Gaviotas is the story of a visionary settlement built in barren savannas of eastern Columbia, based on the concept that if people could find a way to survive sustainably there, they could do so anywhere. Over the years, many engineers, teachers, doctors, and students (mostly from Columbia, instead of foreigners) found their way to Gaviotas, often with the help of Paolo Lugari, the founder of Gaviotas. Many of them were so charmed by the sense of community and their own sense of purpose in Gaviotas that they extended their visits to many years - some even stayed for decades. The result of their living in Gaviotas is an impressive collection of innovative ideas for sustainable life, ranging from solar water heaters to low-cost windmills, from solar-powered passively-cooled hospitals to methods of replanting rainforest in a way that generates profit.

The book Gaviotas tells the stories of these inventions, the people who made them possible, the cultural and environmental context in which they were developed, and the obstacles that Gaviotas faced in implementing their ideas on a large scale. Besides enjoying the story it tells, we can also learn from the success and failures of Gaviotas.

Lugari emphasized multiple times that he was not trying to create a utopia, but instead a atopia meaning 'a place,' Somewhere to simply prove to the world that sustainable methods of living were possible and comfortable, even in conflict-ridden Columbia, where a long history of political conflict and drug trafficing had drained people of hope for the future.

Because most Gaviotans were Columbians, including Guahibo indians native to the regions surrounding Gaviotas, they had a personal stake in understanding and solving the many problems they faced. Inhabitants were provided with living quarters and food. Many were so content with the often minimal lifestyle that they were willing to go months without pay during hard financial times. Many engineers who found their way to Gaviotas could not get enough of the hands-on prototype-over-sketches approach to problem solving that Gaviotas fostered. Ideas were frequently discussed openly among people of all all disciplines, whereafter people went straight to the machine shop to realize their ideas in physical form. Even as violence broke out nearby, Gaviotas remained immune to conflict through decades of turmoil because even the guerrillas recognized the value of their work.

These things are indeed factors in their success, but they will be hard for us to use in D-Lab. We can use many of the ideas they have sprinkled into the book about building things. For instance, when they needed to create a drainage culvert, they used a large plastic bag filled with water to fill the space they didn't want cement to be. Then they poured cement around it and let it harden. When they opened the bag and let the water drain out, they were able to remove it and were left with the correct shape in the concrete. This and many, many more useful ideas are scattered throughout the pages of the book. If anyone is looking for inspiration, flipping through the pages of this book could be useful.

One of the most important things that can be gained from this book is the realization that designing innovations to make the world a better place does not require a formal education. One of the head engineers at Gaviotas did not have a college education but was brilliant at designing things. Children at the Gaviotas school put forward ideas for inventions; youths in Columbian cities built the Gaviotas solar water heaters after a short training period. What was important for creating successful inventions at Gavatiotas was not formal education but enthusiasm, hard work, collaboration with others, and a willingness and try out and refine wild new ideas.

Gaviotas found many ways to make the deserted llanos more habitable. They not only adapted ways to live in a barren place, but also learned to make the place less barren. They undertook

significant reforestation projects, and brought many species back to the area. By carefully cultivating foreign species of trees over several years, they were ultimately able to recreate a rain forest. As native plants took over the area, the older plants died, creating real soil which was much more fertile than the original sand, and encouraging further ecological diversification. They also learned to make themselves sustainable with respect to money as well as fuel. They created so many inventions and products that one was bound to take off. In the end, they were able to sell pine resin as well as water to sustain themselves.

   Gaviotas is the story of many people working together for a better future, for themselves and for the world. It is an inspiring story; hopefully the ambition of the Gaviotans as well as their ideas will continue to spread.

Questions:

1) The Gaviotas community is relatively unique. While there are other "ecovillages" that aim to create environmentally sustainable communities, few have been as successful as Gaviotas in creating and disseminating inventions. In the realm of innovation, how universal is Gaviotas? Could such a community be created anywhere, or are there specific characteristics of the people, the llanos, or the Colombian political situation that make Gaviotas difficult to recreate elsewhere in practice?

2) Have you seen a community similar to Gaviotas in the US? If so, in what ways did it differ from Gaviotas? If not, what aspects of the way Gaviotas works might need to change for it to be feasible in the US (or other developed coutries)?

3) Gaviotas is very community oriented. How does this effect Gaviotas's scalability? How large do you think a place like Gaviotas could grow to be?

4) From reading Gaviotas, it seemed many engineers there did not draw out their ideas in detail before attempting to create and test them. In what situations is this practice effective? In what situations would it be a hindrance to creating and testing new ideas?

5) Gaviotas was constantly threatened by lack of funding. Although the village tried constantly, they were often not able to make enough profit to sustain their research and development ventures. This was the case even though the devices they created were useful and locally appropriate. What might Paul Polak say about the need for aid to the village? Is aid for R&D into appropriate technology different from aid for other purposes, such as simply providing vaccines or food?

6) What are some obstacles to the creation of more Gaviotas-like communities? How would you counter these obstacles?

7) In developing a community like Gaviotas, which do you think is initially more important, environmental sustainability or economic sustainability? Which is more important in the long term?

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