

Christmas Island Project Assignment

Project goal: To create an ecologically-based, sustainable business, service, or project to solve a problem on Christmas Island, a small isolated coral atoll located in the Pacific Ocean south of Hawai'i.

The scenario:

You and your teammates are residents of the coral atoll of Kiritimati (Kir-iss-i-mas). You've lived on this island all your life, and have no desire to leave. You also know that your island, though beautiful, has its problems. The people are poor compared with the few tourists who come to your island. That doesn't bother you much because your people don't feel that they need a lot of material wealth. But you do know that there's very poor health care on your island and that your people depend on foreign aid in the form of canned goods and alcohol shipped to the island. The only major employment on your island is a coconut plantation, and that doesn't make much money and pays its workers very little. Some of your friends have businesses. One owns a little store that sells canned food to the islanders and handmade trinkets whenever a cruise ship stops for a few hours, once or twice a month. Another person you know tried to start a business as a fishing guide, but it didn't work out because the tourists who came to fish were typical Westerners, whose lives are run by clocks and watches, while you and your friends know that things will happen when they happen. The tourists didn't like that, so they stopped using your friend's business. Because there isn't a lot of meaningful work to do on your island, alcoholism is a problem. There's also a problem with people going down to the bird refuge on the far end of the island and poaching birds and turtle eggs. It's free food, but you feel bad about it because some of those birds belong to the island and if they can't nest there, they have nowhere else to go. You have thought about the fish out in the reef that the tourists catch, and wonder why it is that you and your people don't learn to fish, too.

The elders you know came to your island from another island, Tarawa. Things were bad on Tarawa, they say. One very old woman remembers a terrible naval battle way back in World War II. Explosions and spilled fuel killed a lot of sea life, and for years after that, there were just more and more people on the island until there were too many people, all of them dumping trash and sewage into the water. She came to Kiritimati – Christmas Island, the Westerners call it – because she thought that it would be a happy place, Christmas all the time. She's happy, but not as happy as she thought she would be. She remembers a time when soldiers came to the island and set off nuclear bombs that scorched the whole eastern end of the island, and what a terrible thing that was. When you talk to her about fishing, she tells you how polluted the reefs were on Tarawa. "No one fished there," she says. "So when we came here, no one knew how to fish or swim any more. Sometimes I'm sad that we all eat food out of cans when our long-ago ancestors could feed themselves from the sea. But eating out of cans is easy."

Some people in your town talk about trying to get more tourism on the island so there could be more money and more jobs. Others are worried about this because the tourists are fussy and want nice places to stay. Someone would have to spend a lot of money

importing building materials, figuring out a way to generate electricity, and figuring out what to do with the sewage. You imagine what it would be like if hundreds of tourists showed up and all needed to “go to the brush” at once like everyone on the island does. Your precious Kiritimati would end up as polluted as Tarawa. And what would happen to your island culture if all of a sudden everyone has to cater to the tourists?

You’ve seen scientists come to your island, too. Some are bird experts, while others are sea life experts. Not everyone on your island likes scientists coming there. The elders are afraid the scientists will bring bombs again, and don’t trust them. But you like talking to them because they know so much about how the living world works, and you find that very interesting. You’ve learned that your island is an important nesting site for rare sea birds and endangered sea turtles. You know that the scientists who study sea life are excited about the reefs off of your island because they are so clean and unpolluted. One scientist showed you maps and explained why fresh water is so scarce on your island. She also explained that the soil on your island is thin. Islands that are not built on coral like yours, islands that are built by volcanoes and are very old, she said, have richer soil. A high volcanic mountain “catches” rain clouds, so there’s more rain, and with rain and good soil, people can grow more food. Not so much on Kiritimati. With so little water and soil, only a few people try to grow food at all.

Some of the younger people who studied Micronesian culture in school wonder what it would be like if they tried to live like their Micronesian ancestors. What would life be like if they made canoes, learned to swim, and learned to use the sea as people did long ago? Unfortunately, there’s no one on the island who knows how everything was done in those long-ago days. You know that the Micronesians never settled on your island. They thought it was too small and isolated. Are there enough resources on the island for the 5000 or so residents to live as the Micronesians did? You’re not sure, but it’s something you think about a lot.

Your idea

You know your people need help so they can better help themselves, and at the same time preserve the beauty and ecology of your island so it doesn’t end up like Tarawa. You wish there was something you could do, but you aren’t a rich Western tourist or an educated scientist. What can you do?

Then you find out that a store owner in London, the town you live in, just got a microloan to improve her store and at the same time help her neighbors in a way that the scientists would call “ecological.” She was listening to the radio and heard about a thing called a “water cone,” a simple plastic cone that people can put sea water into, set it in the sun, and let the sun distill fresh water from sea water (<http://www.watercone.com/>). After a lot of back-and-forth letter writing with the company, she found out how to apply for a low-interest microloan and bought several dozen water cones. She sold the cones for only a little more than she bought them for so that islanders could afford them. They sold out within a week and she spent the profits buying more water cones to sell. Now people who live near the shoreline can have plenty of fresh, pure water at little cost with no damage to the land or to the sea, without having to wait for rain to fill the rain barrels by their

houses, and without worrying about the rainwater in the barrels going slimy. You bought a water cone yourself to try it out and you love how simple it is to use.

Okay, you think, while there are lots of problems on your island, and you're just one person and can't solve them all, maybe you can solve *one* problem in a way that this store owner did: help the people *and* help the ecology at the same time. Your friends think this is a great idea and want to join you in your project. Now it's up to you and your team of friends to learn as much as you can about your island's ecology and come up with a workable project.

Your assignment

As a team of "islanders" design a project, to be funded by a microloan, that will improve the lives of your fellow islanders while at the same time preserving the fragile ecology of your island. This could involve selling something, such as the store owner who sold water cones. It could involve a service that you provide to your fellow islanders. It could even be a community project or an educational project.

By May 8

Read the Background Material that I posted on the website. Be prepared to discuss it in class. Note what ecological resources the island has, and what ecological problems it presents to people living there. Also note what damage people can cause to the ecology of the island.

By May 15

With your table team, you will find as many resources as you can to learn about both the terrestrial and the marine ecology of Kiritimati. Begin with the resource links on the class website. Use the internet, the library (as in actual books, yes), and article databases to find information. Look up Kiritimati, Christmas Island, and coral atolls in general. *Be sure if you look up "Christmas Island," that it is Kiritimati, which is in the Pacific, not the Christmas Island that is near Indonesia and has an entirely different ecology.* Divide the tasks of being a "terrestrial expert" and a "coral reef expert" between your team members. As a team, collect and turn in printed "expert reports" from each of your team members, which will consist of:

1. A list of the resources each individual consulted (minimum of eight high-quality resources per team member)
2. Answers to the following questions:
 - a. Give a general description of the terrestrial or coral reef environment of Kiritimati. Using the information in your textbook on biomes, describe what kind of biome your chosen habitat is classified as.
 - b. What animals and plants are most common in your chosen habitat?
 - c. Are there rare, threatened, or endangered animals or plants in this habitat?
 - d. What resources are there in your chosen habitat that humans could use?
 - e. What are the major threats that humans pose to your habitat?

By May 21

With your table team, use the resources on the class web site to list the major problems for people on Kiritimati. Then divide a piece of paper in half. On one side list the problems are *caused* by the environment of Kiritimati (an example is lack of fresh water). On the other side, list the problems that people are *causing to* the environment (an example is pollution caused by human waste).

Next, look up the website for Kiva (<http://www.kiva.org>) to find out how microloans work. Click the “Lend” button to see what kind of businesses people in developing nations are trying to start up using microloans as funding. You can also click on the “Journal” button to read about projects that have already been funded. (On Kiva, lenders do not earn any interest and take on all the risks of the loan, which keeps the costs of the loan small and makes the loans affordable to the borrower. All lenders are limited to contributions of \$25 to any one loan, so the risks are divided amongst multiple lenders.)

Using your list and the information about microloans, brainstorm ideas of things you as islanders could do to solve one or more of these problems. Out of your ideas, choose three or four that you think are feasible. As a group, turn in a plan that lists your proposed ideas. For each idea, state the following:

1. What problem does the idea solve?
2. Is the problem caused by the environment, or is it a problem that people are causing to the environment?
3. Does the idea have the potential of causing more environmental damage? (For example, could improved health care contribute to overpopulation on the island?)
4. Is the idea self-sustaining? That is, once it is funded, will it keep going without any additional outside funding?

As a group, **please email this assignment** as a Word document or an RTF so that I can get it back to you quickly.

By May 29

With your group, make a final decision on what your project is going to be. As a group, supply the following information:

1. Describe your project.
2. Describe what human problem it will solve.
3. Describe what environmental problem it will solve, or what environmental challenge it overcomes.
4. List any environmental consequences of your chosen project and how you plan to minimize them.

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On June 5

You will present your project to the class, who will take on the role of potential lenders. Your job is to convince the lenders that your project is worthy of the money that you will need. (you don't have to calculate an exact dollar amount, since that would require knowing a lot about shipping costs, etc. – we're focusing on the ecology aspect.) You will be limited to 7 minutes for your presentation, so practice ahead of time. The class will have a rating form to rate your project on the basis of scientific accuracy, how well it addresses ecological concerns, how well it addresses human concerns, its practicality, and its sustainability (both ecologically and economically). We have the computer projector in class so you may prepare your presentation using PowerPoint.