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## *ERADICATION OF WATER-RELATED DISEASES*

Report on a Joint UNECE/WHO  
Consultation

Kiev, Ukraine  
20-22 March 1997

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821-EUREAST97-14479

## **TARGET 20**

### **WATER QUALITY**

*By the year 2000, all people should have access to adequate supplies of safe drinking-water, and the pollution of groundwater sources, rivers, lakes and seas should no longer pose a threat to health.*

### **ABSTRACT**

The Second European Conference on Environment and Health in Helsinki in 1994 gave high priority to water issues, and at the fourth meeting of the European Environment and Health Committee strong support was given to the development of an instrument for the eradication of water-related diseases. The Consultation considered this proposal and made recommendations regarding its potential content. The meeting endorsed the need for a flexible, legally binding instrument for the eradication of water-related diseases and made specific recommendations regarding its content. Following the meeting, WHO and ECE will collaborate in further preparatory activities.

### **Keywords**

**WATER – adverse effects  
DISEASE OUTBREAKS  
WATER PURIFICATION  
(1) ECE  
EUROPE**

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## Background

The water and health issue was intensively discussed at the first meetings of the European Environment and Health Committee (EEHC) in 1995 and 1996. The discussions clearly indicated that the eradication of water-related diseases is one of the most pressing issues at pan-European, national and local levels.

This follows a loss of momentum of the UN Water Decade and is reflected in the fact that the WHO health for all target on water quality (*adequate supplies of safe drinking-water to all people by the year 2000*) will not be achieved for more than 110 000 000 people in the European Region. This serious situation is also illustrated by the fact that the number of water-related diseases is increasing, primarily in the countries of central and eastern Europe (CCEE) and newly independent states (NIS).

It is against this background that EEHC at its November 1996 meeting in Riga decided that an international instrument on the eradication of water-related diseases could become one of the principal outcomes of the 3<sup>rd</sup> European Conference on Environment and Health to be held in London in June 1999.

The main purpose of this consultation was to outline the potential content of such an instrument and an approach to its development, taking into account existing national and international instruments and financial considerations.

The meeting was attended by 26 delegates from 13 different countries in the UNECE and WHO European regions, including representatives from UNECE, WHO and UNEP (Annex 1).

The principal items on the agenda of the consultation were: reports from country participants on existing and emerging problems; further elaboration of the problem areas; scope and content of an international instrument; and final discussion and agreement on the type and nature of an instrument. The adopted agenda for the consultation is included as Annex 2.

Four main issues were addressed during the consultation:

- protection of water resources in general and of drinking-water sources in particular
- safe drinking-water supply
- human resources development and institutional capacity
- financial implications.

Dr Karamushka, Ukraine, was elected Chairperson of the Meeting, Dr Rocha, Portugal, was elected Vice-Chairperson and Dr Crathorne, United Kingdom, was elected Rapporteur.

## Opening of the Meeting

The meeting was opened by Dr Karamushka, who welcomed participants to Ukraine and wished them a productive meeting. Dr Günter Klein, Director, Environment and Health, WHO Regional Office for Europe (EURO) welcomed participants on behalf of Dr Jo Asvall, Regional Director, described the purpose of the meeting and invited participants to introduce themselves.

## **Water-related diseases. Problems in European countries, with specific emphasis on countries in transition**

### **Armenia (Dr Karapetian)**

Armenia is heavily dependent on groundwater resources (95% of current supply) and these are largely of good quality. The surface water sources (5% of supply) are also generally good as there are no large centres of industry. However, water resources are contaminated from diffuse sources of pollution and notably from fertilizers and pesticides used in agriculture. The main problems in Armenia come from the lack of adequate treatment of source waters, particularly with respect to disinfection, and the poor quality of distribution systems. Very little maintenance or renewal of the supply networks has taken place since 1989 and this, combined with the lack of disinfection, gives rise to 2–3 outbreaks of waterborne diseases per year. With respect to legislation, there is a national law regulating quality but there is an urgent need for an instrument which delineates clear responsibility for water and health related problems.

### **Estonia (Ms O Sadikova)**

In Estonia, 80–94% of the population in cities is connected to a public water supply, but this falls to 59% in rural areas. Water supplies are based on surface, groundwater and shallow well sources. Groundwaters can contain high levels of iron and, particularly, fluoride: concentrations have reached 6.3 mg/l in parts of western Estonia, and the occurrence of fluorosis has reached 87% among schoolchildren in this region. Waterborne disease outbreaks have been experienced due to Shigella (84 outbreaks) and Hepatitis A (32 outbreaks) and enteroviruses have been detected in the water supply of Tallinn. The condition of the water supply system is of great concern, and around 30% of the network must be renovated or renewed. A leakage rate of 30–35% is common. A further problem is caused by the age and consequent poor efficiency of many water treatment works. Legislation exists in the form of the Water Law and Public Health Protection Law and associated regulations. These establish principles for the protection of water resources and the safety of water for human consumption, and cover bathing water quality. Programmes implemented in the last two years have seen a reduction in industrial and rural pollution and a reduction in the incidence of waterborne diseases. The next goal is to improve monitoring and the analysis of information.

### **Germany (Dr Kramer)**

Germany has a well developed system for water management. Over the years, health problems have been solved by using multiple-barrier treatment of surface waters and a concentration on groundwater (better quality) resources. However, in recent years the increased pressure on water resources has meant that more surface water (poorer quality) sources have been used and this trend will continue. This will put pressure on treatment technology particularly with respect to parasites, protozoa, etc. The proposed international instrument should clearly state goals and standards and include resource management and institutional strengthening. The achievement of WHO goals would only be successful through cooperation and exchange of information.

### **Hungary (Dr Kádár)**

Dr Kadar noted that infant and adult mortality was high and life expectancy low in Hungary compared to the average for Europe as a whole, and there was evidence that the situation was getting worse. Social, economic and environmental factors are responsible. Some 97% of the population is served with piped drinking-water and for around two thirds of this number the quality is very good. For the other third, however, there are a range of problems which need urgent action. The most important problems were reported as nitrate, arsenic and faecal contamination although a number of improvements have been made in recent years. The quality of bathing waters (swimming pools and lakes, etc.) was also of concern.

### **Kyrgyzstan (Dr Abdekerimov)**

Kyrgyzstan effectively provides much of the water resources for surrounding countries since many of the major rivers have their sources in the mountainous regions of the country. Some 76% of the total population benefits from a piped water supply, but up to 50% of rural areas are not covered. Some 30% of the population has no access to piped supply and relies on open sources. The quality of water sources has decreased and some, particularly those near towns, are of poor quality, the principal reason being discharge of untreated wastewaters. However, there are other problems, particularly from oil products, chromium, organic matter and saline intrusion and, in particular, from the aging distribution system which plays a role in the deterioration of the quality of the water supplied. A further problem has arisen with respect to the production of radioactive waste from mines and cyanide contamination from gold mining activities. Lack of adequate treatment gives rise to outbreaks of waterborne disease, particularly infectious hepatitis. Legislation does exist for the protection of water resources and an environmental action plan has been developed, including resource protection and measures to improve water sanitation. A high priority is the development of an instrument to regulate rights and responsibilities for transboundary issues.

### **The Netherlands (Dr J Versteegh)**

The Netherlands has a well established water management system with over 99% of the population connected to the public water supply system and 95% connected to a sewer. There are no systematic health problems related to water, but there are occasional pollution incidents, for example with legionella. However, it is known that source waters are contaminated with viruses, protozoa, etc. and the risk of treatment failures or inefficiency of operation can never be zero, hence there is a possibility of disease transmission. Although there are no current problems, pesticide and nitrate levels in groundwater are increasing and could become an issue in future. Thus, the presence of protozoa and viruses in surface waters and increasing levels of pesticides and nitrate in groundwaters are the main concerns. Source protection measures and the introduction of improved purification techniques will help to reduce potential problems.

### **Romania (Dr V Rojanschi)**

In Romania, 60% of the population is connected to a public water supply with the remaining proportion (largely from rural areas) using private sources. The latter are not controlled and frequently do not meet quality standards. The overall loss of water through leakage is high (22%)

and reducing this figure would make big improvements to supply. Parts of Romania suffer from interruption of supply, sometimes for more than 12 hours per day. Bacteriological quality is poor in some areas (8% of samples failing standards) and this gives rise to outbreaks of hepatitis (13 000 cases per year) and dysentery (5000 cases per year). Surface water quality is very variable and 76% of river stretches do not meet quality standards, largely through the discharge of poor or untreated wastewater. Groundwaters suffer from an increasing problem from nitrate contamination. A new environmental protection law has been passed and it is intended to improve monitoring and introduce quality control systems for laboratory analytical work.

#### **Russian Federation (Dr Tvetinov)**

The Russian Federation is well endowed with water resources but the distribution is uneven. The European part of the Federation, which contains 80% of the population, has only 8% of the resources. The quality of natural resources is poor in this part of the country, leading to a correspondingly poor quality of drinking-water. Approximately 50% of the population has a water supply of inadequate quality and for around 30% of the population there is no centralized treatment. In the south of the country some regions are only supplied with water for a few hours per day. The principal problems are a lack of treatment technology, poor quality distribution systems and the need for increased monitoring and control. Existing regulations include a general environmental protection law, a law defining responsibilities and a water code (passed in October 1996) based on WHO recommendations and experience within the Federation. The Russian Federation has signed transboundary and bilateral agreements with several neighbouring countries.

#### **Ukraine (Mrs K Klimenko)**

Environmental and drinking-water problems are similar to those described by neighbouring countries. They are exacerbated by the overall economic crisis in the country and there is a real dilemma with respect to licensing, monitoring and controlling industrial activities as this could put too great a financial burden on the companies involved, resulting in job losses and perhaps closure of the site. In some instances the government has decided to delay the implementation of environmental protection measures to help stimulate economic recovery. Environmental protection laws do exist and appropriate regulations are gradually being developed, e.g. for protecting surface and marine waters. A drinking-water law including quality improvement measures is under consideration.

#### **(Dr I Brown)**

Many open waters in Ukraine are used as a source of drinking-water supply and, particularly in the south of the country; this has implications for the incidence of bacterial disease, viral hepatitis, dysentery and cholera. Algal growths in open water sources appear to play a significant role in the transmission of these diseases. There may be a transmission cycle for water-related disease, which could lead to transport over relatively long distances. Increased monitoring and epidemiological studies are required to study the proposal further. Dr Brown suggested that a centre should be established in Ukraine specializing in disease control (monitoring and prevention) and training.

(Dr Povorosnyuk)

Dr Povorosnyuk reported on the incidence of fluorosis and osteoporosis in Ukraine arising from the presence of high levels of fluoride in the water in some parts of the country. Fluoride concentrations can be very high (6–7 mg/l) and there is evidence of large natural fluctuations in concentrations. The problem of osteoporosis is particularly severe among women; the groups aged 20–29 and 50–59 (post-menopausal) years are more at risk. Reduction of the concentration of fluoride in the water can lead to a rapid improvement in the numbers of individuals affected and help to alleviate symptoms. The need for international cooperation to help combat this problem was noted.

**The United Kingdom (Dr B Crathorne)**

The United Kingdom benefits from a water management system dating from the mid 1800s. This now results in around 99% of the population being connected to a public drinking-water supply and 96% to sewerage collection and treatment. There are few instances of water-related disease but there are some areas where improvements are required. Incidents of microbial contamination occur, usually due to a breakdown in treatment, although there is some concern over regrowth of bacteria in distribution systems. Recent problems have occurred with contamination of the water supply with *Cryptosporidium* (a protozoan parasite). This organism is resistant to disinfection and requires efficient multi-barrier treatment for removal. Lead contamination from old pipes is still a potential problem to 5–10% of the population. Blooms of blue-green algae in surface-water sources are of potential concern through the release of toxins to potable supplies and during leisure activities. There are a small number of private water supplies in the UK which normally receive no treatment and are therefore vulnerable to source contamination. Finally, the pressure on water resources will give rise to problems and the need to make increased use of re-used water. The water sector in the United Kingdom is heavily regulated and most existing and potential problems are adequately covered.

## **Discussions**

### ***Working groups***

The delegates were divided into three working groups to discuss and propose the provisions and contents of an international instrument. The three working groups covered the following areas:

*Working group 1:* The protection of water resources and the provision of a safe drinking-water supply.

*Working group 2:* Human resources development and institutional capacity-building.

*Working group 3:* Financial implications, including broad economic issues, enforcement management and cost-benefit aspects.

The detailed outcome of each working group is provided in Annex 3.



## **Plenary**

The reports of the three working groups were discussed in plenary as follows.

### *Working group 1*

The main emphasis was on providing an outline of the areas to be covered from source protection through to drinking-water supply. Discussions in plenary session noted that the output was a little too 'drinking-water' orientated and this was rectified in the final document.

### *Working group 2*

As with Working group 1, the output was broadly accepted by the plenary group, although some clarification of training requirements was agreed and provided in the final document.

### *Working group 3*

Working group 3 concentrated on the potential coverage of an instrument, its desired format and the elaboration of a series of facilitating measures, i.e. to provide support and encouragement to participating countries. The group concluded that a legally binding instrument was required but stressed that flexibility had to be incorporated in order to encourage and facilitate agreement.

Plenary discussions endorsed the recommendation of the working group that a legally binding instrument would be the preferred product for the London Conference and that substantial supporting work and documentation addressing technical, organizational and economic aspects would be needed to support its development, adoption and subsequent ratification and implementation.

A key point raised in the plenary was the need to link measures to facilitate compliance (particularly financial) with institutional strengthening and the development of sustainable water management infrastructure.

A number of delegates were of the opinion that the instrument should contain some reference to the broadly accepted general principles of water management such as 'the polluter pays' or 'appropriate pricing for water'. However, the counterview expressed was that the link between water and health and economic factors is a very complex subject and that more detailed guidance will need to be prepared in supporting documents for the London Conference. Thus, on balance, it was considered preferable not to pre-empt conclusions from the preparatory work which will be undertaken.

The final outcome of these discussions was a proposed outline structure of the potential international instrument with a broad indication of the content of each section (Annex 4).

A number of key dates were noted and a brief outline was provided of the work plan for preparing supporting technical documentation for the London Conference. It was recommended that WHO collaborating centres concerned with water be heavily involved in developing the technical support documents for the legal instrument.

## **Closure of the Meeting**

The Chairperson, Dr Karamushka, thanked all delegates and the supporting team for their hard work and contributions during the Consultation, and he felt that real progress had been made in defining the scope and content of an instrument. On behalf of WHO and UNECE, Dr Klein thanked the Chairman for his management of the meeting and added that they were particularly grateful to the Government of Ukraine for hosting the meeting at short notice and for providing the local support needed to help produce a successful outcome.

*Annex 1*

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*Annex 2*

**AGENDA**

**Thursday, 20 March 1997**

- 17.00–19.00
1. Opening of the consultation and adoption of the agenda
  2. International instruments having regard to water protection and health-related aspects
  3. Water-related diseases: problems in European countries with specific emphasis on countries in transition

**Friday, 21 March 1997**

- 09.30–13.00
3. Continued: water-related diseases: problems in European countries with specific emphasis on countries in transition
  4. Scope and content of the international instrument
- 13.00–14.30      Lunch
- 14.30–18.00
5. Working groups

**Saturday, 22 March 1997**

- 09.30–13.00
6. Presentation of work of the working groups
  7. General outline and content of the international instrument
- 13.00–14.30      Lunch
- 14.30–18.00
8. Further work on the international instrument
  9. Other business
  10. Closure

*Annex 3*

## **REPORTS FROM THE WORKING GROUPS**

### **WORKING GROUP I – Technical Issues, Key Priorities**

Regarding water-related diseases, water needs to be considered as a resource (quality and quantity) and with respect to associated infrastructure.

The key elements identified below are components of an overall water management process which must be assessed and upgraded in order to reduce the incidence of water-related diseases.

1. Water availability
  - Minimum amount of water of adequate quality to satisfy basic human health and hygienic needs to be defined.
  - International, national, regional, local catchment management plans.
  - Flood and drought plans.
2. Standard water quality
  - Throughout the whole water cycle for the uses as an environmental resource, and through the water process from source-to-tap for the water supply.
  - Application of appropriate standards at each stage of the process.
  - Standards will need to be defined.
3. Source protection
  - Groundwater: all groundwater sources should be identified and protection zones introduced.
  - Surface water: identify and characterize all polluting sources. Where appropriate and possible, introduce zoning.
4. Pollutants and polluters – those that may affect water bodies or water supply systems should be identified.
5. Monitoring
  - Define information needs. Include health surveillance data as well as water quality and quantity data for the different human uses of water (drinking, hygiene, recreation etc.). Define methodologies in order to have comparable information at national and international levels.
  - Inventory of all anthropogenic factors which may affect quantity and quality of the water.
  - Monitoring should be applied throughout the whole water cycle – including treatment and distribution.



6. Treatment

- Objectives to be defined.
- Adequate technologies, and alarm systems to be implemented.
- To be considered:
  - i) drinking-water treatment
  - ii) wastewater treatment mechanisms to protect source water.

7. Distribution systems

- Quantity and quality aspects, including continuity of supply.
- Leakage control measures.
- Abstraction control measures.
- Ensuring performance of the systems to maintain quality and quantity.

8. Information exchange network

- Comparability of standards.
- Public information strategies.

9. Research and development

- Identify key research priorities.

## **WORKING GROUP II – Human Resources Development**

It is necessary to develop human resources in order to understand:

- that human factors, such as basic understanding of processes and relationships involved in environment health issues, are of the utmost importance in prevention of waterborne disease;
- that the overall level of skills and understanding of staff involved in every stage of water-related services and their social control is similarly important;
- that the complexity of all water-supply and water-health issues necessitates an interdisciplinary and intersectoral integrated approach; and
- that drinking-water is one of the most sensitive areas of interest for all groups of society since it affects deeply the basic rights for health.

The following key issues must therefore be emphasized:

- human resources development;
- building an appropriate institutional framework for supply of drinking-water and quality control and for community coverage of health-related issues and their proper handling at the lowest possible level; and
- management of information.

What does human resource development entail?

- The provision to the public of a basic appreciation of water health and their rights and obligations.
- The provision of the necessary information to policy-makers and other decision-makers to raise their awareness and enable them to take well founded and timely decisions.

- The existence of an educational system capable of producing adequate staff with appropriate training.
- The existence of a system to enable continuous professional and operational training and career progression among staff of all levels.
- The dissemination of information to policy and decision-makers.
- The encouragement of an appreciation of the interdisciplinary nature of water health and the intersectoral nature of solutions.

### **Institutional capacity-building**

#### *Underlying principles:*

- Integrated management of water resources at catchment unit
- Decision-making at the lowest appropriate level
- Recognition of water as a social good, environmental factor, and economic factor
- Pollution prevention and risk avoidance
- Reducing inequality.

#### *International*

- Facilitation of investments
- Research cooperation, scientific exchange
- Data and information sharing
- Control of transboundary hazards (e.g. floods, hazardous wastes, chemical spills, early warning systems).

#### *National*

- Setting achievable health based targets.
- Simple, pragmatic, and accountable mechanisms for intersectoral coordination.
- Consumer rights declared, actively protected by government; civil society bodies and consumer associations encouraged.
- Effective government control and enforcement system.
- Protection of the individual against the monopoly of service providers.
- Health-based standards setting (includes performance standards).
- Facilitation of national investment flows and local project preparation; and
- Facilitation of research, scientific exchange.

#### *Subnational (e.g. region, municipality)*

- Conflict resolution and coordination among concerned parties.
- Protection and monitoring water resources.
- Protection and monitoring (includes surveillance systems) drinking-water sources and supply systems.

- Detection and control of outbreaks of water-related disease.
- Efficient management of drinking-water supply, as well as waste water collection, treatment and disposal.
- Managing and monitoring recreational waters; and
- Support of laboratory networks.

#### **Information for management**

- Legislation should identify the obligations of surveillance agencies (public health safeguards) and service providers to monitor and disseminate findings; separate and independent functions.
- Right-to-know; obligation to disseminate; freedom of information.
- Information quality (quality control, laboratory comparison, laboratory accreditation).
- Data harmonization, international comparability.

### **WORKING GROUP III – Financial Implications**

The remit of the group was to cover the broad economic issues which might need to be encompassed by the legal instrument, including enforcement issues, management practice and cost benefit aspects. The report of the group can be summarized under three broad categories: what should be included in the instrument, what should be its format and what types of measure could be included to help participating countries comply with its provisions?

#### **Content of the instrument**

The Group agreed that the instrument should include regulatory provisions covering six basic issues:

1. Exchange of information.
2. Harmonization of national standards covering all aspects of water management related to health and not just drinking-water.
3. The strengthening of institutional mechanisms in participating countries, with the emphasis on creating self-sustaining systems.
4. The control of transboundary pollution problems and the prevention of the transport of polluting substances and related water-related diseases.
5. Provisions for transboundary action in respect of emergency events such as pollution incidents and break out of waterborne diseases with transboundary consequences.
6. Compliance measures; including verification and facilitation of compliance as well as measures to encourage participation in the instrument. It was recognized that enforcement is a national issue and must be dealt with at this level (implementation at a local level: links to the outcome of WG II).

### **Format of the instrument**

It was agreed that any instrument should be enforceable and that this implied a legally binding framework. However, it was also recognized that a flexible compliance mechanism was needed. One of the feasible options would be a framework convention with accompanying protocols. The opinion of the group was that existing legal instruments do not adequately cover the area of water-related disease and that an additional instrument should be considered.

### **Measures to facilitate compliance**

The group agreed that there were a number of clusters of facilitative measures which might be considered:

1. The transfer of technology and technological know-how and research collaboration.
2. The human resource development and training of personnel at all levels e.g. management, specialist and operator training.
3. Access of information including the requirement for transparency i.e. availability of reliable and comparable information and public awareness.
4. Financial support. It was recognized that financial support would need prioritization and that criteria would need to be developed to enable the level of support to be defined.
5. The development of national sustainable, economic structures to support complementary external financial support and the strengthening of resource allocation in line with specific national priorities.
6. The creation of an efficient institutional structure to support implementation measures in particular the disbursement of financial support.
7. Compliance measures which include some provision for delaying enforcement and allowing signatory countries to elaborate a timetable for compliance.

*Annex 4*

## **OUTLINE FOR INSTRUMENT ON THE ERADICATION OF WATER-RELATED DISEASE IN EUROPE**

### **1. Preamble**

The purpose of this instrument is to facilitate the eradication of water-related disease throughout Europe through the following measures.

Participating countries will be guided by the following principles: ref: European Charter on Environment and Health; Environment and Health Action Plan for Europe; WHO health for all targets and Agenda 21.

### **2. Definitions**

Health effects can arise from all parts and stages of the water cycle. The scope of the instrument therefore includes *inter alia* the quantity and quality of surface waters, groundwaters, coastal and marine waters, and their use for recreation, irrigation, drinking-water (source, treatment and distribution), fishery, food industry, and their re-use.

### **3. Commitments to undertake action at national level:**

Governments will:

- undertake the surveillance of water-related diseases to provide a baseline assessment for monitoring progress;
- set achievable, time-limited targets for the improvement of water and health conditions;
- establish national health-based standards for water and health;
- ensure monitoring of environmental health quality by service providers; and
- ensure appropriate independent surveillance of water-health conditions.

### **4. Commitments to cooperate in actions at national level**

- Simple, pragmatic and accountable intersectoral coordinating mechanisms.
- Consumer rights declared, actively protected by government, civil society bodies and consumer associations encouraged.
- National environment and health action plans (NEHAPs).
- Research and development.

### **5. Measures to facilitate action within participating countries:**

- Provide all children during school with a basic appreciation of water health and their rights and obligations.
- Ensure that an education system exists capable of producing adequate staff with appropriate training.

- Ensure a system is in place to enable continuous professional and operational development and career progression of staff at all levels.
  - Increase the awareness and disseminate information to policy and decision-makers; and
  - Continuous awareness programme for adults.
6. **Commitments on joint action targeting transboundary effects:**
- The control of transboundary water-polluting problems and the prevention of the transport of polluting substances related to water-related diseases and of inappropriate retention of transboundary waters.
  - Provisions for transboundary action in respect of emergency events such as pollution incidents, outbreaks of water-related diseases and floods; and
  - Contingency planning and early warning systems.
7. **Measures facilitating participation and compliance**
- Transfer of technology and technological know-how and research collaboration.
  - Human resource development and training of personnel at all levels (management, specialist and operational).
  - Access to information including the requirement for transparency, i.e. availability of reliable and comparable information and public awareness.
  - Financial support: prioritization and development of criteria to enable the level of support to be defined.
  - Development of national, sustainable economic structures to support complementary external financial support and the strengthening of resource allocation in line with specific national health priorities.
  - Creation of an efficient institutional structure to support implementation measures and in particular the disbursement of financial support.
  - Compliance measures including provision for delaying enforcement allowing signatory countries to elaborate a timetable for compliance.
8. **Institutional arrangements:**
- Conference of parties
  - Technical committees
  - Secretariat
  - Trust funds
  - Settlement of disputes.
9. **Final clauses**
- Amendments
  - Entry into force
  - Depository