

Gravity-Fed Water Distribution System Bucori, Panama

Mission Statement

Create a pipe network that will distribute water from 3 springs to the neighborhood of Central Bucori. Water will be treated individually at home.



Figure 1: Panoramic View of Bucori, Panama

Community Background

Bucori, Panama is located in the Ngabe-Bugle Comarca



Figure 2: Map of Panama with Location of Bucori

Community Logistics

- 202 full time residents, 58 part time
- 7 neighborhoods in Bucori
- Main mode of transportation: Canoe
- 2 hours to nearest city, Chiriquí Grande



Figure 3: Girl Wearing Traditional Nagua



Figure 4: Community Members

Current source of drinking water

- Rain water collection
- Creek water

Water Committee

- 7 members required per Panamanian government
- Currently 5 elected members, 3 members are active

Spring Boxes:

- Concrete spring boxes will capture and protect water
- 3 springs will provide water to holding tank

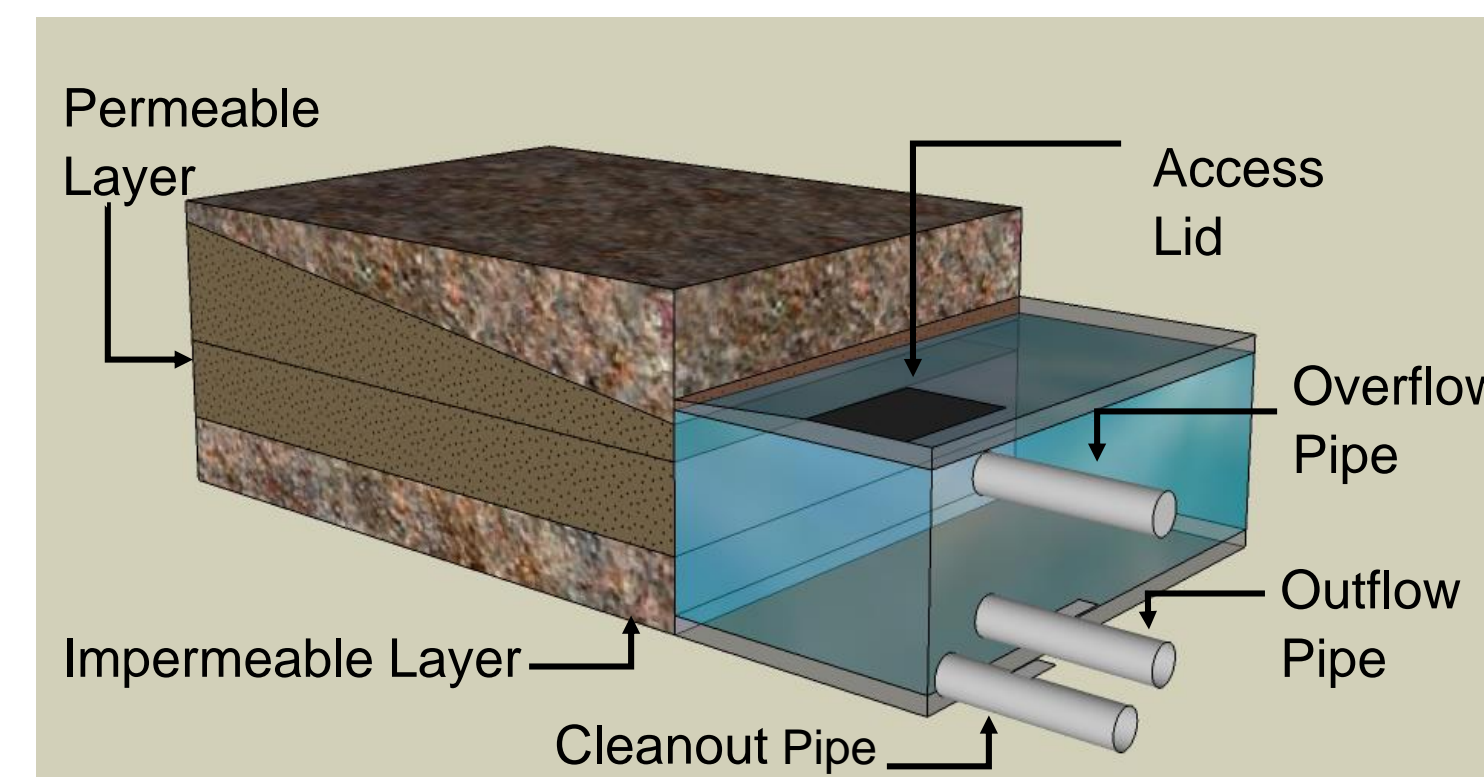


Figure 5: Spring Box Drawing

Holding Tank:

- Volume: 22 m³ (~6,000 gallons)
- Dimensions : L x W x H 3.92m x 3.92m x 2.36m

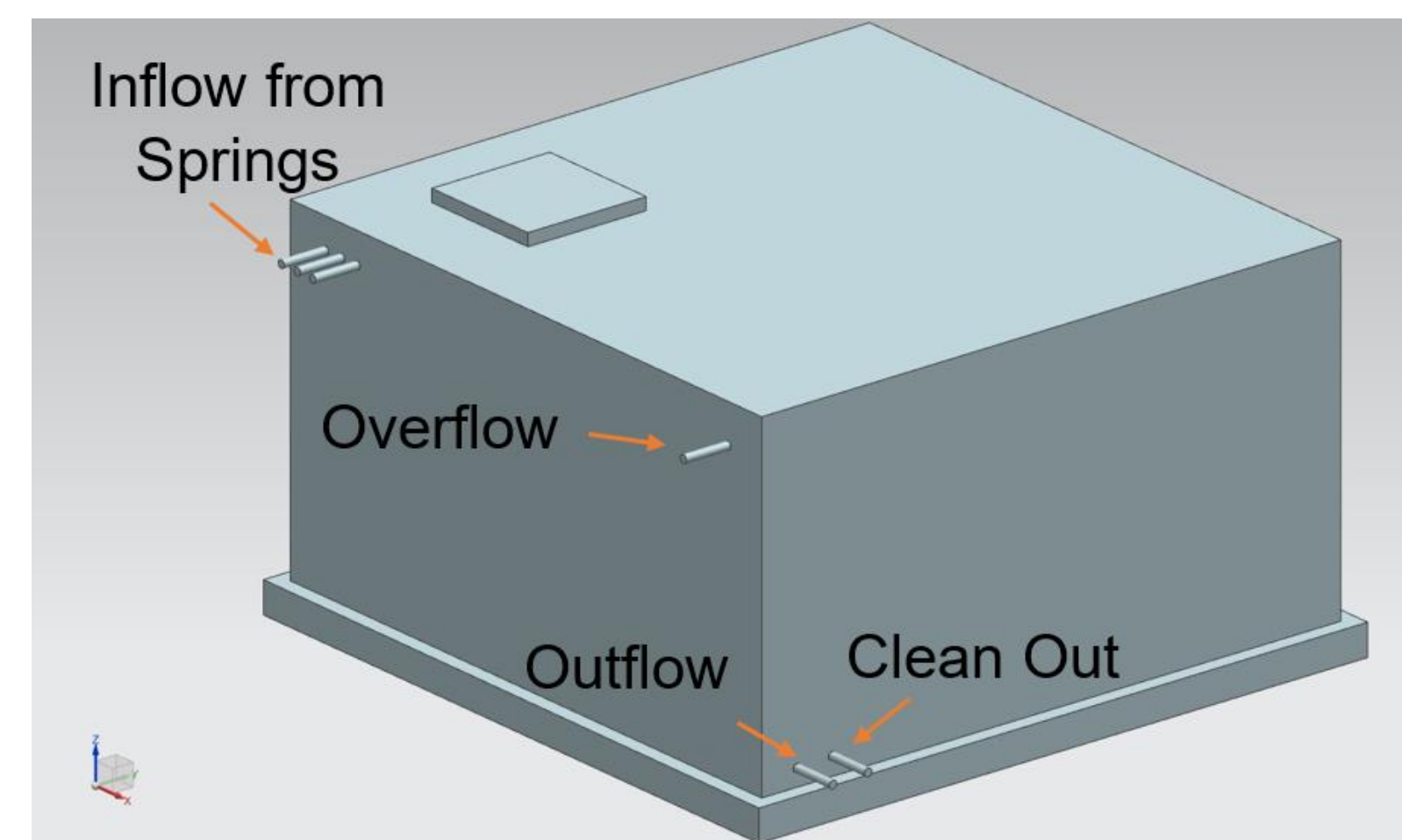


Figure 6: Holding Tank Model

Design

Piping Network:

System will consist of:

- 31 homes and 7 community buildings
- 2" and 1.5" PVC - SDR 26 pipe

8 stream crossings, 1 river crossing and 1 valley crossing within the pipe network

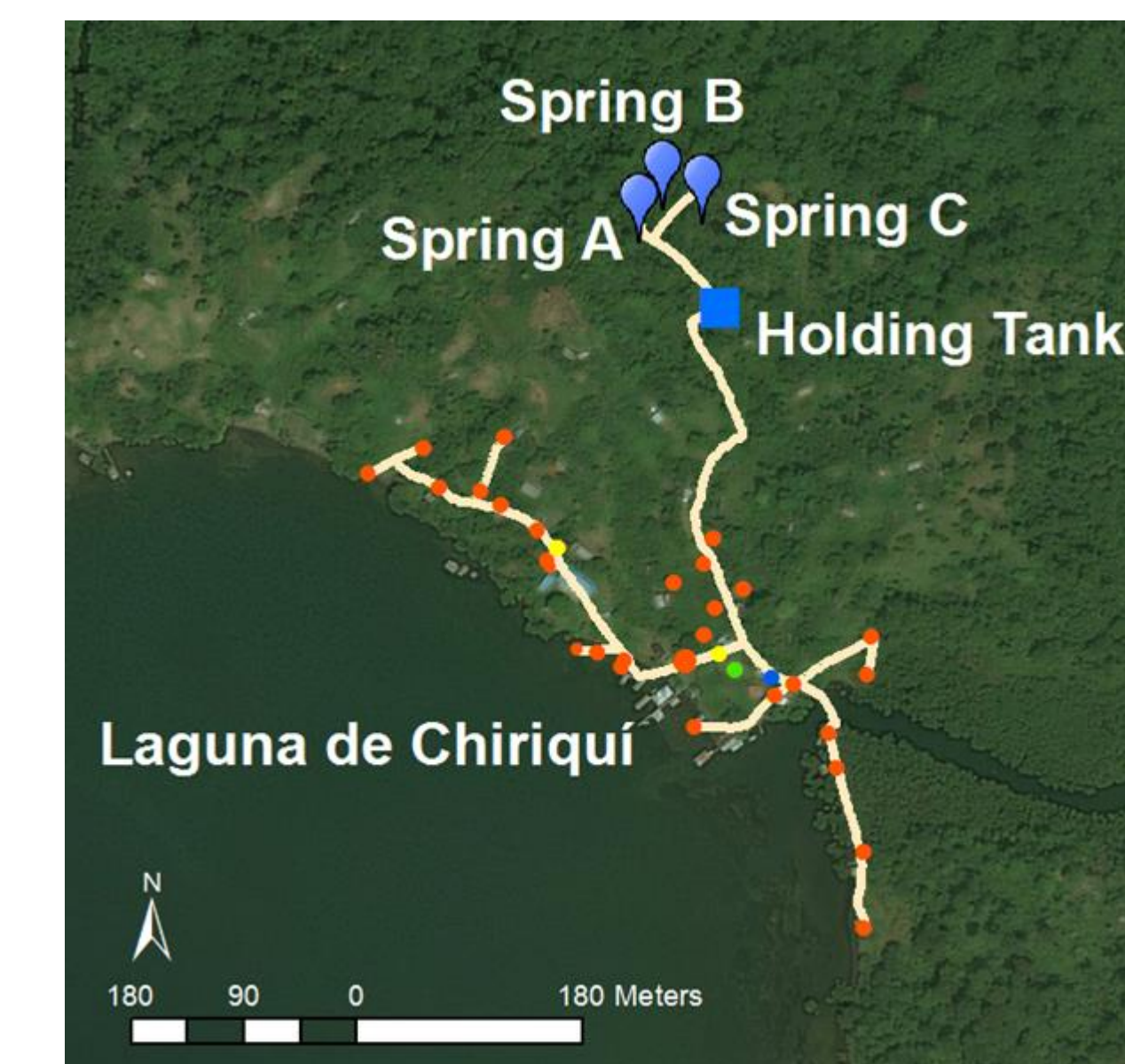


Figure 7: Water Distribution Network Layout

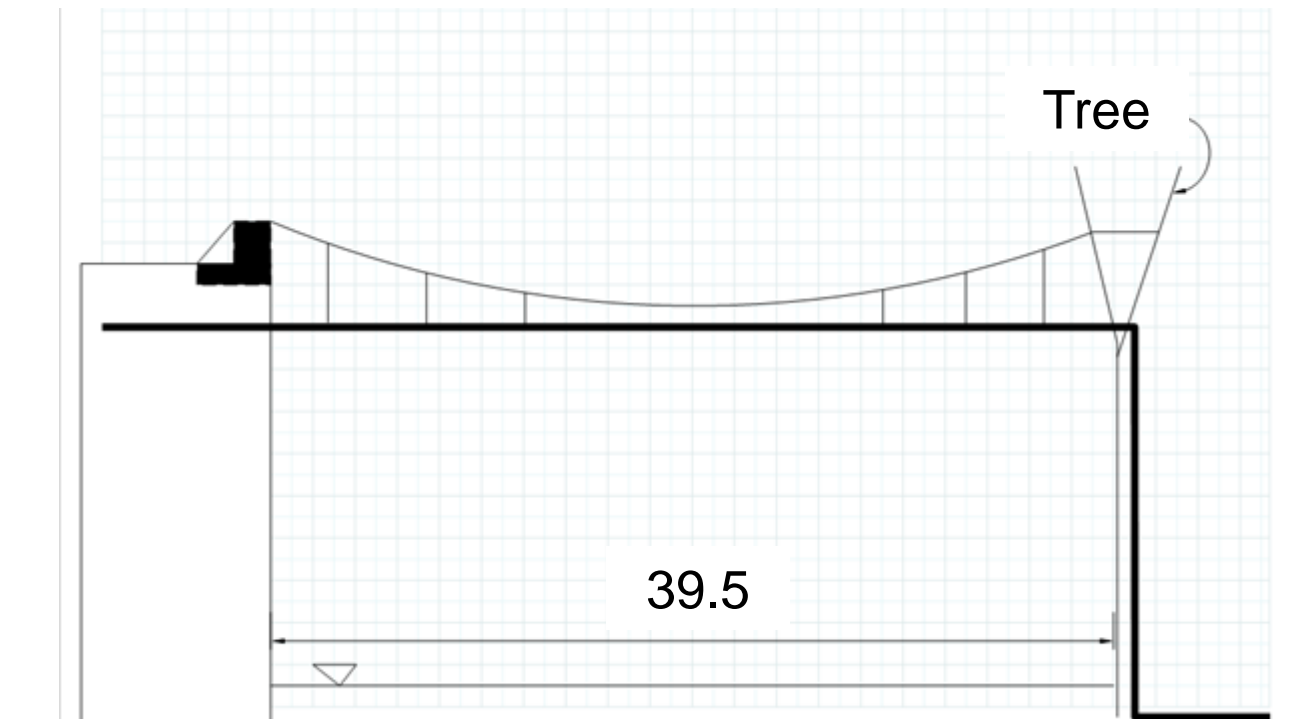


Figure 8: Sketch of River Crossing Suspension

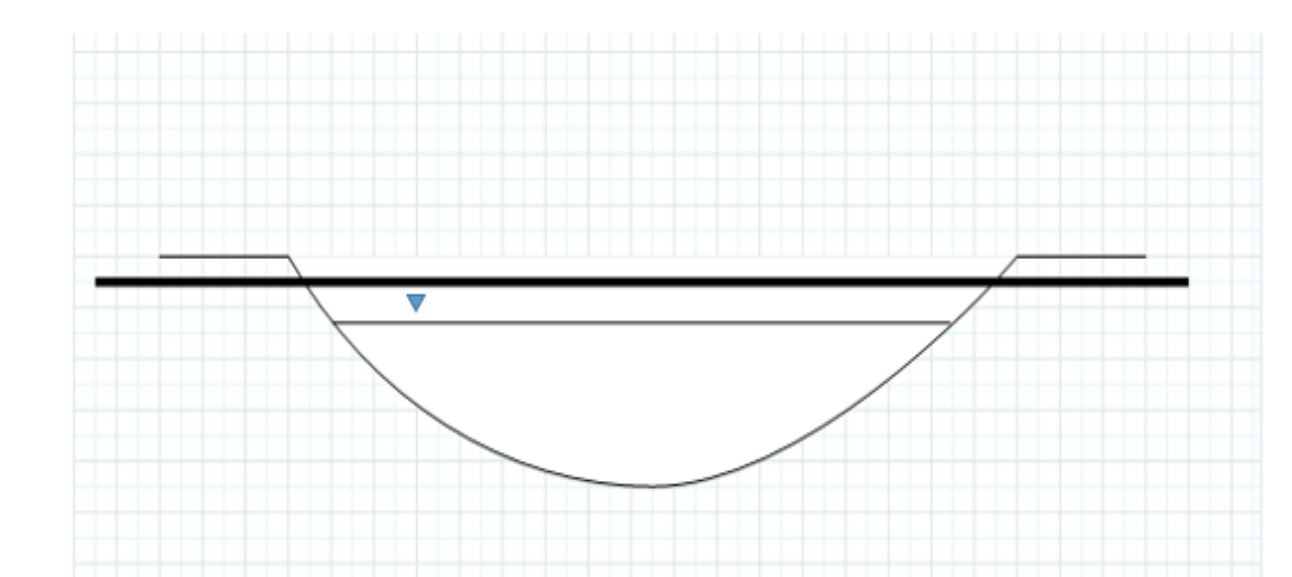


Figure 9: Sketch of Stream Crossing

Water Treatment:

- 1 ml of chlorine treats 1 L of water
- A family of 5 will need 250 ml of chlorine a day

Cost Estimation and Schedule

- The project will take approximately 40 work days
- The total cost estimate is approximately \$15,300
- Grant obtained by Peace Corps Volunteer

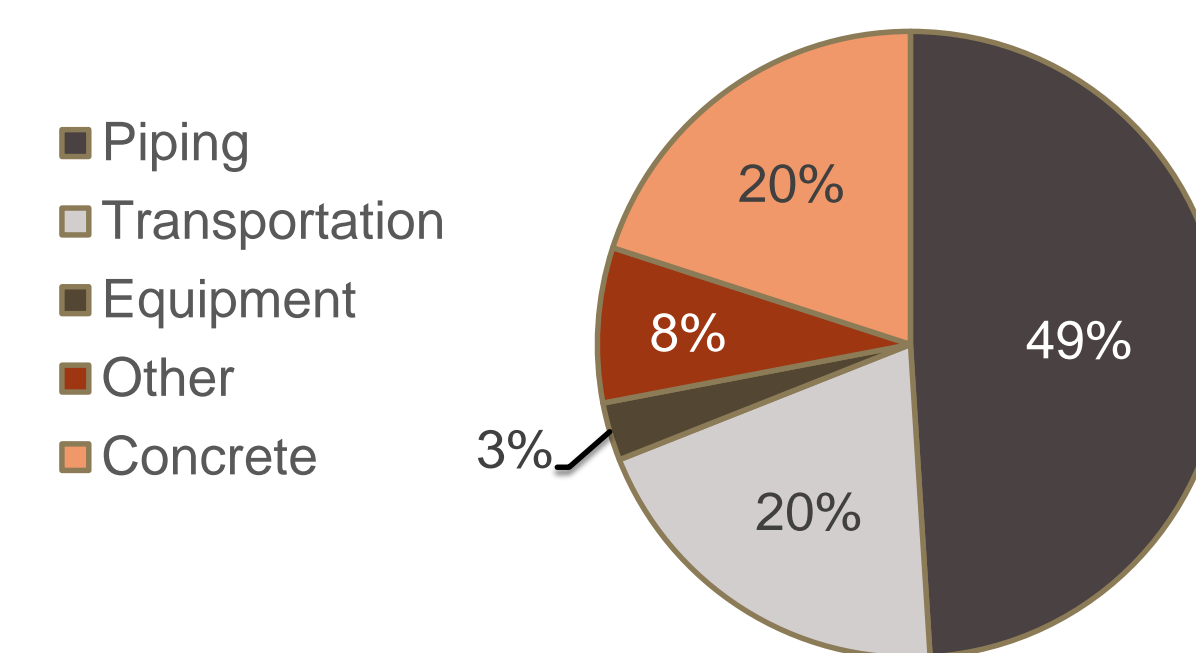


Figure 10: Breakdown of Project Cost

- Monthly water bill: \$1.00 USD/month towards maintenance
- Water treatment: \$3.50/week per family

Conclusions

Improve quality of life

- Ease of water access
- Increased health benefits

Education will be provided by Peace Corps Volunteer

- Maintenance of the system
- Importance of sanitizing drinking water

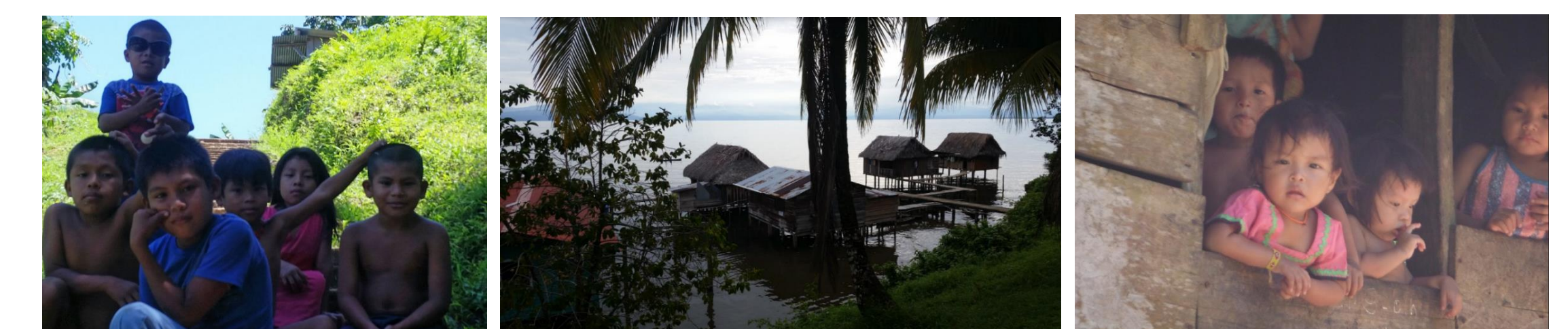


Figure 11-13: Photos from Trip to Bucori