Appendix VII.

GUIDELINES FOR INTERVIEWS ON HRD FROM MEXICO AND WHO, Geneva

National planning for human resources development in environmental and occupational health

Interview Guidelines

Aim
The aim is to gain access to a few key persons who, by their position, experience or influence in the field, are able to provide qualitative information that will enable us to gain a greater depth of insight than that provided by the survey into the problem of human resources development in environmental and occupational health.

Method
1. An appointment should be requested, explaining the reason for the interview.
2. The confidentiality of the interview should be guaranteed, explaining that the results of the analysis will only be given in a composite form, and that recorded materials will be kept without identification.
3. Consent for recording of the interview should be obtained.
4. The contents should be analysed.
5. The content should be incorporated into tables or quoted as verbatim extracts.

Process
1. Introduce the project, explaining its aims and the aspects to be covered in the interview. Also explain why the respondent has been considered a key informant.
2. Indicate whether the interview will cover environmental health, occupational health, or both areas.
3. Seek the key informant’s perception of the human resources infrastructure in that area.
   a. Perception of the available resources in terms of:
      — quantity
      — training
      — economic conditions
      — availability of jobs
   b. Perception of resources required in terms of
      — idem
   c. Perception of supply of human resources:
      — by level of education (from technician to doctorate level)
      — by institution (national or foreign)
4. Opinion of the current situation

a. Why doesn’t Mexico have human resources in sufficient numbers and quality to meet the major environmental health challenges faced by our country?

b. What are the reasons for the sustained lack of interest by the public and private sectors in addressing deficiencies in human resources for environmental health?

c. What are the three basic conditions for raising the numbers and quality of human resources in the field?

5. Profiles of the human resources required at the national level (give details of the respondent’s considered priorities), indicating the level of qualification required:

- for the public sector
- for the private sector
- for nongovernmental organizations

6. Investment in human resources. What are the respondent’s ideas, at the national level and at the level of his/her own organization, on:

- capacity for acquisition of funding
- capacity for development
- proposals for possible funding
- proposals for policies on the issue
Interview topics
National planning for capacity-building in environmental and occupational health
(as drafted by the Project Coordinator, WHO. Geneva)

Objectives of the interview:
- Describe the project and assess level of interest
- Identify key problems in environmental/occupational health
- Identify resources and limitations for HRD in environmental and occupational health
- Solicit opinions on project workplan

Discussion points for interviewer:
1. Describe the project: objectives, activities, timeline. Ask for feedback on the concept and suggestions of who should participate in the project.
2. Ask interviewee to identify 4-5 priority problems in environmental and occupational health
3. Ask to what extent the country has the necessary human resources to address these problems. Address issues of:
   a. adequate number of personnel; identify missing personnel
   b. competency of personnel; identify tasks or environmental health problems which are not being adequately addressed (e.g., air, water, waste, etc.)
   c. distribution of personnel (urban, rural)

Solicit opinions on the following:
4. Has there been sufficient planning for human resources in the field? If not, why not?
5. Status of education and training in the field:
   a. status of existing academic programmes and continuing education opportunities
   b. job categories which require more training
   c. skill areas that need more attention (e.g., hazardous waste management)
   d. training needs which are not being adequately addressed
   e. relation between training and availability of suitable, subsequent employment
6. Availability of educational resources (libraries, equipment, teaching aids)
7. Identify the gaps in:
   a. existing workforce
   b. education and training resources
   c. HRD planning capability
   d. existing HRD policy
8. HRD policy issues which should be addressed
Appendix VIII.

SURVEY INSTRUMENTS-CUBA
Ministry of Public Health National Environmental Health Unit
Survey on human resources development in environmental and occupational health

This survey is being sent to specialists and technicians working in the field of environmental and occupational health and its purpose is to collect basic information that will help to develop a National plan for Human Resources Development.

We value your opinions and therefore, hope that you will be as frank as possible in your answers to the questionnaire, which will remain anonymous.

Instructions
Circle the number which corresponds to your reply. Example: In reply to the question: place of work, if you work in CPHE, you should circle the number 1:

1 CPHE
2 UMHE
3 CMHE
4 Primary health care (polyclinics)
5 Other:
   please specify

6 No reply

1. Province

1a Municipality

1b Health Area

2. Specialty:
   1 Hygiene and epidemiology technician
   2 Specialized hygiene and epidemiology technician
   3 Physician specialized in hygiene and epidemiology
4 General practitioner
5 Integrated general medicine
6 Other:
   please specify

3. Age group.
   1 20 - 29 years
   2 30 - 39 years
   3 40 - 49 years
   4 50 - 59 years
   5 60 years and over

4. Sex
   1 M
   2 F

5. Years since graduation:
   1 <5 years
   2 6-10 years
   3 11-15 years
   4 16-20 years
   5 >20 years
   6 No reply

6. Years since graduation as a specialist
   1 less than 5 years
   2 6-10 years
   3 11-15 years
   4 16-20 years
   5 greater than 20 years
   6 No reply

7. Place of work:
   1 CPHE
   2 UMHE
   3 CMHE
   4 Primary health care (polyclinics)
   5 Other:
       please specify

   No reply
7a Municipality

8. How satisfied do you feel with
   Please enter the number which corresponds to your level of satisfaction in the boxes found below.
   1 Very satisfied
   2 Satisfied
   3 Little or not satisfied
   4 No reply

8.1 The preparation you received for your work

8.2 The organization of the services

8.3 The material conditions

8.4 The flow of information within the system

9. Which theoretical components of environmental and occupational health were not adequately covered during your training and are necessary for you to carry out your functions?

9.1 Environmental health:
   1 Housing
   2 Meeting rooms
   3 Water
   4 Air
   5 Ground
   6 Liquid wastes
   7 Solid wastes
   8 Vectors
   3 Food
   10 Handlers
   11 Schools
   12 Creches
   13 Environmental impact
   14 Pollution

9.2 Occupational health:
   1 Meeting rooms
   2 Working environment
   3 Physical hazards
   4 Ground/floor
   5 Biological hazards
6 Psychosocial hazards
7 Mechanical hazards
8 Occupational diseases
9 Occupational accidents
10 Contamination
11 Physical aptitude for work
12 Health promotion
13 Disease + damage prevention
14 No reply
15 Risk factors
16 Health promotion
17 Disease + damage prevention
18 No reply

10. In the course of your basic studies, did you receive sufficient practical training?
   1 Yes
   2 No
   3 No reply

   n. If you have answered “no”, in which areas did you not receive the necessary training:
      1 Water management
      2 Waste management
      3 Atmospheric pollution
      4 Food safety control
      5 Vector control
      6 Occupational health
      7 School health
      8 Risk assessment
      9 Other please specify
      10 No reply

11 Have you received any refresher training in the last five years?
   1 Yes
   2 No
   3 No reply

   If you have answered “yes”:
      a. In which area of environmental and occupational health was this training given?
         1 Water management
2 Waste management  
3 Atmospheric pollution  
4 Food safety control  
5 Vector control  
6 Occupational health  
7 School health  
8 Health surveillance  
9 Risk assessment  
10 No reply  

b. Did it satisfy your learning needs?  
1 Fully  
2 Partly  
3 Not at all  
4 No reply  

C. By what means was this training given?  
1 Books or journals  
2 Short courses  
3 Information network  
4 Exchanges with colleagues  
5 Other specify:  
6 No reply  

d. Route of entry to professional training  
1 MINED  
2 Health worker  
3 Other - specify:  
4 No reply  

e. Do you feel satisfied with the last technical appraisal you received?  
1 Very satisfied  
2 Satisfied  
3 Not very/not at all satisfied  
4 No reply  

f. What recommendations or suggestions would you make to improve the training of human resources for environmental and occupational health?
Vice-Ministry of Hygiene and Epidemiology
National Environmental Health Unit

Revision of the roster of technical and professional personnel

Province:

Date:

Name of environmental health unit:

Speciality:

<table>
<thead>
<tr>
<th>Professionals</th>
<th>Where employed</th>
</tr>
</thead>
</table>
| 1. Specialized physicians
  - Occupational health
  - Community health
  - Food + nutrition
  - School health
  - Hygiene + epidemiology
  - Other |
| 2. Integrated general medicine (IGM)
  - Specialization
  - 2nd specialization
  - Master’s degree |
| 3. Veterinary medicine
  - Master’s degree |
| 4. Engineers |
| 5. Psychologists |
| 6. Law graduates |
| 7. Graduates in health technology |
| 8. Other please specify |
**Technical personnel:**

1. Postbasic
   - Occupational health
   - Community health
   - Food + nutrition
   - School health
   - General hygiene
   - Other (specify)

2. Nursing (survey)

3. Radiation protection technician

4. General technician without postbasic

5. Other (specify)

Any other aspect of interest to personnel working in environmental health and not covered in this document:

<table>
<thead>
<tr>
<th>Total CPHE C + UMHE</th>
<th>Health area</th>
<th>F</th>
<th>C</th>
<th>M</th>
<th>Policy</th>
</tr>
</thead>
</table>
Appendix IX

PRIORITIZED PROBLEMS AND STRATEGIES TO IMPROVE HRD IN ENVIRONMENTAL AND OCCUPATIONAL HEALTH - CUBA

Problems

Planning
1. Planning is not adapted to territorial divisions at the level of the People’s Councils.
2. Lack of skills and training among the personnel responsible for planning.
3. Lack of indicators for environmental and occupational health for planning congruent with the characteristics of each territory.
4. Insufficient coordination between agencies for the planning of human resources for environmental and occupational health.
5. The health survey is not sufficiently complete with regard to environmental and occupational health to permit adequate planning of human resources.
6. No participation by the community and technical and administrative personnel in the various stages of planning for human resources in environmental and occupational health in some territories.
7. Insufficient coordination between the planning and training of technical and professional personnel.
8. The frequent changes in the structure of the hygiene and epidemiology subsystem have contributed to inappropriate planning of human resources for environmental and occupational health.
9. The MINSAP primary and preventive care perspective is not being sufficiently applied to personnel planning for environmental and occupational health.
10. Failure of human resources planning to meet needs in some territories due to lack of appropriate priorities.

Training
1. Teaching personnel which are insufficiently trained in environmental and occupational health or unaware of their role in the training of specialists in integrated general medicine.
2. Inadequate time and content in environmental and occupational health in the curricula for basic general medical training, specialists in integrated general medicine and nursing degrees.
3. Poor standards and insufficient periodic updating of the competence of teaching personnel in the specialized subjects relating to environmental and occupational health.
4. Inadequate training of teaching personnel in environmental and occupational health in the general education system, polytechnics and vocational training institutions.
5. Lack of sufficient bibliographical, teaching and learning materials and up-to-date information on environmental and occupational health for teachers and students.
6. Lack of regular assessment and continuing education in the various undergraduate and postgraduate courses for the training of personnel in environmental and occupational health.

7. Failure to update the content of courses in environmental and occupational health for middle level technicians in hygiene and epidemiology.

8. Need for continuing education in environmental and occupational health for personnel working in the national health system, with emphasis on new technologies and a multidisciplinary and multisectoral approach.

9. Lack of sufficient reference demonstration areas for teaching personnel and students in environmental and occupational health.

10. Limited use of innovative teaching methods (examples: participatory methods, case studies).

**Management**

1. The capabilities and skills of environmental and occupational health specialists are not always taken into account and matched to the functions they must perform.

2. Health legislation needs to be expanded and updated to cover the overall field and the activities of environmental and occupational health workers.

3. Lack of material resources for environmental and occupational health activities.

4. Exodus of technicians trained in hygiene and epidemiology and other specialists in environmental and occupational health to other areas of the economy.

5. Shortcomings in the selection of personnel with respect of their motivation, knowledge, activity and place of origin.

6. Insufficient systematic assessment of the performance and competence of environmental and occupational health professionals.

7. Inadequacies in the mechanisms for directing the organization of work in environmental and occupational health.

8. Lack of stimulation and motivation for the implementation of environmental and occupational health activities.

9. Participatory techniques have not been properly used in the community to identify human resources requirements in environmental and occupational health.

10. Lack of motivation to specialize in hygiene and epidemiology among specialists in integrated general medicine who are interested in selecting a second specialty area.

11. Lack of cost-benefit analysis to assess both the economic value and impact on the environment of the work done by environmental and occupational health workers.
Proposed Action Strategies to Improve HRD in Environmental and Occupational Health in Cuba

Strategies

Planning

1

I.1 Analyse at the provincial and municipal levels, with the factors involved in the planning of human resources for environmental and occupational health, the characteristics and needs of the territories, from the People’s Councils (Directorate of Health Policy, hygiene and epidemiology representatives, People’s Council chairmen, health area directors, people’s health councils, and others), taking account of health situation survey findings.

I.2 Systematically evaluate the results and economic impact of environmental and occupational health planning activities at the local level, with participation by the community.

2

2.1 Organize courses, workshops, seminars, technical meetings, training and scientific events on the process of planning and advances in planning.

2.2 Carry out research on the insufficiencies and needs for specialized training and information among personnel with responsibility for the planning of human resources for environmental and occupational health in selected provinces and municipalities.

2.3 Disseminate scientific and technical information on experiences, research and current topics of interest for those involved in the planning of human resources for environmental and occupational health.

3

3.1 Recommend to the Ministry of Health (MINSAP) that the Directorate of Human Resources Planning carry out a bibliographical search to identify international and national indicators used for the planning of human resources for environmental and occupational health, in conjunction with other environmental control authorities and institutions, in order to determine indicators for Cuba.

3.2 Convene national, provincial and municipal workshops to discuss and establish indicators for environmental and occupational health resources at the various levels in the country.

3.3 Organize a system for the implementation and systematic evaluation of indicators for human resources for environmental and occupational health so as to ensure proper planning.

4

4.1 Convene the agencies involved and responsible for the planning of human resources for environmental and occupational health at the national, provincial and municipal level, to establish plans of action to strengthen strategies for resource optimization and economic evaluation of impacts on the health of the community (MINSAP, MCTMA, MTSS, Board of Administration and other agencies and institutions involved).

5

5.1 Help to improve the HRD survey in environmental and occupational health, through municipal, provincial and national technical meetings, exchanges of experience, workshops, seminars and scientific events with a multidisciplinary and intersectoral approach.
5.2 Periodically evaluate progress towards the integration and consolidation of the HRD surveys in environmental and occupational health at the various levels

6

6.1 Establish a plan of action between planning representatives and personnel with responsibility for the training of technical and professional personnel at all levels, to help improve and optimize the planning of human resources for environmental and occupational health with a multidisciplinary and multisectoral approach (MINSAF, CPHE, FCM, health policy representatives CICMA, MINED, MES and others).

7

7.1 Recommend that the Vice-Ministry for Hygiene and Epidemiology give thought, in a multidisciplinary and multisectoral perspective, to the primary care perspective which has not been adequately applied to the training of human resources involved in environmental and occupational health activities

Training

1

1.1 Prepare short, continuing education courses in environmental and occupational health for the teachers in the basic working groups in the health areas, after having identified learning needs.

1.2 Prepare short, refresher courses in environmental and occupational health for the subdirectors and technicians in hygiene and epidemiology in the health areas.

2

2.1 Revision by the Vice-Ministry of Education’s National Methodological Commission of the curricula for basic general medical training and degrees in nursing and integrated general medicine, attempting to meet needs for knowledge and skills in environmental and occupational health.

3

3.1 Investigate the learning needs relating to environmental and occupational health among personnel teaching subjects in these fields.

3.2 Devise refresher and further training courses to meet the learning needs identified for these personnel.

3.3 Select appropriate teaching personnel to attend national courses to update and provide new information on environmental and occupational health, which they will in turn pass on to teaching personnel in their respective provinces.

3.4 Establish other modalities, such as periodic scientific and technical information, bibliographical reviews, scientific publications, distance learning courses, etc., for updating and providing further training to personnel teaching subjects related to environmental and occupational health.

4

4.1 Establish coordination with the Ministry of Education and the Ministry of Higher Education to ensure that faculty and teaching personnel receive training and continuing education in environmental and occupational health, and that these activities are incorporated into their day-to-day work with students.
5

5.1 Supply the libraries at the centres responsible for professional and technical training with learning and bibliographical materials and up-to-date scientific and technical information on environmental and occupational health.

5.2 Ensure that the centres responsible for the training of professional and technical personnel in environmental and occupational health receive the necessary supply of learning and teaching materials.

5.3 Give priority to the publication of materials on environmental and occupational health by the “Medical Sciences” publishers and explore other avenues of publication.

6

6.1 Set up and systematically evaluate undergraduate and postgraduate courses for the training of personnel in environmental and occupational health, and for further training where necessary

Activities
— Carry out research to determine the effectiveness of the courses taught in environmental and occupational health with regard to their content.
— Provide workshops on teaching methodology to revise and improve the curricula for basic general medical studies, nursing degrees, technical courses in hygiene and epidemiology, specialist courses in integrated general medicine and the training of health technologists.

7

7.1 Update the content of courses in environmental and occupational health for middle level technical staff in hygiene and epidemiology

Activities:
— Health promotion and education for health
— Teaching methodology workshops to update curricula
— Plan for continuing education for graduate technicians in hygiene and epidemiology, with emphasis on new techniques and methods to enhance performance of their functions.
— Environmental risk assessment and management
— Environmental impact assessment
— Environmental epidemiologic surveillance
— Updating and renewal of State sanitary inspectors
— Inclusion of hygiene and epidemiology technicians in health areas and People’s Councils.
— Updating of the health legislation currently in force.

8

8.1 Implement a plan for continuing education of personnel working in environmental and occupational health.

Activities:
— Carry out research to identify learning needs in regard to environmental and occupational health among health personnel.
— Short courses on specific aspects of environmental and occupational health.
— Short training courses for facilitators on basic aspects of environmental sanitation.
— Master’s degrees
— Doctorates.
9

9.1 Identify and accredit demonstration areas for the preparation and training of teaching personnel and students in environmental and occupational health.

Activities:
- Preparation of a procedural document on the requisites to be met by the demonstration areas.
- Elaboration of proposals for these areas
- Accreditation of the areas.

10

10.1 Give training to teaching personnel in interactive methods of teaching and promote rational use of these methods.

Activities:
- Training of teaching personnel
  - Training of facilitators to give this training
- Utilization and methodical monitoring of this practice

Management

1

1.1 Redeployment of the personnel specialized in environmental and occupational health currently engaged in other activities.

1.2 Training and subsequent preparation of personnel for environmental and occupational health activities through various forms of continuing education.

1.3 Increase enrollment capacity for master’s degrees and establish masters’s degree courses in the provinces, together with criteria for determination of their academic status.

1.4 Establish job descriptions for posts in environmental and occupational health where needed and update existing descriptions.

1.5 Evaluate the managers of health units with regard to the utilization of their human resources in light of the priorities established by the director of health.

2

2.1 Review and update health legislation and other legal documents.

3

3.1 Draw up a plan of requirements for material resources, including
  - transport
  - monitoring equipment
  - reactivation of environmental and occupational health laboratories
  - other work facilities

3.2 Draw up a plan for the gradual introduction of computerization in the management of the environmental and occupational health services.

4

4.1 Develop and introduce a plan for moral and material incentives to personnel in environmental and occupational health and in particular to technical personnel in hygiene and epidemiology.
5.1 Establish a regionalized system for the posts approved and select personnel for environmental and occupational health in each territory on the basis of joint MINSAP-MINED procedures in the pre-university institutes.

5.2 Establish selection requirements for the various professions and posts in environmental and occupational health.

6.1 Establish indicators for appraisal of the performance and competence of the human resources in environmental and occupational health and provide for incremental appraisal.

6.2 Carry out regular appraisals using the chosen indicators.

7.1 Reorganize the location of the entities in which the ISE will work selecting the level of health care delivery appropriate to their level of complexity and impact on environmental and occupational health.

7.2 Give training in health management to all managers in the environmental and occupational health subsystem.

7.3 Modify some aspects of the organization of work in light of current needs in environmental and occupational health.

8.1 Involve the community in the management of human resources for environmental and occupational health, developing participative techniques.

8.2 Ensure that health councils play their role in the management of human resources for environmental and occupational health.

9.1 Improve the work of the hygiene and epidemiology subsystem in order to change the view of environmental and occupational health held by specialists in integrated general medicine.

10.1 Develop and disseminate publicity on the fields of activity in hygiene and epidemiology that will successfully motivate specialists in integrated general medicine.

10.2 Extend the time, content and quality of teaching of environmental and occupational health aspects in undergraduate medical studies and in the speciality of integrated general medicine.

11.1 Promote cost-benefit evaluation in the courses on environmental and occupational health that are established.
Appendix X.

PRIORITIZED PROBLEMS AND IDEALVISION
OF HRD IN ENVIRONMENTAL AND
OCCUPATIONAL HEALTH IN MEXICO

Problems

Education and training
1. Lack of specialized professionals
2. Lack of a critical review of curricula in the environmental/occupational health specialty areas and the establishment of minimum criteria for curricula
3. Failure to incorporate priority environmental health problems in the country in educational programmes.
4. Lack of training centres with adequate facilities.
5. Dependence on external technical assistance to identify evaluate and control environmental health hazards. (Lack of technology in the country.)
7. Absence of a regional perspective in environmental/occupational education.
8. Insufficient support for the high-level professional training that is offered both in Mexico and other countries.
9. Lack of outreach and publicity for educational programmes and their curricula.
10. Lack of knowledge about real educational needs at the grassroots level.
11. Lack of continuing education at all levels and in all organizations, as recommended by the SEF: STTS, and ISO 14000 (Agenda 21).

Job market
1. Lack of job descriptions for key professionals in the field, as defined by employers.

Quality of the teaching-learning process
1. Lack of adequately trained teachers of environmental/occupational health.
2. Lack of adequate infrastructure to support the teaching-learning process.
3. Lack of a system of accreditation for professionals in the field through certification committees.
4. Insufficient incentives for teachers.
5. Lack of definition of theories and methodologies in the field (i.e., in the area of environmental/occupational health research)
Financing
1. Lack of sufficient economic resources for education and training.
2. Inefficient use of national and international resources.

Legislation
1. Lack of rigorous legislation to regulate the market and develop uniform criteria.

Inter-institutional Coordination
1. Insufficient interdisciplinary and intersectoral integration.
2. Lack of intersectoral policy for HRD.

International Cooperation
1. Lack of consideration of international regulatory obligations.
2. Lack of coordination among international programmes.

Planning/Programming
1. Lack of a study and inventory of human resources needs based on the current national situation.
2. Lack of knowledge and procedures for adequate planning.
3. High degree of “improvisation” (decision-making without adequate background and education in the field) by agency directors.
4. Lack of coordination between the academic institutions and the immediate needs in the public and private sectors.
5. Inadequate definition of problems and priorities in environmental/occupational health, with an epidemiological focus.
6. Failure to adequately define and integrate environmental/occupational health concepts and their application.
7. Inadequate definition of professional profiles by employers.

Other
1. Lack of political will to resolve environmental/occupational health problems.
2. Failure to prioritize the problem on the part of all social sectors.
3. Little or no participation by workers and the community in HRD planning; failure to exercise their rights when confronted with environmental and occupational health problems.
Ideal vision of HRD in environmental and occupational health in Mexico

Ideal vision

Education and Training
1. A system for education and training in environmental/occupational health which adheres to certain norms; is based on sound scientific knowledge and real problems in the field; is based on an educational needs assessment among the public and private sectors; is based on the required skills and job profiles of the current market; benefits from an excellent infrastructure (materials, references, equipment, etc.); is based on a clear definition of concepts and methods in environmental and occupational health.

Job market
1. The educational system should be coordinated with the job market.

Quality of the teaching-learning process
2. A participatory process with high quality teachers and consistency between the learning objectives and content taught.

Financing
1. Adequate finances to address the educational needs

Legislation
1. A legislative framework which allows for HRD based on existing supply and demand.

Monitoring of demand
1. Periodic and systematic analysis of the demand through prospective studies, evaluation of morbidity and mortality, market studies, environmental monitoring and analysis of graduates.

Interinstitutional coordination
1. Establishment of an interinstitutional committee for coordination of education and training in the field.

International cooperation
1. High quality technical cooperation which is appropriate to the needs of the country.

Planning and programming
1. Decentralized planning based on available budget, with political support, measurable short, medium and long-term goals and ongoing evaluation.
2. Planning which is interdisciplinary and intersectoral (public, private, community).