

STANDARD SECTOR INDICATOR CODE: ENV-009	Teachers Creating New Environmental Education Materials: Number of teachers, out of the total number of teachers the Volunteer/partner worked with, who created or improved one or more environmentally-themed teaching materials. (ENV-009)	
ENVIRONMENT SECTOR	Sector Schematic Alignment <ul style="list-style-type: none"> • Project Area: Environmental Education and Awareness • Project Activity Area/Training Package: Youth Environmental Education 	
Type: Outcome	Unit of Measure: Teacher	Disaggregation: Sex: Male, Female
<p>Definitions:</p> <p>Examples of teaching materials include, but are not limited to: Curricula, lesson plans, illustrations, posters, science specimens and equipment, exhibits, photographs, games and puzzles, interpretive trails, brochures, reference materials, teacher guides</p> <p>Lesson – what a teacher would present to teach one particular topic in the course, e.g. how bees pollinate flowers</p> <p>Curriculum – a description of the topics to be taught in a course, school, or program of study (e.g. the curriculum of the 7th grade science course; the curriculum of the middle school; the science curriculum offered by the school)</p> <p>Partner/s—refers to the local counterpart who is co-facilitating activities to develop more environmentally-themed teaching material with the Volunteer</p> <p>Examples of environmental themes include, but are not limited to:</p> <ul style="list-style-type: none"> • Significant environmental issues • Ecological concept • Natural history concepts • Appreciation of the natural heritage of a country or community <p><i>Significant Environmental Issues include, but are not limited to:</i></p> <ul style="list-style-type: none"> -- Global climate change and its effect on the country, -- Biodiversity loss, -- Deforestation, -- Soil erosion and depletion, -- Water pollution and shortages, -- Air pollution, -- Misuse of pesticides, 		

- Environmentally-damaging and unsanitary management of solid waste,
- Unsustainable harvesting of plants and animals,
- Disruption of significant ecological processes and services,
- Deterioration of parks and nature reserves.

An environmental issue can also be considered significant if it is so identified:

- In a country environmental management plan
- By a reputable and knowledgeable NGO
- By the Peace Corps country staff
- By the community where the Volunteer is working

Ecological Concepts include, but are not limited to:

-- Nutrient cycles – natural processes in which elements are continuously cycled in various forms between different compartments of the environment (e.g., air, water, soil, organisms). Examples include the carbon, nitrogen and phosphorus cycles (nutrient cycles) and the water cycle.

Source: <http://www.greenfacts.org/glossary/def/environmental-cycles.htm>

-- Symbiosis – literally means "together life". It refers to organisms affecting one another. One organism may benefit while the other one is harmed (parasitism); one organism may benefit while the other one is not affected (commensalism), and both organisms may benefit from the association (mutualism).

Source: <http://www.marietta.edu/~biol/biomes/symbiosis.htm>

-- Carrying Capacity – refers to the number of individuals who can be supported in a given area within natural resource limits, and without degrading the natural social, cultural and economic environment for present and future generations.

Source: <http://www.carryingcapacity.org/>

-- Plant succession – orderly process of one plant community gradually or rapidly replacing another.

Source: <http://www.bethelcollege.edu/users/berkebj/Marian/plant%20succession%20lecture.pdf>

-- Photosynthesis – a chemical process carried on by green plants through which plants capture light energy by constructing glucose molecules, releasing oxygen as a by-product.

Source: <http://stats.oecd.org/glossary/detail.asp?ID=2060>

-- Food Web – Complex network of many interconnected food chains and feeding relationships.

-- Food Chain – Series of organisms, each eating or decomposing the preceding one. A simple example of a food chain is one in which a red-tailed hawk eats an eastern phoebe, which has eaten a great number of insects that lived in streams, which have all eaten stream algae.

Source: http://toxics.usgs.gov/definitions/food_web.html

-- Soil formation – the development of soil through the weathering of parent material, such as rocks and minerals and the decomposition of organic matter. Factors involved in soil formation are; parent material, climate, organisms, topography, and time

Source: <http://www.agronomy.lsu.edu/courses/agro2051/chapter2.pdf>

-- Energy Flow through Ecosystems

-- Pollination – transfer of a pollen grain from the anthers (male part of flower) to the stigma (female part of flower). The sticky surface of the stigma catches the pollen grain where the pollen grain germinates and produces a tube that grows down style and unites with the female cell in the ovary. Water, wind, insects, or other animals can assist in the transfer of pollen

Source: <http://extension.missouri.edu/p/G6001>

-- Seed Dispersal – the movement of a seed away from its parent plant, so both the seed and the parent plant can grow in an area with adequate water, light, nutrients, and other basic biological requirements. Seed can be dispersed by wind, water, animals, etc.

Source: <http://calscomm.cals.cornell.edu/naturalist/Naturalist-Outreach-Seed-dispersal.pdf>

-- Predator/Prey Adaptations/Defenses/Relationships

Natural History Concepts include, but are not limited to: Identification of plant and animal species and their sign, habitat and food requirements, nesting and reproductive behavior, distribution, conservation status, and usefulness to people

Appreciation of the natural heritage of a country or community includes but is not limited to: a positive attitude or connection with nature that likely results in an individual enjoying being in nature, having a sense of curiosity about the natural environment, and some type of respect for nature and the environment. There is no learning or action requirement for natural heritage appreciation.

Rationale: An increase in the number of teachers who have created and improved environmentally-themed educational materials should lead to increased teacher ability and commitment to employ these materials, thereby resulting in more effective teaching and enhanced student learning.

Measurement Notes:

- 1. Sample Tools and/or Possible Methods (for Peace Corps staff use):** Volunteers should use data collection tools to measure progress against project indicators. A data collection tool to measure this indicator could be based on [one of the](#) following methods—survey, secondary data review of lesson plans or curriculum, observation, or interview—though there may be other data collection methods that are appropriate as well. For more information on the suggested methods, please see [Appendix I in the MRE Toolkit](#). Also be sure to check the intranet page as sample tools are regularly uploaded for post use. Once a tool has been developed, post staff should have a few Volunteers and their partners pilot it, and then distribute and train Volunteers on its use.
- 2. General Data Collection for Volunteer Activities:** All Volunteer activities should be conducted with the intention of achieving outcomes – knowledge change (short-term), skills demonstration (intermediate-term), and behavioral changes (intermediate to long term) as defined by the progression of indicators within the objectives of a project framework. The progression of measurement for all Volunteer activities should begin with baseline data being conducted prior to the implementation of an activity (or set of activities), followed by documenting any outputs of the activities and then later at the appropriate time, measurements of specific outcomes (see “Frequency of Measurement”).
- 3. Activity-Level Baseline Data Collection:** Activity-level baseline data should be collected by Volunteers/partners before or at the start of their activities with a teacher or group of teachers. It provides a basis for planning and/or assessing subsequent progress or impact with these same people. Volunteers should take a baseline measurement regarding the outcome(s) defined in this indicator (i.e. determine whether or not a teacher in question has created or improved one or more environmentally-themed teaching materials before working with the Volunteer) early in their work focused on creating or improving environmentally-themed teaching material. The information for the baseline measurement will be the same or very similar to the information that will be collected in the follow-on measurement (see “Frequency of Measurement”) after the Volunteer has conducted his/her activities and it is usually collected using the same data collection tool to allow for easy management of the data over time.

Because Volunteers are expected to implement relevant and focused activities that will promote specific changes within a target population (see the “unit of measure” above), taking a baseline measurement helps Volunteers to develop a more realistic snapshot of where teachers within the target population are in their process of change instead of assuming that they are starting at “0.” It also sets up Volunteers to be able to see in concrete terms what influence their work is having on the teachers they work with during their service. Please note that data collection is a sensitive process and so Volunteers will not want to take a baseline measurement until they have been able to do some relationship and trust-building with the person/people the Volunteer is working with, and developed an understanding of cultural norms and gender dynamics.

- 4. Frequency of Measurement:** For reporting accurately on this outcome indicator, Volunteers must take a minimum of two measurements with teachers of the target population reached with their activities. After taking the baseline measurement (described above), Volunteers should take at least one follow-on measurement with the same teacher(s), typically after completing one or more activities focused on achieving the outcome in this indicator and once they have determined that the timing is appropriate to expect that the outcome has been achieved. Please note that successful documentation of a behavior change or new practice may not be immediately apparent following the completion of activities and may need to be planned for at a later time. Once Volunteers have measured that at least one teacher has achieved the indicator, they should report on it in their next VRF.

Volunteers may determine to take more than one baseline and one follow-on measurement with the same teacher (or group of teachers) for the following valid reasons:

- a. Volunteers may want to measure whether or not any additional teachers initially reached with activities have now achieved the outcome in the indicator, particularly for any activities that are on-going in nature (no clear end date);
- b. Volunteers may want to enhance their own learning and the implementation of their activities by using the data collected as an effective monitoring tool and feedback mechanism for the need to improve or increase their activities;
- c. A Peace Corps project in a particular country may choose to increase the frequency of measurement of the indicator and Volunteers assigned to that project will be required to follow in-country guidance.

In all cases, any additional data collection above the minimum expectation should be based on the time, resources, accessibility to the target population, and the value to be gained versus the burden of collecting the data. Following any additional measurements taken, Volunteers should report on any new teachers achieving the outcome in their next VRF.

5. **Definition of Change:** The minimum change to report against this indicator is that a teacher created at least one improved environmental teaching material as compared to what was measured initially at baseline. In the case of this indicator, if the person the Volunteer/partner works with had already created a lesson plan about local deforestation and climate change, then the Volunteer would not be able to count him/her for this activity because the Volunteer's work did not actually lead to the desired change. However, if as a result of working with the Volunteer/partner, the teacher created a walking tour through a local nature reserve to illustrate the effects of deforestation, that would count because the Volunteer's work influenced the creation of new environmental teaching material.
6. **General Reporting in the VRF:** The "number achieved" (or numerator), that Volunteers will report against this indicator in their VRFs is the number of teachers who have created new environmental teaching materials after working with the Volunteer/partner. The "total number" (or denominator) that Volunteers will report on for this indicator in their VRFs is the total number of teachers who participated in the activities designed to meet this indicator .
7. **Reporting on Disaggregated Data in the VRF:** This indicator is disaggregated by "Sex". When reporting in the VRF, a Volunteer should disaggregate the teachers who achieved the outcome based on male and female.

Data Quality Assessments (DQA): DQAs are needed for each indicator selected to align with the project objectives. DQAs review the validity, integrity, precision, reliability, and timeliness of each indicator. For more information, consult the Peace Corps MRE Toolkit.

Alignment with Summary Indicator: ENV. TEACHER DEVELOPMENT