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Albania: Management of water scarcity to improve safety of potable water

Introduction

Albania is a poor country located along the west side of the Adriatic Sea in southeastern Europe. It lies on the Adriatic and Ionian coast north of Greece, south of Montenegro, west of Macedonia and across the Adriatic Sea from Italy. Albania encompasses 28,748 sq. km, only a fraction smaller than Maryland. It is mostly covered in mountains and hills with small plains along the coast. “The average temperature is fifty-nine degrees” (Albania Health). Albania has rainy winters that tend to be colder in the mountainous region and dry, hot summers that are more frequent around the coastal plain. With Albania’s high annual precipitation, there is high quality ground water for most of the country that requires little chemical treatment. The capitol city, Tirana, relies mostly on surface water for drinking. Surprisingly, in a country which seems to have a lot of rainfall, drinking water is only available for a few hours each day. In some areas, there is severely limited access with safe, potable water only being received about two times per week. Some farmers rely on natural springs and wells to help supply water to their families and crops. These limitations on the availability of potable water result in unfortunate water use decisions, which are not in the best health interests of the people. Further complicating matters for the people is the water delivery infrastructure problems, resulting in what looks like a lot of available pipeline hardly delivering much potable water. Some of this is due to misappropriation of supply and a lot due to old, corroding pipes and the misuse of it by farmers through irrigation. Good, safe, potable water just disappears in the distribution system, leaving the people in dire need.

Current Situation of Rural Albanian Farmers

Albanian families tend to be small, averaging two kids each. A typical Albanian diet consists of some type of meat, preferably lamb, bread, vegetables, and cheese. Education is one way that helps strengthen the food system; however, education is very poor in Albania. Albania has poorly qualified teachers that lack modern equipment, and use out-of-date curriculum and teaching methods; furthermore the enrollment rates are low. “School is mandatory from ages seven through fifteen” (Countries and Their Cultures) but some schools may not let the children register because they do not have a birth certificate. “Educational funding is at 3.25 percent, still below the recommended level of 4 percent” (United Nations in Albania). Preschool is not supported very much. About 1/3 of the children in compulsory schools record poor achievement; this is due in part to the lack of Early Childhood Development (United Nations in Albania). Basic education is very crucial for Albania’s economic growth. Education is at the forefront of society, as these children will ultimately become the leaders of tomorrow. The health care system in Albania is mainly publicly operated. Hospitals are located mainly in urban areas, but it is all very limited. Considering most of the people live in rural areas, there are not enough health clinics to support everyone causing an imbalanced medical system. “The medical facilities are poor, lacking adequate specialists, medical equipment and pharmaceuticals” (Health Insurance). The doctors and nurses are not up to date with the current techniques and new developments in medicine. The Albanian law guarantees equal health care to all citizens. The private health care sector is being developed that will cover most of the pharmaceutical, dental services, and some specialized diagnoses. “In hospitals, most of the doctors expect to be paid in cash at the time of the visit” (Albania Health Insurance).

Sixty percent of the Albanian population lives in rural areas with farms the size of one hectare. “1/3 of the farmers live around or in mountainous areas with little arable land” (Albania Agricultural Sector).

Albanian farmers grow wheat, corn, potatoes, sugar beets, grapes, other fruits and vegetables. They also produce some dairy and meat products. With food prices sky rocketing, poorer consumers are being forced to reduce the amount of food they purchase. Unfortunately, the high food prices also reduce the amount of money the households retain. Agriculture plays a key role in increasing the availability of food and the overall economic stability of the country. It also is the center of improving the nutrition security. There are a number of countries, Albania being one, that are trying to develop their domestic food production. "This occurs through small-scale farming, promoting food and nutrition, which looks beyond small holders like landless laborers and the poor urban areas" (Sustainable Food and Nutrition Security). Albania does not have very large farming production because the country has poor quality land. So, the country looks to the smaller farm operations to help improve the food and nutrition.

The labor force between agricultural workers and industrial/service workers is evenly divided. The labor force has been steadily increasing with time, as the unemployment rate has been decreasing. In 1992, the unemployment rate was at 40 percent. By 2000, there were 1.3 million people in the labor force with the unemployment rate dropping to only 30 percent by 2001. The minimum working age in Albania is sixteen years old and children between the ages of fourteen and sixteen years old may work part-time. Minimum wages for all ages are approximately fifty dollars per month. In Albania, this does not provide enough money to make a decent living wage for a family. The continuously high unemployment rates do not help with access to markets. Many small-scale farmers do not have access to markets for their products. "Without markets, farmers cannot increase their incomes and standards of living" (Rural Poverty). The markets are usually distant and they lack financial services. It is mainly composed of women because men are mostly in search for jobs elsewhere. Some major barriers to improving the access to markets are lack of knowledge of financial services, processing industries, and faraway distance of many of the markets.

Problems and Implications of Increasing Access to Safe, Potable Water

"Only 50 percent of the people in both rural and urban areas have access to safe and clean drinking water" (Rhode Benefit). Throughout the country, high precipitation falls every year, leading to an abundant stock of ground water. This water is of excellent quality and requires little or no chemical treatment. The capital city, Tirana, has about half of its water supply composed of surface water so the rest of the country has to rely on groundwater for drinking. "Drinking water is available, on average in the summer, only three to four hours per day with certain areas receiving water only once in three days" (Rhode Benefit). Summer time is when there is very little rainfall.

"In rural areas, farms have altered and complicated the use of water for irrigation by adding many discrete users" (Rhode Benefit), meaning the farmers are making it so others cannot use it. The rural water is often misused for irrigation in the summer months because there is little rainfall in the summer. In order to keep their crops alive, the farmers must use their drinking water to water the crops. This situation becomes a costly issue and decision for all parties involved. If the farmers do not use the drinking water on the crops, then those crops may die. However, if the farmer uses the water for crops and not for their families or others in the communities to drink, then those people are at risk for dehydration and illnesses from drinking other, non-potable water.

"Albania has an uncontrolled construction problem that is depleting the natural resources such as water, energy, land, and forests" (Albania). These are things that people use; it is part of their livelihoods. This problem is not only affecting the people, but it degrades the quality of the environment. "Over extracting of the natural resources has led to soil erosion, uncontrolled land use, riverbed gravel removal and degrading the surface water" (Albania). Soil erosion can be crucial to the quality of the drinking water. If there are fertilizers in the soil and that soil erodes, it will take not only the soil but some of the excess fertilizers into ponds, rivers, sewer drains, and creeks and since Albania is short on treatment plants, some

people could be drinking the run-off fertilizer residue. Also, the degrading of the environment impacts not only the climate, but it changes the precipitation pattern as well (Albania).

The example of Saranda, a small town located in the southern part of Albania, presents a microcosm of the over-all water security problems for the country. People enjoy their local environment in Saranda; it is a pretty place. But, the “unstudied” (uncontrolled) growth of the tourism industry has led to beaches being developed from inland solids, some of which are already polluted, and lead to further pollution of aquatic life, along with the unlimited dumping of sewage into even the drinking water sources. In addition, the water delivery infrastructure is so out of date that it cannot support getting water into more high-rise hotels, for example, leading to continued problems with non-potable water being pumped into business shops from antiquated water towers on top of the older buildings (Polo).

There are some areas of hope for Albania’s water distribution problem improving thanks to the help of Germany. With German support, they are able to have the infrastructure to support a twenty-four hour water supply in several cities and towns by repairing supply networks and constructing new waterworks. In addition to the infrastructure, the Albanian/German cooperation aims to reduce the high losses of water and raise prices to cover costs. “The infrastructure inputs are designed to create incentives for establishing industry and developing sectors that could provide employment for the Albanian population in the long term” (Main Navigation). Albania had its first sewage plant installed in 2007 and the second one was installed in 2009.

Even with improvement in infrastructure, the most disenfranchised of Albania’s people are not benefitted. Albania has a lot of Roma people. They are very poor, they get discriminated against; some live in little metal shacks and the ones who live in houses often lack running water, sanitation and electricity and some of the families do not have enough money to buy bottled water. Their kids run on the streets throughout the city during the day because their family is poor or the people in the school will not let them attend. Roma people are among the poorest families in Albania and because they get treated badly, they are looked down upon. The Roma families do not have the money to spend on doctors for illness because of the bad water they drink. That is why some of them move to Greece, where it is a lot better for them. The children can go to school, doctors treat them better, it is easier to find jobs (Itano), and they have better water. If Albania improves their potable water availability, Roma people might live better lives and not want to move to Greece.

Major Issues

If Albania keeps having uncontrolled construction problems, this will affect the precipitation pattern, while the rural farmer’s problem of not having enough drinking water will keep getting worse. The farmers will use their drinking water on their crops to keep their crops alive and so they can make money. Albania’s 2012 population is estimated at 3,002,859 people (The World Factbook). If they do not get any money, the pipes will keep corroding and there will still be a scarcity of drinking water. The city will have to shorten the time even more for people to get their water for the day. That means there will be even less water for each farm family.

During the summer time, precipitation is often very scarce. During the last fifty years rain water catchment has been used to irrigate 50 to 60 percent of the land, but little has been done to supply clean, safe drinking water to the people (Hysen). The government is currently not able to supply rural people enough safe drinking water. Some villages in the summer only have access to five to ten liters of water per day. It does not exactly help that tourism in the coastal areas, such as Saranda requires large amounts of drinking water, but the country can only give them so much before they have to put the time limit on just like everyone else. “Water scarcity can be considerably mitigated through metering, leakage detection and reduction, network improvements, disconnection of illegal connections, and optimization of storage

and supply patterns” (Rhode Poor Region). Because of leakage problems, only a small part of water produced goes to the people to be consumed. The leakage problem is huge because that is wasting good clean water that can easily help the people by getting a longer time limit, but seeing it is low, that time limit is still there.

Numerous farmers rely on natural springs and wells. They spend a lot of their time going back and forth transporting water to their households. Not all families have access to wells though, and if they do, most of them have to walk many miles away to get access to them. Generally, it is the women who have to do all of this walking. Most of the increased water requirements occur during the summer when there is little rainfall and farmers are tending their crops. Because of the limitation on the water supply “on average, about 80 percent of the rural families spend about four hours per day fetching water” (Rhode Poor Region).

Recommendations and Suggestions

In some regions of the world, including Albania, there is still a lot of work to be done to meet the drinking water target, which is MDG number seven or Target C. This target is directed to reduce by half the proportion of people without access to safe drinking water and basic sanitation by 2015. It is defined as “the percentage of the population with reasonable access to an average amount of water from an improved source, such as household connection, public standpipe, borehole, protected well or spring, or rainwater collection. Reasonable access to water is defined as the availability of at least twenty liters per person a day from a source within one kilometer of the dwelling” (Ensure Environmental).

As of 2009, 82 percent of progress toward the goal was met in Albania, but the goal of 98 percent by 2015 will likely not be met, as there is only a “medium probability.” The proportion of the population having access to sewage and septic systems has increased from 63.8 percent in 2002 to 86.3 percent by 2008. If there continues to be both domestic and external funding to advance the sanitation part of this target, which has been reduced to 90 percent, then that part is more likely to be reached by 2015. The indicators have been made “less ambitious” and rural access statistics have been separated from urban access statistics, showing that there is actually greater progress in the rural areas (Albania MDG Progress Report). The latest report on MDG progress, published March 6, 2012, shows that Albania is “not on track” to meet the drinking water/sanitation goal. The report indicates that the “coverage rate in 2010 was the same or lower than the rate in 1990 or below 10 percent of the 2010 rate required to meet the target” (Progress on Drinking Water and Sanitation).

All the percentages of the progress being made only tell one part of the story. Along with attempting to measure progress toward the MDG Target seven C, researchers notice that there is a lack of information about the actual safety of the drinking water, which is being statistically tracked as “available.” Simply, it is way too expensive to test the microbial and chemical quality of the water in each country so the proxy indicator was developed that uses “improved” drinking sources as above defined. The definition assumes the word improved means safe from contamination, especially by fecal matter. But, some of the water sources may be either not maintained well enough or be corroding and leaking allowing contamination, and as a result people who think their water is safe may actually be drinking unsafe water (Progress on Drinking Water and Sanitation). This is exactly the challenge for Albania’s drinking water infrastructure, well known for its antiquated, corroding and leaking pipes. Now that the Albanian government has completed a transfer of water supply companies to local governments, the real responsibility for reaching the 2015 drinking water/sanitation target will lie with the local governments.

Albania has significant renewable energy that has a lot of potential from hydro, wind and solar energy. Currently, the country relies mainly on hydropower for almost all of its electricity needs. This creates problems because it makes it difficult when water flow is very low (Renewable Energies Albania). There

are other projects in renewable resources such as solar and wind that have either already been implemented or are being implemented which should be of special interest to local governments as they are designed to have farmers and local people maintain them, therefore increasing the likelihood of support for these projects by local communities and small stakeholders.

For example, Albania has already implemented several projects directed to improving the availability of potable water and these solar pump projects, in particular, seem to be the ones that currently can be scaled up successfully. The pumps use solar panels to harness the energy instead of running on fossil fuels or battery systems. Farmers are trained for the basic maintenance of the system and after they are trained, solar panels are mounted on the farmer's roofs. The solar pumps will help the farmers and the villages to have access to potable water and this will also help improve the sanitation problems. Solar pumps have helped make it possible for the Stavec village in Albania to now have twenty-four hour access to potable water all year round. The only problem is that there is not a local supplier for the solar panels and the equipment needed and it is very pricey for the people in Albania. One of the solar pumps is co-financed by the OSCE, Organization for Security and Co-operation in Europe. As to the other solar pump, there is an estimated 2.0 to 2.5 year payback period from the initial investment (GEF). This will be hard for the farmers to finance in very poor regions; however, this problem can be resolved. In Africa, for example, Coca-Cola committed to give them \$30M over the next six years just so they can help provide access to safe drinking water to communities throughout Africa (The Coca-Cola Company).

The idea of solar pumps is a very good idea considering it will help make Albania a cleaner country without having to dig up natural resources that cause erosion and pollution in the air. To help with the funding, just like the project in Africa, external funding, such as with a corporation or the World Bank is needed to help pay for the solar pumps and pipelines. The rural families can help by going to school to get educated. If they are already educated when the solar companies put them through the training schools for operating the solar pumps, it will be a lot easier for them to comprehend. The local governments could put an incentive in place by perhaps helping pay for the training programs.

Another similar project that will benefit local communities and small stakeholders is if Albania uses wind turbines to pump water or to run a water purifying plant. The government has licensed at least seven wind farms to be completed (Renewable Energies Albania). The wind turbines would tap right into the groundwater supply, bring it up from the ground right into the plants to be purified, and then stored in water towers. Also, the plants would purify and cleanse the run-off water that has been contaminated by all the different pollutants from in town. This project could be funded by different corporations or International Monetary Fund. There could possibly be a role in this development for companies right here in Iowa, like the wind company in Newton. Albania could benefit from all the knowledge and practical experience Iowa has developed in setting up many wind farms here. Currently, Albania is granting licenses for wind farm development. "In addition wind and solar, through the use of photovoltaic cells can be brought together to develop hybrid programs which use one hundred percent of renewable energy" (Wind Power). Projects like these, along with infrastructure rejuvenating projects like the German one, will help sustain the environment, by helping solve the problem of making more and safer, potable water available to Albanians.

To increase collaboration and cooperation between residents, community leaders and local government representatives, community meetings such as those led by Partners Albania, as an example, could be held. Partners Albania specializes in "combining local knowledge with innovative tools and techniques to build sustainable solutions and effective leadership." These discussions have included focusing on "infrastructure, water and sewage, sanitation, education, health, employment, and social aid." This is exactly the kind of holistic approach needed and should be an integral part of addressing water scarcity and potability needs in Albania at the local level (Hoxha).

Conclusion

Albania is lacking in its advancement of increasing access to a supply of safe, potable water for all of its citizens. Albania would be classified in the middle, if not close to the unimproved side. Either way, water is a huge part of the world, it makes it go round, and everything needs it to live. The problem with Albania is that they have a lot of pollution, bad irrigation systems, and little rainfall during the growing season. Albania has plenty of groundwater of excellent quality but they do not have a good way to distribute it. The rural families rely on wells and natural springs. But many farmers use it all in the wrong ways, not to mention that family members, especially women, have to walk a long way to get potable water. In the summer (when precipitation is scarce), the farmers use it to water their crops and do not use it for their families or themselves.

Albanians can also help by not polluting the land and making the water quality situation worse. Rural families are not the only ones who can help this problem; the government and community can help out, too. Every single person can help by not polluting the land! Most of the bad water comes from all the pollution people do. The government can help by getting a sewage system set up instead of discharging it into the sea and rivers' causing not only their environment to be effected but it puts the people in danger for getting diseases. Local community training with partnership provided by community leaders, local government representatives and a facilitator group should help bring focus to the efforts needed to decrease environmental pollution. Addressing water safety and scarcity issues, including distribution, through the use of community facilitators is recommended to help bridge communication at the local level and should lead to a greater focus on localized resolution of these country-wide problems.

The country puts a limit on how much water is available for a reason because they do not have enough clean, sanitary water to go around for everyone twenty-four hours a day. If Albania gets solar and wind pumps, keeps working on rebuilding the water pipes to houses, and finds a company or organization to help fund it, people will, in the next few years, get more, safe, potable water access for a longer period of time. In the meantime to help the solar/wind companies out, local communities can encourage rural families to participate in training programs as well as send their children to school because when the pumps come on-line, they will need people locally who are trained and educated to run them. Solar/wind pump development is advantageous for the country as a whole for environmental benefits as well as helping to enhance the supply of potable water for all of the people.

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