



Health Impact Assessment for Wetlands 281

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Abstract

Wetlands traditionally were considered a threat to human health through water-borne diseases. More recently, the positive contributions of wetland ecosystem services to human well-being and health are recognized broadly but need more clear articulation in planning and management. Strategic Environmental Assessment (SEA) and Environmental Impact Assessment (EIA) for water and wetlands need to incorporate health issues in a comprehensive way to ensure a balanced assessment of health risks, benefits and safeguards. This can be done by recognizing that wetlands not only satisfy biophysical and material human needs for water and nutrition, but also provide important socio-cultural, aesthetic and spiritual benefits. Health Impact Assessment (HIA) consists of procedures, methods and tools that evaluate the effects of policies, plans, programs or projects on the health of a population and identify appropriate management actions. HIA thus influences decision-making to ensure effective integration of health protection and promotion into development planning.

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Wetlands and Human Health in Environmental Assessment

Wetland ecosystems provide a set of ecosystem services that contribute to human well-being and poverty alleviation. While it is impossible to imagine human life without water, the importance of the relationship between wetlands and water is less well recognized, and this relationship has changed over time (Horwitz et al. 2012).

A widespread view of wetlands as ‘the problem’ for human health is that wetlands are seen primarily as the source of vector- or water-borne diseases. This misinterpretation requires careful treatment and attention. More emphasis on the benefits that humans derive from wetlands, including a richer sense of the roles of biodiversity in parasite regulation, is required. Understanding these benefits provides the basis for better land and water management, for fostering human health and well-being while managing wetlands. Wetland managers must have information that will allow them to articulate, and respond professionally to, these claims.

Some groups of people, particularly those living near wetlands, are highly dependent on wetland ecosystem services and are directly harmed by their degradation. For others, wetlands are the basis of economic structures and are embedded in cultural expressions. These benefits can also determine human health, directly and indirectly, by contributing to other forms of well-being, like providing security and basic materials for a good life and fostering good social relations. If wetlands are more than a source of disease, if they play an important role in sustaining human health and well-being, and if they continue to be lost and degraded more rapidly than other ecosystems, then more effective treatment of the trade-offs between different forms of benefits will be required.

Strategic Environmental Assessment (SEA) at the strategy, policy and programme level and Environmental Impact Assessment (EIA) at the project level have traditionally addressed health issues. Human health is, however, often a single bullet point on an EIA or SEA check list. The assessment of health effects is likely to be biased towards bio-physical health determinants rather than being a holistic view that also includes important wider determinants of health. The scope of health issues covered may reflect the industrial-country roots of EIA, and therefore lack the level of comprehensiveness necessary to make the assessment fully relevant to local health conditions. Most importantly, EIA procedures frequently do not recognize the fact that the ultimate authority for health pertains to Ministries of Health (central or peripheral levels), which should have the regulatory responsibilities for the

planning, quality control and final approval of health impact assessment and its follow-up. Because of this, care needs to be taken:

- To ensure that health is covered comprehensively.
- To strike an acceptable balance between strengthening of health services and design and operational measures by other sectors to safeguard health and well-being.
- To adequately address the wider determinants of health.
- To anchor the final authority for the health component with the Ministry of Health.

Wetlands and Human Health Benefits

Wetland ecosystems determine human health and well-being through a number of characteristic influences. Wetlands are a source of hydration and safe water; a source of nutrition; sites of exposure to pollution or toxicants; sites of exposure to infectious diseases; sites of physical hazards; settings for mental health and psycho-social well-being; places from which people derive their livelihood; places that enrich people's lives, enable them to cope and to help others; and sites from which medicinal products can be derived. The benefits of wetland ecosystems for human health can be approached in at least three inter-related ways:

- by recognizing the human needs that are met by water in its setting;
- by recognizing the health products that come from wetland ecosystems;
- and by recognizing the economic value of wetlands in a full sense, in a way that allows individuals within wetland ecosystems to sustainably improve their socio-economic conditions.

With respect to human needs, health benefits will accrue when human social and cultural needs are satisfied by access to wetlands. Health relates most easily to the direct survival requirements, which include water for food, water for drinking, cooking and eating, washing, cleaning, health and health care, and for waste removal and assimilation. Water is needed to generate income and material well-being, and access to water generates prestige and social identity, contributes to social cohesion, allows for recreation while providing an aesthetic opportunity, all embedded within moral, cultural and spiritual needs.

As for health products, health benefits will accrue to societies in general and individuals in particular when products of wetlands can be used for pharmaceutical or other medicinal purposes. Wetland-associated animals, fungi, bacteria and lower plants (algae), some of them living in extreme conditions, provide the most productive sources of new natural products. The medicinal qualities of these are a good example of the value of traditional knowledge to health care today. Links between

wetland biodiversity and human health should focus less exclusively on the obvious (such as birds, large mammals, or plants) and more on the “hidden biodiversity” (such as fungi and bacteria).

In terms of economic value, wetland ecosystem services contribute to the material well-being (and socio-economic status) of individuals and populations, and they can be valued in economic terms. As the socio-economic status of individuals improves, their health outcomes improve as well. Valuation studies highlight the significant contribution of wetlands to local, national, regional and global economies. Several of these studies also indicate that when both the marketed and non-marketed economic benefits are included, the total economic value of an unconverted wetland is frequently greater than that of a converted wetland.

Health Impact Assessment (HIA)

Loss of wetland components and disruptions of wetland functions and ecosystem services will have consequences for human health. Furthermore, adverse health outcomes are likely to be distributed in an unequal way, i.e., along socio-economic lines. As a consequence, health problems which are influenced by the environment cannot be solved by medical approaches to health alone. Rather, broader approaches are needed, drawing on a wider scientific base, including ecological and social sciences. This presumes that humans are not separable from the natural environment, and that socio-economic factors mediate human health.

Over the last decade the impact assessment family of tools has seen a rapid development of Health Impact Assessment (HIA). HIA may be defined as a combination of procedures, methods and tools that systematically judges the potential, and sometimes unintended, effects of a policy, plan, program or project on the health of a population and the distribution of those effects within the population. HIA identifies appropriate actions to manage those effects (Quigley et al. 2006).

The concept of HIA is based on the notion that human health and the physical and social environment are intricately linked. Individual and population health status is largely the result of the social, cultural and physical environment in which we live. Factors such as the state of our environment, access to resources to meet our basic needs, our exposure to risks and capacity to cope with these, our income and education level, and our social network of relationships with friends, family and neighbors all have considerable impacts on health and well-being.

Human health has a number of determinants that go beyond individual lifestyle choices. These include (1) Determinants related to the individual: genetic, biological, lifestyle/behavioral and/or circumstantial; (2) Social and environmental determinants: physical, community conditions and/or economic/financial; and (3) Institutional determinants: the capacity, capabilities and jurisdiction of public sector institutions and the wider public policy framework supporting the services they provide. Health Impact Assessment (HIA) aims to identify how development induces unintended changes in health determinants and resulting changes in health outcomes. HIA provides a basis for proactively addressing any risks associated with

health hazards. HIA also addresses health improvement opportunities in development. Health hazards, risks and opportunities also may be addressed explicitly in environmental assessment.

Development planning is concerned with social and economic development, such as energy, agriculture, industry and transport, and is typically conducted outside the health sector. These other sectors outstrip the health sector in the potential to affect, protect and promote population health because of the considerably larger proportion of resources at their disposal, and a responsibility for action that may change environmental and social health determinants significantly. Development planning without adequate consideration of human health may pass hidden “costs” on to affected communities, in the form of an increased burden of disease and reduced well-being. From an equity point of view, marginalized and disadvantaged groups often experience most of these adverse health effects. From an institutional point of view, the health sector must cope with these development-induced health problems and incurs the costs of dealing with an increased disease burden.

HIA provides a systematic process through which health hazards, risks and opportunities can be identified and addressed early in the development planning process, to avoid the transfer of these hidden costs and to promote multisectoral responsibility for health and well-being. The production of public health management plans with safeguards, mitigating measures and health promotional activities is an integral part of HIA. Key steps in the HIA process are presented in Box 1.

Purpose and Functions of HIA

The purpose of all HIA is to inform and influence decision making on proposals and plans so that health protection and promotion are effectively integrated into them. Linked to this central purpose, HIA has an important function contributing to healthy projects and healthy public policy. For example, HIA involves and engages health experts, project proponents, other key players and the community affected by the proposal, and facilitates public participation in decision making. HIA also attempts to identify health inequalities that may arise from a proposal and addresses cross-cutting health issues with repercussions for sustainability. HIA can help place public health on the agenda of many different agencies and individuals and increases awareness of what determines health status, thereby providing a basis for improved collaboration within and between agencies. In this way, HIA provides a “license to operate,” not only for public bodies, but also for private sector companies who incorporate social and health responsibility into their activities. HIA can thus be a tool for intersectoral action for health. By focusing on the health status of vulnerable groups, HIA may reduce the burden on health sector services.

HIA has no formal basis in law or regulations. It can be implemented voluntarily as a stand-alone assessment of proposed projects or it can be integrated into an EIA procedure if the project is requiring such an assessment. Government bodies in some countries (public health authorities) as well as some large corporations (predominantly in energy & mining) have adopted HIA procedures.

Box 1: the Health Impact Assessment (HIA) process (based on key steps and responsibilities presented in Quigley et al. 2006)

1. SCREENING

Deciding the scale of HIA that is required. This is a desk exercise by the responsible ministry or authority.

2. SCOPING

Defining time and space boundaries for assessment and setting Terms of Reference (TOR) for a full-scale HIA. This is usually done by the Ministry of Health (MOH, at central, province and/or district level) and key stakeholders.

3. FULL SCALE HIA

This is done by the HIA team and follows the specifications in the TOR.

4. PUBLIC ENGAGEMENT AND DIALOGUE

This is initiated by the relevant authority (e.g. MOH).

5. APPRAISAL OF THE HIA REPORT

To assess if the report complies with the TOR, control the quality of independent criteria, and appraise the recommendations in terms of feasibility, soundness and acceptability. This is done by the MOH or a consultant appointed by the MOH.

6. ESTABLISHMENT OF FRAMEWORK FOR INTERSECTORAL ACTION

This is done by the MOH and other ministries involved.

7. NEGOTIATION OF RESOURCE ALLOCATIONS

This is for the resources needed for health safeguard measures, done by the Ministry of Finance together with other relevant ministries.

8. MONITORING, EVALUATION AND FOLLOW-UP

Monitoring of compliance and health indicators, and evaluation and follow-up by MOH and line ministries.

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