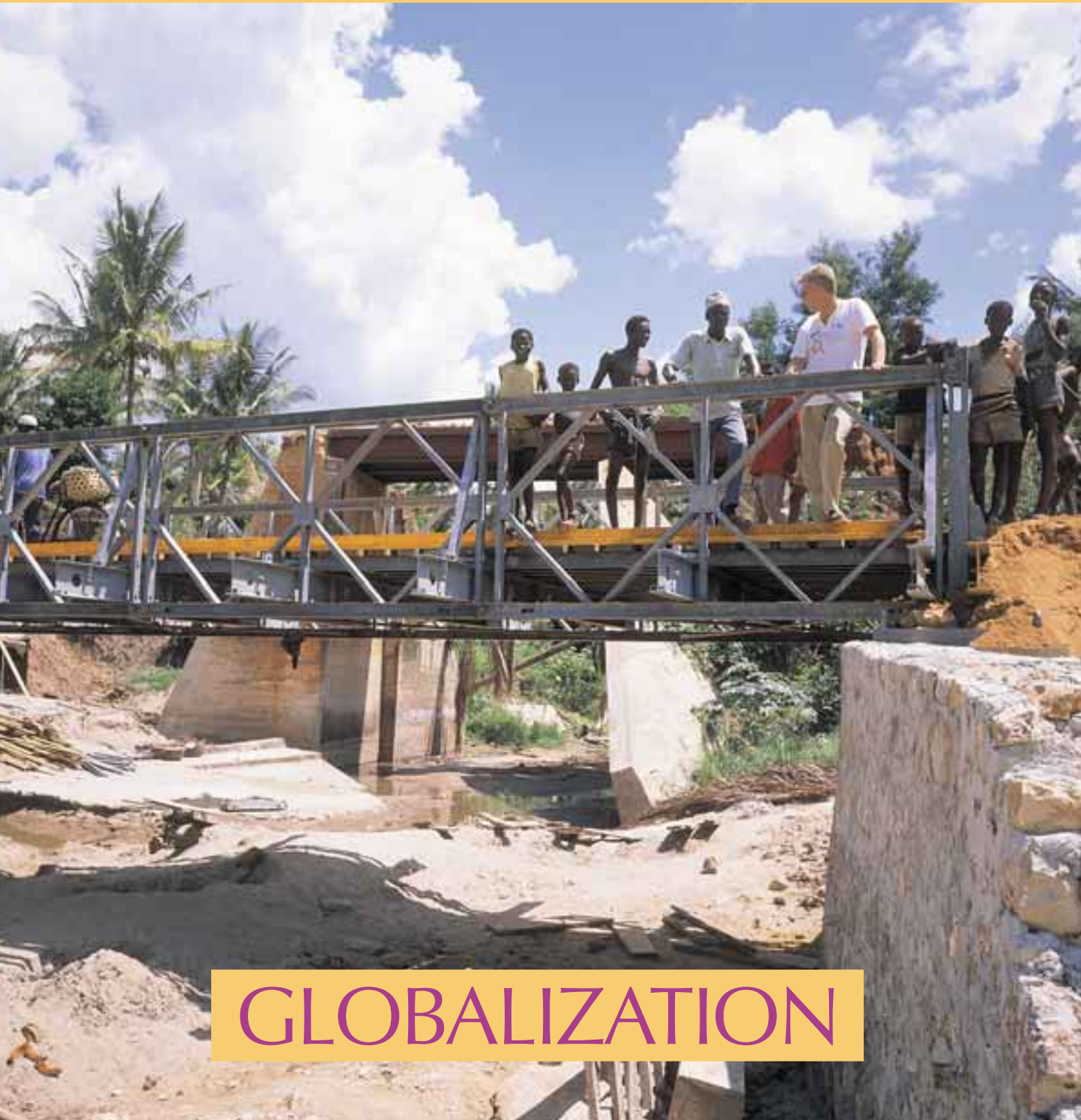
African Newsletter
on Occupational Health and Safety

Volume 11, number 3, December 2001



GLOBALIZATION

African Newsletter on Occupational Health and Safety

Volume 11, number 3, December 2001
Globalization and its effects on occupational health and safety

Published by
the Finnish Institute of Occupational Health
Topeliuksenkatu 41 a A
FIN-00250 Helsinki, Finland

in collaboration with the ILO-FINNIDA
African Safety and Health Project,
INT/89/M16/FIN

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The African Newsletter on Occupational Health and Safety homepage address is:
http://www.occuphealth.fi/eng/info/anl/

The next issue of the African Newsletter will come out at the end of April 2002. The theme of the issue 1/2002 is Violence at work.

Photograph of the cover page: M. Lintunen / Photo Gallery of the Department of International Development Cooperation

NORDIC ENVIRONMENTAL LABEL
441 002
Printed matter

Printed publication:
ISSN 0788-4877
On-line publication:
ISSN 1239-4386
Printed in Finland by
Edita, Helsinki

Contents

Editorial 55
H. Holkeri

Mobilizing to protect worker's health: The WHO Global Strategy on Occuphealth Health and Safety 56
G. Goldstein, R. Helmer, M. Fingerhut

New challenges and oppurtunities for occupational safety and health (OSH) in a globalized world 61
A. López-Valcárcel

External relations of the European Union are a global commitment 64
K. Leichnitz
IOHA

Effects of globalization on working women 66
R. Loewenson
ZIMBABWE

Guidelines on Occupational Safety and Health Management Systems (ILO-OSH 2001) 68
S. Machida, P. Baichoo

Globalization and its effects on occupational health and safety: focus on chemical safety at workplaces 70
M. Amweelo
NAMIBIA

Work in the Global Village 72
S. Lehtinen
FINLAND

Use of pesticides and personal protective equipment by applicators in a Kenyan district 74
J.A. Hanshi
KENYA

Fifth Network Meeting of the WHO Collaborating Centres in Occupational Health 77
S. Lehtinen
FINLAND

Follow-up meeting on indicators and profiles in Chiang Mai, Thailand 78
S. Lehtinen, FINLAND

Globalization and its effects on occupational health and safety

The emergence of new technologies and expansion of trade and financial regimes have accelerated the speed of globalization. True, globalization has made markets more open and inclusive. However, the improved interconnectedness and economic dimension of globalization are often over-emphasized.

The record of globalization is mixed: some countries have been able to take advantage of market economy, when others have become more marginalized, disintegrated, and impoverished. Market forces and economic growth have not been able to guarantee social justice, employment, and development to all.

As industrialized countries are facing the challenge of maintaining their welfare systems and high levels of employment, in developing countries and economies in transition ensuring employment and social security are even more acute and critical for daily survival, as well as for social and political stability. For this reason, there is a need to elaborate the ways structural changes in global economy have affected societies and quality of life, including workers and working conditions.

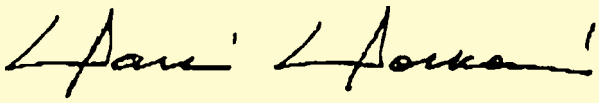
The number of poor has increased in absolute terms during the second half of the 1990s in almost all regions of the world. The financial crisis in South East Asia spread to other continents and some developing countries have recovered slowly. Technological advancement further deepens the gap in knowledge, wealth, and opportunities.

In the North, health and safety of workers are mainly related to their age, gender, and a type of profession, when in the South poverty forces people to work in the informal economy without supervision and work safety guarantees. Poor nutrition, long working hours and exposure to chemicals and work-related accidents make the status of workers in developing countries unequal compared to ones in wealthier societies. In the formal sector, globalization leads to subcontracting and flexibilization, which may cause further compromising health and safety standards of the poor. The HIV/AIDS epidemic is eroding the human resource capacity by killing labour force from all sectors and causing a major burden on the basic health care systems.

Globalization can be argued to have led to a democracy deficit with a huge gap between ordinary citizens and the decision-makers. Yet, new global information networks and the rise of civil society all around the world have enhanced the exchange of knowledge and universalization of ethical and moral values. The awareness and consensus of social standards and rights of labour force have increased. More than ever, individuals have the power to move mountains and influence global policy-making, also concerning the issues of labour.

The right to collective bargaining and freedom of association are crucial for functioning labour market and contribute to good governance at national and international levels. Trade unions already have a long history as defenders of human rights and decent working conditions and their role needs to be recognized and appreciated. Today, agricultural, domestic, and migrant workers also have the right to be included in the social dialogue.

Governments need more co-operation and partnerships with regional and international organizations, but also with civil society actors to alleviate poverty and harmonize minimum labour standards and safety for workers. The private sector and investors should include into their ethical code a support for safe and healthy work environment. Nationally, legal framework, policies, service delivery, and access to education are means to ensure the realisation of human rights. Internationally, the rights-based approach to development needs a particular focus on occupational health and safety of the poor.



Harri Holkeri
President of the 55th General Assembly of
the United Nations

Mobilizing to protect worker's health:

The WHO Global Strategy on Occupational Health and Safety

G. Goldstein, R. Helmer, M. Fingerhut
WHO

Global occupational health challenges, and the relation to globalization

Conditions at work, and especially occupational health and safety have improved substantially during the past few decades in many parts of the world.

But the overall global situation remains poor. Working conditions for the majority of workers do not meet the minimum standards and guidelines set by the International Labour Organisation (ILO) and the World Health Organization for occupational health, safety and social protection. As an example the majority of the world's workforce is still not served by competent occupational health services.

As a result the global burden of occupational disease and injury remains unacceptably high, on a par with the burden from malaria. Yet occupational health programmes receive only a tiny fraction of the resources devoted to combating malaria.

Major traditional occupational health needs still prevail among the global workforce. In addition, due to the rapid changes in economic structures, technologies and demography, new occupational health needs have appeared. Globalization has deep-going effects on the working life and the conditions of work everywhere in the world.

Growing internationalization, global competition, changes in the regulatory strategies, major changes in enterprise structures and associated technology changes must now be taken into consideration in policies affecting working life. A great fear is that more flexible labour policies may lead to a weakening of commitment to occupational health and safety programmes. The stress of global competition may lead employers to view the prevention of occupational injuries and protection of workers' health not as an integral part of quality management, but as a barrier to trade.

Freer trade as part of globalization has already led to a number of adverse occupational health impacts:

Globalization and occupational health: Some problems

- pesticides that are banned in certain countries are still sold in others, causing hazards for agricultural workers and consumers
- machines that are obsolete in some countries, and often in a poor or hazardous condition, are transferred to low income countries
- free trade zones are being developed, where occupational health and environmental legislation is often poor and where hazardous or strenuous production processes are concentrated.

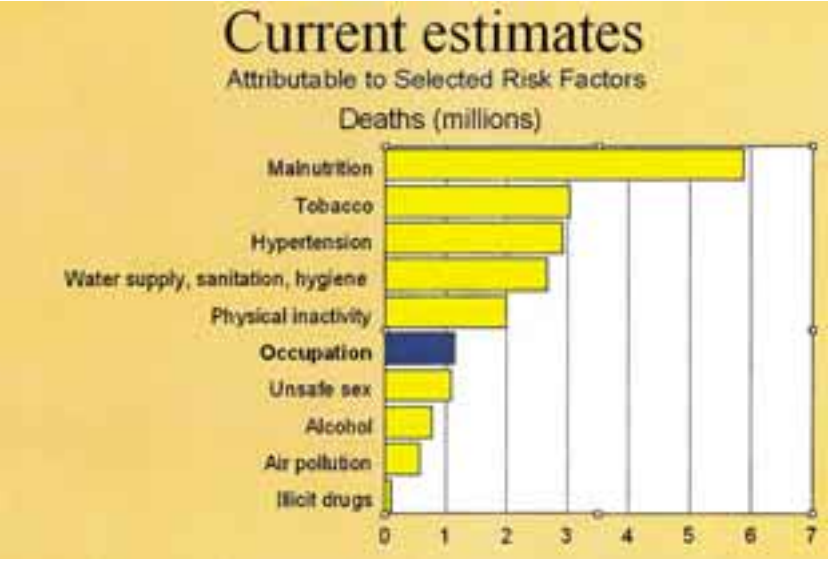


Figure 1: Global burden of disease (Occupational causes)
* These estimates from Murray and Lopez, 1996 are currently (October 2001) under revision

Purpose of article

This article reviews the work carried out to implement the World Health Organization Global Strategy on Occupational Health for All, and considers some key issues affecting its implementation.

What is the Global Strategy? An overview

The need for a global strategy on occupational health was recognized at the beginning of the 1990s. The initiative to develop a strategy was undertaken by the WHO Occupational Health Pro-

gramme and the Network of the WHO Collaborating Centres in Occupational Health. The 52 collaborating centres are occupational health institutes or departments that are making a substantive contribution to the implementation of the strategy with a wide range of activities. The centres are also addressing new and emerging problems of occupational health such as stress at work, computerized work, and violence at work.

The Planning Group of the Network reviewed the needs for occupational health and safety; ideas and comments were invited also from experts in the WHO Headquarters and Regions, and all the Collaborating Centres had a possibility to contribute to its development.

The Global Strategy sets out eight major priority areas:

Priorities for global strategy

1. strengthening of international and national policies for health at work
2. promotion of a healthy work environment, healthy work practices, and health at work
3. strengthening of occupational health services
4. establishment of appropriate support services for occupational health
5. development of occupational health standards based on scientific risk assessment
6. development of human resources
7. establishment of registration and data systems; and
8. strengthening of research.

When endorsing the Global Strategy on Occupational Health for All, the World Health Assembly (a body of Ministers from Member States) made some interesting recommendations, about:

- Special attention to full occupational health services for the working population, including migrant workers, workers in small industries and in the informal sector
- Focus on occupational groups at high risk and with special needs, including child workers
- United Nations system organizations, (including International Labour Organisation, intergovernmental bodies such as the European Commission, non-governmental and national organizations) to strengthen their action in this field and their co-operation and co-ordination with the WHO
- And last but not least, a stronger role was proposed for the Network of 52 WHO Collaborating Centres in Occupational Health

Recommendations of the World Health Assembly

- access to occupational health services for all
- focus on high risk groups
- United Nations system organizations to cooperate
- improved training
- stronger role for collaborating centres' network

Implementation of the strategy has been undertaken by the Occupational Health Programme in the WHO Headquarters, the WHO Regional Offices, and the Network of WHO Collaborating Centres in Occupational Health.

Major concerns and challenges in occupational health and safety

In our view some particular current concerns and challenges are:

Global competition increases health and safety risks: manufacturing firms everywhere now face global competition, and often argue that any additional expenditure on safety or prevention for workers threatens their viability.

In many countries the personnel of national and city health departments have seen their numbers cut, weakening public health programmes including occupational health, and health services.

There is a drastic shortage of professional expertise of all kinds in most countries.

Worker health and safety is not yet understood as an integral part of public health. The message has not yet got through that the workplace is an important arena for health campaigns of many kinds, as well as basic OHS programmes. In one country we are aware of ill-advised cuts in occupational health services to support AIDS prevention work, due to lack of comprehension that the workplace is a vital arena for AIDS prevention.

We face both traditional workplace hazards, and new hazards. Examples of new hazards are stress in the workplace, increasing job insecurity, violence in the workplace, and ergonomic problems associated with use of computer workstations.

Proper attention to worker health and safety has extensive benefits:

Poverty alleviation may be foremost. Healthy workers are productive and raise healthy families. Healthy workers are a key strategy for overcoming poverty. Workplace health risks are high in the informal sector and small industry which are key arenas of action on poverty alleviation, where people can work their way out of poverty. In particular, occupational health programmes that prevent the breadwinner becoming incapacitated prevent the common scenario whereby families become impoverished as the result of an occupational disease or accident.

Safe workplaces contribute to sustainable development; the processes of protecting workers, surrounding communities and the environment for future generations have important common elements, such as pollution control and exposure reduction. Much pollution and many environmental exposures that are hazardous to health arise from industrial processes, that may be influenced by occupational health and safety programmes

Occupational health is fundamental to public health. We have learned that major diseases (e.g. AIDS, heart disease) need workplace programmes as part of the disease control strategy.

Some of these priority issues are being addressed by WHO through activities in Geneva, Regional Offices, collaborating centres, and with other partners such as ILO, governments, universities and international organizations. Our efforts all contribute to the Global Strategy on Occupational Health for All, with periodic meetings for coordination.

Strengthening of international and national policies for health at work

Global policies for occupational health are needed so occupational health is elevated on both national and international social agendas.

WHO is seeking to ensure successful and strong occupational health policies and programmes are shared internationally, in particular to assist the developing and newly industrialized countries and the economies in transition.

At the national level we are seeking to strengthen government policy through a process we are calling national plans for occupational health. The national plans provide a **framework**: to bring together the key players in the various sectors and levels of government and industry, and civil society, to make a situation analysis, to gather resources, undertake training and to initiate action. This has been widely implemented in the Americas, and in other regions, and involves these strategic el-

ements:

Strategic elements of national plan
- improved quality of the work environment (primary prevention)
- regulatory policy and legislation
- workers' health promotion
- delivery of comprehensive health services

This involvement of government in the preparation of a national plan does not prejudice the primary responsibility of the employer for health and safety at work, but rather it complements the employer's efforts.

A model national programme for developing occupational health based on the WHO Global Strategy would include the following:

Model national programme
- updating of legislation and standards
- definition and strengthening of the role of the competent authority
- emphasis on the primary responsibility of the employer for health and safety
- tripartite collaboration between government, employers and trade unions
- education, training and information available to employers and workers
- development of occupational health services
- analytical and advisory services
- research
- registration systems of occupational accidents, diseases and exposures
- collaboration between employers and workers at the workplace and enterprise level.

The national occupational health system to implement this programme is realized at the level of the enterprise and at the local level in the form of OHS provided by occupational health teams in collaboration with employers and workers.

Promotion of a healthy work environment, healthy work practices and health at work

Better health requires that improvements be made simultaneously to the work environments, work practices, and organization of work. Most hazardous conditions at work are in principle preventable and the primary prevention approach is the most cost-effective strategy for their elimination and control.

Primary prevention means that hazards are **engineered out of the workplace production process** and environment. Reliance is NOT placed primarily on training workers to avoid hazards, or the use of protective clothing and devices such as ear-plugs.

This commitment to primary prevention means that intensive actions for better work environments are required in virtually every country.

Criteria and actions for the planning and design of healthy and safe work environments that are conducive to physical, psychological and social well-being need to be considered. We have many activities underway that cover many issues in different environments, from guidelines on prevention of pesticide hazards, to reduction of dust, to mental health issues such as workplace "mobbing", and human factors and ergonomics. Countries are encouraged to include in their national occupational health programmes a strong element for improvement of the physical and psychological work environment.

Does it work? Evidence is available from some countries on highly positive cost-effectiveness of occupational health programmes in view of health, work ability, productivity and economy at the national and enterprise levels. Thus, development of occupational health and safety can be seen as an investment, not as an economic burden.

So why is improvement in working conditions so difficult? We have all our rational arguments that occupational health programmes improve health, work ability, productivity and economy, and are highly cost-effective. We argue that most hazardous conditions at work are in principle preventable and the primary prevention approach is the most cost-effective strategy for their elimination and control.

We suggest there is a need to advocate.

Advocacy is a key health promotion activity for overcoming major barriers to public health and occupational health. The barriers addressed by advocacy are poor living and working conditions, rather than individual or behavioural barriers. The modern use of the term advocacy gained momentum from the Ottawa Charter on Health Promotion: "Political, economic, social, cultural, environmental, behavioural and biological factors can all favor health or be harmful to good health. Health promotion aims at making these conditions favorable through **advocacy for health**".

There is a common public health metaphor about "upstream" versus "downstream" work, that talks about expensive rescue services hard at work dragging drowning people from a river. They never pause to look upstream to see why people are falling in the river, because they are so busy. Those who are rescued are grateful for the services, and conversely, a lot of politically damaging fuss would result if important people should be left to drown.

Some people may advocate that fences might be constructed upstream to stop people falling in; however, decision-makers are reluctant to act. Fences may disrupt the view, and fences lack the glamour of ambulances and dramatic rescue routines. Perhaps most importantly, fences do their job when nothing happens, while a rescue provides a great photo opportunity for a politician.

There are many unfenced rivers in public health, and quite a number of those that are fenced have fences that topple under the slightest pressure. Fences such as curbs on pollution, policies to ensure improved housing, water and sanitation, or improved workplace safety are coveted, long-standing goals in public health, and remain far from being realized. Advocacy has a key role in building and maintaining public health fences, and it is essential to shape the social and political climate.

The tactics and strategies of advocacy and lobbying are not easily described in terms of programmes. This is because advocates need to adopt the same set of opportunist, responsive, imaginative, flexible, dramatic and above all newsworthy tactics that are the stuff of all successful public opinion, political and commercial campaigning.

Historically, **many types of health and safety reform have been implemented in the wake of a disaster**. Strategic use of the media can promote a healthy work environment, especially in the aftermath of a major workplace disaster. At these times newspaper editors are inclined to place stories on occupational health – or the lack thereof – on the front page, and politicians may be prepared to back new occupational health initiatives and legislation. Normally, stories on occupational health on the front page, or politicians who support occupational health measures simply do not occur. But in the aftermath of a disaster there is a rare opportunity: occupational health workers who are prepared, who contact the media and explain their plans, who engage politicians with specific reforms and safety measures etc. have a chance to succeed in advancing their agendas in workplace health and safety.

The WHO Offices in the Western Pacific, European and Americas regions have been particularly successful in developing effective workplace health promotion programmes that focus on primary prevention. In these initiatives the hazards associated with the combined effects of lifestyle factors and occupational exposures are identified and minimised. Health promotion that introduces healthy lifestyles and supports the maintenance of such lifestyles with appropriate information, counselling and educational measures is undertaken as part of the OHS programme.

Effective health promotion is essential where adoption of appropriate working practices by the worker is needed, for example, a choice to use personal protective devices. Occupational health personnel require training and education in health promotion to enable them to implement it as a part of their occupational health practice.

Experience in workplace health promotion has shown that **competitions and awards** are valuable in engaging enterprises in OHS activities. Firms and enterprises achieve valuable publicity and a boost in staff morale through competing to become the most healthy and caring company.

Occupational health and safety grew up in the environment of the large factory and enterprise, and we are only now learning how to carry it out in small enterprises and the informal sector. **Intermediary organizations** – which may be NGOs, universities and technical schools, or private consultancies that specialise in OHS – play an important role in working with employers, self-employed workers, and sometimes directly with workers.

A good example of workplace health promotion, from the Western Pacific Region, is the *Project on Healthy Workplaces in Small and Medium-Scale Enterprises in Vietnam*. All sectors at national, provincial, local and individual workplace levels were involved in a national workshop in 1998 to launch the project. In the Hai Phong City project a survey and needs assessment were undertaken by the steering committee, and criteria for health promoting workplaces were developed with participation of employers. Implementation was monitored, and good results were demonstrated: that is, the working conditions improved.

Healthy workplaces in small and medium scale enterprises in Hai Phong, Vietnam

RESULTS

- installation of insulation against heat
- better ventilation
- control measures for dust and toxic gases
- provision of adequate personal protective clothing
- reduced noise
- improved lighting
- addition of equipment to lift heavy loads
- upgrading of staff facilities
- promotion of sports
- enhancement of surrounding environment
- construction of sheds to house bicycles and motorbikes
- establishment of an awards system for health and safety

Strengthening of occupational health services (OHS)

In many developing and newly industrialized countries no more than 5–10% of the working population have access to competent occupational health services in spite of the evident needs. In several industrialized countries access is limited to less than 20–50% of workers.

Modern occupational health services draw from each relevant profession, discipline or science – be it biomedical or environmental – all the required elements and integrate them into a comprehensive multidisciplinary approach aimed at the protection and promotion of workers' health. Actions relate both to assessing the risks of the work environment, to ensuring preventive actions to reduce risks of workers, and to providing treatment and compensation for workers experiencing illness or injury. Disciplines relevant for occupational health services include occupational medicine and nursing, occupational hygiene, work physiology and physiotherapy, ergonomics, safety and work psychology.

In South Africa, partners in the WHO-ILO Joint Effort for Occupational Health and Safety in Africa have found that **integrated** training of occupational health professionals – the nurses, safety officers, environmental health officers, inspectors – is best. That is, the staff are trained **together**, as a team, to work as a team. Otherwise experience has shown they may not work well together once they are graduated and in employment in their own professional niche.

A majority of African countries are now partners in this WHO-ILO Joint Effort initiative to intensify co-ordination of occupational health and safety activities. The challenges are indeed large. Clinicians in one African country, for example, report the ongoing occurrence of acute silicosis, showing that extremely high exposures to silica dust persist even to this day.

Other major activities of the Joint Effort in Africa include the strengthening of a system for surveillance of occupational respiratory diseases (SORD-SA); research on silicosis incidence and implementation of interventions; and the creation of an occupational health website and listserver for Africa.

Development of human resources for occupational health

Occupational health is a broad expert activity that utilizes the basic knowledge of several disciplines, such as medicine, chemistry, physics, toxicology, physiology, psychology and safety technology, and functions in a multidisciplinary manner. High-quality occupational health clearly requires appropriate training of personnel in these fields.

In many industrialized countries, sufficient numbers of occupational medical experts have been trained to provide one physician per 2 000–3 000 workers and about one nurse per 1 000–2 000 workers (with a wide range of variation). Many European countries and those of North America, as well as Australia and Japan, have established specialist or diploma curricula for occupational health and some countries require specialization or diploma as a condition

for the right to carry out occupational health practices. Special training in occupational health is available for nurses in most countries.

The training of specialists other than the medical experts for the multidisciplinary occupational health team is much less systematically organized. Special curricula for occupational hygiene are available in six European countries and in the United States and Canada. WHO has defined the profile of an occupational hygienist on the basis of defined areas of knowledge in an effort to promote international harmonization of training curricula. Training of physiotherapists specialized in occupational health is also available in some countries while the special training of occupational psychologists is rare. For many Western European countries, the training of safety engineers is well organized. There is a universal shortage of both expert resources and training in developing and newly industrialized countries in the South. This is due to three main reasons:

a) lack of effective legislation and lack of requests from authorities and employers make the employment opportunities for such experts minimal
b) in the absence of requests, the vocational training institutions and universities have not organized and developed curricula for the training of experts in occupational health
c) in some instances, where training is available, it is too limited, for example, oriented to clinical occupational medicine only.

Equally important is the awareness and knowledge of managers and foremen of the key principles of occupational health because they make decisions about several aspects of work that determine health and safety. And of course awareness, knowledge and skills are also needed by the workers and the self-employed for appropriate safety and health behaviour and for adopting safe working practices.

WHO is supporting many types of training through its collaborating centre network, for example a global survey of competencies and curricula.

Plan to implement the strategy

Country offices and collaborating centres constitute important WHO assets in all countries and regions of the world. WHO is committed to mobilize these in implementing all elements of the global strategy. Some important aspects of the implementation plan involve:

The partnership with ILO is strong. In the face of increasing encouragement from countries, WHO and ILO are forming specific partnership programmes at all levels in all kinds of occupational health activities, such as the ILO-WHO Global Elimination of Silicosis campaign, and the Joint Effort in Africa.

WHO's most high-profile, successful and acclaimed programmes involved the **eradication** of diseases such as smallpox, guinea-worm and polio. We are going to use the silicosis elimination campaign as a flagship to raise the profile of not just silicosis but many issues of occupational health and safety.

The case for more attention to occupational health and safety is compelling. A major goal is to share with our global partners rational arguments based on the global burden of disease study, demonstrations of cost-effectiveness of occupational health programmes, and other analytical tools that demonstrate the priority of occupational health programmes.

Finally, we propose that occupational health can benefit from building coalitions with organizations and programmes concerned with sustainable development, poverty alleviation, environmental protection, infectious diseases, social justice, women's health, etc. These major development challenges can only be successfully addressed if the conditions of working life for all people are improved.

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Globalization of the economy has intensified over the recent years and, together with the development of the new information and telecommunications technology, it is bringing about radical changes in society, comparable to those produced during the industrial revolution. Occupational safety and health cannot ignore those changes. And, in this context, the greatest challenge for the countries of the region is the transformation of the difficulties involved in adapting to the new situation into opportunities for the future development of occupational safety and health.

Harmonising standards: labour standards and product standards

One of the most important impacts that economic integration and the liberalisation of international trade have had on occupational safety and health is undoubtedly that of the harmonisation of standards.

In talking about occupational safety and health standards, we are in fact referring to two distinct types of standards.

First, there are the standards concerning labour. They define the general conditions of occupational safety and health in the workplace. The objective in harmonising this type of standard is to prevent "social dumping"; i.e. prevent the comparative advantages that are derived from lower production costs at the expense of inferior working conditions in the enterprise. By harmonising these standards, we are also seeking social integration within the process of economic integration and liberalisation, in such a way that the economic growth, achieved through economic integration and liberalisation, is accompanied by social progress.

Second are the standards concerning

New challenges and opportunities for occupational safety and health (OSH) in a globalized world

Photo by M-L. Kiljunen

product safety. As tariffs are eliminated or reduced, as is currently occurring with the regional economic integration agreements and with the signing of multilateral trade agreements in the framework of the World Trade Organisation (WTO), non-tariff technical barriers acquire more significance in international trade (1). Technical standards, particularly those related to product safety, could block international trade as effectively as high tariffs did in the past, and for that reason harmonisation of product safety standards has become a prerequisite for economic integration.

This harmonisation has in fact already had a positive impact on the development of occupational safety and health (OSH) in many countries.

In many European countries, OSH has benefited as the result of these countries joining the European Union (EU). That was not only due to the application of European Directives related to the social policy area[a] – aimed at harmonisation in the framework of progress of occupational safety and health conditions – but also due to the efforts made to achieve a single market (2). To guarantee the free flow of products and to avoid having to invoke safety reasons that could impede free circulation, measures were taken so that only "safe products" could be traded. In doing so, the safety of a product has become an indispensable condition for its trade and free circulation. At the same time, as the worker is the user of many of these products (substances, machinery, equipment), establishing a system that guarantees the safety of products purchased by the employer and used by the worker means, in fact, an important contribution to the progress of OSH.

In the case of Mexico, NAFTA's[b] side agreements introduced an interesting (an innovative) approach to the development of occupational safety and health. The Agreement on Labour Cooperation considers that the national legislation of the three NAFTA member countries (Canada, Mexico and USA) contains the basic principles of worker protection. Therefore, the Agreement does not oblige the parties to modify their national legislation in this regard, but requires them to guarantee the effective application of their legislation. In addition, it creates an institutional scheme to ensure compliance with these obligations, and it also establishes a special system for dispute resolution in cases related to the lack of effective enforcement of OSH, child labour, and minimum wage labour standards (3).

But the most far-reaching process regarding harmonisation of safety product standards is probably taking place within the new agreement on Technical Barriers to Trade (TBT, signed in 1994 within the Uruguay Round of GATT) (4)[c]. The harmonising strategy of the TBT/1994 is based on adherence of the national standards to international standards, and in the transparency of the standard setting process (1). For many developing countries adaptation to the TBT/1994 will require profound reorganisation of their standard setting systems and institutions; but this effort will bring about a double benefit: better opportunities for exporting their products, and a significant improvement in the safety.

Occupational safety and health (OSH) and competitiveness

With the elimination of tariff barriers, less state intervention in economic matters and the globalization of the economy, markets are becoming more and more transparent and an enterprise that wants to stay in the market is forced to continuously improve its competitiveness.

Three factors can be seen as determining the competitiveness of an enterprise: its capacity for innovation, the quality of its products and its productivity. It is, therefore, not surprising that these three factors have become a true obsession for the modern enterprise that wants to remain competitive and thus, survive in the global economy.

The search for new relationships with clients and suppliers, as factors for productivity, is nothing new in business strategy. What is new, however, in this era of globalization, is the emergence of a new culture concerning the nature of the relationship between the enterprise and its workers. This new culture can be summarised by the words "there is a need to invest in the worker", both in their training and in the improvement of their working conditions. Thus, OSH is beginning to be seen by many enterprises not only as a legal requirement but also as a means of improving productivity.

Another determining factor for competitiveness is the quality of the products. Over the years concepts and programmes such as quality control, quality circles, total quality, and quality assurance, have gained ground. But in the

context of international trade, one usually frequently refers to the international quality management standards, ISO 9000, that over a short period have become the most well known ISO standards. Customers are starting to demand that enterprises obtain ISO 9000 registration, and the number of enterprises all over the world obtaining this certification has escalated[d] (5).

Although the ISO 9000 series does not explicitly cover the issue of OSH, they show many of the links that exist between OSH and quality. Thus, a programme for the management of the quality of an enterprise has to ensure the safety of the production processes. On the other hand, there is a similarity between the nature of the safety problems and the quality problems (e.g. shortcomings, errors). Besides, there are also similarities between the solutions and organisational structures that, within the limits of the enterprise, both safety and quality apply (e.g. documentation, workers' participation, criteria for training, motivation and qualification). Finally, quality has to be built into the workstation. Therefore, ergonomics is an essential factor to be taken into consideration. If the operator has appropriate conditions with regard to temperature, lighting, cleanliness, workload, etc., the probability of human error decreases significantly. As a result, many enterprises now consider their policies for improving working conditions as a key element in their policies for improving quality.

To reach high levels of quality, the fact of having appropriate technology is not sufficient; nor is it sufficient to have highly trained workers. The high levels of quality required today can only be reached if the enterprise can also count on workers who are willing and interested in achieving it. Therefore, concepts such as motivation, participation and co-operation are becoming so important in the management of modern enterprises. Thus also the importance of investing in the OSH of the worker in order to improve both quality and productivity.

The third factor that determines competitiveness is the capacity for innovation. Many of the characteristics of a work environment that favour innovation can also be found in safe and healthy work environments. It has been said, for example, that creativity blooms where the work atmosphere is relaxed or even playful, where conflicts among personnel are at a minimum, and where the worker enjoys ample freedom in the manner in which he performs his work. All of these are also characteristic of good OSH conditions.

Occupational safety and health (OSH) and the environment

Following the success of ISO 9000, the International Standards Organisation has also developed a series of environmental management standards, ISO 14000. These standards have appeared at a time of increased interest by consumers for environmentally-friendly enterprises and products. In this context, it seems that the new series will favour international trade, as the ISO 9000 standards did.

Although the ISO 14000 series does not directly deal with OSH issues, they will probably have a positive impact on the management of OSH in the workplace, due to the link that exists between the work environment and the environment in general.

This link is especially clear when we consider the handling of chemicals. The standards and handling requirements for the environmentally-sound management of chemicals are similar to those required by OSH for the safe use of chemicals at the workplace.

The problems faced by chemical safety are enormous, not only as regards the protection of the environment but also with respect to the prevention of occupational risks. At a meeting of experts organised by the ILO (6), it was estimated that the number of chemicals available on the market was approximately 80,000; and that 5 to 10 per cent (i.e. 4,000 to 8,000) of those should be considered hazardous.

Classification of chemicals, according to the type and degree of their hazards, is a key element of any chemical safety policy. Another key element is correct labelling, to reduce the risks associated with not using them correctly. Standards related to the classification and labelling of chemicals are in fact product safety standards and are, therefore, subject to the requirements of harmonisation inseparable from the liberalisation of international trade. A draft proposal prepared by the Co-ordinating Group for the Harmonisation of Chemical Classification Systems is already available on the Web (7).

In fact, one of the Agenda 21 objectives (UNCED – United Nations Conference on Environment and Development, Rio de Janeiro, 1992) is the establishment of a globally harmonised system of classification and labelling of chemicals. According to the Agenda, this system will not only serve to improve the control of chemical hazards, but will also favour the development of international trade. Agenda 21 considers, moreover, that collaboration between UNEP, ILO and WHO within the framework of the IPCS (International Programme for Chemical Safety) should be reinforced and become the nucleus for international co-operation in the environmentally-sound management of toxic chemicals (8).

A major concern related to international trade is the export of dangerous chemicals whose use has been prohibited or severely restricted in the exporting country itself. Several United Nations agencies have adopted international standards to ensure that the importing country, appropriately informed, may make a sound decision regarding the eventual acquisition of such products.

Thus, UNEP has introduced provisions for Prior Informed Consent (PIC) in its *London Guidelines* (9*);* and FAO, the principle of Information and Previous Consent in its *International Conduct Code for the Distribution and Use of Pesticides* (10). Similarly, the ILO (*Convention No. 170, on Chemical Products -1990)* (11) calls for communication between exporting and importing countries when hazardous chemicals have been prohibited for OSH reasons. In addition, a joint FAO/UNEP programme has been launched for the operation of the PIC procedures for chemicals all over the world.

New codes of conduct adopted by the enterprise

A final issue to consider is the growth of consumer action against enterprises that do not have adequate environmental or social behaviour. This situation is leading companies to adopt voluntary codes of conduct.

In today's world where information flows at high speed, where increased competition is increasing consumer power, and where state control of enterprises is lessening, a significant change is occurring in the demands of the consumers from enterprises. They are beginning to demand not only price and quality, but also specific codes of conduct with respect to the environment, workers and the community in general.

One of the codes of conduct worth highlighting is the chemical industry's initiative, called "Responsible Care". This is a public and voluntary commitment by the chemical industry to im-

prove its performance with respect to safety, health and the environment. Employers associations in 45 countries have already adopted the "Responsible Care" programme, among them two African countries, Morocco and South Africa (12)[e].

Another voluntary initiative that is getting a lot of attention is that of the "Corporate social responsibility", a concept that is generally understood as the commitment of the enterprise to be fair to all its stakeholders, and specially its employees. In a recent opinion poll 12,000 European consumers were interviewed on their attitudes to the role of business (13). Seventy per cent of them said that a company's commitment to social responsibility is important when buying a product or a service. Moreover, the issue European consumers care about most is the protection of workers' health and safety[f].

Recognising the existence of a range of OSH management-related international and national voluntary programmes, and also the ISO standards on quality and environment management, the ILO has recently adopted *Guidelines on occupational safety and health management systems ILO-OSH 2001* (14). These guidelines carry no legal obligation, and emphasize concepts such as continual improvement, employers' leadership and commitment, and workers' participation.

The successful enterprise in this time of globalization can no longer afford to be a faceless institution that does nothing more than sell the right product at the right price. But it will have to present itself with a more personalised image, expressing explicit moral judgements when dealing with its own employees, the community and society at large (15). Moreover, a product or a workplace that is seen as unsafe by clients or the community, will inevitably affect the image of the enterprise, and will reduce its competitiveness.

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Explanatory notes:

a) The fact that most EU Directives related to the area of social policy are OSH Directives (approximately 66% of them) is a clear indication of the high status of OSH within the EU.

b) The North American Free Trade Area (NAFTA) signed by Canada, Mexico and the USA, in 1993, has two side agreements: The Agreement on Environmental Co-operation; and the Agreement on Labour Co-operation.

c) One of the fifty-three agreements of the Uruguay Round GATT was the agreement establishing the World Trade Organisation (WTO), an institution that is to, among other issues, deal with the dispute settlement under the Uruguay Round agreements, included the TBT/1994. Members of the WTO agree to conform their domestic laws to implement the Uruguay Round GATT agreements. At the end of 1999, WTO had 135 members, among them 39 African Countries.

d) According to the *ISO Survey of ISO 9000 and ISO 14000 Certificates*, at December 2000 there were 408,631certifications of enterprises to ISO 9000, in 158 countries, of those 30 were African. On the other hand, six of these thirty countries had more than one hundred certifications: South Africa 3,454; Egypt 468; Tunisia 196; Kenya 173; Mauritius 131; and Zimbabwe 103.

e) In the case of Morocco, Responsible Care was adopted by the *Fédération de la Chimie et de la Parachimie (*FCP)**,** on 1998. In the case of South Africa, the initiative was adopted by the *Chemical and Allied Industries Association* (CAIA*)*, on 1994.

f) 70% of the consumers answered that "Protecting the health and safety of its workers" was an important area for the companies to support; while 68% of them consider "Ensuring products do not harm the environment" was also an important area for the companies to support.

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External Relations of the European Union are a global commitment

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Introduction

When we see the term "glbalization" we may also see the many people who are protesting in front of conference centres where so-called globalization meetings take place. It is not my intention to comment on this kind of activities. I rather wish to point out that globalization could be a useful concept e.g. when occupational health and safety becomes involved.

There are already many activities on global level to improve occupational health and safety; such as the ILO SafeWork Programme (1).

Another example is the so-called Phare Programme which has been developed by the European Union. The question may now be: Why referring to a European programme in the Asian-Pacific and African Newsletter? In the following text I am trying to give an answer.

Phare: a programme of the European Union

The Phare Programme is the European Union's initiative which provides grant finance to support the process of economic transformation of Central and Eastern European Countries (2). Phare provides know-how including policy advice and training; occupational health and safety projects are part of Phare.

The overall objective of Phare is to help the candidate countries to join the European Union. The programme is thus "accession-driven", concentrating the support on priorities which help the candidate countries to fulfil the membership criteria, which require: The candidate country has achieved stability of institutions guaranteeing democracy, the rule of laws, human rights respect for and protection of minorities; the existence of a functioning market economy.

European Union cooperates with African, Caribbean and Pacific Countries

The initiatives of the European Union are not restricted to European programmes. In the year 2000 the European Commission presented a major reorientation of its development policy which also included the cooperation with African, Caribbean and Pacific Countries ACP (3). This cooperation is based on the Cotonou Agreement, which is according to the EU Commission's opinion, the most ambitious and comprehensive agreement between developed and developing countries (3). The basic objective is to promote and expedite the economic, cultural and social development of the ACP States and to consolidate and diversify their relations with the European Union in a spirit of solidarity and mutual interest. The Cotonou Agreement was signed in June 2000 in the capital of Benin, which is the origin for the informal name of the agreement. The wide-ranging partnership is based on equality between the signatories, respect for their sovereignty and mutual interest and interdependence.

The European Union is committed to helping the ACP Countries become more active members in the international economic and trade system. That, it hopes, will encourage other countries and international business to establish closer relations with ACP partners, boosting investment and the transfer of technology and know-how.

Occupational Health and Safety Institutions interested in further details of the Cotonou Agreement should contact in their country the respective ministry (e.g. ministry of labour, ministry of health). They may also contact the European Commission in Brussels (Belgium) at: http://europa.eu.int/comm/world. The European Commission has delegations in most countries around the world; the addresses can be found at: http://europa.eu.int/comm/external_relations/repdel/index.htm.

It has to be clear for all of us that the decisions about funding of projects will be made by the officials of the national governments and the European Commission. But they may consider in their decisions also the advice given by professional occupational safety and health institutions of the respective country.

Example of a project funded by Phare

As an example for funding of occupational health and safety by the European Commission, I refer to the afore mentioned Phare Programme. There, I had the opportunity to manage in a Central European Country a project called "train-the-trainer".

The terms of reference of the project were pre-determined by the responsible national ministry and the European Commission. According to this agreement, the task of the Consultants Team was:

- Preparing a tailor-made programme
- Training of occupational medical, occupational hygiene and occupational safety staff under consideration of the

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following subcomponents:

- Training of 30 future trainers (national experts from the Central European Country) in the Central European Country
- Training of 12 future trainers (national experts from the Central European Country) in two Western European Countries
- Elaboration of an occupational safety and health (OH&S) agenda for the courses; organizing and carrying out of local refresher courses
- Elaboration and organizing the visits of institutions, plants, manufacturers and laboratories in Western European Countries
- Establishing a library and preparing and issuing of practical textbooks, manuals, guidelines and learning materials on OH&S.

The project team consisted of five trainers from different Western European countries and five trainers from the Central European country. Preparatory meetings and training courses altogether lasted 80 days.

The training was structured as follows: Presentations including case studies; discussions; practical demonstrations; visits to workplaces; visits to laboratories; individual and group exercises.

Contents of the training programme: Basis was the WHO publication "Occupational Hygiene in Europe – Development of the Profession" (4). This included courses on the legal basis of OH&S (ILO and WHO Documents, European Directives, ISO Standards), exposure assessment at workplaces, quality assurance, toxicology, classification and labelling of substances, limit values, biological monitoring, preventive measures, control measures (means and technology to reduce or eliminate occupational hazards), risk assessment, cost/benefit, indoor air quality (sick building syndrome), entry into confined spaces, ergonomics, statistics, environmental protection.

Concluding remarks

The European Union's (EU) support in world affairs is on the increase. The EU has a number of foreign objectives. The first is to establish a stable Europe; part of it is the Phare Programme which is an initiative to provide grant finance to support the process of economic transformation of Central and Eastern European Countries. Financial support to occupational health and safety projects is part of Phare. In the year 2000 the European Commission presented a reorientation of its development policy which included the cooperation with African, Caribbean and Pacific Countries; this may result in supporting also in these countries occupational health and safety projects.

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Effects of globalization on working women

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"Women are half the world's population, receive one tenth of the world's income, account for two thirds of the world's working hours and own only one hundredth of the world's property."
International Labour Organisation

Impacts of globalization on women's work

During the past two decades the world trade has tripled and global trade in services has increased more than 14-fold (1). Not all are benefiting from this change. Globalization under liberalized markets has generally benefited the industrialized or strong economies and marginalized the weak economies (1,2,3). Hence, despite optimistic assertions of 'an end to poverty' in the 21st century, and adequate knowledge and technology to achieve this, poverty and inequality have in fact increased in many parts of the world (1).

Women are among those with the poorest social and economic status in many countries of the world, and among those with the weakest control over directing resources towards their needs. Households headed by women, estimated to be one third of the total worldwide, are many times more likely to be poor than those headed by men, and the number of such households has increased following the introduction of structural adjustment and liberalisation programmes (2,4). Gender disparities in social outcomes exist across regions, countries, socio-economic groups and age groups (5,6). These disparities have been widened, rather than bridged, by globalization, in part owing to the changes in women's access to and quality of work.

Firstly, women work longer hours. Women work on average one to three times longer than men in the same society, whatever the number of hours men put in (6). The dual burden of household work and work in other productive spheres places the greatest stress on poor women, whose social support is the weakest (7,8). Women also spend a significant amount of time informally trading surplus produce. This domestic and social work is generally not valued as part of the domestic product, and thus assumes an invisible status and commands little investment in improved conditions.

Women often work in undercapitalized and insecure production activities with inadequate access to credit, land, marketing and extension services, training and other inputs. In Zimbabwe, for example, 90–92% of workers in the informal sector are women (8).

Whilst there is generally legal protection for gender equity in formal employment, in practice, women continue to be generally employed in low-skill, low-paying jobs, in casual or non-permanent forms of employment, in jobs where unionization rates are low, and in certain sectors – e.g. agriculture, the textile and garment industry, food processing, domestic work, market activities and social services. The work that women do is often heavy, monotonous, ergonomically unsound, and involves little control over the pace or content of the work (9). Women are often regarded as supplementary wage-earners rather than as workers in their own right. Reproductive health responsibilities (and the extent to which these are exclusively borne by women) are often a de facto constraint in hiring or investing in women workers, with employers regarding this as an added cost, even if the law sets no specific barriers to this (10).

The twin processes of globalization and marginalization described earlier have produced unequal effects on this pattern of female employment. On the one hand, the global spread of gender and human rights agendas, the enhancement of gender equity in employment law and the widening of employment opportunities in non-traditional spheres of employment have brought more women into the workforce. On the other hand, there is evidence that much of the new formal employment for women is in poor-quality work and assembly line processes with weak options for advancement, and that in the main, women have experienced a growth in insecure, casual employment. Women

Photo by K. Honkasalo

have been a primary target for employment in new export processing zone jobs in the textile, microelectronic and chemical sectors, but women have also lost these jobs as they have shifted to more value added, skilled and more highly regulated employment (11,12,13,14). There has been an increase in out-contracted home-based work. While en-abling women to meet their domestic duties more easily, this sort of work disguises the employment relationship and shifts liability for working conditions to the women. Many more women have been brought into trading and informal sector work in enterprises that are poorly regulated and excluded from support systems. In addition, women's household tasks, it has been noted, take an increasingly longer time as water supplies dry up, forests become degraded, transport becomes more inconsistent and expensive, and competition for scarce resources intensifies.

The phenomenon of women responding to an economic squeeze by working harder and longer is not confined to developing countries. A study in the USA found that the percentage of working women holding two or more paid jobs rose from 2.2% in 1970 to 5.9% in 1989, at the same time as the percentage of men holding two jobs *fell* by 0.6% (6). While this may increase the economic contribution and importance of women, it may also increase the level of stress and its health consequences.

Occupational health outcomes

Women's occupational health in the current process of globalization reflects these shifts in employment, where inadequate regulatory and inspection systems combine with employment insecurity and poor control over work to undermine hazard control. Moreover, new demands for household caring in the face of declining access to social services mean increased domestic burdens.

Much of the occupational morbidity experienced by women is not detected or reported in occupational health systems. Against a background of 50-fold under-reporting of occupational disease in sub-Saharan Africa, for example (15), women work in sectors – such as agriculture, textile work and small enterprises – where under-reporting is likely to be even higher.

Women may face chronic health problems at work that interact with and exacerbate illness caused by the work they do in the home and in caring for dependants. At the same time, women's poor health status arising from poor diet, inadequate vitamin intake, and poor living and social conditions may increase their risks of work-related cancers or chemical toxicity (3,16). Multiple exposures are exacerbated by the long hours of work and the multiple part-time jobs many women have.

Women's work is often characterized by a high level of demands, with little control over the nature and content of the work. They are often drawn into unfair conflict and choice over the positive health gains of being employed and the negative health impacts of the way that work is organized. Women have been hired as flexible labour in an inflexible work organization, a situation that can lead to digestive disorders, sleep difficulties and musculoskeletal problems (9,6,17).

More importantly, this lack of control over the work process and the roles women are expected to play enhance or impede their ability to prevent and manage work-related risks.

It may thus be argued that, with inadequate recognition from social, scientific and insurance systems, women bear many of the health costs of current production and market policies. As a 'silent epidemic' this may have short-term yields, but may also create long-term costs for development. Such costs may be manifest in uncontrolled population growth, high infant and child mortality, poor socialization of and social underdevelopment of children, increased poverty, ineffective agriculture, food insecurity and high levels of sexually-transmitted disease. Conversely, investing in women generates returns in health, social and intergenerational development, in a manner that has greater potential to reach the most vulnerable groups. Indeed, the analysis of women's work-related health is a strong testimony to the fact that there is an urgent global imperative to make the structure and quality of growth as critical a development issue as its quantity.

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Guidelines on Occupational Safety and Health Management Systems (ILO-OSH 2001)

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Background

As a result of the ever-increasing pace of worldwide liberalization of trade and economies, as well as technological progress, the number of occupational accidents and diseases are increasing in many developing countries. It is estimated that every year over 1.2 million workers are killed due to work-related accidents and diseases and 250 million occupational accidents and 160 million work-related diseases are occurring. The economic loss related to these accidents and diseases is estimated to amount to 4% of world gross national product.

After the successful introduction of the "systems" approach to management by the International Organization for Standardization (ISO) through its series on Quality Management (ISO 9000 series) and Environmental Management (14000 series) during the early 1990s, there was a view that the same approach could be used for managing occupational safety and health at the *organizational* level. The possible initiation of work to develop an ISO standard on OSH Management Systems was discussed at an ISO International Workshop on OSH-MS Standardization in 1996. The workshop formed the view that the ISO should discontinue its respective efforts and that the International Labour Organisation (ILO), because of its tripartite structure, would be a more appropriate body than ISO to elaborate international guidance documents for the establishment and implementation of effective occupational safety and health management systems.

In the light of the Workshop conclusion, the Occupational Safety and Health Branch (now: SafeWork) of the ILO, in co-operation with the International Occupational Hygiene Association (IOHA), started in 1998 with the identification of key OSH-MS elements in existing standards. The first step was to review existing OSH management system standards and guidance documents. Based on this review, common elements of OSH management systems were identified and the draft Guidelines were prepared. Over a period of nearly two years, the draft was systematically reviewed by international experts, and improved continuously.

At the end of 1999, the *British Standards Institution (BSI)*, an ISO member body, launched an official proposal for the establishment of a new field of technical activity *Occupational health and safety management,* with a view to developing an ISO standard. This competing initiative by the ISO to on-going ILO work encountered strong international opposition and a campaign to stop the ISO work. This resulted in the failure of the BSI proposal in favour of the ILO.

The final draft ILO document was submitted for comments to ILO constituents in January 2001. The ILO Guidelines on occupational safety and health management systems (ILO-OSH 2001) were adopted at a tripartite Meeting of experts in April 2001. The ILO Governing Body approved the publication of the Guidelines in June 2001. The Guidelines will be published in October 2001.

ILO Guidelines on OSH Management Systems (ILO-OSH 2001)

ILO-OSH 2001 provides a unique international model, compatible with other management system standards and guides. It is not legally binding and not intended to replace national laws, regulations and accepted standards. It reflects ILO values such as tripartism and relevant international standards including the Occupational Safety and Health Convention, 1981 (No. 155) and the Occupational Health Services Convention, 1985 (No. 161). Its application does not require certification, but it does not exclude certification as a means of recognition of good practice if this is the wish of the country implementing the Guidelines.

The ILO Guidelines encourage the integration of OSH-MS with other management systems and state that OSH should be an integral part of business management. While integration is desirable, flexible arrangements are required depending on the size and type of operation. Ensuring good OSH performance is more important than formality of integration. As well as this, ILO-OSH 2001 emphasizes that OSH should be a line management responsibility at the organization,

The guidelines provide guidance for the implementation on two levels – national (Chapter 2) and *organizational* (Chapter 3).

National occupational safety and health management system framework

At the national level, they provide for the establishment of a national framework for occupational safety and health (OSH) management systems, preferably supported by national laws and regulations. Action at the national level includes the nomination of (a) competent institution(s) for OSH-MS, the formulation of a coherent national policy and the establishment of a framework for an effective national application of ILO-OSH 2001, either by means of its direct implementation in *organizations* or its adaptation to national conditions and practice (by national guidelines) and specific needs of *organizations* in accordance with their size and nature of activities (by tailored guidelines).

The National Policy for OSH-MS should be formulated by competent institution(s) in consultation with employers' and workers' organizations, and should consider:

- Promote OSH-MS as part of overall management
- Promote voluntary arrangements for systematic OSH improvement
- Avoid unnecessary bureaucracy, administration and costs
- Support by labour inspectorate, safety and health and other services

The functions and responsibilities of implementing institutions should be clearly defined as well. Figure 1 (below) of the Guidelines describes the elements of the national framework for OSH managements systems. It shows the different ways in which ILO-OSH 2001 may be implemented in a member State.

The occupational safety and health management system in the *organization*

Chapter 3 of ILO-OSH 2001 deals with the occupational safety and health management system at the *organizational* level. The Guidelines stress that compliance to national laws and regulations is the responsibility of the employer. ILO-OSH 2001 encourages the integration of OSH management system elements into overall policy and management arrangements, as well as stressing the importance that at the *organizational* level, OSH should be a line management responsibility, and should not be seen as a task for OSH departments and/or specialists.

The OSH management systems in the *organization* has five main sections which follow the internationally accepted Deming cycle of Plan-Do-Check-Act, which is the basis to the "system" approach to management. These sections are namely Policy, Organizing, Planning and implementation, Evaluation and Action for improvement (see Figure 2 above).

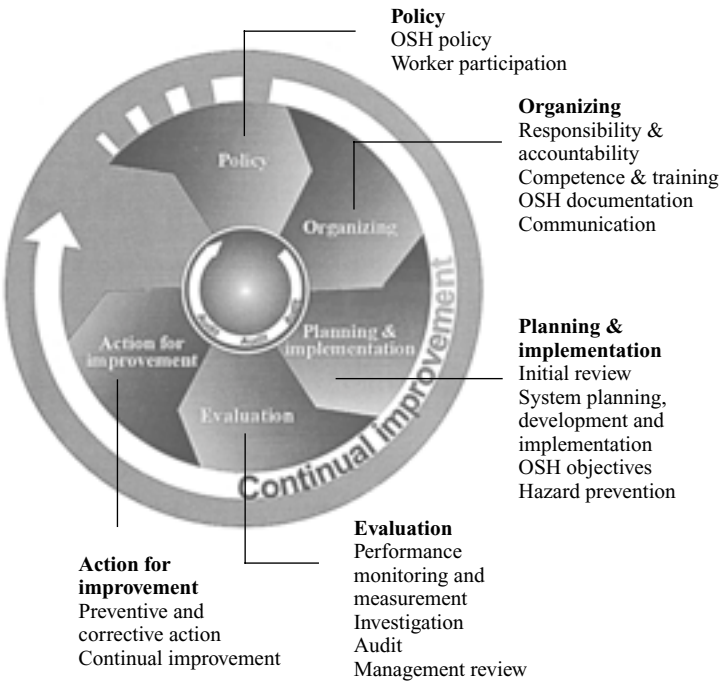

Figure 2. The main sections and their elements of the OSH management system in the *organization*.

Policy contains the elements of OSH policy and worker participation. It is the basis of the OSH management system as it sets the direction for the *organization* to follow. Organizing contains the elements of responsibility and accountability, competence and training, documentation and communication. It makes sure that the management structure is in place, as well as the necessary responsibilities allocated for delivering the OSH policy. Planning and implementation contains the elements of initial review, system planning, development and implementation, OSH objectives and hazard prevention. Through the initial review, it shows where the *organization* stands concerning OSH, and uses this as the baseline to implement the OSH policy. Evaluation contains the elements of performance monitoring and measurement, investigation of work-related injuries, ill-health, diseases and incidents, audit and management review. It shows how the OSH management system functions and identifies any weaknesses that need improvement. It includes the very important element of auditing, which should be undertaken for each stage. Persons independent of the activity being audited should conduct audits. This does not necessarily mean third party auditors. Action for improvement includes the elements of preventive and corrective action and continual improvement. It implements the necessary preventive and corrective actions identified by the evaluation and audits carried out. It also emphasizes the need for continual improvement of OSH performance through the constant development of policies, systems and techniques to prevent and control work-related injuries, ill-health, diseases and incidents.

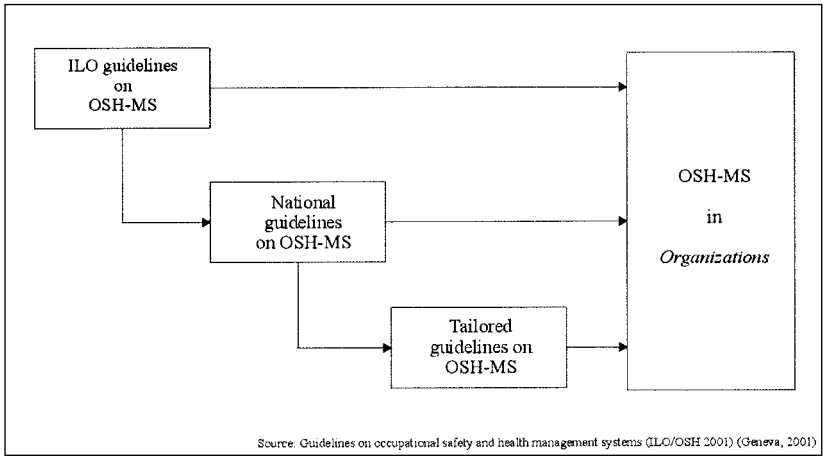

Figure 1. Elements of the national framework for OSH management systems

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Globalization and its effects on occupational health and safety:

Focus on chemical safety at workplaces

M. Amweelo
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Introduction

The world's chemical production has grown quite steadily since the Second World War, and forecasts through the year 2001 and beyond show rising trends. In future, however, chemical markets are likely to grow in the developing and newly-industrialized countries.

Chemicals have become part of our modern lifestyle, supporting many of our activities. They help prevent and control many diseases; increase agricultural productivity; feed the world's population; and provide safe drinking water. While citing the usefulness of chemicals, the rapid growth of chemicals at workplaces has brought danger to workers, employers, the general public and the environment. The rapid pace of modern technology makes it necessary to design correctly operating procedures, not only for workplaces but also for all people dealing with hazardous substances. These people need to be educated to identify the hazards presented by chemicals and to plan, prevent and monitor these hazardous situations.

The chemical industries have traditionally paid careful attention to the safety of processes. Chemical accidents, by contrast, were not given high priority even as late as in the 1970s. Subsequent to a number of tragic events – such as the Mississang railway chlorine transport accident in Canada in 1979, the Seveso dioxin accident in Italy in 1976, the Bhopal methyl-isocynate disaster in India in 1984, and explosion of a gasoline tank in Mexico City in 1984, the nuclear power plant accident at Chernobyl in Ukraine in 1986 and the fire at a chemical storage in Basel in 1986 – however, increased attention has been paid to preventing chemical catastrophes and new special legislation has been introduced in a number of countries.

State of the problem

The risk of chemical catastrophes may not decrease even in the future, for chemical industries are organized in large units; automatic control of processes is improving process safety, but could also allow human errors, which may have widespread consequences; a segment of chemical production is directed to producing compounds of high reactivity. All these factors increase the need for careful reaction control and for ways of avoiding unwanted chemical reactions (1).

In many countries, the collection and handling of toxic wastes has not been controlled for more than ten years, and some countries still lack an effective control system. Thus, the problems of toxic wastes have aroused great concern in highly industrialized countries and in international organizations. In the industrialized countries, stringent legislation and control have slowed down the growth rate of chemical pollution. This has made large-scale toxic epidemics quite improbable. In spite of this, for example, the quality of the environment in Central Europe from the point of view of chemical safety is still declining (2).

How to control these health hazards

Generally, all these chemical hazards are caused by the chemicals and the work environments, by pollution (e.g. noise, gases), etc. Yet it may be impossible to eliminate all the related health hazards because of industrial growth and competition for employment. Owing to unemployment, people are willing to work and earn their livelihood in any environment at all. In practice, it may be difficult to create a 100 per cent healthy environment at workplace, in industries, etc. Many industrial plants

Photo by M. Amweelo

are very old; the layouts were not planned or designed to clear out or remove all unhealthy substances, materials, gases, etc. On the basis of the existing arrangements and layouts, however, management can take certain control measures after studying or surveying the various operations and effluents. Control of potential health hazards can then be planned, and action should be taken:

- to eliminate the health hazards by redesigning the layouts
- to isolate operations and effluents and to keep workers away from others
- to ensure the use of proper personal protective equipment by workers.

It is the management's responsibility to reduce all the health hazards and to protect workers from risk in the work environment. It is also the legal obligation of the workers to use the personal protective equipment.

Transport of hazardous substances

The supplier and transporter of hazardous substances shall ensure that the marking, labelling and storage of hazardous substances for safe transport, especially the labelling of the transport vehicle and storage of the hazardous substances during transport, are in accordance with existing legislation, or if such legislation is not in place, in accordance with the recommendations on the transport of hazardous substances or dangerous goods made by the United Nations.

Storage of hazardous substances

At all times, hazardous substances shall be stored in such a manner that they do not pose a risk to the health and safety of employees or other persons, nor any risk of contamination of the environment, due to seepages, leakage, fire or accidental release. Areas designated for the storage of hazardous substances shall be isolated from other activities and shall be clearly marked with appropriate warning signs.

Handling of hazardous waste

Hazardous waste and deposits shall be removed at intervals, by methods appropriate to the type of hazard in question. Following their collection, contaminants shall be disposed of in a way that poses no risk to the health of any person or to the environment, and in accordance with applicable statutory provisions and regulations.

Fire fighting

Rapid industrialization and urbanization have resulted in the phenomenal growth of industries and also in the importation of hazardous materials. The resulting increases in manufacture, storage, handling, transportation and waste disposal have meant fire, explosion and toxic hazards of different degree.

A disastrous situation can arise either "on site", at the manufacturing site itself, or "off site", away from the production or process location, such as during transportation by land (rail or road), sea or air. In all of these cases, the land-based fire departments, industrial fire brigades and other trained groups are invariably summoned to tackle any emergency situation involving fire, explosion or environmental pollution. Hence it is essential that fire service officers, as well as those responsible for the management of such disastrous situations, are conversant with the likely emergencies that can occur while manufacturing, handling, storing or transporting hazardous substances, and know how to deal with such emergencies.

Emergency planning

Carefully thought out emergency plans for all hazardous industrial operations should be readily available for immediate application in order to stop or minimize the risk involved in an incident caused by dangerous substances before the situation gets out of hand. Such plans should specify the following:

Notification and alerting procedures
On-scene-coordinator (OSC)
Spill control and clean-up procedures
Procedures for disposal of the contaminant
Evacuation procedures
Identification of public relations personnel
Identification of the resource inventory method.

Finally, the plan should be tested in a knock-up situation involving dangerous substances to prove how far it is practical in the event of an actual incident.

Discussion and conclusions

There is a global shortage of trained manpower in the field of chemical safety. The availability of expert manpower is, however, a prerequisite for all control strategies. It is important to strengthen programmes developing the training of various categories of experts.

Education and information concerning chemical safety – for the public, target groups and decision-makers – are poorly developed. New, systematic methodologies for effective actions in this area should be developed. Furthermore, owing to the increased quantity of dangerous substances transported and subsequently handled in industries, safety considerations have taken on dimensions which are strenuous for economically strained nations. This, therefore, necessitates a relatively simple and inexpensive safety approach to reduce, if not replace, the sophistication required to maintain safety and efficiency in the industries of such nations. Simple, easy to understand safety rules and regulations should be introduced, enforced properly, and seen to be enforced.

At both national and regional levels, monitoring and surveillance programmes for following up the most important toxic exposures and for assessing health and environmental risks should be established and coordinated.

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Work in the Global Village

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In mid-October 2001, altogether about 170 experts from 40 different countries, from every corner of the world, gathered in Helsinki to the Work in the Global Village Conference. More than 90 communications were presented and the most prominent keynote speakers had accepted the invitation to share their data, views and experience on the major challenges of globalization. This international gathering provided one forum for the exchange of information and for developing new ideas on how to solve the possible problems of globalization, and how to promote productive interaction and collaboration in the world. These efforts are needed now more than ever.

The International Conference on Work in the Global Village was opened by **Ms. Tarja Filatov**, Minister of Labour, Finland. In her opening speech, she stressed the importance of both international collaboration as well as the need for national activities and measures in facing the challenges posed by globalization. It is worthwhile to analyse also in this Conference, how globalization will affect employment, and to try and find solutions for productive developments in this field, she said.

Dr. Osmo Soininvaara, Minister of Social Services emphasized the need for studying the impacts of globalization on the health of the working people. He pointed out that this is no longer the time to ponder whether we are for or against globalization. Rather, we need to ask what kind of globalization we want. It is of utmost importance that the service provision system for occupational health and safety be strengthened in order to ensure that the most productive population in all societies, the working-aged people, have access to effective and competent occupational health services.

Photo by S. Hiltunen

The conference Work in the Global Village gathered about 170 participants to share data, information and knowledge about the effects of globalization.

Professor Jorma Rantanen, on behalf of the Finnish Institute of Occupational Health and the Organizing Committee of the Conference, concluded that during the past few months the discussion on globalization has become more and more important. He called upon new fresh ideas on how to ensure the minimum level of working conditions to all working people throughout the world.

Alleviation of poverty as a basis for all other activities

One year ago, the Heads of State and the Governments adopted the Millennium Declaration in the UN. One of the most important targets of the declaration is to halve the proportion of those 1.2 billion people living in extreme poverty by the year 2015, said **H.E., Mr. Harri Holkeri**, President of the 55th General Assembly of the United Nations, in his opening presentation. Economic growth does not reduce poverty automatically. Studies (e.g. WIDER; ILO) prove that in many countries the impacts of globalization are mixed. National and international policies and actions are mutually supportive measures in reducing poverty. Poverty is a multidimensional phenomenon, and therefore also the alleviation measures need numerous forms. The lack of education is closely related to poverty. Therefore, one way to alleviate poverty is to increase education. At the international level, improved management of globalization and development finance can support country-driven processes. Partnerships with civic organizations, including the private sector, at all these levels are a necessity. The alleviation of poverty throughout the world is a realistic goal.

Groups that deserve special attention

The Government, employers and the workforce are joining forces in the promotion of a safe and healthy work environment, said **Dr. Dulce Estrella-Gust** of the Occupational Safety and Health Center, The Philippines. The motives vary from achieving higher productivity and efficiency to promoting the basic human rights of workers. Also multinational companies are helping to spread some positive developments. Despite all the developments, the vast majority of workers in small and medium-sized enterprises, in the informal

sector and agriculture, as well as migrant workers, female workers and child labourers remain outside effective Occupational Safety and Health (OSH) protection. In order to improve the situation, concerted action is needed at international and regional, national, corporate, sectoral and community levels, she said.

Models and good practices

The media reports us some negative influences of globalization daily, said **Professor Jerry Jeyaratnam** when talking about the development of methods and models and good practices. Globalization must also have beneficial effects, or else it would not continue to grow and exist. E.g. many multinationals can provide the same kind of occupational health and safety services for their employees in developing countries as they do in industrialized countries. The ensuring of global uniformity in occupational health care is not solely the duty of the multinationals, but also legislative control is needed from international agencies in the UN, as well as commitment from the governments of the developing countries. The question of double standards should be given serious thought, because the needs of workers and their health are exactly the same in the industrialized countries as in the developing world.

Country profiles – a basis for improvement in OH&S

A special session addressed the need for country profiles to determine the status of occupational health and safety in countries that are in various phases of development. The further development of policies for occupational health and safety is nevertheless increasingly based on information steering. Such a policy is critically dependent on up-to-date information on the current status of health and safety, the exposures and risks threatening health, and information on the consequences of such exposures at individual and population levels. Such information is also crucial when setting priorities for further development, identifying the need for actions, including the development of capacities and infrastructures, and attracting partners and allies to join the development work. Appropriate indicator systems can also be used for comparing the needs for policies in different parts of the world, and for recognizing the impact of health and safety actions. Country reports were presented from

Photo by T. Pääkkönen

The workshop on country profiles and indicators took place in Helsinki on 18 October 2001.

Kenya, Nepal, the Philippines, Sri Lanka, Tanzania, Thailand and Vietnam. Several countries are now shifting the emphasis of OH&S to workers in SMEs and the informal sector, which form the majority of the world's labour force. OH&S issues related to agricultural work were also given priority status in many presentations. Novel approaches are needed to address these large segments of the labour force that usually have remained underserved with regard to OH&S, if served at all. The priority lists of many countries stressed the importance of strengthening the reporting systems on work accidents and occupational diseases.

The preparation of the country profiles requires a thorough description of the OH&S structures in the countries, as well as the collection of as detailed data on various indicators as possible. This will allow the setting of priorities for actions at the national level, as well as the setting of objectives for concerted activities for better working conditions.

The new National Plan of Thailand, effective in January 2002, will expand OH&S to workers in agriculture and the informal sector, including 1 million in home-based industries. The priorities in Vietnam will include women at work, and people working in agriculture and in small enterprises. Agriculture and SMEs were in fact reported as priorities in all countries presenting country papers.

A very well organized national OH&S information network has been established in Vietnam during the past few years. The membership of nearly 200 organizations includes several ministries, employers' organizations, trade unions and universities. Regional subnetworks have been established in Ho Chi Minh City and Danang; the prevention of silicosis has received special attention.

In Thailand, a unique arrangement of collaboration between government ministries and Thai university institutions allows the government to identify academic capabilities when planning and implementing new projects and activities. A Thai Directory of academic institutions with OH&S capacities has been prepared.

The country profiles were discussed further in another workshop on 18 October 2001 in Helsinki. The follow-up of the March country profile and indicator meeting took place on 12 November 2001 in Chiang Mai, Thailand. The work on profiles and indicators continues.

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Use of pesticides and personal protective equipment by applicators in a Kenyan district

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Introduction

Globalization is a process that involves transformation of a given national economy into a more sophisticated economy. African countries, among the so-called developing nations, have been caught by globalization unaware.

According to the joint WHO and FAO statement of 1 February 2001 (1), "Possible causes of low quality of pesticides can include both poor production and formulation and the inadequate selection of chemicals. In many pesticide products, for example the active ingredient concentration are outside internationally accepted tolerance limits," said Dr. David Heymann, Executive Director of WHO's communicable disease activities. "In addition, poor quality pesticides may be contaminated with toxic substances or impurities."

The growing demand for enhanced food productivity to meet the needs of the global population has led to the use of sophisticated agricultural technology in which pesticides play a crucial role.

Pesticides can be classified according to the types of pests which they destroy. Thus, there are, e.g. insecticides, fungicides, herbicides, rodenticides and molluscicides. Aside from their benefits, many pesticides have the potential to harm human health.

The use of pesticides is steadily increasing. Pest resistance to pesticides in some developing countries, and aggressive marketing are among the causes for the growing use.

According to Kaoneka and Ak'habuhaya (2), in 1998 the worldwide use of pesticides amounted to about 8 million tonnes, while the figure in 1988 was only 3 million tonnes. In total, developing countries accounted for approximately 30% of all pesticide use. Because pesticide formulations have changed, calculations of the amounts used do not reveal the whole picture. Modern formulations are applied in much lesser amounts now; only milligrams per hectare, as compared to grams per hectare in the past.

Agricultural workers are the largest occupational group in developing countries. Nkurlu (3) reported that 90% of the population of Southern African countries are gainfully employed in the agricultural sector. Farmers have special health problems arising from the agricultural pesticides they use, which are believed to have adverse effects on the health of farmers and on the environment.

Kenya is an agricultural country. About 80% of the population depends on farming as the basic livelihood. Generally, farming includes the cultivation of crops and animal husbandry. The crops cultivated include cash crops (e.g. coffee, tea), food crops (e.g. maize, beans),flowers and vegetables. Animal husbandry involves the tending of cattle and poultry. Pesticides are used in all these ventures.

The most serious occupational health hazard among the agricultural population is exposure to a great variety of synthetic pesticides, mainly chlorinated hydrocarbons and organophosphorus compounds. The risks of pesticides – acute or long-term effects – are not understood by potential pesticide users.

A study on pesticide use and safety awareness in Githunguri, Kiambu district, where the population and agricultural characteristics are similar to those of the current study, revealed that more than 95% of the farmers used pesticides extensively (4). The greatest risks of exposure were found to be among women and children. The study further established that the community's awareness of safety was limited.

Pesticides may enter the body orally, by inhalation or through the skin. The most important route of absorption is via the skin, especially if the chemical in question is sprayed on a windy day. Pesticides have been associated with different types of cancer. They may cause genetic damage to an unborn child as well as abortion or malformation. They may also damage the brain, kidneys and other vital organs if the level of exposure exceeds the burden that the body of the immediate user can tolerate.

Studies have been conducted to investigate effect of organophosphorus pesticides. A study carried out in Japan among a sample of 7,435 people representing the Japanese farming population who use pesticides found that 74 had optic autonomic contraction dynamics of the pupil in reaction to light stimuli, and a high residual level of organophosporous was found in their blood (5). Exposure to organophosphorus pesticides may cause other neurological effects, too.

Chemical safety is paramount in order to control the potential adverse effects of chemicals. Primary prevention is the only effective way to combat the problems associated with chemicals. A set of principal tools for primary prevention has been compiled. It includes enhancing the knowledge of exposed workers with regard to the safe handling of chemicals (6).

VN Kimani and MA Mwath conducted a case study in a Kenyan rural agricultural community (Githunguri loca-

tion) in order to assess the knowledge, attitudes and practices concerning the safe handling of agro-chemical pesticides. This study revealed that 95% of the farmers use pesticide extensively. These farmers had a rather limited knowledge of the relevant safety issues (4).

A study conducted among Indonesian farmers found that spraying caused substantial pesticide exposure to the farmers. Signs and symptoms occurred significantly more often during the spraying season than outside the spraying season. The number of spray operations per week, the use of hazardous pesticides, and the skin and clothes being wetted with the spray solution were significantly and independently associated with the number of signs and symptoms. The study concluded that farmers in the tropics could not wear full protective gear because of the unfavourable hot climate.

The frequency of spraying should be reduced by means of widespread training in integrated pest management. The licensing and selling of most hazardous pesticides should be regulated.

The acute and chronic toxic effects of pesticides may occur at the workplace (manufacturing, packing, mixing and spraying) or through accidental exposure – eating or drinking contaminated food. Acute pesticide poisoning is unacceptably common, although it is impossible to give precise figures for the number of cases on a worldwide scale. Almost all cases of acute pesticide poisoning occur in the developing world, even though it uses only 25% (7) of the world's production of pesticides. Most farmers make extensive use of pesticides sold over the counter, thereby causing the farmers to be exposed to a variety of farm pesticides unnecessarily.

Aim and objective

This study was done in order to assess farmers' safe handling of pesticides with regard to their knowledge, attitudes and practices.

A cross-sectional survey was conducted using a simple multiple closed-ended questionnaire. The questions were posed to the respondents by means of an interview, and the author recorded the responses.

The survey questions inquired into the types of pesticides being used in order to:

1. assess the farmers' knowledge regarding the route of exposure to pesticides
2. identify the types of personal protective equipment used
3. determine attitudes underlying the failure to use personal protective equipment
4. assess the prevalence of symptoms associated with pesticide poisoning.

Study district

Garissa district is one of the three districts forming North-eastern province. The district covers an area of 43,931 sq. km, which is about 7.45% of the total area of the country. The backbone of the district's economy is a nomadic way of life. The concept of farming was introduced along the freshwater Tana River. The full potential of agricultural produce was realised shortly after the cultivation of fields started to be practised in the district of this study around 1988. The types of produce grown range from pawpaw, passion fruits and bananas to tomatoes and other crops.

Farming is practised along the river. Farmers are highly exposed not only to risks arising from pesticide use but also to those caused by reptiles in the water (the river is widely populated by crocodiles). Crocodiles are a constant menace at the riverbanks.

Farmers' profile

Smallholders form about 98% of all farmers; large-scale farmers comprise only 2% of the total. These groups are mostly found within central and Sankuri divisions. The indigenous community dominates farming activity.

There are about 3,200 families with farms under irrigation and 5,500 farms depend on rainfall. At the time of the study, most of the farmers were suffering from floods caused by El Niño induced rains; thus many were unavailable for interviews. Thus a sample of only 30 persons was available for interviews.

Only people working the land and who were believed to have been exposed to agricultural chemicals (pesticides) – i.e. potential applicators – were included in the study. It was assumed that applicators are more exposed than other people working in a treated area. Applicators might be exposed to pesticide residues or their degradation products, which in certain conditions can be even more dangerous.

The following groups, who are not potential applicators of pesticides, were excluded from the survey:

- agricultural extension workers (employees of the Ministry of Agriculture)
- relatives of the potential worker or relatives of those included in the sample population
- pump attendants.

The study had some practical limitations:

1. The work to conduct interviews on the farms was brought to a standstill by the flood caused by El Niño (November 1997–February 1998).
2. Though the questionnaire was specific, the study was not comprehensive, the prime reason being the omission of biological monitoring (blood samples for analysis) because the necessary reagents were not available in the Provincial General Hospital. The measurement of cholinesterase inhibition from blood samples was not considered necessary because most of the pesticides reportedly used by the farmers were carbamate insecticides.
3. The study was demanding in monetary terms (e.g. the costs of transport, processing the report and photocopying).

Results

The farms included in the study were selected through simple random sampling and had 35 persons, only 30 of whom were interviewed while five were excluded on the basis of the exclusion criteria applied.

The mean age of the 30 respondents interviewed was 23 years. Thus, with reference to the questionnaire, young adults between 15 and 20 years of age dominated the sample.

All persons interviewed (100%) were males. 83% of the respondents had no formal education while only 17% had attended various classes at primary school. On assessing their knowledge as far as the use of pesticide is concerned, all of the respondents were able to mention at least one purpose of pesticides, i.e. to kill insects.

On the basis of the responses, the types of insecticides used most frequently by the farmers were as follows: 30% used Sherpa (pyrethroid); 47% used lanate (carbamate); 17% used kelthane (organochorine compound) and 6% used furadan (carbamate).

All of the farmers interviewed got the pesticides they applied from private chemists.

Half of the respondents had been using pesticides for a period of 5 years or more; 17% had been using the same farm chemical for 3–4 years; 30% had been using some pesticide for 1–2 years;

while only 3% had been using some pesticide for less than 1 year.

As to the farmers' knowledge of the routes of exposure to pesticides in humans, 90% knew the routes of exposure while the remaining 10% did not know the routes of exposure to pesticides.

82% identified inhalation as a route of pesticide entry into the human body; 11% knew of skin absorption as a route of pesticide entry and 7% knew of ingestion as a route of pesticide entry.

The results on the farmers' use of personal protective equipment revealed that 83% did not use any personal protective equipment (PPE) and 17% did use PPE.

All 17% of the interviewees who reported that they use PPE said that they only wore (improvised) masks. They reported wearing the masks in order to safeguard their health.

83% who said that they did not use PPE gave the following reasons for their failure to do so: 40% of the respondents said it is very hot to use PPE; 36% confessed that it is too expensive to purchase PPE; and 24% did not know the importance of PPE.

77% of the respondents had experienced short-term illness as a result of using some pesticide, while 23% had not fallen sick since they started using pesticides.

14% had experienced eye irritation as a negative effect of pesticide use; 35% had had a skin problem; and 27% had had difficulties in breathing as a result of pesticide exposure.

Discussion

All of the farmers use pesticides of varying classes on their farms. The results of this study are similar to those of a study conducted in Githunguri in 1995, which revealed that 95% of the farmers make extensive use of agrochemical pesticides.

The practice of the farmers in this survey was very poor, since 83% did not use PPE. This low rate of PPE use, and the resulting unsafe use of pesticides, is assumed to be the reason for some of the complaints reported by the respondents. Statistically, 77% of the farmers had fallen ill, at one time or another, probably owing to unsafe use of pesticides; this has led to impaired health among the farmers interviewed.

On assessing the farmers' attitudes to the use of PPE, many (40%) of the farmers who reported not using PPE blamed the climate, i.e. the high temperatures make it very hot for them to use PPE. 36% said that lack of purchasing power has made it impossible for them to put the use of PPE into practice. However, 24% of the respondents reported having no idea of the importance of PPE.

The Pest Control Products Board has banned or restricted the use of several pesticides in Kenya. Among these are old compounds containing chlorine (chlordane, heptachlor), toxaphene and methylbromide.

The World Health Organization (WHO) has recently published a list of pesticides that persist in the environment (persistent organic pollutants). These include aldrin, dieldrin, chlordane, dioxin, DDT, endrin, furans, heptachlor, hexachlorobenzene, mirex, polychlorinated biphenyls and toxaphene.

Conclusion

The use of personal protective equipment among the farmers interviewed was not common (83% do not use PPE). This is a high proportion and indicates the need for advice on good working practices.

It would be extremely important to continue the study on the remaining farms. To do so would require that funds be made available.

Recommendations

1. There should be a system for controlling the sale of pesticides over the counter so that farmers are not unnecessarily exposed to a variety or certain classes of farm chemicals.
2. Agricultural Department (authority answerable to the Ministry of Agriculture) should generally increase the availability of information, education and communications on the safe use of pesticides.
3. Agricultural Department should create awareness among farmers of the toxicity of pesticides, and should advise farmers to report accidents to the nearest clinic.
4. Farm members should consider the best method of getting personal protective equipment, at an affordable cost.
5. Agricultural Department should ensure that, through simulation exercises, farmers are trained in the importance of personal protective equipment and how to use such equipment.
6. Farmers should be encouraged to observe good working practices; i.e. spraying down wind, not spraying when the wind velocity is too low.
7. Intensive research should be conducted in order to improve the level of farmers' knowledge, attitudes and practices in the district.

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Fifth Network Meeting of the WHO Collaborating Centres in Occupational Health

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The Fifth Meeting of the Network of WHO Collaborating Centres in Occupational Health was organized on 13-15 November 2001 in Chiang Mai, Thailand. Dr. Pakdee Pothisiri, Director General of the Ministry of Public Health, Thailand, opened the meeting and wished all participants warmly welcome. He also stressed that occupational health is as important to developing countries as to industrialized ones. He emphasized that the problems in work life have become increasingly more complex, requiring more exchange of information and sharing of experiences to be solved. He also pointed out how important the role of the Network of Collaborating Centres in Occupational Health has been from the very beginning of its establishment in Moscow, Russian Federation, later through the network meetings organized in Beijing, China, Bogota, Colombia, Helsinki, Finland, and now in Chiang Mai, Thailand.

The meeting gathered close to 60 participants from 39 Collaborating Centres, WHO Headquarters and Regions, ILO, as well as from NGOs. Altogether 24 countries were represented.

Dr. Mike Repacholi, Dr. Marilyn Fingerhut, and Dr. Greg Goldstein of the WHO Headquarters had participated in preparing the meeting programme. The practical arrangements were carried out by Dr. Wilawan Juengprasert and her colleagues from the Thai Ministry of Public Health. Everything ran smoothly, and the participants were well taken care of, as regards both the business matters and the social programme. It seems that although all the other previous meetings have been very well organized, the Thai colleagues surpassed the previous records. Warm thanks are due to all the Organizers of the Fifth Network Meeting!

The agenda of the meeting consisted of an overview of the WHO, ILO, and NGO Programmes, a presentation of the activities of the WHO Regions related to the WHO Global Strategy on Occupational Health for All, as well as papers on the impact of WHO/ILO Global Strategy activities, with special attention to the Programme for Elimination of Silicosis. In addition, several papers focused on the impact of the collaborating centre activities. A special session was dedicated to studies describing the global/national burden of disease. Much development work is still needed to make the calculations more accurate. Several posters described the success stories of occupational health and safety advances in various countries.

The joint work plan of the WHO Headquarters, Regions, and the Collaborating Centres, to implement the WHO Global Strategy on Occupational Health for All, was discussed in three working groups. The contributions, commitments and interests of the Collaborating Centres and discussions in the three working groups were integrated into one work plan that was then further developed to respond to the challenges of the changing work life in all corners of the world. In all, 15 Task Forces on various aspects of work life were established. These will continue the work in a coordinated way so that the results can be checked and evaluated in the Sixth Network Meeting in two years.

The specific conclusions and recommendations of the Meeting dealt with the continuous need to emphasize the priority position of occupational health, both on the national and international agendas, the growing need for occupational health and safety in all countries, and the further development of well-functioning and universally available infrastructures, particularly occupational health services, and sufficient and well-trained human resources for occupational health. In addition, the need for research in the field of occupational health and safety was recognized, especially as a basis for the practical application of research results to improve working conditions at the workplace level. Gathering reliable information about the status of occupational health and safety in the countries was also emphasized. This information can be used to develop further the content of occupational health and safety programmes in the countries, and it can to a certain extent be used to benchmark and guide developments at the international level. WHO/HQ efforts for the calculation of the global burden of occupational injuries and diseases was welcomed. The collection of data on national as well as local occupational health and safety indicators should be improved further. The country occupational health and safety profiles will be one of the main tasks on the work plan for the next few years. All Collaborating Centres were encouraged to take part in this effort.

In addition to the scientific and practical papers given at the meeting, one of the aims – the enthusiastic exchange of ideas and information and the sharing of knowledge and expertise – was realized in all sessions of the Meeting. This was a truly stimulating event, and points to continuing collaboration in ensuring *Occupational Health for All*.

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Follow-up meeting on indicators and profiles in Chiang Mai, Thailand

The first preparatory meeting on developing national and local profiles in occupational health and safety was organized by the Ministry of Public Health, Thailand, and the Finnish Institute of Occupational Health on 6–7 March 2001 in Chiang Mai, Thailand. Altogether 35 participants, representing several ministries, universities and health agencies, attended the meeting. As a result of the lively discussions and keen interest of all participants to continue the development of OH&S indicators further, a follow-up procedure was agreed upon. The first follow-up step was the 18 October 2001 workshop in Helsinki, where the Thai colleagues, Dr. Twisuk Punpeng and Dr. Somkiat Siriruttanapruk presented their community profiles in occupational health and safety for the Lamphoon province. It was a most successful presentation, and got a lot of positive feedback from the other participants. The Workshop was attended by representatives from nine countries, namely China, Kenya, Nepal, the Philippines, South Africa, Sri Lanka, Tanzania, Thailand, and Vietnam. Such wide participation was made possible by the funding from the Finnish Ministry for Foreign Affairs, WHO and ILO.

In March 2001, it was also decided that a follow-up meeting be organized in mid-November 2001. This meeting took place on 12 November 2001 in Chiang Mai, Thailand, and it was attended by the same persons and organizations as the first preparatory meeting. Dr. Twisuk Punpeng, Dr. Wilawan Juengprasert and Dr. Somkiat Siriruttanapruk of the Ministry of Public Health, together with many other colleagues, had organized an effective meeting to follow up the developments in preparing the profiles. At this time the main focus was on provincial and local community profiles. In their presentations, the representatives of Pitsanulok, Lamphoon and Khon Kaen provinces described the situation in their respective provinces. The rapid assessment methods were also introduced and discussed, and there was interest in the audience to carry out rapid assessments in order to increase the amount of information on various specific questions of occupational health and safety. In addition, also the results of the Work in the Global Village Conference held on 15–17 October 2001, and the results of the 18 October Helsinki Workshop were briefly high-lighted.

In the 18 October Workhops, the Kenyan country profile was described by Mr Franklin K. Muchiri of the Directorate of Occupational Health and Safety Services, Nairobi; the South African report was given by Dr Gopolang Sekobe of the Ministry of Health of South Africa; Tanzania was represented by Mr H. I. Kitumbo who also gave the report on the Tanzanian occupational health and safety situation.

It was agreed that a second follow-up be organized in November 2002 in connection with the International Symposium to be organized by the FIOH on the topic of young people and work life.

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Themes of the African Newsletter in 2002

1/2002	**Violence at workplaces** (manuscripts by 15 February 2002)
2/2002	**Occupational health and safety networks and the Internet** (manuscripts by 30 May 2002)
3/2002	**Work-related diseases and their prevention** (manuscripts by 30 September 2002)

Readers are encouraged to submit manuscripts focusing on above themes. Articles on other topics in the field of occupational health and safety are also welcomed. Please send your manuscript to:

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University of Michigan / Fogarty International Center Grant

To support environmental and occupational health training and research in the Southern African Development Community (SADC) Region

Applications are hereby invited for bursary supported post-graduate study OR focussed research training of up to 3 months duration in Environmental or Occupational Health at the University of Michigan, USA.

MASTERS OR DOCTORAL PROGRAMMES

The University of Michigan offers Masters of Science (MS), Masters of Public Health (MPH), and Doctorates (PhD or DrPH) in Environmental Health Sciences (including Air Pollution, Water Quality, Management of Hazardous Wastes, Risk Assessment), Occupational Medicine, Industrial Hygiene, Occupational Health Nursing Occupational Safety Engineering, Toxicology, and Environmental and Occupational Epidemiology. Distinct preference will be given to applications for study of environmental health sciences and occupational hygiene, but applications for study in the other disciplines listed above will also be considered. Masters Degrees are usually completed in 3 to 4 terms of study over a 1 ˚ to 2 year period. Persons pursuing a PhD typically complete at least 2 years of course-work before turning to dissertation work requiring 2 to 3 additional years of research. Master theses and PhD dissertations are expected to be based on research conducted in Southern Africa. Supervision of students conducting research projects will be shared between US and South African advisors.

This grant will provide 1 ˚ to 2 years of support per student, including a stipend, health insurance, tuition and transatlantic airfare. Funding is from a Fogarty International Center grant. This programme does NOT provide funds for the conduct of the actual research, however, UM and local supervisors will assist the student in accessing research funding. Over the five-year period of the grant, a minimum of three students will be trained at either masters or doctoral levels.

SHORT-TERM FOCUSSED RESEARCH TRAINING (UP TO THREE MONTHS DURATION)

Areas of expertise of University of Michigan Faculty available to collaborate with applicants include preferentially Environmental Health Sciences (including Air Pollution, Water Quality, Management of Hazardous Wastes, Risk Assessment), Occupational Medicine, Industrial Hygiene, Toxicology, and Environmental and Occupational Epidemiology. Consideration will also be given to Occupational Health Nursing and Occupational Safety Engineering.

This grant will provide up to three months support per successful applicant, including a stipend, health insurance, and transatlantic airfare. Two awards are expected to be made in the first year of the grant.

ELIGIBILITY

Applicants must be citizens of SADC nations, must hold a bachelors degree and, for the short-term research training, must be involved in an existing research project.

CLOSING DATES

Applications must be submitted to the University of Michigan and to the National Centre for Occupational Health (NCOH). Strong preference will be given to complete applications received no later than 1 March 2002. However, applications after this date will be considered. If awarded, the earliest possible date for commencing graduate studies will be September 2002. Commencement dates for short-term programmes could be earlier depending on availability of UM faculty. Applicants can expect notification of status no later than 30 June 2002.

Application forms and additional information about the programme are available from:

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