AGRICULTURAL AND ENVIRONMENTAL MITIGATION STRATEGIES
ENVIRONMENTAL SAFEGUARDS FOR ENVIRONMENTAL SUSTAINABILITY

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ABSTRACT

Environmental safeguarding defines the application of precautionary measures to ward off degradation to the environment and human health that may be occasioned during implementation of a project. The researcher indentified the key challenges of environmental flow policy was the transition from high-level aspiration to actual implementation. While many countries now have some form of high-level policy and legal recognition of environmental flows, implementation has proved a significant challenge. Lack of political will and stakeholder support hindered implementation in the sense that, policy changes alone didn't result in implementation. Insufficient resources and capacity implementation could not be achieved without strong institutions with sufficient resources and capacity to carry it out. Institutional barriers and conflicts of interest due to environmental flows were inherently interdisciplinary and inter-sectoral. The research determined the significance of environmental safeguards for environmental sustainability. This study was exploratory in nature since the literature review and primary data were gathered from relevant documents published by individual researchers served as the main sources of data for this paper. The advent of sustainability in development science had led planners to apply evolving notions of environmental sustainability. Sustainability was regarded alternatively as the proper means and the proper end of urban development. The researcher recommended practical environmental safeguarding measures such as, introduction of corporate environmental policies and strategies and carrying out environmental impact assessments during project implementation phase which went a long way in forestalling environmental hazards for sustainability.
Keywords: Environmental Policies, Environmental impact assessment

INTRODUCTION

Environmental safeguarding refers to precautions preventing degradation to the environment and human health that may be occasioned during implementation of a project. Environmental safeguarding starts at the earliest planning stage of a project and is continued until it ends. It includes different measures such as: introduction of corporate environmental policies and strategies; building adequate human and institutional capacity to deal with environmental issues; carrying out environmental impact assessments during the planning phase; development of waste stream concepts for all health projects; including necessary financial resources for environmental equipment and services; monitoring and evaluation of environmental safeguarding measures for project operations; environmental accountability through dissemination of environmental information, public consultation and information disclosure mechanisms.

Globally there are several international conventions applicable environmental safeguards for environmental sustainability which are: The Stockholm Convention on Persistent Organic Pollutants aimed at elimination and restriction of the production and use of POPs. These pollutions such as carcinogenic dioxins and furans are unintentionally produced during the incineration of waste products created by the project. The Vienna Convention for the Protection of the Ozone Layer and its accompanying Montreal Protocol on Substances that Deplete the Ozone Layer is an international treaty designed to protect the ozone layer. For example, refrigerators and other equipment procured for health projects might contain the ozone depleting hydro chlorofluorocarbons (HCFCs). The Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal intends to reduce the movements of hazardous waste and to minimize the amount and toxicity of wastes generated. The Minamata Convention on Mercury is the latest international treaty with relevance for healthcare waste management

and was designed to protect human health and the environment from mercury and mercury compounds. Mercury-added products such as thermometers are not anymore procured or imported latest until 2020.

Another relevant convention is the United Nations Framework Convention on Climate change. The 2010 Conference of Parties (COP 16) in Cancun agreed on significant decisions to address the long-term challenge of climate change collectively and comprehensively over time and to take concrete action now to speed up the global response. In light of this, the UN launched Greening the Blue in 2010 with the aimed at measuring and reducing the environmental impacts of the UN operations. UNDP considered environmental safeguard processes as essential and experience showed that the ratio of benefits to costs in introducing safeguard processes were substantial. In 2015, UNDP issued the Social and Environmental Standards (SES) demonstrating UNDP's commitment to mainstreaming social and environmental sustainability. The SES was embedded in the UNDP's Quality Assurance. The key challenge of environmental flow policy was the transition from high-level aspiration to actual implementation (Hirji and Davis, 2009a) While many countries now have some form of high-level policy and legal recognition of environmental flows, implementation has proved a significant challenge. Two international reviews attempted to assess environmental flow implementation challenges in detail.

Based on our own review, we concurred with and elaborated upon their conclusions, with our focus at the policy level. Moore (2004) surveyed 64 countries via 272 respondents and documented the challenges perceived to be most pertinent to environmental flow establishment and application. Overall, respondents indicated that issues relating to stakeholder support and political will posed the most significant challenges. Moore further examined the trends and differences between six major regions of the world: respondents from North America, Europe, and Asia cited political will as their most significant obstacle, whereas those in South America, Oceania, and Africa identified the lack of understanding of the socio-economic benefits of environmental flows among stakeholders, policy makers, and the general public.

In the second international review, the World Bank (Hirji and Davis, 2009a) evaluated how various countries had adopted environmental flows in policies and practice, and identified the following barriers to implementation that were: maintaining political and stakeholder support to implement environmental flow provisions, especially in over-allocated catchments and basins; reorienting sectoral ministries to the need to include environmental water provisions in their policies and practices; establishing environmental goals and the benefits delivered by associated ecosystem services; matching environmental flow assessment procedures to the budget and time available, while still meeting the requirement for best available science; turning value-laden terms such as over-allocation and sustainable levels of extraction into practical procedures based upon these findings and our own global review, we identify three principal, related obstacles to implementation.

Lack of political will and stakeholder support hindered implementation in the sense that, policy changes alone didn't result in implementation. Ongoing political and public support was essential. At the highest level, political support for environmental flow policy is crucial for setting strategic direction, securing planning resources, championing environmental requirements with stakeholders, and enforcing implementation. However, political challenges were monumental in managing for environmental flows implied either that water would be removed from existing uses and constraints placed on future water uses. Agricultural, real estate, hydropower and industrial sectors that may be impacted by these changes wield considerable political power, and may use it to resist attempts to reform water management. Competing social and economic requirements for water resources were a result of biases in the political arena against environmental flows.

Insufficient resources and capacity implementation could not be achieved without strong institutions with sufficient resources and capacity to carry it out. Virtually every case study undertaken for this review reported that limited capacity of one form or another constrained implementation. Conducting a thorough assessment and developing operational rules for environmental flows at even a single dam or river reach requires significant technical and institutional capacity. Doing so at the scale of an entire state, province, or country requires capacity that few, possess at the onset of environmental flow policy implementation.

Institutional barriers and conflicts of interest due to the fact that environmental flows were inherently interdisciplinary and inter-sectoral. The Instream Flow Council of the USA and Canada identified that understanding, incorporating, and improving legal and institutional frameworks were a leading challenge to implementing environmental flow solutions (Annear et al., 2004, p. 8). Agencies that planned and managed hydropower, agriculture, land use, urban and industrial development, and natural resources all operate under different legal authorities, yet all play important roles in managing environmental flows. A lack of understanding

about the interdependence between various downstream water needs, including estuarine, near-shore, and aquifers, further exacerbated the institutional barriers between the respective government agencies that manage them (Hirji and Davis, 2009a). In addition, countries whose political and academic institutions didn't cooperate were disadvantaged in developing the scientific and decision support tools needed to set and manage flow targets. This research determined the significance of environmental safeguards for environmental sustainability.

METHODS AND MATERIALS
This study was exploratory in nature since the literature review and primary data were gathered from relevant documents published by individual researchers were the main sources of data for this paper. This enabled the researcher to determine the significance of environmental safeguards for environmental sustainability. Information gathered from literature review highlighted that there was a growing concern about environmental safeguards for environmental sustainability. Most organizations such as NEMA, UNEP, Ministry of Environment and Forestry were formulating policy guidelines in enhancing environmental safeguards for environmental sustainability.

REVIEW FINDINGS
The advent of sustainability in development science had led planners to apply evolving notions of sustainability to the contemporary debate over how cities and regions would be revitalized, redeveloped, and reformed. Sustainability was regarded alternatively as the proper means and the proper end of urban development. Today, it is common in planning circles for urban planners to describe efforts to reverse problems of urban sprawl, congestion, and decline as a search for urban sustainability as envisioned by Basiago, Z 1996. This is the case even though in urban theory where no consensus exists as to which human settlements embody sustainability. Urban sustainability implied the vitality of a city as a complex system of the quality of life of its citizens and the capacity of nature to support its activities. Some commentators defined this concept narrowly in terms of the economic sustainability of a city as it's potential to reach qualitatively a new level of socio-economic, demographic and technological output which in the long run reinforces the foundations of the urban system as postulated by Ewers and Nijkamp, 1990. Others, notably environmental activists, linked urban sustainability to broader social principles of futurity, equity, and participation, especially involvement of public citizens in the land development process a stated by Foe, 1994.

When environmental planners speak of urban sustainability, they mean the pursuit of urban form that synthesizes land development and nature preservation. Hence, for environmental planners, the pursuit of urban sustainability became a matter of placing the development of land into cities and the protection of natural systems into a state of vital equipoise as opined by Lyle, 1994.

This is not inconsistent; nonetheless, the tumult over sustainability in planning circles has tended to conflate planning guidelines, which are specific in nature and applicable on a case-by-case basis as observed by Calthorpe et al., 1991 and planning principles, which, by definition, must be general and of universal applicability McDonough, 1992. In terms of practical planning guidance, Agenda 21 proposes a number of concrete measures to achieve 'sustainability' in the socioeconomic realm. These include equity, entrepreneurship and technology transfer. Agenda 21 ties access to land, security of land tenure, tenants' rights, liberalized credit policies, and low-cost building material programs to sustainable urban living for the homeless and for the urban poor. It calls upon developing countries to foster small businesses in the informal economic sector and developed countries to provide developing countries monetary and technical aid to educate environmental managers.

Within nations, wealthy districts are asked to provide clean water, sanitation, and waste collection services to poorer ones Keating, 1993. Agenda 21 also proposes a number of tangible strategies to bring about 'sustainability' in the environmental realm. Agenda 21 calls for appropriate technology, transport reform, and urban renewal. Governments are asked to improve rural areas and urban slums, to build moderately sized cities that promote job creation and housing, and to build cities invulnerable to natural disasters. National construction programs based on technologies that utilize local materials and are energy-efficient, non-polluting and labour-intensive, as well as action programs in energy conservation and renewable energy, such as wind, solar, hydro-electric and biomass, are urged. Transport policies that favor public, bicycle, and foot transport over automobiles, municipal development designed to reduce commuting, and land use that contains urban sprawl and prevents it from encroaching upon agricultural land and environmentally sensitive areas are enunciated Keating, 1993.

In terms of planning principle, however, Agenda 21 introduces a new paradigm of urban development. It is this paradigm, rather than the litany of urban reform proposals recited above, that relates 'sustainability' in development theory to 'sustainability' in city planning practice. A lack of understanding in planning circles as to what this urban development paradigm entails may explain why 'urban sustainability' is so often misconstrued as merely an

environmental doctrine. Kahn 1995 wrote that the paradigm of sustainable development described in Agenda 21, in fact, rests on three conceptual pillars. These pillars are economic sustainability, social sustainability, and environmental sustainability.

Economic sustainability, by way of growth, development, and productivity, has guided conventional development science in the past. Market allocation of resources, sustained levels of growth and consumption, an assumption that natural resources are unlimited and a belief that economic growth will 'trickle down' to the poor have been its

hallmarks. Sustainable development expanded development's concern with monetary capital to consider natural, social and human capital. Restraint upon economic growth and consumption which deplete these is favored Kahn, 1995. Social sustainability encompassed notions of equity, empowerment, accessibility, participation, sharing, cultural identity, and institutional stability. It seeks to preserve the environment through economic growth and the alleviation of poverty. Environmental sustainability involved ecosystem integrity, carrying capacity and biodiversity. It required that natural capital be maintained as a source of economic inputs and as a sink for wastes. Resources must be harvested no faster than they can be regenerated. Wastes must be emitted no faster than they can be assimilated by the environment Kahn, 1995.

THEORETICAL FRAMEWORK

The term environmental safeguards were integrated late into debates on developing sustainability. Within the social sciences, the discipline of sociology has been invisible in professional circles, and public and policy discussions have focused on climate change and sustainability. However, other disciplines, such as geography, urban studies and planning, and anthropology, have been more involved. Only with the widening influence of the social ecology framework that was enhanced by ecofeminist, ecosocialist, indigenous movement theories did the debate shift toward an understanding that most of humanity is vulnerable when facing environmental externalities, natural disasters, and climate change. Moreover, the sustainability discourse was linked to the inequality discourse when it became apparent that environmental externalities are differentially and disproportionally distributed, both geographically and among groups.

The major challenges of today are framed within the social context with the mounting levels of evolving risk and vulnerability resulting from social polarization, rising urban poverty levels, urban conflict and violence, terrorism, natural disasters, and climate change. These challenges affect planning and practices, thus necessitating the rethinking and revision of current planning methods to remedy this dire social situation. It is accepted that a triad model, in which the ecological is interwoven with the economic and the social, is required to formulate methods of sustainable development.

This three-pillar model of sustainability has greatly evolved in developing each aspect independently. However, as Littig and Greissler assert, no conclusive understanding of the relationship between the elements of the triad, or of how they should be measured and evaluated, was formulated. Although developing this understanding has dramatically altered the sustainability discourse, one aspect of the discourse, namely social sustainability, lacks a coherent, clear and utilizable definition. The deficiencies are typically attributed to social scientists, who are criticized for being conceptually vague and inconsistent, thus generating multiple concepts.

Furthermore, Grieller and Littig found that even the selection of social sustainability indicators frequently is not grounded in theory but rather in a practical understanding of plausibility and current political agendas. A deeper, ontological caveat of the ambition to overcome the convulsive and feinted discourse on social sustainability is proposed by Boström and Davidson, who contend that any effort to develop socially sustainable communities entails first the need to define the kind of society we want to sustain (p. 12); (p. 609). Although drawing the contours of a just society is too ambitious by far and beyond the scope of this paper, we would like to offer some progress by following two propositions: first, that the main problem with the contemporary scattered framework does not concern defining the social circle of sustainability but in approaching sustainability through three dimensions while endeavouring to define each dimension separately.

Second, we understand risk as a dominant organizing concept and the manner in which societies cope with or ignore risks as a determent of social injustices. Thus, by positioning risk as a constitutive concept of sustainability, we re-conceptualize social sustainability within the vision of having a safer planet: safer human and non-human societies now and in the future. Therefore, our goal in this article is to review existing definitions concerning the social aspects of sustainability, outline the deficiencies and problems of contemporary understandings of sustainability and offer an alternative conceptual framework for social sustainability. The proposed framework aims at redefining and redirecting policies of coping with risk to facilitate resilient societies.

CONCLUSIONS

Environmental safeguards for environmental sustainability were imperative to the well-being of our planet and to human development. Most organizations such as NEMA, UNEP, Ministry of Environment and Forestry were formulating policy guidelines in enhancing environmental safeguards for environmental sustainability.

Environmental safeguarding referred to the use of precautionary measures to ward off degradation to the environment and human health that may be occasioned during implementation of a project. The advent of sustainability in development science had led planners to apply evolving notions of sustainability to the contemporary debate over how cities and regions would be revitalized, redeveloped, and reformed. Sustainability was regarded alternatively as the proper means and the proper end of urban development.

RECOMMENDATIONS

The researcher recommended simple, practical environmental safeguarding measures such as, introduction of corporate environmental policies and strategies; building adequate human and institutional capacity to deal with environmental issues; carrying out environmental impact assessments during the planning phase; development of waste stream concepts for all health projects; including necessary financial resources for environmental equipment and services; monitoring and evaluation of environmental safeguarding measures for project operations; environmental accountability through dissemination of environmental information, public consultation and information disclosure mechanisms.

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