HUMAN HEALTH IMPACTS – TEMPERAMENTAL PATHOGENS FOR SUSTAINABLE DEVELOPMENT?

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ABSTRACT

“Everyone has the right to an environment that is not harmful to their health and well-being”
- This is a frequently quoted section from the Constitution of the Republic of South Africa (RSA, 1996). The paper explores how meaning is given to this constitutional right in impact assessment processes and whether current practices in South Africa contribute to sustainable development.

The South African regulatory framework, the importance of human health to stakeholders, the scope of human health, tools and availability of information are considered. Results of a targeted survey on human health and impact assessment inform the findings.

INTRODUCTION

Human health is central to sustainable development, as stated in Principle 1 of The Rio Declaration on Environment and Development (1992): “Human beings are at the centre of concern for sustainable development. They are entitled to a healthy and productive life in harmony with nature.”

During the past decade, the consideration of potential human health impacts of development projects has gained noteworthy interest and momentum in the international arena. The International Association of Impact Assessment submitted a briefing paper (IAIA, 2002) at the World Summit that emphasized the need to make human health and safety an integral part of the impact assessment of policies, plans and development projects. The World Health Organisation adopted such an integrated approach during its support of Health Impact Assessment and a Memorandum of Understanding signed with IAIA in 2001 (Morgan, 2003).

In response to these developments, some countries have published human health impact assessment guidelines (Canadian handbook on health impact assessment, 1999). Multiple examples of assessment of human health impacts, either as part of environmental assessments or independent specialist reports have been conducted in many parts of the world, including amongst others Canada (Kwiatkowski and Ooi, 2003), the United Kingdom (Quigley R et al 2003), Republic of Slovenia (Lock et al, 2003) and Germany (Fehr et al, 2003).

The South African Constitution (Chapter 2 - Bill of Rights, section 24 – Environment) is aligned with Principle 1 of the Rio Declaration on Environment and Development through the frequently quoted statement: “Everyone has the right to an environment that is not harmful to their health and well-being”. This statement is followed by a less frequently stated right to “have the environment protected for the benefit of present and future generations … through measures … that secure ecologically sustainable development”. The Constitution links environment and human health and well-being and interprets these concepts within the notion of sustainable development.
PURPOSE OF PAPER

Against the background of the above international perspectives and rights stated in the South African Constitution, the paper explores how human health is addressed in impact assessment in South Africa. The paper is structured to firstly present results of a targeted survey on consideration of impacts on human health in environmental assessment. This is followed by an examination of the value that the South African legal framework assigns to human health. Applicable Acts and Regulations are explored for interpretation of human health and legal requirements. The importance that stakeholders assign to human health is also presented. Perspectives on current practice are offered through consideration of the scope of human health in impact assessment, available tools and information.

SURVEY

A survey was conducted to obtain an indication of the current handling of impacts on human health in environmental assessment in South Africa. The survey, literature and experience in numerous environmental assessments inform the findings of the paper.

Methodology

A questionnaire was distributed to a range of stakeholders, including environmental assessment practitioners, specialists, government representatives, residents’ organisations and individuals. Due to the specialist nature of the questionnaire, it was distributed to only 20 organisations/individuals. The survey group was selected on the basis of ability to contribute meaningful comments, indicated by considerable experience in environmental assessment of projects with potential human health impacts.

The questionnaire format was structured questions with structured responses. Opportunity for additional comment was provided. A total number of 12 responses were obtained from a variety of sectors, including authorities, industry, environmental assessment practitioners, human health specialists and private individuals.

Results

Results of the survey are presented in Figures 1 to 3 and discussed below.

Question 1: Is the current health status of the population usually included in EIA reports?

![Figure 1: Addressing of current health status in population](image)
Seventy five percent of respondents indicated that the current status of human health is not described in EIA reports, while a further 17% indicated that a general, broad description is provided (which is usually included in most studies) (Refer to Figure 1). Only one respondent indicated that the current health status of the population that may be affected is described.

Question 2: To what extent are existing environmental risk factors described and taken into account?

![Figure 2: Take existing environmental risk factors into account](image)

Results show that current risk factors in the local environment (sometimes referred to as confounding factors) are not described or taken into account (58%), while some risk factors are taken into account in approximately 42% of instances (Figure 2). None of the respondents indicate that existing environmental risk factors are considered comprehensively.

Question 3: To what extent are indirect linkages, such as current lifestyle, between human health and the environment described?

![Figure 3: Consideration of indirect linkages between human health and the environment](image)

Fifty eight percent of respondents indicated that linkages between human health and indirect components of the environment, such as the current lifestyle, unemployment and poverty, sources of household water and degree of urbanisation of the local population are not determined or
described (Figure 3). Only two respondents specified that indirect linkages are described and considered comprehensively.

Question 4: Is there consideration and comparison of the situation in the study area with national or global trends such as an increase in the prevalence of asthma and/or HIV/AIDS?

Yes - 17% (2 respondents)  
No - 83% (10 respondents)

Question 5: Is there consideration of the health infrastructure and services in the area e.g. number clinics and accessibility, number of health practitioners, etc?

Yes - 17% (2 respondents)  
No - 83% (10 respondents)

Responses indicate that national or global trends such as an increase in the prevalence of asthma and/or HIV/AIDS are not taken into account (83%). The existing health infrastructure and services in the area of development are also not considered in most cases (83%).

Only two respondents indicated that most human health impacts, apart from atmospheric emissions are usually considered in EIA reports. Health impacts, other than that of atmospheric pollutants, listed in the question are improved economic conditions with improved access to health services and education, stress on health services due to an influx of work seekers during construction, impacts due to water pollution and accident risk due to an increase in heavy traffic.

DISCUSSION

Results of the targeted survey of experienced individuals and organisations reveal an almost complete absence of assessment of human health impacts. Furthermore, where human health is considered, it is done very selectively during environmental assessment processes. This situation demands the question: “How important is or should human health be in environmental assessment in South Africa?” The South African regulatory framework and stakeholder issues are explored to provide a response.

Human health in impact assessment – vital or peripheral?

What does the South African regulatory framework articulate?

While chapter 2 of the Constitution of South Africa unambiguously links environment, human health and well-being and sustainable development, the regulatory framework must be further scrutinised to reveal statements on human health and well-being. The National Environmental Management Act (NEMA) (RSA 1998) refers to human health and well-being in its definition of “Environment”. It states that “Environment” means the surroundings within which humans exist and that are made up of:

i) the land, water and atmosphere of the earth;  
ii) micro-organisms, plant and animal life;  
iii) any part or combination of (i) and (ii) and the interrelationships among and between them; and  
iv) the physical, chemical, aesthetic and cultural properties and conditions of the foregoing that influence human health and well-being;”

The definition effectively links the biophysical pillar of sustainable development with human health and well-being. The act further articulates National Environmental Management Principles in Chapter 1, which include the following:

Principle 2: “Environmental management must place people and their needs at the forefront of its concern, and serve their physical, psychological, developmental, cultural and social interests equitably.

Principle 3: Development must be socially, environmentally and economically sustainable.
Principle 2 affirms that human interests are central to environmental management and lists a range of human interests that are aligned with the World Health Organisation’s definition of human health. This definition asserts that human health is “...a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity” (WHO, 1947). The combination of principal 2 and 3 in NEMA conveys that environmental management and sustainable development is principally about human welfare.

Taking the above principles and definition into account, a schematic representation of human health and well-being within the context of the Act is presented below. The diagram presents:

- Human health and well-being as central concern of sustainable development,
- Pillars of sustainable development (economic, social and biophysical),
- Interrelationships between the pillars of sustainable development (socio-environmental, eco-efficiency, socio-economic), and
- Examples of components (nuisance, direct jobs, access to energy, etc)

The schematic presentation conveys human health and welfare as the principal consideration of environmental management and sustainable development.

![Diagram](modified_from_Petro_Canada,_2001_Sadler_and_Jacobs,_1992)

**Figure 4:** Human health as central consideration in sustainable development

While the Environment Conservation Act (RSA 1989) does not include the terms human health and well-being, the act defines “environment” as “the aggregate of surrounding objects, conditions and influences that influence the life and habits of man or any other organism or collection of organisms.” The reference to “life and habits of man” must surely imply human health and well-being.

The key objectives of the EIA Regulations do however include the phrase: “to promote sustainable development, thereby achieving and maintaining an environment which is not harmful to people’s health or well-being.” Further reference is made to human health in specifications for the content of the Scoping Report, which includes: “The effects (using information on the project and the existing environment) on human health……..should be included.” Furthermore, impacts should specifically be evaluated in terms of “Effects on public health or risk of life.” The EIA Regulations therefore require an understanding of linkages between environment in its broadest sense and human health and well-being. It further requires assessment of impacts due to changes in the social,
biophysical and economic components, as well as interrelationships of these components, as a result of a development project.

It is interesting to note from Davies and Sadler (1997/2003) that “Despite the fact that development projects can have profound effects on human health, relatively few international agencies or countries have requirements, principles of guidelines for health to be considered as part of Environmental Assessment.” In contrast to this statement the requirements of the South African Constitution, the National Environmental Management Act and the EIA Regulations are progressive in respect of impacts on human health. It can therefore not be concluded that impacts on human health are given cursory attention due to a weak regulatory framework in South Africa.

**Stakeholders not concerned about their health?**

It may be argued that impacts on human health have not gained much focus in environmental assessment because stakeholders do not raise it as an issue. Human health and well-being is however always one of the most serious stakeholder issues where industrial developments are proposed. The issue is sometimes raised over a period of years during a number of impact assessments that are conducted in the same area. Concerns in regard to human health and well-being are, in fact, becoming increasingly emotive and controversial.

Some environmental assessment reports include information on measured air pollution levels compared with human health based guidelines or results of human health risk assessments. Yet stakeholder comment in the questionnaire includes: “Community concerns regarding health issues are either totally ignored or “mitigated”’. Stakeholders thus perceive that impacts on human health are never fully addressed.

In summary, the first section of the discussion has demonstrated that:

- Human health and well-being is central to sustainable development
- The importance of human health is enshrined in the Constitution of South Africa
- NEMA confirms that environmental management and sustainable development is principally about human welfare.
- Human health and well-being is explicitly included in the EIA Regulations
- Human health is almost always a major concern for stakeholders

Our regulatory framework and stakeholder concerns unambiguously state that human health is crucial in environmental assessment. Why is human health then almost absent in environmental assessment? The next section of the paper provides perspectives on this question.

**Human health in impact assessment – where are the problems?**

**Scope – human health in impact assessment**

Comments included in the questionnaire indicate that there is little agreement, even confusion, on the scope of health issues that should be considered in environmental assessment. Opinions on one end of the spectrum are that consideration of human health is largely outside the scope of environmental assessment and that it should rather be addressed in documents such as State of the Environment Reports, policy documents and documentation from the Department of Health. On the other end of the scale there are expectations that detailed, in-depth human health investigations, such as epidemiological studies, should be included in environmental assessment, apparently without consideration of the broader content of human health and well-being.

In reality the inclusion of human health impacts in South Africa entails mainly direct impacts of atmospheric pollutants, with limited consideration of other direct impacts, let alone indirect impacts. Should all direct and indirect health impacts have been considered during an assessment
process and changes in air quality be identified as significant, it is agreed that more detailed investigation is necessary and should be conducted. Survey respondents clearly indicate that this is not the situation.

Where human health is included in environmental assessment, it is interpreted in a limited, one-dimensional media-specific way. This practice is in stark contrast with international developments where the scope of impacts on human health includes positive and negative direct, as well as indirect impacts (Canadian handbook on health impact assessment, 1999; Morgan 2003).

**Tools for assessing impacts on human health**

The tools that are available to assess impacts on human health are limited. Additionally, these tools are mostly one-dimensional and media specific. The few familiar tools are usually applied to every situation, without consideration of suitability to address the context or issues. The proverbial “when you have a hammer, every problem looks like a nail” situation manifests. The reality is that there are no tools that properly integrate the multi-dimensional nature and complexity of human health and well-being. We will however make progress by conducting environmental assessment within the broad health and well-being framework.

**Lack of information**

There is a perceived lack of information on human health and well-being in South Africa. Given the narrow interpretation that human health is given in current practice, this lack of information is severe. Very few studies conducted to date have linked environmental risk factors with human health.

Human health within the context of sustainable development and the South African legal framework requires much wider information. Sources should certainly include municipal clinics, district hospitals and published reports from Statistics South Africa and the Health Systems Trust (Boer 2001). Health services are provided and administered from many different institutions and it will still not be a trivial task to find meaningful information.

It is not uncommon to deal with varying and limited levels of information in environmental assessment. This problem will not disappear. Identification of key health informational needs for environmental assessment will however contribute substantially to advancement.

**CONCLUSION**

The first section of the paper has shown that consideration of human health is mostly absent in environmental assessment in South Africa. The importance of human health and well-being in environmental assessment was established through examination of the South African legal framework and the importance that stakeholders place on the issue. The Constitution, the National Environmental Management Act and the EIA Regulations unambiguously show that human health and well-being is the principal purpose of sustainable development and environmental management. Human health and well-being was presented schematically within the context of the South African legal framework to demonstrate its multi-dimensional, extensive, interlinked and complex nature. Human health and well-being is almost always a key issue for stakeholders.

Perspectives were offered on why human health and well-being is given cursory attention in environmental assessment. Despite our legal framework, there is confusion and widely differing opinions on the scope of human health and well-being in environmental assessment. In practice, human health entails mainly direct impacts of atmospheric pollutants, with little consideration of other direct, let alone indirect impacts. Adding to the predicament of the limited scope within which human health and well-being is interpreted, the tools that are available to assess impacts on human health and well-being are mostly one-dimensional and media specific. There is a perceived
lack of information, but it is not uncommon to deal with varying and limited levels of information in environmental assessment. The situation may be improved through defining key informational needs within the holistic definition of human health and well-being.

Sustainable development and its lofty ideals are exciting concepts for environmental management professionals and many other stakeholders. While we want to protect wetlands, beautiful scenery, different habitats, cultural and historical sites and different species, sustainable development is primarily about the welfare of humans. Human health and well-being, through protection of the environment, is the foremost aim.

Our conclusion is that we have unintentionally created a myth that human health in environmental assessment equals impacts of atmospheric pollution only. This misconception conceals the ultimate aim of environmental management. It raises debates to more emotional levels and polarises stakeholders. This myth is a pathogenic infection for sustainable development.

REFERENCES


