

# OSH & Development

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Editors: Kaj Elgstrand & Stefania Loria

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## Third issue

OSH & Development, June 2001

Kaj Elgstrand

Here we are: the third issue of "OSH & Development". This time I am happy to tell that we have many contributions from former and current participants in NIWL's and Sida's international courses on "Occupational Safety and Health in Practice" and "Occupational Safety and Health & Development". There are eight such articles, most of them from Africa, but also some from Latin America and the Caribbean, and Eastern Europe.

You will find a new article by Jürgen Hannak, on improvement of OSH and productivity in the tanning industry in South India. (His first article, which appeared in OSH&D no.1, 1998, described similar experiences from a UNIDO project in several countries in South East Asia). Jorma Rantanen and Suvi Lehtinen give a summary of the impressive Finnish OSH-collaboration in developing countries. In this issue you will also find an article on the future of epidemiology in developing countries, written by researchers from Costa Rica, South Africa, Tanzania, México and India. You will also find information from an international conference organised by the International Occupational Hygiene Association, and from initiatives and newly published books and reports, from NIWL.

Like before, OSH&D is published in cooperation with UFA and NIWL, and the printing is sponsored by Sida/Asdi. This time we have also a fourth organisation collaborating: the Scientific Committee on "Occupational Health and Development (SCOHDev)" of the International Commission of Occupational Health (ICOH). SCOHDev's members are invited to use OSH&D as a means for communication. In this issue we have the first article from a SCOHDev member, Maurizio Manno's description of a grandiose and fascinating project: globalisation of a postgraduate curriculum.

Bad OSH&D-news is that Stefania Loria terminates her tasks as technical editor of our journal with this issue. She has left the job at NIWL for another employment. Good OSH&D-news is that Bo Dahlner is joining OSH&D as technical editor from next issue.

Let me use the opportunity to promote UFA's new homepage: [www.ufa.org.se](http://www.ufa.org.se) There you will find many useful links. You can also load down major parts of the contents of OSH&D.

So, you are welcome to read and reflect upon the contents of this issue. And you are invited to contribute to the next issue, to be published next year. First deadline (a new concept!) for contributions is October 25, 2001.

*Kaj Elgstrand*  
*Swedish National Institute for Working Life*  
*SE-112 79 Stockholm*  
*Sweden*  
*Telephone: +46-8 619 6742*  
*Telefax: +46-8 618 3635*  
*Email: [kaj.elgstrand@niwl.se](mailto:kaj.elgstrand@niwl.se)*

## Practical improvement of safety and health at work – Experiences and lessons from the small- and medium- scale tanning industry in South India

OSH & Development, June 2001

Jürgen Hannak

### **Background**

Tanning of hides and skins to convert them into leather has been an important industrial activity since ancient times. Odor and pollution have been regarded as an inevitable consequence of such activity for much of this time, and the persons engaged in it have rarely enjoyed high social status. The latter is very much the case for the around 285,000 persons working in the Indian leather tanning industry.

Today, the potential environmental impact of tannery operations on surface water bodies, groundwater, soil, waste dumps is widely acknowledged and is, particularly in Tamil Nadu, successfully tackled. In addition to the various environmental problems of pollution, concerns for workers' safety and health have increasingly drawn attention. There have been earlier isolated initiatives in India dealing with preliminary studies of the prevalent safety and health hazards at work and how to improve the conditions and practices at work, however with limited impact on bringing about change in attitude and awareness on occupational safety and health issues.

During the period from 1996 to 1999, the United Nations Industrial Development Organization (UNIDO), through its Regional Programme for Pollution Control in the Tanning Industry in South East Asia, tried to create a momentum towards improving the prevalent working conditions and work practices in the tanning industry of the participating countries (Bangladesh, China, India, Indonesia, Nepal, Sri Lanka, Thailand) in an integrated and sustainable manner. In our earlier article in OSH & Development, no.1, August 1998, we have already briefly reported

about UNIDO's initiative in South India, particularly in the state of Tamil Nadu. This forms part of the Regional Programme in South East Asia. Tamil Nadu, which accounts for about 60% of all tanneries in India, has been the focus of the UNIDO programme activities in India, as it was found that the state had good support structures, strict environmental standards and good awareness of environmental.

### **The concept**



**Poorly guarded fleshing machine (Source: UNIDO)**

Of the around 1200 organized units operating in different states of India, less than a 100 are classified as medium to large-scale tanneries. Most small- and medium-scale tanneries operate out of premises that

lack even the most basic facilities required to establish a safe working environment. Traditional technology, manual handling operations, inadequate machine safety, lack of a skilled, trained workforce to name just a few, have been largely responsible for this. Tanners, who form a close community, have been considered averse to change and ideas from outside the community.

At the time of the launch of the UNIDO programme, initiatives such as safety audits,

industrial hygiene and hazard management, were hardly practiced or known. Except for the monitoring facilities of the state authorities, no other professional facilities have been available or were not applied in the leather industry. Accordingly, the programme activities on the one hand focused on improving the working conditions at work while on the other hand fostering initiatives in establishing health and safety support structures.

### ***Its implementation***

Overcoming the initial reservations of the tanning industry vis-à-vis change and ideas from outside by adopting a “know-how through show-how” approach on-site, while assisting in the establishment of an appropriate support structure, has helped to sustain the momentum towards improving the working conditions and work practices. One major focus of the activities in this connection has been on making the concerned management and staff aware of the prevalent safety and health hazards at work.



**Poor arrangements and practices in dosing acids (Source: UNIDO)**

The information level about chemical hazards amongst managers, supervisors and workers was poor, which in turn led to unsafe practices in use of chemicals at work, in terms of storing, handling, dosing/mixing chemical substances, disposing of chemical waste and taking protective measures. Substandard

An initial survey of the conditions and practices conducted in a sample of selected tanneries in 1996, revealed a dismal picture. The

production and electrical equipment, excessive manual handling and poor preventive and general maintenance of premises and production facilities, particularly in small-and medium-scale tanneries, contributed to the prevalent number of mechanical and physical hazards. Protective guards or covers preventing access to hazardous machine parts were absent. National electrical safety standards were floated. Noise levels between 85 and 100 dB(A) and poor levels of illumination were common. Preventive and suitable organizational procedures to deal with emergencies (accidents, fire, spillages) were in most cases absent or inadequate.

Chemical safety and materials handling perhaps were the biggest area of concern across all tanneries. Even the large-scale tanneries were found lacking in storage of chemicals as per specifications of the Material Safety data Sheets MSDS sheets. Only brand names of chemicals



**Unsafe electrical installations (Source: CLRI)**

available and most facilities had no records of MSDS sheets for chemicals being used. Lack of proper labeling resulted in incompatible chemicals being stored together posing additional fire hazards. Lack of proper flooring, ventilation, and drainage facilities results in considerable material losses as well contributes to localized soil and water pollution.

The Indian Factories Act stipulates the standards for worker exposure to various chemical and physical hazards. The standards are adapted from the American Conference of Governmental Industrial Hygienists (ACGIH) time

weighted average values for short and full shift exposures. However, until the initiative of UNIDO industrial hygiene monitoring had never been conducted in any of the facilities surveyed.

Following this initial survey, UNIDO initiated an assessment of the status of occupational safety and health in select volunteer tanneries with a view to establish a baseline for the conditions prevailing in the tannery work environment.

Table 1 provides an overview of the various monitoring steps and parameters used during this exercise.

Type of monitoring	Parameters
Occupational Safety and Health Audit	<ul style="list-style-type: none"> <li>• Machine safety</li> <li>• Electrical and fire safety</li> <li>• Chemical safety and materials handling</li> <li>• Use of personal protective equipment</li> <li>• Emergency preparedness</li> <li>• Hazard Communication</li> </ul>
Environmental monitoring	<ul style="list-style-type: none"> <li>• Total dusts</li> <li>• Respirable dusts</li> <li>• Hydrogen sulfide</li> <li>• Ammonia</li> <li>• Noise</li> <li>• Heat stress</li> </ul>
Biological monitoring	<ul style="list-style-type: none"> <li>• Chromium levels in blood</li> <li>• DDT levels in blood</li> </ul>
Clinical monitoring	<ul style="list-style-type: none"> <li>• Spirometry</li> <li>• Urine Analysis</li> <li>• Serum chemistry for liver and kidney function tests</li> <li>• Hematology</li> </ul>

The environmental, biological and clinical monitoring was carried out with the help of the Sri Ramachandra Medical College & Research Institute in Chennai, in which the UNIDO programme had established a separate “OHS cell”.

This has been the first time in India that industrial hygiene practices have been systematically and extensively applied in small-and medium scale enterprise sector.

The results of the clinical monitoring thus revealed multiple areas of concern where routine surveillance had to be initiated. In the absence of any baseline of medical or industrial hygiene records, it was not possible to attribute the entire burden of morbidity on the occupational environment and establish causality. However, the results of preliminary industrial hygiene and clinical monitoring clearly identified areas where the first set of interventional strategies needed to be directed. Quantitative, objective monitoring exercises such as those described above allowed the initiation of targeted improvement programs in a limited set of volunteer tanneries to “**show how**” these improvements would benefit the

individual tanner. Once the tanners realised the benefits, the percolation of information to other members through their networks is much faster and more effective.

### *The lessons*

Active stakeholder participation from the very beginning made it possible to translate many of the recommendations given by the expert teams into actual physical improvements in the

workplace. In many cases the actual solutions were developed and implemented by the tanners and their staff themselves.

Many of the improvement measures implemented fall into the category of “Good Housekeeping” measures, which are mostly low-cost, easily implementable and have an immediate and visible impact. Highlighting the cost-saving potential of such measures, not only in terms of safety and health but also in

terms of productivity improvement and reduction of environmental costs, has helped to make the tanners to readily accept such solutions.

The ongoing endeavors in improving safety and health at work in the Indian leather industry are implemented on a tripartite basis with industry associations (such as Indian Leather Industry Foundation and All Indian Skins & Hides Tanners and Merchants Association), the Central Leather Research Institute and the Sri Ramachandra Medical College & Research Institute working hand-in-hand. The latter two organizations provide support service such as technical guidance and information, safety audits, industrial hygiene monitoring, training, while the Indian Leather Industry Foundation focuses on creating further awareness on environmental, health and safety issues.

Recent trends in the global market show that adherence to acceptable environmental, health and safety standards at work is increasingly becoming a pre-requisite for the local leather industry in supplying leather and leather products to international customers. Pressure by the international buyers has proven as a major incentive for the local industry to improve environmental, safety and health conditions at work.

Today, the local leather industry is actively seeking guidance from organisations such as Central Leather Research Institute and the Sri Ramachandra Medical College & Research Institute on how best to implement measures. Services such as industrial hygiene monitoring are called upon to prove to the buyers that exposure to chemicals and physical parameters is within acceptable limits. So far, this trend is still confined to the larger units. However, it is expected that these developments will percolate down the supply chain during the coming 24 months.

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*The author designed and coordinated the implementation of the programme on safety and health in the leather industry in South East Asia for UNIDO. He is presently assisting the Central Leather Research Institute, Chennai, in improving the safety in the Indian leather and leather product industry as part of a German government funded programme. For comment or further information, you can contact the author.*

*Dr. Jurgen Hannak,  
c/o CLRI, CLRI Campus Adyar  
Chennai 600020  
India  
Tel: +91-44-4912560  
Fax: +91-44-4911589  
E-mail: cim-clri@gmx.de*



**Guarding access to a drum in a small-scale tannery  
(Source: UNIDO)**

## **Finnish occupational health and safety collaboration in developing countries**

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Jorma Rantanen & Suvi Lehtinen

The traditions of the Finnish Institute of Occupational Health (FIOH) in international development collaboration trace back to the early years of the 1970s. A small country like Finland needs itself international collaboration as a resource basis. Therefore, also the Finnish Institute of Occupational Health has participated in international joint work right from the beginning. As countries of the world are in different stages of development there is a good opportunity for fruitful and mutually beneficial exchange of information.

The main objective in the development collaboration of the Finnish Institute has been to contribute to the overall socio-economic development of the collaborating countries. This is based on the understanding that healthy and safe work is the right of every citizen of the world. And not only so, but the healthy and motivated workforce also ensures the success of the national economies, and sustains all the other activities in the society.

The support and close collaboration of the both the Finnish Ministry for Foreign Affairs, International Development Agency and, where appropriate, of the International Organizations, particularly the International Labour Office, ILO, and the World Health Organization, WHO, have always been crucial to the implementation of the collaborative projects of FIOH. These have provided a huge information basis for the various research and development projects.

In order to eliminate poverty, one of the principles of FIOH development collaboration has been that some of the collaborating countries chosen have been among the least developed countries of the world. It should, however, be noted that being a small country,

Finland has been able to allocate resources only to limited geographical areas or to limited substance areas. Following this principle, the Finnish Institute has concentrated its activities on East African countries, and on the Asian-Pacific Region. Geographically, the regional approach has been taken, and substantially, training and information have been the main contents in the programmes.

### ***East African Regional Programme on OH&S***

A four-year East African Regional Programme on Occupational Health and Safety was carried out in 1987-1991. It was based on the ILO-FINNIDA collaborative projects implemented in the early years of the 1980s, and funded by the then FINNIDA, Finnish International Development Agency. The collaborative countries were Kenya and Tanzania, to some extent also Zimbabwe and Uganda. The regional training events covered more than ten countries in the English-speaking Africa.

### ***Elements of the Regional Programme***

The elements of the East African Regional Programme on Occupational Health and Safety consisted of training of experts, expert advisory support, information activities, and material aid.

Training of occupational health and safety experts, authorities and, if possible, employers' and workers' representatives was the core task. This seems to be by far the most sustainable form of development collaboration. The training element contained regional complementary courses, regional symposia, national basic courses, fellowships for post-

graduate training, and on-site training in connection with risk surveys. This was expected to lead to sustainability both in the practical skills for organizing training and also in improving the substantive contents of training adapted to local conditions.

The expert advisory support and consultations aimed at giving advice in planning, implementing, reporting and evaluating the policies and practices. This element was implemented mostly in the form of risk surveys. These surveys were conducted in order to identify the priority occupational health and safety problems, and to provide a scientific basis for directing the activities of occupational health and safety experts and organizations. Statistical data at the national level on e.g. the workforce, occupational exposure, occupational accidents and diseases, use of chemicals, etc., was also deemed important, and in some cases it required preparatory work for the creation of information infrastructures. The topics of the risk surveys in Kenya and Tanzania were noise, sisal dust, cotton, lead, pesticides, chemicals, heat stress and strain, and exposure to free silica. The planning and design of the risk surveys was done in collaboration with the African and Finnish experts, and the African project groups implemented most of the surveys. Most of the survey teams were multidisciplinary, covering medical, hygienic, nursing and safety experts.

Information is a prerequisite for decision-making in any field. Therefore, strong emphasis has been put on information in the collaborative programmes. The aim has been to encourage the exchange of information among the local experts both within the countries and between the countries. This was facilitated through establishing a newsletter for the Region, and also by supporting the experts in the Region with mental support transmitted by personal contacts between researchers and other experts, i.e. being a part of the scientific and professional community.

### *Assessing the impact*

The outputs of the East African Regional Programme are shown in [Table 1](#) (ref. 1, 2, 3). In addition, more than 10 training courses with approximately 200 participants and 5 regional symposia with more than 160 participants were arranged during the years, prior to the East African Regional Programme.

Some effects have been obtained on the basis of these outputs, for instance, more than 800 experts obtained training, 12 risk surveys (on noise, lead, cotton dust, thermal environment, etc.) were conducted, the mobility of the organizations was improved, and their technical facilities were improved, and e.g. in Kenya the legislation has been extended to cover also agriculture. Information services were strengthened and a new continental journal was established to act as a continuous forum for exchange of information. The skills of the local experts have significantly improved in reporting survey and other results in occupational health and safety.

The results of the risk surveys were reported to the responsible national authorities, and they were expected to have an impact on their decision-making, especially when they made decisions on the prioritization of practical inspection activities. In connection with the risk surveys, on-the-job training was systematically conducted with the aim to get the local experts acquainted with various survey practices and to improve their reporting skills. Also, a nucleus for a comprehensive information database was established around the project plans and result data of the risk surveys.

Despite the general success encountered in conducting risk surveys in both countries it is evident that some problems were also met in the course of their implementation. These were to a large extent the same as are faced in the industrialized countries. Time schedules and deadlines for various tasks were problematic, because the local experts had so many other

**Table 1.** Summary of the outputs in the East African Regional Programme on Occupational Safety (EARPOHS)

<p><b>Training:</b></p> <ul style="list-style-type: none"> <li>* training of staff for the mobile clinics</li> <li>* 200 experts trained in courses</li> <li>* 160 experts attended symposia</li> <li>* 400 persons in courses or symposia within EARPOHS</li> <li>* 128.5 fellowship months for 21 persons within EARPOHS</li> </ul> <p><b>Material aid:</b></p> <ul style="list-style-type: none"> <li>* a mobile clinic donated to OH&amp;S authorities in Kenya, Tanzania and Zimbabwe</li> <li>* an ambulance and a fully equipped dentistry work station and equipment to Tanzanian Group Occupational Health Services</li> <li>* 7 cars, 2 motorbikes</li> <li>* overhead projectors</li> <li>* computers, programmes</li> <li>* CD-ROM diskettes and readers</li> <li>* analytical instruments</li> <li>* laboratory equipment</li> <li>* spare parts</li> <li>* cameras, video cameras</li> </ul>	<p><b>Expert advisory support:</b></p> <ul style="list-style-type: none"> <li>* 12 risk surveys completed</li> <li>* 2 carried out, not reported</li> <li>* 11 consultation missions on 7 topics, 157 consultant weeks within EARPOHS</li> <li>* in addition numerous short-term consultations in connection with training courses</li> </ul> <p><b>Information:</b></p> <ul style="list-style-type: none"> <li>* 12 issues of East African Newsletter on Occupational Health and Safety, incl. 122 articles in 368 pages (1987-90)</li> <li>* 6 supplements incl. 180 articles in 654 pages</li> <li>* 19 issues of African Newsletter on Occupational Health and Safety, incl. 189 articles in 536 pages (1991-)</li> <li>* 6 supplements, incl. 112 articles with a total of 603 pages</li> <li>* articles of the African Newsletter at Internet</li> <li>* handouts, guide leaflets</li> </ul>
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tasks to carry out in their day-to-day activities.

There were also some deviations from the study protocols, and practical problems caused by transportation to the work sites. In spite of these obstacles, it can be assessed that risk surveys improved both the theoretical knowledge and practical skills of the local experts.

### *Lessons learnt*

During the many years of collaboration, some lessons have also been learnt. Regional activities have proven cost-effective and sustainable as they effectively allow learning from the neighbours. National elements are, however, also needed. The training courses were organized only in the target countries in order to provide local examples and solutions to the problems. Advanced training courses were provided on the regional basis to facilitate the interaction among participants from several countries and to make cost-effective use of lecturers. The higher level education was organized with trilateral

agreements among universities and research institutions.

A higher number of short-term consultations were preferred to a few long-term expert advisory services. Carrying out risk surveys was very relevant but also most demanding. They were used as a tool for training of local experts. The information support in the form of a regular newsletter ensured the continuity in publishing, and provided a forum for the local experts to share information. It also created a nucleus for forthcoming networking. The activities need to be evaluated because that is the only way for further development.

### *Summary*

Mutual collaboration in occupational health and safety means long-term commitment to research and development work aiming at improvements in workers' health. One of the most valuable features of development collaboration has, during the 30-year period, been the shift in the collaboration from development aid to equal interaction between

the collaborating experts. This has been equally rewarding to all partners.

### ***References***

1. Rantanen J. East African Regional Programme on Occupational Health and Safety: A case report on bilateral development collaboration. East African Newsletter on Occupational Health and Safety, Suppl. 1/1991:110-6.
2. East African Regional Programme on Occupational Health and Safety, EARPOHS. Final report, 31 August 1991. 60 p.
3. Rantanen J, Lehtinen S. Finland's role in promoting collaboration in occupational health and safety. Environmental Management and Health 1997;8(5):202-4.

*Jorma Rantanen*      *Jorma.Rantanen@occuphealth.fi*  
*Suvi Lehtinen*      *Suvi.Lehtinen@occuphealth.fi*

*Finnish Institute of Occupational Health*  
*Topeliuksenkatu 41 a A*  
*FIN-00250 Helsinki*  
*Finland*  
*Telephone: +358-9-47471*  
*Telefax: +358-9-47472548*

## The future of epidemiology in developing countries

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Catharina Wesseling, Leslie London, Vera Ngowi,  
Lizbeth Lópes, Rolando Herrero, Cherian Varghese

The fervent discussion of our colleagues from industrialized countries at last year's *'First Panum Seminar: the Future of Epidemiology'* in Copenhagen indicated that the gap between rich and poor may be growing even in epidemiology, the traditionally basic science of public health. The conception of today's epidemiology as a medical science, concerned with individual and micro level research on disease causation and divorced from public health, contrasted with the broader conception of multilevel research and adherence to the target of improving the health of all people worldwide.

But how do we, third world epidemiologists, feel about epidemiological research in our countries and in which direction do we want to go? And beyond that, what are our realistic possibilities? We represent the majority of the world population, the poorest and less favored part in terms of health and wellbeing. We believe that, as a public health discipline, epidemiology in developing countries should respond to public health priorities. Epidemiology should contribute to human development, by providing a scientific basis for sound public health interventions. Epidemiologic tools are severely underused in developing countries and increasing the epidemiologic capacity in developing countries should receive strong attention in the future.

The contribution of epidemiology to improve the health and the quality of life of the people in developing countries relates to many different exposures and health outcomes. Developing countries vary greatly in socioeconomic aspects, culture, climate and geography. The path to development is not the same in different parts of the developing world, and hence, specific needs and opportunities for epidemiology are different. The list of important re-

search topics in developing countries emerging from our discussions seems endless, including infectious diseases, nutrition, health services, occupational accidents and diseases, road safety, substance abuse, pesticides, cancer, and neurobehavioral research. In particular, intervention research and the development of qualitative methods to complement quantitative epidemiology were mentioned to address developing country priorities. However, the assumption that epidemiologic research has an uncomplicated relationship with policy and implementation is false. The research-policy-implementation gap is particularly evident in developing countries, where already weak public health traditions are extra-burdened by structural adjustment and globalization policies. We must conduct policy and intervention epidemiologic research to guide and correct our course in the ocean of public health problems. Action-oriented research or 'implementation epidemiology' is a future field for epidemiologists.

Setting research priorities in the midst of the epidemiological transition that most developing countries are undergoing is not a straightforward task. We must ask, for example, whether we are focusing right when placing more weight on infectious diseases than on the increasing burden of disease from subtle chronic illness from deteriorating environmental, socioeconomic and working life conditions. Why shouldn't developing country populations also enjoy quality of life besides improved morbidity and mortality? We will have to raise active debate to find the proper balance between pressing and urgent needs and more hidden, but perhaps equally devastating long-term health events.

The situation in terms of infrastructure, human and other necessary resources in a specific

country will demarcate the realistic research possibilities. The topics that epidemiologists in the South do investigate are *de facto* determined by financial considerations. Although we need to gather knowledge of health problems that are of exclusive interest for specific developing regions, local funds are often not existent or available. International agencies, such as WHO, usually support epidemiological initiatives within their own priorities, but should consider local interests in the future. Many research opportunities derive from shared interests with the North. One type of shared North-South epidemiologic interests may be the study of etiologic associations between exposures and certain outcomes, when these exposures occur also in the North but are much higher in developing countries, for example associations of environmental chemical exposures with cancer incidence or neurobehavioral effects. The South also benefits from the generation of such knowledge and such opportunities should not be missed. However, a possible consequence is that developing country researchers get involved in 'developed' country types of fields and may drift to the north where their competence is better appreciated. Another consequence is the type of studies conducted. In many developing countries, today there is capacity to conduct from descriptive surveys up to molecular epidemiologic studies. Where a country's situation might demand good (basic) descriptive surveillance studies, funding may only be obtainable for studies which have analytical questions of considerable complexity. Descriptive studies are seen as entry level epidemiology, so there may be conflicts between professional/academic recognition and national/public health priority.

Overall, partnership with the North is highly desirable. Common interests and priorities for the South and the North will expand in the future. Health problems are becoming increasingly global in nature. Infectious diseases, depletion of environmental resources, and economic and human development policies have huge global health implications. Links between environment and health and develop-

ment are poorly understood and knowledge is poorly applied. Shared research on topics so far considered third world problems will increase. On the other hand, the issue of research ethics and developing country populations is a yawning interest. The human genome projects and the intellectual property rights claimed by the pharmaceutical and related industries require close attention from developing country scientists to avoid research exploitation and to assure that populations in poor countries will have access to the health benefits expected to derive from the emerging knowledge.

Developing country epidemiologists must communicate and collaborate more closely in the future. We must establish networks. We have to facilitate interchange of questionnaires and data sets for the conduction of multi-center studies based on *our* shared priorities, and on that account increase the cost-effectiveness of our studies by reducing the time of gathering information, increasing the gradient of the exposure of interest and setting mechanisms to validate the internal and external quality of our data. We need to form a strong pool of qualified professionals that can guide ethical and scientific discussions, set the agenda, lend mutual support, and raise the epidemiological capacity including high level training in the third world, and that will be highly-regarded active members of the international epidemiological community. But above all previous considerations, we should be aware that epidemiology is a powerless tool without integration with other public health and related disciplines. Epidemiology needs a socioeconomic and political context to be translated into effective action. That means that epidemiological researchers should not be isolated scientists who passively provide the scientific basis for other professionals' decisions. They should actively be involved in multidisciplinary approaches to the most pressing health problems in the world.

*For the addresses to the authors, see next side.*

*Catharina Wesseling*  
*Central American Institute for Studies on Toxic*  
*Substances (IRET)*  
*Universidad Nacional,*  
*Apdo 86 - 3000 Heredia*  
*Costa Rica*  
*Phone: +506 277 3584*  
*Fax: +506 277 3583*  
*Email: cwesseli@una.ac.cr or*  
*ineke.wesseling@yahoo.com*

*Leslie London*  
*Associate Professor*  
*Occupational and Environmental Health Research Unit*  
*Department of Public Health and Primary Health Care*  
*University of Cape Town*  
*Private Bag Rondebosch*  
*7700 South Africa*  
*Phone: + 21-40 66 524*  
*Fax: + 21-40 66 163*  
*Email: ll@anat.uct.ac.za*

*Vera Ngowi*  
*Messukylänkatu 37 H 70*  
*FIN-33700 Tampere*  
*Finland*  
*Phone: +358 3 215 66 21*  
*Fax: +358 3 215 60 57*  
*Email: verangowi@yahoo.com or*  
*verangowi@hotmail.com*

*Lizbeth López*  
*Instituto Nacional de Salud Pública*  
*Av. Universidad 655*  
*Col. sta. Ma Ahuacatlán*  
*Cuernavaca Morelos*  
*62508 Mexico*  
*Phone/Fax +01-(7)-311 23 38*  
*Email: lizbeth@insp3.insp.mx*

*Rolando Herrero*  
*Proyecto Epidemiológico Guanacaste*  
*Sabana Norte, Del Chicote 100 Norte*  
*50 Oeste, 200 Norte y 75 Oeste*  
*Casa Blanca No 88*  
*San Jose*  
*Costa Rica*  
*Phone: (506) 296 10 36, (506) 296 14 67*  
*Cell: (506) 397 67 91*  
*Email: rherrero@amnet.co.cr*

*Chariean Varghese*  
*Regional Cancer Centre*  
*Trivandrum, Kerala 695011*  
*India*  
*Phone: 91-471 52 22 24*  
*Fax: 91-471 55 07 82*  
*Email: charianvarghese@vsnl.com*

## Human-computer interaction - still an interface issue

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Moreshnee Govender

The introduction of computers in the workplace has fundamentally changed the way men and women do work. Its impact has also been felt in the home environment. Virtually every aspect of daily life especially in the industrial world is affected in some way by this technology. Children as young as four or five years old have their exposure even before attending formal education facilities. This has made it more critical to get to grips with the problems associated with computer usage so as to make this interaction safer for future generations.

### *So, what are the problems?*

Research: although volumes have been written about this interaction, the epidemic of injuries continue. A fragmented approach to the research has resulted in conflicting messages in recommendations, which is evident by the confusion visible in the 'gadgets' available. Of those few studies that have taken a holistic approach to this problem, the resulting recommendations are not able to influence new designs in any major way. This is a product of the 'gap' in the communication between designers in the field and researchers/academics. In addition the focus on 'object-centred' rather than 'human centred' approach to the design process has only added to this problem of poor fitting design solutions. To date some of the hardware solutions include:

- Computer chair: saddle chair, kneeling chair, floating chair, attached armrests etc.
- Desks: height adjustability, fixed desks separating computer monitor and keyboard area ( maybe on tray)
- Computer displays: various sizes and shapes (e.g. CRT, CD) and colour of hardware
- Controls: variety of keyboard shapes and layout. Also electronic pointing devices (mouse, touchpad, roller-ball etc)
- Others: wrist braces, wrist rests, foot rests/ supports.

In viewing the above hardware solutions it is evident that the only common factor throughout is the human user who has to integrate all these technologies which have been created to suit individual parts of the human body. By attempting to integrate all these technologies, the human user pays the price long term in the related injuries.

### *Possible solution...*

In the area of safety we apply the principle of 'hierarchy of control' to guide us in finding solutions to hazards in the workplace. This same principle is fundamental to the hazards associated with computer work. Using this principle then, our first step should be to engineer the problem out. We need to identify the problems of misfit to the technology and re-engineer better fitting solutions. Customising the technology by allowing for flexibility in the design itself is crucial to this issue.

Usually only when we are unable to solve the problem through available engineering processes, do we move to the second stage of reducing exposure to the hazard through administrative controls (include, reducing work time with the hazard, job rotation, etc). If the hazard is still present personal protective equipment (PPE) is then provided with limited exposure.

Implications of human-computer intervention (HCI) will be evident in the continuing epidemic of musculo-skeletal injuries. These injuries will unfortunately present themselves at

an earlier age as the exposure begins earlier still. Also, productivity and work performance will be affected as the demands of the system exceed the capabilities of the 'injured' workforce. These cost will be evident in the rising cost of ill health (both direct and indirect) to the community and the nation as a whole.

In concluding I can truly say that all is not bleak and, as this is a man made system, there are opportunities to improve the 'design fit' by shifting focus from technological driven approach to a more human-centred one. Recognising the fact that the human is the key in integrating the system is the first step to solving this problem of injurious interaction.

*Moreshnee Govender*  
*PO Box 17094*  
*Congella 4013 - South Africa*  
*Tel: +27-31-702 75 82*  
*Fax: +27-31-260 45 27*  
*E-mail: moresh39@hotmail.com*

## Occupational safety and health in Tanzania - changes with the new century and millennium

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J.P. Safari

### *Introduction*

The law governing occupational health and safety in Tanzania is known as The Factories Ordinance cap 297 of the Laws ordered by our colonial masters (Britain) in 1950 covering health, safety and welfare of persons employed in factories and other places, and for matters incidental there to and connected there with. Due to staff recruitment and awareness of the then factory owners, the ordinance came into operation in 1952.

The Law as the principal chapter has not been changed even after independence in 1961 but several subsidiary legislation have been promulgated, namely:

- \* Wood working machinery rules, 1959
- \* Electricity Rules, 1955
- \* Cotton and Ginnery rules, 1963
- \* The factories (Prescription of standard First Aid Equipment) order, 1958
- \* Dock Rules, 1962
- \* Factories (Building Operations and works of Engineering Construction) Rules, 1985
- \* The factories (Electricity) Continuity, Polarity and Insulation Tests Fees) Order, 1985
- \* Factories (Electricity Polarity and Insulation Test) order, 1985
- \* Electricity (F.O) (Amendment) Rules, 1985
- \* Factories (Occupational Health Services) Rules, 1985

- \* Factories (Examination of Pressure Vessels Lifting Equipment (Fees) Rules, 1985.

### *Administration of occupational safety and health*

As OSH is multidisciplinary and inter - sectoral, it is therefore approached through a number of legislation under different stakeholders ministries, departments and organizations). Some of these legislations include:

- \* The Food Acts
- \* The Pharmaceutical and Poisons Act, 1978
- \* Pesticides Control Act, 1979
- \* The National Environmental Management Act
- \* The Radiation Act
- \* The Mining Act
- \* The Factories Ordinance cap 297 of 1950
- \* The workmen's compensation Ordinance cap 263,1963
- \* Accidents and Occupational Diseases (Notification) ordinance, 1953.

OSH activities are handled by different ministries, departments, institutions, employers and workers organizations, NGO, etc. However, there is no established and reliable information network through which all these parties can exchange information thus jeopardizing efforts in promoting OHS.

### ***Problems and barriers***

The factories ordinance cap 297 has been manned by the Factories Inspectorate Unit (FIU) under the Ministry of labour and Youth Development, Labour Division. As a unit under the Labour Division the F.I.U has been facing a lot of up and downs viz:

- \* Bureaucracy
- \* Inadequate man-power
- \* Outdated and weak legislation
- \* Lack of national policy and comprehensive legislation
- \* Limited resources for dissemination
- \* Low awareness among work place owners
- \* Most people (workers) not aware of OSH matters
- \* Lack of funds to train and recruit specialized staff
- \* Lack of funds to purchase tools and equipment
- \* Lack of funds for conducting TV and radio programmes on OSH.

We have been fighting for so many years to become a division so as to render better services but in vain.

### ***The Factories Inspectorate***

The FI as the enforcing authority had four inspectors up to 1968. In early and mid seventies the FI was strengthened to about twenty four inspectors and early eighties the FI was strengthened to about forty five inspectors with various sub units namely: technical unit, occupational health unit, industrial hygiene unit, training and statistics and regional General Factory Inspectorate.

The early 1980s FI Strengthening Project, brought in some technical equipment like pressure vessels inspection equipment, lifting appliances inspection equipment, electrical testing equipment, environmental monitoring equipment, training equipment and medical equipment to mention a few. Never the less, due to the barriers mentioned above, all the technical equipment is out of order and the manpower strength has dropped to 25 due to a number of reasons: retrenchment; retirement; deaths, resignation for green pasture and the government not recruiting any more.

### ***A break through-failure or success***

The Tanzanian Government has now embarked on an ambitious programme of public sector reform by the help of The UK Department for International Development DFID through Public Service Reform Programme PSRP. The programme is to set up Executive Agencies among its departments, units within departments etc., to cut down the already overburdened government expenditure and the ailing public service to its people. The aim is to create a public service of the highest calibre and integrity that is both responsive to and supportive of national efforts to produce and be competitive, to ensure good governance, and to facilitate poverty reduction. A public service that regards its staff as its single most valuable resource, working within a performance-oriented culture, empowering them to give of their best in serving their country and rewarding them only on the basis of merit. A service that will use modern information systems to support efficient decision-making.

### ***Transformation***

Among the several departments and units within departments to be transformed to executive agencies is the Factories Inspectorate Unit to be known as Occupational Safety and Health Authority (OSHA). To become an executive agency there is a lot of preparatory work to be done. Much of the spade work be-

tween PSRP, DFID, Ministry of Labours and Youth Development (Factories Inspectorate) has been completed: this includes business analysis and the chief executive interview exercise is taking place now. According to plans, the chief executive may be appointed shortly. Furthermore, the agency may be expected to be launched in July 2001.

It will be the duty of the chief executive once found to put right some few things before the agency is launched. He will have to make sure that the legislation is strong and up to date, recruit some more staff, solicit some funds to buy some few tools and equipment, well at least to put the house conducive for business hence a better service to the people.

This is a big challenge to the agency because after a while it will have to run on its own e.g. financially etc. to make sure that the deliverance of the services offered are effective, efficient, prompt and affordable to the public (customers). Services offered are oriented towards the traditional OSH risks, such as physical, chemical and biological agents which are still rampant in our developing country. Besides that, there are the new risks to take care of Viz; ergonomics, new biological factors causing occupational diseases, new allergies associated with the introduction of new chemicals and biotechnology methods and products, musculoskeletal disorders, hours of work and psychological stress and overload.

On the other hand, there is the impact of globalization on the development of OSH and occupational health services to take care of. Globalization has brought in growing freedom in the movement of capital and investments and liberalization of the world trade have led to the competition of countries on hosting of multinational industries.

The liberalization has also been associated with the deregulation of policies in interest to offer more freedom for businesses. But also globalization has brought in a number of negative impacts as recognized by international organizations e.g. by the ILO and

UNDP. Compromising social security, occupational safety and health, standards, environmental standards, avoiding taxation as well as exercising low wage policy have been factors in such a competition at least in parts of the world.

Obviously this is a break through and we are bound to succeed in any case and not fail. With the limited core capacity OSHA has we must really work hard, tirelessly and get support both locally and from abroad in order to achieve the desired goal.

### *References*

1. Lukindo J. K. Focus on the Factories Inspectorate. Challenges and prospects in the 1990s. East African Newsletter on Occupational Health and Safety 1991; suppl. 2:11-14
2. Tanzania Government ñ Public Services Reform Programme PSRP.
3. J. Rantanen. Impact of globalization on the development of OH & S and Occupational health services. East Africa Newsletter on Occupational Health and Safety 1999; Suppl. 1:19-26.

*J.P. Safari  
Ministry of Labour and Youth Development  
Kilimanjaro Regional Labour office  
P.O. Box 186  
Moshi - Tanzania  
Tel. +255-27-275 3637  
Fax +255-27-275 3638  
E-mail: ibc@eoltz.com*

## Overview of HIV/AIDS in Botswana

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Keba Modisane

### *Population*

The population of Botswana is estimated to be 1 611 000 (1999). The population has a young age structure: 15% and 25% of the total population are aged 0–4 and 5–14 years respectively. Those aged 15–59 years constitute 50% of the total population while the remaining 10% are aged 50 years and above. It is estimated that 49% of the population live in urban towns and villages.

### *HIV/AIDS cases*

The first case of AIDS was diagnosed in the year 1985. Since then the number of cases and infected individuals have continued to be reported from every corner of the country in increasingly large numbers. The 1999 sentinel surveillance reflects that the estimated total number of HIV infections in Botswana is 266,600. The rate of infection among the general population is 17%. The rate of infection among the sexually active population (15–49 years) is 28%.

### *Monitoring of the HIV/AIDS epidemic*

The Ministry of Health through the HIV/AIDS Unit has been monitoring the trends of the epidemic using sentinel surveillance, routine reports of confirmed AIDS cases and monitoring of trends in youth sexual behavior.

The first monitoring tool, sentinel surveillance, has been carried out annually since 1992 among pregnant women attending antenatal clinics, and among males attending clinics for Sexually Transmitted Diseases (STD). Pregnant women seeking antenatal care are assumed to represent the so-called “general population” and in particular the sexually

active (15–49) age group, males with STD’s are assumed to represent the groups at high risk of HIV infection, given the close association between STD’s and HIV infection. The objectives of the sentinel surveillance are:

1. To provide information on the geographic spread of HIV infection
2. To monitor trends of HIV epidemic over-time
3. To provide information for estimate and future projection of HIV/AIDS in the country.
4. To provide data for mobilizing support and for appropriate planning for preventive and control measures.

The second monitoring tool is the routine reporting of confirmed AIDS cases and those with AIDS related signs and symptoms, which are reported by health institutions on a regular basis to the AIDS/STD Unit. According to the AIDS/STD unit, although less accurate due to problems of underreporting, late reporting and possible under-diagnosis, this system is supplementary to the sentinel surveillance. A cumulative total of 13,193 individuals with HIV related signs and symptoms and 4,962 individuals with full-blown AIDS were reported by December 1996 to the AIDS/STD Unit. The most affected age groups are between 0–4 and 20–49 years. From age 15–39 the majority of AIDS cases are females.

The third monitoring tool is the monitoring of trends in youth sexual behavior. Youth between the age of 18–25 years of age in the areas where sentinel surveys have been conducted are interviewed to assess their knowledge on preventive practices and in addition their attitudes and sexual practices. These studies have been done annually since 1992 by Social Impact Assessment and Policy Analysis Corporation (SAIPAC-Africa) on behalf of the

AIDS/STD Unit.

### ***The Government's response to the epidemic***

The government of Botswana responded first by setting up a minimum program in 1986 focusing on blood screening and supply and use of disposable needles and syringes throughout National Health Services. With the support of WHO the National AIDS Control Program was set up in 1987. This program created a Short-Term Plan (STP) covering 1987–1989. The STP focused on increasing national public awareness on HIV and on training health workers on clinical management of AIDS cases. The STP was soon followed by the first five-year Medium Term plan covering 1989–1993 whose strategies were:

1. Strengthening epidemiological surveillance activities
2. Prevention of sexual transmission of HIV
3. Prevention of transmission through blood and blood products
4. Prevention of prenatal transmission
5. Strengthening of diagnostic management and infection control
6. Setting up systems of monitoring and evaluation

### ***AIDS/STD unit***

The AIDS/STD unit was set up in 1992 to coordinate the control program. This resulted in a merger between National AIDS Control Program and STD programs. The function of the unit is:

1. To provide data necessary for the development of strategies and interventions for the control of HIV/AIDS through research and surveillance.
2. To initiate and sustain psychological support for individuals and communities through effective counseling services for HIV/AIDS prevention and care.

3. To influence and maintain positive attitudes and behavior by raising awareness on HIV/AIDS through coordinated IEC.
4. To prevent acquisition of STDs and development of their consequences, and interrupt the transmission by providing guidelines and support in order to ensure sufficient and effective management of STDs.
5. To coordinate and support Community home based care services aimed at ensuring quality care for the terminally ill patients and their families.
6. To mobilize all sectors towards HIV/AIDS prevention and care activities, and support and coordinate a multi-sectoral response.

### ***National AIDS policy***

The government also took additional measures to respond to the epidemic by preparing and adopting a National AIDS Policy in 1993 through a presidential directive. The policy provides a guide and a framework for multi-sectoral response to the AIDS epidemic. The overall strategies of the national policy are:

1. The prevention of HIV/STD transmission
2. The reduction of personal and psychosocial impact of HIV/AIDS & STD.
3. The mobilization of all sectors, and of communities and for HIV/AIDS prevention and care.
4. Provision of care for people living with HIV/AIDS.
5. The reduction of the socio-economic consequences of HIV/AIDS & STD

### ***Multi-sectoral response to the AIDS epidemic***

A multi-sectoral response to the epidemic led to the development of Multi-sectoral Medium Term Plan covering 1997–2001. This plan involves all sectors of the society: ministries, parastatal organizations, the private sector, relevant non-governmental organizations and

community based organizations. Its goals are to:

1. To reduce transmission in Botswana
2. To reduce the impact of AIDS at all levels of the society in Botswana.

### ***Mother to infant transmission of HIV***

Infants can acquire HIV from their mothers during

1. Pregnancy; the virus can cross the placenta into the blood stream of the foetus from 20 weeks of gestation. (St.Louis 1993).
2. During delivery; at least 50% of new-born infections occur during delivery by ingestion of blood or other infected maternal fluids (Scott, 1985) and (Boyer, 1994)
3. During breast-feeding. (Kuhn, 1994)

Magnitude of the problem: Most pediatric HIV is due to mother to infant transmission (MIT). Sentinel study data in asymptomatic pregnant women in 1995 indicated that 31% in Gaborone and 43% in Francistown were infected and that the trend in prevalence rates was still growing.

The first case of pediatric AIDS was noted in 1985. Since then there has been a massive spread of the infection. The mode of infection in almost all cases is MIT. A three-fold increase in pediatric mortality was noted between 1991–1997, which is largely due to HIV/AIDS.

Government's intervention: The government has introduced Zidovudine (AZT) therapy to HIV infected pregnant women who opt for voluntary testing. The program is run in Gaborone and Francistown and other urban settlements. The therapy is given to the mother during pregnancy and to the infant after delivery.

### ***Breast feeding and HIV/AIDS***

Botswana like many African countries has enjoyed the benefits of breast feeding which includes a positive contribution to the infant's health, but with the growing of HIV epidemic in women of reproductive age, infants may not be able to enjoy these benefits without endangering their lives. Several studies indicate that HIV can be transmitted through breast milk and transmission is increased if a mother becomes HIV positive during lactation (Hu, 1992).

The risk of HIV infection to infants through breast-feeding has become an important public health issue that needs immediate attention. A HIV positive mother who wants to hide her status from her family members, grandmothers and relatives faces pressure of giving valid reasons why she cannot breast feed the baby. Some young people when confronted by their family members resort to lies such as "my doctor advised me not to breastfeed because my milk is contaminated or my milk is too thin." Though mothers have a right to decide whether to breast feed or not, particularly when they alone know their HIV status, Botswana women find it difficult to exercise their rights to choose not to breast feed in a culture where breast feeding is the norm and appropriate support is lacking. (P. Kebaabatswe 1997).

The government provides formula feeds as alternative to breast-feeding to the mothers who enroll in the AZT therapy.

### ***HIV/AIDS and the youth***

Botswana National Policy defines the youth as people between 12 to 29 years. Young people between 12–19 years make up 18% of the population. The 1995 HIV/AIDS sentinel surveillance indicated that the youth aged 15 to 19 years showed the highest infection rate accounting to 56% of reported cases of HIV.

Youth Programs: HIV/AIDS is addressed as part of family life education in both primary and secondary schools. In primary it is taught

to the standard five and six pupils. In secondary schools it is the responsibility of career guidance and counselling teachers to cover the topics on HIV/AIDS. It is also taught in different subject areas like home economics, science, social studies and guidance and counselling. Out of classroom like peer counselling by teens (PACT) also play a major role in addressing HIV/AIDS among the youth.

Non-governmental organizations play a key role in the prevention of HIV among the youth by training, empowering them with social skills of making informed and responsible decisions. These NGOs include Young Women Christian Association (YWCA) and the Botswana Family Welfare Association (BOFWA). Despite these interventions, addressing the youth issue is complex:

1. Out of school youth who failed Junior Certificate and were not absorbed by any institution resort to destructive behavior such as drinking alcohol and experimenting with drugs. Others team up to form youth hooligan groups that terrorize people at night. They resort to sexual behaviors that result in teenage pregnancy and threat of HIV infection.
2. Failure to use contraceptives and wrong use of condoms.
3. Financial problems: young girls engage in sexual relationships with the hope of getting something in return. They use the money for buying clothes, transport and to buy lunch at school and some even to buy food at home.
4. Most parents still find it uncomfortable to discuss sexual issues with their children. Some mothers even resort to using parables normally when the girl begins her menstruation to warn her about the possibility of pregnancy. The young girl may not understand the message very well and may also become curious as the information she gets from the parents might conflict with the ones she gets from school. Some parents

still cling to the belief that adolescents do not know anything about sex or if they do they are not sexually active so they ignore them.

### *Men's role in promoting HIV/AIDS awareness*

Men have played an insignificant role in promoting HIV/AIDS awareness in Botswana. The Society of Men Against AIDS in Botswana (MSAABO) is one of the few male empowering projects that have been set up in this country. Other than that, the attention has been mainly on women and children.

Conceptions of male sexuality: Most Botswana are socialized to accept that a man's word is final. The traditional Botswana belief system socializes men to assume power even in marriage. Laws assume that men have power and the authority to decide on any marital question and often places women as minors in marriage. As a result men act as conquerors in relationships and are notorious for having multiple partners. It is not uncommon for men to practice unsafe sex simply to prove their manhood and because they feel it is what is expected of them. There is a traditional Botswana saying that; "Monna ke selepe o a amoganwa" meaning that a man is an axe to be lent to others. It is very common for men to have more than one sexual partner. It is also very common for men to be conservative and not talk emotionally about sex, as it is an "unmanly" thing to do. The men often control decision-making on the use of contraceptives. They do not discuss sexual problems such as premature ejaculation, lack of sexual performance, etc.

In a report from a survey conducted on "Men. Sex & AIDS" it was established that:

1. Some men believe traditional herbs can cure STDs including AIDS.
2. Quite a few men used alcohol as an excuse for having casual sex and for not protecting themselves.

3. 80% of the men gave an impression of having positive attitudes towards condom use and only 9% gave a negative impression. These were mainly among the elderly men. In 66% of the conversations the men say that they use condoms regularly while 24% say that they use them irregularly and 5% have never used them. The 5% were again the elderly men. The use of condoms regularly is with the casual partners than steady ones. The main obstacle to condom use according to the study seems to be irresponsible behaviour under the influence of alcohol, lack of condoms when needed. Not having planned for the sexual intercourse, embarrassment (they smell, they burst) and reduced sensation (they do not satisfy myself or my partner). Some blamed their partners for not wanting to use a condom.

Level of AIDS awareness among men in Botswana: In a survey conducted on men, sex and AIDS it has been established that almost all men in Botswana had at one stage of their lives heard about AIDS. They know that it is “a disease that one gets if he sleeps around with many women”. They also know that the disease has no cure but surprisingly many of them still believe that traditional African medicine ‘ditlhare tsa Setswana’ can heal AIDS. One man interviewed said, “I only use a condom when the girl insists. I never get sick, after every round I drink a cup of his (Traditional doctor) medicine to kill any virus and I am still fit”.

Traditional doctors’ perspective of HIV/AIDS: Traditional Doctors believe that:

1. They can cure AIDS. They say the hindrance is that the government and the health fraternity do not recognize them. They say another major problem is that sick people seek their help when they are at a critical stage. If the infected can come for treatment when they are not at an advanced stage traditional doctors believe that they can cure them.
2. Almost all the traditional doctors believe AIDS is “Boswagadi” ; this is a disease that occurs when a widow/widower does not take any traditional cleansing medication after the death of the partner but continues on to have another relationship(s).
3. They believe they should be given an opportunity to prove that they can/cannot cure AIDS alongside their counterparts (medical doctors).
4. The treatment given to their patients they say is confidential and they cannot disclose it to the third party.

Other healers: One healer, who has been a traditional doctor for 18 years (a gift from his ancestors), in September 2000 announced that he has developed a paradigm called Bonamodi (Redemption). Bonamodi is an abstract ‘institution’ with multiple capacities. It is propelled and dependent upon “transformative prayers”. The formula is a combination of prayer and food.

### *Home based care*

The percentages of bed occupancy for HIV illness in medical and pediatric wards in the two referral hospitals (Princess Marina and Nyangabgwe) are 70% and 50% respectively. In primary and district hospitals the occupancy of HIV related illness is about 30% of the total beds. The upward trend of the HIV prevalence has forced Botswana to move to Community Home Based Care (CHBC). CHBC support is seen as a key strategy to sharing tasks between hospitals, districts health services, families and the community. Providing support to the families to care for people in the home during chronic and terminally stages of AIDS creates an alternative to prolonged hospitalization. Objectives of CHBC are;

1. Avoid the “dumping syndrome”
2. Avoid unnecessary hospital admission

3. Provide clinical care in the home including giving medications
  4. Provide an ongoing counseling service to both patient and their families
  5. To refer terminally ill patients to social welfare and other appropriate agencies for material support
  6. Establish functional referral system between hospitals, district health teams, and clinics and between districts.
4. Poverty and relative lack of power in social and sexual relations among women contributes to the high transmission rate among women. Generally women are either unemployed or hold low positions, most families have a single parent and are female headed.
  5. Despite the increase in condom use estimated at over one million per month in government outlets and the fact that most people are informed and educated on condom use, HIV infections are ever increasing in the country. Condoms are not used every time partners have sex and if used they are not properly used.

#### Problems:

1. The majority of the caretakers have not been trained.
2. Inputs like nutrition and other accessories are sometimes not adequately provided to the patient. The majority of the households do not receive financial support from the government churches, village organizations and NGOs.
3. It is noteworthy that the secrecy, which engulfs the diagnosis of the disease, makes it difficult for NGOs who would like to lend support to the affected household to effectively and promptly do so.
4. Compared to the hospitals, the care given as currently practiced is of low quality.
6. Most adolescents have multiple partners, as do the adults in Botswana. Boys and girls have partners of the same and diverse age group. Some of them have partners who are much older than they are. The sugar-daddy and sugar-mummy syndromes have created serious problems in AIDS and unwanted pregnancies prevention program in Botswana.
7. Cross border population movements for facilitating ease flow of goods, skilled labor, and capital is also responsible for the rapid spread of the HIV/AIDS cases.

#### ***Factors contributing to the rapid spread of HIV in Botswana***

1. Good infrastructure has led to the extreme mobility of the population and this has increased chances of spread of sexually transmitted diseases including HIV.
2. Sexual behavior patterns that include having multiple partners, and frequent change of partners are accepted as the norm and common in both rural and urban communities.
3. Rapid urbanization (approximately 45% of the population now lives in urban areas) has led to the breakdown of traditional mechanisms for controlling social and sexual behavior.
8. The mobility of the workforce between worksites, places of residence, the village and the cattle post (for weekends and holidays) also have serious implications for the contracting and spreading of HIV/AIDS.
9. Gender roles have a significant influence on the course and impact of HIV/AIDS. It is generally accepted that men can work far away from home and for long periods of time. Many mobile occupations such as truck driving, road construction, working in the South African mines are predominantly taken by men. Such occupations however contribute to circumstances that elevate the risk of these men contracting and spreading HIV/AIDS.

10. The rate of alcohol consumption, which is quite high in Botswana, also contributes to behaviour that places both men/women, girls/boys at high risk of contracting and spreading HIV/AIDS.

### ***HIV/AIDS at the workplace***

Botswana's workplaces are increasingly being confronted by AIDS epidemic and are facing all manners of unexpected difficulties. The hardest hit is the economically productive segment of the workforce aged between 20-49 years. The workplace is a convenient, effective and regular location to reach many men and women of strategic importance to the business and society. Rural Industries Innovation Center has developed a workplace-based program that includes education on HIV/AIDS to the entire workforce and the implementation of an HIV/AIDS policy.

*Keba Modisane  
Rural Industries Innovation Centre  
Private Bag 11  
Kanye - Botswana  
Tel. +267-503 023  
Fax +267-340 642  
E-mail: kmodisane@hotmail.com*

### ***References***

Baseline study (1996) for the community Based Care Program for Terminally III HIV/AIDS Patients in Botswana (NACP31). Assistance Atta J. K., Fidzani N.H., AIDS/STD Unit of the Ministry of Health.

Botswana National Policy on HIV/AIDS. Assistance: Ministry of Health, AIDS/STD Unit.

Community Home based Care for people living with AIDS in Botswana Operational Guidelines. NACP 30. Assistance K. Molosiwa, AIDS/STD Unit of the Ministry of Health.

Conference Report: National Conference on HIV/AIDS in Botswana.

Doehlie E and Maswabi M.M. (1996) Men, Sex and AIDS. Assistance: Ministry of Health and the Norwegian Board of Health.

Hope K.R and Gaborone S. (1999) HIV/AIDS and the mobile population groups in Botswana. Commissioned by Community Health Services Division, Ministry of Health.

HIV/AIDS in the Workplace. The Manager's Guide. (1993). Occupational Health Unit, Ministry of Health.

Modungwa K. T., Selelo M.S. & Doehlie E. Assisted by Kweneng District Council, AIDS/STD Unit; Ministry of Health & Norwegian Board of Health. "Teenage pregnancy & the risk of HIV infection in Molepolole, Botswana." (1999).

Munodawafa D & Ncube E. HIV/AIDS Home Based Careguide. Africa Turning Point Gaborone, Botswana.

The Midweek Sun (September 2 2000)  
"Nthobatsang: Sophist or Saviour".

# OSH Training for Labour Inspectors

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Hassan Salah - Eddin Boukacem

## *Objectives*

In Algeria, a decree issued in January 1991 established new regulations giving priority to workers in the most hazardous occupations and sectors such as construction and mining. As labour inspectors are in charge of enforcing the law, it was decided to start OSH training in order to initiate inspectors and improve their knowledge in OSH.

## *Method*

A training programme was launched in 1998. Scheduled for five days each session it aimed a sample of 100 labour inspectors based on different themes as follows:

- Prevention from height falls
- Investigation methods
- Measuring equipment (dust, light and noise)
- Fire-prevention (use and control of extinguishers)
- Practical visits of a construction site and a carpentry workshop

## *Results*

The major outputs of these training programmes are that labour inspectors are now aware of the reality and the benefit of OSH. Usually in Algeria labour inspectors are employed by the Ministry of Labour. They have a university degree but no knowledge about OSH. This kind of training gave them the possibility to enforce the law into a new strategy of promoting workers health.

Besides, at the end of each session, a survey was made in order to have labour inspectors' opinion about the training. One year later, each

inspector received a new questionnaire aiming at having his opinion about how he used the OSH knowledge in front of work reality.

## *Conclusion*

The results indicate that this kind of safety programmes is efficient to improve workers' safety as labour inspectors acquired through the training a more rapid response to safety and health issues. It is also a form of strengthening the labour inspection system. Some inspectors revealed that their enforcement capacity improved due to the fact that they are now able to penalise on scientific basis.

*Hassan Salah-Eddin Boukacem  
OPREBATP  
10, Rue Mohamed Belouizoad  
Algers - Algeria*

## **The quest to improve occupational safety and health through effective policies and legislation in Ghana**

OSH & Development, June 2001

Samuel Brewu

Ghana's pursuit of OSH reforms comes at a time of increasing public concern about safety and health at work, especially in the wake of globalisation and its accompanying labour deregulation, which have in turn brought about weakened labour standards. It is also in response to general concerns about public health as well as the increasing strain on the environment resulting from the increasing pace industrialisation.

Ghana does not have any policy on OSH. A few laws which aim at improving health and safety at work exist. However, these are fragmented and do not cater for employment sectors such as Agriculture, Forestry, Health Services and a very large and growing informal sector.

More than ever before the need for an all-embracing policy that covers all sectors of the economy is realised. Such a policy is expected to recognise the interplay between OSH and the wider environment and make appropriate interventions.

### ***The context***

Ghana has a population of about 18.5 million people (2000) with a growth rate of 3%. Ghana is classified as a low income country by the world bank with per capita income standing at \$450 (1994). Illiteracy rate is estimated at 34% for females and 21% for males (1997). About 66% of the population live in rural communities and are mainly engaged in subsistence agriculture. Agriculture accounts for 51% of Ghana's GDP and engages over 60% of the workforce. Ghana has a dependency ratio of 9.5 with each formal sector worker supporting about 10 dependants. Only 20% of workers are employed in the

formal sector. Informal sector work is dominated by females. There is a large scale of youth unemployment.

Agriculture and the informal sector which account for the largest segment of employment are not covered by existing OSH laws and regulation. Even for the small percentage of the working population that is covered control and regulation is weak. This is principally because:

- \* Regulatory Bodies are woefully under-resourced.
- \* Employers have very little obligation under existing legislation. Legislation in many cases, is weak, outmoded, fragmented and limited in scope.
- \* There is little collaboration between Public Authorities, Employers and workers' representative.
- \* Given the high levels of unemployment workers tend to accept hazards as part of the job.

### ***The need for reform***

Three main Ministries are responsible for the regulation and promotion of OSH in Ghana. These are the Ministries of Employment and Social Welfare, Mines & Energy and Health. Other Ministries and agencies have responsibilities for some aspects of OSH. The statutes for which each Ministry is responsible have evolved independently. These have resulted in the fragmentation of enforcement efforts, overlapping areas of responsibility, differences in

approach, inconsistencies in the law and the absence of an overall strategy and coordination. Furthermore legislative provisions for worker protection have not kept pace with developments in industry, the informal sector and international standards. Current accident report formats in the various health institutions do not provide for reporting and recording occupational illnesses and diseases. Hence records of incidence and prevalence of occupationally related diseases are unavailable.

The specific objectives of the reforms are:

- \* To create an OSH policy and legislative framework which covers workers in all sectors of the National economy.
- \* To address occupational illnesses and diseases.
- \* To eliminate as far as possible overlapping and narrowly defined functions which result in wasteful consumption of money and manpower.
- \* To progressively introduce uniform standards throughout Ghana.
- \* To involve workers in decisions affecting their health and safety.
- \* To bring Ghana's OSH standards in line with ILO Convention 155 and that of major trading partners.
- \* To introduce measurable exposure standards.
- \* To regulate private OSH Services through accreditation.

### ***OSH legislation***

In line with current global trends Ghana's OSH reforms aim at consolidating OSH legislation, harmonising standards across sectors, adopting an explicit national policy as well as creating institutions to undertake research, provide technical support and oversee the implementation of

policy. The main thrust of the legislation and policy on OSH is to ensure that employers manage health and safety in a proactive manner and break with past practice which has largely been reactive. The proposed legislation would ensure:

- \* An obligation to manage OSH proactively.
- \* An obligation to inform, share and publish information.
- \* The rights and responsibilities of workers.
- \* A participatory approach to OSH.

Existing OSH laws are to be harmonised into one national law to facilitate an integrated approach to OSH. A National Commission on Occupational Safety and Health (NACOSH) is to be established under the law. The law will also establish mechanisms for the formulation of detailed regulations, codes of practice and guidelines.

### ***OSH policy***

The proposed National Policy on Occupational Health and Safety is expected to guide the reform initiatives and provide mandates for OSH activities and services. It addresses the main shortcomings in present arrangements and takes into account the content of ILO Conventions 155 and 161.

The policy also targets the promotion of preventive measures by, among other things;

- \* Developing appropriate sector specific prevention strategies.
- \* Supporting and enhancing worker participation.
- \* Developing expertise in risk management and simpler methods of communication

The policy will also promote the specific interests of the informal sector, women and young workers by developing standards that protect their health and safety. Training and research are key components of the proposed policy. The National Commission, when it is established, would be required to develop training facilities and identify training opportunities. The policy also aims at developing research capacity in respect of epidemiological surveys as well as for the promulgation of standards.

### ***Institutional framework***

Government, through the Ministry of Employment and Social Welfare, shall take steps to establish a Tripartite Board on OSH involving representatives of government, employers and employees. The board shall be charged with the provision of guidelines for the National Commission, through monitoring and evaluation.

The Ministry of Health shall generally provide technical support to the National Commission. It shall also be responsible for the delivery of appropriate OH services including OH awareness creation and the development of OSH research agenda.

Other Ministries like Mines and Energy, Environment, Science and Technology, Local Government and Rural Development shall provide sector specific support to the NACOSH. Government Departments and Agencies that are responsible for areas or activities connected to OSH shall have ex-officio representation on the National Board to enhance collaboration and ensure smooth implementation.

### ***Funding***

Adequate funding is required for the recruitment and retention of professionals, ensure efficiency in inspection, enhance capacity to undertake research and training as well as establishing an efficient system of information management. Also required is the initial

capital expenditure for office accommodation, 100 percent of the start up capital requirements is expected from the Government of Ghana allocation from the National Budget. Donor contributions shall also be sought. 50 percent of the operating budget shall come from government allocation through the Ministry of Employment and Social Welfare. The other 50 percent shall come from levied compensation insurance premiums to be paid by employers. Incidental sources of funding shall be derived from fines collected and from research and services supplied.

### ***Implementation strategy***

1. Needs Assessment
2. Secure funding
3. Develop implementation plan (offices, staff complement and roles, skill needs, equipment, recruitment needs)
4. Appoint Executive Director
5. Establish Tripartite Board
6. Establish directorates and key sub committees, regional and district offices
7. Recruit staff
8. Expand support programmes
9. Further development (3-5 year plan)

### ***Conclusion***

Whilst these reforms may not meet the exact requirements of all stakeholders they signal a certain level of commitment to improving safety at work. It has been particularly hard to strike the balance between current global OSH trends and Ghana's level of socio-economic development. It is expected that designated National Authorities would expedite action to see these modest proposals through.

*Samuel Brewu*  
*General Agricultural Workers Union*  
*TUC Hall*  
*P O Box 701*  
*ACCRA / Ghana*  
*telephone: +233-21-665-514*  
*telefax: +233-21-669-394*  
*email: gawu@igh.mail.com*

## Safety as it applies to supervisors

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Allan Sappleton

The key figure in any safety programme is the supervisor. The supervisor is the direct link between top management and the workplace. A supervisor has the responsibility for quality job training, development of good safety attitudes and detection of unsafe conditions or practices.

### *Know the importance of safety*

First and foremost, the purpose of all safety efforts is to prevent accidents, accidental deaths or injury to human beings. When a company employs people, it accepts the responsibility for their safety on the job. As a supervisor, keeping your people from being hurt is just as important as meeting your production and quality standards.

In addition to causing human suffering, accidents cost money. The worker loses wages and the company loses production and has to pay insurance premiums. Safety pays off in other ways too. The supervisor who enjoys an accident free record, usually has the confidence of his workers and gets good production quality and good results because people work best when they don't have to worry about getting hurt.

When a supervisor goes all out for safety, he enjoys the personal satisfaction of knowing that he is helping to prevent suffering and hardship. Workers sense this genuine interest in them and tend to cooperate in achieving a good safety record.

### *How to prevent accidents*

To prevent disabling accidents to workers, it is necessary that a supervisor:

- \* Knows the principal causes of work injuries
- \* Trains workers to do their jobs safely
- \* Explains safety rules to all workers
- \* Takes steps to prevent minor injuries from becoming serious
- \* Enlists the active participation of workers to help prevent accidents
- \* Follows up to see that instructions are put into practice.

### *Know the principal causes of work injuries*

There are two types of work injuries. The first type occurs due to unsafe practices involving methods or processes. Examples of these are improperly guarded gears, pulleys, poorly lighted passageways or stairs and sloppy housekeeping. Many times these conditions are not recognized until someone is injured, and only then are steps taken to prevent this type of accident recurring.

Accidents that arise out of unsafe practices involving methods or processes are the easiest for the supervisor to correct. Usually the causes can be eliminated by making simple mathematical improvements: keep your eyes open as you go about your department and you will be able to spot these hazards before they cause trouble.

The second type of work injuries result from unsafe acts on the part of workers. Examples of these are accident caused by horseplay, running in the department, cleaning a machine while it is running or failure to wear the required protective gear or equipment.

Accidents which are the result of unsafe acts on the part of workers are more difficult to control since there is no simple mechanical remedy. Eliminating these accidents depends upon the knowledge of the workers themselves.

Get to know the workers who are absent-minded, the workers who like practical jokes, and the workers who are always in a hurry or are impulsive. They are the weak links in your safety chain. A little extra effort will go far to eliminate their shortcomings. If possible, find out why they act as they do, do what you can to correct their unsafe attitudes.

### ***Train your workers to do their jobs safely***

It is good to remember that an employee who works safely usually works well.

- \* Start the new workers off on the right foot. Know the safety angles of the job and train the new employee to do the job safely.
- \* Make safety training an integral and regular part of the job training. Use the four-step instruction method.
  - Put the workers at ease and interest them in doing the job correctly.
  - Tell and show them how to do their jobs safely.
  - Test them by letting them try the job while you are watching.
  - Follow up to see that they continue to do the job the right way and the safe way.
- \* Make it a habit to include safety in all job instructions. It is part of the job.
- \* Proper habits have a lot to do with working safely. Aim to develop within the work force safe working habits; then, keep checking to make sure that they stick.

- \* When giving safety instructions, always explain why. Don't take it for granted that an employee knows why a job must be done in a certain way – tell him so he knows what the hazards are.

### ***Explain safety rules to all workers***

Safety rules are the guideposts to accident-free work.

- \* Emphasize that safety rules are not made to make the work harder. Their purpose is to prevent accidents.
- \* Be sure your workers understand exactly what each rule means. Explain any technical terms, especially to new employees. Actually show the equipment, operation, or machine to which the rule refers.
- \* Put yourself in the worker's place. When explaining the reasons for safety rules, think of all the things you would like to know and be careful to explain the "why" of every safety rule.
- \* Merely ordering people to observe safety rules will not ensure the development of safe working attitude. Take time to guide and encourage the workers you supervise.

*Allan Sappleton  
National Water Commission  
Safety & Occupational Health Department  
4 Marescaux Road  
Kingston 5 - Jamaica  
Tel. +1-876-960 0585  
Fax +1-876-929 1480  
E-mail: asaplton@nwc.com.jm*

## Workers' health services in Brazil

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Maria Maeno

The repercussions of working conditions on workers' health have been studied for a long time.

In Brazil, in spite of social exclusion, it has been possible to state that some technological development has allowed some groups of people to improve their living conditions. On the other hand, it is not possible to state a proportional improvement in working conditions.

Before the 70's, the registered workrelated diseases used to be those attributable to a single and evident causal agent, chiefly the physical and chemical ones, such as hearing loss related to noise, lead intoxication or silicosis. For last years approximately 90% of occupational diseases officially registered by the Social Security have been Work-Related Musculoskeletal Disorders (WRMD).

For the 70's and beginning of 80's some health professionals have started activities on occupational safety and health according to some policies incorporated by a national framework, in the health system, and it resulted in some successful regional experiences.

In 1988 the Constitution defined both the Labour Ministry and the Unified Health System (Sistema Único de Saúde - SUS) to share an equal responsibility for occupational safety and health issues.

Traditionally, occupational safety and health had been an exclusively Labour Ministry's responsibility. The novelty was the other protagonist, the Unified Health System- SUS. SUS is the official health care in Brazil. It is based on free, global and universal assistance, decentralization and direct social control, by local and regional councils of government and

popular representatives. SUS comprises 3 layers of responsibility: Health Ministry (federal lawyer), State Health Agencies (there are 27 States) and City Health Agencies.

According to the constitution SUS's responsibilities are:

1. Assistance to workers suffering from work-related accidents and disorders
2. Occupational health surveillance
3. Labour inspection
4. Development of research and studies for controlling work-related risks and potential harm
5. Establishment of rules, standards and laws for health assistance, occupational surveillance and labour inspection
6. Information to workers, trade unions and companies about work-related risks and rules for prevention
7. Periodic revision of occupational disorders list.

The strategies adopted by most of health agencies have been organised Reference Services specialised on occupational safety and health. Professionals of these services have been trained for supporting the local and regional health system to carry on programmes on this field.

Some parameters such as population and economic activities of cities are considered to define whether a local health service specialised on occupational safety and health must be created or just a training must be done

in specific issues by neighbour's Workers' Reference Centres.

Both alternatives have to run with other institutions which carry on programmes on occupational safety and health like Labour Ministry, Public Ministry, trade unions, non-governmental organisations.

São Paulo State, the most important and developed state of Brazil, has approximately 37 million people and 645 cities. There are approximately 60 services specialised on occupational safety and health linked to health agencies of cities. Linked to the health agency of São Paulo State is the Workers' Health Reference Centre (Centro de Referência em Saúde do Trabalhador da Secretaria de Estado da Saúde de São Paulo- CEREST/SP).

CEREST/SP is a Service which has been carrying on activities for:

- \* Increasing the number of occupational safety and health services in different cities of São Paulo State
- \* Stimulating the activities on occupational safety and health carried on by all services of SUS
- \* Raising priority issues on occupational safety and health in São Paulo State
- \* Establishing or grouping institutions, establishing rules for assistance, surveillance and labour inspection on occupational safety and health in the São Paulo State
- \* Supporting the cities of São Paulo State on occupational safety and health.

In the last years CEREST/SP has been working for the constitution of a reference networking services in the São Paulo State, able to enlarge the activities on occupational

safety and health carried on by SUS, consolidating its role on occupational safety and health.

*Maria Maeno*

*Workers' Health Reference Centre of Sao Paulo State  
Rua Conselheiro Crispiniano, 20-8 andar - Centro-SP  
CEP 01037-000*

*Tel: 55-11-259-9075*

*55-11-231-5390*

*Fax: 55-11-259-2202*

*E-mail: maeno.salaroli@hipernet.com.br*

*cerestsp@ig.com.br*

## The work environment of the dentists

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Natalia L. Arsentjeva

Dentistry is one of the medical professions where the level of occupational strain is high. It is connected with the influence of chemical, biological and physical occupational hazards and also psychoemotional stress.

### *Materials and methods*

We gathered a database of 271 questionnaire tests of dentist staff (theraputists, surgeons, nurses and assistants of orthopaedists) and cultivated this material by epidemiological methods.

### *Results*

The main peculiarities of the dentists' work are: intensive rhythm of work, strain of vision, inconvenient working posture. Among nurses and orthopaedist's assistants we also find that difficulties of contact with patients take place. Occupational hazards in different dentists professions are: among therapeutists – strain of attention (70%), working posture (57%), intensive work under time's deficit (56%), contact with pathogenic infections, especially herpes and piogenic bacterial florae (53%), psychosocial stress (51%). Surgeons recognised such factors as contact with infections (44%), strain of vision and attention (33%), operations and night duties (20%). Professional factors among nurses are: difficulties of information reception (63%) strain of attention (52%), contact with pathogenic infections (50%). Occupational hazards specific to orthopaedists' assistants are: chemical substances (92%), strain of attention (91%), intensive rhythm of work (81%) and physical overloads (78%).

The regime of the work in dentistry is connected with alternating between morning and evening duties (75% questioned people), 7-8

holidays per month, absence of lunch in 80% of nurses, 77% of doctors and 11% of orthopaedists assistants. The length of working day is 6,5-7 hours for doctors, 8-12 hours for hospital staff and 10-11 hours for orthopaedists assistants.

Social aspects, which had additional influence on the overstrain are: house conditions (81% orthopaedists' assistants, 59% doctors, 57% nurses) and the great volume of house work (44% orthopaedists' assistants, 41% of nurses and 30% of doctors).

### *Conclusions*

The leading place in occupational hazards in dentistry belongs to psycho-physiological factors (strain of attention and vision, psychosocial stress, difficulties of information's reception and intensive rhythm of the work). Additional role in the overstrain belongs to regime of work and social factors.

*Natalia Arsentjeva*  
*National Institute of Hygiene and Sanitation*  
*Dept. of Occupational Diseases*  
*Clinic N10*  
*Uborevitcha str. 73*  
*220600 Minsk - Belaruss*  
*Tel. +375-172-404944*  
*Fax +375-172-405842*

## Globalization of a postgraduate curriculum

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Maurizio Manno

### *Introduction*

The professional profile of the occupational physician is changing quickly, particularly in some areas of the world, due to the introduction of new technologies, increasing industrialization and trade market globalization. In addition, advances in occupational health sciences and technologies provide new, more effective tools for surveillance and protection of the workers' health and new, more effective protocols are developed and implemented. However, the availability of the professional human resources needed to effectively use these tools and to cope with the increasing demands of expertise level in occupational medicine may become inadequate in some countries or regions. Differences in academic, scientific, economic, legal and cultural backgrounds throughout the world lead to very different approaches and professional standards in occupational health. It is a priority, therefore, to ensure that sufficient human resources are available in each country in the new century. The first step in this process is the comparison, integration and, if necessary, harmonization of the academic curricula upon which the new professional profiles of the occupational physician will have to be based.

This is precisely the objective of ALFA-*OMET*, a two year collaborative project for the structural improvement of higher education in occupational medicine (OM) and environmental toxicology (ET) in Europe (EU) and Latin America (LA). The project is supported by the programme ALFA (America Latina Formacion Academica) of the European Commission and aims to develop new graduate and postgraduate courses in OM and ET as well as to harmonize the existing ones in the various Latin American and European universities participating in the collaborative venture. A progress

report containing the very preliminary results of the project was presented at the IUTOX Congress in Paris, July 1998 (ref.1); some specific results of the ET group have been published elsewhere (ref. 2) and the overall results of the project will be published separately.

Due to the complexity of the topic and based on the space available here, the present report is concerned with the following: *a)* identification of the current professional profile of the occupational health physician, *b)* definition of the core curriculum for a postgraduate medical course of specialization in occupational medicine to be implemented in Latin America and, finally, *c)* prediction of the challenges to be faced by the occupational physician in the new century. Points *a)* and *b)* above are essentially those developed by the OM group at the inaugural meeting of ALFA-*OMET* held in Oaxtepec, Mexico, in January 1998. Point *c)* reflects the opinion of the author.

### *Material and methods*

Thirteen partners from 5 European and 8 Latin American academic institutions have been collaborating for two years through reciprocal visits, international courses, participation to congresses and exchange of information and material. One of the aims was to define the professional profiles and design the corresponding academic curricula for specialist training in OM and ET. Two general meetings of the 13 partners were held in LA with the participation of a number of external advisors from well established, international scientific societies/institutions in OM and ET. The critical questions to be answered by the OM working group of ALFA-*OMET* were:

\* What are the essential requirements for OM

professionals? (*functions, tasks and expertise*)

- \* What are the specific needs for LA? (*regional priorities*)
- \* How can these requirements be achieved? (*core curriculum*).

## Results

The *OM professional profile* scheme proposed at the inaugural meeting by two of the participants (Prof. Piet Kroon and Prof. Giovanni Costa) were used as a basis for discussion by the OM group. Then, the *functions* and the related *tasks/activities* were defined at the “individual”, “group” and “organizational” level. The functions (and tasks) of OM professionals were identified by the group as follows:

- \* Medical care (Diagnosis, Treatment & Rehabilitation)
- \* Prevention
- \* Education
- \* Interaction (Communication & Collaboration)
- \* Health promotion.

The “group” functions of OM professionals were found to be essentially the same in the two regions, except for *Health promotion* which appears to be more represented in LA than in EU. It relates to the detection, prevention and management of non-occupational diseases or risks which might affect the workers and their performance at work. This function has to be particularly considered when designing the core curricula for undergraduate and postgraduate courses of OM in LA. Moreover, the general (political) and the specific (technical) priorities in occupational medicine in LA were identified by the OM group. The main effort of the group, however, was to develop the core curriculum for a postgraduate course for specialist training in occupational medicine to be implemented in LA institutions. The *core curriculum* designed by the ALFA-OMET group is reported in Tables 1 and 2.

The course proposed, for medical graduates, is made of four terms in two years and will lead to the title of specialist in occupational medicine. Two years were considered an adequate period for a full time course (the current length for the corresponding course in EU is four years). [Table 1](#) shows the subjects proposed for each term and the percentage of the total course teaching time allocated to each term. The students are evaluated during and at the end of each term. In the two final terms, the students have fewer lectures in order to have time to prepare their thesis in any of the subjects undertaken during the four terms. A “Diploma of Specialization in Occupational Medicine” will be granted after successful completion of all final exams and discussion of the thesis as a final exam.

[Table 2](#) indicates, in some detail, the content of each subject and the compulsory prerequisites to be satisfied by the students to be able to attend the lectures and take the exam of the corresponding subject. The percent of total teaching time allocated to each subject is also provided. The various contents proposed for each subject, however, should not be interpreted rigidly, as they are meant to provide simply an indication. The specific topics will be selected and personalised by each institution based on local/national/regional priorities, the academic competences available and, also, the students’ didactic background and interests. Indeed, the curriculum should be based not only on the highest academic standard but also on regional priorities. Therefore, it is important *how* and *by whom* these priorities are to be set.

It seems to us, for example, that an important role in the curriculum should be given to occupational *risk assessment* as a subject, probably one of the main challenges for occupational medicine in the new century. Risk management, including cost-benefit analysis, aiming to improve the duration and quality of the workers’ life at sustainable costs, is, of course, also important, although much more difficult as a subject to teach since it involves complex social, economic and cultural considerations.

Moreover, it deals with difficult ethical problems and insoluble questions such as: Is it better to prolong the life of a worker by 30 years or that of 30 workers by one year? Regulators have the responsibility and the competence for this kind of decisions. Occupational medicine professionals, however, are expected to provide regulators with the information necessary for the best decision to be taken and, therefore, should be trained accordingly and at the highest academic standard.

Other important aspects of the proposed course were discussed by the OM group, including the forms of teaching, the teaching material, the prerequisites, the practical training, the criteria and methods for the evaluation of *a)* the students by the teachers and *b)* the teachers by the students, and many others.

### **Conclusions**

Harmonization of education and training in OM at the highest possible standard requires global collaboration among academic institutions. The core curriculum for specialist training in OM, developed through ALFA-OMET and presented here, is the initial product of such an effort. ALFA-OMET was not just a series of meetings of individuals or even representatives from different universities of Latin America and Europe. It was, instead, a unique opportunity for teachers, students and experts of different geographic, linguistic and cultural origin to compare their experiences, contrast their opinions and make new proposals to the academic community as a whole. The present proposal is a small but, we hope, promising contribution to an ambitious achievement: the international harmonisation of professional profiles and competencies in occupational medicine. The definition of the academic curriculum for the formation of qualified human resources capable of fulfilling these profiles/competences is a challenging and time demanding exercise but it is, possibly, *the* most important part of the whole process. This objective could not be achieved without the highest academic standard of the institutions in-

involved, the enthusiastic and continuous contribution of the partners and experts participating in the project, and the generous support of the European Commission and other national and international institutions.

As a result of ALFA-OMET, a number of Latin American academic institutions are currently implementing the present or a similar curriculum in their postgraduate programmes, after adaptation to their specific needs and according to the country's priorities in occupational medicine. Among these are the University of Cuenca, Ecuador, the University El Bosque in Bogotá, Colombia, and the Autonomous University of Nicaragua in Leon, Nicaragua. Here are some details on the present status of implementation and the contact person of each of these institutions for those who are interested.

The University of Cuenca is currently establishing a formal, two-year bilateral agreement with the University of Padua, Italy, aiming to set up a postgraduate course in Occupational Medicine in Cuenca and, also, to start a research collaboration on biomonitoring and health surveillance. The coordinator of the Cuenca group is Dr. Holger Dutan ([dutanol@cue.satnet.net](mailto:dutanol@cue.satnet.net)). The University El Bosque has recently produced a document describing in some detail its project for the implementation of a specialization course in occupational medicine in Bogotá. This university has also established a collaboration with Padua to organize the first international course in occupational medicine in 2001. The contact person there is Dr. Enrique Guerrero ([enriguerrero@hotmail.com](mailto:enriguerrero@hotmail.com)). Finally, the National Autonomous University of Nicaragua (UNAN, Leon), whose representative in the ALFA-OMET project, Dr. Teresa Rodriguez, has actively participated, together with other ALFA-OMET partners, in the ICOH Conference on Education and Training in Occupational health, has also shown interest in starting a similar initiative. Another project which actually started independently, but which is interacting and will certainly synergize with the original ALFA-OMET group, is that of a network of Mexican universities aiming to

establish new harmonized graduate and post-graduate courses in occupational medicine. This initiative is coordinated by Prof. Rodolfo Nava of the Autonomous National University of Mexico (Universidad Nacional Autónoma de México, UNAM), and involves several universities throughout Mexico: rodolfonava@hotmail.com

*Maurizio Manno MD, PhD*  
*Università degli Studi di Padova*  
*Dip. di Medicina Ambientale e Sanità Pubblica*  
*Via Giustiniani 2*  
*35128 Padua - Italy*  
*Tel. +39-049-821 6647*  
*Fax +39-049-821 6603*  
*E-mail: manno@ux1.unipd.it*

**Table 1:** Overview of proposed core curriculum

Duration of course:	<i>2 years (4 terms)</i>
Prerequisites:	<i>Medical degree</i>
Title:	<i>Specialist in Occupational Medicine</i>

(for each term, the subjects and the % of total teaching time are indicated)

**Term A (30%, 1st year)**

1. Introduction to the workplace
2. Industrial hygiene and safety
3. Organisational structure and management
4. Legislation, legal medicine, and ethics

**Term B (30%, 1st year)**

5. General and industrial toxicology
6. Occupational diseases and injuries
7. Work physiology and ergonomics
8. Rehabilitation, fitness, and return to work

**Term C (22.5%, 2nd year)**

9. Epidemiology
  10. Biostatistics
  11. Research methods and bioethics
  12. Risk assessment
- Thesis work

**Term D (17.5%, 2nd year)**

13. Communication, collaboration, educational methods
  14. Health promotion
  15. Emergency response systems
- Thesis work

**Table 2:** Proposed Core Curriculum for Specialist Training in Occupational Medicine in Latin America

Individual Courses Prerequisites & Contents

**1. Introduction to the workplace** (Term A, 5%)

*Prerequisites:* general medicine, social sciences

*Contents:*

- \* Short overview of the workplace for clinicians
- \* Global scheme of machinery, hazards, work organisation and requirements (not workplace specific)
- \* Demographic factors: social, cultural, economic issues affecting the workers and the workplace.

**2. Industrial hygiene and safety** (Term A, 10%)

*Prerequisites:* Introduction to the workplace and general toxicology

*Contents:*

- \* Exposure assessment
- \* Principles of safety: relation between workers and workplace for accident/injury prevention.
- \* Methods for control of exposures (total quality control).

**3. Organisational structure and management** (Term A, 5%)

*Prerequisites:* none

*Contents:*

- \* Organisational structure (e.g., corporate)
- \* Organisational culture (how to manage a group)
- \* Organisational economics (priorities, budgets, resources)
- \* Workplace health system management and administration
- \* Social, economic, and legal context

**4. Legislation, legal medicine, and ethics** (Term A, 10%)

*Prerequisites:* general medicine

*Contents:*

- \* Laws directly affecting employers and employees
- \* Medico-legal practices
- \* Professional ethics: worker rights, patient rights, confidentiality, privacy
- \* Continuing education because of changing laws

**5. General and industrial toxicology** (Term B, 10%)

*Prerequisites:* general medicine, chemistry, biochemistry, physiology, pharmacology

*Contents:*

- \* Basic concepts: dose-response, effects on organ systems, mechanisms of toxicity, absorption, distribution, metabolism, elimination
- \* Workplace exposures: biological, chemical, physical, and organisational agents
- \* Routes, time and form of exposure (acute, chronic, etc.)
- \* Biomonitoring of effects (effects on organ systems)

**6. Occupational diseases and injuries** (Term B, 10%)

*Prerequisites:* general medicine, biochemistry, physiology, pathology

*Contents:*

- \* Occupational diseases and injuries (e.g. infectious diseases, acute and chronic effects of chemical exposure, noise, heat, vibration, stress, etc.)

Table 2 - second page

**7. Work physiology and ergonomics** (Term B, 5%)

*Prerequisites:* physiology

*Contents:*

- \* Workplace-worker interaction
- \* Analysis of workplace: equipment, machines, processes (including ergonomics), work schedules (e.g., shift work), work organisation (e.g., labour-management relations), psychological factors (e.g. worker-supervisor interactions)
- \* Adaptation of the workplace to the worker (e.g., design of equipment and workplace, processes, schedules, organisational relationships)

**8. Rehabilitation, fitness, and return to work** (Term B, 5%)

*Prerequisites:* legislation, legal medicine, and ethics

*Contents:*

- \* Rehabilitation, fitness to work, and return to work of ill or injured worker
- \* Fitness to work of vulnerable workers (pre-placement and replacement during work)
- \* Workplace changes necessary to place/replace vulnerable workers in the workplace

**9. Epidemiology** (Term C, 5%)

*Prerequisites:* biostatistics

*Contents:*

- \* General concepts: population, prevalence, incidence, distribution, etc.
- \* Epidemiological techniques: data collection methods, analytical techniques, data description and interpretation. etc.

**10. Biostatistics** (Term C, 5%)

*Prerequisites:* general medicine

*Contents:*

- \* Principles of biostatistics: probability theory, tests of significance (selection and interpretation of test)

**11. Research methods and bioethics** (Term C, 5%)

*Prerequisites:* Epidemiology and biostatistics

*Contents:*

- \* Research methods
- \* Ethics applied to research

**12. Risk assessment** (Term C, 7.5%)

*Prerequisites:* toxicology, occupational diseases and injuries, industrial hygiene and safety

*Contents:*

- \* Principles, concepts, and applications (e.g. difference between risk and hazard, exposure and effect measurements, extrapolation)
- \* Case studies of different types of exposures and diseases
- \* Interpretation
- \* Risk Perception
- \* Risk communication

**13. Communication, collaboration, and educational methods** (Term D, 7,5%)

*Prerequisites:* none

*Contents:*

- \* Survey of human relations topics necessary for the occupational physician in interacting

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with individuals, at organisational and workplace levels

- \* Communication methods to disseminate information
- \* Motivation methods to effect change
- \* Education techniques
- \* Development and organisation of teaching materials
- \* Presentation methods; workshops, lectures, seminars, etc.
- \* Multidisciplinary team-building methods, including motivational methods to get people to work together

#### **14. Health promotion** (Term D, 5%)

*Prerequisites:* general medicine

*Contents:*

- \* Methods of public health promotion programs (e.g. for smoking cessation, awareness and reduction of common diseases and non occupational health risks, diet)
- \* Health of workers for fitness to work
- \* Effects of work on health

#### **15. Emergency response system** (Term D, 5%)

*Prerequisites:* basic emergency medicine and surgery

*Contents:*

- \* Advanced first aid
- \* Development and implementation of emergency response programs
- \* Community of public medical and safety systems (e.g. hospitals, firemen, rescue, police, public health services)

#### **16. Thesis** (Term C and D, additional 10-15%)

*Prerequisites:* all Term A and B subjects

*Contents:* original experimental or clinical research work.

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#### ***References***

1. Albores *et al.*: Structural improvement of higher education in occupational medicine (OM) and environmental toxicology (ET) in Latin America and Europe. *Toxicol. Lett.*, 95 (Suppl. 1), p. 239, 1998.
2. Albores *et al.*: Structural improvement of higher education in environmental toxicology in Latin America and Europe. *Toxicol. Lett.*, 111: 203-211, 2000.

## Glimpse from 4th international scientific conference of the international occupational hygiene association

OSH & Development, June 2001

Gun Nise

The IOHA Board, upon recommendation of the Conference's organisers from Australian Institute of Occupational Hygienists, selected the theme of IOHA's 4<sup>th</sup> International Scientific Conference: **Occupational Hygiene in Developing Countries**. The Conference organisers managed to achieve their goal to address real problems facing workers in developing countries. They also selected papers that present ideas and problem solving concepts.

The conference was held 10-14 July 2000 at Cairns International Hotel, Cairns, Australia. It attracted almost 300 delegates from 26 countries. The conference organisers had contrived to obtain sponsoring for a few people from Latin America and Asia to take part in the conference. Additional developing countries could send representatives through scholarships and grants from different national occupational hygiene associations.

After the usual opening session **Jukka Takala** (Safe Work, ILO, Geneva) opened the scientific sessions by presenting the ILO's SafeWork Programme. He started his presentation by showing a video with examples of the working environment in different countries all over the world. The video clearly illustrated that many workers still are lacking an acceptable working environment. The video was supplemented with depressing figures. Taking accidents and diseases together, the global estimate of work-related deaths amounts to 1.1 — 1.3 million per year. This figure corresponds approximately to 3,000 deaths per day. The economic losses are enormous and, in terms of shattered families and communities, the damage is incalculable. JT complained that the investment decisions made especially in Asia and Latin America continue to be made in disregard of safety, health and environmental considerations, though alarming information

on fatality, accident and disease.

The primary objectives of the SafeWork Programme are:

- \* to create world-wide awareness of the dimensions and consequences of work-related accidents, injuries and diseases
- \* to promote the goal of basic protection for all workers in conformity with international labour law
- \* to enhance the capacity of member states and industry to design and implement effective preventive and protective policies and programmes.

**Michael Repacholi** (Occupational and Environmental Health, WHO, Geneva) presented WHO's programme priorities in occupational health. He repeated the depressing figures of the global estimate of work-related deaths. Further, he showed that these estimates give a clear indication of the magnitude of the problem and a hint at its enormous costs: approximately 4% of the world's gross national product.

A new initiative by WHO in close collaboration with ILO will develop the necessary methods to estimate the burden of disease of occupational risk factors and its cost implications at the national level. This will help focus actions where they are most required, and help bridge the currently wide gap between knowledge about the problems and interventions needed to avoid them.

WHO is establishing a programme of actions in three areas:

- \* Evidence for policy, legalisation and support to decision-makers
- \* Protection and promotion of worker's health
- \* Infrastructure support development.

***Summary of some presentations given in the parallel scientific sessions***

**Nicola Cherry** (University of Manchester, England) began with a presentation that discussed the importance of surveillance of the working environment in developing countries. Experience in the UK suggests that voluntary reporting schemes for occupational disease can be sustained, at relatively low costs, to provide ongoing data on trends in disease and causative agents. However, the schemes work well only if the link between occupation and disease is evident and relevant to reporting physicians clinical practice, the system for collecting information is simple and clear and there is a frequent feedback and personal contact to meet the needs of the reporters.

The feasibility of introducing surveillance for occupational disease and exposure in less developed countries will depend on the success with which each of these issues can be addressed locally. The variation can be huge; pesticides for example may be known to be a serious hazard and accepted as that by health workers at all levels, while other toxic substances are not regarded as risks with exception of the specialist. The motivation to report will be sustained and enhanced by rapid feedback of pertinent data followed by action to curtail the hazard.

**Paul J Oldershaw** (Health & Safety Executive, Bootle, Merseyside UK) raised the question whether occupational exposure limits contribute to the needs of the developing countries. Many countries and bodies are now engaged in a programme of exposure limit setting, especially for chemical substances. However, in this presentation PO demonstrated

several limitations when exposure limit values were to be used in countries where the skills of the occupational hygienists are scarce. In particular:

- \* The difference between "health based" limits and those intended to be practical values.
- \* The difference between "safe limits" underpinned by an extensive technical base and upon which a high level of trust can be placed, and those aimed at guiding the professional and to be judged by the individual.
- \* The issue of sampling, especially the need for availability and utility of the sampling technologies that are robust in the area adopting the limit.

Ill health is not absolute but defined by agreement and knowledge. What is a practical limit in a Northern European context may well not be elsewhere. Their decision on which "health" consequence to be protected against may well be a luxury elsewhere.

It has long been known that skin absorptions is the dominant route of exposure for certain chemicals, especially pesticides and aromatic amines. In his presentation **Pentti Kalliokoski** (University of Kuopio, Finland) pointed out that dermal exposure is especially problematic in developing countries. Today, about one third of the substances in the various exposure limit lists carry a skin notation. Recent studies have indicated that this proportion is too small. The list of known sensitizers already contains over 3500 substances. The current trend to replace solvent-based products with less volatile ones is also putting emphasis on control of dermal exposure since many of the new products contain compounds that easily penetrate the skin (e.g. glycol ethers) or are skin sensitizers (e.g. acrylates).

In the developing countries, dermal exposure is especially problematic since protective clothing seldom occurs as they are expensive and the climate is hot. The hygienic facilities

are poor or missing. The use of pesticides, that easily penetrates the skin, is common. The agricultural workers often consider the inhalation risk only and cover their noses with handkerchiefs, but do not use protective clothing or gloves while working with pesticides. It is important to disseminate the knowledge that pesticides easily penetrates the skin and that simple measures as washing and changing clothes after work reduce the uptake.

**Eric Omaña** Universidad Central de Venezuela (UCV) informed about the development of occupational hygiene in Venezuela. As early as 1953, with J.J. Bloomfield from USA, the development of occupational hygiene started in the Health Ministry. At the middle of the 60s, the Health Ministry had 20 occupational hygiene professionals. When the economic crisis began in 1984, occupational hygiene started to decline in Venezuela. The companies did not contract people for occupational safety, medical care services or occupational hygiene. This situation has lasted ever since then. First in 1999 it was possible to study occupational hygiene at UCV. So far there are four students who hopefully will graduate in March 2000. In addition an occupational hygiene association was established in 1998, whose immediate goal is to arrange their first national conference.

**Evelyn Poh Sim Kuan** (Work-Safety Consultancy, Malacca, West Malaysia) reported in her presentation the experiences of working with preventive measures in an electroplating company after a fatal cyanide poisoning accident. Safety and health hazards caused by chemicals that were in use in the company were identified using information from Material Safety Data Sheets. The health risk assessment of the employees' exposure identified about 50% of the chemicals in use as "Very high risk or high risk to health". A qualitative assessment to determine the airborne concentration of hydrogen cyanide was carried out. Various recommendations were made for improvements in the storage of chemicals, handling of chemicals and effluents, ventilation, suitability of personnel protective equipment, monitoring of

airborne chemicals, biological monitoring and training.

The employer implemented several of the recommendations, and after three years, this factory is on its way to become a safer and healthier workplace. Her important message was that it is never too late to implement safety and health.

### *More information*

All abstracts from the IOHA Conference in Cairns are available at the IOHA homepage [www.bohs.org/ioha/epubs/conference.htm](http://www.bohs.org/ioha/epubs/conference.htm)

*Gun Nise*  
*Department of Occupational Health*  
*Norrbacka*  
*SE-171 76 Stockholm*  
*Tel. 08-517 727 71*  
*Fax 08-33 43 33*  
*E-mail: gun.nise@smd.sll.se*

## Two bi-regional programmes on work and health

OSH & Development, June 2001

Kaj Elgstrand & Christer Hogstedt

### Background

In many developing countries, death rates among workers are five to six times those in industrial countries. Yet the phenomenon is still largely undocumented. Developing countries face, besides the traditional occupational and safety health problems, many new working life problems in the context of rapid global macroeconomic and technological changes, including the industrialisation of agrarian societies, the transfer of hazardous work processes to countries with weak regulations, increased migration, and serious effects on wage systems, labour contracts, and worker participation. These newly emerged issues coexist with the conventional occupational health and safety problems. Consequences of globalisation for work and health require an international approach. In recent years, a number of workshops have addressed the need for collaboration between developed and developing countries (North-South collaboration) and between developing countries (South-South collaboration) in the field of work and health.

NIWL has long-standing research and research training co-operative involvement with universities in Nicaragua and Costa Rica with support from Sida. NIWL also collaborates with agencies and universities in southern Africa, and carries out one- and two-year long international training courses in occupational health and safety practice for participants from Africa and Latin America. Sida finances those courses.

In recent years, two international OSH conferences involving NIWL have been supported by Sida, one in Zimbabwe (occupational epidemiology) and one in Costa Rica (pesticides).

Government representatives and senior researchers from both regions have suggested to NIWL that expanded regional and inter-regional collaboration with Swedish and Scandinavian working life institutions would be most desirable. Consequently, NIWL approached Sida to discuss the development of a far-reaching research, training and development programme involving the two regions and Sweden/Scandinavia. This resulted in studies of the feasibility of a long-term tri-regional programme on working life and health issues performed by two consultants, one for each region.

### Feasibility studies

October-November 2000 industrial hygienist Urban Svedberg, Sweden, visited 26 organisations in South Africa, Zambia, Zimbabwe and Tanzania. The interest for a tri-regional programme was substantive and the needs for OSH improvements immense. A focused programme was usually warranted in collaboration with the SADC structures and on going as well as planned activities of related character, especially by ILO, WHO, Danida and US institutions (NIOSH and NIH/Fogerty). Mining, agriculture and chemical industry were mentioned by several organisations as sectors of high priority. Training at different levels was the method usually regarded as most suitable for the purposes of a OSH programme. Working through and strengthening the tri-partite structures is recommended.

October-December 2000 Dr Catharina Wesseling, Costa Rica, visited 40 organisations in Costa Rica, El Salvador, Guatemala, Nicaragua and Panama.

The overall impression was that a Central American component of a tri-regional programme would be both necessary and feasible. Special emphasis is recommended on the construction, agriculture and service sectors. As 90% of the workers in Central America are non-unionised, ways to promote unorganised workers' participation in OSH activities in the formal as well as informal sectors is highlighted. So called maquilas, free trade zones, are a high priority and many projects are directed towards those in CA. Collaboration with relevant agencies within the Central American Integration System, SICA, was recommended as well as on going and planned programmes by US Department of Labor, PAHO, ILO, the Danida supported Plagsalud programme and several non-governmental organisations. Components of multidisciplinary, applied research and support for policymaking are recommended.

### **Workshop in Stockholm**

In April 2001, a three day workshop was organised in Stockholm. About 20 persons participated, representing SADC ELS (Lusaka), SADC Health (Johannesburg), the Factory Inspectorate in Tanzania, the Danida OSH programme in Zimbabwe, the Fogarty Foundation programme in southern Africa, SICA (San Salvador), IRET, National University of Nicaragua (León), ASEPROLA (a NGO, based in Costa Rica), Sida and NIWL.

During the workshop, the programme objectives were discussed as well as support to organisational structures and the continued processing of the collaboration, according to the following.

### **Programme objectives**

The proposed long-term objective of the programme is to contribute to regional and

national capacity development for the prevention of occupational safety and health risks in a labour market and public health perspective. The programme will also promote south-south and south-north cooperation between southern Africa, Central America and Sweden/Scandinavia in the working life field.

By the assistance of the programme, the following kinds of commitments and results should be achieved by the end of the programme (2015):

- increased awareness of the essential role of healthy work, i.e. safe and supportive workplaces for poverty reduction, equality and empowerment in addition to sustainable high productivity and good product quality
- common and valid knowledge in the region about the size and character of fatal accidents and occupational diseases in different sectors of the work life
- commitment and abilities of occupational health and safety experts and the social partners to plan, carry out and evaluate preventive actions for eliminating or reducing occupational safety and health risks
- the workers' organisations will be able to have an efficient communication with managers and government about issues related to occupational health and safety
- establishment of many arenas - at international, regional, national and local levels - for the interchange of experiences and knowledge between experts of occupational safety and health, production experts, managers, policy-makers and workers' organisations

- increased capacity for applied research and scientific evaluations for strategic regional, national and local actions
- practically oriented post-graduate courses in occupational safety and health, stimulating the application of theories and basic knowledge into actions for improvements at the workplaces
- the inclusion of practical applications of occupational safety and health in the basic education (in primary and secondary schools) and at technical and medical faculties, and in public health education and training,
- well-functioning cooperation between the international, regional and national actors in the fields of occupational and public health.

### **Support to organisational structures**

The strategic, regional organisational structures, as well as the working conditions are different in Central America and southern Africa. Therefore, it is suggested that the two regional processes for creating strong programmes for healthy work are separated for the near future but that the idea of tri-regional cooperation and exchange of experiences is kept alive.

A few "resource centres" to support and initiate regional capacity development have been suggested. They should support the three tasks of applied research, training and practical implementation. Such centres should have several experts from different disciplines at a senior level, extensive experience of applied research, and training as well as implementation in practice.

The competence level and requirements for centres with the specified tasks in supporting other centres, the number of regional resource centres and the initial centres shall be decided in the future planning of the programme.

Three such centres for southern Africa were discussed. It was agreed that they preferably should be located in different countries. The National Centre of Occupational Health (NCOH) in Johannesburg has been suggested as clearing-house for OSH by a SADC Health meeting in November 2000; thus NCOH seems to be appropriate as one of those three resource centres for the initial development of the southern Africa programme.

Two resource centres were proposed for the initial programme developments in Central America; IRET in Costa Rica and UNAN-León in Nicaragua, which was accepted by the workshop. It was underlined that contacts and collaboration should be established with the Regional Centre for OSH in El Salvador.

Concerning sectoral priorities it has been proposed that agriculture and mining sectors initially should be given highest priority within the programme for southern Africa. For Central America agriculture, construction, textile maquila and health services were suggested as high priority sectors for the initial part of the programme.

### **Main actors and continued processing**

For southern Africa SADC ELS accepts to take the responsibility for continued planning in close cooperation with SADC Health and in consultation with other concerned SADC structures. After consultations with Sida and NIWL, the final proposal will be processed through relevant SADC structures and in

cooperation with the identified, initial resource centres. A final application to Sida should be submitted by December 2001.

For Central America, the Social Secretariat of SICA in collaboration with UNAN-León and IRET takes the responsibility for continued planning, in contact with NIWL.

*Kaj Elgstrand*  
*Swedish National Institute for Working Life*  
*SE-112 79 Stockholm*  
*Sweden*  
*tel: +46 - 8 - 619 6742*  
*fax: +46 - 8 - 618 3635*  
*email: [kaj.elgstrand@niwl.se](mailto:kaj.elgstrand@niwl.se)*

A proposal will be processed through relevant Central American regional structures. A final application to Sida should be submitted by December 2001.

*Christer Hogstedt*  
*Swedish National Institute of Public Health*  
*SE-103 52 Stockholm*  
*Sweden*  
*tel: +46 - 8 - 5661 3602*  
*fax: +46 - 8 - 5661 3505*  
*email: [christer.hogstedt@fhi.se](mailto:christer.hogstedt@fhi.se)*

### Some abbreviations used in the article

ASEPROLA	Association for Services of Labour Promotion, headquarters in San José, Costa Rica
IRET	Central American Institute for Studies on Toxic Substances, Heredia, Costa Rica
NIH	National Institutes of Health (USA)
NGO	Non-governmental organisation
PAHO	Panamerican Health Organisation (WHO), headquarters in Washington
SADC	Southern African Development Community
SADC ELS	The employment and labour sector of SADC, office in Lusaka, Zambia
SADC Health	The health sector of SADC, having Ministry of Health in Johannesburg, South-Africa, as focal point
SICA	The Central American Integration System, headquarters in San Salvador
UNAN-León	National University of León, Nicaragua

## Books and reports

OSH & Development, June 2001

### 1. Systematic occupational health and safety management

*Eds: Frick, K, P Langaa Jensen, M Quinland & T Wilthagen. Elsevier Science - Pergamon, 2000. 527 pages.*

In the past 15 years the notions of systematic OHS management and OHS management systems have gained wide currency amongst regulators, employers and other parties in advanced industrialised countries. Indeed, these related but distinct concepts are now also finding their way into developing countries. Inducing employers to take a comprehensive, programmatic and preventive responsibility for OHS rather than just prescribing solutions has emerged as a major new regulatory strategy and this approach has also been voluntarily assumed by an increasing number of generally large organisations. Government methods to promote OHSM as well as the form and content of both these and voluntary management systems vary widely.

There has been little attempt to critically assess the developments just described, let alone compare different forms of OHSM, examine the problems of implementing these policies or identify their strengths and limitations. This book seeks to address this gap. With diverse contributions from leading experts in Europe, America and Australia, the book examines the origins, development, application and value of OHSM, as well as providing an international perspective on their effectiveness in managing ill-health at work. It also examines the impact of recent changes in economic, labour market, organisational and regulatory structures.

### 2. OSH experts meet production managers

*Internal report IDC 2000:2, Swedish National Institute for Working Life, 2000. 83 pages.*

A workshop was organised in Costa Rica, March 2000. It was organised by NIWL and Ifa Production Development AB (Ifa), with financial support from the Swedish International Development Cooperation Agency (Sida). The 22 participants were occupational safety and health experts and production experts from eight countries in Latin America and the Caribbean, all former participants in courses organised in Sweden.

The workshop objectives and program are described in the report, as well as the different actors involved. The result of a follow-up questionnaire on the participation in the courses in Sweden is presented and analysed. Participants' and organisers' impressions, comments and evaluations of the workshop are presented.

NIWL and Ifa have proposed Sida to finance similar workshops for former course participants in Asia and Africa. Sida has not yet taken any decision.

### 3. Work Life 2000 - Scientific reports from the workshops

*Ed: Wennberg, A. Swedish National Institute for Working Life, 2000. 328 pages.*

In this report, summaries are given of 63 scientific workshops organised in 1997-2000. These workshops constituted the scientific basis for the discussions and the reports at the Swedish European Union Presidency Conference Work Life 2000 in Malmö, Sweden, 22-24 January 2001.

Reports on the planning of Work Life 2000 have been given in earlier issues of OSH & Development (no.1 August 1998, and no. 2 June 2000).

#### **4. A look into modern working life**

*Ed: Lena Skiöld. Swedish National Institute for Working Life, 2000. 326 pages.*

Modern working life gives rise to many questions and challenges. What are the trends and driving forces for the future? In this book, popular versions are given of the scientific reports on the 63 workshops of Work Life 2000. (See above, 3).

#### **5. Worklife and health in Sweden 2000**

*Ed: Marklund, S. Swedish National Work Environment Authority & Swedish National Institute for Working Life, 2001. 359 pages.*

This anthology provides an overview of the relationship between work and health in Sweden today, with a number of researchers from various disciplines presenting their results. The research shows that traditional work environment risks remain in many sectors, while working life has developed new problems and problems in new groups.

Strain injuries are extremely common, with enormous costs for the individual and for society. There are major differences in work-related ill health between various occupational groups, between men and women and between employees in the private and public sectors. Work-related tiredness and stress is on the increase, particularly among those who work with people. The consequences include an increase in sick leave and the fact that many older people do not manage to work up to retirement.

#### **6. Biomedical effects of electromagnetic fields**

*Ed: Wennberg, A. The COST 244bis Final Report, Swedish National Institute for Working Life, 2001. 285 pages.*

COST is a framework for scientific and technical cooperation of national research on a European level. The COST activity "Biomedical Effects of Electromagnetic Field" was carried out between 1996 and 2000 in response to the growing concerns about possible adverse health effects of electric, magnetic or electromagnetic fields. The general objectives were to create European coordination for research in the area, to coordinate and promote national research activities at the European level and to stimulate multidisciplinary collaboration between experts in the fields of medicine, biology, electrical engineering, physics etc. A number of workshops were carried out in different European countries, newsletters were issued, ongoing research was reviewed, European research networks were strengthened, etc. This book contains the final report as well as summaries from the workshops and other related reports.

#### **7. Swedish initiatives in international development in occupational health**

*Ed: Elgstrand, K. International Journal of Occupational and Environmental Health. Vol 7/no. 2, April-June 2001. 41 pages.*

In a series of articles, Swedish international development cooperation activities are described and analysed. The first article describes a long-term cooperative effort concerning research and research training at the National Universities in Nicaragua and Costa Rica. In the second article, six international one-year courses on "Occupational Safety and Health in Practice" are summarised and

evaluated. In the third article, a technical collaboration project between NIWL and the Central Institute for Labour Protection in Poland is reported. The cooperation resulted in the establishment of a training program for personnel in Polish industry. The fourth and fifth articles deal with the labor market and working conditions for workers employed in small and medium-sized rural firms in China and India. In the sixth and final article, working life in Europe is presented both as a focus of research and practice in science and politics and as the unifying element behind a series of initiatives at local, regional, national, European, and international levels.