

Measuring Environmental Results: Outputs and Outcomes

Beginning in early 2005, EPA has required that all grant recipients document outputs and "to the extent practicable" outcomes. Outputs and outcomes differ both in their nature, and in how they are measured.

Applicants for EPA grants are now required to submit a plan for tracking and measuring progress towards achieving the expected **outputs** and **outcomes** identified their workplans or proposals.

1. OUTPUTS: Outputs are the activities or deliverables that are to be accomplished as a result of a grant. Outputs are generally described as deliverables or milestones in a workplan or timeline. EPA project officers track the completion of outputs to monitor the progress of a grant. Outputs include things like number of workshops held, number of volunteers trained, field work completed, study completed, watershed management plan completed, etc.

2. OUTCOMES: Outcomes are the measurable impacts or results of the work of the grant. While outputs are accomplished during the life of the grant, outcomes generally occur after the completion of the grant. It is useful to categorize outcomes as short, medium, and long-term. Measuring environmental outcomes can be challenging, especially for small grants.

Medium and long-term outcomes can be costly, especially if monitoring, sampling and analysis are involved. In addition, it can take many years for the long-term impact of a grant to have a measurable effect on the environment. For small grants, we tend to focus on short and medium-term outcomes, but we want to see the grant in the context of long term goals and objectives.

- **Short-term outcomes** may include things like: increased knowledge, active stewardship program.

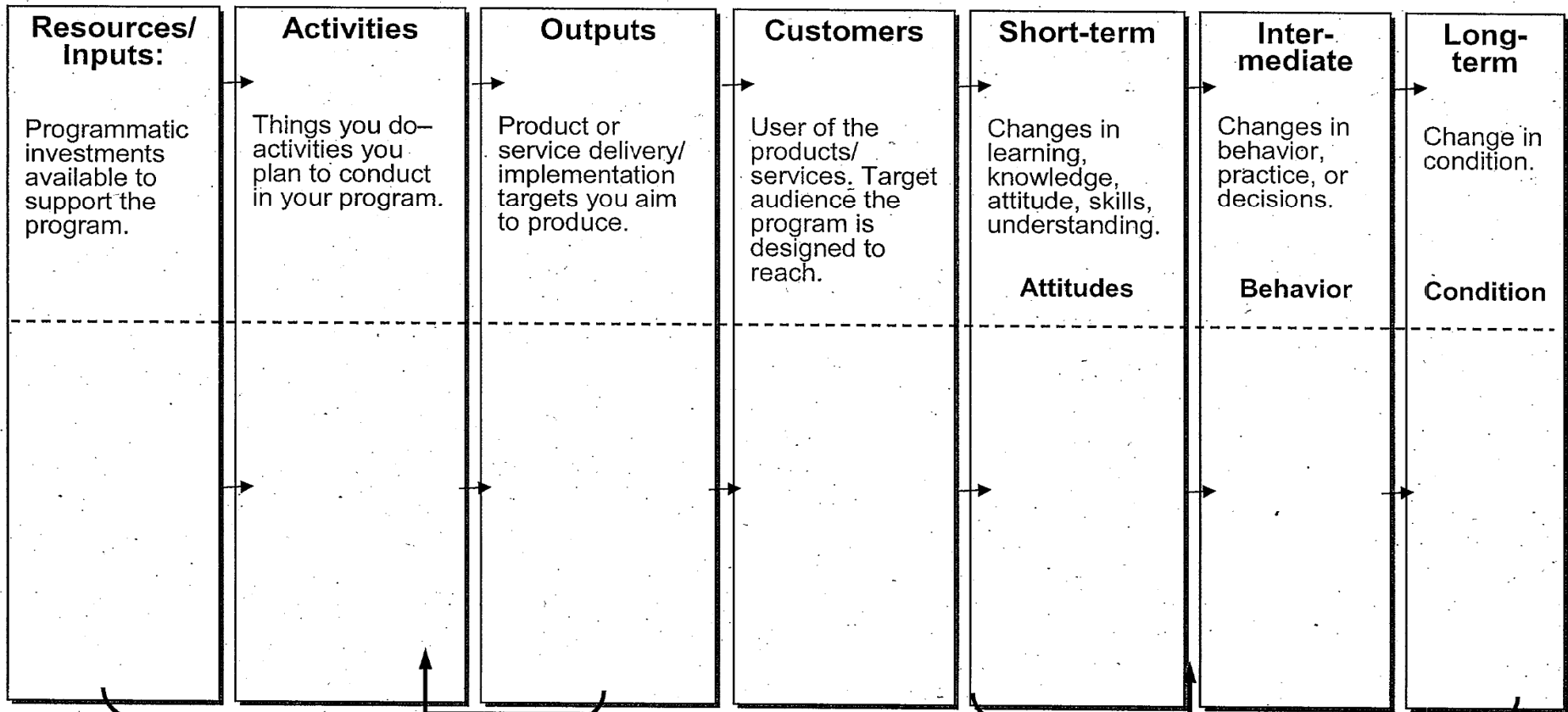
- **Medium-term outcomes** might include: documented widespread adoption of best management practices, documented reduction of pesticide use (3 of pounds of pesticides per acre no longer being used on 2000 acres).

- **Long-term outcomes** might include: documented reduction of nutrients in lake, documented reduction in # of children with asthma, documented improvement of indoor air quality, meeting water quality standards.

Logic Model

HOW? → WHY?

OUTCOMES



PROGRAM

RESULTS FROM PROGRAM

External Influences

Factors outside of your control that may influence outcomes or impacts of your program/project.

Diesel Emissions Reduction Demonstration Project

Assumptions:

- 1) Ports use specialized diesel equipment for which emission reduction strategies could be developed.
- 2) Diesel emissions at port facilities can be substantially reduced using proper technologies and practices.
- 3) A demonstration project can identify the most cost effective mix of procedures for reducing diesel emissions.
- 4) Other ports are more likely to adopt diesel emission strategies if they can be demonstrated to be cost effective and result in substantial reductions.

| INPUTS | OUTPUTS | | | OUTCOMES | | |
|---|--|--|--|---|---|--|
| | ACTIVITIES | OUTPUTS | PARTICIPANTS | SHORT TERM | MEDIUM TERM | LONG TERM |
| EPA Grant \$\$ Matching Funds In-Kind Contributions | Select representative cross section of on-site diesel vehicles for demonstration project Institute best management practices including reduced idling, cleaner fuels, and retrofits. Model emissions reductions and track cost associated with each of the practices for each category of vehicle. | A suite of cost effective best management practices is identified. A Best Management Practices Implementation Plan is developed for Port PowerPoint presentation prepared for use in presentations to Internal Port and Outreach Targets | Internal Port Targets: Port management & employees, Port customers (shippers), vehicle operators, etc. External Targets: National and Regional Port Conferences | Internal to Port: Implementation plan and timeline is put in place for the port. (Plan is in place by June 2006) Modeled estimates of particulate reduction for demonstration project. (expressed in pounds) External: BMP's & Implementation plan shared with other port facilities. | Internal to Port: Implementation Plan is 50% implemented by 2008. (reductions expressed as reduction in pounds per year in 2010. Baseline = pounds per year for 2006.) Cost savings expressed in \$\$ per year as of 2008 using 2006 dollars. Plan is modified to reflect lessons learned & information gathered from other ports. External: Dialogue and information sharing with other ports continues | Internal to Port: BMP Implementation Plan fully implemented by 2010. (reductions expressed in pounds per year) Cost savings expressed in \$\$ per year as of 2010 using 2006 dollars Desired External Outcome: BMPs are widely adopted by other ports. |

End of Demonstration Grant Period

The information contained in this document came from the EPA website. For more information regarding logic models visit:
<http://yosemite.epa.gov/R10/ECOCOMM.NSF/webpage/measuring%20environmental%20results>