

AN ABSTRACT OF THE THESIS OF

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Title: An Evaluation Model for International Short-Term  
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The purpose of this study was to propose a model for evaluating international short-term training programs in small-scale fisheries. The study focused on providing useful information to decision-makers of the program funding agency and the training program operator. The proposed evaluation model could also prove useful for other technically-oriented short-term training programs and similar development activities within the international development sector.

Program evaluation methodologies currently employed in international development programs and projects are ill-suited for use on small-scale fisheries training programs. Furthermore, current practices do not differentiate between program accountability evaluation and program improvement

evaluation, on the one hand, and program planning on the other.

Evaluation of small-scale fisheries training programs is oriented toward the qualitative and quantitative variables of program accountability and program improvement. Program accountability is concerned with whether or not the training program, training project or training component should be continued in its current form. The evaluative questions posed in program accountability are globally-oriented, whereas the program improvement questions posed range from project specific to unit specificity. The information acquired through program accountability evaluation passes onto program improvement evaluation for further delineation, if required. However, information on ameliorating any discrepancy is not within the scope of the particular program improvement inquiry. Such programmatic changes require specific planning and structuring decision-alternatives available only through program planning. Program planning evaluation is concerned with information required by proposers of future training programs or projects. The needed information is derived from the proposals and reports of program

accountability evaluation and program improvement evaluation.

Three recommendations are made to decision-makers of the program operators and the government agencies and international assistance organizations which disburse funds for internationally-oriented short-term training programs in small-scale fisheries:

- 1) Be cognizant of the separateness between program evaluation and program planning and acutely aware when the training project, training component or training unit is either within the parameters or in transition between program accountability evaluation, program improvement evaluation or program planning evaluation.
- 2) Conduct further research into the efficacy of the program environment and its socio-economic, socio-political and cross-cultural effects upon small-scale fisheries training programs within the international development sector.
- 3) Proceed with the installation of the proposed decision-alternative evaluation model into program evaluation strategies and specific

project guidelines for application toward  
small-scale fisheries and other short-term  
technically-oriented training programs,  
projects and similar development activities in  
the international development sector.

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AN EVALUATION MODEL FOR  
INTERNATIONAL SHORT-TERM TRAINING PROGRAMS  
IN SMALL-SCALE FISHERIES

by

Steven Eric Martinson

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**AN EVALUATION MODEL FOR  
INTERNATIONAL SHORT-TERM TRAINING PROGRAMS  
IN SMALL-SCALE FISHERIES**

**Chapter I**

**INTRODUCTION**

The purpose of this study was to propose a model for evaluating international short-term training programs in small-scale fisheries. The model was based on selected components of contemporary evaluation and occupational training concepts within the context of small-scale fisheries training programs. The study focused on providing useful information to training program decision-makers which could result in more appropriate and cost-effective training programs being provided to the small-scale fisheries sector of the developing world. The proposed evaluation model could also provide useful information to decision-makers in government agencies and international assistance organizations which disburse funds for internationally-oriented short-term training programs in small-scale fisheries, other technically-oriented short-term

training programs, and similar development activities within the international sector.

#### **BACKGROUND OF THE PROBLEM**

In the international development sector, the United Nations Food and Agriculture Organization (FAO) has indicated that the annual world demand for fish as a human food will reach an estimated 110 million metric tons by the year 2000 (Ben-Yami & Anderson, 1985). This projected demand nearly double's the amount of fishery products which were used for human consumption in 1980 (FAO, 1981c, 1982, 1983; International Development Research Center [IDRC], 1982). As a result of this increasing demand, a severe strain has been placed upon the ability of the world's fishing industry to provide adequate supplies of consumable fishery products. The fishing industries of the world, both traditional small-scale and industrial large-scale, have had to struggle with harvesting, processing, and marketing problems in their attempt to assist in feeding the increasing world population (FAO 1985b, 1987a).

In the developing world, the small-scale fisheries sector produces approximately one-third to over one-half of the foodfish consumed worldwide (FAO,

1984, 1985a, 1986b, 1987b). This proportion of foodfish being landed between the traditional small-scale and industrial large-scale is generally much greater in developing countries (Thomson, 1979b). In addition to being an important source of food and income, the small-scale fisheries being labor-intensive, provided more employment opportunities than the industrialized fisheries sector (Thomson, 1980).

In many areas throughout the Third World, the small-scale fishermen continue to utilize sail and paddle canoes, capture fish using traditional means, and process fish by drying it on beaches while watching the technological-advanced industrial fisheries sector harvest a greater share of the fish resources (Ben-Yami, 1980; Thomson, 1980; Martinson, 1981). Because of the remoteness of rural fishing communities, lack of organization, and low socio-economic status, governments have tended to favor industrial fisheries training programs over small-scale fisheries training programs (Thomson, 1979a; FAO, 1987a). It should be noted that small-scale fishermen are not gender-dominant. Traditionally, both men and women have been involved in the capture, harvest, and processing of fish and fish products throughout the world (Pollnac,

1976; Ben-Yami & Anderson, 1985). This is especially true in the Pacific region where men and women have continued to be actively engaged in the small-scale fisheries sector (Kent, 1980; Thomson, 1980; Martinson, 1980, 1981).

#### **ESTABLISHING A DIRECTION FOR FISHERIES TRAINING**

Small-scale fisheries training programs stress economic self-sufficiency and development of the individual fishing community (Ben-Yami, 1980; FAO, 1986). These non-formal education-oriented fisheries programs were generally short-term in duration. The central focus throughout the training process has been the development and usage of appropriate technologies in the support areas of the local fishery. These support areas included, but were not limited to: fish preservation, processing, and handling; outboard and diesel engine repair; fishing gear maintenance and construction; salt making; small income generation projects; fish marketing techniques; and fisheries capture (Government of Western Samoa [GOWS] & United Nations Development Program [UNDP], 1978; Government of Fiji [GOF], 1981; Martinson, Joyce & Bordman, 1983). In addition, the educational limitations of the small-scale fishermen demanded less structured, less

technologically-oriented instructional formats than those provided in formal institutional training programs (Coombs & Ahmed, 1974; Hermansson, 1978).

#### **DEFINING SMALL-SCALE FISHERIES DEVELOPMENT**

To offset the problems associated with improving productivity, infusions of international development aid have been directed toward the small-scale fisheries sector in many developing countries (National Research Council [NRC], 1982b; The World Bank, 1980, 1982; FAO 1987a, 1987c). Small-scale fishermen in coastal and inland communities in developing countries cannot usually develop their productivity without this outside assistance. Their geographical isolation and economic disadvantage has resulted in restricted access to markets (Martinson, 1981; Martinson, Joyce, and Bordman, 1983; FAO, 1987b). Incentive-killing exploitation of the fishermen, overfishing in some areas by the industrial fisheries sector, and local cultural, socio-economic, and socio-political pressures have added to these problems (Thomson, 1980). Limitation of resources could also act as a constraint to development; this particular problem would be further aggravated when traditional small-scale fishermen were in direct competition with adequately

financed, industrially-oriented large-scale fisheries (FAO, 1981b). Attempts by outside development agencies, both national and international, governmental and non-governmental, to overcome the barriers in small-scale fisheries development have not yielded the desired results (Kent, 1980; NRC, 1982a). Though funded by international and host-government agencies and proliferating in all Third World regions, the majority of training programs which were oriented toward small-scale fisheries development have had less success than similar development training programs in health, forestry, and agriculture (Thomson, 1979a; The World Bank, 1980).

The increased demand for fish products on a global scale warranted inclusion of all parties involved within the fishing industry for adequate development opportunities. The small-scale fisheries sector has characteristics and problems which are unique to the industry (Thomson, 1979b). Training opportunities for small-scale fishermen have only recently begun, yet oftentimes resulted in ill-planned, inadequately financed, and poorly instructed programs (International Center for Marine Resource Development [ICMRD], 1981; International Labor Organization [ILO],

1981; NRC, 1982a). If the increased consumable foodfish needs of the world's expanding population is to be met, effective development criteria for training programs in small-scale fisheries must be instituted (Thomson, 1980; Martinson, 1980, 1981; The World Bank, 1982).

#### **STATEMENT OF THE PROBLEM**

Limited technical improvements along with minor introductions of innovations within the small-scale fisheries sector have been achieved through training and development programs (Kley, 1983). Such training programs should be conducted in accordance with the present state-of-the-art and realistic development potential of the particular fisheries, the fishermen, and the supporting industries and services (FAO, 1980; NRC, 1982b).

A large number of small-scale fisheries in the Third World have neither locally available nor fully functional small-scale fisheries technology programs. Such fisheries technology oriented programs would ensure efficient development and transfer of improved and appropriate technologies to the local small-scale fishermen (FAO, 1980; ICMRD, 1981). These programs, whether fully functional or not, were seen as potential

recipients for program improvement strategies. Attempts to initiate training programs for small-scale fishermen have been made in nearly every Third World country with a substantial population of subsistence and small-scale fishermen. The documentation of these small-scale fisheries training programs has occurred so infrequently over the last two decades that now only former training staff and training participants have the ability to assess past program impact (Gerhardsen, 1977; The World Bank, 1980; ILO, 1981).

This deficiency of adequate documentation pertaining to decisions being made on program planning, program improvement, and program accountability has not gone unnoticed. A policy formulation paper for the United Nations Food and Agriculture Organization (FAO) stated that:

One reason why there has not been as much progress as expected in the field of small-scale fisheries development [training] is perhaps the dearth of empirical evaluation. (Gerhardsen, 1977, p. 24)

Because of the lack of useful information, recent training programs have tended to duplicate earlier training efforts in every aspect, including their deficiencies (Dockrell, 1983; FAO, 1985b). Both strong and weak program methodologies have been utilized

within the international development community with no sign of subsequent change (FAO, 1973, 1981a; OECD, 1983). Similarly, there have been successes, but documentation of factors that contributed to programmatic effectiveness has been lacking (Thomson, 1980).

Attempts to foster program effectiveness have been initiated within both the international development sector and the domestic sector (Bennett, 1981a, 1981b; Kley, 1983; Casley & Lury, 1982; Hunting, Zymelman & Godfrey, 1986; Raab, Swanson, Wentling, & Clark, 1987; U.S. Agency for International Development [USAID], 1987). International program evaluation and domestic program evaluation models provided diverse illustrations of contemporary evaluation methodologies either proposed or currently employed.

It is oftentimes the case that the terminology employed by evaluators in labeling their proposed evaluation designs may be similar in meaning to other terms in other evaluation designs (Worthen & Sanders, 1973). Thus, care has been taken in this study to avoid explicit categorization of the reviewed approaches in international-oriented program evaluation, domestic program evaluation, contemporary

evaluation methodologies, and theories based simply on differences in terminology. A description of the evaluation methodologies currently employed or proposed within the international development, assistance, and the domestic sectors follows.

#### **U.S. Agency for International Development**

Within the international assistance sector the U.S. Agency for International Development (USAID) has been involved with aspects of program evaluation and technical training evaluation (USAID, 1980a, 1980b, 1983, 1987). The definition of program evaluation prescribed by USAID (1987) is as follows:

A management activity that is undertaken selectively to inform program managers about key issues before major decisions are made regarding existing AID-funded activities or future program development, that is, the issues of relevance, effectiveness, efficiency, impact, and sustainability. (p. 2)

The determinate was made by USAID that the process of evaluation was a management activity oriented toward providing information regarding issues of substance. The decision-making process of this evaluative approach denoted the provision of this substantive information to allow judgement regarding key development issues. There was also the premise of three evaluative purposes in this definition: 1) providing information to

program managers for future program development, 2) enabling major decision-making by the funding agency on continuing, redirecting, or terminating projects, and 3) providing information to program operators for program improvement through future program development (USAID, 1987).

Accordingly, the end-purposes of this evaluative approach were program improvement and program development as desired effects of the provision of relevant information to decision-makers. The emphasis upon the provision of information for decision-making and program improvement was accorded specifically for the management-oriented in-house evaluation format utilized by USAID (1987). This format recognized that only ". . . interim, final, or ex-post evaluations are needed to address problems and issues that are beyond the scope of ongoing evaluation [project monitoring]" (p. 14). Within USAID the terminology depicting programs or projects is unique. The term "program" refers to more comprehensive efforts to promote longer or broader term objectives such as those that are encompassed by a policy program or a country, regional, or program strategy. Whereas the term "project" refers to a specific development-oriented project (USAID,

1987).

The professional-judgement approach employed by USAID (Worthen & Sanders, 1973; Floden, 1983) utilizes an intrinsic-summative evaluation methodology (Scriven, 1967) which focuses on the various-end processes of programs to identify deficiencies for post-program modification (USAID, 1980a, 1987). Aspects of this particular approach encompassed rapid feedback between observations made, information collected, and recommendations presented (USAID, 1987). There was a managerial bias in the USAID methodology that favored project continuation or extension, with limited modification, in all but the most extreme cases (USAID, 1980a, 1987; Scriven, 1983).

The USAID intrinsic-summative evaluative characteristics compared with selected aspects of Provus' (1969) installation evaluation and Stufflebeam's (1983) process evaluation. The professional-judgement evaluation approach, although inexpensive to conduct, was not regarded to be as fully comprehensive or objective as other contemporary program evaluation approaches (Scriven, 1967, 1983; Worthen & Sanders, 1973).

USAID (1980b) also employs use of the comparative

baseline survey evaluative technique to gauge education and technical training project success. This technique requires both randomization and comparison processes, and is generally part of the USAID evaluation policy statement for USAID education and training oriented projects. Chapman and Boothroyd (1988) note that in research the purpose of comparison and randomization supports claims of generalizability and effect, which ". . .at times, may impair meaningful conduct of evaluation" (p. 40). Though suitable in research, this particular evaluation format does not provide appropriate evaluative information for purposes of either program accountability, program improvement or program planning, as do other more effective program evaluation formats.

#### **Reflective Appraisal of Programs**

Within the domestic development sector, the extension-based Reflective Appraisal of Programs [RAP] (Bennett, 1981a, 1981b, 1981c, 1981d) evaluative approach was found to focus on a summative-payoff form of pseudo-evaluation under the guise of a political-oriented public relations inspired study (Scriven, 1967; Stufflebeam & Webster, 1983). The evaluative process in this particular approach was the collection

and analysis of solicited information. The stated evaluative purposes denoted three characteristics: 1) effecting or influencing decision-making, 2) justifying program funding, and 3) influencing future program improvement. The domestic application of RAP was proposed in a wide range of county extension programs, including consumer education, commercial fisheries workshops, handicraft marketing, integrated pest management, marine education, and homemakers clubs.

The RAP evaluative process relied upon past program participants' estimates of change or their perceptions of the end-results of an extension-based program (Bennett, 1981a, 1981b). The process involved the exclusive use of interviews, either in-person or telephone, employing a standardized question format. This particular format allowed the evaluation to be adapted to a wide variety of programs in various subject matter areas, though the methodology should be conducted no more than three years after completion of the programs under review. The process of documentation resulting from the interviews encourages program administrators to justify budgets and future funding requirements by claiming accomplishments of the

programs (Bennett, 1981a). The basic concept behind the RAP approach was the overt influencing of program decision-makers rather than facilitating decision-making for either program planning, program improvement or program accountability.

This particular evaluation format appeared to be amenable to studies that promoted either positive or negative views irrespective of the program's worth (Stufflebeam & Webster, 1983). Being domestically-oriented, the RAP approach did not address the potentially negative affects of inappropriate technology transfer, non-standard conditions, socio-cultural issues, and other conceptual issues germane to the managing of evaluations within the international environment (Chapman & Boothroyd, 1988). The RAP model placed a high emphasis upon the validity of past participants' subjective program assessment. Floden (1983) has noted that training program participants' familiarity with a former program was generally sympathetic, and as such, ". . .may overlook obvious problems" (p. 272). In addition to past participants' overlooking the obvious by employing evaluative methodology similar to the RAP model, they may also be reluctant to offer criticisms of friends or superiors

associated with the training program (Floden, 1983). Such action could result in personal repercussions far more serious than intended by the evaluative critique.

Though the approach utilized in the RAP model may be suitable for more specialized politically-oriented assessments, other evaluation methodology exists which could provide more substantive information of an objective nature for evaluative assessment and program review purposes.

#### **FAO and Fisheries Training Evaluation**

A Food and Agriculture Organization (FAO) fisheries training publication, noted that evaluation must be accomplished ". . .during the training program and after the training program" (Kley, 1983, p. 93). The FAO process methodology denoted the conveyance of relevant information to decision-makers. There was also the assumption of two evaluative purposes:

- 1) improvement for program effectiveness and
- 2) accountability for program goal achievement and tangible benefits.

The decision-making process denoted the provision of relevant information for improvement of the training program. This professional-judgement evaluation approach made the distinction between formative evaluation and summative evaluation (Scriven,

1967, 1983).

The formative evaluation methodology, denoted for ongoing program improvement, provided relevant information to program operators for programmatic adjustment purposes during the training process (Worthen & Sanders, 1973). The summative evaluation methodology, on the other hand, provided necessary information to the program consumer or funding agency for determining whether or not program objectives were achieved. A related aspect of the summative approach contrasted program costs and benefits. However, the inherent weakness in the FAO formative-summative evaluation approach was the lack of usage of value-judgements and the declination of judging the entire program in a holistic manner. By concentrating upon an appraisal of the program, the evaluative focus was oriented toward that of intrinsic evaluation (Scriven, 1967).

The focus of the study's proposed evaluation model upon decision-making for purposes of program planning, program improvement, and program accountability required that an emphasis on value-judgement usage and holistic program judgement be addressed. As such, the intrinsic formative-summative

evaluative methodologies were less effective than other available evaluative methodologies in acquiring substantive information for decision-making, program planning, and program accountability purposes.

#### **World Bank and Vocational Training Evaluation**

A World Bank publication on evaluating vocational training programs (Hunting, Zymelman & Godfrey, 1986) stressed quantitative and qualitative evaluation. This approach involved ". . .ex-post analysis of the functions, outcomes, and costs of a project" (p. 3). These evaluative procedures looked at the particular training program either mid-term or at the completion of the program cycle. The mid-term evaluation process of the study focused upon ways to improve the program by ". . .redesigning its mode, curricula, or management" (p. 3). The ex-post evaluation process was primarily oriented with project ". . .success or failure" (p. 3) with the ". . .drawing of lessons applicable to subsequent [training] projects" (p. 3).

This particular evaluation format appeared to be amenable to contemporary education institutions where the relative success or failure of a program was the primary concern (Gerhardsen, 1977). The values

regarded as important to an evaluative study were not demonstrated in the formative-payoff or summative-payoff approach. As such, there should be noted levels of quality within the evaluative process. Scriven (1967) noted that references to quality of curriculum, such as integrity, structure, modernity, elegance, and considerations of readiness should be evident within the design of the evaluation.

The application of formative-payoff and summative-payoff evaluation methodologies compared with aspects of the Provus (1969) product and process, and the Stufflebeam (1983) product evaluation methodologies. The qualitative-quantitative evaluation approaches, as identified, could not be regarded as comprehensive in comparison to other contemporary evaluation approaches for the collection of substantive information.

#### **World Bank and Rural Development Evaluation**

Casley and Lury (1982), in their World Bank publication on rural and agriculture development evaluation, proposed the application of a scientific-experimental evaluation methodology. The methodology employed in this particular quasi-evaluation approach divided the area under study into a treatment group and

a control group. The progress, if any, of the control group against that of the treatment group would be then subject to comparison.

This evaluative approach assessed the intentional and unintentional effects and the resulting impact of the project. Concurrent with the evaluative process was a monitoring apparatus which functioned as an assessment vehicle in determining whether project inputs were being delivered and utilized as intended with the resulting desired effects. In this approach, monitoring was regarded as a internal project activity and part of the day-to-day function of management. The sole use of information to enable objective comparisons to be made without benefit of judgement or decision-making would not allow for the realization of program planning, program improvement, or accountability.

The application of experimental design to program evaluation has been repeatedly questioned by contemporary evaluators (Guba & Lincoln, 1981; Stufflebeam, 1983; Stufflebeam & Webster, 1983). Practical constraints, such as the ". . . inability to randomly assign students, lack of a usable comparison group, [and] insufficient resources" (Worthen & Sanders, 1973, p. 224) forced the experimental design

to be compromised, with the validity of results in question. The usage of the quasi-experimental evaluation approach was more applicable under the rigidly controlled training circumstances found in formal institutions, rather than the oftentimes rudimentary training sites found in international development environments (Gerhardsen, 1977). As such, other evaluation methodologies provided effective strategies for more substantive information collections and assessments in non-formal educational field settings.

#### **FAO and Technical Training Evaluation**

A more recent Food and Agriculture Organization (FAO) evaluation publication (Raab, Wentling, Swanson, & Clark, 1987) was prepared for use by FAO technical training staff and their host-country-national counterparts. Evaluation was stressed as the primary mechanism by which training programs should be monitored. By focusing upon training evaluation within the contextual schema of program planning, decision-making, program budget justification, and policy determination, various evaluation activities were recognized as necessary to overall effective management and development by program managers. This objective-

based approach was regarded as most prevalent in terms of more formalized educational evaluation (Stufflebeam & Webster, 1983).

The three types of evaluation employed by FAO for technical training were: 1) process evaluation, 2) terminal evaluation, and 3) impact evaluation. These three evaluation-types offered a basic common-sense appeal to training program staff who utilized the particular methodology (Stufflebeam & Webster, 1983).

Process evaluation was proposed for use in obtaining feedback primarily from the trainee participants and others associated with the training program. Raab et al. (1987) noted that the informal or formal detection of procedural design defects was the primary evaluative goal, though the objectives of improving the efficiency and effectiveness of the training program were regarded as equally important. Terminal evaluation was denoted for use in determining program effectiveness at the completion of the training activity. Terminal evaluation allowed the determination of the degree to which intended instructional goals and objectives were met. The methodology of impact evaluation provided on-the-job

assessments of former training program participants in order to determine skill level and performance changes.

This particular evaluation methodology was regarded as an information tool for both program planners and decision-makers (Raab et al., 1987). The information collected for this methodology could be too narrow in scope to provide any benefit for effective program planning or in judging the quality of the program. There is also a potential weakness in the training evaluation approach due to the lack of external credibility and the possibility of bias on the part of the in-house program evaluators. They have, according to Stufflebeam and Webster (1983), inherent control over the evaluation. The FAO technical training evaluation methodology may be suitable for more formal institutional-oriented technical training programs within the international development sector, other evaluation formats could be available which provide more descriptive and judgemental information of a substantive nature.

#### **SIGNIFICANCE OF THE STUDY**

The need for assessments of training program effectiveness have been mandated by numerous international development agencies, host-country

governments, and training program participants (USAID, 1980a, 1987; The World Bank, 1982; FAO, 1985b, 1987a). The support for the majority of international technical training programs, such as health, forestry, and agriculture, have generally been dependent upon adequate sources of funding (NRC, 1982b; Roling, 1982). These funding sources have a tendency to be restrictive towards programs which are "proven." In other words, if there was something to show for the money, a visible gain, continued support for the program would be virtually ensured (Rondinelli, 1977).

The majority of the fisheries training programs reviewed were instituted as single-cycle pilot projects. Therefore, training programs for small-scale fisheries have not been assured adequate funding on a continual basis. After one or possibly two cycles, the training programs ceased to operate due to special circumstances (FAO, 1986b). These "special circumstances" were generally the result of inadequate planning prior to the training program. A poorly planned program, questionable goals, and inadequate staff, were prime reasons for program termination (ILO, 1981). Proper evaluative appraisals before, during, and after a training program were therefore essential.

The needs of a developing country warrant these, as well as the needs of the small-scale fishery, small-scale fishermen, family, and community (Martinson, 1980; 1981).

A constraint of the international-oriented small-scale fisheries training programs was the scarcity of recorded information, e.g., training designs, course syllabi, project reports (von Brandt, 1979, 1980; NRC, 1982a). Means for ". . .delineating, obtaining, and providing" (Stufflebeam & Shinkfield, 1983, p. 159) these types of data could improve short-term training programs in small-scale fisheries by effectively defining, collecting, and reporting appropriate information to project investigators, as well as the agencies and organizations providing the funding for the training programs (USAID, 1980b; Kley, 1983). Yet, the extent of effective program evaluation models within the international development sector are inadequate.

This study addressed this need for useful information by program planners, program operators, and program decision-makers of international short-term training programs in small-scale fisheries. The evaluation model to be developed took into account the

special characteristics of short-term training programs in small-scale fisheries; those characteristics of viable evaluation models; the cross-cultural, socio-political, and socio-economic considerations that were relevant in an international environment; and, the respective needs of international development agencies, host-country governments, and small-scale fishermen.

#### **DELIMITATIONS**

The study differentiated between industrial large-scale and traditional or artisanal small-scale fisheries. The commensurate criterion used to differentiate between the industrial and the traditional was scope, level, and duration of the small-scale fisheries training program.

Comprehensive curricula offerings from domestic and overseas fisheries education and training programs in either two-year college diploma or four-year university degree institutions were not considered. These long-term institutional training programs placed heavy emphasis upon the development of industrial large-scale fisheries (Hamlisch, 1967; Thomson, 1979b; von Brandt, 1979, 1980; FAO, 1980; Government of Papua New Guinea [GOPNG], 1980; ILO, 1981). The courses of instruction provided by such institutions, e.g., marine

engineering, ichthyology, navigation, fisheries statistics, marine refrigeration, diesel technology, oceanography, etc., were generally theoretical in nature and as such were comprehensible only to those students with advanced educational backgrounds (FAO, 1972, 1981a, 1981b; Alexander, 1975; Gerhardsen, 1977; Barron, 1980; Ben-Yami, 1980; ICMRD, 1981; ILO, 1981). These types of advanced training programs appeared to be amenable to contemporary theoretical constructs and methodologies in existing program evaluation.

#### **METHODOLOGY**

In order to achieve the purpose of this study, three questions were addressed:

- 1) What are the components of an effective evaluation system?
- 2) What are the desired characteristics appropriate to a system of evaluation for selecting the proper evaluative questions in order to effectively evaluate international short-term training programs in small-scale fisheries?
- 3) What are the appropriate evaluative questions to pose when descriptive and judgemental information is required for

the evaluation of international short-term training programs in small-scale fisheries?

In the evaluation of international development projects, the political, economic, environmental, as well as ". . .social and cultural factors have often been overlooked or inadequately considered" (Weiss, Waterson & Wilson, 1977, p.107; Patton, 1985; USAID, 1987). This study focused upon, and took into account those factors during the development of the evaluation model.

The first and second question were answered with an in-depth review of the literature of contemporary evaluation methodology, evaluation theories, occupational training, and technical training programs in small-scale fisheries. A comprehensive literature search was conducted. The search was oriented toward two primary and one secondary area of interest: evaluation, small-scale fisheries, and vocational education. The search utilizing ERIC references was unproductive. A variety of descriptors for each of the above areas, either individually or in combination, resulted in unusable ERIC reference listings. Literature searches conducted by the International Labor Organization (ILO) in Geneva, the

Food and Agriculture Organization (FAO) in Rome, and the U.S. Agency for International Development (USAID) in Washington, DC, resulted in a more suitable listing of reports and studies from their archives. Food and Agriculture Organization (FAO) publications from the South China Sea Fisheries Development and Coordinating Program (SCSP), Manila, and the Bay of Bengal Program (BOBP), Madras, were also reviewed. Included in the extended review were publications from The World Bank, Washington, DC, and the Organization for Economic Cooperation and Development (OECD), Paris.

In order to achieve a satisfactory answer to the third question, a series of appropriate evaluative questions were formulated, each arranged according to the relevant descriptive and judgemental information requirements pertaining to program effectiveness, program efficiency, program costs, and program essentiality of the international short-term training program in small-scale fisheries under review (Scriven, 1967, 1983; Stufflebeam, Foley, Gephart, Guba, Hammond, Merriman & Provus, 1971; Sorenson & Suzuki, 1978; Stufflebeam, 1983; Stufflebeam & Shinkfield, 1985).

## **Chapter II**

### **STRATEGIES FOR A SYSTEM OF EFFECTIVE EVALUATION**

The result of program evaluation should essentially be the description of a particular system for pre-determined purposes (W.N. Suzuki, personal communication, August 2, 1988). This chapter will describe the necessary strategies and characteristics appropriate to a system of evaluation as they relate to pre-determined purposes of international short-term training programs in small-scale fisheries.

#### **A PROPOSED TRAINING SYSTEM STRUCTURE**

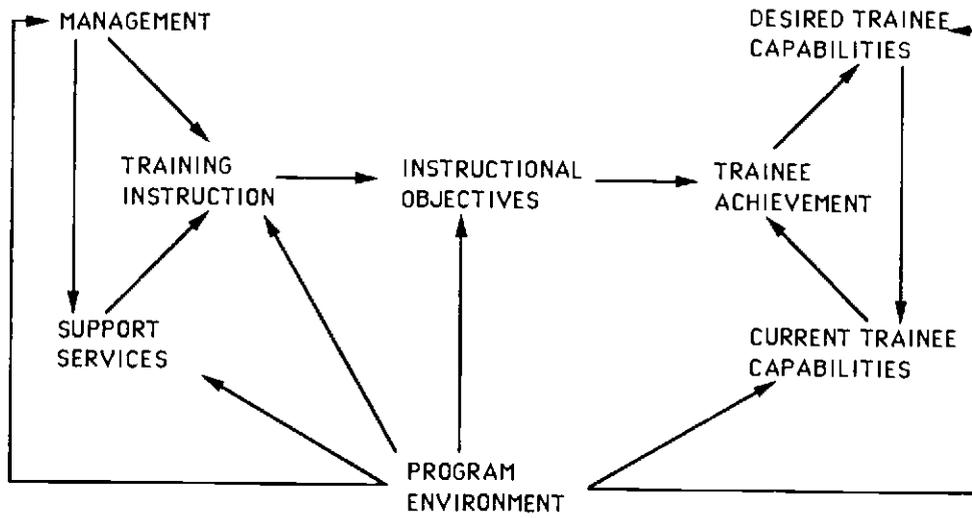
The occupational training models and the small-scale fisheries training programs reviewed for the study provided certain distinctive criteria with which to gauge specific characteristics and functions for effective evaluation of international short-term training programs in small-scale fisheries.

A synthesis of four occupational training models (Suzuki, Shaltry, & Coatney, 1975; Sorenson & Suzuki, 1978; Wentling, 1980; Hunting, Zymelman, & Godfrey, 1986) and four small-scale fisheries training programs (GOWS & UNDP, 1978; Development Academy of the

Philippines [DAP], 1980; GOF, 1981; Martinson, Joyce, & Bordman, 1983) resulted in the design of a conceptual training system structure which could contribute to training program efficiency and effectiveness (Figure 1). The components of the proposed training system model were as follows: 1) desired trainee capabilities, 2) current trainee capabilities, 3) trainee achievement, 4) instructional objectives, 5) training instruction, 6) management, 7) support services, and 8) program environment.

Similarities among the components of the proposed training system model were separated into two groupings of effective program characteristics. Those aspects pertaining to inquiry of program participants and clientele of the training program were one such grouping (Sorenson & Suzuki, 1978; Hunting et al., 1986). The program process characteristics pertaining to the organization, operation and direction of training were the second grouping (Sorenson & Suzuki, 1978; Wentling, 1980; Raab et al., 1987). The identified components of program processes along with the components of program inquiry were inclusive of specific and generalized evaluative functions associated with the reviewed occupational training

Figure 1.  
A Proposed Training System Structure



models and the small-scale fisheries training programs.

#### **PROGRAM INQUIRY CHARACTERISTICS**

The program participants (fisheries trainees) and program clients (fisheries industry and labor force) inquiry characteristic grouping provided introspection into training program effectiveness (Sorenson & Suzuki, 1978). The four program inquiry components were identified as: 1) desired trainee capabilities, 2) current trainee capabilities, 3) instructional objectives, and 4) trainee achievement. A description of the four program inquiry components follows.

##### **Desired Trainee Capabilities**

The desired trainee capabilities (1) component established the standards of employability and the level of competency necessary for assuming positions within the labor force. The competency level and employability standards would be pre-determined by interrelations between the small-scale fishing industry labor market and the training program (Sorenson & Suzuki, 1978; Hunting et al., 1986). The same quantitative and qualitative standards utilized by the labor market would therefore be influential in establishing goals and objectives for the training

program (Sorenson & Suzuki, 1978; House, 1983). The program participants, either partially or fully trained, would either enter directly into the small-scale fishery labor market (desired trainee capabilities) as a result of the training; re-enter the small-scale fishery client pool (current trainee capabilities) for further occupational skill training; or enter the client pool of a non-fishery occupational training program (Sorenson & Suzuki, 1978). Direct programmatic linkages would be evident between the desired trainee capabilities component and the current trainee capabilities component, the trainee achievement component, and the program environment component.

#### **Current Trainee Capabilities**

The small-scale fisheries training programs reviewed for this study targeted particular segments of pre-determined socio-economic groups for recruitment as program participants. This recruiting of pre-defined individuals from both the general and small-scale fishermen population, denoted by the current trainee capabilities (2) component in the proposed training system model, was dependent upon a particular set of criteria (Sorenson & Suzuki, 1978). These criteria included factors such as the relative costs associated

with the training, e.g. availability of funding; employment opportunities, e.g. the lack or need of trained personnel in the fishery; natural forces, e.g. weather, increases or decreases in the fish resources, etc. Sorenson and Suzuki (1978) noted that training program participants in the client pool (current trainee capabilities) were lacking adequate competencies to varying degrees to allow them to be employable in the industry sector intended by the program. Though the purpose of short-term training programs was to provide skill up-grading or basic skill attainment (Thomas & Postlethwaite, 1983), most fisheries trainee-participants could be considered self-employed, i.e., owning their own fishing boats, fishing equipment, etc. (Thomson, 1979a). Though these fishermen were positioned in the labor force prior to participation in the training program, they were to varying degrees "insufficiently competent" (Hamlisch, 1967, p. 117). The discrepancy between the desired trainee capabilities and the current trainee capabilities components is the program's training problem. A direct programmatic linkage would be between the training problem, the instructional objectives component, the trainee achievement

component, and the program environment component.

### **Instructional Objectives**

The instructional goals and objectives to be met by the trainee-participants in order to achieve the program goals formed the basis for the instructional objectives (3) component (Sorenson & Suzuki, 1978). All training instruction, whether technical or non-technical, fisheries or community development, was an aspect of this particular component. The particular courses of instruction of the training programs reviewed were inclusive of specific ". . .knowledge, skills, and beliefs" (Sorenson & Suzuki, 1978, p. 11) that the individual trainee-participant required in order to be regarded as competent. Those fisheries trainee-participants recruited for the training program and undergoing training instruction would therefore be considered in a transitional phase between the current capabilities and the desired capabilities (Sorenson & Suzuki, 1978). At the conclusion of the training cycle, the trainee-participant would pass from the instructional objectives component into the desired capabilities component. The programmatic linkage of the instructional objectives component would be evident between itself and the trainee achievement component,

with direct linkages to the training instruction component, and the program environment component.

### **Trainee Achievement**

The trainee achievement (4) component measures performance of objectives or intended outcomes with actual learning or actual outcomes for purposes of achievement (Sorenson & Suzuki, 1978). The training program participants exposure and acquisition of innovative fisheries and community development techniques, skills, and concepts enabled the completers of a small-scale fisheries training program to be regarded as a fully trained resource. Sorenson and Suzuki (1978) offered the view that employability of former program participants should be determined by the availability of positions within the labor market (desired trainee capabilities component). They also noted that the levels of necessary competency attainment were pre-determined by the labor market. The trainee-participants should therefore be adequately competent for positions of employment within the labor market for which the training program prepared them (Raab et al., 1987). The view of judging program effectiveness as the end result of the employability of trainee-participants would be beneficial to both the

training program operator and program funding agency decision-makers. The programmatic linkage of the trainee achievement component would be tied directly in-line with the instructional objectives component, the current trainee capabilities component, and the desired trainee capabilities component.

#### **PROGRAM PROCESS CHARACTERISTICS**

The particular training program processes responsible for enabling trainee-participants to become competent (Sorenson & Suzuki, 1978) were identified as: 5) training instruction, 6) management, 7) support services, and 8) program environment. The proposed training system components were each structured in a particular order involving distinct resources during the course of the training program. These resources consisted of people, equipment, materials, and space, each available to the training program in certain quantities for specified periods of time (Sorenson & Suzuki, 1978; Raab et al., 1987). A description of the four program process components follows.

##### **Training Instruction**

The training instruction (5) component contained resources arranged in a particular order (Sorenson & Suzuki, 1978). The resources are thus distinguishable

with regard to their specific quality and were ". . .available to a program in certain amounts for certain periods of time" (Sorenson & Suzuki, 1978, p. 11). This component with its identified resources was linked continuously with the instructional objectives component throughout the duration of the training program. Thus, as the trainee-participants passed through the programmed training courses in the instructional objectives component, they acquired specific skills, knowledge, and concepts that originated with the training instruction component. A direct programmatic linkage between the training instruction component, the instructional objectives component, the management component, support services component, and the program environment component would be evident.

### **Management**

The two components which constituted the program operation of the proposed training system structure model dealt with the administrative and logistic support functions within the respective training programs. The management (6) component entailed certain responsibilities to ensure that trainee-participants were directed through the training

program, in addition to maintaining program expenditures at a cost acceptable to the funding agency (Sorenson & Suzuki, 1978; Wentling, 1980; Hunting et al., 1986). This component embodied the additional responsibilities of providing direct leadership linkages to both the training instruction and the support service components. In addition, direct programmatic linkages would be evident between the management component, the training instruction component, the support services component, and the program environment component.

### **Support Services**

The logistic or support service (7) component associated with small-scale fisheries training programs was inclusive of such basic logistical services as administrative support, food services, physical plant support, marine and fisheries engineering services (Sorenson & Suzuki, 1978; Wentling, 1980; Martinson et al., 1983; Hunting et al., 1986). These service functions, though providing essential support to enable trainee-participants to acquire specific competencies, were primarily concerned with other matters of substance (Sorenson & Suzuki, 1978). The support service component was linked directly with the

management component, the training instruction component, and the program environment component.

### **Program Environment**

An additional program characteristic which was proposed in the Suzuki, Shaltry, and Coatney (1975) occupational training program structure was the program environment (8) component. For the purposes of this study, the initial construct of this component was redefined as being international in scope and redesigned so as to include those elements of a cross-cultural, socio-economic, and socio-political nature. The cross-cultural and socio-economic dictates of a people, particularly small-scale fishermen, have been found to influence program operation, instruction, and management (Patton, 1985). The external funding sources of the training program influenced control over these same characteristics, yet with concerns which could be construed as distinctively political in nature (Weiss et al., 1977; USAID, 1987). However, though these three environmental elements have been determined as necessary concerns for development assistance projects and extension training programs involved within the international sphere (Roling, 1982; Patton, 1985; USAID, 1987), few international-oriented training

programs have taken the elements into account for purposes of either program improvement, program accountability and their subsequent relationship to program planning. The program environment component was linked programmatically, as well as socio-politically, socio-economically and cross-culturally with six of the proposed seven training system structure components previously identified.

The application of the proposed training system structure for the evaluative purposes of program accountability, program improvement and their subsequent relationship to program planning could prove useful to decision-makers of both program operators and funding agencies involved with international short-term training programs in small-scale fisheries, other technically-oriented short-term training programs, and similar development activities within the international sector.

#### **DEFINITION OF EVALUATION**

Within the international development and assistance sector, a publication of the United Nations Food and Agriculture Organization (FAO) on evaluation (Raab et al., 1987) for FAO technical training staff and their host-country counterparts, has offered the

following definition of evaluation:

A systematic process of collecting information for and about a training activity which can then be used for guiding decision-making and for assessing the relevance and effectiveness of various training components. It is also used to determine the immediate impact of the activity. (p. 5)

This training-oriented definition of evaluation denoted the evaluative process as the collection of information with specific regard to the training activity under review. Accordingly, the presumption of four specific evaluative purposes were made: 1) guiding the decision-making process, 2) assessment of the relevance of training components, 3) assessment of training component's effectiveness, and 4) determining the impact of the training activity. The decision-making process denoted the use of selected decision-alternatives for planning, implementation, or revision of the training program. Assessment of the relevance of training components comprised obtaining feedback from trainees and others involved in the training program. The assessment of a training component's effectiveness denoted information collection of both training participant and training activity achievements. The determination of impact was

indicative of on-the-job assessments of former training participants. The combination of evaluative purposes within the body of the definition provided a shift from the traditional evaluation definitions. Selected aspects of the training-oriented evaluation definition, particularly usage of decision-alternatives, assessment of the relevance and effectiveness of training components, and the determination of impact, were noteworthy.

In the domestic sector of contemporary evaluation Stufflebeam et al. (1971) advocated a unique evaluative approach which stressed a decision-oriented and information-based definition. The definition stated that: "evaluation is the process of delineating, obtaining, and providing useful information for judging decision alternatives" (p. 129). In an updated version of the definition, Stufflebeam (1983) incorporated several encompassing concepts as follows:

Evaluation is the process of delineating, obtaining, and providing descriptive and judgemental information about the worth and merit of some object's goals, design, implementation, and impacts in order to guide decision-making, serve needs for accountability, and promote understanding of the involved phenomena. (p. 159)

Stufflebeam (1983) has presented evaluation not as an

event, but rather a process. The concept of process was denoted to include the methodology of delineating, obtaining, and providing information.

Accordingly, there was the presumption of three evaluative purposes. First, the decision-making process, characterized as a proactive function, denote the ability to provide decision-alternatives to decision-makers for either terminating, refocusing, modifying, or continuing their training programs (Stufflebeam, 1983). Second, the use of accountability needs, characterized as a retroactive function, provide for records of objectives, strategies, actual process, and attainment, and allowed use of the decision-alternative to either refocus or recycle the object of review. Third, an understanding of the involved evaluative phenomena indicate the ability to comprehend and judge decision-alternatives more fully (Stufflebeam, 1983). The usage of means to acquire the stated evaluative purposes embodied within the definition of evaluation denoted a contradictory approach to contemporary evaluation than had been previously indicated (Stufflebeam & Webster, 1983; Raab et al., 1987). Selected characteristics of the definition, particularly the procedural aspects of

delineating, collecting, and reporting of judgemental and descriptive information, along with the stated purposes of guiding decision-making and meeting accountability demands were notable distinctions.

Wentling (1980) briefly noted the need for a workable definition of evaluation in occupational education. The definition Wentling proposed was: "the collection of information and judgements to facilitate planning, to aid in the improvement of programs, and to meet accountability demands" (p. 19). This definition emphasized three principal purposes in the evaluative process: 1) program planning, 2) program improvement, and 3) program accountability. Though these three purposes of evaluation coincided with the stated purposes of the study, their application to the process of evaluation differed significantly.

#### **A Working Definition**

In determining a comprehensive working definition of evaluation for the purpose of this study, inclusion of key definitive characteristics based upon selected training-oriented approaches of Raab et al. (1987), in addition to the contemporary definitive phraseology of Wentling (1980) and Stufflebeam (1983), were found to be advantageous. Therefore, evaluation, pertaining to

international short-term training programs in small-scale fisheries, was defined as:

The process of defining, collecting, and reporting descriptive and judgemental information in order to guide decision-making pertinent to program improvement, program accountability and their subsequent relationship to program planning.

This definition of evaluation emphasized the primary purposes of evaluation as characterized by Wentling (1980) and the characteristics of evaluative procedure, as utilized by Stufflebeam (1983), all of which were determined essential for effecting the stated purposes of this study.

The evaluative processes in the working definition were indicative of delineating, collecting, and reporting descriptive and judgemental information (Stufflebeam et al., 1971; Stufflebeam 1983).

Accordingly, there was the premise of four evaluative purposes in the evaluation working definition:

1) facilitating decision-making, 2) program planning, 3) program improvement, and 4) program accountability (Stufflebeam et al., 1971; Wentling, 1980; Stufflebeam, 1983; Raab et al., 1987). A description of the four evaluative purposes follows.

The decision-making process denoted the provision

of descriptive and judgemental information to decision-makers for determining whether to terminate, refocus, modify, or continue an ongoing or future training program. Program planning denoted the specific methodology employed to achieve a particular set of objectives for the training program. Stufflebeam (1983) has noted that this can generally be accomplished by employing needs assessments early on in the training operation. Program improvement was characterized by the provision of useful information to decision-makers for assessing the effectiveness, relevance, and impact of training components; in order to modify or refocus the training program. The accountability characteristic denoted the use of program results or program impact in relation to the overall program costs and program objectives. The usage of decision-alternatives for accountability purposes to either refocus, modify, continue, or terminate an ongoing or future training program could be targeted for application by the respective program funding agency as well as the program operator (Stufflebeam, 1983).

These decision-alternatives could be further clarified as follows: 1) facilitating decision-making

for terminating, refocusing, modifying, or continuing training programs; 2) providing useful information to program operators in order to modify or refocus their training operation for program improvement; and, 3) providing effective information delivery mechanisms in order to institute more cost-effective and appropriate training programs. The three stated study purposes provided the necessary criteria with which a more discriminating assessment of the essential effective evaluative characteristics could be made.

The application of this working definition of evaluation could prove useful to program operators and decision-makers of funding agencies involved with international short-term training programs in small-scale fisheries, other technically-oriented short-term training programs, and similar development activities within the international sector.

#### **CHARACTERISTICS OF EVALUATION SYSTEMS**

In order to provide for appropriate program improvement, program accountability and program planning within international small-scale fisheries training programs, provision should be made to be informed about a training program prior to, during, and at the conclusion of the training cycle. Cronbach

(1963) has stated:

Evaluation, used to improve the course while it is still fluid, contributes more to improvement of education, than evaluation used to appraise a product already placed on the market. (p. 48)

A delineation of contemporary evaluation models for effective evaluative characteristics and functions provided two values-oriented evaluation approaches which incorporated Cronbach's concept of evaluative fluidity (Stufflebeam & Webster, 1983). A description of the evaluation functions follows.

#### **Decision-Oriented Evaluation**

Stufflebeam et al. (1971) proposed four evaluative functions (context evaluation, input evaluation, process evaluation, and product evaluation) in their initial decision-oriented evaluation model. Subsequent revision by Stufflebeam (1983) resulted in similar, yet more detailed evaluative functions of the decision-making evaluation model (Stufflebeam & Webster, 1983). Only two (process evaluation and product evaluation) were judged appropriate for the purposes of this study. A synopsis of the various roles of the decision-oriented evaluation methodologies follow.

The process evaluation function allows for an

ongoing check on the implementation of a particular plan. It could be used to identify or predict, defects in the procedural design. The role of process evaluation, according to Stufflebeam (1983), would be to obtain feedback which could assist program personnel to continue the training program as it was intended, or to change (modify or refocus) in mid-course if there was a demonstrated need. The recording of information could prove beneficial for purposes of accountability, since program advisory committees, funding agencies, and program decision-makers generally have a strong desire to be knowledgeable about whether or not the training program transpired as originally proposed. The process evaluation approach allowed for the provision of an extensive implementation record of the training program to show how it compared to the original program intent (Stufflebeam & Shinkfield, 1985).

The product evaluation function should, on the other hand, be used for measuring, interpreting, and judging the particular attainments of a training program. This particular evaluative methodology required the collection of descriptions and judgements to ascertain the extent to whether the stated goals and

objectives of the program were met (Stufflebeam & Shinkfield, 1985). Product evaluation findings would be reported at various stages during the assessment process. The use of interim assessments throughout the training program cycle could possibly aid in indicating that targeted needs were being met. End of training cycle assessments provided necessary details of programmatic results achieved and offered them in light of program costs incurred, pre-assessed needs, and the extent of program completion. Follow-up assessments of program results provided indication of long-term impact upon trainee-participants of the client pool (current trainee capabilities component) and the labor market (desired trainee capabilities component) (Stufflebeam, 1983).

An additional element of product evaluation would be the cost-benefit function. Though briefly regarded by Stufflebeam (1983), inclusion of cost-benefit would provide training program operators and decision-makers of the responsible funding agency the opportunity to offer small-scale fishermen training programs which were cognizant of local socio-economic, socio-political, and cross-cultural environmental factors (Kearsley, 1982). It should be noted that cost-benefit

analysis is the melding of product and process evaluations. This is due to benefits being derived from the former and costs from the latter.

The context evaluation function identified the relative strengths and weaknesses of a program, institution, or target population, so as to provide the necessary direction for improvement (Stufflebeam, 1983). This particular approach of context evaluation has been utilized to define the institutional context, identify the target population and assess their respective needs, identify opportunities for addressing the needs, diagnose problems underlying the needs, and judge whether proposed objectives were sufficiently responsive to the assessed needs (Worthen & Sanders, 1973). Within the international assistance sector, context methodology could possibly enhance the ability of the program to initially engage in conceptual analysis. This ability of context evaluation would be to identify and define limits of the program, in terms of objectives and their priority.

The input evaluation function proffered identification and assessment of system capabilities, alternative program strategies, the procedural designs for implementing the strategies, and development of

budgets and schedules (Stufflebeam, 1983). This particular approach allowed for a search of the clients' particular environment for barriers, constraints, and potentially available resources. The overall intent of this function has been to assist program clients consider alternative program strategies in the context of their needs and particular environmental circumstances (Stufflebeam & Shinkfield, 1985).

The evaluative functions of context and input should prove useful to planning applications within an international training program environment. However, the needs of the proposed evaluation model and the particular purposes of the study for accountability and program improvement preclude their direct application.

#### **Consumer-Oriented Evaluation**

In a contrasting yet similar evaluative approach, Scriven (1967) focused upon a consumer-oriented evaluation model (Worthen & Sanders, 1973; Scriven, 1983; Stufflebeam & Shinkfield, 1985) which incorporated two roles, as well as two relative functions of evaluation. These were formative evaluation, summative evaluation, intrinsic evaluation and payoff evaluation. The formative-summative

evaluation roles provide the intended and actual analysis of ends and means of a training program while focusing on the direct assessment of program worth and values (Worthen & Sanders, 1973). These in turn supported the intrinsic-payoff evaluation approaches which provided for evaluative functions of means to reach certain ends (intrinsic) and the evaluative functions of ends or effects (payoff) (Stufflebeam & Shinkfield, 1985).

The sole function of formative evaluation should be regarded as ". . . program refinement and improvement" (Scriven, 1967, p. 62). This role has best been utilized to assist in the ongoing development of the training program. There has been noted continual feedback action during application of this function which provided support in the planning and production of the respective program, allowing for adjustments to be made by the program development staff and the evaluator appraising the operational program. The decision-making attributes of formative evaluation require information to be empirically oriented. With regard to international training programs in small-scale fisheries, formative evaluation could possibly determine the fit or adaptation of the program to the

local context or situation. This regard to the program environmental elements, socio-economic, socio-political, as well as cross-cultural, is essential when utilizing alternative training methodologies in a variety of locations and under numerous less-than-desirable conditions and circumstances (Weiss et al., 1977; Roling, 1982; Patton, 1985).

By contrast, information pertaining to the impact or outcomes of a training program could generally be regarded as being inclusive of the summative evaluation role. The summative evaluation role provides an enabling function to program decision-makers to judge whether a completed program or project, improved or adjusted by formative evaluation action, is adequate for final consideration (Scriven, 1967, 1983). By focusing upon the intended and unintended goals of the program, the program could be judged more succinctly. The environmental factors (socio-political, socio-economic, and cross-cultural) associated with the program could also be taken into account. The summative function would therefore benefit program consumers by providing independent assessments on the costs, effectiveness, and relative worth of the training program (Scriven, 1967, 1983).

The intrinsic evaluation and payoff evaluation functions which Scriven (1967) proposed in his consumer-oriented model were similar in approach and operation to components of Stufflebeam's (1983) more evolved process evaluation and product evaluation functions. As such, specific adaptation of the intrinsic-payoff evaluation functions for the purpose of this study would not provide adequate enhancement of the proposed evaluation model design and therefore were not included.

A synthesis of the decision-oriented and consumer-oriented evaluative approaches resulted in the design of a conceptual evaluation model which could prove beneficial to decision-makers of the program funding agency and the program operator of international short-term training programs in small-scale fisheries.

#### **STRATEGIES FOR AN EFFECTIVE EVALUATION MODEL**

The large number of variables required to render a decision on whether to refocus, modify, continue, or terminate a training program could prove to be laden with insuperable difficulties (Stufflebeam et al., 1971; Sorenson & Suzuki, 1978; Stufflebeam, 1983). This section will propose the evaluative inquiry

processes necessary to properly determine the essential variables for effectively evaluating international short-term training programs in small-scale fisheries.

### **Effective Decision-Making in Evaluation**

The study's focus upon facilitating decision-making to aid in program improvement, program accountability and their subsequent relationship to program planning corresponded to a conceptual decision-making taxonomy proposed by Stufflebeam et al. (1971) (Figure 2). The taxonomy of decision-types identifies decision-making criterion in terms of ends or means and intentions or actualities. The taxonomy classifies the process of decision-making as it pertains to either intended-means and actual-means or intended-ends and actual-ends. The proposed evaluation model would focus upon these respective decision-making criterion when the decision-alternatives of either modification, refocusing, or continuation of ongoing small-scale fisheries training programs are applied (Sorenson & Suzuki, 1978). The decision-making criterion of actual-means and actual-ends would be applied when program continuation was the primary evaluation purpose. When the evaluation purpose selected was program modification, the criterion of

Figure 2.  
Types of Decisions

	INTENDED	ACTUAL
ENDS	PLANNING DECISIONS TO DETERMINE OBJECTIVES	RECYCLING DECISIONS TO JUDGE AND REACT TO ATTAINMENTS
MEANS	STRUCTURING DECISIONS TO DESIGN PROCEDURES	IMPLEMENTING DECISIONS TO UTILIZE, CONTROL AND REFINE PROCEDURES

(Stufflebeam et al., 1971, p. 133)

intended-means and actual-ends would be applied. The evaluation purpose of program refocusing requires the decision-making criterion of actual-means and intended-ends. Sorenson and Suzuki (1978) briefly noted that modification of the existing training program actually implied focusing upon program planning and development. Similarly, the refocusing of the small-scale fisheries training program or project should embody substantive planning changes for program improvement, whereas the modification of a program or project should embody procedural planning changes (Worthen & Sanders, 1973; Sorenson & Suzuki, 1978; Stufflebeam, 1983). For the purpose of this study, program modification and program refocusing would be programmatically linked to planning changes for purposes of program improvement of the existing training program, training project or training component.

#### **A Theoretical Structure for Evaluation**

Stufflebeam (1983) noted that process evaluation and product evaluation could be used both to guide the decision-making process for the purpose of program improvement, which would be regarded as the formative role, and to convey and record descriptive and judgemental information for accountability purposes,

which would be regarded as the summative role. The theoretical construct of the proposed decision-alternative evaluation model was based upon a synergistic relationship between the two evaluation roles (formative-summative) (Stufflebeam, 1983) and the two evaluation processes (process-product) (Figure 3). The resulting interrelationship among the evaluation roles and processes when combined was the formation of four distinct functions of evaluation: 1) process-formative, 2) product-formative, 3) process-summative, and 4) product-summative.

Either individually or in combination, the four evaluative functions: process-formative evaluation, product-formative evaluation, process-summative evaluation, and product-summative evaluation were directly responsive to two of the proposed decision-making criterion (Stufflebeam, 1983) (Figure 4). The process-formative and process-summative evaluative functions were found to be responsive to implementation decisions. In contrast, the product-formative and product-summative evaluative functions were directly responsive to recycling decisions. These two decision-making criterion (recycling decisions and implementing decisions) were inclusive of the decision-making

Figure 3.

## Interrelationship of Evaluation Roles and Processes

	ACTUAL	ACTUAL
PROGRAM ACCOUNTABILITY	PROCESS-SUMMATIVE	PRODUCT-SUMMATIVE
PROGRAM IMPROVEMENT	PROCESS-FORMATIVE	PRODUCT-FORMATIVE

**Figure 4.**  
**Relationship of Evaluation to Decision-Making**

	PROCESS	PRODUCT
SUMMATIVE	RECORD OF THE ACTUAL PROCESS OF IMPLEMENTATION	RECORD OF RECYCLING DECISIONS AND PROGRAM ATTAINMENTS
FORMATIVE	GUIDANCE FOR IMPLEMENTATION	GUIDANCE FOR REFOCUSING, MODIFYING, CONTINUING, OR TERMINATING

(Stufflebeam, 1983)

methodology necessary for effectively evaluating international short-term training programs in small-scale fisheries, such as GOWS and UNDP (1978), DAP (1980), GOF (1981), Martinson et al., (1983).

The decision-making criterion corresponding to evaluation functions are as follows:

Implementing decisions:

- to govern program operations;
- to determine the intellectual integrity;
- final judgement of program content for assisting process evaluation, process-formative evaluation, and process-summative evaluation (Stufflebeam, 1983);

Recycling decisions:

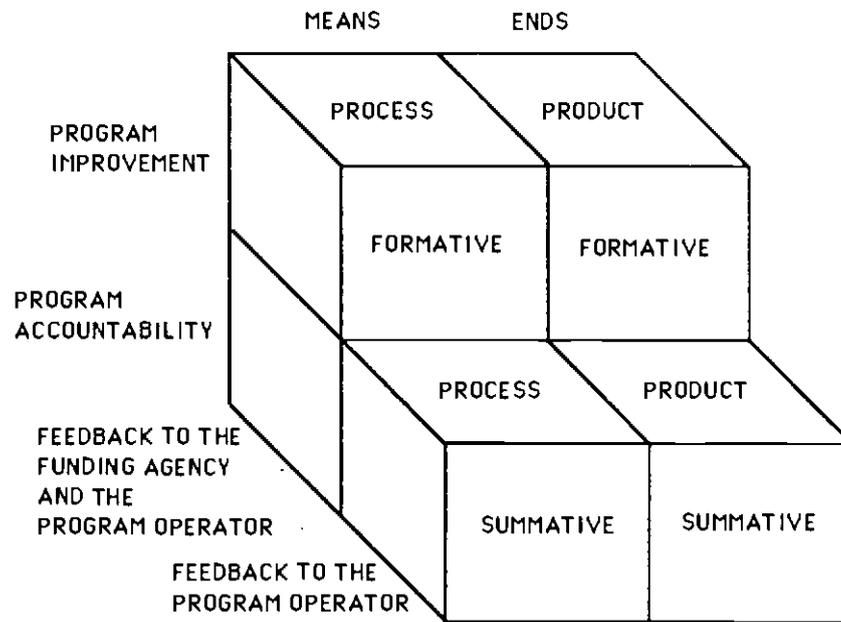
- to judge and react to program attainments by providing funding agencies and potential clientele with interim and end-of-project data;
- for serving product evaluation, product-formative evaluation, and product-summative evaluation (Stufflebeam, 1983).

### **A Programmatic Structure for Evaluation**

The programmatic structure of the proposed decision-alternative evaluation model incorporated two

tiers of evaluation within a box-like framework (Figure 5). The application of the proposed evaluation taxonomy, decision-making taxonomy, and the decision-making and evaluation matrix provided the basis for development of the six boxes in the framework. The program accountability tier (lower four boxes) encompassed the proposed evaluation model's orientation toward overall training program, training project or training component accountability. The four proposed evaluation functions of this tier directed descriptive and judgemental information toward either the training program's funding agency or program operator. The program improvement tier (upper two boxes) encompassed similarly proposed evaluation functions, yet with an orientation toward specific improvement of the respective training project, training component or training unit. The program improvement tier directed generally identical descriptive evaluative information solely toward the operator of the training program. This information differed only in scope. Information from both evaluative tiers of the proposed decision-alternative evaluation model should be provided to planners, as deemed necessary, for new training projects and training programs. A description of the

**Figure 5.**  
**The Decision-Alternative Evaluation Model:**  
**A Programmatic Structure**



accountability evaluation and improvement evaluation processes as they relate to either tier of the proposed programmatic structure of the decision-alternative model follows.

The programmatic structure of the proposed decision-alternative evaluation model is oriented toward the qualitative and quantitative variables of program accountability and program improvement when relating to either the individual training project, the training program in it's entirety, or selected aspects of both (House, 1983). The function of accountability evaluation would be assessment in it's entirety of the respective training program, training project or training component, either mid-course, at the program, project or component conclusion, or whenever the decision-makers of the funding agency or program operator should determine the action necessary. The process-summative and product-summative evaluation functions enable the provision of training program, training project or training component implementation and program, project or component attainment records solely to the respective funding agency for overall accountability purposes during either interim or post-conclusion evaluation. This information should include

the procedural elements as well as substantive elements of the training program, training project or training component. In contrast, the same process-summative and product-summative evaluation functions enable provision of information on programmatic guidance and direction of overall training activity implementation practices and processes solely to the program operator for mid-course or interim evaluation.

The program improvement evaluation process of the upper evaluative tier would provide essentially identical training assessment and review information, yet only to the level of the program operator. This information would differ mainly in terms of scope. The program improvement evaluation process allows assessment of the specific training project, training component or training unit either mid-course, whenever the program operator deems the action necessary or when directed by the funding agency. The process-formative and product-formative evaluation functions of the upper tier should enable the provision of records of specific training project, training component or training unit implementation. These program improvement evaluation functions should also enable collection of information on the provision of project,

component or unit direction, in addition to enabling necessary programmatic guidance for determining decision-alternatives for planning purposes.

#### **PRINCIPAL EVALUATION QUESTIONS**

The specificity of effectively evaluating a training program is dependent upon the decision-making requirements of the particular evaluation situation. The decision-making requirements, in turn, specifies the type of evaluation questions to be posed (Wentling, 1980). The concept of decision-alternatives proposed by Stufflebeam et al. (1971) to either refocus, modify, continue, or terminate a program, could be represented as three principal questions (to refocus, to modify, to continue) and a consequence (to terminate) (Sorenson & Suzuki, 1978). A sequence of the principal evaluative questions based upon the decision-alternative concept reveals how an essentially solitary decision could be separated into numerous sub-decisions (Sorenson & Suzuki, 1978). An expanded series of these principal evaluative questions, each based upon a decision-alternative to either refocus, modify, or continue, were developed for the study (Figure 6).

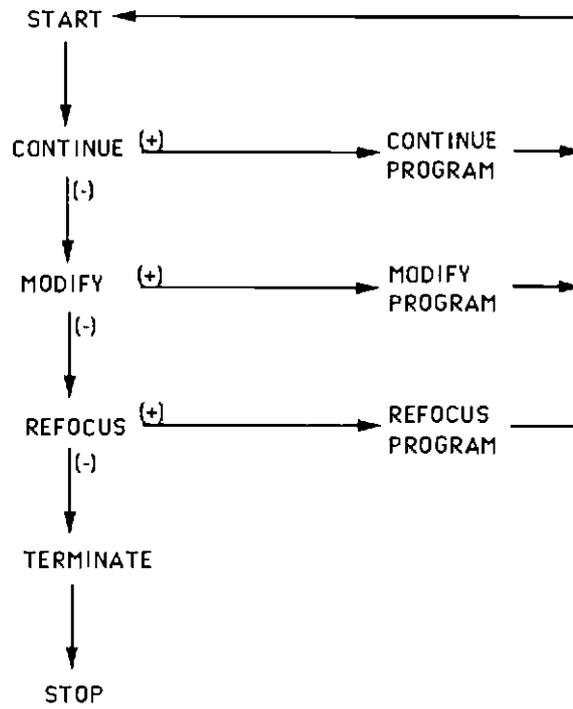
Based upon Sorenson and Suzuki's (1978) sequence of decision-alternative questions, the study's

principal evaluation question would ask: "Should the small-scale fisheries training program be continued as it currently exists?" An affirmative response would thus negate further evaluative questioning with appropriate action taken to continue the training program, training project or training component. However, a negative response would lead directly to the second principal evaluative question: "Should the existing small-scale fisheries training program be modified?" An affirmative response would result in appropriate action to modify the program, project or component. A negative response leads to the final principal evaluative question: "Should the existing small-scale fisheries training program be refocused?" Action to refocus the training program would be the result of a affirmative response to this question. A negative response, on the other hand, initiates action to terminate the existing training program or training project or training component.

The questions posed on program refocusing and program modification differs from the continuation question. Program refocusing is based upon the need for substantive change within the training program, training project, or training component. This is in

Figure 6.

## Decision-Alternatives of Principal Questions



contrast to program modification which affects procedural changes within the program, project or component. As a result, only specific evaluative questions which pertain to either the substantive or procedural issues of the particular training activity should be posed for eliciting responses to the two decision-alternatives.

Affirmative responses to the principal evaluative questions to either modify or refocus the training activity under review would result in either a procedural or substantive transition of the program review and assessment being conducted. Entry into either program modification or program refocusing would cause the programmatic emphasis upon program evaluation to shift to program planning. The apparent lack of distinction between evaluative assessment processes and evaluative planning processes in contemporary evaluation models has resulted in current evaluative methodology being ill-suited for assessments and reviews being conducted upon technical training programs within the international sphere. As an example, the use of external evaluation consultants by the U.S. Agency for International Development (USAID) has bolstered USAID's professional-judgement evaluation

approach, even though these outside consultant's have perpetuated this same lack of distinction between the evaluation assessment process and the evaluation planning process during USAID-funded development programs and development projects (USAID, 1980a, 1983, 1987).

As such, the general lack of a formal transition between program evaluation and program planning may result in the processes of either modification or refocusing to occur either pre-conclusion or post-conclusion without the appropriate level of awareness by the program funding agency or the respective program operator. This summative-oriented external form of evaluation has therefore necessitated the programmatic need for project extensions without a rigorous and substantiated regard to the causal relationship between evaluation assessment and evaluation planning (USAID, 1980a, 1987). Therefore, in order to achieve the purposes of this study and to alleviate unnecessary project expenditures of future small-scale fisheries training projects and their evaluations, among others, a notable distinction between the evaluation assessment process and the evaluation planning process should be made.

## FUNDAMENTAL EVALUATION QUESTIONS

A delineation of the decision-alternatives posed as principal evaluative questions allowed an in-depth examination of the proposed fundamental evaluative questions to be formulated. In order to properly evaluate international small-scale fisheries training programs, the fundamental evaluative questions to be posed should be of primary importance. Therefore, the fundamental evaluative questions of the proposed decision-alternative evaluation model should treat training program effectiveness, efficiency, costs, and essentiality (Sorenson & Suzuki, 1978) in relation to the principal evaluative questions on whether or not to refocus, to modify, or to continue the training program under review (Stufflebeam et al., 1971; Sorenson & Suzuki, 1978; Stufflebeam, 1983). The question on program continuation could be succinctly answered by responses from the fundamental evaluative questions of effectiveness, cost, efficiency, and essentiality, however, the questions of program refocusing and modification could not (Sorenson & Suzuki, 1978).

The extent to which training programs, training projects or training component under review have been determined effective varies (Kim, 1977; Sorenson &

Suzuki, 1978). For the purpose of this study, effectiveness is regarded as the achievement of program objectives (Sorenson & Suzuki, 1978; Kearsley, 1982; Steinmetz, 1983).

The consideration of acceptable cost in determining whether or not to continue the training program or project is not without precedent (Kim, 1977; Sorenson & Suzuki, 1978; Kearsley, 1982). The cost associated with conducting a training program should be considered by the degree of acceptability of benefits derived, or in other words, whether or not the particular benefits justified the cost expended. The cost question includes associated program costs and resources expended against benefits derived (Sorenson & Suzuki, 1978). Determination of training program efficiency, on the other hand, was regarded as requiring that programmatic results were achieved with fewer associated costs (Kim, Harris, & Ruby, 1976).

Sorenson and Suzuki (1978) noted that concern for cost reduction should occur after the decision was made to continue the respective training program. The "least cost" question (efficiency) proposed by Sorenson and Suzuki (1978) is essentially a planning question and was found to be generally applicable when used in

multi-cycle training environments in domestic occupational training programs. However, the question of "least cost" is also important to international-oriented short-term training programs. The planning aspects of the efficiency question precludes its use within the main body of the proposed decision-alternative evaluation model. Therefore, for the purposes of this study to be achieved, the question of efficiency would be posed after the decision was made to continue the training project, training component or training unit. The efficiency question, because of its planning orientation would be posed within the proposed decision-alternative evaluation model as part of its program planning component.

Introspection into program essentiality was enabled by delineation of characteristics specific to the program environment component. These included cross-cultural, socio-economic and socio-political elements particular to the international development environment. Sorenson and Suzuki (1978) noted that the needs of society, requirements by government, as well as institutional traditions and priorities were as relevant as the demands of the labor market, program cost, and trainee achievement. As such, the

programmatic concern of whether or not the training program, training project or specific training activity is essential would be socio-politically-oriented (Brickell, 1976; Sorenson & Suzuki, 1978). As a result of the potential political ramifications, the question of program essentiality, along with any response, should therefore be limited solely to consideration by decision-makers of the program funding agency and the respective program operator.

### **Chapter III**

#### **THE DECISION-ALTERNATIVE EVALUATION MODEL: A PROPOSAL FOR THE TRAINING PROGRAM FUNDING AGENCY AND THE TRAINING PROGRAM OPERATOR**

The overall scheme for an effective system for evaluating international short-term training programs in small-scale fisheries has been delineated in the previous chapter. This chapter will clarify the various evaluative functions and evaluative questions and their relationship to the proposed decision-alternative evaluation model.

#### **PROGRAM ACCOUNTABILITY EVALUATION**

The primary purposes of evaluation were incorporated as major considerations in the proposed model. These purposes were program accountability and program improvement and their subsequent relationship to program planning. Program planning is concerned with information needed by proposers of future training programs. The information required by program proposers is derived from program accountability and program improvement.

Program accountability embodies the function of summative evaluation in conjunction with the processes

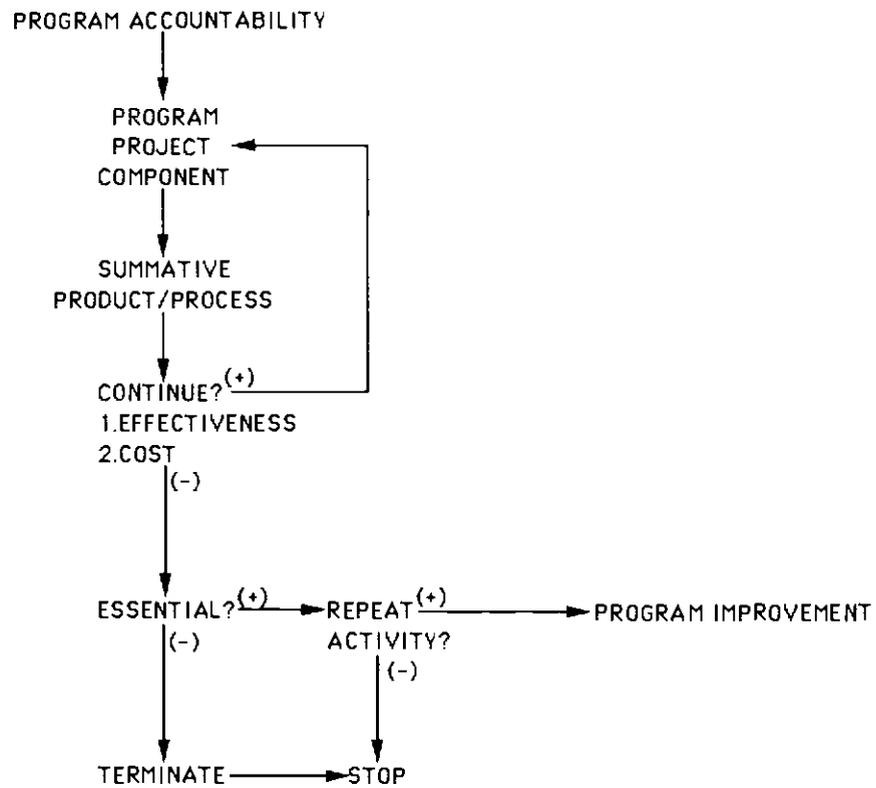
of product evaluation and process evaluation (Figure 7). During the program accountability process, the summative evaluative function would be oriented toward both the program funding agency and the program operator. The specific areas of evaluative concern for the program funding agency during the accountability process would be an overall training program, training project, or possibly an individual training component, depending on the specificity of goals and objectives specified in the particular scope of work. The program operator's evaluative concern during the accountability process could also focus on the training program, training project, or training component, and possibly a training unit. Though the orientation of accountability evaluation may be the same for the program funding agency and the program operator, the use of the acquired information by both is not.

As stated in the previous chapter, program accountability evaluation could be conducted at program mid-course, program conclusion or whenever the decision-makers of the program funding agency or program operator deemed the action necessary.

#### **Program Accountability Questions**

The initial evaluation question posed for

Figure 7.  
Program Accountability Evaluation



purposes of program accountability is concerned with whether or not a training program, training project, or training component should be continued in its current form. The posing of decision-alternatives as principal evaluative questions was previously discussed in Chapter Two. The principal evaluative question for determining whether or not to continue an ongoing training program, training project or training component involves the following two evaluative questions:

- 1) Is the small-scale fisheries training program effective, that is, does the training program accomplish its primary objectives in terms of quality, quantity, and time (Sorenson & Suzuki, 1978; Stufflebeam, 1983)?
- 2) Is the actual cost(s) of the small-scale fisheries training program acceptable, that is, do approved costs match approved expenditure(s) in terms of amount, types, and time (Sorenson & Suzuki, 1978)?

The posing of such global assessment questions as program effectiveness and acceptable cost requires the continuous provision of all relevant records of program implementation and program attainments to the

responsible evaluative body by the program operator (Stufflebeam, 1983). Post-program accountability evaluation would allow the posing of evaluative questions concurrently. Similarly, if interim accountability evaluation was to be conducted during the period of training, then the evaluation questions posed would warrant sequential application.

Criteria for measuring program effectiveness are delineated from the desired trainee capabilities component, current trainee capabilities component, instructional objectives component, and trainee achievement component of the proposed training system structure. Program effectiveness is the extent to which the program's stated goals are achieved (Sorenson & Suzuki, 1978; Kearsley, 1982; Steinmetz, 1983). As an example, a criterion could be concerned with the relative percentage of training program completers actively engaged within the small-scale fishery labor force (Hunting et al., 1986) or the percentage of program completers who were adequately prepared for positions within the fishery industry or the level of recruiting of trainee-participants from targeted population groups (Raab et al., 1987) or the level of specific technical skill competency of trainee-

participants after program completion (Hunting et al., 1986). The program's effectiveness would then be the extent to which those criteria were satisfied.

The evaluative question on acceptable program cost considers the discrepancy between approved costs against actual program expenditures (Sorenson & Suzuki, 1978; Kearsley, 1982). Criteria for measuring acceptable cost are delineated from the program process characteristics of the proposed training system structure. The management component, training instruction component, and support services component provide the relevant administrative and logistic cost information with regard to overall program expenditures. As an example, a criterion for determining acceptable costs could establish the acceptable level of overall program cost to the program operator or socio-economic cost to the trainee-participants for their involvement within the training program (Sorenson & Suzuki, 1978; Hunting et al., 1986). Additional criteria could be the overall expenditure level for operation of the training program (Stufflebeam, 1983) or whether levels of resources, space, and time being utilized were within the specified expenditure limits (Sorenson & Suzuki, 1978).

If the training program, training project or training component under review is both effective and operating within acceptable cost, the activity should continue. If, on the other hand, the program, project or component is either ineffective or operating above acceptable cost guidelines, the essentiality of the training program, training project or training component, which is a politically-oriented inquiry, should be questioned.

As stated previously, the political reality of international development has oftentimes necessitated disproportionate trade-offs between benefits of services provided and their costs. Because of this, the political orientation of the essentiality question makes it necessary for the decision-makers of the program funding agency and program operator to both pose and answer the question (Sorenson & Suzuki, 1978). The political ramifications for decision-making extend beyond the scope of the particular funding agency or program operator when the potential consequence for a training program, training project or training component would be its termination. For instance, the training program could be ineffective or operating at unacceptable cost levels, yet the political reality of

the situation would compel continuation of the program. Therefore, a decision made by either the program funding agency or program operator decision-makers to terminate the training program could therefore prove to be either politically sound or unsound within the context of either a greater national political policy or strategy.

Criteria for an appropriate response to the essentiality question are delineated from the training system structure component on program environment. The criteria includes elements of a cross-cultural, socio-economic, and socio-political nature (Brickell, 1976; Weiss et al., 1977; Patton, 1985; USAID, 1987). A negative response to the evaluative question on program essentiality should initiate action to terminate the respective training program, project, or component. Program termination could be indicated immediately, or at any point in time as is determined by the decision-makers of the program funding agency or the program operator. At termination, any further evaluative review and assessment activities would be conducted at the discretion of the responsible training program decision-makers. In contrast, a positive response to the question of program essentiality results in further

evaluative review and assessment of the training program, training project or training component.

The "repeat activity" accountability question is procedural and posed once a positive response to the essentiality question is provided. The repeat question will determine whether or not the training program, training project or training component being assessed will again be conducted during the particular training cycle. If positive, the discrepancy previously determined during the question sequence on continuation necessitates that the program improvement evaluation process be conducted upon that discrepancy. If, on the other hand, the training activity is not repeated, documentation of the discrepancy is made and further evaluative action on the particular training activity is concluded.

In an accountability evaluation, the summative evaluation function occurs as an evaluative role (Stufflebeam, 1983) rather than an evaluative process, thereby enabling program accountability evaluation to occur simultaneously, though in separate venues for both the program funding agency and the program operator. For example, the program funding agency could decide to conduct a mid-course or interim program

accountability evaluation upon a small-scale fisheries training project. All relevant descriptive and judgemental information on current project implementation and project attainments would be provided by the training program operator. During the same period of time, the training program operator could determine that a program accountability evaluation was warranted in order to assess a specific training activity or training component of the same small-scale fisheries training project. The same descriptive and judgemental information provided to the funding agency would be used by the program operator, though information would be subject-matter specific to the particular training activity or training component being reviewed.

Decisions arising from program accountability evaluation which noted deficiencies in the program, project or component would lead directly to the program improvement evaluation process. The negative evaluative finding arrived at by either the funding agency or program operator evaluators should be used by the program operator to improve the program. This is based on the premise that actions to ameliorate deficiencies found by the funding agency are proposed

by the program operator at the request of the funding agency and approved by the funding agency either formally or tacitly. However, any program accountability evaluation finding identified by the program operator as a result of the program operators' evaluative inquiry, would be used for the program improvement evaluation at the operator's discretion.

#### **PROGRAM IMPROVEMENT EVALUATION**

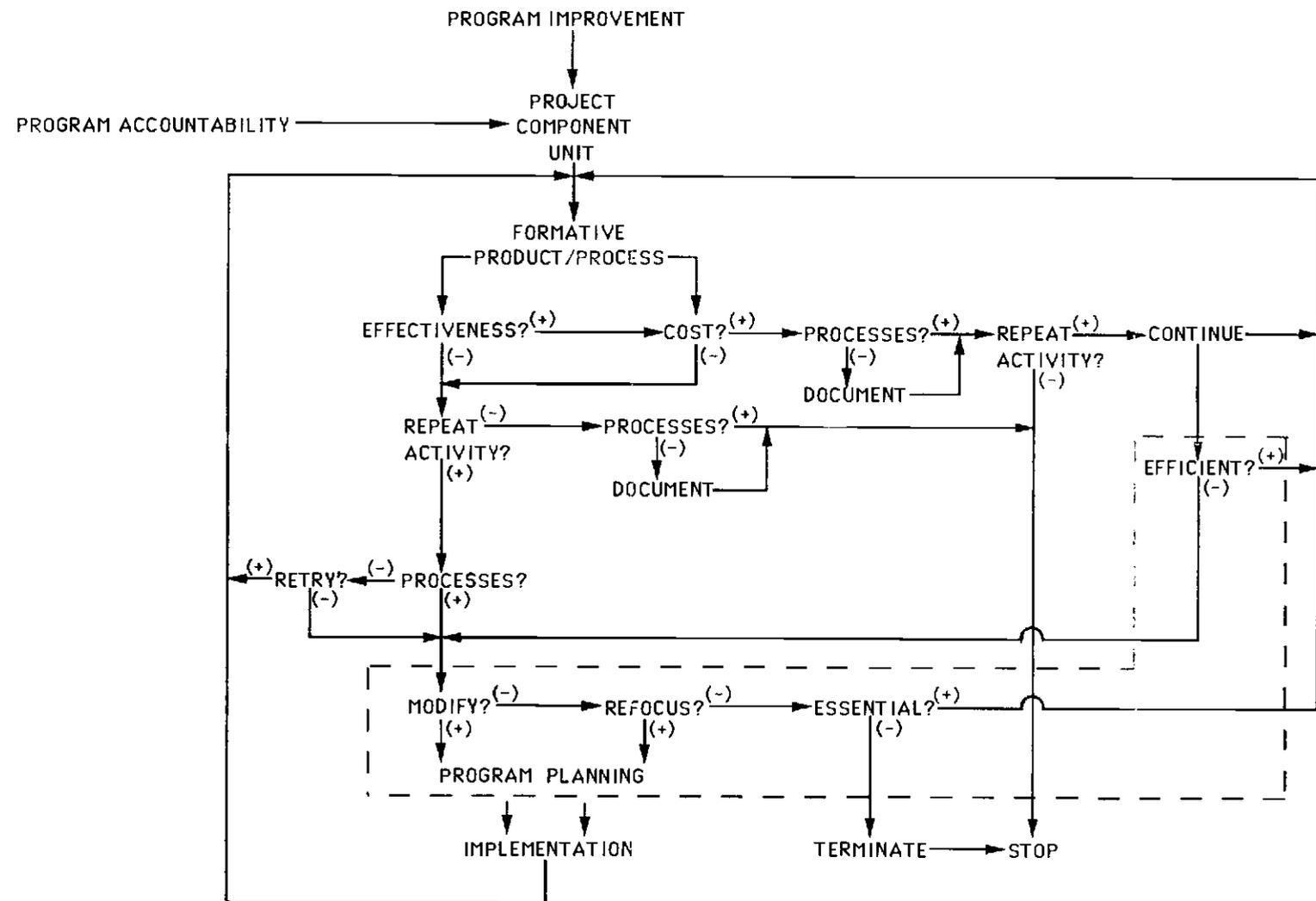
The program improvement process embodies only the formative evaluation role in conjunction with the functions of product evaluation and process evaluation. The evaluative purpose of program improvement is therefore oriented solely toward the program operator. The circumstances of this orientation would not change even if the particular program improvement evaluation was commissioned by the program funding agency. As an example, an interim external evaluation currently commissioned by USAID results in findings and recommendations on whether or not the particular program or specific project should be continued. These external evaluations generally address the question of effectiveness, cost, efficiency, and sustainability (USAID, 1987). The evaluative question of essentialness could be too sensitive a political issue

to be either posed or answered by contracted external evaluators, and as such is generally not considered. The external evaluators, operating with professional-judgement methodology, are functioning in the summative evaluative role. However, the external evaluators are also expected to provide information and recommendations on improving the program or project which is a formative evaluative role. Although reporting to the program funding agency, in this case USAID, the external evaluators are actually functioning for the program operator. Recommended changes to the scope of work or operating procedures can only be effected by the program operator although consent by the funding agency may be necessary if the recommendations embody contractual modifications. This discrepancy between evaluative roles and evaluation processes may result in the distortion of evaluative findings. The phenomenon of external evaluators posted at program or project sites who are unable to maintain their objectivity and therefore develop a significant blindness to the programmatic weaknesses of the particular training program or training project of which they are contracted to evaluate, is an inherent danger of the interim external evaluation process

(Scriven, 1983). This co-opting of evaluators can be exacerbated by evaluative methodology which is indiscriminate in its distinction between the tasking of evaluative roles and processes.

The program improvement process should cause evaluative questioning on program effectiveness and cost to again be pursued. However, the scope of the evaluative questions may be reduced in order to allow appropriate assessment of either the particular training project, training component or training unit (Figure 8). Assessment of the particular training activity for purposes of program improvement occurs after the respective training program is judged deficient through accountability evaluation in either area of effectiveness or acceptable cost and the training activity is judged essential. Program improvement evaluation could be conducted at either program mid-course or whenever the decision-makers of the program funding agency or program operator deems the action appropriate. In this regard, only specific deficiencies identified in either program effectiveness or acceptable program cost should be addressed. The evaluative inquiry should delineate the noted deficiency clearly; however, information on

Figure 8.  
Program Improvement Evaluation



ameliorating the deficiency is not within the scope of this particular inquiry. Such changes require the specific programmatic planning and structuring decision-alternatives of either program modification or program refocusing.

#### **Program Improvement Questions**

The evaluative questions posed during the program improvement evaluation would again examine program effectiveness and program cost. However, as previously indicated, though the questions may be similar they differ in terms of scope. In other words, whereas accountability questions are globally-oriented, the program improvement questions may range from project to unit specificity.

The concern for the improvement question of effectiveness would be directed toward matching actual program outputs against intended program outcomes. Criteria for measuring effectiveness are delineated from the same program inquiry characteristics of the proposed training system structure as those utilized for accountability evaluation. The trainee achievement component provides the necessary assessment information for introspection into the trainee-participants' actual acquisition of fisheries and community development

techniques, skills, and concepts against projected acquisition. Specifically, a criterion could be established for the relative percentage of trainee-participants' acquisition of fish processing and handling techniques (Martinson et al., 1983) or the percentage of trainee-participants successfully completing a boat-building course (GOF, 1980). A negative response leads to the posing of the effectiveness sub-question which asks for specifics of the identified discrepancy or problem. This negative response establishes the basis for inquiry by the question on practices and procedures. If, the training project, component or unit is deemed effective, the evaluative questioning sequence continues to the question posed on cost.

The evaluative question on cost considers the discrepancy between approved project, component or unit costs against expenditures (Sorenson & Suzuki, 1978; Kearsley, 1982). Criteria for measuring cost are delineated from the program process characteristics of the proposed training system structure. The management component, training instruction component, and support services component provide the relevant administrative and logistic cost information with regard to specific

expenditures. As an example, a criterion for determining cost could establish the acceptable level of specific project or component cost to the program operator, or socio-economic cost to the trainee-participants for their involvement within specific aspects of a training activity (Sorenson & Suzuki, 1978; Hunting et al., 1986). Additional criteria could be the specific expenditure level for operation of the training components or units (Stufflebeam, 1983) or whether specific levels of resources, space, and time being utilized were within the specified expenditure limits of the project, component or unit (Sorenson & Suzuki, 1978). An affirmative response to the cost question leads to the processes question. On the other hand, a negative response to the question, leads to the posing of the cost sub-question which asks for specifics of the identified problem or discrepancy. This negative response, indicating a cost discrepancy requiring training project, training component or training unit procedural change, leads to the posed evaluative question on practices and procedures.

The processes question concerns the discrepancy between planned processes and actual processes of areas previously addressed by the effectiveness and cost

questions. Though the processes question is the same for each area, the information being sought is not. For example, examination could be made of whether trainee-participants were provided with previously specified instruction (Hunting et al., 1986) or whether trainee-participants acquired the requisite fisheries skills prior to further technical training (Martinson et al., 1983). Information required to answer this aspect of the processes question is collected from the program inquiry instructional objectives component of the proposed training system structure. The processes question could also examine criteria which would be collected from the program process training instruction or support services components of the training system structure. For example, assessment could be made of whether the technical training activities programmed for a specific course were conducted according to the course schedule (Hunting et al., 1986) or whether marine mechanic logistical support was provided when it was necessary (Martinson et al., 1983). If actual processes do not agree with planned ones, relevant information pertaining to the actual program process should be documented. Improvement questioning continues with the posing of the repeat activity

evaluative question.

The repeat activity question is procedural and posed after positive responses to both the effectiveness and cost questions. This repeat question seeks to determine whether or not the training project, training component or training unit is to be conducted again during the particular training cycle. If the training activity is not to be repeated, further evaluative action by the program operator is therefore unnecessary (Stufflebeam, 1983). On the other hand, any training activity that is to be repeated should be evaluated according to its initial implementation plan.

The evaluative question on efficiency seeks to determine whether the programmatic response could be achieved with fewer associated costs (Kim et al., 1976). A criterion established for determining efficiency should note whether the cost of the training activity or training project could be lowered without influencing the training activity or training project effectiveness (Sorenson & Suzuki, 1978), or whether a particular benefit was worth the number of services and resources required (Hunting et al., 1986), or whether a reduction in instructional time would result in lowered costs for space, equipment, and materials (Sorenson &

Suzuki, 1978). A negative response ends the program improvement evaluation process and is an indication that the program operator has determined that a more efficient format for the training project, training component or training unit cannot be found. The training activity is then continued in its current format. A positive response, on the other hand, indicates the necessity for further programmatic improvement and leads to the program planning question on modification. The distinction or juncture between program evaluation and program planning occurs at this point. The program operator should determine whether or not further programmatic improvement through program planning is necessary to achieve efficiency.

The repeat activity question is again procedural and posed after negative response to either the effectiveness or cost questions. The repeat question seeks to determine whether or not the training project, training component or training unit is to be conducted again during the particular training cycle. If the training activity will not be repeated, further evaluative action by the program operator is therefore unnecessary (Stufflebeam, 1983).

The second processes question again concerns

those discrepancies between planned processes and actual processes of the areas previously addressed by the effectiveness and cost questions. Those discrepancies which are identified are documented and any further evaluative inquiry is ended.

The third question on processes is posed as a result of negative responses to either the cost question or the effectiveness question. The discrepancy should have been initially identified by the posing of either the cost or effectiveness sub-questions. This particular processes question concerns further identification of the specific discrepancy between the intended or planned practices or procedures of the training project, training component or training unit and the actual procedures or practices. The processes question seeks to determine whether the intended or planned practice or procedure were used. In other words, information is being sought to determine whether or not there was a deviation from the originally intended practices or procedures of the particular training activity. The decision to deviate from the intended practices or procedures is a program planning decision and should only be considered when the decision has been made to either modify or refocus

the training project, training component or training unit. If the program operator deviated from the planned practices or procedures of the training project, training component or training unit, the question to retry the particular training activity is posed. If there was no deviation from the original intended or planned training practice or procedure, further programmatic improvement is required. This response indicates that the particular discrepancy is sufficiently identified and will require either a procedural planning (modification) or a substantive planning (refocusing) programmatic change. Program evaluation would therefore end at this point and program planning would begin. The juncture between program evaluation and program planning occurs at this point.

The retry question provides for the originally intended or planned training activity, in its original format, to be implemented through the training project, training component or training unit. If the program operator determines that it would be beneficial to allow the activity to cycle through the training project, then the particular training activity would again take place. If the decision is made not to

implement the training activity as originally intended, then further programmatic improvement is required. Program evaluation would therefore end and program planning would begin.

When the program planning questions to either modify or refocus are posed the programmatic implications for the particular training project, training component or training unit should be fully comprehended by decision-makers of both the program funding agency and the program operator. The posing of the refocus or modify questions places the training project, training component or training unit directly within program planning. The planning question of determining whether or not to modify the training project, training component or training unit is further defined by the following questions:

- 1) Will the cost of a modified small-scale fisheries training activity be acceptable (Sorenson & Suzuki, 1978)?
- 2) If the costs for effecting the modifying changes are acceptable, could resources be made available to enable changes (Sorenson & Suzuki, 1978)?

The decision to modify either the training project,

training component or training unit will result in the transition of the program improvement evaluative process to the program planning process. This transition entails the application of the input evaluation function in conjunction with a structuring decision orientation (Stufflebeam, 1983). The decision not to modify either the project, component or unit leads to the posing of the principal evaluative question on refocusing.

The planning question for judging whether or not to refocus the particular training project, training component or training unit is defined by the following questions:

- 1) Can new goals and objectives be established to make the small-scale fisheries training activity effective?
- 2) Would the costs of establishing new goals and objectives for the small-scale fisheries training activity be acceptable, or would resources be available for allocation (Sorenson & Suzuki, 1978)?

An affirmative response for each of the questions will result in training activity refocusing, denoting substantive planning changes of the small-scale

fisheries training project, training component or training unit. This will cause the evaluative review and assessment activity to cease and the transition to context evaluation and substantive planning to be initiated (Stufflebeam, 1983). Any negative responses to the posed program planning questions on project, component or unit refocusing would result in action to terminate the particular training activity.

The decision to terminate the training project, training component or training unit, as a politically-oriented inquiry, should be determined by the responsible decision-makers of the program operator. However, the decision to judge whether or not to terminate could be within the contractual bounds of the program funding agency. Therefore the question posed to determine termination of the particular training project, training component or training unit actually judges the essentialness of the particular training activity in relation to the political reality of termination. A decision not to terminate, in other words, determination was made that the training activity is essential, ends the program improvement evaluative process. Further determination for action to take upon the training activity under question

should be considered. Therefore, either program accountability evaluation or program improvement evaluation should again be undertaken in order to resolve the assessment issue.

The improvement of the training project, training component or training unit should entail the procedural or substantive transition of the improvement evaluation process to the program planning evaluative process of either input evaluation and its structuring decision orientation or context evaluation with its planning decision orientation (Stufflebeam, 1983). The decision-makers of the program funding agency and the program operator should be cognizant of the apparent need for the transition for purposes of program improvement and program accountability, and acutely aware when the training project, training component, training unit or particular aspect of the training activity is within the parameters of either program improvement evaluation, program accountability evaluation or program planning evaluation. Therefore, entry into either program planning stage of modification or refocusing should provide the necessary format for enabling the appropriate training project, training component or training unit improvement changes

to be effected.

## Chapter IV

### SUMMARY, CONCLUSION AND RECOMMENDATIONS

Based on the projected annual world demand for fish as a human food, a severe strain has been placed upon the ability of the world's industrial and small-scale fishing industry to provide the estimated 110 million metric tons by the year 2000 (Ben-Yami & Anderson, 1985). As a result of this increasing demand, the fishing industries of the world, both traditional small-scale and industrial large-scale, have had to struggle with harvesting, processing, and marketing problems in their attempts to assist in feeding the increasing world population (FAO, 1985b, 1987a). The small-scale fishery sector, being labor-intensive, provides greater employment opportunities to small-scale fishermen in developing countries than the more technologically-advanced industrialized fishery sector (Thomson, 1980). In the coastal and inland communities of these developing countries, the small-scale fishermen have not been able to fully develop their productivity without infusions of international development assistance funding (FAO, 1987b). Their

geographical isolation and economic disadvantage has not only restricted access to markets (Martinson, 1981; Martinson et al., 1983) but has contributed to their vicious cycle of poverty (Thomson, 1979a).

The majority of training programs oriented toward development of the small-scale fisheries sector has had less success than similar development-oriented training programs in the areas of health, forestry, and agriculture (Thomson, 1979a; Ben-Yami, 1980; The World Bank, 1980). If the increased consumable foodfish needs of the world's expanding population are to be met, effective development criteria for training programs in small-scale fisheries must be instituted (Ben-Yami, 1980; Martinson, 1980, 1981; Ben-Yami and Anderson, 1985).

Attempts to initiate programs for training small-scale fishermen have been made in nearly every third world country with a substantial population of subsistence level fishermen and small-scale fishermen (von Brandt, 1979, 1980; FAO, 1980, 1981a). The documentation of these small-scale fisheries training projects have occurred so infrequently over the past three decades that now only former training staff and training participants have the ability to assess past

impact (Gerhardsen, 1977; The World Bank, 1980; ILO, 1981; FAO, 1987c). Furthermore, there is no indication that contemporary evaluative methodologies are contributing to improving training projects (FAO, 1973, 1981a; OECD, 1983). Though there have been successes, documentation of factors that contribute to programmatic effectiveness is lacking (Thomson, 1980; Ben-Yami & Anderson, 1985).

The need for more substantive assessment of training program effectiveness has been mandated by numerous international development agencies, host-country governments, and training program participants (USAID, 1980a, 1987; The World Bank, 1982; FAO, 1985b, 1987c). Adequate sources of funding from these bodies have a tendency to be restrictive towards programs which are "proven." In other words, if there is something to show for the money, a visible gain, continued support for the program is virtually ensured (Rondinelli, 1977).

Attempts to foster program effectiveness which are currently being initiated within the international and domestic development sectors provide diverse illustrations of contemporary evaluation methodology either under proposal or presently employed (Bennett,

1981a, 1981b; Kley, 1983; Casley & Lury, 1983; Hunting et al., 1986; Raab et al., 1987; USAID, 1987).

However, these various methodologies and approaches are not as comprehensive, objective, or substantive as are necessary for accountability and improvement of small-scale fisheries training programs or projects.

The primary purpose of this study was to propose a model for evaluating international short-term training programs in small-scale fisheries. The study focused on evaluation as a means for providing useful and relevant information to the program funding agency and the program operator decision-makers. This should result in more appropriate and cost-effective training programs being provided to the small-scale fisheries sector.

#### **Foundations of the Model**

Concepts proposed by Stufflebeam (1983) and Scriven (1967) provide a foundation for designing an evaluation model for international-oriented small-scale fisheries programs and projects. Stufflebeam's product evaluation is concerned with the extent to which objectives have been achieved. His process evaluation addresses the degree to which planned processes for achieving those objectives were actually employed.

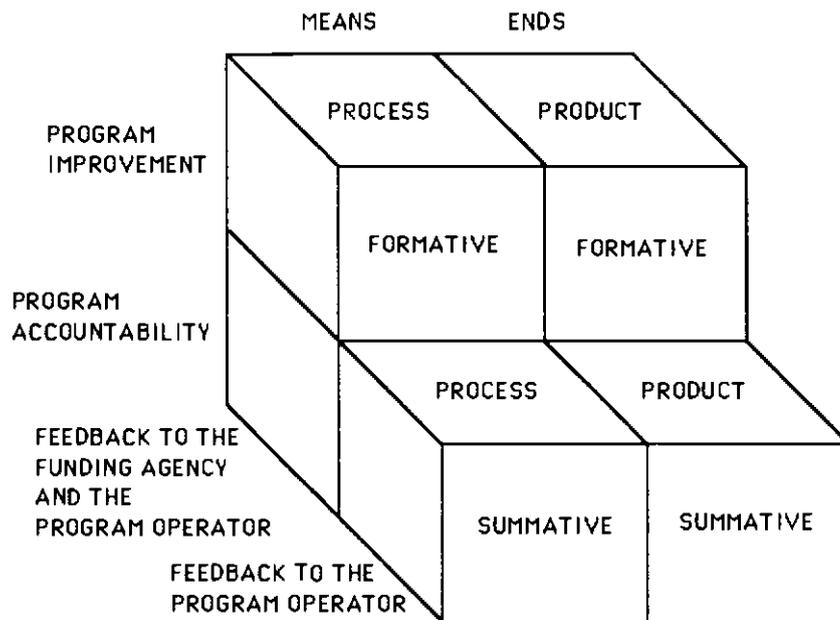
Scriven's formative evaluation would provide data for improving the program or project to the program operator. His summative evaluation focuses on the need of consumers, in this case, the program funding agency. Although Scriven intended the results of summative evaluations for users external to the program or project, program operators also need to be able to assess the extent to which they are fulfilling the contractual requirements of their programs and projects.

The evaluative concepts form four distinct evaluative functions for small-scale fisheries training programs and projects: 1) process-formative evaluation, 2) product-formative evaluation, 3) process-summative evaluation, and 4) product-summative evaluation. The programmatic association of these functions with the two initial users of evaluative findings in small-scale fisheries programs and projects, program funding agencies and program operators, results in the six components shown in Figure 9.

The two cells which are apparently missing from the matrix would be concerned with program improvement by the program funding agency. These are functions which should be the sole responsibility of the program

Figure 9.

**The Decision-Alternative Evaluation Model:  
A Programmatic Structure**



operator. External evaluators have been traditionally expected to conduct formative evaluations in addition to summative evaluations by program funding agencies in the international small-scale fisheries sector. Interim or mid-course external evaluations currently commissioned by USAID (1987) result in findings and recommendations on whether or not the particular program or project should be continued. These external evaluations generally address the questions of effectiveness, cost, efficiency, and sustainability (USAID, 1987). The evaluators for these external evaluations, operating with a professional-judgment evaluative methodology (Worthen & Sanders, 1973; Floden, 1983), are functioning in the summative evaluation role. However, these same external evaluators are also expected to provide information and recommendations on improving the program or project, which is a formative evaluation role. Although reporting to the funding agency, in this case USAID, these external evaluators are actually functioning for the program operator. This discrepancy between evaluation roles and evaluation processes may result in the distortion of evaluative findings through co-opting of the external evaluators. The co-opting of external

evaluators is an inherent weakness of the interim external evaluation process (Scriven, 1983). As such, this co-opting can be further exacerbated by evaluative methodology which is indiscriminate in its distinction between the tasking of evaluative roles and processes.

These evaluative concepts are applied to training programs or projects. A synthesis of the occupational training models and the small-scale fisheries training programs such as: Suzuki et al., 1975; GOWS & UNDP, 1978; Sorenson & Suzuki, 1978; DAP, 1980; Wentling, 1980; GOF, 1981; Martinson et al., 1983; and Hunting et al., 1986 suggests components structured in a particular order with each involving distinct resources. The components are arranged into two distinct groupings. Those aspects pertaining to program participants and clientele are one grouping, and those pertaining to the organization, operation, and direction of the training program or project are the second grouping (Sorenson & Suzuki, 1978). The proposed training system structure included the following components: 1) desired trainee capabilities, 2) current trainee capabilities, 3) trainee achievement, 4) instructional objectives, 5) training instruction, 6) management, 7) support services, and

8) program environment.

The desired trainee capabilities component establishes the standards of employability and the level of competency necessary for assuming positions within the labor force (Sorenson & Suzuki, 1978; Hunting et al., 1986). Current trainee capabilities defines the capabilities of clients in the targeted population from which trainees are accessed (Sorenson & Suzuki, 1978). Data on the achievement of objectives or the intended outcomes is collected from the trainee achievement component (Sorenson & Suzuki, 1978). The instructional objectives component is composed of the goals and objectives to be met by the trainee-participants necessary to achieve the program goals (Sorenson & Suzuki, 1978). The skills, knowledge, and concepts necessary for acquisition of competence by the trainee-participants is provided by the training instruction component (Sorenson & Suzuki, 1978). Management entails the specific responsibilities to ensure that trainee-participants are directed through the training program at acceptable expenditure levels (Sorenson & Suzuki, 1978). Logistical functions of the support services component are inclusive of such element as food services, mechanical services, and fish

processing assistance (Sorenson & Suzuki, 1978).

Finally, the program environment component is comprised of cross-cultural, socio-political (Suzuki et al., 1975; Sorenson & Suzuki, 1978) and socio-economic elements oriented toward an international scope.

#### **The Decision-Alternative Evaluation model**

Evaluation of small-scale fisheries programs and projects should provide data for both program accountability by program funding agencies program operators and program improvement by program operators. These same findings should also be useful to proposers of new programs and projects in small-scale fisheries.

The proposed decision-alternative evaluation model (Figure 10) is composed of two major parts. One addresses program accountability and the other program improvement. The program accountability component could be conducted at either program conclusion or anytime during the cycle of the ongoing training program, project or component. For example, the program funding agency could decide to conduct a mid-course or interim accountability evaluation on a particular small-scale fisheries training project. All relevant descriptive information on the current training project implementation and attainments would



be provided to the program funding agency evaluator by the program operator. During the same period of time the funding agency evaluation is occurring, the program operator determines that an interim accountability evaluation is warranted in order to assess a specific training activity or component of the small-scale fisheries training project. The same descriptive information being provided to the program funding agency for judgemental purposes could be used by the program operator, though the information would be specific to the particular training activity or component being assessed.

The program improvement component should be conducted during every training activity regardless of its magnitude. The results of these formative product and process evaluations are provided only to the program operator for making decisions affecting the improvement of the training project, training component or training unit.

Program accountability and program improvement processes consist of a series of decisions and procedural steps. As can be seen in Figure 10, most of the decisions and steps are found in more than one place in the model. The questions posed or concerns

addressed are similar regardless of the series in which they appear; however, the scope of the questions may differ when concern is on program accountability than on program improvement. As an example, program accountability is concerned with training programs, projects and components, whereas program improvement addresses training projects, components and units.

Effectiveness. The questions on effectiveness are concerned with the extent to which actual production of the program, project, component or unit satisfy the objectives and goals specified for them. As an example, a criterion could address the extent to which trainees are able to use hand tools in wooden boat maintenance (GOF, 1981) in relationship of the competency specified in the program plan or proposal. Other effectiveness criteria may be concerned with the extent to which trainee-participants are recruited from target populations or the number and quality of boats which are operational during a predetermined period of time.

Cost. The question of cost addresses discrepancies between approved cost and actual expenditures. If a boat-building course (GOF, 1981) is being evaluated, the program operator may check whether

levels of resources, space, and time were being adequately utilized against the specified expenditure limits of the program (Sorenson & Suzuki, 1978).

Essential. The essentiality question is concerned with the political reality of the particular training project or training program. The decision to terminate a training activity could prove to be politically unsound within the context of either greater national political policy or strategy. The programmatic concern of whether or not the training project or a specific training activity is essential should be considered to be socio-politically-oriented. As such, decision-making on the essentiality question should be both posed and responded to solely by decision-makers of the program funding agency.

Efficiency. The question on efficiency would seek to determine whether the programmatic response could be achieved with fewer associated costs (Kim et al., 1976). For example, the program operator may want to determine whether the cost of the boat building course could be sufficiently lowered without adversely influencing effectiveness. In other words, could the course continue to be effective if the trainee-participants were provided with less instructional time

or fewer instructors or lowered course pre-requisites. If the program operator determines that a more efficient format for the course cannot be found, the course is continued in it's current format.

Repeat Activity. The posing of the repeat question again considers whether the particular training activity is to be repeated within the current training cycle. For example, if the boat-building course (GOF, 1981) will not be repeated within the training cycle, further evaluative inquiry on this particular component will end.

Processes. Information collected for the processes question is sought to determine if actual processes that were employed deviated from the planned practice or procedure of the training activity. Examples of deviations are the use of manufactured plywood for the building of small-scale fishing boats when wood planks or fiberglass is required (GOF, 1981) or substitution of a technically-qualified instructor by one less qualified or the deletion of skill objectives from a required course. Deviation from intended or planned practices or procedures raises questions about whether or not the component would have been effective or operated within acceptable costs if

conducted as originally planned.

Documentation. Any discrepancy between planned and actual outcomes/outputs for processes should be documented. This information along with the approved scope of work can be used by program planners proposing similar training programs or projects.

Retry. If the training project, component or unit is ineffective or too costly and actual processes used to achieve selected goals or objectives deviated from those that were specified in the program plan, scope of work or proposal, questions on whether or not the planned activities would have resulted in the desired outcomes/outputs or cost should be posed. If the planned procedures are plausible means for achieving goals then they should be attempted as originally intended during the next training cycle.

Program Planning. The program planning questions of either modification or refocusing should be posed when the evaluative questions of effectiveness or cost identified either substantive or procedural deficiencies in the training activity under consideration. The decision to modify the particular training project, training component or training unit results in the transition of program evaluation to

program planning. Program planning originating from the decision to modify embodies context evaluation and the subsequent decision-orientation of planning (Stufflebeam, 1983). In contrast, the decision to refocus the project, component or unit results in the same transition of program evaluation to program planning. Refocusing embodies input evaluation and a structural decision-orientation (Stufflebeam, 1983). Entry into either program planning stage provides the necessary format for enabling required training activity changes to be effected. The decision-makers of the program funding agency and the program operator should be cognizant of the need for structural transition for program improvement and acutely aware when the training program, training project or training component is within the parameters of either evaluative assessment or evaluative planning.

#### **RECOMMENDATIONS**

In order for the proposed decision-alternative evaluation model to be implemented so that it may provide useful information to decision-makers of internationally-oriented program funding agencies and their training program operators, it is necessary that the decision-makers be made fully aware of the general

lack of distinction between program evaluation and program planning within contemporary evaluation models. This obvious lack of distinction has resulted in current evaluative methodologies being ill-suited for use within program evaluations being conducted upon small-scale fisheries training programs in the international development sector.

Further research into the efficacy of the program environment and its effects upon technical training programs within the international sector is necessary. The environmental socio-economic, socio-political and cross-cultural elements of international-oriented small-scale fisheries training programs and similar technical training programs and development activities warrant application within the overall training program and specific training project proposals being developed for immediate and future use. In particular, the socio-political aspects of a small-scale fisheries training project or any technical development activity within the international sector warrants increased awareness and cognizance on the part of both decision-makers of the program funding agencies and their program operators. This leads not only to more effective evaluations but also more cost-effective and

appropriate international short-term training programs in small-scale fisheries.

Installation of the proposed decision-alternative evaluation model within the international assistance agencies and organizations program evaluation strategies and specific training project guidelines is recommended. The application of this evaluation model toward short-term small-scale fisheries training projects and similar technically-oriented training programs, projects and development activities in the international sector should further enhance the programs, projects, and the individual trainee-participants.

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