annex 4 of the GHS, available online on the UNECE website (https://unece.org/transport/standards/transport/dangerous-goods/ghs-rev9-2021).

Note: that ISO standards are copyrighted and not available free of charge.

Convention on the Prohibition of the Development, Production, Stockpiling and Use of Chemicals Weapons and on their Destruction (Chemical Weapons Convention [CWC])

The CWC, which came into effect on 29 April 1997, aims to eliminate an entire category of weapons of mass destruction under strict and effective control that is largely outside the scope of this summary. However, it also covers chemicals and activities not prohibited under the Convention. These include the so-called dual-purpose chemicals and their precursors. Indeed, the exchange of scientific and technical information, and the production, processing and use of such chemicals for purposes not prohibited under the Convention are permitted. Imports and exports of scheduled chemicals are also permitted subject to the conditions as laid down in the Convention and the relevant decisions that have been taken by the policy-making groups of the organization.

National implementation of the Convention involves adoption of measures by each State Party to fulfil its obligations under the Convention. In particular, it includes the enactment of necessary legislation to prohibit activities that are not permitted under the Convention, setting up National Authorities that are to serve as national focal points for implementation of the Convention, and bringing national regulations concerning trade in chemicals into line with the provisions of the Convention. In order to facilitate national implementation, technical assistance, training of personnel, and legal assistance aimed at capacity building are provided by the Technical Secretariat of the OPCW. As with other Conventions, activities are undertaken through the National Authorities that assist in briefing national scientific and technological communities and the public at large on the requirements of the Convention. Synergies between the CWC and the GHS could strengthen national chemicals management.

Aarhus Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters

The importance of chemical hazard communication and workers right-to-know has been highlighted in various international initiatives and agreements, including the International Labour Organization (ILO) Chemicals Convention 170, Chapter 19 of Agenda 21, and by the IFCS. The topic is also indirectly addressed in the Aarhus Convention, given the GHS is an important tool that supports effective communication of chemical hazards to users and the public. The UNECE Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters (Aarhus Convention) was adopted on 25 June 1998 in the Danish city of Aarhus at the Fourth Ministerial Conference in the 'Environment for Europe' process. The Convention is a major initiative to strengthen environmental democracy and it acknowledges that achieving sustainable development requires the involvement of all stakeholders. The first meeting of the Parties to the Convention that took place in Lucca, Italy, 21-23 October 2002, requested in Decision I/10 that the secretariat make efforts to develop capacity-building service as a means of adequately addressing the need for coordinated and systematic assistance in the implementation of the Convention, primarily in countries in transition.

Transport of chemicals

The main instrument used for ensuring implementation of the GHS in the transport sector is the United Nations Recommendations on the Transport of Dangerous Goods (UNRTDG), elaborated in the 1950s at the request of the UN Economic and Social Council in order to improve safety and to harmonize the various national and international regulations applicable to transport of dangerous goods by the various modes of transport worldwide. Since then these Recommendations, which take full account of the GHS, have been regularly updated every two years. Irrespective of action taken by governments at the request of ECOSOC to adapt their national regulations accordingly, mechanisms have been put in place to ensure cooperation between all UN specialized agencies, other UN entities such as regional commissions (mainly UNECE) and other international organizations depositary of multilateral treaties dealing with transport of dangerous goods to ensure not only that the UNRTDG provisions are reflected in their legal instruments applicable to international transport but also that there are amended simultaneously every two years (on 1 January of odd years) to reflect UNRTDG updates

The main actors in this cooperation mechanism are:

- **International Maritime Organization (IMO)**, through:
  - **SOLAS** (International Convention for the Safety of Life at Sea, 1974, as amended)
  - **MARPOL** (International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 relating thereto, as amended) and related codes of mandatory application for contracting parties to these conventions:
  - **IBC Code** (International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk) (International Bulk Chemical Code)
  - **IMSBC Code** (International Maritime Solid Bulk Cargoes Code)
  - **IGC Code** (International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk, including applicable amendments to which the vessel has been certified)

    * **EGC Code** (Code for Existing Ships Carrying Liquefied Gases in Bulk)
    * **GC Code** means the Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk (Gas Carrier Code)
    * **IMDG Code** (International Maritime Dangerous Goods Code)

- **International Civil Aviation Organization (ICAO)**, through the Chicago Convention (Convention on International Civil Aviation), its annex 18 on the safe transport of dangerous goods by air and the related ICAO Technical Instructions for the Safe Transport of Dangerous Goods by Air

- **United Nations Economic Commission for Europe (UNECE)**, through **ADR** (Agreement concerning the International Carriage of Dangerous Goods by Road) and **ADN** (European Agreement concerning the international carriage of dangerous goods by inland waterways)

- **Intergovernmental Organization for International Carriage by Rail (OTIF)**, through RID (Regulations concerning the international carriage of dangerous goods by rail) which is the Appendix III to the Convention on International Carriage by Rail (COTIF)

- **Organization for Cooperation between Railways (OSJD)** through annex 2 (transport of dangerous goods) to the Agreement on International Goods Traffic by Rail **(SMGS)**

The mechanism includes also close cooperation with the International Atomic Energy Agency (IAEA) in relation to transport of radioactive material; WHO and FAO, in relation to transport of pesticides and infectious substances; the secretariat of the Basel Convention, in relation to transport of hazardous waste; the secretariat of the Montreal Protocol, in relation to transport of ozone-depleting substances; and the secretariat of the Convention of Biodiversity (Cartagena Protocol on Biosafety), in relation to transport of GMOs and GMMOs

Other international agreements

Other international agreements and efforts exist that are relevant to sound chemicals management and GHS implementation, including the following:

- UNECE Convention on the Transboundary Effects of Industrial Accidents
- Vienna Convention for the Protection of the Ozone Layer and the Montreal Protocol on Substances that Deplete the Ozone Layer;
- United Nations Convention against Illicit Traffic in Narcotic Drugs and Psychotropic Substances

Annex III: Additional Information Sources

UNECE Website

The Secretariat of the UN Sub-Committee of Experts on the Globally Harmonized System of Classification and Labelling of Chemicals (UNSCEGHS) is hosted by UNECE: www.unece.org.

The UNSCEGHS and the UNSECTDG are under the CETDGGHS. These groups are found under the Dangerous Goods Transport Division of the UNECE at: https://unece.org/transport/dangerous-goods and https://unece.org/transport/dangerous-goods/ecosoc-bodies-dealing-chemicals-safety.

From the UNECE GHS website, there is access to the latest edition of the GHS Purple Book: https://unece.org/transport/standards/transport/dangerous-goods/ghs-rev9-2021.

GHS Roster of Experts

The WSSD Global GHS Roster of Experts is a database of individuals with expertise related to the Globally Harmonised System of Classification and Labelling of Chemicals. These experts are available to provide support on training and capacity building activities in the application of GHS classification, labelling and safety data sheets in specific sectors and/or geographic regions. Their inclusion in this list is a voluntary effort and within their personal capacity. Experts in the roster are not necessarily official representatives of their respective organisations or endorsed by the Partnership. The GHS Roster of Experts can be accessed at: https://www.unitar.org/sustainable-development-goals/planet/ghs-roster-experts

Information sources for preparing labels and SDS

There are many sources of information for generating labels and SDS. Some national chemical hazard communication systems have classification/labelling lists that indicate which label elements should be assigned to a given category of hazard. The classification information required to generate a label can also be found in some on-line databases, which are often searchable by chemical name or Chemical Abstracts Service (CAS) number.

One source for validated (i.e. peer-reviewed) information on pure substances – International Chemical Safety Cards (ICSCs) – are available from the International Programme on Chemical Safety (IPCS).[18] An ICSC summarizes essential health and safety information on chemicals for their use at the "shop floor" level by workers and employers in factories, agriculture, construction and other work places. ICSCs are not legally binding documents, but consist of a series of standard phrases, mainly summarizing health and safety information collected, verified and peer reviewed by internationally-recognised experts, taking into account advice from manufacturers and Poison Control Centres. Over 1700 ICSC are available in several languages online at: www.ilo.org/public/english/protection/safework/cis/products/icsc/

[18] While there are significant similarities between the headings in an ICSC and an SDS, they are nevertheless not the same. The SDS is the fundamental source of important health and safety information but, in many instances, can be technically complex. The ICSCs, on the other hand, set out peer-reviewed summaries of key data. The ICSC should not be a substitute for an SDS, as workers should be provided with information on the exact chemicals, the nature of those chemicals used and the risk posed in any given work place. However, the ICSC can be thought of as a useful information source for SDS development. The criteria and hazard information in the ICSCs are being aligned over time with the GHS.

The GHS itself does not include requirements for testing substances or mixtures. Therefore, there is no requirement under the GHS to generate test data for any hazard class. It is recognised that some parts of regulatory systems do require data to be generated (e.g., pesticides), but these requirements are not related specifically to the GHS. The criteria established for classifying a mixture will allow the use of available data for the mixture itself and /or similar mixtures and /or data for ingredients of the mixture.

Tests that determine hazardous properties, which are conducted according to internationally-recognised scientific principles, can be used for purposes of a hazard determination for health and environmental hazards. The GHS criteria for determining health and environmental hazards are test method neutral, allowing different approaches as long as they are scientifically sound and validated according to international procedures and criteria already referred to in existing systems for the hazard of concern and produce mutually acceptable data. Test methods for determining physical hazards are generally clearer cut and are specified in the GHS.

The International Chemical Control Toolkit: A practical application of the GHS

The International Chemical Control Toolkit (ICCT) outlines a scheme for protection against harmful and dangerous chemicals in the workplace. It is designed for small and medium sized enterprises (SMEs) in developing countries. From the ICCT website, www.ilo.org/legacy/english/protection/safework/ctrl_banding/toolkit/icct/index.htm, a five-step process is described for finding relevant instructions (guidance sheets) for the safe handling of a substance under given conditions.

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United Nations Institute for Training and Research

The United Nations Institute for Training and Research (UNITAR) was established in 1965 as an autonomous body within the United Nations with the purpose of enhancing the effectiveness of the United Nations through appropriate training and research. UNITAR is governed by a Board of Trustees and is headed by an Executive Director. The Institute is supported by voluntary contributions from governments, intergovernmental organizations, foundations and other non-governmental sources

International Labour Organization

The International Labour Organization is a UN specialized agency which seeks the promotion of social justice and internationally recognized human and labour rights. It was founded in 1919 and is the only surviving major creation of the Treaty of Versailles which brought the League of Nations into being and it became the first specialized agency of the UN in 1946. The ILO formulates international labour standards, provides technical assistance and promotes the development of independent employers' and workers' organizations and provides training and advisory services to those organizations. Within the UN system, the ILO has a unique tripartite structure with workers and employers participating as equal partners with governments in the work of its governing organs.

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