Obstacles and opportunities in GHS implementation and its links to trade:

Focus on the Latin American and Caribbean region

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1. Background and introduction

The Globally Harmonized System of Classification and Labelling of Chemicals (the GHS) is a system of hazard classification and communication of chemicals, open for use by countries around the world. A sub-committee of experts under the auspices of the United Nations (UN) is responsible for the GHS, and they work to develop the main elements within the GHS, including:

1. Rules for classifying the hazards of chemical products (i.e. substances and mixtures)

2. Hazard communication tools, including:

- Format and contents for safety data sheets (SDSs).
- Contents for labels.
- Hazard and precautionary statements.
- Pictograms.
- Signal words.

The GHS was initiated with the intention to develop a single, harmonized system, given multiple systems around the world for classification and labelling of chemical products were in existence. While those systems were similar in many respects, their differences in classification criteria and communication were significant enough to result in different hazard classifications, labels, and format and contents of safety data sheets for the same product. For example, one country may classify a product as carcinogenic while another country will not.

This situation may be resource-intensive for governments to regulate and enforce, costly for companies who must comply with many different systems, confusing for workers who need to understand the hazards of a chemical in order to work safely, and users who may not receive the relevant information in an appropriate format. The principal objective of the GHS is to enhance the protection of human health and the environment by providing an internationally comprehensible system for hazard communication. Furthermore, as more and more countries adopt the principles of GHS, the benefits include:

- providing a recognized framework for those countries without an existing system;
- reducing the need for testing and evaluation of chemicals; and,
- facilitating international trade in chemicals whose hazards have been properly assessed and identified on an international basis.

This document, prepared by UNITAR, seeks to understand some of the main obstacles and opportunities to promote GHS implementation, focusing on its links to trade. Where feasible, the assessment has also prioritised one region - Latin America and the Caribbean (LAC) - as a means to gather more specific evidence/lessons/cases.

This output is not intended to be a “final” report on the GHS and trade, but an exercise in understanding some of the knowledge and gaps, as a means to identify key opportunities to support the implementation of the GHS from a trade perspective.

2. Methodology

For the development of this report, research was conducted by two means primarily: 1) desk research, and 2) a series of semi-structured interviews.

The following documents were used as sources of background information for the desk research:

- Developing a National GHS Implementation Strategy (ILO, IOMC, UNITAR, 2022)[1]
- Scaling-up of commitment for implementation of the GHS (the Global Partnership to Implement the GHS[2] , 2021)[3]
- Options for legislation and standard setting to implement the GHS (UNITAR, 2021b)[4]
- Experiences and lessons learned from GHS implementation (UNITAR, 2021a)[5]
- Have international trade agreements supported implementation of the Globally Harmonized System of Classification and Labelling of Chemicals? (KemI, 2021)[6]
- The GHS in the world of work: Mapping synergies between ILO Instruments and the GHS (ILO, 2021)[7]
- ICCA Recommendations on Modernization of The World Trade Organization (WTO) (ICCA, 2021)[8]
- Overview of GHS activities from organisations outside of the ILO/OECD/UNITAR partnership (UNITAR, 2020b)[9]
- Key elements of a national GHS roadmap and Implementation Roadmap (UNITAR, 2020a)[10]
- Synthesis of GHS Cost Benefit Papers (ICCA, 2019b)[11]
- A Selection and Summary of Case-Studies of Countries or Regions with Experience in Adopting and/or Implementing the Globally Harmonized System (GHS) of Classification and Labelling of Chemicals (ICCA, 2019a)[12].

In addition, a series of semi-structured interviews were carried out with the aim of reaching a broad range of stakeholders and obtaining information from around the world and across the LAC region, from

[1] https://www.unitar.org/sites/default/files/media/file/DEV%20GHS%20STRATEGY%20DOC_INT_26May2022.pdf
[2] OECD, ILO and UNITAR have worked in a partnership since 2002 to support implementation of the GHS, building on their collaboration through the IOMC. The partnership, alongside a coalition of stakeholders including governments, regional economic integration organizations, trade unions, NGOs and the private sector, is seeking to re-energise commitment and scale up implementation of the GHS.
[3] https://unitar.org/sites/default/files/media/file/Global%20GHS%20Committment%2029.12.2020.pdf
[4] https://unitar.org/sites/default/files/media/file/GHS%20Legislation%20document_final_14Dec21_0.pdf
[5] https://unitar.org/sites/default/files/media/file/GHS%20Implementation%20Experiences%20and%20lessons%20learned%20-%20FINAL%208.7.2021.pdf
[6] https://www.kemi.se/en/publications/pms/2021/pm-4-21-have-international-trade-agreements-supported-implementation-of-the-globally-harmonized-system-of-classification-and-labelling-of-chemicals
[7] https://www.ilo.org/global/topics/labour-administration-inspection/resources-library/publications/WCMS_818521/lang--en/index.htm
[8] https://icca-chem.org/wp-content/uploads/2021/09/ICCA-WTO-Modernization-Position-Paper.pdf
[9] https://unitar.org/sites/default/files/media/file/Overview%20of%20GHS%20activities_final_29.12.2020.pdf
[10] https://unitar.org/sites/default/files/media/file/Key%20elements%20of%20a%20national%20GHS%20roadmap_FINAL%2006.11.2020.pdf
[11] https://unitar.org/sites/default/files/media/file/Synthesis%20of%20GHS%20Cost%20Benefit%20Papers%20-%20ICCA%2C%202019.pdf
[12] https://unitar.org/sites/default/files/media/file/Case%20Studies%20to%20Suppport%20GHS%20Implementation%20-%20ICCA%2C%202019.pdf

different sectors (government, private sector, IGOs) and those at a range of implementation statuses. (See Annex 1 and 2 for the list of stakeholders consulted and the protocol used to guide the interviews, respectively.)

For the preparation of the report, findings in terms of obstacles and opportunities for GHS implementation and its links to trade in LAC countries were structured under the following categories:

- Type of legislation and enforcement agency (ies);
- Time and stages of implementation;
- Capacity building efforts;
- Resources and expertise requirements;
- Monitoring, enforcement and compliance;
- Multi-stakeholder arrangements for consultation during design and implementation phase;
- Cooperation with main trading partners during design and implementation phase; and,
- GHS requirements that differ between countries.

3. Obstacles and opportunities of GHS implementation in the LAC region and its links to trade

In order to identify obstacles and opportunities of GHS implementation in the LAC region and its links to trade, a first step is to understand the present situation in the LAC counties in terms of GHS implementation. Table 1 below shows, for some of the countries, GHS regulations in force, as well as the year of adoption, the scope of the implementation (workplace, consumer products, and pesticides), the edition currently in force, and information about building blocks adopted.

Country	Regulatory Reference	Date of publication	Scope (workplace, consumer products, others)	Edtion in force	Are all GHS building blocks adopted?
Argentina	Resolution SRT 801/15	2015	Workplace (industrial sector)	5	Yes
Brazil	Ordinance No. 229, of May 24, 2011, of the Ministry of Labour, amended NR 26 (on hazard communication) incorporating the GHS. Technical provisions for the implementation of the GHS are given in the standards developed by the Brazil Association of Technical Standards (ABNT). First version of standard: ABNT NBR 14725	2009	Workplace (industrial sector)	4	Yes
	Decree No. 10.833	2021	Pesticides (rollout in progress)	NA	NA
Bolivia	Andean Community Resolution No. 2075	2019	Pesticides	Last version	Yes
Chile	DS 57/2019	2021	In force for workplace and consumer products.	7	No
Colombia	Res 2075:2018 implements GHS for pesticides (Andean Community Resolution No. 2075)	2019	Pesticides	Last version	Yes
	Decree 1496:2018 Adopts GHS for: workplace, pesticides, transport, consumer products. Res 773:2021 implements GHS in workplace	2018	Workplace: 6th edition. Full implementation begins 2023	6	Yes

Costa Rica	Decree No. 40.457-S and its Technical Regulation RTCR 481: 2015 Decree No.40457-S, and Technical Regulation RTCR 481: 2015	2017	Industrial chemicals (workplace and some consumer products) Agrochemicals.	6	Yes
Ecuador	Andean Community Resolution No. 2075	2019	Pesticides	Last version	Yes
	Resolution No. 13 067 adopted the technical regulation IRTE INEN 078	2018	Storage and handling of dangerous goods	1	Yes
Mexico	Official Mexican Standard NOM-018-STPS-2015	2015	Workplace	5	No
Peru	Andean Community Resolution No. 2075	2019	Pesticides	Last version	Yes
Uruguay	Decree 307/009 and its amendment by Decree 346/011	2011	Workplace	Most recent (automatic updates)	Yes

Table 1: GHS implementation status in LAC countries. Table based on information available from: GHS implementation: Implementation by country, UNECE, 2021

Type of legislation and enforcement agency (ies)

GHS is implemented in LAC countries through different types of legislations. As seen in Table 1, a variety of instruments are used: Decrees, Resolutions, Technical standards. The latest adoptions of GHS in the region were carried out either through Decrees (Brazil [just for pesticides], Chile, Costa Rica and Colombia) or through a trade bloc resolution (Andean Community); while the earliest adoptions were done mostly through resolutions (Brazil, Mexico, Argentina), with the exception of Uruguay (a Decree). Though it is too soon to know which approach is more efficient in terms of achieving higher levels of implementation, it

can be assumed that a higher level of legislation would provide a greater support for GHS implementation; consistent with the principle of the hierarchy of norms.

Furthermore, if the GHS is adopted by Decree (or law), responsibilities can be assigned to different authorities, which could be beneficial considering the inter-sectoral nature of the system; whereas, if it is adopted by resolution or ordinance (Argentina and Brazil for workplace), then all responsibilities must fall to the respective authority. This has been raised as a barrier to implementation in countries under this condition, because these areas, such as labour departments, generally do not have enough employees and equipment to perform, for example, compliance and enforcement tasks across the country. In addition, as stated by one of the interviewees, a labour or health ministry regulation may not include, for example, environmental hazards within their GHS legislation. Such is the case of Brazil when it comes to GHS implementation for workplace[13].

In addition, when a Decree is used, it is possible to address the implementation of GHS in different sectors simultaneously, promoting coherence among them. Colombia adopted GHS for all sectors in one unique Decree, clarifying in it the pre-existing national mechanisms, those created by the legislation and those that will be implemented in the future. The text includes general considerations applicable to all sectors; further refinement is provided in the secondary regulations.

It is worth mentioning the case of the Andean Community as a best practice within the region of adoption of GHS for pesticides as a trade bloc, thus members of the Andean Community are implementing GHS under the umbrella of the supranational body. Such an initiative would ensure that neighbours, as major trading partners, adopt a harmonized GHS system, facilitating trade.

An additional opportunity is to designate the authority or authorities that would act as the GHS National Focal Point/s within the regulations. This would imply not only coordinating GHS implementation at the national level, but also act as the country representative to the sub-committee of experts on the GHS.

As stated in the "Report on legal and institutional frameworks for the integrated management of chemicals in Latin America and the Caribbean"(Intergovernmental Network on Chemicals and Waste for Latin America and the Caribbean, 2021)[14] it is noted as a trend in the region that countries start to implement classification and labelling systems at a preliminary stage through the creation of voluntary technical standards within their national standardization and quality assurance systems (for example, in Argentina through the Instituto Argentino de Normalización y Certificación or IRAM, in Brazil through the Associação Brasileira de Normas Técnicas or ABNT, in Ecuador through the Ecuadorian Institute for Standardization or INEN). These voluntary technical standards help industry -particularly large companies- to adjust to the chemical safety requirements and gradually adapt their production and trade practices according to international standards. In addition, these tools serve governments to raise awareness and to train SMEs and consumers at a preliminary stage of the journey towards adoption of the GHS. In some cases, such as in Argentina, these technical standards have then been replaced by a mandatory regulation. In others, like Brazil, though the GHS is adopted through a mandatory Ordinance of the Ministry of Labour, the technical provisions remain in the technical standards. However, these technical standards may not

[13] Ordinance 26 from the Ministry of Labour of Brazil states that chemicals must be classified as long as they are hazardous to health and safety of workers in accordance with the criteria established by GHS. Nevertheless, ABTN norms do include environmental hazards and, in practice, this is what companies follow.

[14] http://ccbasilea-crestocolmo.org.uy/wp-content/uploads/2021/05/Report-on-legal-frameworks-in-English.pdf

be free-to-access and they may be prepared without the participation of all stakeholders, including those in government. Consequently, though they may be a good basis as an initial or preparatory tool when regulation is absent, the development of regulations is likely to be more effective for supporting GHS implementation.

Time and stages of implementation

When developing any new regulation or revising an existing one, an initial stage of planning and the development of a gap analysis should be carried out. In relation to GHS implementation, such stages could include, the development of a roadmap for its implementation, an assessment of the current status in the country in terms of existing labelling and classification schemes, and resources available and required at government and industry levels, the identification of legal and economic instruments required for proper implementation and enforcement, and an assessment of GHS implementation with the main trading partners.

Most countries have allowed between one and five years to complete their implementation of the system. For example, in the case of Argentina, the original legislation established 180 days for entry into force. Due to the number of requests from the private sector, a new resolution was published that extended the entry into force for one year for substances and two for mixtures. In the case of Ecuador, an amendment to postpone entry into force for four years was required.

Another approach is the case of Chile, where the Decree, adopted in 2021, established an entry into force regime as follows:

- Industrial substances: 2022
- Industrial substances in mixtures: 2025
- Non-industrial substances: 2023
- Substances in non-industrial mixtures: 2027

As can be seen, it is common practice to first set the system for substances only and then expand it to mixtures, or even give it different times depending on the different uses of the system. This phased implementation allows authorities to gain experience and make any necessary adaptations along the way and can give the private sector the necessary time to adapt procedures and gather information. Transition periods were also a notable feature of UNITAR's lessons-learned document[15].

Another element of this, as seen in the region, is to allow transition periods when another classification and labelling system has already existed in the country. A transition period would mean that, for a certain period of time, products can be classified or labelled under the GHS or under the old system. Again, this gives the private sector time to adapt procedures and gather information, and also to run down stocks of materials. This approach is seen in the case of GHS for pesticides in the Andean Community regulation and in the technical regulation of Costa Rica.

15 https://unitar.org/sites/default/files/media/file/GHS%20Implementation%20Experiences%20and%20lessons%20learned%20-%20FINAL%208.7.2021.pdf

Capacity building efforts

Considering a core GHS element is hazard communication, its goals can only be achieved if the target audience is trained on how to use information available.

Most of the countries studied carried out strong training campaigns during the first stages of the implementation of the GHS, accompanied by the implementation of mechanisms to provide support to companies. However, given the continuous changes that GHS has, staff turnover and the need to reinforce knowledge, it has been seen that there is a strong need to design, maintain and make available a continuous training and support system. One of the interviewees highlighted that, although many courses, trainings and support systems are available from the government, there is little communication about them, so companies are generally unaware of their existence.

On the other hand, the following actors were identified as key for providing GHS trainings and support to companies: unions, industrial chambers, work risk insurers, and consulting companies. This is in addition to information and training available from international organisations, such as UNITAR.

According to an assessment of quality and sustainability requirements, and gaps carried out in the context of the Global Quality and Standards Program (GQSP) Colombia[16], financed by SECO (Switzerland), the Colombian Ministry of Trade, Industry and Tourism and Colombia Productiva and implemented by UNIDO, the following are the main topics to be addressed through training in relation to GHS:

- Campaigns to raise awareness in the industry and the market about what GHS is, what the identification and classification of chemical product hazards consist of, and how said information serves as a preventive measure in terms of exposure to risks associated with chemical substances.
- Training on GHS aimed at companies mainly in topics related to classification of hazards and labelling of chemical products.
- GHS training for other actors who are part of the chemical value chain and related entities, for example, surveillance and control agencies (Labour Ministry, Ministry of Environment and Sustainable Development, ICA, ANLA, labour inspectors, customs inspectors).
- Training of expert consultants in GHS who are multipliers of knowledge in the industry.
- Development of basic, intermediate and advanced GHS courses.
- Strengthening and unification of inspection criteria in the entities assigned to carry out surveillance and control in GHS and the means of communication of the hazards of the chemical product: safety data sheets and labelling
- Strengthening and unification of inspection criteria in the entities assigned to carry out surveillance and control in GHS, transport of dangerous goods and the means of communication of the hazards of the chemical product: safety data sheets, label, emergency cards, identification and conditions that vehicles transporting these substances must comply with, among others.

[16] https://gqspcolombia.org/wp-content/uploads/2020/10/Diagn%C3%B3stico-qu%C3%ADmicos-industriales_VF-.pdf

- Training in the safe storage and handling of chemical products for direct actors in the value chain: manufacturers, logistics and transport operators, as well as other relevant actors in the institutional environment (for example, unions).
- Conduct courses in risk assessment (hazards and the GHS being a component of risks) with a focus on health and the environment of chemical products: Safety margins and exposure to chemical substances.
- Training on the design and development of safety data sheets.
- Development of tools and guides for the implementation of GHS in SMEs.

Resources and expertise requirements

While large companies and multinational corporations are often in a position to lead GHS implementation, a gap in technical knowledge and resources is found in SMEs. The former have resources, information, knowledge and needs regarding GHS that are very different from those of SMEs. Companies that only place their products on the local market lack awareness of the benefits of the GHS. Many SMEs perceive their resources as limited and prefer to allocate them to needs other than the application of the GHS; there is thus a limited understanding of the benefits of the system beyond compliance and obligations. Particularly for small and medium-sized enterprises, which constitute 99,5% of LAC companies[17], a difficulty to access and use information is seen.

A need identified to support more effective implementation of the GHS in the region is for technicians and experts from companies, regardless of their size, to have access to information on chemicals, preferably in their language. The development of practical tools to access chemicals data at the global or regional level, such as databases with information on harmonized classifications for labels and SDS, would be very beneficial for companies. Chile, for example, includes the official classification list of the EU (the ECHA (European Chemicals Agency) database). In terms of language, the GQSP Colombia assessment[18] showed the low commitment of international suppliers to GHS; since often they do not send information in the local language (the research indicated, for example, that information was often sent in Chinese and German).

Once the regulatory framework on GHS is adopted, technical guides for its implementation are also essential for companies, particularly SMEs (Intergovernmental Network on Chemicals and Waste for Latin America and the Caribbean, 2021). Another important tool is the use of specific software to classify and prepare the SDS, which take into consideration the specific requirements of each jurisdiction. This type of software fills most of the SDS, so users do not need to have in-depth knowledge. Nonetheless, the knowledge –at least basic- is important for generating an accurate document. There are several providers that offer this service or provide the specific software.

Another aspect that characterizes the LAC region is the low availability of national chemical laboratories in the development of tests that are required for the characterization of chemical substances at the toxicological and eco-toxicological level, a barrier relevant especially for SMEs and governments, who often do not have access to tests and reference data. Nevertheless, it is worth highlighting that the GHS

[17] OECD and CAF, (2019). Latin America and the Caribbean 2019: Policies for Competitive SMEs In the Pacific Alliance and Participating South American Countries.

[18] https://gqspcolombia.org/wp-content/uploads/2020/10/Diagn%C3%B3stico-qu%C3%ADmicos-industriales_VF-.pdf

promotes the cross-border use of test results and existing information, both in order to reduce unnecessary costs and for animal welfare reasons.

Through the GQSP Colombia assessment, a key obstacle was shown to be the GHS. The report concluded that the lack of technical, financial and qualified personnel resources to address and implement the requirements established by the GHS act as an obstacle to export chemicals, particularly for SMEs. While the most prominent barriers mentioned in the study did not include the GHS, perhaps indicating a need to raise awareness in the system beyond its perception as an environmental issue, it became clear throughout the project that in practice it stopped companies from complying with export standards/ requirements.

Monitoring, enforcement and compliance

In the countries studied, it was observed that customs do not usually carry out controls for the implementation of the GHS (except in relation to transport, which is not the focus of this report). A similar scenario is seen in developed economies, for example, in Sweden, GHS is not checked at customs, they focus on market enforcement (i.e. inspections in workplaces, consumer products, when in country). One of the reasons raised by the interviewees is related to the type of legislation used to implement the GHS, as seen earlier in this report. For example, if the GHS is adopted through a labour resolution, customs would not have the power to carry out border controls. In addition, as mentioned by one of the interviewees, customs often works on a "yes/no" basis – something is allowed in or not, but the GHS is not a system itself that should fall under a yes/no, meaning compliance is not limited to whether a label and SDS is available, but can go further into what is contained in those labels and SDS. Although, as presented, it seems difficult to verify GHS compliance at customs for economies that do not have sufficient resources to carry out proper market enforcement and that most of the chemicals used are imported. It would be interesting to evaluate if setting the necessary mechanisms to carry out border control would mean economies of scale can be developed and a way to achieve higher implementation rates. It is worth noting the case of Uruguay; in the early stages of their implementation, a laboratory for controlling GHS implementation was set up at customs, but over time, it was left unattended given it was not among their main responsibilities.

In terms of compliance and enforcement, it was seen as weak by most interviewees. The main reasons were related to the lack of enforcement agents. It was highlighted as a best practice to improve compliance, the inclusion of GHS-related requirements in the chemicals registration systems that are being set up in the region. This approach is seen in the latest OECD Member States, namely Chile, Colombia and Costa Rica, promoted primarily by their OECD accession processes. One interviewee highlighted that the use of technologies and software within the chemical registries to verify, among others, GHS compliance, as done by REACH in the EU, would ensure higher rates of compliance.

Regarding the impacts on trade, several interviewees highlighted that the lack of stricter controls in the countries results in a common approach used by companies that the classification and labelling are carried out by translating labels and SDS of the country of origin that may -or may not- match the requirements in the country of destination. For example, the building blocks, the purple book versions, or the classification cut-offs for mixtures may differ between trading countries; these should require adaptations of the SDS and the labels, that may not be carried out. It is worth mentioning that, up to now, none of the interviewees recalled any type of commercial barriers to trade derived from this situation, but given that the new approaches adopted by countries such as Chile or Colombia imply for the near future the

registration in IT systems of imported substances and the presentation of information related to GHS (hazard classifications or SDS), this can potentially become a trade barrier.

It is even observed that in countries that have not implemented the GHS, some companies use it. This is due to diverse factors: market pressures, being part of a multinational corporation, corporate social responsibility, or adherence to global initiatives for environmental protection and/or chemical safety. Among the most relevant initiatives of the industrial sector in the region, the Responsible Care® Program in the chemical industry is identified, with more than 20 years of history and representation in 9 LAC countries (Intergovernmental Network on Chemicals and Waste for Latin America and the Caribbean, 2021).

A well-functioning GHS demands a combination of sustainable capacity with those who will classify/label/make the SDS, an efficient enforcement (sustainable capacity with responsible authority) and users with knowledge.

During the first years of GHS implementation or if significant GHS compliance in the upstream sector is still not achieved, inspections and control measures could be focused high up in the supply chain, since there will be fewer actors. This is for efficiency reasons and also because potential sanctions or penalties may be placed on those who should have classified/labelled/made the SDS, rather than on those who have purchased and sold onward a product that should already have been classified. On the other hand, companies requiring suppliers to sell products that comply with GHS will support overall compliance in the supply chain. It will effectively support the enforcement of the legal rules on GHS enforced by the relevant agencies. If GHS compliance is achieved in the upstream, dedicating enforcement resources in the downstream sectors was identified as an opportunity. Focusing on the downstream would not only support compliance, but would trigger a chain effect, where downstream companies would encourage their suppliers to comply with GHS, and they would do the same, until reaching the upstream. In this regard, it will be interesting to see the effect that the requirement of implementing GHS for consumer products, as regulated in Chile, Colombia or Costa Rica, will have in terms of retail companies requiring compliance up the supply chain.

One interviewee highlighted that the inclusion of GHS in standards such as ISO, also has a good impact in terms of promoting implementation.

Another best practice suggested by more than one interviewee was the increasing use of new technologies for the implementation of the GHS; QR codes were provided as an example. The subject has also been raised in the Sub-Committee of Experts on the GHS in relation to the digitalisation of hazard information for chemical products[19][20].

[19] https://unece.org/DAM/trans/doc/2019/dgac10c4/UN-SCEGHS-38-INF22e.pdf

[20] In this regard, it should be taken into account that not the entire population has access to the technological resources required to read a QR code. In addition, one of the main functions of a label is that the hazards of the chemical are accessible at first glance, an aspect that would be harmed if only QR codes were used. This is particularly relevant for the transport (and emergency response) sector. Furthermore, it is important to note is that there are many sectors in the workplace where workers are prohibited from using electronic devices, such as cell phones and tablets, for security reasons.

Multi-stakeholder arrangements for consultation during design and implementation phase

There is a broad consensus among the documents studied and stakeholders' interviews that the establishment of multi-stakeholder arrangements for consultation during design and implementation phases are key for a successful implementation. Therefore, it may be useful to form a national GHS coordination or implementation committee that includes 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). For example, in Colombia, the Ministry of Environment and Sustainable Development was the entity that led the process of formulating the chemical national strategy in coordination with the Chemical Safety Committee of the National Inter-sectorial Commission for Environmental Health (CONASA), which acted as an inter-agency coordinating mechanism. In Argentina, the chamber of chemical and petrochemical industry (CIQyP) had a strong involvement during the design of the legislation that, according to one of the interviewees, currently translates into a high level of compliance among the members. In order to facilitate the discussion of sectoral considerations, countries may want to consider establishing sectoral working groups that would specifically focus on the implementation of the GHS in the four key sectors.

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 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. 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 and retailers, including multi-national corporations, and user industries (e.g. paint, plastics, detergents). Civil society groups, workers' organisations, consumer groups and NGOs can also be divided by sectors or may cover multiple sectors. 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. Thus, careful attention should be given to identifying the appropriate actors for each of the sectors affected by the GHS (ILO, IOMC, UNITAR, 2022). In addition to this, the intersessional process for the sound management of chemicals and waste beyond 2020 continues to emphasise the significant importance of the multi-stakeholder and multi-sector nature of activities on chemicals, such as in the implementation of the GHS.

Cooperation with main trading partners during design and implementation phase

The study did not indicate that the perspectives of the main trading partners were taken into account during the design and implementation phase, with the exception of the Andean Community, and their adoption of GHS for pesticides as a trade bloc. It would be recommended to undertake an assessment of the commonalities and differences with the main trading partners in terms of adoption of GHS in the early stages, when designing the legislation. Such an approach could signify important resource and cost savings in the future.

Some initiatives in the region were identified that were intended to address and tackle such differences. Within Mercosur, efforts have been made to promote a consistent adoption of GHS. From 2009 to 2015, an ECONORMAS project called "Support for the Deepening of the Economic Integration Process and Sustainable Development of MERCOSUR" was implemented as part of the cooperation between the European Union and the MERCOSUR. Among its activities, ECONORMAS promoted the "progress for the implementation of the Globally Harmonized System of Classification and Labelling of Chemical Products (GHS)" and "the convergence of the normative and regulatory framework of products in specific areas (...) and capacity building for regional compliance assessments". An exhaustive regulatory survey was carried out within the project to identify existing differences among the regulations of the Parties and the GHS requirements. However, no more initiatives by the blocs have been identified since the project's completion date.

A best practice is to consult main trading partners and the WTO before passing a legislation, to ensure it does not create unnecessary obstacles to trade. For example, Colombia has the Decree 1595/2015 that states that regulatory entities in Colombia must adopt good regulatory practices. Following the terms stipulated in the aforementioned instrument, which are based on, among others, the Agreement on Technical Barriers to Trade[21] of the World Trade Organization (WTO), the official bodies must request a prior consent from the Department of Regulation of the Ministry of Trade, Industry and Tourism. Additionally, the authorities that intend to issue an administrative act for regulatory purposes must evaluate its potential impacts on free trade and competition, based on a questionnaire adopted by the Superintendency of Industry and Trade, and previous consideration of the draft regulatory act. Following the procedures illustrated above, it was determined that the adoption of the Globally Harmonized System in Colombia does not create an unnecessary obstacle to international trade of chemicals and the project was notified to the World Trade Organization and the Andean Community of Nations (CAN), among other trade partners (Intergovernmental Network on Chemicals and Waste for Latin America and the Caribbean, 2021).

GHS requirements that differ between countries

GHS is a flexible system that allows for countries to decide on which elements to adopt. A recommended tool to be developed would be a guidance document so that government officials know clearly what provisions they should define. Among others, the building block approach of the GHS gives governments discretion to choose:

- The implementation instrument, as seen under section Type of legislation and enforcement agency (ies)
- The sectors in which it is implemented and, within a sector, the hazard classes and categories to be implemented,
- The version of the GHS implemented and the periodicity, if any, of updates,
- Use of non-standardized or supplemental information

[21] The Technical Barriers to Trade (TBT) Agreement aims to ensure that technical regulations, standards, and conformity assessment procedures are non-discriminatory and do not create unnecessary obstacles to trade. At the same time, it recognises WTO members' right to implement measures to achieve legitimate policy objectives, such as the protection of human health and safety, or protection of the environment. The TBT Agreement strongly encourages members to base their measures on international standards as a means to facilitate trade. Through its transparency provisions, it also aims to create a predictable trading environment.

- Cut-off values requiring communication of certain hazard information,
- Specific labelling arrangements, labelling of small containers and label size rules in relation to the container,
- Confidential business information specifics and disclosure requirements on the SDS,
- Requirement to provide SDS for mixtures not meeting the criteria for classification as hazardous but which contain hazardous ingredients in certain concentrations,
- Requirement to include a statement in the label, the SDS or both, indicating that x % of the mixture consists of ingredient(s) of unknown toxicity,
- Requirement to provide information on specific hazards that do not result in classification.

When requirements differ between countries, a lack of harmonization in terms of classifications and SDS should be expected. In the region, a range of versions adopted is seen. Countries could regularly update their legislation to take account of the updates to the GHS adopted by the Sub-Committee every two years, update their legislation on larger cycles (sometimes implying updates taking into account several revised versions of the GHS at once) or simply not define any mechanism for updates. These variations, as well as for example, if different building blocks are adopted, would cause a diversity of labelling and SDS for the same product in the region. When this product is sent to multiple jurisdictions without the necessary adaptations, in addition to the potential barriers to trade mentioned under the section Monitoring, enforcement and compliance, the legal status of the substance and therefore its resulting treatment may change. Potentially, this would also be the case with mixtures containing such substances. In addition, confusion among workers at facilities or emergency services and consumers can be expected due to the non-harmonized information for the same chemical[22], which implies consequences in terms of safety.

A good practice may be to include provisions allowing imported chemicals classified and labelled in accordance with more recent revised editions of the GHS. On the other hand, if adaptations are done, additional costs would arise due to the adjustment of the labels and SDS to each country.

4. Engagement with the "Trade" stakeholders

Several forums and initiatives have been identified as valuable to help promote the GHS and its effective implementation:

- The World Trade Organization (WTO) is the only global international organization dealing with the rules of trade between nations; at its heart are the WTO agreements. The goal is to help producers of goods and services, exporters, and importers conduct their business. WTO Committees and Councils are fundamental fora for discussion. Members use these multilateral settings to raise trade concerns with respect to measures which may affect their trade. These discussions can help ease trade tensions by providing further information and clarification, working towards mutually satisfactory solutions. There are two committees of particular relevance for GHS: the Technical Barriers to Trade (TBT) committee and the WTO Committee on trade and environment. In

[22] https://www.wto.org/english/tratop_e/tbt_e/principles_standards_tbt_e.htm

particular, the TBT has agreed on six principles for the Development of International Standards, Guides and Recommendations[23]. In addition, the Trade and environmental sustainability structured discussions (TESSD) complement the work of the Committee on Trade and Environment and are good way to access trade discussions, framing the GHS issue as a link between environment and trade.

- Basel, Rotterdam and Stockholm conventions and SAICM. The three Conventions require Parties to communicate hazard information to the Secretariat, other Parties and/or the public. In particular, Parties to the Basel Convention have initiated a review of Annex III in the light of the GHS, and this work is expected to be carried out at least until 2023[24]. Under SAICM, negotiations on the design of the instrument beyond 2020 are taking place; GHS is likely to play an important role in the new instrument. In addition, a project to support African Countries in overcoming barriers in implementing the UN GHS is running.
- OECD activities contribute towards harmonisation of international classification of hazardous chemicals. The OECD develops proposals for classification or criteria, at the request of the UN Sub-Committee of Experts on the Globally Harmonised System (GHS), facilitates application of classifications through its works on the assessment of chemicals, and provides a GHS classification search functionality in a web portal (eChemPortal) to link to national/regional databases where classifications are available for individual chemicals.
- The International Labour Organization (ILO) aims to protect workers and work toward sound chemicals management through the promotion and ratification of its International labour standards (ILS) related to chemicals and occupational safety and health (OSH). A number of ILS require the implementation of systems for hazard classification, communication and training. The Globally Harmonized System of Classification and Labelling of Chemicals (GHS), developed following several major industrial accidents in the 1970s and 1980s, plays a fundamental role in protecting workers from chemical hazards through its system of harmonized chemical labels (pictograms) and safety data sheets. There is a growing momentum worldwide led by governments, investors, companies, civil society, social partners and other stakeholders to mainstream the protection of occupational safety and health through regulations and standards, among which we can situate GHS. These developments, if implemented through a human rights-based approach, considering OSH has been recognised as a fundamental right[25], will help to reinforce the principle that all workers share the right to a safe and healthy working environment.
- Trade agreements can reduce trade barriers and develop provisions to promote the use of the GHS. Many governments are increasingly recognizing the need to ensure that trade agreements reflect environmental concerns to help achieve overarching environmental goals and to increase their public acceptability. Given the extensive global trade in chemicals, and the need to develop national programmes to ensure their safe use, transport and disposal, it is recognized that a harmonized approach to classification and labelling would enhance the protection of human health and the environment by providing an internationally comprehensible system for hazard communication. It would also provide a recognized framework for those countries without an existing system, facilitating international trade in chemicals whose hazards have been properly assessed and identified on an international basis, reducing the need for testing and evaluation of

[23] https://www.wto.org/english/tratop_e/tbt_e/principles_standards_tbt_e.htm
[24] UNITAR, 2021b
[25] https://www.ilo.org/global/about-the-ilo/newsroom/news/WCMS_848132/lang--en/index.htm

chemicals (KemI, 2021). ICCA states that the WTO Technical Barriers to Trade (TBT) Committee has been a primary forum for advancing regulatory cooperation and encourages work in the promotion and collaboration on the implementation of international standards in the field of chemicals, such as the UN GHS (ICCA, 2021). Particularly in the region, the MERCOSUR Working Group 6 action plan for 2021-2022 includes the need to strengthen the implementation of the GHS through training for the preparation and use of the safety data sheets of chemical substances and products following the guidelines of the GHS and the preparation of a proposal for a MERCOSUR standard so that the safety data sheets of chemical substances and products are prepared under the guidelines of the GHS.

- Standards and certification schemes. Including GHS would promote implementation among companies. Standards and certifications are voluntary guidelines used by producers, manufacturers, traders, retailers, and service providers to demonstrate their commitment to, among others, good environmental, social, ethical, and food safety practices. For example, International Standard ISO 11014 is aligned with the GHS as regards hazard communication. Standards and certification systems help the private sector meet or go beyond regulatory requirements. Such international standards, particularly those developed by international consensus standards organizations such as ISO, may eventually be adopted by governments to become legal requirements. Some standards and certification schemes relevant for chemicals, that could be assessed to identify the viability to include GHS, are presented below:

Standard	Overview
International Code of Conduct on Pesticide Management	FAO's International Code of Conduct on Pesticide Management sets standards for sound pesticide life cycle management practices, particularly with respect to government authorities and the pesticide industry, which are especially relevant where there is inadequate or no national legislation concerned with pesticide regulation.
International Standardization Organization (ISO)	The ISO 14040 series standards, Life Cycle Assessment, address quantitative assessment methods for the assessment of the environmental aspects of a product or service in its entire life cycle stages.
ECO Declaration standard	This Standard specifies environmental attributes and measurement methods for Information communication technology and computer electronic products according to known regulations, standards, guidelines and currently accepted practices. The Standard is also applicable to products used as subassemblies, components, accessories and/or optional parts
Cradle to Cradle Certified®	Cradle to Cradle Certified® is a globally recognized measure of safer, more sustainable products made for the circular economy. To receive certification, products are assessed for environmental and social performance across five critical sustainability categories: material health, material reuse, renewable energy and carbon management, water stewardship, and social fairness.
Together for Sustainability (TfS)	Together for Sustainability (TfS), a joint initiative and global network of 31 chemical companies, delivers the de facto global standard for environmental, social and governance performance of chemical supply chains. The TfS program is based on the UN Global Compact and Responsible Care® principles.
EPA Safer Choice Program	The Safer Choice program is an EPA program based on standards and conformity assessment and allows companies to get an agency-approved label if their products are proven to meet stringent health and environmental safety criteria. That label is used by consumers, and also to guide purchases made for schools and other institutions. As part of the program, the EPA maintains a Safer Chemical Ingredients List, or SCIL, consisting of chemicals that are among the safest available for their function. Adding chemicals to the SCIL encourages innovation and growth in safer products, increases markets for manufacturers and helps protect people and the environment

EU-Ecolabel	A label of environmental excellence that is awarded to products and services meeting high environmental standards throughout their life-cycle: from raw material extraction, to production, distribution and disposal. The EU Ecolabel promotes the circular economy by encouraging producers to generate less waste and CO2 during the manufacturing process. The EU Ecolabel criteria also encourages companies to develop products that are durable, easy to repair and recycle. Furthermore, many companies turn to the EU Ecolabel criteria for guidance on eco-friendly best practices when developing their product lines
Nordic Swan Ecolabel	The Nordic Swan Ecolabel works to reduce the environmental impact from production and consumption of goods – and to make it easy for consumers and professional buyers to choose the environmentally best goods and services. It sets strict environmental requirements in all relevant phases of a product's life cycle; sets strict requirements for chemicals used in eco-labelled products; tightens requirements for goods and services continuously to create sustainable development and certifies and verifies that all requirements are met before a product is approved
Blue Angel	The Blue Angel is the ecolabel of the federal government of Germany since 1978. The Blue Angel sets high standards for environmentally friendly product design and has proven itself over the past 40 years as a reliable guide for a more sustainable consumption. The Blue Angel guarantees that a product or service meets high standards when it comes to its environmental, health and performance characteristics. In the process, these products and services are always evaluated across their entire life cycle
Fair Trade	Fairtrade Standards are designed to support the sustainable development of small producer organizations and agricultural workers in developing countries
UTZ	The UTZ Certification is nw Part of the Rainforest Alliance. The UTZ label stands for more sustainable farming and better opportunities for farmers, their families, and our planet. The UTZ certification program enables farmers to use better farming methods, grow better crops, and generate more income. They learn how to improve working conditions, adapt to climate change, and protect the environment.

Table 2: Examples of standards and certification schemes relevant for chemicals. Table based on information available from: Study on industry involvement in the Integrated Approach to financing the sound management of chemicals and waste (SAICM, 2021).

- At the regional level, the Ministers of Environment established the Intergovernmental network on chemicals and waste for Latin America and the Caribbean which acts as a platform for regional coordination and cooperation for enhancing the sound management of chemicals and waste. Recently, an action plan for 2021 to 2024 was approved which includes the commitment of the countries to work towards establishing national schemes and regulations to deal with hazardous substances, including the implementation and promotion of the GHS as a key element. This network would be a relevant partner to this project because it comprises not only national authorities but also the private and the scientific sectors.
- It would be important to engage with the sub-committee of experts of the GHS, as there is a range of experiences in implementation of the GHS. In addition, it would be important to coordinate with those across government, and especially with those (if any) that represent a government on the sub-committee

5. Summary, conclusions and priority activities

The following table summarizes the main opportunities and barriers identified for improving GHS implementation and its links to trade:

Opportunities	
Using a higher level of legislation to implement GHS would provide a greater support for its implementation: - responsibilities could be assigned to different authorities - all types of hazards could be included (physical, health and environmental) - GHS could be implemented in different sectors simultaneously, promoting coherence among them.	For economies that do not have sufficient resources to carry out market enforcement and that most of the chemicals used are imported, it would be interesting to evaluate if setting the necessary mechanisms to carry out border control by customs would achieve more effective implementation
Adopting GHS within a trade bloc	Inclusion of GHS related requirements in the chemicals registration systems that are being set up in the region, and use software for checking GHS compliance upon chemical registration
Including GHS provisions within trade agreements	Market pressures, being part of a multinational corporation, corporate social responsibility, or adherence to global initiatives for environmental protection and/or chemical safety often prompt companies to implement GHS voluntarily.
If regulations are not in place, adopting GHS within voluntary technical standards can help industry to adjust to the chemical safety requirements and gradually adapt their production and trade practices accordingly, raise awareness and train SMEs and consumers at a preliminary stage of the journey towards adoption of the GHS. These technical standards should be updated in a harmonized manner and could be replaced or adopted by a mandatory regulation.	During the first years of GHS implementation, concentrate enforcement resources in the upstream. Requirements from companies on their suppliers that the products they buy comply with GHS will support overall compliance in the supply chain. If GHS compliance is achieved in the upstream, targeting some enforcement resources in the downstream sectors was identified as an opportunity.
Consider a phased implementation, giving the private sector the necessary time to adapt procedures and gather information, and allowing authorities to gain experience and make any necessary adaptations along the way	Engage with certification schemes that promote safer working practices or other elements related to hazardous chemicals, to include the GHS as part of the schemes
Include a transition period where products can be classified or labelled under the GHS or under the old system giving the private sector time to adapt procedures and gather information, and also to run down stock of materials already packed	Seeking opportunities to digitalise hazard communication, where appropriate
Design, maintain and make available a continuous training and support system	Establishment of multi-stakeholder arrangements for consultation during design and implementation phases
Engage with the following actors as they are key for providing GHS trainings and support to companies: unions, industrial chambers, work risk insurers, consulting companies, UNITAR and other entities	Assess the commonalities and differences with the main trading partners in terms of adoption of GHS in the early stages, when designing the legislation.
Facilitate access to information on chemicals, preferably in local language. The development of practical tools to access chemicals data at the global or regional level, such as databases with information on harmonized classifications for labels and SDS, would be very beneficial for companies.	Consult main trading partners and the WTO before passing legislation, to ensure it does not create obstacles to trade

Once the regulatory framework on GHS is adopted, develop technical guides for its implementation, particularly SMEs	Include provisions allowing import of chemicals classified and labelled in accordance with more recent revised editions of the GHS
Use of specific software to classify and prepare the SDS	Engage with the following organizations and fora to promote GHS and its effective implementation: WTO, Basel, Rotterdam and Stockholm conventions and SAICM, OECD, ILO, Regional and bilateral free trade agreements, Trade standards and certification schemes, and the Intergovernmental network on chemicals and waste for Latin America and the Caribbean.
Barriers	
Technical knowledge and resources gap is found in SMEs compared to large companies	Lack of enforcement agents and capacities
While the GHS encourages mutual acceptance and use of test data, where relevant, low supply capacity of national chemical laboratories in the development of tests that are required for the characterization of chemical substances at the toxicological and eco-toxicological level has been noted	Lack of stricter controls in the countries means a common approach used by companies is that the classification and labelling are carried out by translating labels and SDS of the country of origin that may -or may not- match the requirements in the country of destination
Lack of technical, financial and qualified personnel resources to address and implement the requirements established by the GHS act as an obstacle to export chemicals, particularly for SMEs Lack of awareness among trade stakeholders of the relevance of the GHS	When requirements differ between countries, a lack of harmonization in terms of classifications and SDS is to be expected.

Table 3: Opportunities and barriers identified for improving GHS implementation and its links to trade.

Annex 1: Names of stakeholders consulted

Claudine Albersammer, ICMM (International Council on Mining and Metals)

Fabriciano Pinhero, Intertox

Helen Mier Giraldo, Claudia Camargo Gomez, Mario Sanchez Castro, UNIDO

Helena Casabona, Cecilia Westoo, Gunilla Prideaux, KemI

Hugo Petean, Sinteplast

Judith Bensignor, INTI Argentina

Judith Torres, Ministry of Environment of Uruguay

Mateo Ferero, WTO

Rodrigo Mogrovejo, Schneider Guataqui Cervera, Halshka Graczyk, ILO

Rolando García Valverde, CIQyP

Rosa Garcia Couto, UNECE

Tatiana Moneró, Lisam Systems

Annex 2: Protocol used to guide the semi-structured interviews

1. *Please describe the type of legislation that regulates GHS (Law, Decree, other). Please indicate application and enforcement agency(ies) (Environment, Health, Labour, Army, Customs, Other)*
    a. *If customs or trade is not specifically mentioned, probe to ask if there are links to legislation or areas of government involved in trade and/or customs*
2. *Please describe time and stages of implementation*
    a. *Preparatory steps / design of regulation:*
    b. *Time of publication of regulation*
    c. *Time of entry into force*
    d. *Was implementation designed in stages?*
    e. *Was a transition period considered?*
    f. *Was a grace period for materials already packaged considered?*
3. *Have multi-stakeholder arrangements been established for consultation during design and implementation phase?*
4. *Was cooperation done with main trading partners and/or regional trading blocs during design and implementation phase?*
5. *Please describe capacity building efforts: trainings and channels of communication for queries available for whom and when*
6. *Please describe resources and expertise requirements and availability, for example, of qualified local experts to do the classifications, especially of mixtures*
7. *Please describe resources needed and available to conduct customs checks at borders, and compliance checks within the country*
    a. *Are facilities available to hold hazardous substances at customs while checks are completed?*
8. *Please describe monitoring and enforcement of GHS compliance arrangements needed and established*
9. *Are you aware of any trade forums that would be of interest to UNITAR to help promote the GHS and its effective implementation?*
10. *Please detail your views and experience on the following GHS requirements that may differ between countries, resulting in lack of harmonization:*
    a. *building blocks,*
    b. *versions of the purple book used as a reference,*
    c. *transition periods*
    d. *classification cut-off for mixtures,*
    e. *scope of the regulation, sectors included/not included*
    f. *labelling requirements to import x export,*
    g. *lack of a list of globally harmonized GHS classifications for substances, deferral to/reliance on external lists (e.g. ECHA list) and the role of self-classification,*
    h. *CBI requirements and disclosure requirements on the SDS,*
    i. *Labelling of small containers and label size rule in relation to the container.*
    j. *Other?*

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