

EXECUTIVE SUMMARY

DRAFT Outcome-based Monitoring & Evaluation Framework NOAA Education

Document Revised September 9th, 2009

“[A]s part of the quality standards for NOAA Education, the agency is committed to advancing evaluation practices to improve the results of its efforts and to contribute to the body of knowledge regarding effective environmental and science education. Building the evaluation capacity of NOAA educators and developing a coordinated system to capture and share these findings are key elements in achieving this outcome.

2009-2029 NOAA Education Strategic Plan

Executive Summary

NOAA's Education Council has embarked on an ambitious monitoring and evaluation (M&E) project that will allow it to assess education program outcomes and impacts across Goals, Line Offices and programs. The purpose of this effort is to link outcome measures to program efforts and to evaluate the success of the agency in meeting the **strategic vision** (as outlined in the 2009-2029 NOAA Education Strategic Plan) and the **strategic directions** outlined in the NOAA 5-Year Education Implementation Plan.

This document provides the NOAA Education Council with a proposed NOAA-wide Outcome-based Monitoring and Evaluation Framework for its education programs. The primary **need** for this document is internal. NOAA Education Program Directors, Coordinators, Specialists and grantees, need a guiding document that delineates the expectations and guiding mandates for a corporate level monitoring and evaluation framework.

The **vision** in designing, refining and implementing this M&E framework is to:

- Create a cultural norm within the agency where evaluation is an integral part of program management;
- Provide a comprehensive framework for education that positions education as a whole, as well as each individual education program, on strong footing to be successful in an external review processes, such as Program Assessment Rating Tool (PART);
- Create a system that can provide agency-wide reporting capability for data calls to document how Federal dollars are invested and where Federal investment in education is being spent (number and type of audiences, people, products, grants, programs, services), philosophical groupings, audiences); and,
- Encourage scientifically "rigorous" evaluation, at the corporate and program level, in order to advance evidence-based policies and practices that demonstrate successful goal attainment and program outcomes.

Adoption of this M&E Framework will not replace the need for each line office and program to continue to implement their own evaluation processes to meet individual programmatic mandates and requirements. With this understanding, it should be noted that data required from the different NOAA education programs should fulfill the corporate level objectives (as stated in the NOAA Education Strategic Plan) as well as serve the needs of the individual programs. This framework, therefore, addresses not only what will be done at the corporate level, but also how it will work to coordinate, support and advance evaluation at all levels within NOAA education.

The design and implementation of this Outcome-based M&E Framework has been divided into three stages. Stage I is the development of a draft conceptual framework for the evaluation. Stage I will be completed upon approval from the NOAA Education Council and prioritization of the evaluation strategies proposed in this document (tentatively October 2009). Stage II will entail the identification of resources needed and the execution of an initial contract with an evaluation expert to advance this framework. The contract will include a specific task list and proposed schedule for completion. Stage III will entail the development of a full implementation plan, including data collection and analysis, for reporting on program evaluation outcomes to the larger NOAA education community.

THE OUTCOME-BASED MONITORING & EVALUATION FRAMEWORK

This M&E framework uses an outcome-based evaluation approach. Through this approach NOAA education programs will move from a more traditional input–output focused M&E, a design which is more quantitatively driven, to one where the focus and analysis is on *outcomes* and *impacts* that better reflect longer term societal goals.

To achieve the vision stated in this M&E Framework, the NOAA education community will employ a variety of **strategies** over the coming years. These strategies will be directed at all members of the Education Council, the Office of Education, and other NOAA staff working on education related activities. The strategies of the Outcome-based M&E Framework fall into six broad categories:

1. Characterize NOAA’s education portfolio;
2. Institute an outcome-based performance monitoring system;
3. Conduct and disseminate programmatic- and corporate-level evaluations;
4. Engage in methodology development and tools for evaluation;
5. Training in evaluation evaluative thinking;
6. Develop strategic partnerships to support M&E strategies and leverage funds.

Strategy 1. Characterize NOAA’s Education Portfolio

NOAA’s Education Evaluation Workgroup proposes to employ two tools to assist us in better characterizing NOAA’s overall education portfolio and competencies in program evaluation, the readiness assessment tool and the portfolio analysis tool. The “**readiness assessment**” tool is a diagnostic tool that will help determine where a given NOAA education program stands in incorporating evaluation and *evaluative thinking* in their program design and implementation. The “self-assessment tool”, originally developed by the NOAA Education Evaluation Workgroup will be refined to determine whether education programs (1) Meet a minimum series of prerequisites recommended for incorporating evaluation in their program design and implementation; (2) Can demonstrate increased competency in measuring outcomes; and (3) Can show that they have a system in place to collect and report performance indicators, as will be required by this NOAA education outcome-based M&E framework. The “**portfolio analysis**” proposed here refines an earlier version of what the Education Council termed the “NOAA Matrix”, which was the Council’s first attempt to collect program-level data across the entire agency. This portfolio analysis will also be revised to evaluate quality and consistency of data in current data call; improve data consistency and target focus questions; and include a guidance document that outlines the frequency of data collection, among other things. Most importantly, revisions will be made to ensure that the completion of this tool not be a burdensome task for those that have to collect and submit the data. Revisions to both these tools will be done incorporating feedback from the NOAA Education Council members.

Strategy 2. Institute an Outcome-based Performance Monitoring System

The 2009-2029 NOAA Education Strategic Plan identifies two goals with nine corresponding outcome oriented statements. To design an outcome-based performance monitoring system the NOAA Education Council will need to: (1) Disaggregate these **outcomes** into subcomponents that allow us to capture only one improvement area in each outcome statement; (2) Select key **performance indicators** to monitor outcomes; (3) Set **baseline** information on each of the performance indicators for each outcome; and, (4) Establish **targets** — what can be achieved in a specific time toward reaching the outcome. The completed matrix of outcomes, indicators, baselines, and targets will comprise the performance component of the overall M&E framework. The next step in designing an outcome-based performance monitoring system, after indicators have been selected and baseline data has been established, is to define the **data collection instruments** required to

record the information appropriately. As part of this step, it will be important to define what procedures to use (surveys versus interviews, for example); and how often to access the data sources, and so forth. *This component is resource intensive and will require technical assistance from an expert in the subject.*

Strategy 3. Conduct and disseminate programmatic- and corporate-level evaluations

This framework does not advocate for the implementation of a specific type of evaluation, but it does identify three types of evaluations that could be instituted as part of a corporate level evaluation; it suggests that key research questions be defined *prior* to making any decision on the type of evaluation used; and recommends that efforts be made to define what NOAA education programs mean by “rigorous evaluation”.

Thematic type studies could be used to focus on cross-cutting agency education themes to (a) reveal innovative practices; (b) assess changes within and across programs (c) capture learning at the corporate level and (d) describe anecdotal information. These studies could be conducted internally by an Expert Panel Review or through university contracts.

Periodic peer reviews at NOAA have been suggested on selected programs that possess similar outcomes & objectives. Such reviews could include detailed analysis of information provided through the NOAA portfolio analysis, program documents, performance reports, and site visits. Education Council members would volunteer to participate in a review and share this role with a team of external evaluation experts.

The M&E Framework would be greatly strengthened by **longitudinal assessments** that study long term effects that help us better figure out the overall impact of NOAA science education programs on environmental and science literacy on and specific target audiences. Longitudinal evaluations require external expertise, as the development of tools, instruments, timetables, and metrics are typically complex and rigorous. It is proposed that funding should be sought to support this approach.

Strategy 4. Engage in methodology development and tools for evaluation

A formal database system will need to be established so that data are reported, collected, stored, retrieved and analyzed in an easy way. NOAA Education must invest early in this effort to ensure the process runs efficiently. The data collected will be much more dependable and useful if, at the beginning, the database is designed to collect data at every program component level in which data are produced, and all the necessary data is collected in the right time frame and format. A good database can serve an important function by providing users with quick and easy ways to access and display the data for their own reporting needs and analysis.

Strategy 5. Training in evaluation and evaluative thinking.

The NOAA Education community aims to infuse **rigor** and **validity** in its approach to evaluation and build a **culture of evaluative thinking** for NOAA education programs. This moves the view of evaluation from the study of projects and programs to evaluation as an analytical way of thinking that infuses and informs everything we do. We define *evaluative thinking* as “being clear and specific about what results are being sought and what means are used to achieve them.” It assures the systematic use of evidence to guide and/or report on progress and achievements so that information is used in decision making. Program evaluation training will be a key component to advance this evaluative thinking in all NOAA education programs. Training will need to happen at various levels within NOAA; in particular, Education Council members and field office staff will

need continuous support and training on all elements designed for the implementation of the monitoring and evaluation systems. Specific training will need to be designed for key staff responsible for coordinating and collecting data on behalf of a Line Office or program.

It will also be important to cultivate and sustain evaluation expertise in the regions. Key people across education programs will need to be identified that might be interested and willing to take the lead in a region. A core group of trainers could also be formed through “train-the-trainer” sessions and Webinars, when appropriate. The overall intent of this approach is to generate support structures on evaluation across programs and within regions. Development of these regional areas of expertise could have great benefit in ensuring consistent use of the M&E implementation plan.

Strategy 6. Develop Strategic Partnerships to Support M&E Strategies and Leverage Funds

The full design and implementation of M&E Framework will require the advice, support and contributions from internal NOAA and external partners, with evaluation expertise. Over the next five years, key partners will be identified and brought on board to assist with different components in this M&E framework. Partnerships with evaluation associations will be sought, as well as collaboration with relevant Universities. Additional relationships with local area universities should also be considered as opportunities to seek professional development training to field staff.

It is important to note that NOAA internal partnerships can be built to leverage additional resources to support this framework; however it is not the ideal mechanism to sustain a comprehensive M&E framework. Some modest activities may be undertaken, but this approach might not build the expertise that is desired by programs in the field that seek to and avoid being overtaxed with sophisticated evaluation tools and requirements.

DISSEMINATING AND UTILIZING EVALUATION RESULTS

Using findings to improve the NOAA education programs’ performance and accountability is an objective of the M&E Framework. It is this important to ensure that this information be accessible to all potential users and be provided in a timely fashion. The development of an intranet site can be a useful method for the NOAA education community to share its findings, and the production of a series of reports can help disseminate those results.

OPTIONS FOR MOVING FORWARD IN THE IMPLEMENTATION OF THIS M&E FRAMEWORK

This section outlines a series of options Education Council members have to advance the implementation of this M&E Framework. It was the task of the Evaluation Workgroup to prepare a discussion document that outlined the overall vision and specific components that make-up this M&E Framework.

The Evaluation Workgroup recognizes that to implement this whole M&E Framework the NOAA education community would need to have resources provided at all different levels of engagement, from the Office of Education to individual programs. If education programs decide that the implementation of this M&E framework ought to be a priority, then it will be extremely important to define a funding mechanism to advance immediate tasks. One of the options the NOAA Education Council currently has available is the Planning, Programming, Budgeting, and Execution System (PPBES) process. Even if the NOAA Education

community was successful in this process, funds would not become available until 2013. In order to move forward within the next five years, NOAA education programs will need to become creative and partner with different Line Offices to pool some resources and request formal support from the Office of Education (OED). This latter strategy makes an informed assumption that this OED office could better leverage resources on behalf of the Education Council and through PPBES. However, it is not clear that OED will be successful in meeting this objective, as there are many factors that can impede goal attainment.

There are three options listed in the table below:

- ▶ **Option 1 - Minimal Level of Evaluation with No Additional Funds:** This option assumes that there would be no additional funds designated to advance the strategies identified in this M&E framework. It also assumes that evaluation efforts at the programmatic level continue, but with minimal coordination between programs. Also, there would be no standardized process for collecting data.
- ▶ **Option 2 - Limited Level of Evaluation with a Reduced Level of Funding:** This option assumes that different Line Offices will work together to pool some resources and request formal support from the Office of Education (OED). Assuming OED could better leverage resources, the top priority would be issue a contract an evaluation expert to help us improve the revisions of the readiness assessment tool and portfolio tool analysis tool. In addition, this expert would play a leading role in guiding the Education Council in developing the outcome-based performance monitoring system outlined under Strategy 2, from the M&E Framework. In addition, this option assumes that some members from the Evaluation Workgroup, as well as from the rest of the Education Council, might dedicate some of their time to working with the evaluation expert to accomplish some of these tasks.
- ▶ **Option3 - Adequate Level of Evaluation with a Plus Up in Funding:** This option assumes that there would be an adequate level of funding to move most of the tasks outlined in the strategies of the M&E Framework.

Please find all the details on these options in the document that contains the full description of this outcome-based monitoring & evaluation framework.