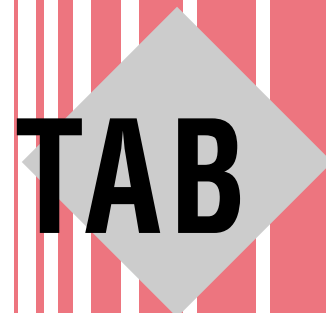


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Environment and health

Summary

SUMMARY

What adverse effects on health are caused by human impacts on nature, and specifically by anthropogenic physical, chemical and biological noxins? As a starting point in considering the theme »Environment and health« this question covers a multitude of individual issues and above all controversies of various kinds. Scientific disciplines and the associated expert cultures, political and commercial interests, world views and differences in perception clash here, and with them – or in the midst of it all – are people with their concrete tales of woe. In this confused landscape the present report attempts to make controversies over assessments more comprehensible, offer suggestions for dealing with them better and describe approaches for prophylactic health protection which go beyond risk prevention alone and promote the strengthening of living conditions which promote health.

THE CONTEXT

Following the proposal of the Committee for the Environment, Nature Conservation and Reactor Safety a study was planned on the context and strategies for prophylactic health protection in the area »environment and health«. A preliminary study (TAB 1997) reviewed the state of knowledge on environmental pollution relevant to health and environmentally-influenced diseases and developed the concept for the present main study, which researches the question of controversies over assessments and possible approaches to prophylaxis.

Definitions

Key terms – such as environment, health, disease and environmentally-influenced diseases – are not uniquely defined and are given different meaning depending on the context. The different understanding and potential uses of these terms are a source of complication in resolving controversies in the field of »environment and health«.

The term environment basically describes everything surrounding an object (e. g. people). People perceive their environment as a mixture of physical, chemical, biological, social, cultural and economic conditions under which they live. As a topic of scientific and political discussion »environment and health« is usually concerned with the effects of anthropogenic pollution (using »environment« in a more restricted sense), but not individual, behaviourally-conditioned exposure



SUMMARY

or job stresses. However, it is often difficult to »separate« even the natural environment analytically speaking, e.g. in the case of human-made landscapes with agricultural emphasis. In dealing with issues of salutogenesis and promoting health, the transition to using »environment« in a broader sense is inevitable, as this involves going beyond consideration of environmental noxins alone to living conditions generally.

As health has been and is perceived and understood in different ways in different eras, cultures and even within a society, no generally valid definition was and is possible. Health is another term which can be used in a broader or narrower sense. As a result, the WHO definition of health as »a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity« is regarded as utopian and difficult to operationalise, while narrow, functional definitions for social security or labour law purposes may be necessary but cannot be uniquely defined in medical and scientific terms and (above all) are coloured by a negative view of health.

There is little opposition to the idea that disease arises out of an ongoing process of deviation from the norm of healthy reactions. However, the question when a deviation from the norm should be described as a disease inevitably involves an element of judgement. In addition there are individual differences in the ability to cope with stresses and the transition to the zone of failure of defensive and compensatory mechanisms (i.e. to disease). Environmental medicine in particular deals with this grey area between healthy and ill. The term used in this report »environmentally influenced diseases« is an attempt to convey the assumption that environmental stresses are relevant influences on the state of health of patients, without seeking to characterise them as causal.

Medical prevention means preventing disease and worsening of diseases (pathogenetic perspective). It distinguishes between primary prevention (risk prevention), secondary prevention (early detection) and tertiary prevention (rehabilitation). In the social sciences prevention is also used in a comprehensive sense. Here, prevention covers all early intervention measures related to causal agents, in order to prevent harmful developments, minimise risks and prevent adverse secondary effects.

Health promotion by contrast involves analysing and strengthening the health resources and potential of people (salutogenetic perspective). It can concern itself with all social levels and living conditions relevant to health. Health promotion covers measures aiming to change and encourage both individual and collective health behaviour and also living conditions (i.e. the general conditions affecting

the health and health behaviour of every individual and of the population as a whole).

The term prophylaxis is used in the health sector in both a narrow sense for medical prophylaxis and a broader sense for prophylactic health protection covering the entire range of prevention and health promotion. The boundaries between prophylaxis and health promotion and prevention generally are fluid, with numerous overlaps, particularly since all these terms are used with different means. The term preventive approaches is used in the present report in an overarching sense, covering all types of approaches to prophylactic health protection.

Political significance

Protecting human health is a key starting point and element of environmental policy. The public and political decision-makers are faced by a steady flow of new reports and information on substances in the environment which are injurious to health and other anthropogenic environmental pollution. Health policy on the other hand continues to focus on the organisation and funding of medical care.

To date the field of »environment and health« has been dominated by uncoordinated, short-term isolated decisions. Environmental and health policy are not adequately linked. At the international level in particular there are concepts and suggestions for developing an intersectoral policy for environmentally-influenced health risks.

Besides the initiatives of the Rio Conference and the resulting Agenda 21 and other UN conferences, international discussion is shaped particularly by the programmes of the WHO, including the »Health for all« strategy (1977), now replaced by »Health for all in the 21st century«, or the »Ottawa Charter« on health promotion (1986).

At the European level the issue of »environment and health« was also established by the WHO, first through the »European Charter« (1989) and subsequently through the »Action plan environment and health for Europe« (1994), which gave rise to a commitment for the signatory states to present national action plans, including the Federal Republic of Germany. The Federal Ministries of Health and Environment, Nature Conservation and Reactor Safety fulfilled this commitment with their »Action plan environment and health« in June 1999, which cited a number of substance and media related quality goals and associated measures but primarily concerned itself with cross-sectional issues and



measures. The proposed measures relate in particular to the future contribution of the (scientific) Federal agencies, and are supplemented by an appeal to »all relevant groups and institutions« to »participate in the discussion and further development of the programme and contribute to its implementation«.

CONTROVERSIES OVER ASSESSMENTS

There is no established and recognised system for organising controversies in the field »environment and health«. The present report distinguishes between the scientific, political and social levels. This distinction is an analytical aid in presentation, as in reality these levels overlap and merge.

At the scientific level it is basically a question of whether there is a link (or a causal relationship) between the environment (or environmental pollution) and health (or incidence of disease). »Scientific level« here does not mean that the controversy is restricted to scientists with different assessments, but that the question at issue – for lay persons as well – is one of causes and effects.

Potential risk and evidence of causality

From the »environmental« point of view the question is what potential risk to health is posed by environmental noxins? Without going into the many individual noxins (for this, see the TAB preliminary study) the problems of toxicological and epidemiological risk assessment and specifically the question of combination effects and mental later effects (section III).

The decisive controversies in the risk assessment for individual noxins arise in connection with the evaluation of toxicological and epidemiological results, and particularly their application in setting standards. Key issues are still the transferability of results from animal trials to humans and the extent of safety factors in setting limits.

Opinions differ on whether combination effects are more likely with noxins having similar actions and affecting the same organs or more likely with noxins (including different categories of substances) with interactive actions. Opinions on the relevance of combination effects differ very widely.

The debate about the impact on health of environmental noxins centres above all on somatic effects, whereas mental components are assumed to be causes on balance. This is the case even though in the field of psychosomatic problems

cause and effect are often difficult to distinguish in individual cases. The area of indirect consequences of still largely unresearched, even if there are initial indications of specific mental pollutant effects. There is also the difficulty of identifying mental problems as an indirect result of environmental pollution, where these are a reaction to direct or indirect experience and may relate to circumstances with or without injurious potential.

There is still scope for improving risk assessment for individual noxins and making the debate about these more rational. It will, however, be impossible to prevent different assessments and corresponding controversies. Better understanding of the relevance of combination effects and complex environmental pollution. The risk assessment model for individual noxins will encounter fundamental limits here. While strengthening salutogenetic perspectives and health promotion (see below) cannot resolve this dilemma of conventional risk estimation, it can ameliorate the problem.

Types of diseases and etiology

The problem from the »health perspective« is, which diseases are actually the result of influences of environmental noxins? And how can these be treated or avoided? Closely linked with this is the question of how the discipline of environmental medicine views itself and its orientation in research and practice (section IV).

Currently, classification of environmentally-influenced health problems is in the early stages. Categories of environmentally-influences diseases can be constructed – among other ways – on the basis of how far specific or nonspecific syndromes exist or how far the pathogenesis and etiology is known. There are corresponding differences in the main issues: Where the emphasis is – for instance – multifactorial diseases with (demonstrated) environmental associations is on the quantitative share of environmental pollution, the focus of discussion with other diseases is whether there is any environmental influence at all. The most controversial are the so-called environmental syndromes (including MCS), as here the definition, diagnose, pathogenesis and etiology are all disputed.

The two main currents in environmental medicine can be described as population/preventive medicine and individual/curative medicine. Curative environmental medicine, whose importance has increased sharply since its inclusion as a subject in the medical CPE regulations, is opening up a wide field of different medical philosophies and approaches. Scientific uncertainties sharply limit the scope for conventional medicine, so that a large number of unconventional



methods have evolved, among which »clinical ecology« in particular sees itself as specific to environmental medicine. There are also wide gaps in our knowledge regarding the psychosomatic etiology which is frequently assumed for environmentally-influenced diseases, and these gaps leave scope for far-reaching differences in assessments by experts. There is, for example, still no psychodiagnostic procedure which can discriminate between psychogenetic and environmentally-influenced mental disorders.

In the discussion about environmental medical services under the health care system the focus is on the question of what structures are in adequate and desirable in principle, the aspect of quality assurance for environmental medical services, and the question of financing within the statutory health insurance scheme.

Overall we can expect that our understanding of environmentally-influenced diseases will expand and become more nuanced, and that this will improve the way we deal with them. This is particularly the case for environmental syndromes like MCS. A great deal of research is still needed to clarify mental causes and consequences of environmentally-influenced diseases, particularly with respect to developing and establishing practicable diagnostic procedures. There is much to suggest that illness is due less to individual substances or noxins and more to specific lifestyles. Increased attention should be given to this in research efforts, diagnosis and the search for therapies and preventive possibilities. A decisive factor is the allocation of responsibilities within the health care system, the competence of the individual actors and the quality of the procedures and instruments used. Besides the need to improve quality assurance, developing new forms of cooperation and action will be very important.

Information and social evaluation

At the social level the fundamental question is evaluating identified relationships between environmental pollution and health (section V). The question here is accordingly how great are the problems of environmentally-influenced diseases and how are they distributed and evolving?

Environmental and health reporting covers not only collecting and publishing straight data, but also interpretation and conclusions (e. g. determining the need for action). While there are many approaches and activities in the field of health reporting and environmental reporting at international and national (federal, state, local), there is still virtually no specifically environmentally-related health reporting, although there have been frequent calls for this. Ideas about the possible orientation, design and capability of such reporting also differ sharply.

It is virtually impossible to assess in summary form the scale and evolution of environmentally-influenced health hazards, as they can take very different forms in terms of geography (local, regional or global), time (short or long term), etiology (individual noxin or pollution generally) and the individual (average or hypersensitive person). Many potential risks are not equally distributed, but concentrated in specific regions, firms or occupations. Health risks can have local or global importance. Generally, the development of environmentally-influenced health risks offers a highly heterogeneous picture with trends which in some cases are conflicting and which cannot be consolidated into an overall trend.

In the past there have been repeated individual instances of overrating and underrating environmentally-influenced health risks. Here, it is not only important to consider differences of opinion between experts but also differences between experts and lay people. Risk assessments by lay people and experts differ in their underlying logic, as experts and lay people have different approaches to the phenomenon of uncertainty about the future and threatening dangers. Which approach is more appropriate is also a matter of lively controversy. Whereas experts mostly resort to statistical risk and probability analysis, lay people mostly use an intuitive concept of risk. Direct perception of environmentally-influenced risks is possible only to a limited extent, and knowledge of these is mainly conveyed through public communication. Mass media accordingly play an important role, with the mass media presentation of environmental risks corresponding in many respects with the lay perception of risk. Risk definitions are involved in the contexts of various institutional actions and interests, and these shape the relevant criteria for evaluation and the preferred strategies for action and solving problems. These heterogeneous perspectives clash in the public controversies over risks. If and how public debate over environmentally-influenced health hazards evolves into mobilisation processes depend particularly on the nature of the issue and the institutional reactions.

Finally, there is a diverse picture when it comes to social inequality and environmentally-influenced diseases. Several chronic cardiovascular diseases and selected malignant growths are more frequent in the lowest social class, while other environmentally-influenced diseases like allergies, eczema, pseudocroup are significantly more frequent in the highest. Social inequality in environmentally-influenced diseases can only partly be supported by empirical results on the inequality of class-specific exposure to pollutants. Another important influence is undoubtedly the different perceptions of risks and diseases and response to increased risks in the various social environments. These presumably influence the political urgency and institutional options for action in the individual problem areas.



In view of the universal lack of knowledge it is not surprising that the need to improve our information base is effectively uncontested, even if there are different ideas about quality, scope and performance. In many cases, however, it will not be possible to resolve the different assessments of environmentally-influenced health hazards as differences in judgment and interests and uncertainties in the knowledge available play an important role and cannot be easily eliminated. Confrontational communication strategies should, however, be replaced by discursive rationalisation of conflicts of judgment. More concrete concepts for action or approaches at the level of society as a whole, such as bringing about greater »environmental equity« or using dialogue processes to handle controversies, require detailed further research, development and testing.

PREVENTIVE APPROACHES

At the political level the basic issue is one of identifying approaches to preventive policies to deal with the connections between environmental pollution and health which have been established and socially debated (section VI). The questions here are, do we need to something more or something different? How and where do we need to act? Different assessments at the scientific level and judgments at the social level result in a broad spectrum of preventive policy approaches and options, which are the subject of correspondingly controversial (although in part also complementary) discussion.

A central issue in the complex »environment and health« is whether reactive prevention is the dominant form with too little proactive prevention, or vice versa. Those who take as their starting point scientifically demonstrated causal chains (specifically, toxicologically and epidemiologically established) are likely to conclude that there is sufficient prophylaxis. Conversely, those who give greater weight to the limits to our knowledge in toxicology and epidemiology, the arguments of environmental medicine and the problems of combination effects, are likely to conclude that prevention to date has been largely reactive.

There are no purely objective criteria for determining where best to position preventive measures in the zone between scientific certainty and cause for suspicion. Differences in judgment are inevitable here. It is accordingly impossible to avoid controversies over judgments, which can only be made more rational and effective by making more use of various forms of participation and dialogue fora (see options for action in sections III.4, IV.4, V.5 and VII.4.6).

To date, preventing exposure has clearly dominated, with preventing disposition the exception. This is generally accepted. However, growing attention has been paid recently to differences in sensitivity (disposition). This is the main source of the criticism that the level of protection (e.g. limit values) is inadequate in the light of these differences. Questions of disposition could become increasingly important with advances in genome analysis and genetic testing. It is presently not clear if and when corresponding knowledge will be available for the area »environment and health«. Possibilities for preventing disposition should only be formulated, however, if there are also possibilities of avoiding or treating problems and social discrimination can be precluded. Generally, preference should continue to be given to preventing exposure.

In the area of »environment and health« field we find approaches to both situational prevention and behavioural prevention. In the case of situational prevention the Federal Republic of Germany has a comprehensive regulatory system for individual noxins and environmental media, while less progress has been made on structuring the polluter-related environment. Behavioural prevention involves approaches to promoting behaviour which avoids problems and is more environmentally tolerable. To date, behavioural prevention has concentrated on communicating knowledge. In some areas there are combinations of behavioural and situational prevention.

Judgments differ on whether the right balance has been struck between behavioural and situational prevention. Central points of criticism of behavioural prevention are that it relies on the insight and motivation of those affected, which are often difficult to influence, and that the result is false attribution of responsibility (»false behaviour«). Conversely, we see that situational prevention in the form of state regulation often only emerges after a long process of public discussion and definition of environmental and health hazards and behavioural changes by various actors.

In future, an attempt should be made to find a more focused combination of behavioural and situational prevention. Increased use should be made of behavioural prevention aimed at encouraging avoidance combined with encouragement for modifying behaviour. As knowledge-centred approaches have limited effect, emphasis should be shifted to using relationship-centred approaches. In situational prevention, there is unused scope for action not so much in regulating and dealing with noxins as in changing the framework conditions.

In line with this, previously noxin prevention, i.e. prevention of individual noxins, has dominated polluter prevention, i.e. approaches to reducing the potential



for health hazards at the polluter level (e.g. transport, agriculture). Noxin prevention is strongly tied to scientific (and specifically toxicological) knowledge of potential hazards. Given the large number of potentially relevant noxins, however, there is a constant danger of lagging behind developments. Polluter prevention by contrast relies heavily on social debate and normative decisions. There is, accordingly considerable (political) resistance to implementation at points. Influencing economic and technological trends does, however, promise more effective health protection in the longer term. Polluter prevention offers a smooth transition to health promotion.

Scientific and public discussion in the field of »environment and health« has so far concentrated one-sidedly on environmental pollution and its risks and on preventing danger or limiting risks. As a result, the focus has so far been on pathogenetic perspectives and risk prevention.

Beyond reducing and avoiding exposure to specific environmental pollution, however, the question that arises is how health-promoting living conditions in the broad sense can be achieved. Although our knowledge of significant positive effects on health of material and physical influences is still minimal – which is why the salutogenetic perspective has been virtually ignored to date in considering the issue of »environment and health« – a substantial influence must be expected from positive (environmental) factors. It is accordingly possible that a corresponding shift in the emphasis of scientific and public debate might reduce uncertainties and the sense of threats and open up new perspectives for action for those affected and involved. Overall, there are considerable and still unutilised opportunities for action here, and these are summarised in the following sections.

STRENGTHENING HEALTH-PROMOTING LIVING CONDITIONS

Improving health-promoting living conditions is given only marginal consideration (if any) in the German debate on »environment and health«. At the same time, this issue has an important place in international discussion of a sustainable and viable policy for the future. The theme of health promotion creates a link between the health policy debate and the sustainability debate and strengthens the dimension of health (policy), which is frequently neglected in environmental policy.

The salutogenetic perspective focuses consideration on health and conditions promoting health. The aim is to use these as the basis for identifying options for action for maintaining or improving health, well-being and the quality of life. The task

becomes one of design instead of repair. In the health sector, a WHO worldwide action programme has given us the guiding concept of health promotion.

The theoretical models of salutogenesis have developed from stress theories, supplemented by disease management factors. Essentially, they are theories about the interplay of stresses and management strategies, risks and health resources. They can be used to explain both health and disease.

Theories of salutogenesis are important as a basis for health promotion because the explanatory variables are formulated in terms of health resources. These resources are available to people (or are lacking) as personal resources, skills, sense of integrity etc at the individual level or as living and environmental conditions in the external world. The aim of health promotion is to develop and enhance health potential by maintaining and strengthening personal, social and institutional resources.

In health promotion practice the most widespread concept is of shaping contexts for life and action in all their complexity, which is also known as the »setting« approach. This applies at the level of regions (e.g. towns, communities and city districts) as well as at the level of institutions, i.e. social subsystems within specific regional levels. The greatest advances in this sense have been made by projects for health promotion in companies, hospitals and schools and exchange of experience between them in national and international networks.

Intersectoral cooperation between various parts of the political and administrative system has repeatedly proved very difficult. Frequently, lack of political support plays a crucial role. This often leads to resorting to individual projects free from the overall political context. Pragmatically, this only helps in the initial phase. Complex programmes at the level of municipalities have so far rarely been based on systematic framework planning. This, together with the frequent resulting inadequacy of resources, gives rise to the most serious deficits in implementation. Further development is also needed of the indicators, instruments and approaches for evaluation and monitoring of complex programmes.

The tasks of the public health service (PHS) are governed by Land legislation. All the public health service acts cover the classic regulatory responsibilities of the PHS for protecting health. Currently, the provisions in Land legislation creating new PHS responsibilities in terms of health promotion, health reporting, health planning and cooperation take approaches which differ in parts.



Health promotion requires appropriate structures. Many of these structures are spontaneous and sometimes even very transient social constructs. Particularly important for health promotion as a common social task are cooperative structures, such as regional working groups, health promotion conferences and health promotion networks dealing with specific issues or social and geographical groupings. A large number of such cooperative structures have emerged in recent years. However, with a few exceptions, they have so far failed to develop any political weight. For this they lack above all an explicit political mandate and the necessary resources – particularly financial. To implement health promotion in the sense of shaping living and environmental conditions, networks (political and actors) are needed.

Financing for concrete health promotion measures is currently inadequate. Its share of total health care spending is minimal. In practice, funds are only available for individual health promotion projects, and the use of funds follows the interests, priorities and criteria for relevance of individual project executing organisations. There is no funding for joint tasks.

OPTIONS FOR ACTION

In the field of »environment and health«, there is need for action to improve management of the various assessment controversies and to improve risk prevention. There is also considerable need for action to develop health promotion, if the goal is to shift the focus from preventive health protection to strengthening health-promoting living conditions. Detailed proposals for action are presented for the latter in particular.

Developing health reporting with an environmental dimension

There have been repeated calls for developing health reporting with an environmental dimension. Based on existing elements of environmental and health reporting, health reporting with a specific environmental dimension should be developed (section V.5). A central approach here should be improving networking and cooperation between the various areas of responsibility (environment, health, transport, research etc) at the various administrative levels (community, district, Land, federal) and more intensive international exchanges. In part new data should be collected, but in part new and specific links between existing data records would be sufficient. Methodologically, systematic evaluation and targeted further development are needed of data sources, review and use of both appropriate structural models and geo-information systems and exploitation of

synergies with neighbouring fields such as Quantitative Risk Analysis (QRA) and Health Tolerance Testing (HTT). The proposed periodic health and environment surveys (every 5-7 years) are an essential basis. A point which still requires consideration is if and how recording and reporting of environmentally-influences diseases can be improved. In addition, it is particularly important to present the results of the surveys and reporting in a manner accessible to a lay public and to ensure widespread publication.

Further, environmentally-related health reporting should be used at federal, Land and community level as an instrument of health promotion policy (section VII.4.1). Particular priority should be given to integrating health, social and environmental reporting as the basis for integrated planning.

Further development and implementation of the »Environment and health« action programme

The »Environment and health action programme« which has just been submitted contains valuable proposals for improving cooperation in the field of health and environment, but tackles the issues primarily from a pathogenetic perspective. An expansion and integration of proposals from a salutogenetic perspective is indicated in order to tie the two sectors more closely, including health promotion aspects (section VII.4.1). Incorporating the aspect of »strengthening health-promoting living conditions« would also provide an opportunity to incorporate other policy areas. As implementation also involves increased measures at Land and community level, incentives must be additionally integrated for local approaches and structures to take into account health promotion in implementing the programme. Actors, instruments and processes for strengthening health-promoting living conditions should be given concrete form.

Another consideration is that the present »Environment and health action plan« now has to be implemented. For this, concrete campaigns and programmes must be developed, to prevent the action programme from remaining merely a document. Implementation cannot be limited to the level of ministries and the supreme federal agencies. For this reason, the various actors need to be involved and opportunities for participation created. Another point for consideration is how far dialogue procedures (see below) could be integrated into the implementation process.

Strengthening participation and dialogue

Strengthening participative elements and processes is one of the most important measures for improved management of assessment controversies in the area »en-



environment and health«. There are options for action specifically in the following areas:

- > Improving the processes of setting environmental standards (section III.4): The goals of the proposals for improvement of the SRU and the action programme are supported by the results of the present report, specifically in their emphasis on process and call for openness, dialogue and participation. It is particularly important for this reason to take these elements into account when considering the membership of future commissions for developing standard setting processes. The greater the uncertainty in our knowledge and state of judgment, the more necessary it seems to open up the processes to achieve socially acceptable and communicable results, even if at the cost of extra effort.
- > Participative processes in managing disease-related controversies (section IV.4): Possible approaches identified here are integrating those affected into research projects, establishing dialogue between various streams in environmental medicine and actors and developing and utilising mediation procedures for issues of environmental medicine.
- > Dialogue processes for resolving disagreement over the necessity for and design of preventive approaches (section V.5): There is a great need here for dialogue processes, not only for individual issues but also in the societal debate over the issue of »environment and health«. The goal should be to make transparent the reasons for the current disputes, their high emotional charge in parts, and the existing blocks to communication, and to use this as a basis for developing options for a technically and socially more appropriate approach to the fundamental problems.
- > This primarily applies to the problems of demonstrating causality, overrating or underrating hazards and appropriate preventive strategies. A neutral framework for possible fora will be crucial for potential success.

At communal level there is great need for extensive opportunities for inhabitants to participate in planning and shaping health-promoting living conditions. Regional and national planning and decisions on strengthening health-promoting living conditions also need opportunities for participation. With respect to strengthening health-promoting living conditions the following options for action are discussed (section VII.4.6):

- > Strengthening participation in political planning processes: In political project decisions, disputes over planning and utilisation should be tackled as early as possible, the broadest possible social consensus sought and aspects of health promotion incorporated.

- > Creating binding force and validation through mediation-assisted planning of action: One option would be to begin with mediation processes and citizen appraisals to establish a broad consensus among all the important social groups and the population generally regarding the long term global objective (sustainable and health-promoting development). Next, »reverse planning« should be used to develop various scenarios for achieving these goals, and giving concrete form to intermediate goals and stages of action. The final result should be a social consensus about an action plan for a long-term, sustainable, health-promoting policy with strong, democratic validation that is capable of surviving a change in political majority as far as possible.
- > Qualification and quality development for new forms of dialogue: Quality standards need to be developed and implemented as a basis for improving and evaluating political, administrative and participative planning processes.

Strengthening intersectoral policy approaches

A serious obstacle to an intersectoral policy at all political levels is the division of politics and administration into specialist areas with their narrowly-defined responsibilities and often rigidly regulated bureaucratic procedures. This applies both to handling assessment controversies and to health promotion. Options for action are presented in the following areas:

- > Creating organisational structures for intersectoral cooperation (section VII.4.2) by establishing a coordination agency at federal level for »Integrated reporting and design of health-promoting living conditions«, creating an advisory board on health promotion or a health promotion conference at federal level and establishing or strengthening cooperation bodies at Land and local-authority level.
- > Networking programmes and actors (section VII.4.4), e.g. through a model programme for creating an infrastructure for intersectoral cooperation and promoting intersectoral projects in the public health service, a programme to support involvement of municipalities and communities in international and national networks and Agenda 21 projects or creating incentives and structures for communities with local Agenda 21 processes to integrate health promotion.
- > Promoting interdisciplinary research efforts and bundling information acquisition (section III.4): Interdisciplinary cooperation should be promoted by initiating corresponding joint projects and by developing multidisciplinary specialisations like public health. There are also calls from many quarters for the creation of an institution or agency with extensive responsibilities for risk assessment of environmental noxins which will act as a central input channel and early warning system.

*Better use of knowledge and experience*

There is still a great deal of uncertainty about the quality and effectiveness of health promotion. However, more knowledge and experience is available than is easily accessible and known. Existing knowledge and experience can be better used and expanded by suitable accompanying measures in the sense of a competency offensive and crosslinking of knowledge, inter alia by (section VII.4.5):

- > Setting up a reference and transparency centre for health promotion as a federal-Land facility
- > Creating »competency networks« of interdepartmental planning and policy
- > Expanding existing information systems with »good practice models«

Expanding quality assurance

In various areas of »environment and health« quality assurance systems should be developed and used more extensively in future in order to raise the effectiveness in tackling problems.

Quality assurance in research (section III.4) involves the ongoing evaluation of the processes and the final products of research projects and programmes and using the results to derive proposals for improving processes and other aspects. Quality assurance in research is ultimately only conceivable as an arrangement within science itself. Relevant developments can, however, be encouraged, strengthened and accelerated through stimuli and pressure by both users and sources of funding, and particularly by the state.

Environmental medicine quality assurance systems (section IV.4) are needed for environmental medicine for case histories and diagnosis, surveying external exposure (environmental visits, monitoring etc), bio-monitoring (indication, sampling, laboratory practice), laboratory testing and choice of and assistance with therapy. As there are currently no established quality assurance systems, these need to be developed. A central requirement for establishing corresponding quality assurance systems will be that the efforts must be rewarded, i.e. funding or reimbursement for services is tied to compliance with such standards.

Quality assurance in health promotion also needs to be developed. This task can be handled by the cooperation bodies, the reference and transparency centre and the model programmes which have been proposed for discussion (sections VII.4.2, 4.4, 4.5 and 4.6).

Securing the financial and legal basis

The legal and financial basis for integrated health promotion programmes is inadequate (section VII.4.3). Above all, there is a lack of possibilities for raising the finance needed (fund approaches) for such joint tasks. Overall, eliminating deficits in application of existing legislative provisions has clear priority over amending or supplementing the legislative situation. Exceptions are improved embodiment of health promotion in the Land legislation on the public health service and a substantial expansion of opportunities for participation by health insurance schemes in community responsibilities for health promotion and prevention. Another aspect deserving mention in this context is the creation of incentives for public service employees to upgrade their qualifications and fair rewards for taking on interdepartmental functions.

In the case of assessment controversies in risk prevention, need for legislation is seen primarily in connection with improving and harmonising processes in setting environmental standards (section III.4).

Need for research

Assessment controversies in the field »environment and health« cannot be resolved simply by improving our knowledge and increasing research efforts. In addition, conflicting results can frequently be expected, particularly with comparatively weak effects, even if a number of studies are available to test comparable hypotheses about more specific cause-effect relationships, so that both supporters and critics can find evidence to confirm their own assumptions. More powerful procedures for weighting results are also rarely available because of the number of independent study results needed.

Despite these restrictions current and urgent gaps in knowledge and research in particular should be filled as far as possible. Special attention should be placed on the following:

- > Strengthening and systematising research into combination effects (section III.4)
Intensifying research efforts into neurotoxic and psychovegetative effects of pollutants (section III.4)
- > Developing and implementing a comprehensive research project on environmental syndromes, above all Multiple Chemical Sensitivity (MCS) (section IV.4)



SUMMARY

- > Initiating a research association for environmental psychology including sociological and clinical disciplines (section IV.4)

In developing health promotion, research with its concepts, questions and theorising has repeatedly been a key source of stimulus. Particularly at the level of developing the international key concepts of sustainable development and health promotion, scientific awareness of problems, public response to these and the advisory role had considerable importance for policy preparation and development. Even so there are still substantial deficiencies in health promotion research. There is still a lack of concepts capable of operationalisation, of overarching theories, of empirically established results and effective communication and transfer of existing knowledge to practice and politics. Three key areas can be recommended for research programmes (section VII.4.7):

- > Health concepts in population groups, science, politics, law and administration (origin of health concepts, evolutionary potential of key concepts and concept careers; intellectual, normative and pragmatic content of concepts, normative and empirical aspects of operationalisation)
- > Salutogenesis research (everyday health detriments, salutogenic resources and management processes, salutogenic design of nature, technology and environment; lifestyles promoting salutogenesis and sustainability)
- > Action-oriented analysis of complex programmes (actors, instruments, control mechanisms, structures for health promotion, participative and discursive processes for shaping living and environmental conditions)

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