

FAIRCHILD TROPICAL BOTANIC GARDEN

Ethnobotany In-Classroom Assignment Grades 9-12

Stakeholder Analysis: Medicinal Rainforest Plants

Background

Rainforests are dense evergreen forests with an annual rainfall of at least 406 centimeters (160 inches). Rainforests are often, but not always, located in tropical regions.

Rainforests used to cover 14% of the earth's surface but now only occupy 6% of the earth's surface. Scientists estimate that 1.5 million species were lost and 50,000 more continue to be lost every year with the destruction of the rainforest to harvest timber or create space for farming and development. It is estimated that ten million Indians lived in the Amazonian Rainforest five centuries ago, but there are only 200,000 left today. (<http://www.rain-tree.com/facts.htm>)

Approximately 25% of pharmaceutical drugs are derived from plants found in the rainforest. (<http://www.rain-tree.com/facts.htm>) Many Western companies and scientists have gone to the Amazon to study plants that could be used to cure illness and disease. Up until recently, however, the indigenous people who knew how to use these plants and lived in the areas where these plants were found were not compensated in any way once these companies patented their “findings” and made a large profit from the sales of their plant-based products.

The lack of recognition or compensation for indigenous people in these circumstances led to a global conversation concerning “intellectual property rights”, rights related to creations of the [mind](#). This includes traditional knowledge, music, art, inventions; symbols, names, images, and designs used in commerce. In 1992, at the World Summit on Ecology in Rio, Brazil, 144 countries signed the Convention on Biological Diversity, a document establishing that communities or countries must be paid royalties when companies develop products based on their natural resources or indigenous knowledge. (<http://www.brazil-brasil.com/cvrjul97.htm>)

Case Study

Plant X is native to the Amazon rainforest. The indigenous Indians use the plant for both medicinal reasons and religious ceremonies. Recently, an American pharmaceutical company conducted studies on this plant and found that it suppresses the growth of cancer tumors in mice. This company would like to create a drug based on this plant and patent it for use in treating cancer. They have held a preliminary meeting with the local

chief and an ethnobotanist but have disclosed very little information about their ideas and plans.

Directions

1. You may wish to ask students to conduct research on any or all of the following topics prior to this lesson: rainforest ecology, indigenous groups from rainforest areas, medicinal plants found in the rainforest, pharmaceutical medicines that have been derived from plants, threats to the survival of the rainforest, and “intellectual property rights”.

2. Lead a discussion with the class concerning the rainforest and the use of plants from the rainforest. You may use the following questions as a guide:

- Where are rainforests located in the world? [close to the equator]
- Describe the environment [humid, hot, rains each day, very dense vegetation, high biodiversity]
- Who lives in the rainforest? [thousands of different species of plants and animals, various groups of indigenous Indians]
- What resources have been found in the rainforest? How have people used these resources? [many different plants that have been used for construction, creating materials we use each day, food, and medicine. Some examples include the rubber tree, acai berry, raffia]

3. Explain to students that they will conduct a stakeholder analysis, which is a process of gathering and analyzing information to determine whose interests should be taken into account when developing and/or implementing a policy or program. Stakeholders are people or groups that have a vested interest in the policy or program.

4. Read the students the case study (or write on board or on overhead projector).

5. Have students brainstorm who the stakeholders would be in this scenario. Answers could include: indigenous Amazon Indian groups, Western doctors, pharmaceutical companies, cancer patients, Brazilian and American governments, political activists, environmentalists, scientists, and ethnobotanists. Write all answers on the board.

6. Divide the class into smaller groups. Assign each group to a particular stakeholder (alternatively, the groups could choose which stakeholder they are). Have them work in their small groups to fill out the section of the stakeholder analysis table that pertains to their stakeholder. You may wish to do one together as a class to demonstrate how to fill in the table. Share answers among groups to complete the entire table for all stakeholders among the class.

7. Have each group generate questions they would ask other stakeholders. Have students act out these interviews in front of the entire class.