WHO/IPCS Planning Meeting on Control Banding:
The Practical Application in Developing Countries

Utrecht, the Netherlands,
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1. Background

There is scientific and technical knowledge available today that, if applied, could prevent and control most occupational risk factors. However, worldwide, a "healthy" work environment is still the privilege of a few; too many workers continue to be exposed to, often very serious, occupational hazards and the general environment continues to be polluted, sometimes by large scale disasters.

Even in developed countries, there is a “knowledge-application gap". Prevention fails more often due to an inability to apply existing knowledge, adapted to specific conditions, than to an absence of knowledge. The application of the available knowledge on hazard prevention and control to providing appropriate and effective solutions in the workplace must be further promoted. The wide dissemination of such solutions is essential if they are to have an impact globally.

Observations in many countries reveal that common constraints to the effective implementation of adequate control strategies include:

- insufficient awareness, education and political will,
- inadequate human and financial resources,
- deficiencies in information, access to information or communication among professionals and institutions,
- inadequate preventive approaches (including too much reliance on quantitative evaluations, insufficient emphasis on source control and control solutions which are too complex to be implemented), and
- failure to involve workers and their representatives directly in problem solving.

For many years the World Health Organization has promoted the prevention and control of occupational risk factors in order to reduce ill health among the workforce. The “Global Strategy on Occupational Health for All” recommends a number of key principles for international and national occupational health policies, which include the following:

- avoidance of hazards (primary prevention)
- application of safe technology
- optimization of working conditions
- integration of health and safety with production.

In 1999, the Health and Safety Executive (HSE, United Kingdom) published "COSHH Essentials – Easy steps to control chemicals" to help small businesses understand what they needed to do to control exposure to chemicals. Both the ILO and WHO recognized that this approach would help them in achieving the key principles of their strategy on occupational health and decided to promote the tool internationally. The underlying concept for the COSHH Essentials approach has been called "control banding".

"Control Banding" is an occupational risk assessment and management instrument for using current knowledge about hazards and the exposure to these hazards from specific tasks to identify measures which will control exposures adequately. This can be done without on-site technical experts and expensive exposure measurements. An initial step was to adapt COSHH Essentials for international use in the form of a Toolkit; this was done by the International Occupational Hygiene Association (IOHA) as a contribution to the International Programme on Chemical Safety (IPCS), comprising the International Labour Organization, the World Health Organization and the United Nations Environment Programme. This first toolkit is called the International Chemical Control Toolkit (Chemical Toolkit).

The key objective for promoting the Chemical Toolkit is to motivate and support countries to focus most of their efforts on controlling the hazard, rather than measuring it.

It should be mentioned that, in the past, WHO has developed PACE (Prevention And Control Exchange) and the ILO has developed WISE (Work Improvement for Small Enterprises). The experiences learned from those initiatives are important for the implementation of the "control banding" concept.

International collaboration can appreciably strengthen national capabilities for the prevention and control of health hazards in the work environment, thus contributing to the protection of workers' health and of the environment, worldwide. Sharing of knowledge and experiences will also help avoid duplication of efforts and the consequent waste of valuable resources.

2. Objectives and Output

This Utrecht meeting was organized by the Occupational Health Programme of WHO together with IPCS, in order to launch effective action for the implementation of the Control Banding approach at the country level, starting with the elaboration of models and strategies. The responsible WHO officers were G. Eijkemans and C. Vickers. Representatives of already established and upcoming WHO Collaborating Centres in four countries participated; building on their experience, it is expected that the project will be expanded to include many more countries. The List of Participants is in Annex I.

2.1 Objectives

The objectives of this meeting were:

- To plan pilot projects for the implementation of the Chemical Toolkit and industrial hygiene in four countries (Benin, Brazil, India, South Africa)
- To develop effective twinning strategies with the implementing agencies in the four pilot countries
- To plan the training activities on the Chemical Toolkit in the four selected countries
- To develop a network of experts that will support the implementation of the project in the selected countries

2.2 Expected output

- A work plan for 2004-2005, with clear pilot projects and twinning strategies

3. Presentations

3.1 Titles and authors

"International Chemical Control Toolkit", by Carolyn Vickers (co-author: Pavan Baichoo, ILO SafeWork), PCS, Department of Protection of the Human Environment, World Health Organization

"COSHH Essentials", by Paul Evans, HSE, Chemical Risk Assessment and Control (CRAC) Central Specialist Division, Room 326 Magdalen House, Bootle, UK

"IOHA and Control Banding", by David M. Zalk, University of California, Lawrence Livermore National Laboratory (representing IOHA)

"Tool for SMEs for working safely with chemical substances", by Maikel van Niftrik, IVAM, Research & Consultancy on Sustainability Section, Chemical Risks, Amsterdam, The Netherlands

"CONTROL BANDING: Is the U.S. Ready? The NIOSH Control Banding Team - Applying the Concepts to U.S. Small Business Industries", presented on behalf of: Thomas J. Lentz, Rick Niemeier, Heinz W. Ahlers, Paul A. Schulte, by Gregory A. Day, NIOSH, Division of Respiratory Disease Studies, Morgantown, USA

"Strengthening Regional and National Capacities for Implementing the Globally Harmonized System of Classification and Labelling of Chemicals (GHS)", by Jonathan Krueger, Chemicals and Waste Management (CWM) United Nations Institute for Training and Research (UNITAR)

"Presentation from FUNDACENTRO, Brazil", by Arline Arcuri, FUNDACENTRO, São Paulo, Brazil

"Control Banding in Chemical Factories in Gujarat-India", by Saiyed Habibullah, Director, National Institute of Occupational Health, Meghani Nagar, Ahmedabad, India

"Control Banding opportunities in Southern India", by Kalpana Balakrishnan, Department of Environmental Health Engineering, Sri Ramachandra Medical College and Research Institute, Chennai, India

"The State of Control Banding in South Africa", by Kevin Renton, National Centre for Occupational Health, Johannesburg, South Africa

"Presentation from Benin", by Benjamin Fayomi, Université Abomey Calavi Bénin, UER de Sante au Travail et Environment, Cotonou Champ de Foire, Bénin

"SUVA Portfolio", by Olivier Favre, Institut Universitaire Romand de Santé au Travail (IST), Lausanne, Switzerland, and Vincent Perret, Service Cantonal de Toxicologie Industrielle et de Protection contre les Pollutions Intérieures, Geneva, Switzerland

"The SOBANE Strategy for the Prevention of Occupational Health Risks - application to chemical agents", by J. Malchaire, Unité Hygiène et Physiologie du Travail, Université Catholique de Louvain, Bruxelles, Belgium

3.2 Highlights

The Power Point presentations are all included on this CD-ROM. However, a few highlights are hereby presented in view of their importance for the understanding of subsequent discussions.

COSHH Essentials

HSE recognized that small businesses have difficulty applying risk assessment to chemicals. Many of them do not understand occupational exposure limits (OELs). Indeed, most chemicals do not have OELs. Small businesses want real, practical help in controlling chemicals and HSE set about developing a new approach to meet this need. The idea behind "COSHH Essentials – Easy steps to control chemicals" was to simplify control choices. This was made possible because:

- there are few basically different approaches to control, therefore risks can be "banded"
- many problems have been previously encountered and solved

COSHH Essentials provides a step-by-step risk assessment. It identifies solutions for adequate control. Just as importantly, it indicates when expert help is needed, such as when dealing with substances which can cause serious, non-reversible health effects, like cancer or asthma.

The Generic Risk Assessment uses information which is readily available to the user and guides them through the following steps:

- banding the health hazard, using the R-phrase
- banding exposure potential using the quantity of the material and the ability to become airborne (dustiness or volatility)
- selecting the task from a small list
- identifying the control approach.

Using this approach, the user can determine the best controls to protect workers from the harmful effects of the chemical without the need for an expert on site

The Control Guidance Sheets are written in a consistent style and contain guidance on the following elements:

- access
- design and equipment
- maintenance
- examination and testing
- cleaning
- PPE (see control approach S)
- training
- supervision

Learning how to apply this approach will develop preventive knowledge.

However, there are limitations in the generic COSHH Essentials:

- It is simplistic since it was developed to be simple to use.
- It tends to be precautionary since it provides solutions for 'bands' of substances and offers generic guidance for everything within that band.
- It does not deal with process emissions, since these are not 'supplied products' and do not have a risk phrase.
- It refers users to experts for "difficult" substances.

HSE is developing process and substance specific guidance to provide advice in situations where generic COSHH Essentials cannot be used.

The IPCS International Technical Group

An IPCS International Technical Group (ITG) was established with representatives from WHO, ILO, IOHA, HSE, NIOSH and GTZ. In May 2004, the Global Implementation Strategy was set up, starting with the elaboration of a structure for the project, aiming at individual work plans and including twinning of organizations for mutual support, exchange of information and experiences thus strengthening the activities and avoiding duplication. One important aspect is capacity building and training.

This meeting is a step under this Strategy.

4. General Discussion (Plenary) - Control Banding in Developing Countries

The following questions were given as guidance for the discussion:

- Is control banding as it is, at the moment, useful for developing countries ?
- What is needed in order to make it more appropriate for developing countries ?
- Are additional tools needed ? (awareness raising for owners of medium sized enterprises, appropriate training)
- What are the mechanisms to implement control banding, particularly in small and medium size enterprises ? who is going to follow up and give advice ?

Highlights of the Discussion

Pilot Projects

It was agreed to carry out pilot projects in selected countries with the following phases: plan, implement, evaluate and improve. The Pilot project should include awareness raising, training, and development/adaptation of practical and effective preventive solutions for specific jobs. This should be enhanced by a Data Base of control solutions and mechanisms for continued exchange of experiences and information.

In each country, an “intermediary” has to be identified. This would be the organization or institution that receives the training (train the trainers) and will support the selected workplaces in the implementation of the project. These could be national institutes, local/national governments, universities, NGOs or other relevant stakeholders.

Capacity building

Appropriate facilities, equipment and access to information are essential to the success of the pilot projects. Education, training and transfer of knowledge are of fundamental importance in building the capacity to succeed in participating countries.

Exposure Assessment

The difficulties of carrying out quantitative exposure assessment should never be a barrier to the implementation of appropriate control measures. This does not mean that exposure assessment is not important; it is necessary in many cases. However, there are situations when the correct control measures can be identified because it is already known what works. Valuable resources are then better spent in putting these measures in place.

Specific Comments by participants:

Gerry Eijkemans emphasized that both WHO and the ILO have a keen interest in developing this approach and that the discussion should lead to the elaboration of Pilot Projects in Developing Countries, indicating what is needed for their successful implementation.

The idea of twinning institutions for mutual support should be developed. Since not all countries yet have the required occupational hygiene capabilities to support the use of control banding, the 'twinning' of institutions would be very helpful. This arrangement would be set up between an institution in a developing country and another, in a developed country with good occupational hygiene capabilities; the latter would help in elaborating and testing control solutions, as well as in guiding their application and verification. Marilyn Fingerhut strongly supports the idea that the WHO Network of Collaborating Centres can, and should, play a key role in this.

Sophie Kisting stated that a major problem in South Africa is silicosis and that specific practical guidance for controlling silica exposure would be a priority for them. An example of this type of guidance is "Silica Essentials", being developed by HSE.

Martin Harper mentioned the importance of exposure assessment for the validation of control banding and of control guidance. In fact, it was recognized by all that exposure assessment is a necessary step for the correct application of a control banding approach. Control Banding is a tool that allows taking preventive action without measurements, in certain situations, which have already been studied and for which it is already known what kind of preventive action works. The risk assessment, in other words, has already been done by others. For the evaluation of the effectiveness of a specific control measure, it is necessary to assess the risk before and after implementing the measure in question. Thereafter, the control solution can be used with a certain confidence that it will work, provided that all required measures are properly maintained and continue to work effectively.

In any case, people using pragmatic methodologies should ensure that they use good occupational hygiene practice; for this, they need to be somehow "backed up" and have some kind of access to occupational hygiene professionals.

It was discussed whether the exposure range predicted by using Control Banding is achieved in the workplace. Martin Tischer, at BauA in Germany, has examined exposures for a wide range of substances in a variety of occupational situations, and he found that, in the vast majority of cases, they were within or below the exposure ranges predicted by COSHH Essentials. This work is ongoing.

Many participants agreed that one problem is to obtain correct toxicological (in the case of chemicals) information. In Europe, the R-phrases are used. However, the accuracy of an R-phrase depends on the quality of the information used by the manufacturers, and its

adequate communication depends on their good will. Some participants questioned the reliability of all R-phrases. The use of the Globally Harmonized System of Classification and Labelling of Chemicals (GHS) will help solve this problem. However, it is clear that all risk assessment methodologies, not just control banding, rely on accurate toxicological information.

Generic Control Banding and Specific Guidance

It was observed that the term Control Banding was being employed to indicate the use of pragmatic control approaches without quantitative exposure assessment, that is, a methodology that allows moving from the recognition and qualitative estimation of an exposure situation, to its control.

HSE has recently embarked on a new phase of COSHH Essentials. The original, Generic COSHH Essentials required an R-phrase, which meant that it could not be used for hazards that were generated by the process. Also, for the most hazardous substances, such as those which cause asthma or cancer, it advised the user to consult an expert.

The new phase of COSHH Essentials supplies control guidance for a number of operations and exposure situations, such as spraying isocyanates or hairdressing, or specific agents, such as rubber fume or silica. In the case of control guidance for a specific hazard, the term Control Banding is not an accurate description of the approach being used and there is a need to clarify and use terms more precisely.

5. Sub-groups

The participants divided into four sub-groups, one for each represented country, namely Benin, Brazil, India and South Africa. The objective was to discuss a number of relevant points and draft proposals for specific pilot projects and action plans in each country. The starting point was a “brainstorm” on the following basic questions:

- What is needed to for control banding to be useful in developing countries? which tool to use?
- What is needed to implement it ?
- How to reach the established targets ?
- How to achieve sustainability ?

The Reports from these sub-groups are presented in Annex II.

6. Conclusions and Recommendations for Further Action

Title of the Methodology

The title of the methodology has been changed for a number of reasons. The title “Control Banding” is suitable for the method initially developed by the HSE and

transformed into the “International Chemical Toolkit”, for chemicals that are used, either in the liquid or powder form.

However, the principle of using proven measures for controlling risks without, or before, carrying out quantitative evaluations opens wider possibilities. But this approach does not fit neatly into the “banding” terminology. This is the case when specific guidance is given for specific risk factors, e.g. Silica, where the hazard is already known, as well as the potential for exposure in specific tasks and how to achieve adequate control. HSE has developed control guidance to control exposure to airborne dust containing silica using this approach; this is called “Silica Essentials”. It is possible and desirable to expand the concept to other hazards and also to specific operations, such as welding or paint spraying. Moreover, the translation of the term “Control Banding” into other languages has posed problems.

For these reasons, a broader title to indicate the use of this concept has been sought and the decision was to name it “Occupational Risk Management Toolbox”. In order to avoid misunderstandings, for a period of time, the term “Occupational Risk Management Toolbox” will be accompanied by “Control Banding”, in brackets.

Extending the Scope of the Control Banding Approach

It is desirable to extend this kind of approach to other occupational risk factors, such as physical agents, biological agents and ergonomic factors. In fact, the SOBANE methodology has already been applied to Noise, Heat Stress and Ergonomics (in addition to Chemicals).

This kind of “no quantitative measurement approach” is of particular importance for biological agents since, for most of them, quantitative evaluation is not even considered and the paradigm is “recognition-control”. It should be mentioned that NIOSH has been working on semi-quantitative methods for molds.

It is envisaged that the Toolbox will also contain a set of other Toolkits for a number of other occupational risk factors (including working conditions) that will be developed over time.

Data Base on Solutions

A data base containing control solutions for specific operations would be desirable.

HSE, NIOSH and other institutions already have a significant collection of tested controls. An inventory of what already exists should be elaborated, as well as guidance for its application, which may require adaptation (as some measures may not be feasible in all situations). It is necessary to develop solutions which are adequate for SMEs. Solutions designed, or adapted for use, in developing countries should also be part of this data base.

It should be kept in mind how important it is to search for solutions which control the source, such as substitution, modification, and work practices. It should also be pointed out that, particularly concerning inhalation hazards, personal protective equipment should be regarded as a last resort.

Forum for Exchange of Experiences

Teleconferences will be organized in January and July 2005. The schedule and a one-page summary of the relevant protocols will be sent to the group by Kalpana Balakrishnan, India.

A discussion list, by means of an electronic forum and list serve, has already been set up by Olivier Favre, Switzerland.

Information Dissemination

- Control Banding Webpage, hosted on the ILO SafeWork Webpage, as part of the Global (WHO and ILO) Portal, and WHO site.
- GOHNET – the Summer Edition of 2004 will be dedicated to the Occupational Risk Management Toolbox (Control Banding)
- IOHA Newsletter – material being prepared by B. Goelzer for the September 2004 issue.

The 17 Questions

These very useful questions to be used in connection with this effort are presented in Annex III. These questions are the foundation for a document that is being prepared by Richard Rinehart for the ILO Working and Employment Conditions Branch, entitled "Improving Working and Employment Conditions in Micro and Small Enterprises and the Informal Economy: Review of Recommendations for the Design of Future Programs". The final document will be posted on the ILO website in due course.

International Chemical Toolkit CD-ROM

It is important to create an interactive, annually updated CD-ROM of the International Chemical Toolkit. For this purpose, an expert group should be set up, involving IOHA, IPCS (WHO, ILO) and the HSE.

Country Projects

Detailed Pilot Projects

Initial draft proposals, prepared during the meeting (see section 6.) will be the basis for more detailed projects.

These projects will fall into the scope of the WHO Task Force 10. A 400-word project summary for this should be completed by the end of July 2004, according to WHO requirements.

Requirements for a complete project

A request was made by WHO for a complete project description to be presented within 2 - 3 months. Participants requested written information, from WHO, describing what information is required for a "complete" description.

Focal Points for Country Projects

Focal points (or Primary Investigators) should be identified/selected for each project at the country level. This does not necessarily need to be someone who attended the Utrecht meeting.

Funding Possibilities

Funding possibilities should be explored. One possible source of funding is the EU; the required conditions should be identified and passed on to the participants. The EU has funding for projects on health and safety in SMEs, and there may a possibility to involve not only EU member states but also developing countries.

International Silica Database Project

This will be an important contribution to the worldwide understanding of the magnitude of the problem of exposure to silica containing dusts and of the consequent prevalence of silicosis among exposed workers. It will also demonstrate the feasibility of preventing such exposures hence the associated disease, disability and deaths. Extensive dissemination of such data and information will appreciably contribute to raise awareness concerning this unacceptable (and ongoing for centuries) problem and to trigger political will to take effective action to solve it. Moreover, it will help occupational health professionals who face this problem in their daily practice. This Database will be prepared under the leadership of Sophie Kisting.

Train the Trainer

Train the Trainer (TTT) centres are essential for capacity building and sustainability within many develops countries, for example, Brazil and India. The role of multinational companies was discussed as these may contribute in this respect. The presence of so many multinationals in these countries, and the fact that implementation of Control Banding concepts is to their advantage, leads us to believe that they should have some fiduciary obligation to this process. Therefore their role must be better defined and their support and funding sought out.

The concept for a virtual TTT centre is a best first step in creating a sustainable process. This approach should be further discussed by the group.

Annex I

LIST OF PARTICIPANTS

Planning Meeting on Control Banding in Developing Countries: The Practical Application

Utrecht, the Netherlands, 13-16 June, 2004

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Annex II

WORK OF THE SUB-GROUPS: PARTICIPANTS AND INITIAL REPORTS

BENIN SUB-GROUP REPORT

Participants: Benjamin Fayomi, Fatim Diallo, Olivier Favre, Vincent Perret

Part 1 – Discussion on the questions presented

What is needed for control banding to be useful in developing countries?

Which tool to use? (*e.g., for labelled chemicals: International Chemical Control Toolkit, COSHH Essentials, GTZ Chemical Management Guide, or a country specific adaptation; e.g., for other applications: Silica Essentials or other task-based approaches that do not rely on the R/hazard phrases*).

The informal sector represents about 90% of the workers in Benin. The group does not believe in having two different tools (formal vs. informal). The difference between informal and formal sector is a "socio-economic segregation"; concerning occupational health, there should be no difference between workers. Therefore, the tool should be versatile enough to work in every situation. Moreover, in order to be used and accepted, the tool should be as simple as possible and used in a participative approach (workers, employers, occupational health professionals).

Control Banding requires, as a starting point, an identification/priorization phase.

MSDS and labels are not so often available in Benin; therefore qualitative analyses of used products will certainly have to be made prior to using an approach such as the Control Banding (which requires that the toxicity is known). The GTZ Chemical Management Guide seems to be a proper tool. The SOBANE method (Belgium) has already been used with success in Benin. This could be a good opportunity to organise a parallel comparison of these tools in the field.

What is needed to support implementation of the selected tool? *(e.g. development of materials in your language/s, training, awareness raising, access to expertise, technical and scientific back up).*

- Translation of the relevant documentation, as well as information to local people and workers, in local language, must be done.

- The project will certainly need a toxicological/chemical back-up to assess substitution possibilities for the most dangerous pesticides used.

Where to focus effort in the pilot? *(e.g. size of company, type of company, and how to reach them)*

Pesticide exposure is a major threat in both the informal and formal sectors; therefore the pilot project in Benin should focus on this area, particularly in the cotton agriculture. This would be informal cotton agriculture, in South Benin, in a village in the Aplahoue region, where lethal exposure to Endosulfan has occurred.

How to achieve sustainability? *(e.g. enforcement vs. creating demand, identifying stakeholders, identifying an owner for the process)*

In order to ensure sustainability, it is important to involve:

- Three ministries (agriculture, environment, labour).
- Union of Benin cotton producers

It is also necessary to prepare relevant information to producers and importers of chemicals.

What are the roles and contributions of partners in eventual projects?

International partners

STIPI (State of Geneva): chemical identification of products, provision of experts
WHO
GTZ
UNITAR
ILO

Locals partners

Ministry of health
Ministry of environment
Ministry of labour – labour inspection
University FSS (Cotonou)
Local nurses
Local rural development people
Cotton producer association of Benin

Remark: *The roles of the different partners will be identified after projects are elaborated.*

What are the desired outcomes of the pilot projects, and how should experience be shared?

Outcomes

Expected outcomes would include:

- Information on the most serious problems, including types of products used.
- Awareness of the risk and knowledge related to pesticides use.
- Evaluation of the GTZ method adapted to agriculture and comparison with the SOBANE method.
- Feedback to the ILO and WHO, in order to contribute to the elaboration of a chemical products management toolkit specific for agriculture

Another important outcome would be the sharing of experiences, both at the village level and at international meetings.

Part 2 – Proposed Pilot Project in Benin: "Control Banding in the Cotton Agriculture"

Scope

- Focus on one of the major productions of Benin, involving formal/informal workers
- Intensive use of chemicals (pesticides, fertilizers, etc.) and poor awareness of risk
- Major threat for occupational and public health in Benin
- Focus on village of the Aplahoue region (South Benin), where there are documented cases of disease due to Endosulfan exposure
- Biological monitoring (cholinesterase) data is available for pesticide exposure among regional workers

Project life line

It is important to take into account the local acceptance of the approach. Local people usually do not have or have poor access to basic health services. To focus on a particular threat (chemicals) will certainly not be accepted and a more comprehensive approach, including general health care, has to be considered. Local nurses have to be part of the project. Local personnel, dealing with rural development, have to be involved as a local resource.

- **Stakeholders**
    - Administrative level : *ministries of health, labour, environment, superior education*
    - Local level : *Village social hierarchy, workers, nurses, rural development personnel*

- **Identification**
    - Chemicals : *Sampling, analysis (need of environmental laboratory capabilities)*
    - Processes : *Identification of a representative homogeneous group*

- **Tool**

  As already mentioned, this would be a good opportunity to organise a comparison of the GTZ and SOBANE tools in the field.

- **Validation**

  - Exposure measurements
  - Biological monitoring (cholinesterase)

Available resources for funding the pilot project

Local

- University of Benin (Benjamin Fayomi)
- Olivier Favre (Swiss Civil Cooperation Programme; from January to May 2005)

External

- Vincent Perret (State of Geneva; cooperation programme)
- Jacques Malchaire (Belgium)
- WHO
- Others to be identified

Tentative agenda

(Please, see slide number 6 of the Benin presentation)

Suggestion for a title, in French for Control Banding: "**Gestion catégorielle du risque"**

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BRAZIL SUB-GROUP REPORT

Participants: Arline Arcuri, Berenice Goelzer, Jacques Malchaire, Martin Harper

Control Banding: Replies to Questions and Proposal for a Pilot Project in Brazil

What is needed for CB to be useful in Developing Countries?

Control Banding needs to be put into the context of a broader framework of occupational health considering:

- all the different aspects of the working conditions, and
- different levels of intervention.

Which tool to use?

Under this pragmatic approach, there are many tools, for example: the International Chemical Toolkit, COSHH Essentials and the GTZ Management Guide, for labelled chemicals; SOBANE, for noise, thermal stress, ergonomics and chemicals.

There are also other applications of COSHH Essentials that do not require risk-phrases, namely: hazard-based guidance (e.g., for silica) and process-based guidance (e.g., for welding).

It would be interesting to compare different tools. This exercise would have two values:

- to determine what methods is the most suitable to the context in question

- in any case, to raise awareness and train as all these methods have in common the need to recognize hazards (this would already be a public service).

What is needed to implement?.

Important points include:

- awareness raising
- improve labelling (among the many actions already being taken in Brazil, it should be mentioned that a workshop with UNITAR on GHS (translated into Portuguese) will take place in FUNDACENTRO in October 2004)
- training and education
- demonstration of efficiency of different types of controls: magnitude of the hazards before and after
- the economical benefits of the improvement in working conditions (lowered insurance premiums (Brazil has a workplace insurance scheme with premiums based on risk).

How to reach the target

First Workshop

A first workshop will be held in FUNDACENTRO with the following objectives:

- To introduce the concept
- To discuss its applicability with technical people
- To raise awareness of the different partners and identify what additional trainings are required

- To plan a pilot study in Brazil with the selection of 3 branches of small industries using chemicals (the known priority in Brazil) to start with.
  - *These sectors could be foundries and electroplating (for process-specific guidance), shoe and furniture manufacturing, pesticide formulation, paint recycling (for more generic control banding).*

- To elaborate a mechanism to reach the SMEs (mailing, suppliers, visits, official data banks, such as RAIS).

The participants/co-sponsors will be:

- selected FUNDACENTRO staff (about 10)
- other organizations with interest in small industries (SEBRAE, SESI)
- Relevant Ministries
- Trades Unions
- Representatives of Occupational Health associations
- Universities

Preparatory Steps

- To select and translate the necessary materials
- To identify participants (including 2 or 3 international speakers).

Pilot Study

The pilot study would involve the following steps:

- to translate guidance sheets specific to the selected industries
- to train trainers at FUNDACENTRO
- to invite industry to discuss the methods and the guidance sheets
- to train people at the enterprise level on how to apply the tools
- to follow up the applications in selected workplaces
- to analyse the results
- to finalize the procedures and methods
- to plan a nationwide study

Outcomes:

- a set of control guidance sheets adapted to local conditions

- introduction of a pragmatic methodology in the "Simple Guidance" legislation on which FUNDACENTRO is presently advising the Ministry of Labour.

Concerning the **application of the control guidance sheets**, there will be a need to carry out exposure assessment in order to:

- characterize exposure profiles for specific operations in different process industries.

- demonstrate the effectiveness of the proposed control guidance.

In this respect, partnerships could be established, for example, between FUNDACENTRO and NIOSH, HSE, GTZ, UCL-Belgium. These possibilities should be explored.

Where to focus effort in the pilot?

As already mentioned, SMEs that use chemicals, for example, furniture and shoes manufacturing, paint recycling.

It should be mentioned that there is already a large group working on the elimination of silicosis (this group would add any control guidance on this topic to the FUNDACENTRO web-site).

How to achieve sustainability?

One way is to have legal back up. FUNDACENTRO is already advising the Ministry of Labour concerning the elaboration of a simplified law on health and safety in SMEs (the current law is very complex). This could be an opportunity to include Control Banding concepts.

The success and sustainability in the application of these control techniques is conditioned by the availability of reliable toxicity data to the users, by the suppliers of chemicals. In Brazil, the Public Ministry is pressing large public companies (e.g. PETROBRAS) to provide MSDS sheets and labels.
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INDIA SUB-GROUP REPORT

Participants: Greg Day, Kalpana Balakrishnan, Martha Waters, Rick Rinehart, Saiyed Habibullah

Control Banding: Implementation in India (INDIA PILOT PROJECT)

Initial Observations:

- There is a large number of chemical factories in India
    - 90% employ less than 50 people
    - The bulk of the workforce is engaged in SMEs
    - Yet, even the largest companies have inadequate OSH infrastructure

- At present, there is no use of the Control Banding methodology in India (however prior experience with WISE methodologies is available)

- Baseline research data indicates a high prevalence of symptoms related to chemical exposure

- There is a great deal of emphasis in existing regulations for implementation of controls in hazardous processes but limited enforcement has been responsible for poor compliance

- The available infrastructure affords enough opportunities to apply these methods

All this justifies the need for Control Banding, which should be tested in Indian workplaces, in order to:

- examine whether existing control banding tools (COSHH Essentials/International Chemical Toolkit) can be readily applied in medium- to large-scale enterprises;
- test Control Banding in smaller enterprises, which do not have OSH infrastructure
- determine differences in approach needed for larger versus smaller enterprises
- identify essential elements for sustainability

Project 1: Medium- to large- enterprises (Western India)

The objectives of this project would include the following:

- To leverage existing HSEES Pilot Project in order to provide a platform to reach enterprises
- To build on existing relationships among stakeholders
- To utilize the generic COSHH Essentials or the International Chemical Toolkit

Project 2: Medium- to large- enterprise (Southern India)

The objectives of this project would include the following:

- To tap into routine relationships with medium to large scale companies involved in handling hazardous chemicals
- To use existing local networks with professional industry associations
- To review available toolkits and select the most applicable one
- To promote the use of OSH graduate students (develop capacity)
- To act as service providers
- To evaluate Control Banding recommendations by comparison with traditional industrial hygiene measurements

Project 3: Small enterprise test project

The objectives of this test project would include the following:

- To frame the Control Banding concept into the scope of existing programs that target the small enterprise sector (possibly including an ILO child labour project in India that targets "hazardous" work)
- To collect preliminary data on potential target populations (e.g., footwear makers, small scale stone crushing mills, and/or lead battery recyclers) and specific geographic areas
- To work with and raise awareness among potential partners about OSH conditions and show how improvements can positively affect business success
- To design interventions, based on initial research, that meet the demands of the individuals they are meant to reach (possibly adapting the existing GTZ Chemical Management Guide to local situations)
- To help create an environment for targeted workers and entrepreneurs to form or join networks or associations
- To "preplan" for follow-up activities to measure issues related to sustainability

Next Steps

Projects 1 and 2

- "Scope" what is needed
- Estimate costs
- Identify funding mechanisms
- Build internal capacity

Project 3

- Collect preliminary information on existing programs or groups that target selected hazardous small enterprise sectors
- Market the project concept to potential donors, partners and other stakeholders

Summaries for Projects 1 and 2 are expected to be available by end of July and full project proposals by end of the August 2004. It is anticipated that these pilot projects can be implemented largely through available resources within the concerned institution. Modest support may be required from WHO. Project 3 would however be submitted for extra-mural funding and implementation would be contingent upon receipt of funding.

Expected outcome

This activity will provide initial information on applicability of specific occupational risk management toolkits in medium and large-scale industries involved with hazardous

process chemicals in India. It will implement a select battery of interventions and identify requirements to sustain these efforts beyond the project periods. It will allow wider dissemination of technical information regarding available toolkits and their applicability as well as train OSH professionals on the use of specific toolkits. In addition, the program will explore the feasibility of extending the control banding concept to small enterprises in the informal economy (contingent on funding).
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SOUTH AFRICA SUB-GROUP REPORT

Participants: Dino Mattarano, Kevin Renton, Marilyn Fingerhut, Nick Henwood, Sophie Kisting

PART 1: RESPONSES TO QUESTIONS

1. **What is needed to for control banding to be useful in developing countries?**

- **Which tool to use?** (*e.g., for labelled chemicals: International Chemical Control Toolkit, COSHH Essentials, GTZ Chemical Management Guide, or a country specific adaptation; e.g., for other applications: Silica Essentials or other task-based approaches that do not rely on the R/hazard phrases*).

  Points to consider:

  - The South Africa legislation has similarities to that of the UK; thus adoption/ modification/use of COSHH Essentials will provide sustainability.
  - Aspects of other tools are valuable for worker training and participatory approaches. Further exploration is needed to ascertain whether COSHH Essentials provides for this or if a method like SOBANE would be needed for unions. Unions are already using some training tools that could be connected to control banding.

- **What is needed to support implementation of the selected tool?**
  (e.g., development of materials in your language/s, training, awareness raising, access to expertise, technical and scientific back up).

  - Strengthening of occupational hygiene capacity, particularly in NIOH and particularly concerning COSHH Essentials in order to serve nationally as resource.

  Points to consider:

- Insertion of a pilot project into Silicosis National Plan

- Consideration of what will motivate employers to utilize this approach.

- Training of several levels of audiences in COSHH Essentials, including: NIOH staff, elected H&S representatives, labour inspectorate, pilot leaders. A goal is to open minds to the control banding concept and to develop approaches to train AIA's and others (including technical schools and university occupational hygiene programmes) later on.

- CD-ROMs and paper for sharing

- Unions need to have workers look at workplaces to see where CB can be used.

- **Where to focus effort in the pilot?** *(e.g. size of company, type of company, and how to reach them).*

  The main effort in this Pilot would be primary prevention of silica exposure. It should be mentioned that studies in Quarries and Foundries will be conducted within the South Africa National Silicosis Plan. The NIOH, UCT and Trade Union would have the leadership, with technical expertise from IOHA, HSE and NIOSH.

- **How to achieve sustainability?**
  (e.g., enforcement vs. creating demand, identifying stakeholders, identifying an owner for the process).

  - Incorporate training in Control Banding into the activities of the National Plan to Eliminate Silicosis

  - Ensure that the National Plan Working Group endorses the pilot efforts

  - Train occupational hygienists and other experts (including AIAs and labour inspectors) in control banding

  - Train workers in recognizing failures in control systems, in order to ensure their continued efficacy

2. What are the roles and contributions of the partners in the projects?

NIOH

- Train occupational hygienists in COSHH Essentials
- Adopt/modify/use COSHH Essentials

- Serve as National Resource for occupational hygiene and control advice
- Provide a national silica measurement system
- Explore role within SA National Plan
- Train Labour Inspectors in occupational hygiene and on COSHH Essentials.
- Hold national training programmes for Approved Inspection Authorities (AIAs) on Silica including the use of COSHH Essentials.
- Set up a LPAT silica measurement system with NIOH as reference laboratory.

UCT

- Educate stakeholders on the value of the COSHH Essentials approach
- Prepare a draft database of occupations/tasks with potential for silica exposure using SA data and UK COSHH Essentials silica data
- Carry out intervention effectiveness research in order to evaluate success of control technology.
- Train Labour inspectors in Control Banding
- Train occupational hygienists of the Labour Department in Control Banding
- Train Approved Inspection Authorities in Control Banding

Trade Unions

- Educate/Train elected workers' representatives
- Facilitate workers' contribution to ensuring sustainability of control systems in workplaces
- Identify, in consultation with unions, who will be trained
- Send questionnaire to workplaces to identify hazards and broad H&S needs, in order to select representatives to attend national training on control banding and to evaluate the level of workers' knowledge of chemical hazards.
- Evaluate effectiveness of training interventions.

Remarks:

(1) The Mine Worker Union needs to be brought in and invited to participate in Quarry pilots.
(2) Technical assistance would come from NIOH at the country level; collaboration from IOHA and NIOSH should then be incorporated.

Outside experts: Tasks below could be invited from the outside experts

WHO/ILO/IPCS: Context for efforts and technical assistance.

HSE:

- Provide COSHH Essentials to NIOH and updates as available.
- Provide training in COSHH Essentials, through Kerry Gardiner and directly via Paul Evans

IOHA:

- Arrange for substantial Train the Trainer programmes (on Control Banding) at the IOHA 6th International Scientific Conference, to be held in South Africa, September 2005.
- Train AIA's on Control Banding
- Provide technical assistance to NIOH, UCT and Trade Unions.
- Arrange for review of COSHH Essentials draft guidance documents by SA groups, beginning with silica review.

NIOSH:

- Provide on-site assistance with evaluation of exposure to silica-containing dusts (equipment and techniques)
- Provide on-site occupational hygienists to train local professionals on how to evaluate silica exposure in workplaces.
- Provide training programmes for occupational hygienists before and during the IOHA 2005 Scientific Conference
- Provide technical assistance regarding prevention and control of exposure to silica
- Work with SA experts to revise US silica information and adapt it, if needed, to be suitable for use in SA.

FOGARTY:

- Training for laboratory analyses
- Training on COSHH Essentials/Control Banding

UNIVERSITIES:

- Training of students in Control Banding
- Participation of students in relevant pilot projects

3. What are the desired outcomes of the pilot projects, and how should experience be shared?

- Presentation of plan to NIOH public meeting - June 2004
- Presentation of plan to SA Silica Programme Working Group at next meeting.
- Review of COSSH Silica Essentials by pilot partners in SA Silica Plan during 2004.
- Participation of occupational hygiene groups will be obtained through CB training in August 03 by Kerry Gardiner.

- Progress on model quarry and foundry pilot projects, in two SA provinces, will be shared at IOHA 6th International Scientific Conference, September 05

4. How will the effort be funded ?

The subgroup could not make decisions regarding funding, therefore a list of activities for which funding will be needed is hereby presented. Funds are needed:

- to teach COSHH Essentials for quarries and foundries (these could be possibly sought from SIMRAC), to be carried out by Kerry Gardiner
- to prepare Kerry Gardiner to provide " train the trainer" in COSHH Essentials (to be provided by HSE)
- to identify 2 quarries and 2 foundries
- to prepare database of SA Exposure situation and analysis of COSHH guidance sheets
- for assessment and control guidance in 2 quarries and 2 foundries
- to implement control measures in each setting
- to evaluate the success of interventions
- for silica sampling and analysis
- for report preparation and publication

5. What are the immediate next steps upon going home?

- Describe pilot silica project to SA National Working Group in SA National Program for the Elimination of Silicosis and request approval to insert the pilot into the National Program.

- Request that the SANWG take ownership of the pilot project and direct its implementation.

- Assess whether NIOH agrees to being National Resource.

- Take steps for NIOH to obtain laboratory guidance.

- Take steps for IOHA to provide COSHH Silica Essentials to NIOH, UCT, Trade Unions, for review and sharing.

- Prepare "Database Description of Silica Exposure Settings in South Africa", with assistance from IOHA (under the responsibility of Sophie Kisting)

- Identify two quarries and two foundries for pilot.

- Identify who will run the pilots, prepare their protocol and carry them out.

PART 2: SUMMARY OF THE PILOT FOR SOUTH AFRICA

Pilot Title: "Primary Prevention of Silica Dust Exposures: Implementation of Foundry and Quarry Exposure Assessment and Control in two provinces: Hauteng and Western Cape"

Timeline: Presentation of progress of the pilot project at the IOHA 6th International Scientific Conference, to be held in South Africa, September 2005

Methods:

A. Preparation of a Database Description of Silica Exposure Settings in South Africa, with technical assistance from IOHA:

1. Review the existing COSHH information on Foundries and Quarries

2. Compare likely similarity with SA foundry and quarry situations

B. Identification of Pilot Quarries and Foundries and Protocol for Assessment and Control Implementation and Evaluation.

C. Training and Awareness Raising on COSHH Essentials

1. NIOH is having a public meeting in July, 2004 and will then provide an opportunity to present the concept of "control banding" for Silica exposure control.

2. Inspectorate training in Cape Town, 15-18 August 2004; this will be national training for the Department of Labour. It is desirable to have an additional day of sessions (perhaps taught by Kerry Gardiner) on COSHH Essentials including General COSHH Essentials (4 hours) plus Silica Essentials (2 hours).

3. Common workshop for Mining and Labour inspectors: It is desirable to have training by Kerry Gardiner, in January 2005 in Johannesburg

4. Training in COSHH Essentials for:

    a. NIOH
    b. Elected H&S representatives
    c. Managers, including line managers
    d. Inspectorate
    e. Pilot project leaders

5. The goal of the Awareness-raising effort is to open minds to the concept of Control Banding and to develop approaches to training AIA's and others, including in occupational hygiene programs at technical schools and universities.

6. Training of Trade Union officials on COSHH Essentials, for participation in the foundry and quarry pilots.

7. South Africa should invite Paul Evans, from HSE, to conduct COSSH Essentials "Train the Trainer" sessions at the 6th IOHA International Scientific Conference in September 2005.

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Annex III

SEVENTEEN QUESTIONS TO CONSIDER WHEN REPORTING ON "OCCUPATIONAL RISK MANAGEMENT TOOLBOX" (CONTROL BANDING) PILOT PROJECTS

1. In what technical subject areas have improvements in OH been achieved? Which technical areas have had the widest outreach?

2. For which target groups are projects most successful? Why? For which groups are projects less successful? Why?

3. How have projects resulted in a sustainable increase in demand for improvements in OH among individuals in the project target groups?

4. How have projects resulted in sustained delivery of services, assistance and/or information that help improve OH conditions of individuals in the project target group?

5. How have projects resulted in a diversification of the types of services, assistance and/or information being delivered which help people in the target group improve OH conditions?

6. How have projects resulted in expansion of the numbers and types of organizations that are actively promoting improvements in OH conditions in a sustainable way?

7. How have projects resulted in sustained improvement in OH conditions and/or productivity among participating enterprises, individuals, or families?

8. How have projects resulted in sustained improvement in OH conditions and/or productivity among other enterprises, individuals or families?

9. How have projects resulted in sustained improvement in OH conditions for particularly vulnerable groups?

10. How have projects made a significant impact on the "worst" OH conditions among participating enterprises, individuals or families (including providing a definition and rationale for why these conditions are considered the "worst")?

11. How have projects resulted in changes to the policy or regulatory framework for OH conditions?

12. How have projects resulted in changes to other aspects of the macro environment that affect OH conditions?

13. How have projects had an impact on the achievement of broader social goals (within participating enterprises, individuals or families), including poverty reduction, gender equality, and business development?

14. What are the strengths and weaknesses of projects, particularly in the areas of the choice of target groups, the choice of technical subject areas addressed, and the mechanisms for improving OH conditions

15. Have participants in projects acted as change agents, resulting in the spread of OH conditions improvements to other enterprises, individuals, or families? If so, what are the characteristics of these participants and how did the spread of improvements take place?

16. To what extent did projects tailor their strategies or technical content to specific target groups such as women, specific sub sectors or according to the size of enterprises? Why? For what types of OH conditions improvements? Has tailoring increased the effectiveness of these projects? How?

17. What types of institutions (private, public and civil society) have taken on which roles in projects? What have been the strengths and weaknesses of various institutions *vis à vis* the roles they performed?