**The Water Problem in My Village, *Bolivia***

I'm not good at talking in front of a group of people. I'm a farmer and spend my days in the fields. The work is often solitary, but I like it. So when Father Rodriguez asked me to speak to the congregation in a neighboring village and answer questions, I was very nervous. What if I gave the wrong answer? Or stuttered? Or said something stupid and people laughed?

He wanted me to talk about the water problem in my village. Where my wife and I live with our baby son it is high and arid like it is here; we don't have electricity either, and we share some of the same health problems, like diarrhea, scabies, and respiratory infections. But unlike my village, this one doesn't have covered wells and hand pumps. And before last year, we didn't have them either.

I heard the priest call my name. I dried my palms on my pants, and with my head down, watching my feet so they wouldn't trip over themselves, I moved to the front of the church. When I lifted my head, sixty strangers were staring at me. My knees started to shake and I almost sat down again-until I remembered Juanita.

"My name is Miguel Sanchez," I whispered. My own voice sounded strange in my ears. I cleared my throat. "I've come from the neighboring village over the mountain to talk to you about water," I began. The congregation turned to each other in confusion. I could see the question marks stamped on their faces. Water? They seemed to be asking each other. Holy water? I started over.

"Two years ago my first child, Juanita, was born. She was a beautiful baby who looked just like her mother. She was chubby and happy with dark shining eyes. I used to love to put her on my shoulders and listen to her laugh. But after my daughter was weaned she started to get sick. She frequently had diarrhea and stopped gaining weight. The last time Juanita was sick, my wife made sure that she had plenty of well water to drink so that she would not become dehydrated. But it didn't seem to make her better and then, only a week later, she died.

"My wife and I were heartbroken, but we weren't the only ones who had lost loved ones. Other children in our village, and some older people with the same sickness, had died.

"Soon after Juanita died, the school teacher in our village heard about a new water system in a nearby town, and invited the people who helped them build it to come visit us. Some engineers and health care workers came to our village and tested our well water and river water and found that both sources were polluted with bacteria. Because the water was contaminated and we hadn't boiled it, the water we had been giving our daughter had been making her diarrhea worse. We thought we were helping her, but we had just made her sicker. In fact, the water was harming the whole village.

"The families came together and decided to work with the water project people to improve the water supply. The health care worker told us the bacteria comes from animal and human waste on the ground that washes into the well and the river when the rains come. The bacteria infects the water and makes it dangerous to drink and to wash with. The engineers explained how to build stronger well walls out of sand and mortar and how to build covers to protect the well water. They also studied the way the water drained after it rained to help us pick the best spot to dig the new well.

"At least one person from each family—men and women—had a job to do on the water committee, some ordering parts, others digging the well, others learning how to repair the pump. The engineers trained each of us in different areas and taught us how to manage the well on our own. I'm not good with numbers, but a storekeeper who is figured out how much each household would pay for the water. I am good at working with my hands—I was in charge of laying the stone foundation for our chapel—so they trained me to do the masonry work. With help from the other men, we dug a new hole for the well, poured the cement and lime mixture, covered the well, and installed the hand pump. The school teacher taught the villagers how to become healthier by washing our hands and fruits and vegetables with clean water before eating and how to store clean water safely so that it doesn't become contaminated. He also taught us to boil our water before drinking it to be sure it is safe.

"Now all of us in the village take turns being in charge of maintaining the well and hand pump and replacing parts so it doesn't break down. We don't get paid with money, but we all benefit from having safe water. Occasionally the hand pump breaks, and then we must wait for a part. But together we take responsibility for the well, and we don't have to rely on outside help to keep it going. The longest we have gone without clean water in the last year has been just three days while we were waiting for a part. Even though my wife still has to carry the water from the well to our house, most days we not only have enough safe water to drink, but also enough to wash more often—and fewer people have been sick.

"It's too late for our daughter Juanita, but now my wife and I feel that we have more to offer our son, and we are expecting another child in the spring. Father Rodriguez asked me to talk to you so that you would know what I had lost and now what my whole village has gained. Like the people of my village, you can work together to have better water and healthier lives."

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| **Basic Data Table** | | | | | | |
| **South America**       [Map of Region](http://www.worldbank.org/depweb/english/modules/basicdata/maps/lac2.html) | | | | | | |
|  | | | 1 | 2 | 3 | 4 |
| **Population Growth Rate** | **Life Expectancy at Birth** | **GNP  per Capita** | **Access to Safe Water** |
| average annual growth rate % | years | $ | % of  population |
| 1980-98 | 1998 | 1998 | 1990-96 |
| M | 101 | **Argentina** | 1.4 | 73 | 8,030 | 65 |
| M | 102 | **Bolivia** | 2.2 | 62 | 1,010 | 55 |
| M | 103 | **Brazil** | 1.7 | 67 | 4,630 | 72 |
| M | 104 | **Chile** | 1.6 | 75 | 4,990 | 85 |
| M | 105 | **Colombia** | 2.0 | 70 | 2,470 | 78 |
| M | 106 | **Ecuador** | 2.4 | 70 | 1,520 | 70 |
| M | 107 | **Paraguay** | 2.9 | 70 | 1,760 | 39 |
| M | 108 | **Peru** | 2.0 | 69 | 2,440 | 80 |
| M | 109 | **Uruguay** | 0.7 | 74 | 6,070 | 89 |
| M | 110 | **Venezuela** | 2.4 | 73 | 3,530 | 79 |
| .. means that data are not availabe or that aggregates cannot be calculated because of missing data in the year shown. H. [High-income economy](http://www.worldbank.org/depweb/english/modules/glossary.html#h). L. [Low-income economy](http://www.worldbank.org/depweb/english/modules/glossary.html#low-income). M. [Middle-income economy](http://www.worldbank.org/depweb/english/modules/glossary.html#middle-income). h. Estimated to be a high-income country. l. Estimated to be a low-income country. m. Estimated to be a middle-income country. a. Refers to mainland Tanzania. | | | | | | |

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| --- | --- | --- | --- | --- | --- | --- |
|  | | | 1 | 2 | 3 | 4 |
| **Access to  Safe Water** | | **Access to Sanitation** | |
| % of  population | | % of  population | |
| 1982-85 | 1990-96 | 1982-85 | 1990-96 |
| M | 101 | **Argentina** | 55 | 65 | 69 | 75 |
| M | 102 | **Bolivia** | 53 | 55 | 36 | 41 |
| M | 103 | **Brazil** | 75 | 72 | 24 | 67 |
| M | 104 | **Chile** | 86 | 85 | 67 | .. |
| M | 105 | **Colombia** | .. | 78 | 68 | 83 |
| M | 106 | **Ecuador** | 58 | 70 | 57 | 64 |
| M | 107 | **Paraguay** | 23 | 39 | 49 | 32 |
| M | 108 | **Peru** | 53 | 80 | 48 | 44 |
| M | 109 | **Uruguay** | 83 | 89 | 59 | 61 |
| M | 110 | **Venezuela** | 84 | 79 | 45 |  |

**Case Study Exercises**

1. What are some of the health problems shared by Miguel's village and the one he is visiting? Which of these problems might be related to the lack of safe water?

2. How is it that people die of diarrhea?

3. In Miguel's village, how did the sources of water become contaminated?How did this contamination affect Miguel's family?

4. How do higher well walls and covers help to protect the water?

5. What training did the villagers receive as part of their water project?

6. Why didn't the people from the water project dig the wells and install the handpumps themselves?

7. Find Bolivia in the [Data Table](http://www.worldbank.org/depweb/english/modules/environm/water/data.html). What is the 1990-96 percentage of the population with access to safe water? What is the 1980-98 population growth rate? What is the 1998 GNP per capita?If more projects like the one in Miguel's village were to increase the percentage of people with access to safe water, what changes might you expect to see in these and other indicators? Explain you answer.

8. Go to the [Data Table](http://www.worldbank.org/depweb/english/modules/environm/water/data.html) and find out how the 1990-96 percentage of the population with access to safe water in Bolivia compares with that of your country.Would a project like the one outlined in the case study work in your community? Explain your answer.

9. Are you aware of any community-run utilities (water, electric, or gas providers) where you live? What might be some advantages of such programs? What might be some disadvantages?

10. How does your community help ensure that the water you drink is safe?

11. What kind of water supply problems, if any, might your community face?