Puerto Rico experiences severe erosion problems. This picture was taken near the Villa Cofresí Beach area in Rincón, PR. Current efforts are in place to evaluate the feasibility of a beach nourishment program in the area, yet sand sources to replenish the beach are scarce.

**ECONOMIC FEASIBILITY**

Cost estimates of beach nourishment (743K m³ volume and 36-m wide berm) were evaluated with three scenarios: 1) dredging from Bajo Blanco sand shoal within 1 mile from the beach; 2) dredging from a different sand shoal within 4 miles from the beach site; and 3) filling the beach a 50/50 percent mixture of sand from the Bajo Blanco sand shoal and crushed glass from Cay Clean Glass Plant. To complete the process of glass crushing, 2.5 billion bottles are needed ($70 – 80 per ton). A trawling suction hopper dredge was considered for all cost estimates.

**Sensitivity Analysis – Distance from Dredging Site**

The Life Cycle Assessment (LCA) was conducted using GaBi (www.thinkstep.com), a system boundary was considered from the glass bottle as a main product (gate) to the final system process (grave): eliminating the raw material and creation process.

**Social Feasibility**

In order to analyze the feasibility of this project, the public perception of its implementation must be taken into consideration. A series of surveys concerning recycling practices and community approval were conducted to evaluate the recycling potential in the area and public perception of the project.

**Glass Beaches Around the World**

- Caribbean island of Curacao
- Hilton Hotel on Piscadera Bay
- Zanzibar Park
- Town of Lake Hood, New Zealand.