Evaluation, Sustainable Development, and the Environment in the South Pacific

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This article outlines the Results-Based Evaluation (RBE) framework proposed for the *ex-post* assessment of the National Environmental Management Strategies (NEMS) in 12 small-island developing states (SIDS) in the South Pacific. It gives an overview of the methods and basis of developing an evaluation framework in the context of SIDS in the region. Framework development is a) process-based because it integrated contextual, conceptual and empirical parameters for evaluation design, and b) spatially oriented because it involved vulnerability assessment, situational analysis and workshop-based consultation in Kiribati and Samoa. It concludes that RBE has potential value in the review process for updating the environmental strategies and action plans and for measuring what has been achieved within the managerial process for sustainable development in the region.

Evaluation in the 1990s has emerged as a profession historically positioned in the social sciences (House, 1993; Shaddish et al., 1995; Chelimsky and Shaddish, 1997). Broadly, the field and practice of evaluation has grown immensely, permeating various professions and disciplines from education to geography by the end of 20th Century. As a field, evaluation has been considered a growth industry around the world and its importance in policy research remains substantial (Rossi and Freeman, 1993; Ryan and Destefano, 2005). According to House (1993), the practice of evaluation is expected to expand globally into a much larger enterprise during the first half of the 21st Century with a major decision making role in many countries.

Over the last few decades, formal evaluation has contributed to the growth of evaluation concepts, methods and approaches for government-funded initiatives, as well as international development programs and projects (Binnendijk, 1989; Bamberger, 1991; House, 1993; Jackson and Kassam, 1998; Stufflebeam, 2001). In the early 1970s, the field has evolved with the rise of alternative methods and models based on the qualitative paradigm to cater to various evaluation needs.[1] Compared to quantitative (positivist) paradigm, the qualitative paradigm used non-quantitative evaluation methods such as naturalistic observation and subjective exploratory techniques.[2] Alternative models in the 1980s ranged from stakeholder evaluation (Gold, 1981) to goal-focused evaluations (McLaughlin, 1988).[3] From the early 1980s to mid-1990s, increased attention has been paid to the role of multiple groups and stakeholder involvement in the evaluation process (Guba and Lincoln, 1981; Mark and Shotland, 1985; Sechrest and Sidani, 1995). As Rebiens (1995, p.5) puts it, stakeholders (who are either directly or indirectly affected by the evaluation process and results) '…bring their perceptions and analysis of reality to the table to

create a negotiated reality, from which flow recommendations for action.' At the turn of the 21st Century, evaluation models and techniques stressed the importance of sound evaluation, inclusion and dialogue in building evaluation capacity (Stufflebeam, 2001; Compton, 2002; Davidson, 2004; Goodman and Carey, 2004; Ryan and Destefano, 2005; Scriven, 2006).

With a burgeoning evaluation literature, a broad range of professions from health and education to conservation and environmental planning have been engaged in different evaluation activities at local and international levels (Smith and Theberge, 1987; Bamberger, 1991; Spellerberg, 1992; House, 1993; Scriven, 2006). However, although the field has produced a prodigious amount of scholarship in the social science, research on evaluation of environmental plans and policy outcome assessments has received little attention from policy scholars and social scientists (Ringquist, 1995). Despite a diversity of evaluation types, methods and instruments, the methodology to evaluate the results of environmental plans for managing the environment is rather limited, piecemeal, if not *ad-hoc* in many developing countries.

A potential exists for expanding the field and practice of evaluation to deal with important concerns, especially the *ex-post* evaluation of plans and strategies in managing the environments of developing countries. This article considers the Results-Based Evaluation (RBE) framework in asserting the need for, and importance of, evaluation in managing the environment of small-island developing States (SIDS) in the South Pacific. The focus is on developing an evaluation framework on environmental strategies in the region, not the conduct of evaluation. First, the paper reviews the literature on evaluation in environmental management (EM) and then cites how the term 'evaluation' is defined in the study. This section broadly looks at the evaluation practice in EM with reference to the developing countries. The second section states the research goal and study area and then provides a background and overview of the South Pacific environment. The third outlines the methods and basis of framework design. RBE, the proposed evaluation framework, is introduced briefly followed by a summary of the design process along with the criteria for framing RBE. Finally, the paper concludes with a discussion of the potential value of the proposed framework in the evaluation field.

Literature Review: Evaluation in 'EM'

Existing literature has considered evaluation approaches for environmental planning such as impact evaluation, policy evaluation, and strategic environmental assessment (Cordray and Lipsey, 1987; Bingham and Felbinger, 1989; Found, 1992). However, early contributions to develop methods and techniques invariably emphasised *ex-ante* evaluations for managing the environment in developing countries. At issue on evaluation for EM is how *ex-post evaluation* could be designed in the context of developing countries. An *ex-post* evaluation is aimed to address the question on what exactly happened at the end of plan implementation. So, the challenge is to ensure that evaluation for managing the environment reflects the cause-effect relationship, involves stakeholders in the evaluation process, and operates in an integrated way to improve and sustain the quality of the environment. But first is a discussion of the meaning of 'evaluation'.

Defining 'Evaluation'

Definitions of the term 'evaluation' vary by paradigmatic mode, purpose and contexts. The classic way is to define the term 'evaluation' to ascertain merit, worth or significance of something (Scriven, 1982; Chelimsky and Shadish, 1997). In differentiating the focus of research and evaluation, Patton (1986, p.12) noted that 'Research is aimed at truth.

Evaluation is aimed at action.' Cordray and Lipsey (1987) argued that conceptually, evaluation is not simply a 'collection of research methodologies, tools and tactics.' From a qualitative view, evaluation is about measurement, description, judgement and negotiation between evaluators and stakeholders (Guba and Lincoln, 1989, p. 75).

Evaluation has been perceived from its purpose as a 'form of applied research intended to have a real-world effect' (Babbie, 1992, p. 347). As a study with a distinctive purpose, Robson (1993: 171) explains that evaluation is aimed to 'assess the effects and effectiveness of something, typically some innovation or intervention: policy, practice or service.' With a multiplicity of meanings ascribed to the term 'evaluation', Shaddish et al., (1995, p. 104) believed that no inclusive definition was available.' For the purpose of the research, Suchman's (1967, p. 31-32) work is relevant as he defined the term as:

> ...the determination (whether based on opinions, records, subjective or objective data) of the results (whether desirable or undesirable; transient or permanent; immediate or delayed) attained by some activity (whether a program, part of a program...ongoing or one shot approach) designed to accomplish some valued goal or objective (whether ultimate, intermediate or immediate effort or performance, long or short-range).

Importance of Evaluation and 'EM'

The importance of evaluation in environmental management has been widely recognised in the context of developing countries (SPC, 1992; WB, 1993; ESCAP, 1995).

During the 1990s, it has been tied to 'managerialism' because evaluation studies were focused on efficiency, economic productivity, budgets and control of some sectors of society (House, 1993). From an environmental viewpoint, Redclift (1987) viewed 'managerialism' in terms of environmental management (EM) to achieve sustainability, greater efficiency and closer collaboration between planners and users in developing countries. There are two prevailing assessment approaches in the conduct of evaluation studies on EM. First is a propensity to apply program evaluation (PE) which has been used as a practical and service-oriented, evaluative mode of inquiry. PE often involved an assessment of the utility, effectiveness, efficiency and significance, as well as responsiveness to improve and meet accountability requirements of various stakeholder interests. Second is a diversity of evaluation studies in terms of scope and methodology. Existing studies are methods-oriented, program and/or project-based, and sector-focused because they are tailored according to the particular demands and subject of evaluation.

Past evaluation studies in EM involved an assessment of environmental policies, impacts of decisions, outcome of implementation and sector programs. Some approaches were extensions of environmental impact assessments (EIA) and management plans, if not focused on sectoral assessments and program evaluation. In assessing aid-funded projects, EIA as a formal assessment process involved identifying and predicting environmental impacts and consequences for a proposed action or development proposal, both beneficial and adverse (UNEP, 1988; OECD, 1993; SPREP, 1993). From a sustainability perspective, EIA is an important process in furthering sustainable development in public and decision-making (WCED, 1992; OECD, 1993; Lawrence, 1997).

This paper asserts that the evaluation field and practice could be linked with EM to attain the goal of sustainable development (SD). Drawing from the World Commission on the Environment and Development (1987, p. 8), sustainable development is 'development that meets the needs of the present without compromising the ability of the future

generations to meet their own needs.' In interpreting this WCED (1987) concept, SD is taken as an approach to development with a normative focus that has potential to become a useful concept for creating solutions for building sustainable societies. It can be an orienting vision that seeks to foster participation, consensus and appropriate human behaviour toward managing the environment. It provides a moral imperative, a call to build healthy economies and environments and to improve the quality of life now, and in the future.

Research Goal and Study Area

The need for an evaluation framework and process for assessing the performance of the environmental management process in developing countries has been recognised (UN, 1994; ESCAP, 1995; SPREP, 1997). Although environmental action plans and strategies have been adopted nationally and affirmed regionally since the early 1990s, there is no clear system and process in place for the evaluation of environmental action plans and strategies in the South Pacific.

The goal of the research has been to develop an evaluation framework for the environmental management of small-island developing states in the South Pacific. An 'evaluation framework' means the structure and process of assessing the implementation results of environmental strategies, generically known as 'National Environmental Management Strategies' (NEMS) in the region. In the study, the word 'strategy' in environmental management is an umbrella term for policy statements, decisions and action plans put in place mostly by the national governments and regional agencies to address environmental issues and challenges. The central research interest is design, not the actual conduct of evaluation in EM. Thus, the research focused on two questions, *viz*:

1. What are the factors that should be considered and which conceptual parameters could be used for framework development?
2. In what way should the framework for the evaluation of the NEMS in the South Pacific be designed and developed?

The foregoing are some of the 'big questions' with which the scholarly community needs to engage concerning evaluation in 'EM'. In support of the study, the region's environmental body, SPREP (1996, p.1), has expressed the need for, and potential value of, the research as follows:

> The research topic…addresses a very important and little studied aspect of environmental management in this region. An appropriate evaluation framework will be of significant value to our work at a regional level and to our member countries as they continue to implement and ultimately revise their National Environmental Strategies.

The proposition here is that evaluation is an integral part of the environmental management process for sustainable development. Developing an evaluation framework on the NEMS comes from the need for a system of measuring the results of implementing environmental strategies. By framework development means specifying an evaluation model, one that defines the structure, components and method for evaluating the *ex-post* implementation performance of the NEMS in twelve SIDS in the South Pacific. It is expected to provide operational and methodological direction at the post-implementation stage of the NEMS throughout the region. The framework could serve as a guide for planning and evaluating the EM strategies (NEMS) at a country level.

In defining its spatial framework, the study covered 12 of 22 small island developing States in the South Pacific. The study area was limited to the small island countries that have adopted National Environmental Management Strategies (NEMS) as an action plan for planning and managing the environment. Although the study

focused on the South Pacific, its spatial framework varied according to the purpose and method of research. The NEMS or environmental action plan has been implemented by 12 countries in the region, namely: Marshall Islands, Federated States of Micronesia, Kiribati, Samoa, Tuvalu, Tokelau, Niue, Tonga, Solomon Islands, Palau, Cook Islands and Nauru. On this basis, the research methods from the desk review to situational analysis and postal survey covered these 12 countries with the NEMS in place. For the field research, Kiribati and Samoa were chosen as study sites based on certain criteria. These two countries have agreed to hold a national consultation workshop to discuss the draft evaluation design (concept paper) proposed for the region. The selection criteria for the two study sites for fieldwork are as follows:

1. The island country has adopted the NEMS
2. The diversity of environmental issues and development constraints, one to be identified based on proneness to natural disaster and the other based on exposure to environmental risk (e.g., sea-level rise)
3. Either low-lying coral island or high island country of volcanic origin
4. Representative of the South Pacific island groups of Melanesia, Polynesia and Micronesia
5. Presence of relevant academic and other institutions involved with environmental management.

The study sites were chosen based on (1) the acceptance by the respective government to participate in the research and (2) the approval of institutional affiliation arrangements to meet the research objectives in the region. Samoa was chosen because it meets the selection criteria as an island country that: (a) adopted the NEMS, (b) beset with a wide range of environmental issues from deforestation to inadequate waste management, (c) is a high island country of volcanic origin in Polynesia. Thus, choosing Samoa was cost-effective. Kiribati was chosen because the country (1) has adopted the NEMS as an environmental action plan, (2) is a low-lying coral island country representing the Micronesia, and (3) also beset with a wide range of environmental issues and development constraints being a least developed country (LDC). The interest to participate in the research by both the Governments of Kiribati and Samoa was a deciding factor in identifying these study sites. Next is an overview of the South Pacific Region and their environmental agenda.

Background and the South Pacific Environment

Global concerns about the environmental threats to small-island developing states in the South Pacific have been articulated in international agreements and action programmes, e.g., AGENDA 21 and the Barbados Programme of Action for the Sustainable Development of SIDS. In general, the small-island developing countries are among the most fragile ecosystems on Earth and are constantly under threat from humans and nature (UN, 1994). Like most SIDS around the world, their environmental problems are microcosms of the big picture in the coastal regions of both the developed and developing world (Dahl, 1984; Dowsdeswell, 1994). The island ecosystems and coastal areas of this tropical region are unique and vulnerable. In the context of sustainable development, SIDS around the world are special cases for both environment and development in Chapter 17, AGENDA 21 as follows (UN, 1994, p.9):

> …small-island developing States and islands supporting small communities are recognised as a special case for both environment and development, because they are ecologically fragile and vulnerable and their small size, limited resources, geographic dispersion and isolation from markets all place them at

a disadvantage economically and prevent economies of scale.

The way these SIDS are conceptualised as special case in development and the environment tends to follow the notion of sustainable development. For instance, UNCTAD (1995) considered the small islands as special case in development based on their geographical disadvantages of remoteness and insularity. The interest and concern to pursue the special case argument- that SIDS are invariably described in terms of their precarious geography, fragile economy and vulnerable environments- is widely held (Brookfield, 1990; Hess, 1990; UN, 1994; UNCTAD, 1995). In the Pacific, SIDS are beset with first generation environmental issues- from water pollution to solid waste management and second generation issues such as accelerated sea-level rise and threats of global warming (ESCAP, 1995; SPREP, 1997). Ecologically and economically, sustainable development options for these countries are limited. The South Pacific Forum, a political network of independent states that promotes self-determination in regional affairs, asserted the special status of SID as follows:

In the Pacific way, the smallest and most vulnerable members of the family deserve special attention. The Forum therefore recognises that special emphasis on meeting the needs of the Smaller Island Countries should be given through support of their national development strategies and through preferential treatment in regional programmes (Forum, 1985, p.1).

Sustainable Development and SPREP

Prospects for long-term sustainable development are contingent on environmental and resource management strategies. Since the 1980s, the South Pacific region has made environmental management a priority. The importance of managing the environment has been a prime factor for setting up the South Pacific Regional Environmental Programme (SPREP) in 1991 as an autonomous regional body responsible for EM policy and planning, public information and education and environmental assessments (Fry, 1994, p. 68). As articulated in the Regional Action Plan (1997-2000), SPREP is a 'community of Pacific island countries and territories with the capacity and commitment to implement programmes for environmental management and conservation' (SPREP, 1997, p. 2). Under Article 2 of the *Agreement Establishing SPREP* (1993), the mission of SPREP is 'to promote cooperation and provide assistance…to protect and improve its environment and to ensure sustainable development for present and future generations' (SPREP, 1997, p. 2). The organization's mandate is to help member countries improve their environmental management as part of the region's environmental agenda (SPREP, 1997; 1999).

Overall, the South Pacific's agenda is based on the concept of 'sustainable development' as the regional approach to resolving environmental dilemmas (SPREP, 1997). Major regional initiatives include the development of an action strategy for nature conservation, training programs on coastal resource management, environmental education, biological diversity conservation, and strengthening of environmental planning and management. In protecting the region's environment, the medium-term goal is to 'build the national capacity to protect and improve the environment in the region for the benefit of the people now, and in the future' (SPREP, 1997, p.3).

Environmental Management and the 'NEMS'

The region has proposed two major initiatives to meet the environmental management needs and address the goal for sustainable development. The first focuses on environmental education and training by involving communities, educational institutions and environmental personnel to increase public awareness and build local capacities in managing the environment. The second recognises the

importance of a framework for environmental assessment and management to include baseline monitoring of natural resources, assessment of alternative resource uses, and environmental appraisal, review and evaluation of development projects.

According to SPREP (1997), one way to achieve sustainable development at the national level is the adoption of national environmental plans (i.e., the NEMS). A standard NEMS document contains an environmental profile specifying local EM problems and issues, principles, objectives and programme of action for addressing short- and long-term goals to improve the quality of life. In the 1990s, the national and regional environmental planners and managers stressed the need to review and evaluate the extent of NEMS implementation for decision making, reporting and management purposes (ADB, 1992; SPREP, 1996; 1997). Apart from regular monitoring and periodic review, the pressing need has been to link the evaluation of the NEMS post-implementation with the region's broader Action Plan (SPREP, 1997, p. 27). An evaluation of the NEMS relative to the Regional Action Plan is expected to give better insights into how the region's environmental agenda could enhance sustainable development. The next section outlines the methods and basis of framework design before a discussion of the proposed evaluation framework.

Methods and Basis of Framework Design

Framework development was 'process-based' in approach to establish the contexts and design parameters. It was structured into conceptual and operational frameworks to address the research problem on the need for, and importance of evaluation in managing the environment of SIDS in the region. In conceptual terms, the framework delineated two constructs- one on environmental management, and the other on evaluation. First, by building upon the substantive achievements in the literature, a functional approach to EM was applied. In conceptual terms, the study asserted that environmental management is a managerial process that can achieve the objectives of sustainable development- both regional and national. As a managerial process, it works in an iterative fashion based on key management functions- from problem identification to evaluation. It is structured to achieve the specific objectives and strategies and operated as a policy-based and action-oriented approach to sustainability. Second, the framework viewed evaluation as an integral function of EM to realise sustainable development in the South Pacific. Evaluation is an essential function of environmental management, yet it is often ignored as part of a continuing feedback process. The proposed evaluation framework should be premised on EM as a rational, strategic system and managerial process for attaining the long-term goal of sustainable development in the South Pacific.

In operational terms, the research strategy was divided into two studies: exploratory and confirmatory. Beginning with a literature review, the exploratory study focused on two types of analysis. The first involved a place-based analysis to seek empirical evidence to substantiate the 'special case' argument on SIDS and the question of small-island vulnerability. Although much can be learned from past evaluation studies, little is known about research on framework design being posited from spatial and stakeholder perspectives. A geographical perspective or place-based analysis is meant to situate the concepts of place and study setting so as to address the question of evaluation in the study area. The special case argument and small-island vulnerability were examined with the use of vulnerability assessment (VA) mentioned below.

The second is a situational analysis carried out initially as a desk review to examine past studies on the EM-evaluation links, the NEMS country document, state-of-environment (SOE) reports and annual reports on 'EM' by country,

SPREP and other relevant agencies in the region. This was used as background material on the study setting for ongoing environmental management efforts. The desk review also explored some aspects of EM in terms of resources, national priorities, strategies and responses to major environmental issues. Next was a survey about the NEMS to draw up the potential elements of the evaluation framework. The survey used postal questionnaires to gather information on the scope and nature of environmental issues, priorities and strategies for managing the environment in the region. The questionnaire was intended to bring to bear first hand stakeholder views and collective thinking on design considerations from key informants and potential evaluation users and participants. Purposive sampling was then applied to limit the study to key informants from countries with the NEMS in place as reference for managing the environment.

Equally important to situational analysis was the field research to collect primary and secondary data. The expected outcomes from the field research were to finalise the framework design of the proposed framework and to generate interest with the potential users/stakeholders in Kiribati and Samoa as study sites. Two regional offices agreed to participate in the research through institutional affiliation arrangements with SPREP and UNDP offices in Apia. The latter provided technical assistance in preparing the NEMS in a number of countries and was also involved in funding environmental programs in the region through the Global Environmental Facility (GEF). Apart from SPREP and UNDP, the researcher benefited from institutional affiliation arrangements with the University of the South Pacific, the Ministry of Environment and Social Development of the Kiribati Government and the Department of Lands and Survey of the Government of Samoa. The nature of institutional affiliation in both countries ranged from access to official documents to use of office space and research facilities. The institutions helped identify the potential workshop participants, informants and resource persons for data collection and interviews. Regional and national officers from the affiliated institutions were interviewed in the study sites, especially from SPREP and the environmental agencies in Samoa and Kiribati. The regional institutions in the research provided a useful link during the data collection stage and design process of the entire field inquiry.

The field research in Samoa and Kiribati was aimed to broaden understanding of the environmental issues and actual administration of the NEMS in the study area. The range of environmental issues was compiled through data and materials obtained from SPREP, and/or captured through photographs of environmental conditions and simple observation of the natural and institutional settings. Main activities during field research involved unstructured interviews with regional experts, primary and secondary data collection and workshop-based consultation on the proposed framework. The confirmatory study used a two-pronged approach to validate the initial findings from the exploratory investigation. First is vulnerability assessment (VA), an empirical study of 100 developing countries to examine the situation of SIDS in terms of place vulnerability. The study involved a review of the progress of work on vulnerability index, the configuration of component variables, indicator selection, index construction, scaling and country ranking by composite vulnerability index (CVI). As a quantitative approach to spatial analysis, this inquiry stemmed from the need for empirical evidence in probing the special case argument and distinctive focus on SIDS. In the study, vulnerability assessment involved building data sets, surveying current vulnerability studies and selecting candidate indicators for index construction to compute the composite vulnerability of developing countries. VA

findings are however, not reported in the present paper.

Second is a qualitative, stakeholder-based process to framework development. In examining whether a qualitative method for evaluation design is appropriate to the study area, a participatory approach has been posited given its potential to get user/stakeholder views on which design factors and conceptual parameters are appropriate in the study area. Central to the participatory process of framework design was the conduct of national consultation workshops in Tarawa, Kiribati on July 21, 1999 and then another in Apia, Samoa on August 5, 1999. The Governments of Kiribati and Samoa reviewed the workshop design prior to the actual conduct of field research.

The consultation workshops were jointly organized by the researcher and the responsible department or ministry from the Government side. The 'Government side' means the responsible officers from the Division of the Environment and Conservation, Department of Lands, Survey and the Environment in Samoa and the Environment Unit of the Ministry of Environment and Social Development in Kiribati. In Kiribati, there were 18 participants representing government (8), state-owned enterprises (2) and non-government organizations (3). In Samoa, 15 participants attended the workshop representing the government (13) and non-government agencies (2). It is not uncommon for a large number of government representatives among the participants in Pacific seminars and workshops. Although the role of NGOs and the private sector has been recognized as crucial to address planning and development issues, the size and level of NGO participation has been quite limited. In both countries, the public sector is a major employer, the size of state-owned companies is significant and the institutional arrangements for planning and development are centralized at ministry levels and/or government departments.

Considered the first of its kind in both countries, the consultative workshop on framework development involved 33 stakeholders to review the concept paper and finalize an evaluation framework for EM. The objectives of the national consultation workshops were to highlight the progress of work on environmental management, to present the survey findings on the priorities, evaluation criteria and approaches to evaluation design and to discuss the draft concept paper on the design of RBE. The workshop techniques included stakeholder participation, group discussion, and a concept paper on the proposed framework and a ranking sheet on national environmental issues. Sample indicators on sustainable development were also distributed during the workshop. In both workshops, RBE was introduced to initiate group discussions that centred on the research questions- 'How should 'NEMS' be evaluated to measure and judge the extent of the NEMS performance? What process can be used to measure any change or improvement on the basis of decisions, actions and the use of resources in managing or taking care of the local environment?'

In identifying the potential benefits and advantages of RBE, the Kiribati participants noted the potential uses of RBE, not only for collecting information for the State-of-the Environment report but also for strengthening EM and managing information as a policy making tool for environmental performance reviews. Relevant agencies tasked with the NEMS implementation from government, NGOs and the general public would benefit from the proposed framework and would keep the decision makers abreast of the environmental performance. Also stressed was a need to clarify between '*ex-post*' and other current evaluations in meeting the assessment requirements in Kiribati' NEMS such as the use of Environmental Impact Assessment (EIA) and other types of evaluations. The participants in Kiribati recommended that a new working group should be established to continue with

Phase 2 (policy implementation) of the NEMS. Another item was the inclusion of key stakeholders involved at the planning, policy and project level of environmental management. The new working group was suggested to have adequate representation by interest groups from both government and non-government bodies.

In Samoa, the workshop participants concurred with the potential benefits and advantages for adopting RBE as an evaluation framework. In practice, its likely application would include the State-of-the Environment (SOE) reporting, strengthening of an EM Information System, and the availability of policy/decision making tool on plan performance reviews. RBE can be a useful tool to build an environmental database, to report on action programs and international frameworks and agreements, and to review the extension of the environmental strategies for the next planning period. It was also relevant in linking NEMS with the regional Action Plan and in formulating environmental programs and projects. The participants from Samoa submitted three recommendations after group discussions. The first recommendation is to establish a new working group responsible for evaluation aspects, possibly different from the NEMS Task Force (Phase 1) to continue with Phase 2 of the NEMS implementation. Second, RBE should be considered for adoption in Samoa and implemented as a continuing exercise.

As a qualitative method of research, the consultation workshops focused on the contextual and conceptual factors for designing the framework. The focus has been to establish the value and relevance of qualitative methods in evaluation research. The emphasis was on the conceptualisation process based on a 'researcher-user equality' or partnership in developing the framework. As basis of investigation, it is a confirmatory method that was consultative in nature as it verified and generated a perspective of reality from the South Pacific participants of the National Consultation Workshops in Samoa and Kiribati. During the two in-country workshops, discussions between the inquirer (researcher) and respondents (stakeholders) centred on the concept paper of the proposed framework. The conduct of workshops as primary basis of field investigation is deemed pragmatic by drawing from the real world experience in the study setting of Kiribati and Samoa. As an 'insider/outsider' process of investigation, these consultations provided an opportunity to produce a rich description of the insights and interests on the need for, and importance of, evaluation in EM by the prospective users and stakeholders of the proposed framework.

Designing the framework with the stakeholders and or prospective users is viewed to foster an evaluative culture for EM, valued stakeholder constructions through shared local knowledge, contexts and experiences in the situational and spatial analysis of the state-of-the environment. The inquiry has offered the participants and interest groups to gain from the idea of 'inclusion' of key stakeholders in evaluation design and fostered the sense of local ownership of EM initiatives and 'shared commitment' to evaluation results. There are advantages to be gained from a participatory, stakeholder-based approach to evaluation design. One is conceptual (educational) to learn and appreciate the value of evaluation in EM and development. The other is instrumental to sharpen the focus of evaluation in EM, the common understanding and shared objectives on diverse interests in the environmental arena to utilise results. Next is an overview of the proposed framework based on a concept paper discussed at the workshop consultations during fieldwork.

Results-Based Evaluation

The proposed framework herein referred to as Results-Based Evaluation (RBE) was discussed as a concept paper for the National Consultation Workshops in Kiribati and Samoa during field research. This section highlights the

key aspects of the framework as discussed with the stakeholders during the consultation workshops.

Goal and Objectives

The long-term goal for evaluation is to help the SIDS establish a national process to evaluate the NEMS implementation results. It is essential to explain the 'contextual influences', principles and methods in the design and structure of RBE. The framework is designed to set out a systematic, rather than *ad-hoc* and arbitrary evaluation process. It seeks to translate the evaluation principles into operational terms or stages according to design. The objectives of RBE are:

- To propose an evaluation system for determining the level or extent of plan achievement during and after implementation of the National Environmental Management Strategies of SIDS;
- To establish a standard, but complementary process for environmental management that would facilitate environmental evaluation and State-of-the Environment (SOE) reporting in the South Pacific, and
- To stimulate strategic, integrated and dynamic thinking in environmental management work compatible with existing national, regional, and global environmental management reporting.

Focus of 'RBE'

The 'Results-Based Evaluation' (RBE) model is proposed as the framework for evaluating the NEMS of SIDS in the South Pacific. In this article, RBE is viewed as a circular flow of analysis, measurement, and reporting of performance results relative to the EM strategy, detailed objectives and programs. It is a schematic representation of the links and relationships among the environmental issues, strategies and results of NEMS operation. In adopting RBE, evaluation is an integral EM function and should not be taken as a 'stand-alone' review, analysis and measurement enterprise.

The rationale is that RBE seeks to measure and judge the post-implementation performance of the NEMS and to serve the information needs of stakeholders on the progress of EM at the country level. From a systems perspective, evaluation is a dynamic process linking the various functions, decision points and activities in managing the environment through the NEMS. As a continuing process, it requires strategic thinking that links the objectives, strategies and management results. RBE is characterised to be (a) results-oriented as it focuses on the NEMS performance to improve environmental quality, (b) designed as basis for review and assessment of NEMS for forward planning, and (c) structured to strengthen management information systems to increase local capacities for environmental evaluation.

Meaning of 'Results' in RBE

Based on the site visits and workshop discussions, it was observed that the people from the South Pacific viewed their environment and envisaged the future in concrete results. The people's concerns and aspirations are articulated by way of increased local participation, cleaner environment, safe and adequate water supply, efficient waste disposal system and sufficient resources for livelihood and sustenance now and in the future. The idea behind the term 'results' in RBE is to facilitate measurement and reporting beyond the level of 'outputs' to capture the effects of national efforts to attain sustainable development. The key is to specify results. The use of the term 'results' refers to any describable, measurable change or improvement realised on the basis of cause and effect relationships (Sawatogo and Dunlop, 1996). In RBE, the chain of results is comprised of outputs, outcome and impact (OOI) as adopted in the Results-Based Management (RBM) (UNDP, 1996; Sawatogo & Dunlop, 1996).

A few decades ago, the approach to development cooperation shifted from an 'input-output based' system to RBM as applied by major donor agencies including the United Nations Development Programme (UNDP) and the Canadian International Development Agency (CIDA) (Jackson & Kassam, 1998). RBE is consistent with RBM because the fundamentals involve a chain of results and an emphasis of the participatory aspect from the design phase to the final evaluation phase. The focus of interest of both RBE and RBM is on *what has been achieved* by way of results, rather than *how the results were achieved* during plan implementation.

The chain of results consists of outputs, outcomes and impacts (OOI) (CIDA, 1996). *Outputs* are immediate, verifiable and quantifiable consequences of specific environmental management intervention or treatment carried out under the NEMS in the form of a policy, program, project or activity. *Outcomes* refer to the results derived at the objective level of the NEMS hierarchy as a short- or medium-term effect of NEMS efforts generally achieved at the end of a program or strategy implementation. *Impacts* refer to any long-term after-effects that mirror environmental efforts to achieve the goal of NEMS e.g., sustainable development. With the chain of results, environmental results are results measured as an output or outcome, impact (OOI) of any policy, strategy, program or project undertaken in pursuance of an environmental management strategy or action plan.

The Core Components

This section describes the core components of RBE, namely (a) the evaluation logic and focus on results, (b) stakeholder-based approach and (c) use of indicators.

Evaluation Logic and Focus on Results

Logical analysis has been introduced since the 1960s in developing program evaluation models (Suchman, 1967; Weiss, 1972; Wholey, 1986). For example, Suchman (1967) suggested that the construction of a hierarchy of objectives is useful in analytical work, evaluating short-term and long-term goals and in making assumptions on causes and effects of certain phenomenon. 'Evaluation logic' in RBE is applied because this type of evaluation draws attention to the results of NEMS as an environmental management strategy or action plan. The emphasis on results in RBE is on measuring the performance of the environmental action plan for the next planning period. Its use implies the need to show plausible horizontal and vertical linkages among the core elements of RBE and NEMS components. In a simplistic way, it is constructed from a straightforward, iterative and logical process of analysis of the NEMS elements- from priorities, objectives, strategy, resources (inputs) to results. The operational definition of 'results' as an umbrella term refers to the effects and consequences, that is, as a chain of results (OOI).

Stakeholder Participation

RBE promotes the idea of 'inclusion' rather than exclusion, a concept that has been explored in the literature to foster stakeholder empowerment (Guba & Lincoln, 1981; Weiss, 1983; Wilson & Bryant, 1999). Empowerment implies an enhanced perception of oneself as an efficient, responsible and competent person- in taking control of one's life and managing his or her own affairs (Jackson & Kassam, 1998). This stakeholder-based approach to evaluation implies a broad-based involvement of various players and wider communication base such as policy/decision makers, program managers, evaluators and target beneficiaries other than donors and sponsors. People from different groups and levels would be better informed and actively involved in contributing to the design and conduct of evaluation for EM.

Use of Indicators in Results-Based Evaluation

The use of indicators is deemed appropriate as a measurement tool for RBE. The indicator approach met the criteria for choosing the RBE measurement method. The criteria applied by the study were feasibility, propriety, validity and applicability. The *feasibility criterion* means that the method is quick to generate the results, politically and technically viable, inexpensive and cost-effective. The *propriety criterion* means that the method is legally acceptable, practical and in conformity with international standards. *Validity* means the method applies systematic procedures for generating verifiable, objective and reliable information. The *applicability criterion* means the method is simple and easy to use, replicable, widely used by evaluators in the field and able to include qualitative assessment. There has been an increasing use of indicators to meet the demands of cost-effective data processing and informed decision making. The use of indicators meets the criteria of consistency and coherence with existing methodologies and technologies for addressing the issues of measurement for sustainable development in the South Pacific. The method complements the regional and global efforts toward environmental performance evaluation (e.g., Global Environmental Outlook).

Summary and Criteria for the Proposed Framework

The design parameters for the proposed framework were divided into two categories: contextual, theoretical and empirical. The parameters are *contextual* because the factors considered are substantive, organizational and operational in contexts. The s*ubstantive* parameters included the notion of *sustainable development* which was adopted as national and regional policy direction and deemed as an important factor for framework design and *environmental management* as an organisational parameter to emphasise the management aspect of SD from the South Pacific perspective. The *operational* parameter pertained to *evaluation* as an integral function of EM and used to indicate the instrumental value of evaluation for enhancing EM practice in the study area. As for the theoretical basis of design, the concept of 'island development orthodoxy' was postulated given the inherent island characteristics that posed as constraints to achieve their goals for sustainable development. To inform research on the special case argument of SIDS, the notion of 'small-island vulnerability' has been raised in terms of their susceptibility to various factors and forces given their precarious geography, fragile economies and vulnerable environments.

The *empirical* basis of the study involved a vulnerability assessment of developing countries, the situation analysis during field research to establish the need, value and relevance of evaluation in EM, and the qualitative analysis- through a participatory, stakeholder-based approach. The qualitative analysis provided the so-called 'constructionist epistemology' by which stakeholders brought their perceptions, experience and analysis in an open discussion to create a consensual reality, from which recommendations for actions and decisions on the final design were adopted. As a way to produce knowledge, a constructionist position on epistemology means that 'knowledge of all kinds…is a construction of a human mind' (Scarr, 1985, p. 449). From this viewpoint, knowledge is produced based on shared perceptions (consensual validation) and whether they work for the purpose for which something is designed. By initiating, facilitating and sharing knowledge among stakeholders, this approach can build a consensus in decision making.

Setting out the criteria for deciding upon the appropriate structure and elements of the proposed framework has been deemed essential to ascertain the evaluation needs of SIDS and to encourage the stakeholders (e.g., potential users) to be involved with, and be apprised of, the aspects of evaluation design. The criteria for evaluating EM strategies were drawn up from

the situational analysis such as sustainability of strategy implementation. These criteria are feasibility, applicability, compatibility, propriety, cultural coherence and evaluation audience and sustainability.

The feasibility criterion means that the evaluation design has the capacity to generate results that are cost-effective, technically feasible and politically viable. The design is easy to use particularly in the review of the environmental plans (NEMS). 'Technical feasibility' means the design (i.e., proposed methodology) is easy to operate, cost- effective and within the limits of local resources. 'Political viability' means the system is operationally adequate to monitor the enforcement of environmental policies and suitable to promote good governance for environmental management based on transparency, accountability and equity principles. The criterion of applicability means it can be put to practice and is replicable, simple and easy to use for providing a concise report to include qualitative assessment to measure the NEMS performance. It has educational and instrumental value for generating a broad range of environmental information for public education, research and environmental planning. Further, it has political usefulness in communicating environmental information important to policy and decision-makers.

The framework complements the current reporting systems and information management at both the regional and global levels, (e.g., the indicator approach to global environment outlook (GEO) reporting by the United Nations Environmental Programme (UNEP) in pursuance of Chapter 40 of Agenda 21). At the regional level, it is important to consider for example, the State-of-the Environment (SOE) reporting systems through the Pacific Environment and Natural Resource Information Centre under SPREP. The compatibility criterion means conformity of the framework with relevant government statistical systems for planning, monitoring and reporting purposes. It must also parallel computer-based systems to ensure easy access to available information technologies such as geographic information system (GIS) and remote sensing for presenting environmental information and SOE reports.

By conformity means the evaluation method is legally acceptable, or in consonance with other standards of measurements- that is, it is consistent with current efforts such as the development of indicators for sustainable development under Chapter 40 of AGENDA 21 (ESCAP, 1995; UNCSD, 1995). The method is also useful for reporting on the progress of implementation of the Programme of Action for Sustainable Development of SIDS. Presumably done as fair and balanced analysis, it could be operated with practical know how and supports other environmental performance reporting systems at various geographic scales.

The cultural coherence criterion means the method is culturally sound or appropriate to local practice, conditions and situations. It is culturally sensitive by recognising the 'Pacific way' and the local traditions for decision making and governance. In understanding the 'Pacific way' for example, consensus building as a way of life in the Pacific is, as described below,

> …Though scattered, the island countries of the South Pacific are a close knit family. Our cooperative approach to regional development is merely an extension of home-grown processes of government which have traditionally placed very high value on cooperation and the consensus approach to problem resolution (SPREP, 1992, p. 3).

Cultural coherence implies the use of traditional institutions and prevailing local practices as viable means of consultation and participation. The need to relate the method with its evaluation audience is fundamental. This involves identifying potential users and those directly involved in the evaluation process, the beneficiaries, interest groups and the general public interested to see any change

and/or improvement of the NEMS in the next planning cycle. The criterion of 'sustainability' refers to the region's internal and potential capacity to operate the RBE system once local training and capacity building activities on the use of the framework have been completed. This means the framework could be understood and implemented smoothly relative to local capabilities, limitations and resources. Without need for complex knowledge, it should have the potential to install and maintain the system within existing institutions to assume evaluation responsibilities in the study area.

Conclusion

The purpose of developing an evaluation framework was to fill a methodological gap in measuring and judging the results of the NEMS as the region's instrument for managing the environment. The study proposed the Results-Based Evaluation based on a mix of complementary methods from a quantitative analysis (vulnerability assessment) and situational analysis to a qualitative approach to evaluation design. As a qualitative method, the use of workshop-based techniques for engaging stakeholders asserted that the social construction of realities and multiple views could generate consensus validation (of the RBE concept paper for example) between the researcher and the workshop participants. Such technique placed emphasis on the value of qualitative method by using a participatory approach to evaluation research. By doing so, stakeholder inputs were considered to offer valuable inputs to the design process. First is in generating local knowledge about the study area and second is in sharing knowledge based on a researcher/insider relationship in the course of the research. Third is in drawing technical knowledge based on insights from the regional and national environmental experts and resource persons concerned with the research problem.

Overall, RBE is considered useful in the review process for the NEMS. As a practical evaluation and analytical tool, it is envisaged to assist SIDS in assessing environmental management policies, programs and projects. In terms of forward planning, RBE has potential to gauge the contributions of SIDS relative to the NEMS to achieve the region's goal of sustainable development. In practical terms, the design of the Results-Based Evaluation opens an opportunity to strengthen the evaluation practice in environmental management in the South Pacific. Future research should focus on selecting and testing the indicators for EM, if and when the SIDS decide to adopt the proposed RBE framework as an evaluation model for EM in the study area and possibly, in other SIDS.

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1 The alternative evaluation models have placed importance not on objectives, decisions and effects but to stakeholder views and concerns (Guba & Lincoln, 1989).

2 The qualitative paradigm is characterized by humanistic philosophical underpinnings and views the social world as construction of multiple realities (Filstead, 1979:35). Naturalistic evaluation as proposed by Guba and Lincoln (1981) advanced the thesis of the 'fourth generation evaluation' to trace how the evaluation field evolved from its focus on measurement, description, judgement and negotiation.

3 Stakeholder-based evaluation as advanced by evaluation scholars like Mark & Shotland (1985) acknowledges and accommodates the existence of multiple groups and perspectives in the evaluation process. To Mark & Shotland, the term 'stakeholders' has been defined as 'distinct groups interested in the results of evaluation, either because they are directly affected by, or involved in, the program activities, or because they must make a decision about the program' (1985, p. 132).

References

Asian Development Bank (ADB). (1992). *Environment and Development: A Pacific Island Perspective,* PIDC Report to the United Nations Conference on Environment and Development. Manila: ADB Press.

Bamberger, M. (1991). The Politics of Evaluation in Developing Countries, *Evaluation and Program Planning* 14, 1-339.

Babbie, E. (1992). *The Practice of Social Research*, 6th edition. Belmont, CA: Wadsworth.

Binnendijk, A.L. (1989). Donor Agency Experience with the Monitoring and Evaluation of Development Projects, *Evaluation Review* 13 (3), 206-222.

Bingham, R.D. & C. L. Felbinger (1989). *Evaluation in Practice- A Methodological Approach* New York and London: Longman.

Brookfield, H. C. 1990. Introduction: the Conduct and Findings of Inter-Disciplinary Fiji Project, in *UNESCO Population – Environment Relations in Tropical Islands: The Case of Eastern Fiji*, MAB Technical Notes 13, 13-28. Paris: UNESCO.

Chelimsky, E. & W. Shadish, (Eds) (1997). *Evaluation for the 21st Century*. Thousand Oaks: Sage.

Compton, D.W. (2002). *The Art, Craft and Science of Evaluation Capacity.* San Francisco: Jossey Bass.

Cordray, D.S. & M. W. Lipsey (1987). *Program Evaluation and Program Research-Evaluation Studies for 1986*, Evaluation Studies Annual 11. Newbury Park: Sage.

Dahl, A. (1984). Oceania's Most Pressing Environmental Concerns, *AMBIO* 13 (5-6), 296-301.

Davidson, E.J. (2004). *Evaluation Methodology Basics: The Nuts and Bolts of Sound Evaluation.* Thousand Oaks, CA: Sage.

Dowdeswell, E. (1994). Foreword, *Our Planet* 6 (1), 2-3.

ESCAP. (1995) *State of the Environment Report-Asia Pacific Region*. Bangkok: ESCAP.

Filstead, W. J. (1979). Qualitative Methods: A Needed Perspective in Evaluation Research, in Cook, T. D. and C. Reichardt. (Eds.), *Qualitative and Quantitative Methods in Evaluation Research*, London: Sage, 33-47.

Fry, G. (1994). International Cooperation in the South Pacific, in Axline, W.A. *The Political Economy of Regional Cooperation: Comparative Case Studies*. London: Pinter Publishers, 137-177.

Guba, E.G. & L.S. Lincoln (1989). *Fourth Generation Evaluation.* Newbury Park, CA: Sage Publishers.

Jackson, E.T. & Y. Kassam, (Eds). (1998). *Knowledge Shared: Participatory Evaluation in Development Cooperation,* IDRC Publication. Connecticut: Kumarian Press.

Found, W. C. (1992). Implementing Environmental Management Programs: A General

Framework for Analysis, in *Program and Policy Implementation Proceedings of a Workshop at the Bandung Institute of Technology,* Research Paper 42, 1-7. Bandung: Bandung Institute of Technology.

Gold, N. (1981). *The Stakeholder Approach for Educational Program Evaluation*. Washington, D.C.: National Institute of Education.

Goodman, G. & K. Carey (2004). *Ubiquitous Assessment: Evaluation Techniques for the New Millennium*. New York: P. Lang.

Guba, E. G. & Y.S. Lincoln (1981). *Effective Evaluation*. San Francisco, Washington and London: Jossey-Bass.

Guba, E.G. & L. S. Lincoln (1989). *Fourth Generation Evaluation.* Newbury Park, CA: Sage Publishers.

Mark, M. K. & R. Lance Shotland (1985). Stakeholder-Based Evaluation and Value Judgment. *Evaluation Review*. 9 (5), 605-625.

Hess, A. (1990). Overview of Sustainable Development and Environmental Management of Small Islands, in Beller, W. d' Ayala, P. and Hein, P. (Eds.) *Sustainable Development and Environmental Management of Small Island,* Paris: UNESCO, 3-13.

House, E. R. (1993). *Professional Evaluation- Social Impact and Political Consequences*. Newbury Park, London and New Delhi: Sage.

McLaughlin, J. A., Weber, L. J., Covert, R. W. & Ingle, R. B. (Eds.). (1988). Evaluation Utilization. *New Directions for Program Evaluation* 39. San Francisco: Jossey-Bass.

Patton, M. Q. (1986). *Utilization-focused Evaluation*, 2nd edition. Beverly Hills: Sage.

Rebiens, C. (1995). *Participatory Evaluation of Development Interventions: The Conceptand Its Practice*. Working Paper No. 4, Department of Intercultural Communication and Management, Denmark: Copenhagen Business School.

Ringquist, E. (1995). Evaluating Environmental Policy Outcomes, in Lester, J. P. (Ed.) *Environmental Politics and Policy- Theories and Evidence,* 2nd edition. Durham and London: Duke University Press.

Robson, C. (1993). *Real World Research: A Resource for Social Scientists and Practitioner-Researchers*. Oxford, UK and Cambridge: Blackwell.

Rossi, P.H. & Freeman, H. E. 1993. *Evaluation: A Systematic Approach*. Newbury Park, London, and New Delhi: Sage.

Ryan, K.E. & L. Destefano (eds) (2005). *Evaluation as a Democratic Process: Promoting Inclusion, Dialogue and Deliberation*. San Francisco: Jossey Bass.

Sawatogo, J.B. & K. Dunlop (1996). *Practicing Results-Based Management* (RBM).

Canadian International Development Agency Africa and Middle East Branch, Strategic Planning-Performance Unit. Unpublished paper.

Scarr, S. (1985). Continuing Psychology: Making Facts and Fables for our Times. *American Psychologist* 40, 499-512.

Scriven, M. (1982). The Logic of Evaluation. Inverness, CA: Edgepress.

Scriven, M. (2006). Key evaluation checklists. Retrieved November 28, 2006 from http://www.wmich.edu/evalctr/checklists/kec_nov06.pdf

Sechrest, L. & S. Sidani (1995). Quantitative and Qualitative Methods: Is There an Alternative? *Evaluation and Program Planning* 18 (1), 77-87.

Shaddish, W. R. 1995. Philosophy of Science and the Quantitative-Qualitative Debates: Thirteen Common Errors, *Evaluation and Program Planning.* 18 (1), 63-75.

Shaddish, W. R., Newman, D., Scheirer, M. A. & Wye, C. (Eds.). (1995). *Guiding Principles for Evaluators*. New Directions for Program Evaluation 66. San Francisco: Jossey-Bass.

Smith, P.G. & Theberge, J. (1987). Evaluating Natural Areas Using Multiple Criteria: Theory and Practice. *Environmental Management* 11 (4), 447-460.

Spellerberg, I. F. (1992). *Evaluation and Assessment for Conservation: Ecological Guidelines for Determining Priorities for Nature Conservation*. London: Chapman and Hall.

South Pacific Region Environmental Programme (SPREP). (1993). *Kiribati: National Environmental Management Strategies*. Apia: SPREP.

South Pacific Region Environmental Programme (SPREP) and Economic Commission for Asia and the Pacific (ESCAP). (1996). *Report to the United Nations Commission on Sustainable Activities to Implement the Barbados Programme of Action in the Pacific Region*. Apia: SPREP.

South Pacific Region Environmental Progrramme (SPREP) (1997). *Action Plan for Managing the Environment of the South Pacific Region 1997-2000*. Apia: SPREP.

Suchman, E.A. (1967). *Evaluative Research and Practice in Public Service and Social Action*. New York: Russel Sage.

Stufflebeam, D. (2001). *Evaluation Models*. San Francisco: Jossey Bass.

United Nations (UN) (1994). *Report of the Global Conference on the Sustainable Development of Small Island Developing States*, Bridgetown, Barbados (A/Conf.167/9).

United Nations Conference on Trade and Development (UNCTAD). (1995). *Handbook on International Trade and Development Statistics*. Geneva: UN.

United Nations (UN). (1996). *Governance for Sustainable Human Development*. Draft UNDP Policy Document, Bureau for Policy and Programme Support. New York: UNDP.

United Nations Commission for Sustainable Development (UNCSD) (United Nations Commission for Sustainable Development). (1996). Report of the High Level Panel Meeting on Island Developing Countries, April 1996, UNCTAD/LLDC/IDC, http://gopher/gopher.uncsd.

United Nations Development Programme (UNDP). (1997). *Who are the Question Makers? A Participatory Evaluation Handbook*. New York: UNDP.

Weiss, C. H. (Ed). (1972). *Evaluating Social Action Programs*. Boston: Allyn and Bacon.

Weiss, C.H. (1983). Toward the Future of Stakeholder Approaches to Evaluation, in C.H.

Weiss (Ed), Stakeholder-Based Evaluation, *New Directions for Program Evaluation* 17. San Francisco: Jossey-Bass, 83-96.

Wilson, G. A. & R. Bryant (1997). *Environmental Management: New Directions for the Twenty-First Century*. London: UCL Press.

Wholey, J.S. (1986). Evaluation and Utilization in the United States. *Canadian Journal of Program Evaluation* 1 (1), 11-17.