

EXECUTIVE SUMMARY

1. BACKGROUND

In October 2000, the third session of the Inter-Governmental Forum on Chemical Safety highlighted the harmonisation of classification and labelling of chemicals as a priority for action beyond 2000. All countries have been encouraged to implement the Globally Harmonised System for the Classification and Labelling of Chemicals (GHS) as soon as possible with a view to have the system fully operational by 2008. The GHS harmonises the classification criteria for evaluating health, environmental and physical hazards of substances and mixtures.

All chemical hazard communication systems are similar in intent with respect to the protection of people from experiencing adverse effects from hazardous chemicals. However, there are significant differences in the specific provisions of the criteria used to: classify the chemicals, warning phrases, symbols and other hazard communication components.

The GHS programme addresses the following issues: hazard symbols, colours, and written information used on labels; the preparation of chemical safety data sheets (SDSs) and instructions; the comprehensibility of precautionary statements used on both labels and SDSs; and training related to these areas. The term 'issue' is used in this report to highlight areas of concern regarding hazard communication that are in conflict with the GHS system and that are to be taken into consideration during the GHS Gap Analysis.

The hazard classification and labelling process, supported by relevant training and education, is a primary tool for achieving effective information transfer about the degree of hazard the chemical represents for people and the environment, the correct preventative actions to be taken and the establishment of safe-use practices. Comprehensibility of the information provided is one of the most important issues addressed by the GHS.

The four target sectors identified by the GHS as primary end-users of the hazard communication system are: industrial production, agriculture, transport and consumers. These sectors receive and use the information about hazardous chemicals in different ways. Employers and workers in the industrial production sector need to know the hazards and the specific protective measures required for the chemicals used or handled in the workplace. Farmers and farm workers are potentially at risk from exposure through the use of agricultural chemicals, such as pesticides and fertilisers. Those involved in the transport sector require information about the general safe practices that are appropriate for all transport situations. Consumers are exposed to a wide variety of chemicals which require labelling that is sufficiently detailed and relevant to ensure the safe use of the product. In addition to the four primary sectors, the other important role players in chemical hazard communication are the emergency responders who respond to chemical emergencies.

2. INTERNATIONAL AND REGIONAL PROGRAMMES

A number of international and regional programmes, directly or indirectly linked to the development and implementation of the GHS, are currently being undertaken. These include:

- Initiatives concerned with the implementation of the Bahia Declaration;
- Initiatives from the World Summit on Sustainable Development;
- The United Nations Environmental Programme on Chemical Safety Issues;
- The development of a Strategic Approach for International Chemicals Management;
- International Labour Organisation (ILO) research on hazard communication strategies being developed at the University of Cape Town;
- The New Partnership for Africa's Development (NEPAD) Environmental Initiative;
- The implementation of the South African Development Community (SADC) Code of Practice for the Safe Use of Chemicals; and
- Various SADC regional co-operation initiatives.

3. THE SOUTH AFRICAN SITUATION

A key factor in the success of the GHS is the extent which countries recognise the potential benefits of the system and develop the necessary infrastructure to implement and operate it at the national level. This process will require adequate funding to build the appropriate legal and technical infrastructures.

The overall objective of this study is to identify the implications of implementing the GHS in South Africa and to develop a workable implementation strategy. The Project comprises three phases, i.e.

- Phase 1: Development of a Situation Analysis;
- Phase 2: Development of a Gap Analysis and Identification of the Socio-economic Implications and,
- Phase 3: Development of a National Implementation Strategy.

The Situation Analysis was undertaken on a sectoral basis, and involved the following sectors: industrial production, agriculture, transport and consumers. Crosscutting issues were also addressed, including: the South African legislative framework, institutional and administrative infrastructure, training and capacity building, and emergency response. The purpose of the Situation Analysis was to document the existing legal, institutional, administrative and technical infrastructure and to access the available national expertise across the four primary sectors. The socio-economic situation of the chemical sector is also presented. This Situation Analysis report provides the basis for the Gap Analysis and Socio-Economic Evaluation, as well as the development and implementation of a National GHS Implementation Strategy for both the government and non-government sectors.

4. STUDY METHODOLOGY

The UNITAR Guidance Document on *Conducting a National GHS Situation Analysis* informed the methodology used in this project.

Key stakeholders who have an obligation to, and/or concerns about, the GHS were consulted in the compilation of this report. They included the following groupings:

- national government;
- business and industry;
- agriculture;
- transport and emergency services;
- consumers;
- labour; and
- NGOs.

The approach used for the compilation of the Situation Analysis was:

- Collection of relevant documentation and information and associated background research;
- Compilation of sectoral and cross-sectoral questionnaires, which listed key discussion points;
- Telephonic interviews and bilateral discussions with selected key stakeholders; and
- Further follow-up discussions and meetings, where necessary.

A Draft Situation Analysis Report was compiled and discussed with the GHS Counterpart Group. The report was amended based on their input. The main findings of the study were workshopped with selected key stakeholders, and finally this report was updated and refined to its present form.

In parallel with this *Situation Analysis* study (reported as Part 1 of the GHS Project), the University of Cape Town undertook a *Chemical Hazard Communication Comprehensibility Testing* study. The latter study will be reported separately, as Part 3 of the GHS Project.

5. REPORT STRUCTURE

This Situation Analysis Report (Part 1) covers the following aspects:

- An Introduction to the GHS and the South African Study;
- A Socio-Economic Profile of the Chemical Industry;
- An Overview of the Legal Framework;
- An Overview of Institutional and Administrative Infrastructure;
- A Review of the Status Quo in the following sectors: the Industrial Production Sector; the Agriculture Sector; the Transport and Emergency Response Sectors; the Consumer Sector, and
- A Concluding Chapter.

The parallel study on Chemical Hazard Communication Comprehensibility Testing, by the University of Cape Town (Occupational and Environmental Health Research Unit, School of Public Health and Family Medicine), is reported separately as Part 3 in this series of reports on the GHS Project.

6. ISSUES IDENTIFIED DURING THE SITUATION ANALYSIS

The key issues identified during the Situation Analysis are summarised below.

Socio-Economic Issues

Hazard Communication

- South Africa is the leading country in chemicals trade amongst the SADC members. It is also the leader in chemicals trade of SADC with the rest of the world. Hence, the introduction of the GHS in South Africa could have beneficial spin-offs for both South Africa and SADC.
- The GHS aims to simplify the inter-modal and cross border movement of chemicals by the standardisation of communication on hazardous chemicals.
- Non-implementation of the GHS could be harmful to trade.
- The GHS could enhance the protection of people; this is of specific importance to workplace issues, since these are of increasing concern to world trade (WTO and EU).
- The GHS could enhance protection of the environment; environmental issues are becoming important concerns in world trade (WTO and EU).
- The GHS could impact on the downstream chemical companies in terms of job creation and labour remuneration.

Training and Awareness Raising

- Training and awareness raising for all levels of workers and management will be of decisive importance for the effective implementation and efficient management of the GHS.

Implementation

- It has been difficult to establish the projected cost for the implementation of the GHS in South Africa due to lack of relevant information. However, adoption of the GHS may result in improved cost-effectiveness by offering an internationally maintained system providing the informational framework for the sound management of chemicals and avoiding the duplication of testing and evaluation of chemicals to determine their hazardous effects.
- **The dti** has a limited regulatory role to implement the GHS in the interest of its area of responsibility (trade and investment promotion). Apart from facilitation across government departments, **the dti** could enhance implementation through Standards South Africa as the key institution responsible for formulating and setting of the standards contained in the GHS.
- Medium and small businesses and new export entrants will find it harder and more costly to comply with the GHS than larger concerns; hence public sector support for the implementation of the GHS in the medium sized and small enterprises would be essential.

Legal Issues

Hazard Classification

- The different Acts adopt different approaches to defining and classifying hazardous substances, mixtures and waste, and there are different levels of comprehensiveness.
- The different Acts are not consistent in their use of hazardous substances, mixtures and waste definitions and terminology; as well as their requirements for hazard communication using of Material Safety Data Sheets (MSDSs) and labels.
- However, there has been a marked move towards streamlining the classification of chemicals through the consistent application of SABS 0228, by incorporating these standards in legislation.
- Legislation provides for mandatory communication and training of workers in respect of hazardous substances; but operationalisation and implementation of these Acts is only in the initial stages.

Implementation Issues

- There is overlapping jurisdiction of the relevant Acts.
- There is no legislative requirement for co-ordination of hazard communication activities between the different regulatory authorities.
- There are a number of deficiencies in the compliance and enforcement system.

General

- Gaps exist with respect to the regulation throughout the life cycle of chemicals.
- A rights-based approach has been incorporated in newer legislation (e.g. access to information), but this protection is not well addressed in some of the older legislation and this needs to be addressed.
- There is no national Act which regulates the full spectrum of hazard communication. The different objectives underlying the various relevant Acts have an impact on the consistency and comprehensiveness of approach, and hence may result in practical difficulties.

Institutional Issues

Implementation Issues

- There is overlap of jurisdiction between the various departments involved with hazard communication, which results in ambiguity regarding the jurisdictional mandate.
- There is no legislative requirement for hazard communication activities to be co-ordinated between different regulatory authorities.
- There are deficiencies in the compliance and enforcement system.
- There is limited information on compliance.

Industrial Production Sector Issues

Hazard Classification

- There is a lack of compatibility between international and South African hazard classification.
- Capacity exists for physico-chemical testing of new chemical substances, but not for health and environmental hazards. Physical testing on products is performed where insufficient data is available and on a random basis in respect of quality control.

Hazard Communication

- Difficulties are being experienced with the identification of hazardous chemicals for the provision of labels and MSDSs. Failure to recognise the hazardous property of chemicals, despite the information provided on labels and in MSDSs, has implications for hazard classification and communication.

- Some procurement policies ensure that MSDSs are provided with raw materials, but their quality may require improvement.
- There is a lack of standardised format and information on MSDSs sourced from different suppliers.
- The legal responsibility for provision of hazard information does not extend beyond the first customer.
- The supplier bears the responsibility and liability for the provision of appropriate and accurate information on labels and in MSDSs that manufacturers use as the basis for the hazard classification and communication; at times insufficient information is provided.
- At times the information on health hazards, occupational exposure limits and control measures provided in MSDSs and on labels is incomplete.

Training and Awareness

- Workers are not provided with sufficient training for them to fully understand labels and MSDSs.
- There is a lack of accessibility of information to general public.

Implementation Issues

- There is limited capacity to undertake risk assessments and to evaluate environmental data.
- Appropriate monitoring and collection of data relating to chemical hazards is essential as a sound basis for enforcement activities by the authorities.

Agricultural Sector Issues

Hazard Classification

- The capacity to test for new chemical substances or mixtures, in order to meet requirements of the Fertilizers, Farm Feeds, Agricultural Remedies and Stock Remedies Act, resides mainly with the major pesticide manufacturers.

Hazard Communication

- MSDSs are not yet in wide use in the agricultural sector.
- Labelling and storage problems occur when pesticides are diluted for uses.
- Information on less hazardous effective alternatives to pesticides and fertilizers is not provided to growers.
- Information is not provided on the requirements of international legislation and classification of hazardous chemicals e.g. manufacturers do not supply customers with updated MSDSs and MSDSs are not always readily available to farmers.

Training and Awareness Raising

- There are currently no specific training programs on chemical labelling and MSDS available through the relevant Sector Education and Training Authority (SETA), although this is to be addressed in the future.
- The low literacy and educational levels of employees in the agricultural sector complicate the dissemination of information on chemical hazards.
- Specific training on the safe use of chemicals is targeted towards those employees who handle chemicals.
- The indirect exposure of employees and the general public in adjacent areas is not being addressed.
- Employees are reluctant to use personal protective equipment in hot conditions.
- There is currently a dearth of publications on the use of agricultural chemicals which are inexpensive and easily accessible to both educated and educationally disadvantaged persons.

Implementation Issues

- There is ambiguity within the Fertilizers, Farm Feeds, Agricultural Remedies and Stock Remedies Act regarding the classification of consumer products, depending on their use.
- Enforcement should be supported by appropriate monitoring and collection of data relating to chemical hazards in order for all stakeholders to make interventions. The implementation of the GHS could place additional demands on all social partners, i.e. Government, Labour and Business.

Transport Sector Issues

Hazard Classification

- The National Road Traffic Act regulations do not apply to dangerous goods that are being transported in quantities below those listed in SABS 0232, Part 1.

Hazard Communication

- Hazard classification for transportation of dangerous goods is based on the information provided by consignor prior to acceptance of the consignment.
- The consignor does not always provide Tremcards.
- Declarations signed by the consignor should declare that containers were packaged in accordance with legislation.
- Ships carrying dangerous goods are not obliged to report to South African authorities when passing the coastline.

Training and Awareness Raising

- Implementation of national programmes for the training traffic officials for effective enforcement is only taking place at a limited scale.
- Transport Education and Training Authority (TETA) accredited courses are not available to meet the needs of the private sector.
- TETA approved training is limited.
- Responsibilities and liabilities between the consignor and the transporter are not always fully defined or understood.
- Communities along transport routes are not informed of the potential hazards.

Implementation Issues

- Prescribed hazard communication mechanisms are not referenced in rail legislation although rail transportation complies with SABS 0232-2 and the International Maritime Dangerous Goods (IMDG) code, it is not referenced in legislation. Hazard communication for crossborder road transportation of dangerous goods is currently not harmonised.
- Local authorities are not always aware of dangerous goods being transported through their area of jurisdiction.
- Registration of transporters of dangerous goods has not been fully implemented.
- There is limited enforcement of the provisions in the National Road Traffic Act for transportation of dangerous goods.
- Wastes are not always well defined.

Emergency Response Issues

Hazard Classification

- Availability and accuracy of hazard information is limited.
- Differences in comprehensiveness and consistency of classification approaches by the different Acts need to be addressed.

Hazard Communication

- The prescribed transport documentation (Tremcards or dangerous goods declaration) is not always available.
- The information on the transport documentation is not always in conformance with regulatory requirements.
- 24-hour contact telephone numbers for additional information and specialist advice on placards are not always up to date or the service is not available for 24 hours per day.
- Storage facilities as specified in SABS 0232-3 are not always complied with.
- The actual mechanisms used in practice for communicating an emergency to the general public are generally not regulated in most of the legislation.

Training and Awareness Raising

- The level of emergency preparedness, and associated resources and capacity, are not uniform throughout the country and are particularly constrained in the rural areas.
- Resources are not available to implement refresher training.
- The formal recognition of the qualifications and standards for personnel are not finalised with the SETA, and accredited SETA courses are still being developed.

Implementation Issues

- There is currently limited interaction between manufacturers, retailers and transporters of dangerous goods and the emergency services.
- Communities have limited knowledge of the potential hazards associated with hazardous chemicals.
- There is limited awareness of the scope and nature of emergency services.
- There is overlap of regulatory jurisdiction by several government departments and organs of state that have authority in respect of emergency incidents.

Consumer Sector

Hazard Classification

- The consumer is generally unaware of the different classifications of chemicals.
- Hazard communication is inadequate with respect to information on labels, and, information about the active and toxic ingredients is not adequately detailed for health services.
- Labelling of decanted chemicals is inadequate; there is no central repository of information on hazardous household chemicals; there is a lack of guidance on proper storage of dangerous chemicals in retail stores and homes; and, inadequate communication to the public on transport routes.
- Some imported chemicals are labelled in a foreign language.
- Problems are experienced with the comprehensibility of labels due to language and illiteracy.
- The print of hazardous information on labels is too small and does not draw attention to the hazardous nature of the chemical.
- Some advertisements are misleading to the consumer.

Training and Awareness

- Capacity building and training is inadequate and is insufficiently funded.
- Lack of consumer awareness.
- All stakeholders (e.g. manufacturers, government, unions, retailers and the consumers) should all take responsibility for training and awareness raising.

Implementation Issues

- Consumers do not have a single reporting body to which they can report hazardous chemical exposures.
- South Africa has only one poison centre, which is unable to execute its functions due to lack of funds.
- Few organisations or sites exist where hazardous household chemicals can be safely disposed of.
- Improved legislation to protect consumer is required.
- The provisions, regulatory mechanisms and documentation on hazard communication are not readily accessible to all stakeholders or simple to understand, implement and enforce.
- Information from overseas sources is often used, but is at times not appropriate to the South African situation.

7. CONCLUSION

Definitions

Definitions of hazardous substances are contained in the following Acts:

- The Occupational Health and Safety Act;
- The Mines Health and Safety Act;
- The Hazardous Substances Act;
- The Explosives Act;
- The Fertilizers, Farm Feeds, Agricultural Remedies and Stock Remedies Act;
- The Road Traffic Act and Merchant Shipping Act; and
- The List of Substances in SABS 0228.

Some of these definitions are inadequate and sometimes contradictory. Definitions of substances are not included in emergency response legislation. There is also no legislation which specifically regulates all chemicals that are intended for consumer use.

Hazard Classification

Classification is largely based on SABS 0228 which is incorporated by reference into the Occupational Health and Safety Act and the Hazardous Substances Act. The Explosives Act provides for the classification of explosives into eight classes. In the agricultural sector the relevant legislation is The Fertilisers, Farm Feeds, Agricultural Remedies and Stock Remedies Act, which uses SABS 0228 for classification. The transport sector is regulated by the International Maritime Dangerous Goods (IMDG) Code in the Merchant Shipping Act. The National Road Traffic Act incorporates SABS 0228. SABS 0228 is also referenced in the Annexures to the Fertilisers, Farm Feeds, Agricultural Remedies and Stock Remedies Act.

No specific legislation is in place for rail transportation. Different criteria are used in the emergency response legislation for determining hazard. NEMA refers to the toxicity of the substance (without definition), the National Water Act refers to any incident which pollutes or may pollute a water resource and the Major Hazard Installation Regulations refer to a substance which has the potential to cause a major incident. The National Road Traffic Act incorporates SABS 0232-3 and the IMDG Code is incorporated in the Merchant Shipping Act. There is also no legislation which specifically regulates chemicals intended for consumer use.

Hazard classification is based on information provided by the chemical supplier. Manufacturers use the percentage constituents of the individual components to describe the hazards of a new product. The worst-case scenario of components is then reflected and a toxicity rating is given to the product being classified.

Hazard classification is based on materials classified in SABS 0228 and the IMDG Code. This classification system utilises the unique United Nations number. The classification of hazardous

waste is covered by the Basel Convention. Mixed loads are given SABS 0232-1/2 and the IMDG Codes. There are significant differences in hazard classification between South Africa and other countries, and substances are sometimes assigned to different hazard categories. SABS 0228 and SABS 0265 are not fully aligned with international systems, despite the fact that SABS codes are being based on the European Directives.

Dangerous goods are classified into 9 classes of acute toxicity according to the most hazardous component and the consignor is responsible for providing the information about the consignment and the specific hazard class. Emergency response procedures are based on the nine classes of the hazard classification system and the associated hazards in the event of an incident.

Classification Criteria

Hazard classification is based on physical, health and environmental criteria and these criteria are based on the chemical's acute toxicity, physical hazards and environmental hazards. Classification criteria are contained in SABS 0228 as incorporated in: the Occupational Health and Safety Act; the Hazardous Substances Act; the Explosives Act, the Fertilisers, Farm Feeds, Agricultural Remedies and Stock Remedies Act; The National Road Traffic Act and the Merchant Shipping Act. In terms of the Occupational Health and Safety Act regulations, MSDSs must include the classification and corresponding emergency response procedures.

Legislation pertaining to rail currently does not include hazardous chemical classification criteria. However, rail transport requirements are based on SABS 0228 and the IMDG Code. The consignor provides information about the consignment and associated hazards. Pipeline transportation is in accordance with the information provided in the MSDS.

Placards denote the hazard classification based on the nine hazard classes. Transportation documentation includes the hazard classification and the Tremcard provides emergency response procedures based on the hazard classification of the dangerous goods.

Companies do not always recognise that their products fall under the Hazardous Chemical Substances Act and assume that they are non-hazardous.

No applicable legislation and hazard classification criteria exist for chemicals specifically intended for consumer use.

Test Methods

The Occupational Health and Safety Act, the Hazardous Substances Act, the Explosives Act, the Fertilisers, Farm Feeds, Agricultural Remedies and Stock Remedies Act and SABS 0228 contain reference to relevant testing methodologies and procedures. The National Road Traffic Act and the Occupational Health and Safety Act incorporate SABS 0228 and the IMDG Code is incorporated into the Merchant Shipping Act.

No legislation for tests methods exists for rail transportation, emergency response and the consumer sector.

Capacity to test for physico-chemical properties and toxicity is limited and resides mainly in large companies. Currently there are no internationally accredited toxicology laboratories in South Africa.

Labelling (Symbols, Signal, Words, Hazard Statements, Precautionary Statements, Product Identifier and Supplier Identification)

There are no uniform and/or standard labelling requirements for all sectors. In terms of the Hazardous Substances Act, the Minister may promulgate regulations regarding labelling. The labelling requirements used by the Department of Agriculture are based on WHO requirements.

MSDSs and workplace labels are regulated in terms of the Occupational Health and Safety Act. Labelling in respect of rail transport is currently self-regulated. There are currently no legislated labelling requirements except for agriculture and transport. Labelling and warning signs of other household chemicals are not covered by any legislation. When chemicals are decanted at the workplace, new containers are not always labelled.

The layout of labels is not always conducive to comprehensibility and current signal words, symbols, pictograms and hazard statements used in South Africa are not consistent with those used in the GHS system. Emergency contact numbers on labels and MSDSs are sometimes not provided or out of date.

In the agricultural sector, growers and farmers are not able to ensure that the labels reflect the contents accurately and rely on the supplier for accurate information. There are discrepancies in hazard classification between different suppliers.

Some chemicals are provided without labels or the labels are not legible. Labels are sometimes unclear because of poor translation or do not specify international requirements, such as Maximum Residue Levels (MRLs), which are different for different country (countries).

Placards on transport vehicles must be provided by the consignor and correspond to the class of the dangerous goods by colour and symbol. Other placard display requirements include: signal words, a four-digit UN identification number, a 24-hour operator telephone number and specialist telephone number. The level of compliance to the aforementioned requirements is not known and currently enforcement by the authorities is limited. Initial emergency response procedures are based on the placard which identifies the hazard of the consignment. Appropriate training to recognise hazard labelling and the correct emergency response procedures are necessary. Only fire fighters currently undergo training in hazard recognition.

Labelling of household products varies greatly. "Warning" and "Caution" are only used on these products when they contain known hazardous chemicals. In the cases where the hazard effect of ingredients is not known, no signal words are used. Some pesticides and fertilisers sold at informal outlets, such as "spaza shops" and farm stalls, are not labelled according to the legal requirements.

Safety Data Sheets

The General Administrative Regulations passed under the Occupational Health and Safety Act requires MSDSs to be furnished, "as far as is reasonably practicable". The Mines Health and Safety Act requires the manufacturer to furnish information regarding, *inter alia*, use, risks and disposal of the hazardous substance. The Fertilisers, Farm Feeds, Agricultural Remedies and Stock Remedies Act requires that information on the hazards of a particular agricultural product is communicated either through inserts in packaging or by imposing obligations on the pest control operator. The Occupational Health and Safety Act, as well as General Administrative Regulations specify the requirements for the Transport Sector. SABS 0232-1 is incorporated by the National Road Traffic Act and specifies the requirements in respect of Tremcards, the dangerous goods declaration and waste certificate, and the Merchant Shipping Act requirements for packing declarations and packing certificates.

SABS 0232-1, as incorporated by the National Road Traffic Act, covers emergency responses. SABS 0265 provides requirements on the classification and labelling of dangerous substances and the preparations for sale and handling of these goods.

MSDSs are not yet in wide use and where they are used they present several problems. Internet databases and other reference material are used to supplement information provided by suppliers. MSDSs are not reviewed on a regular basis throughout the various sectors and can be out of date. The relevant authorities do not audit the quality of MSDSs. The information contained in MSDSs is not always accessible to workers and customers.

At some farming enterprises, the use of and access to chemicals is restricted to trained personnel, but this practice is not widespread in the sector.

Consignors not always provide Tremcards for road transportation of hazardous chemicals. Some transporters generate their own Tremcards, but have to use photocopied documents. Under-reporting or incorrect reporting of substances has been detected when incidents have occurred. The level of compliance is not known and currently enforcement of correct placarding by the authorities is limited.

Information on substances to be transported through a local authority and the route plans for such transport, must be issued to the appropriate fire service of the affected local authority. In addition, the fire services should also be notified of all hazardous substances manufactured in its area of jurisdiction. However, local authorities receive limited information on the dangerous goods that are being transported through or manufacturer in their area of jurisdiction. This situation may be due to a

lack of awareness by the local authority that this is a legal requirement or that the local authority is not able to adequately process the information that has been provided to it.

Training and Awareness

The Occupational Health and Safety Act includes requirement for training and information regarding hazards. The Skills Development Act facilitates the institutional and process aspects of training.

No generic course on hazard communication relating to chemicals has yet been developed. However the Chemical Industries Education and Training Authority (CHIETA) provides some accredited courses relating to occupational health and safety. Other SETAs also include aspects of occupational health and safety in their learnerships.

Workplace training ranges from best practice, such as specific training on MSDSs and labels, to occupational health and safety training and on-the-job training. Other supplementary methods include use of signage on walls, communications during employees' annual medicals, and the utilisation of pictograms. Verbal communication is used where literacy levels are low.

Accuracy of information on labels and MSDSs is the responsibility of the supplier. The general public have access to information on request. Although MSDS information is not confidential, product specifications could be restricted. Environmental impact assessments are used as a means to inform the public of hazardous chemicals that might affect communities.

The low literacy and educational levels of employees in the agricultural sector compounds the difficulties with the dissemination of information relating to chemical hazards. Agricultural associations, chemical suppliers and universities support training activities in this sector. Farmers are required to inform surrounding communities if aerial spraying is to be used.

Drivers of vehicles transporting dangerous goods are required to undergo training every two years, including hazardous materials training. Existing SETA courses are to be benchmarked internationally. However, difficulties in registering training courses with the SETAs have limited the extension of private sector courses to wider audiences.

Community awareness programmes and training are limited to non-existent. There is limited interaction between the community and the transporters or manufacturers of substances being transported through the communities. Communities are generally not trained to understand hazard labelling or how to obtain additional information in the event of an incident.

Informal settlements are encroaching on areas next to the railway tracks and residents are not aware of the dangers associated with the rail consignments, or understand labelling for dangerous goods. Awareness programmes have been implemented to mitigate the problem of pilfering from wagons.

Training and access to information regarding hazards is required under the Occupational Health and Safety Act, as well as the National Road Transport Act and Merchant Shipping Act. A specific course on disaster management is being developed for certification with the Local Government, Water and Related Services Education and Training Authority (LGSSETA). In the consumer sector the Paraffin Safety Association of South Africa (PSASA) is conducting training programmes and awareness campaigns. The Domestic Workers Union is planning workshops that will be organised by the Department of Labour (DOL) and the Poison Information Centres.

Institutional Arrangements

The DOL is the primary regulator of hazardous chemicals. Other departments involved are the Department of Health (DOH), the Department of Minerals and Energy (DME) and the Department of Environmental Affairs and Tourism (DEAT).

The Chemical and Allied Industries' Association (CAIA) provides guidelines on preparation of MSDSs.

Organised labour provides basic training for shop stewards on occupational health and safety; chemical safety is included in these courses. However, there appears to be a lack of capacity among key stakeholders (i.e. Government, Industry and Labour) to adequately implement current systems for the safe management of chemicals and to implement the GHS. Small, medium and micro enterprises (SMMEs), in particular, will require support to comply with current systems and with the implementation of the GHS.

Agricultural associations support farmers by communications relating to hazards and Maximum Residual Levels (MRLs) of chemicals, the training of trainers, farmers and workers, and improving conditions relating to labour standards, including health and safety standards.

The National Department of Transport (NDOT) has primary and overall responsibility for the regulation of the transport sector. There is an overlap of responsibility for health and safety of employees between the DOL and the NDOT.

Standards South Africa (SSA) represents South Africa at the United Nations Transport Committee and has responsibility for drafting the SABS Codes of Practice.

There is no legislative requirement for hazard communication activities to be co-ordinated between the different regulatory authorities. Currently co-ordination takes place on an *ad hoc* basis or through reliance on Memoranda of Understanding.

Effective enforcement requires the capacity for monitoring. The collection of data (i.e. exposure and incident) would inform appropriate interventions along the value chain. The primary responsibility for land-based emergency response lies with the local authority. The National Disaster Management Centre (NDMC) and the Department of Provincial and Local Government (DPLG) provide additional support, if required, or where facilitation is required in the event of an incident.

There is currently limited co-ordination between the emergency response services at the local authority level, which is exacerbated by constrained resources. The process of regionalisation of the local authorities is still being implemented.

Many of the transport companies have established their own in-house incident response team or subcontract this aspect to private clean-up companies. Good working relationships have been established between the local authorities and the private clean-up companies.

Inter-governmental forums are to be formalised by the NDMC. These forums have been ongoing since 1999 and include representation from the three levels of government and other key stakeholders. The NDMC has undertaken studies to assess the emergency preparedness of the country. In addition, an action plan is being developed to strengthen the emergency services, particularly in rural areas. Standards are being developed which will include the standardisation of equipment and vehicles. An electronic reporting system is being established for first responders to notify the NDMC about every incident that takes place and to indicate whether any support (and the nature of the support) is required.

A number of non-governmental and consumer organisation are involved in raising public awareness of hazardous chemicals.

8. THE WAY FORWARD

The Situation Analysis provides the basis for the next phase of the GHS Project, i.e. the Gap Analysis and Socio-economic Implications study (Phase 2), as well as the development and implementation of a National GHS Implementation Strategy (Phase 3) for both the governmental and non-governmental sectors.

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