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## A Vision Faces an Environmental Test

By CORNELIA DEAN

MICHES, Dominican Republic — From a development perspective, this town has a few problems.

It is 60 miles from the nearest airport, a three-hour drive on roads so bad the trip can be nauseating. Electricity is erratic, drinking water is contaminated, the beach in town is littered with trash and nearby rivers are either clogged with an invasive weed or plagued by silty agricultural runoff that threatens the fish on offshore reefs.

But to a team of conservation biologists and other researchers from Columbia University who began working here in 2007, Miches has great potential. They see tourists camping in platform tents, like those in St. John, in the Virgin Islands. They see hikers in its lush green hills, people riding horseback on pristine beaches outside of town and others heading out to sea to watch whales, dolphins or manatees. They imagine the town's half-derelict waterfront plaza lined with locally owned restaurants serving locally caught fish.

To make these visions a reality, the researchers, from the Center for Environment, Economy and Society, at Columbia, have begun a sweeping effort to identify and repair problems in the town and region and to capitalize on their assets. They have recruited fishermen volunteers to count marine mammals, assess the health of coral reefs and measure the effect of invasive water plants. With townspeople, they are devising projects to improve sanitation. And they are working with farmers and fishermen to determine fair compensation for people who contribute to better offshore water quality by keeping their cattle away from inland streams.

The goal is a tourism economy, but not typically Caribbean all-inclusive "high volume, low cost, keep churning the people through" tourism, said Donald J. Melnick, a conservation biologist who is co-director of the Columbia center.

Dr. Melnick said participants envisioned small-scale, low-impact ecotourism that would sustain the environment rather than degrade it. And, as much as possible, the environment will stay in local hands.

When he first met with community leaders, Dr. Melnick said on a recent visit here, they

pointed to places like Bávaro, a town 60 miles to the east, where a building boom is under way, fueled by the success of the nearby Punta Cana resort and largely financed by foreigners.

“They said, ‘Look, we are poor, we don’t have very much, but we have Miches,’” Dr. Melnick recalled. “‘But with all this development going on in the Dominican Republic, if you come back in 10 years, we will still be poor, but Miches will not be ours.’”

That is what the project intends to prevent.

Unlike the Punta Cana resort, built on land that was more or less pristine when developers acquired it, Miches (pronounced MEE-chis) was settled hundreds of years ago and is home to about 9,000 people, with 11,000 more or so in the region.

“You have a whole city there, a pretty good footprint of people, impact on the landscape in terms of agriculture and fishing,” said Jake Kheel, environmental director for Grupo Puntacana, which operates the Punta Cana resort. “It’s going to add some challenges.”

In a way, the project began in 2001, when the United Nations adopted targets, known as the Millennium Development Goals, for reducing poverty, disease and other problems. Dr. Melnick had a central role in the United Nations’ work on environmental sustainability, and the Dominican Republic was one of its “pilot countries.”

John Gagain, the American-born head of the Dominican Republic’s commission on sustainable development, said that President Leonel Fernández Reyna had decided to focus the country’s efforts on “a place that is poor but with incredible potential.” Mr. Fernández invited Dr. Melnick to test his ideas in Miches, and the Columbia group began work here.

Miches is in a basin, ringed by the mountains of the Cordillera Oriental to the south, whose streams and rivers drain onto the beaches, “conduits for all the human activities in the watershed,” Dr. Melnick said. After months of consultation with community officials, local fishermen’s associations and other groups, a consensus emerged that water would be the initial focus.

In the Los Mamayes district along the town waterfront, for example, sanitary facilities were limited to chamber pots that residents would empty into the sea. But project managers, working with local residents, organized the construction of latrines.

The Peace Corps provided the design, which James Danoff-Burg, an ecologist who directs the Columbia effort in Miches, said used a “natural filtration system” to control the flow of contaminants. The Cisneros Group, a Venezuelan company that owns about a half-mile of beach out of town, paid for the materials, and community residents did the work.

One of them, Teresa Rivera, was proud to show Dr. Melnick and his colleagues a result: a cinderblock structure with a roof and a door of corrugated metal, a few feet from the front door of her small house. As Henry Fernandez, a manager of the program (and no relation to the president) translated, she told Dr. Melnick what would happen if she had to choose one or the other.

“A latrine is more important than a house,” she said.

Dr. Melnick said the success of the project would depend in large part on the degree to which actions were not created by theorists a thousand miles away but rather based on “a model worked out here,” with the agreement of national and local leaders.

Such a consensus is not always easy to achieve. For example, when Dr. Melnick and his colleagues met recently with fishermen, they discussed the invasive plant hydrilla, which is choking the river leading into Laguna Limón, a once-valuable fishing resource, and the lagoon itself.

The fishermen said the plant clogged their motors and grew so thick at the surface that they had to clear it away with poles before they could drop a net — “like clearing land with a machete,” as one of them, Benito Reyes, put it.

But so far the fishermen, government officials and the researchers cannot agree on whether to dredge the river, poison the plant, introduce exotic fish to eat it or find another approach.

“There is an information disparity,” Dr. Danoff-Burg said. “We know what has worked in other locations. They know what is happening here.”

Dr. Melnick said it was crucial to find an approach that would be “acceptable to fishermen, government agencies and science.”

“We can make it work,” he added.

Dr. Melnick acknowledged, though, that he had “grossly underestimated” the time the Miches project would take. What he originally thought of as a three-to-five-year project will take a decade or more.

In an interview, Mr. Gagain said it helped that the center had set up headquarters in an apartment in downtown Miches, where Mr. Fernandez and Darien Clary, project managers, live full time. Dr. Danoff-Burg spends about a quarter of his time there.

A larger issue is whether the high-end, low-impact tourism the project envisions is practical.

Dr. Melnick said researchers from the Columbia School of Architecture, Planning and Preservation who assessed Miches's potential had determined that "nonhotel-based tourism has some very healthy projections."

But not everyone in the Dominican Republic is as optimistic.

"I wouldn't rule it out," said Mr. Kheel, who noted that the Punta Cana resort was designed from the beginning to minimize water use, recycle waste and so on. Miches has "a lot of potential," he said, but people there will have to overcome decades of environmental damage.

"They have to be more creative than Punta Cana has been," he added.

Freddy Miranda Severino, a lawyer who advises real estate investors and has a blog on development issues in the country," said in an e-mail message that while he too could see the potential of Miches's waterfront — "watching the sun going down there while having a glass of wine would be magical," he said — investors knew that "we can sell our beaches, golf and land to build villas and condos." And he dismissed other forms of low-impact ecotourism: "An entire day to watch manatees? Why bother?"

Anyway, Mr. Severino said, "I don't see what is good about having hundreds of acres in the name of poor peasants."

Mr. Gagain and Dr. Melnick said it remained to be seen whether the people of Miches would continue to resist the lure of all-inclusive resort-style development, pressure they expect to increase as the economic downturn eases.

"When you spend so much time poor and without any hope and any education and right next door is Punta Cana — they say, 'Why not us?' " Mr. Gagain said. "They need at least a foot on the ladder of development."

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