

**ROLE, FUNCTIONS AND TRAINING REQUIREMENTS OF
ENVIRONMENTAL HEALTH OFFICERS (SANITARIANS) IN EUROPE**

Report on a Consultation

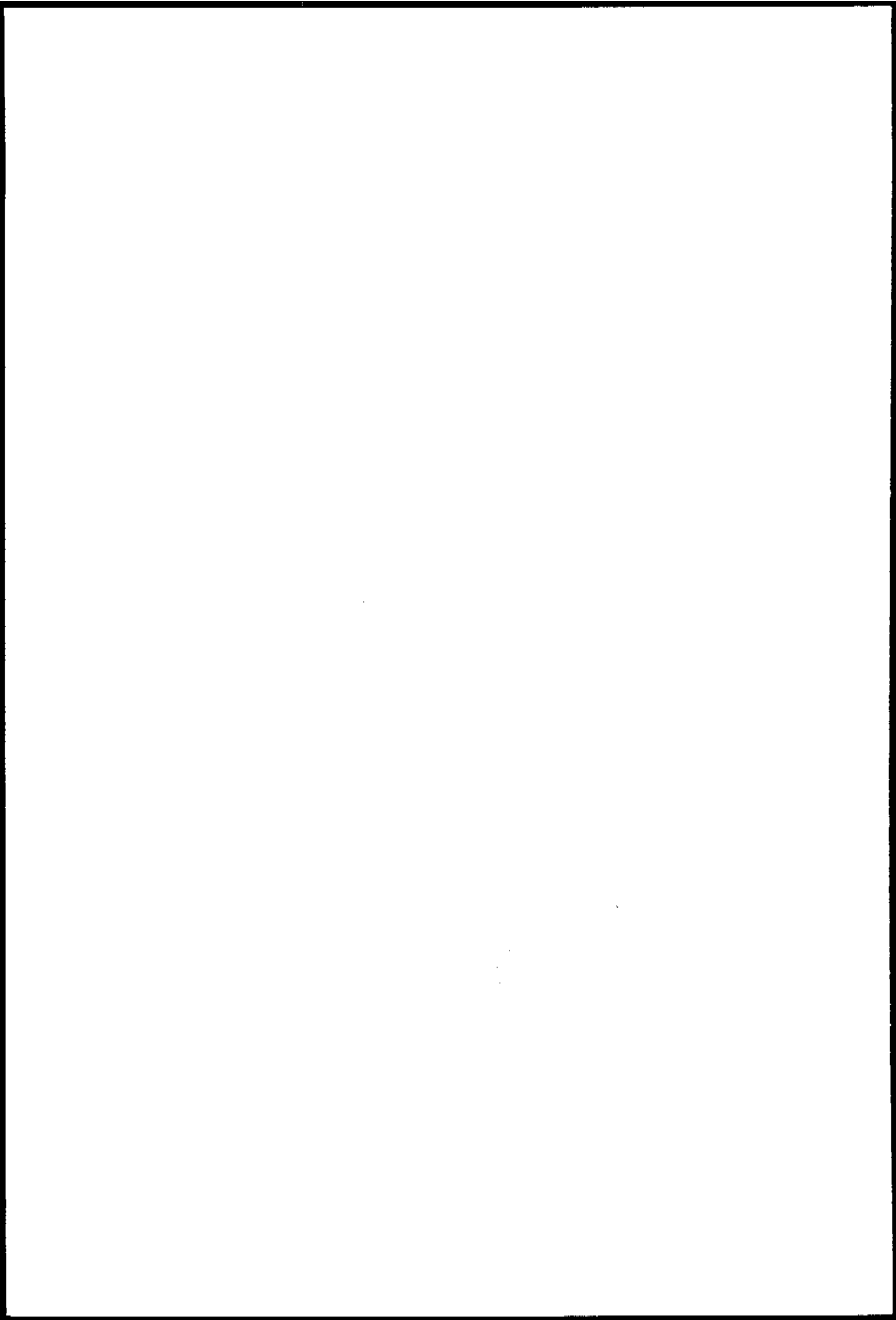
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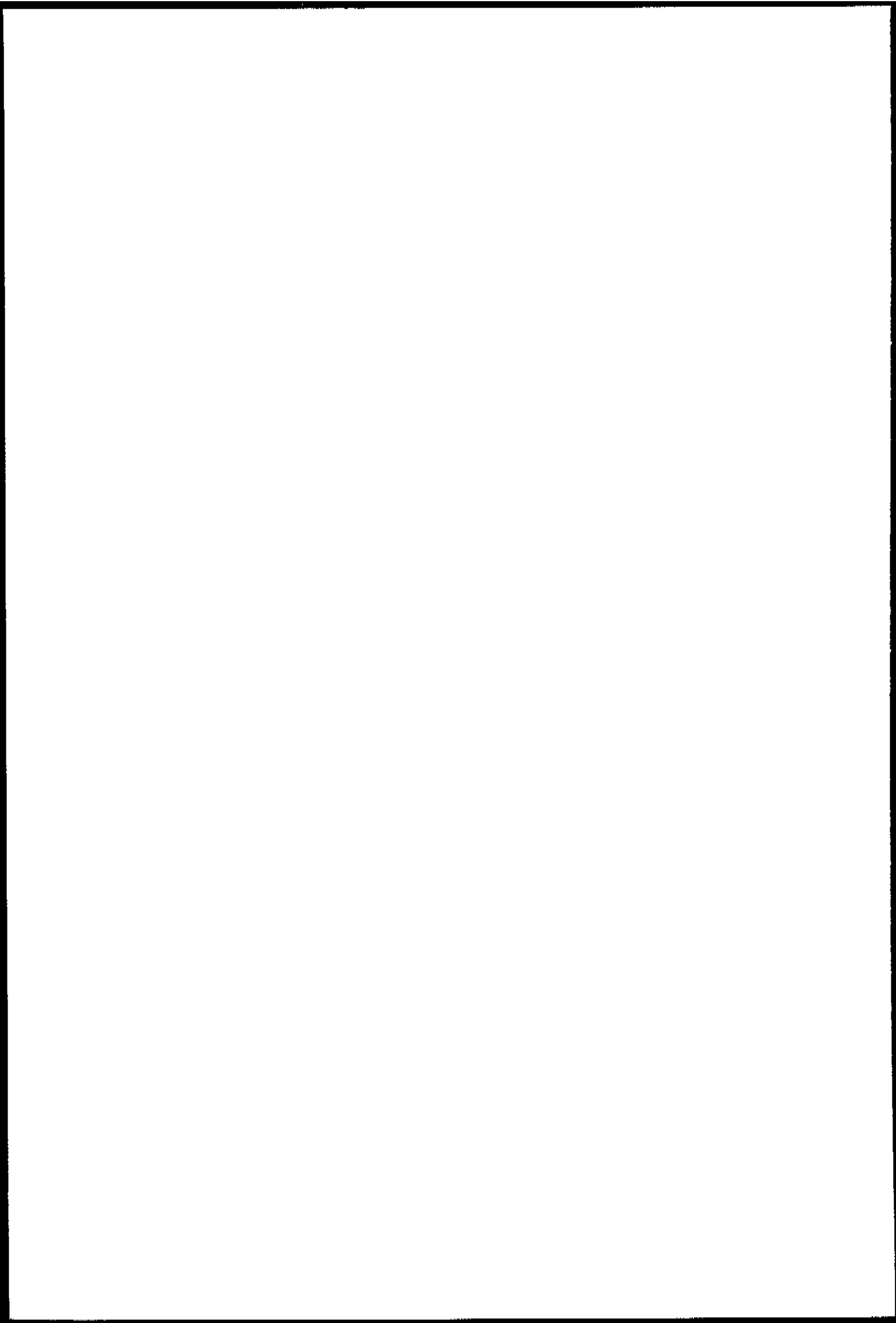


NOTE

This report has been prepared by the Regional Office for Europe of the World Health Organization for governments of Member States in the Region and for those who participated in the Consultation on the Role, Functions and Training Requirements of Environmental Health Officers. A limited number of copies are available to persons officially or professionally concerned in this field of study from the WHO Regional Office for Europe, Scherfigsvej 8, 2100 Copenhagen Ø, Denmark.

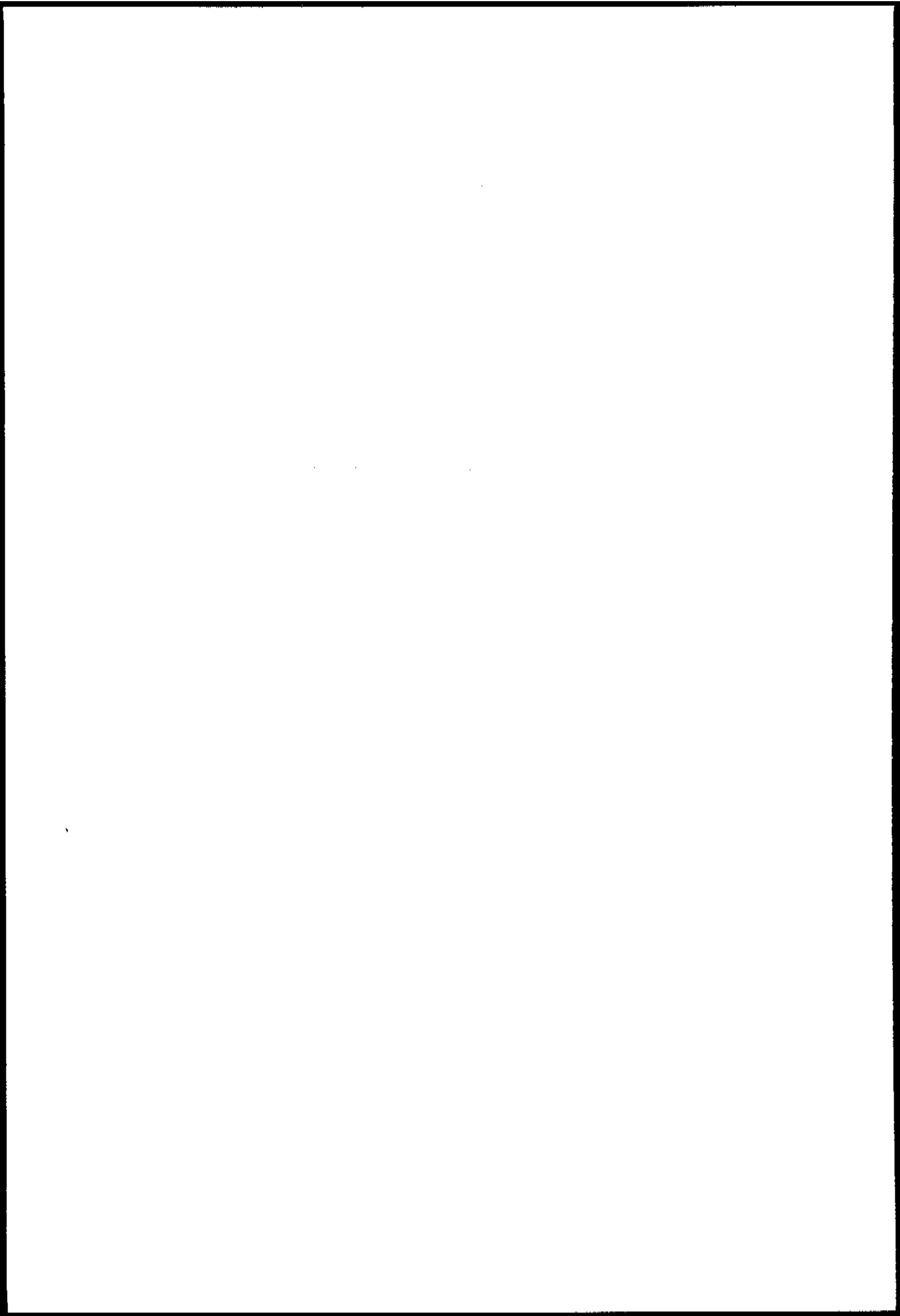
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1. INTRODUCTION

As part of the work of the WHO Regional Office for Europe in the field of community hygiene, the Consultation was convened from 12 to 15 December 1977.

The meeting was attended by six temporary advisers, eight WHO staff members from the Regional Office and one staff member from Headquarters. The list of participants is contained in Annex 2.

The working papers were circulated to participants describing the activities and responsibilities of environmental health personnel in a number of countries of the WHO European Region and this information is summarized in Annex 1.

The purpose of the Consultation was to compare the ways in which environmental health officers (sanitarians) are employed in various countries of the Region, to identify common features and to explain the differences in order to propose a common approach regarding their activities and responsibilities. Once this approach has been established, it will be possible to discuss training and staffing requirements.

At the opening of the Consultation it was noted that the Regional Office has devoted considerable attention to the role of sanitary engineers rather than to chemists, lawyers and environmental health officers in a multidisciplinary approach to environmental health; and it has now become obvious that countries will have to rely increasingly on the environmental health officers.

For that purpose it is necessary to decide on the form of liaison there should be between central and local authorities, and to determine the role and range of functions of the officers as well as their administrative and technical responsibilities vis-à-vis other departments and related environmental health activities. On that basis proposals could be made on training and improvement of the efficiency of officers and on strengthening of environmental health services generally.

Also, although the Region is highly industrial, basic sanitation problems are not totally solved. Thus microbiological hazards do not appear as a major risk except in the area of food. Here the risk is compounded as it has been calculated, for example, that in one highly industrialized country half of all meals are consumed in public eating places and not at home. The matter of chemical residues in food substances is also of great importance in industrial countries. The environmental health officer has a vital role in safeguarding the public from these hazards and he must know how the food industry functions and the type of consumer products that are available. He must keep abreast of recent developments of food science and toxicology. He should not design and build but should monitor and control potential and existing environmental hazards with the backing of strong legislation. However these legal enforcement powers should be used with discrimination. In implementing surveillance and control measures the environmental health officer should provide professional advice and guidance, thereby gaining the confidence of the community and encouraging their participation in improving environmental health.

Finally the hope was expressed that the participants, in striving for a professional profile for the environmental health officer who had identified a major need, would recommend a more suitable title for this type of personnel than the present one of "sanitarian" used by WHO.

2. PRESENT SITUATION

The meeting commenced with an elaboration by participants of individually prepared working documents. In addition a number of statements were made outlining the present situation in Albania, Algeria, Czechoslovakia, Denmark, German Democratic Republic, Greece, Italy, Morocco, Norway, Portugal, Sweden and Turkey.

In reviewing the national and local administrative infrastructure for environmental health services in the Region, and in particular the role and functions of environmental health officers, a large measure of uniformity is apparent in the range of duties that need to be performed in relation to common environmental concerns. The environmental problems in the Region are of increasing complexity, directly related to growing industrialization and changing agricultural practices and to a corresponding diversification of control measures. In addition more informed public opinion has brought greater awareness of potential environmental hazards.

With reference to the existing national environmental health infrastructures of industrialized countries, at both central and local levels, a similarity of approach is apparent in certain cases. In general terms a grouping could be made as follows. Poland and the USSR have a network of sanitary and epidemiological stations which form the infrastructure through which the environmental health officer (known as the sanitary feldsher) works within a team to ensure control of the

environment. In Portugal and Spain the specific professions of sanitary engineer and environmental health officer have yet to be fully developed, and many environmental health responsibilities tend to be delegated to other professions. In Ireland, Sweden and the United Kingdom the environmental health officer has developed as a professional in his own right and works within an organized local government infrastructure, backed by an extensive legal framework, in carrying out his duties. In Austria, Federal Republic of Germany and Switzerland responsibility for environmental health falls within the wider system of public health, and sanitary inspectors work in public health offices which are part of the district or commune administration. In Belgium and the Netherlands highly qualified environmental hygiene officers work in the national public health service with regional officers at the provincial level. Finally in France sanitary engineers have been introduced at various levels of the administration since 1970 and there has been an upgrading of lower level environmental health personnel together with the introduction of a new category at the intermediate level. The equivalent titles for similar officers in various countries are "environmental health officer" in the United Kingdom, "sanitarian" in the USA, "technicien supérieur du génie sanitaire" in France, "inspecteur d'assainissement" in Algeria, "sanitarfeldsher" in the USSR, "Gesundheitsaufseher" in the Federal Republic of Germany and "agente sanitario" in Spain.

The Consultation felt that no recommendations could be made concerning the above titles in various languages, since if countries created specific categories of professionals they should naturally select their own appropriate nomenclature, bearing in mind the importance of a title in the development of a profession both nationally and internationally.

While comprehensive basic training is necessary for environmental health officers to perform the many varied tasks involved in environmental health control, there is also a need for specialization to enable them to deal with major concerns such as food hygiene, housing and environmental pollution control.

Employment of specialists is recommended in urban industrialized areas, while rural areas with a narrower range of problems do not require such expertise.

Thus the scope of environmental health programmes is wide and growing, although emphasis on its different aspects varies from area to area according to the state of development. In a developing country the greatest emphasis is placed on the provision of services in basic sanitation, water supply, excreta disposal, etc., and on the control of communicable disease. In rural areas in some of the countries 40% of the population get their water supply from wells, which presents a considerable problem of control, especially when they are privately owned. But generally in the Region, which is to a large extent highly industrialized, environmental health work is more extensive and complex, being concerned with the problems of industrialization, urbanization and mass travel. The etiological factors in health and disease have also to be carefully considered hand in hand with every modification that man makes to his environment, using such recently developed approaches as environmental impact analysis.

For the general purpose of promotion of environmental health, many different skills are required. The disciplines which have important contributions to make include medicine, veterinary science, engineering, chemistry, physics, microbiology, law and the behavioural sciences. In some cases important responsibilities have been given to members of established professions whose basic professional training has been supplemented by training in environmental matters, e.g. the veterinarian carrying out all food control activities, the medical officer being responsible for all aspects of epidemiological field investigation, and the engineer dealing with housing, water and pollution control. In other countries environmental health personnel of various categories are employed, but with a considerable variation in the nature and extent of their duties and with corresponding differences in their training from comprehensive courses up to the level of a university degree to basic programmes lasting only a few months.

3. CONSIDERATIONS FOR FUTURE DEVELOPMENT OF ENVIRONMENTAL HEALTH OFFICERS' ACTIVITIES

In the simplest terms, environmental health covers all the measures necessary to deal with factors in the environment which affect human health.

Although many existing professions have an important and continuing role to play in the promotion of environmental health, none can possess all the knowledge which this work demands. It is agreed therefore that there should be a place in the environmental health services of all countries for a professional officer with specific training in the discipline.

This officer occupies a key position in the environmental health service and an important part of his functions must be to acquaint himself with actual or potential environmental hazards and to ensure that appropriate action is taken to deal with them. In some cases he may have the required authority and expertise. In others he may need to press particular agencies to take appropriate action. There will also be occasions when he will need to consult professional officers, such as

community health physicians, engineers, microbiologists, veterinarians, physicists and chemists and make use of laboratory and other expert scientific services. A vital part of his functions will therefore be to maintain effective liaison with other relevant professional officers who have a contribution to make in the promotion of environmental health.

A comprehensive list of functions is given in Annex 1 with asterisks denoting the main duties which appear common to environmental health officers in the majority of countries in the Region. In carrying out these tasks the environmental health officer should concentrate on the administrative, inspectional, educational and regulatory aspects of environmental health, with reinforcement from other professions as stated.

Environmental health officers should be employed in sufficient numbers in their working areas to permit them to exercise adequate surveillance over health related environmental conditions; and this surveillance should include necessary monitoring activities. They must have a close association with the people in their area and be readily accessible to them. The governmental level at which they are employed will depend on the constitution of the country, but there are strong advantages in their operating at the community level where they will be in close contact with the population and the environmental problems that affect them. In this context they would be seen as members of the multidisciplinary primary health care teams, delivering comprehensive health care at community level.

It is recognized that the environmental health officer must be capable of demonstrating his ability to protect the health of the community from the ever-increasing chemical hazards to health in highly industrialized countries, in the form of toxic industrial wastes and new chemicals released into the environment from agricultural or other sources. The environmental health officer envisaged for this control would require a sound educational background combining traditional grounding in public health with much of the present knowledge of toxicology. He would then be able to cope with such problems as soil pollution due to degradation-resistant agricultural pesticides, leachates from industrial wastes, fall-out from chemical work plumes, and liquid radioactive wastes from industry and research. Chemical pollution of the work environment from solvents and from dust arising from processes using silica, asbestos and lead are other examples of hazards. The home environment needs control for such products as cosmetics, detergents, paints, pesticides and gas used as fuel. Similarly water resources need monitoring for heavy contamination as from mercury, antimony, barium and cobalt and other metals, due to industrial wastes, pesticides used in agriculture, etc. New problems in food safety are also arising, such as the irradiation of food, permitted in some countries, and the increasing use of "substitute foods". Although in some countries the work is carried out by an industrial wastes inspector working with the Ministry of the Environment, it is felt that a well-trained environmental health officer working for the Ministry of Health or a municipality would be a very suitable person for this control.

The employment of environmental health officers should help to ensure economic, efficient and effective promotion of environmental health, both on a comprehensive and preventive basis; although the extent to which this will be possible depends on government policy, the specific functions allocated to the officers and the powers they are given. An important advantage of employing such officers is that it would enable other professional staff to concentrate on matters which require their particular skills and to avoid becoming involved in matters which are really outside their area of competence.

4. CONCLUSIONS

The Consultation reached the following conclusions:

- (1) Experience of those countries in the Region which have officers with specialized training in environmental health who are recognized as constituting a specific profession clearly demonstrates their value. Thus it would be to the advantage of all Member states to introduce into their environmental health service staff of this kind whom the Consultation called in English "environmental health officers".
- (2) The environmental health officer must have a standard of general education equivalent to university entrance level and professional training leading to a bachelor's degree or recognized equivalent. The curriculum should be task-orientated and appropriate to national requirements, taking into account the increasingly complex range of environmental health problems being experienced in the Region. Provision should be made for appropriate postgraduate specialization.
- (3) Adequate arrangements should be made for regular refresher training to keep environmental health officers abreast with recent developments and changing priorities in their field.

(4) Whether the environmental health officer is employed by a central or local authority must depend on the constitution of the country, but there are strong advantages in his operating at the community level. At this level he will be concerned with the administrative, inspectional, educational and regulatory aspects of environmental health programmes, leaving the highly technical engineering aspects to the engineer and the strictly medical decisions to the community health physician.

(5) Nevertheless his role should not be restricted to field work; it should be recognized that he has a contribution to make to environmental health work at higher levels.

(6) As teamwork is necessary in the promotion of environmental health, the environmental health officer must maintain adequate liaison with staff of the other disciplines concerned.

(7) Although the specific functions performed by the environmental health officer will vary from country to country, he should be given the widest possible responsibilities. A list of the responsibilities which could properly be entrusted to this officer is given in Annex 1.

(8) To ensure that the particular skills of the environmental health officer are used to the best advantage, there are various routine tasks for which he should have adequate technical support. Similarly, although it is essential that he should have strong legal backing, he must not be regarded merely as a law enforcement officer; the emphasis in his work must also be on prevention and education.

5. RECOMMENDATIONS

5.1. It was recommended:

(1) that in those countries where environmental health officers do not already exist, steps should be taken to appoint them, either by creating new staff categories or by upgrading the training and functions of appropriate existing categories;

(2) that the training and duties of these officers should be those envisaged by the Consultation;

(3) that in view of the increasing complexity of environmental health problems in the Region, Member states should review the existing role and functions of their environmental health staff to ensure maximization of their potential as professionals in the health team;

(4) that in planning environmental health programmes, and in order to ensure maximum utilization of expertise, the environmental health officer's duties should not be limited to those of enforcement but should also include educational and preventive components;

(5) that a study be undertaken as soon as possible to define a professional profile for the environmental health officers in the Region in the light of the Consultation's conclusions and the need to expand the scope of their activities to meet the demands of highly industrial societies, it being understood that the study would also provide a basis for the preparation of a working group on training methods and curriculum development for these officers;

(6) that among the steps to be taken in encouraging Member countries to adopt the recommendations, the following action should be considered:

(a) appointment of an environmental health officer at the Regional Office to widen the range of its environmental health expertise;

(b) proposal of the subject "The team approach in environmental health, with particular reference to environmental health officers" for the technical discussions at the thirtieth session of the Regional Committee.

RANGE OF EXISTING ACTIVITIES AND FUNCTIONAL RESPONSIBILITIES
OF ENVIRONMENTAL HEALTH OFFICERS (1)

Activities	Functional responsibility
<p>A. <u>Water resources management</u>^{x1}</p> <p>1. Drinking-water supply (urban)</p> <p>2. Drinking-water supply (rural)</p> <p>3. Water for food industry</p> <p>4. Water for other uses (recreational)</p> <p>5. Water for other uses (transportable)</p> <p>6. Water pollution control</p> <p>6.1 inland waters</p> <p>6.2 coastal waters</p> <p>7. Plumbing</p> <p>B. <u>Food control</u></p> <p>1. Inspection of specific foods</p> <p>1.1 Meat at abattoirs</p>	<p>Inspection of water sources.</p> <p>Systematic surveillance including sampling (chemical and bacteriological) of water supply for potability and purity. Epidemiological investigation in case of waterborne diseases.</p> <p>Planning, siting, inspection of small-scale water sources, preventive disinfection (rural). Epidemiological investigation in case of waterborne diseases.</p> <p>Systematic surveillance including sampling (chemical and bacteriological).</p> <p>Systematic surveillance, inspection, sampling.</p> <p>Systematic surveillance, inspection, sampling, preventive disinfection.</p> <p>Monitoring and enforcement: surveys, sampling of effluents from suspected sources, routine sampling of river waters for condition.</p> <p>Monitoring and enforcement.</p> <p>Inspection and remedial action for defects in plumbing fixtures, services, pipes, taps (faucets) etc. Monitoring of plans for new constructions.</p> <p>Post mortem inspection of carcasses and condemnation of diseased meat.</p>

¹ x denotes functions which appear common to most environmental health officers working in the countries reviewed.

Activities	Functional responsibility
1.2 Meat at retail level	Inspection of meat in butchers' shops and markets and seizure of unsound products
1.3 Fish at ports	Inspection of fish landed in ports, condemnation of unsound or contaminated fish, sampling for laboratory monitoring of heavy metal and pesticide contamination.
1.4 Fish at retail level	Inspection of fish in shops and markets for soundness.
1.5 Shellfish layings	Sanitary surveys of areas, sampling of sea water and shellfish for detection of bacterial or chemical contamination.
1.6 Shellfish purification units	Inspection of installations, sampling of sea water and shellfish.
1.7 MILK production at farms	Inspection of premises, health education of personnel, sampling.
1.8 Milk at pasteurization plants	Inspection of premises, monitoring of processes, sampling of milk health education of personnel.
1.9 Poultry processing plants	Inspection of processed carcasses for disease, inspection of processes, health education of personnel.
1.10 Other foodstuffs	Inspection for soundness.
2. Inspection for registration and routine inspections of:	
2.1 Food industry premises	Application of regulations at the planning stage, routine inspections, legal action.
2.2 Abattoirs	Application of regulations at the planning stage, routine surveillance to enforce compliance.
2.3 Eating establishments	Application of regulations at the planning stage, routine surveillance, legal enforcement of regulations, health education.
2.4 Wholesale storage depots	Application of regulations at the planning stage, routine surveillance, legal enforcement of regulations, health education.
2.5 Markets	Application of regulations at the planning stage, routine surveillance, legal enforcement of regulations, health education.

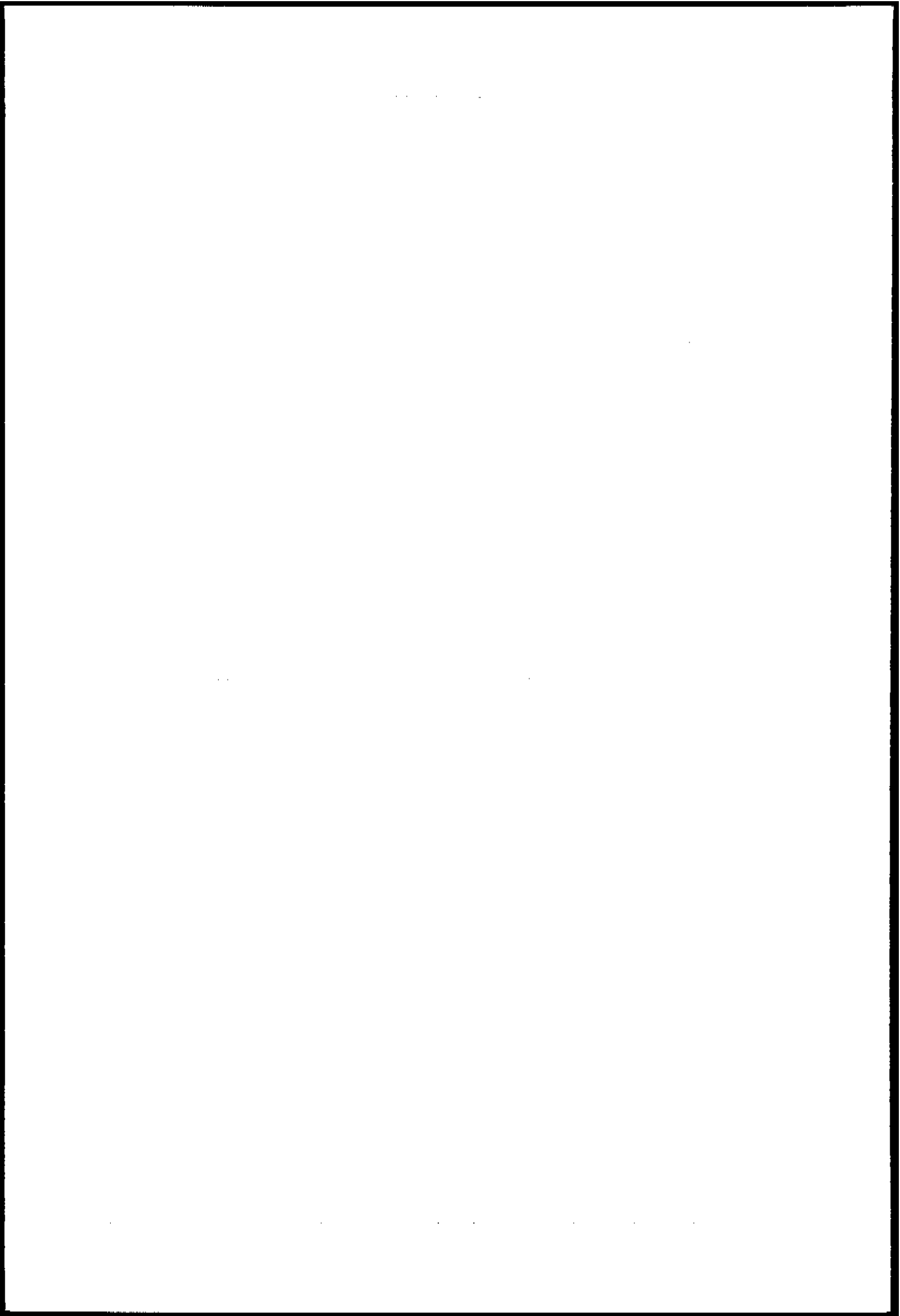
Activities	Functional responsibility
<p>3. Quality control, monitoring for bacteriological and chemical contamination</p> <p>3.1 Routine monitoring</p> <p>3.2 Measures in food poisoning outbreaks</p> <p>4. Field investigation of food poisoning outbreaks</p> <p>C. <u>Waste management</u>*</p> <p>I. Solid wastes</p> <p>1.1 Municipal waste collection and disposal</p> <p>1.2 Cleaning of public places</p> <p>1.3 Disposal sites</p> <p>2. Liquid wastes</p> <p>2.1 Newly laid drains</p> <p>2.2 Existing drains</p> <p>2.3 Small disposal units</p> <p>2.4 Connexions to sewers</p> <p>2.5 Sewage disposal installations</p> <p>2.6 Effluent sampling</p> <p>2.7 Industrial and other toxic wastes</p>	<p>Planning of sampling, interpretation of laboratory findings, follow-up action.</p> <p>Application of epidemiological procedures for taking food samples</p> <p>Collaboration with medical and veterinary teams to determine causes of outbreaks, taking appropriate action to contain outbreaks.</p> <p>Organization and direction of services.</p> <p>Organization and direction of services, routine surveillance.</p> <p>Participation in planning, routine inspections, infestation control measures.</p> <p>Supervision of construction and testing.</p> <p>Testing for defects, initiation and supervision of remedial action.</p> <p>Advice on planning, design and installation, routine inspections.</p> <p>Enforcement of regulations on connexions to private dwellings.</p> <p>Routine hygienic surveillance.</p> <p>Monitoring for anti-pollution measures, remedial action.</p> <p>Participation in industrial planning, routine sampling of toxic and non-toxic wastes, initiation of action to control health and pollution hazards.</p>

Activities	Functional responsibility
<p>2.8 Waste water reutilization</p> <p>D. <u>Housing</u> *</p> <p>1. Permanent dwellings</p> <p>1.1 Demolition</p> <p>1.2 Reconditioning</p> <p>1.3 Repairs</p> <p>1.4 Overcrowding</p> <p>1.5 New dwellings</p> <p>2. Temporary dwellings</p> <p>2.1 Tourist sites</p> <p>2.2 Camping sites</p> <p>2.3 Caravan dwellings</p> <p>E <u>Epidemiological services</u></p> <p>1. Vector control</p> <p>1.1 Rodent control *</p> <p>1.2 Insect and other pest control *</p>	<p>Quality control of waste water reutilized for irrigation or other purposes.</p> <p>Detailed inspections, application of regulations on individual dwellings and urban renewal projects.</p> <p>Inspections, application of regulations, supervision.</p> <p>Inspections, schedules of work, supervision of repairs.</p> <p>Inspections, application of regulations.</p> <p>Participation in planning, supervision of environmental health aspects of construction and zoning.</p> <p>Participation in planning and siting, routine inspections.</p> <p>Participation in planning and siting, routine inspections.</p> <p>Participation in planning and siting, routine inspections.</p> <p>Planning and supervision of specific control programmes and routine activities.</p> <p>Planning and supervision of specific control programmes and routine activities particularly where the role of vectors in outbreaks requires specific integrated rodent, arthropod or mollusc control measures.</p>

Activities	Functional responsibility
<p>2. Field investigations</p> <p>3. Disinfection</p> <p>F. <u>Air quality management</u></p> <p>1. Planning and zoning</p> <p>2. Surveillance and monitoring</p> <p>3. Enforcement of standards on emissions</p> <p>3.1. Vehicles</p> <p>3.2. Housing</p> <p>3.3. Industrial premises</p> <p>4. Control devices</p> <p>G. <u>Noise control</u></p> <p>1. Zoning</p> <p>2. Sources of noise</p> <p>3. Monitoring and enforcement</p> <p>4. Installation and operation of control services</p> <p>H. <u>Occupational Health</u></p> <p>1. Hygienic standards of workplaces</p>	<p>Collaboration with medical and veterinary staff to determine causes of outbreaks of diseases and take appropriate measures to halt their spread.</p> <p>Initiation and supervision of appropriate techniques, health education of public.</p> <p>Participation in surveys and planning.</p> <p>Siting of monitoring stations, data collection through laboratory services.</p> <p>Routine control, legal action for enforcement of regulations.</p> <p>Routine control, observations, health education, enforcement.</p> <p>Observation of emissions, advisory inspections, enforcement.</p> <p>Advisory services, routine control.</p> <p>Participation in planning for airports, industry and highways.</p> <p>Identification of sources of noise.</p> <p>Noise monitoring, advice and enforcement of regulations.</p> <p>Advisory services on noise reduction, monitoring of efficiency and follow-up.</p> <p>Planning approval for sanitary accommodation, water supplies, heating, lighting, etc., routine inspections, initiation of remedial action.</p>

Activities	Functional responsibility
<p>2. Control of hazards to workers' health</p> <p>3. Office accommodation</p> <p>1. <u>Protection of the recreational environment*</u></p> <p>1. Public swimming pools</p> <p>2. Beaches and bathing areas</p> <p>3. Parks</p> <p>J. <u>Control of frontiers, air and seaports, and border crossings</u></p> <p>1. Vector control</p> <p>2. Water supply</p> <p>3. Food hygiene</p> <p>4. Solid/liquid waste disposal</p> <p>K. <u>Educational activities</u></p> <p>1. Community participation</p> <p>2. School, environmental health education</p>	<p>Liaison with other ministries, control of small installations in rural areas.</p> <p>Routine inspections, approval of sanitary accommodation, water supplies, restrooms, meal facilities, lighting, ventilation.</p> <p>Inspections, water quality monitoring, advisory services, closure during certain epidemics.</p> <p>Sanitary surveys, water quality monitoring, pest control, closure of insanitary premises.</p> <p>Inspections, pest control.</p> <p>Control of vectors, collection of specimens, deratization to comply with international health regulations.</p> <p>Surveys, control of transportation to ships and aircraft.</p> <p>Air and marine catering, food premises in air and seaports.</p> <p>Control of disposal of aviation wastes, hygienic waste disposal within air and seaports.</p> <p>Motivation for active community involvement in environmental health projects by advising on and supporting education of the public.</p> <p>Encouragement and information of teachers concerning environmental health subjects suitable for inclusion in school curricula, encouragement of student projects on environmental matters.</p>

Activities	Functional responsibility
<ul style="list-style-type: none">L. <u>Radiation health</u>I. Drinking water and food safety	Systematic surveillance through sampling and follow-up.



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