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### **Chile: A Land of Contrasts**

At one point in time nutrition centered on undernourished and underweight populations. 2015 belongs to a new era where obesity and excess weight are issues being addressed in low income countries as well as wealthy developed countries. Chile is one such country where the transition from rural life to modern urban ways has created major lifestyle shifts. Obesity is now ranked as a leading health concern for Chile (Economist). Education and resource implementation will help Chile continue forward as a vibrant and healthy leader in South America.

A land of contrasts, Chile is a long narrow country that lies between the Andes Mountains and the Pacific Ocean on the west Coast of South America. It is located south of Peru and west of Argentina. Chile has a land area of 743,812 square km with only 1.74 percent of that land being arable (Central Intelligence Agency). With having very little land for farming, much of their food has to be imported or found in other ways.

Most Chilean people are either part of the upper class or the lower class with a very small middle class. The Chilean culture focuses on the family and strong family values. As a result, many businesses are small and operated by a single family. It is normal for people to only hire family members. Large companies tend to be run by family groups which are a part of the upper class in Chile. The families that own the large companies will control most of that industry. The only competition they have are the state owned corporations. Chile claims that most companies were privatized from 1974 to 1989 but as of 2013 the government still owns copper mining industries and oil companies (U.S. Department of State). The government's mining company is run by a board that has nine leaders. Three are chosen by the president with two elected by the union, but still approved by the president. The other four are chosen by Chile's independent committee, but evidently still approved by the president (U.S. Department of State, 2013). Also Chile's state owned oil company is the only company in Chile that owns a refinery. This shows that it is very hard to grow a small family business when in competition with the government or other larger and more powerful family operated companies. It hurts even more when a company goes out of business. Entire families are affected when a business goes under or fails to thrive.

Lack of education is a substantial problem in Chile. Most Chileans are expected to go through 16.9 years of education from the time they are age 5 until they are 39 years old (Organization for Economic Cooperation and Development), and the literacy rate is 95.7 percent of the population as of 2013 (United Nations Environment Programme). On average Chilean students scored a 436 on the PISA exam. The United States average score 492. The United state is still lower than the Organization for Economic Cooperation and Development (O.E.C.D.) average score which is 497. Chile is far off from the score of a developed country and the international average. The PISA (Programme for International Student Assessment) reviews students' abilities and knowledge that are essential to perform in society. Girls also perform better in other countries internationally. In Chile, however, the boys outscored the girls on an

average of 3 points and the differential between their top students and bottom students was 105. The difference between the boys and the girls' scores may show that there is gender discrimination. The differential from the top students and the bottom students may indicate that high quality education is not accessible to all students in Chile.

In Chile there are three different types of schools. Municipal, private subsidized, and private non-subsidized are the three different schools. As of 2011 42.1 percent of spending for education is paid by households and only 15 percent is paid for by the public. With half the students attending private subsidized schools it will cost on average 400 dollars per child (Asia-Pacific Economic Cooperation). With the minimum monthly wage at 379 dollars it is very hard for some households to pay for schooling (Going Global). A proposed bill by the ministry of education would cut the copayment and give the opportunity to higher quality education to everyone. It would be a start to have education more accessible.

Without a good supply of educated and skilled workers, many companies have hired people in the hope that they could provide their own training for open positions. This is a great financial and time burden to the company. The advanced education and training may pay off in filling jobs and providing opportunities for the unemployed. Salary rates are often unable to compensate for the investment in education. Even with a high demand for skilled workers and a booming economy, Chile's monthly minimum wage is 379 U.S. dollars. Ninety percent of its workers earn less than 1,354 dollars and 76 percent of workers earn less than 729 dollars (Going Global). In this case the benefit goes to the company and not the individual.

Due to lack of education, the leading companies in Chile have management level positions open but are unable to find workers qualified for the job. Without educated workers it is difficult for these companies to start new projects that would offer more jobs and expand the economy. When a devastating earthquake hit Chile in 2010, bringing a need for rebuilding, the construction industry had very few architects and engineers to design the plans for new buildings. Without them the construction crews could not start work which meant they would have to be laid off. It prolonged the rebuilding of roads, bridges, and other buildings. It hurt the infrastructure of Chile dramatically. This is a result of the education problem because all of the Chilean people are not given the opportunity for high quality and higher level education.

Another problem created from lack of education focuses on the ability to provide professional inspectors and directors for the various industries in Chile. An example I found in the research pointed out problems with the salmon fishing industry in Chile. Salmon companies were caught using too many antibiotics or using antibiotics that are illegal for use in other countries such as the United States. Without people being able to assess these problems and serve as inspectors, companies and problems go unchecked. Another problem in the fishing industry was disease control. Lack of education played a role in a large outbreak of Infectious Salmon Anemia Virus (I.S.A.V.) in 2008. Today the fishing community in Chile is still trying to recover from the damage and repair itself. It has taken longer than they hoped. Had educated inspectors and disease experts been in place, they may have avoided the spread of the virus and extent of damage to salmon populations(Center for Food Security and Public Health).

When Chile experienced a large and prolonged outbreak of Infectious Salmon Anemia Virus. One of the biggest companies hit by this was Marine Harvest, the largest producer of farmed Atlantic salmon. This disease was found in farmed Atlantic salmon and causes hemorrhaging in internal organ. The disease was observed in 2007 with original low mortality rates. The outbreaks were recognized in Chile during the months of July and August of 2007 in region X (The Fish Site). The virus went unchecked and was able to spread throughout the fish farm and eventually to other farms. In the third quarter of 2008 the disease was confirmed to have been in farms in region XI. Region XI was located just south of region X. By the fourth quarter in 2008 there were 76 confirmed outbreaks in Chile. By the end of the year there were 105 confirmed outbreaks with 25% affecting the Marine Harvest Company (The Fish Site). With increasing mortality rates, companies began to harvest fish earlier to maintain a flow of fish. Still, productivity was down and Marine Harvest had to close farm sites and processing plants. Marine Harvest justified this as bringing capacity down due to reducing production. Twenty one farms and two processing plants were closed. An immediate result was the loss of 1,866 jobs (The Fish Site). Some people were moved to Marine Harvest farms further south, yet many lost their job. The loss of jobs created stress in the local economy and for families needing to pay for basic necessities. Workers unable to pay for housing, food, and supplies could not support the businesses providing these services. When I.S.A.V. hit Chile it caused job loss and a huge decrease in production in the salmon industry.

The outbreak of I.S.A.V. in Chile could have potentially been avoided. Not having marine biologists available for management questions and site checks was a potential problem waiting to happen. In Chile most workers in the salmon industry didn't have any schooling in the field of marine biology or animal health. What is worse is most workers didn't have any background in the field of science. Without workers being educated, diseases like I.S.A.V. pop up and become more of an issue than they need to be. The people were unable to identify what was causing fish to be sick. The fish were treated with large quantities and varieties of antibiotics in an attempt to get rid of the disease. Antibiotics are only effective against bacterial infections and were not able to combat Infectious Salmon Anemia Virus. The overuse of antibiotics may be an effect of workers being uneducated. Workers may have thought that the antibiotics would make the fish healthy again. Without running the test to find that it was a viral infection that antibiotics have no power against, workers just assumed. When finally the fish weren't getting better professionals came in to assess the situation. By that point it was too late and the disease had got into the fish and was spreading. If tests were run sooner and they would have found it was I.S.A.V. Marine Harvest could have culled those fish and took a small loss compared to what happened when the fish went unnoticed. Without the professionals regularly checking farms, there was no way of detecting it earlier. The main need is that the workers being educated so they can detect these problems before they cause an outbreak. The I.S.A.V. outbreak could have been avoided through education.

Creating an opportunity for native Chileans to become educated will start to rebuild the middle class. Educating the people creates more jobs because the people will have the education to take those management level positions. After hiring management level positions they can hire more people underneath them and start new projects. The people at the management level could make more money and have a better life. This will start to rebuild a stable middle class that would eventually boost the economy.

An easy way to educate a few people is corporations like Marine Harvest nominate an employee that they think could benefit from the education. After choosing employees they can send them to another country to be enrolled into a college program. When they are finished with their education they can come back to Chile and help train and teach people for management level positions. With a few people educated from each corporation they can give that knowledge to other skilled workers and then be able to implement a plan of educating other workers. This may involve having workers shadow a educated person or take classes after their regular hours. Another way to continue the education process is to educate a group of people and have them act as an extension program so that if any other farms are having problems they can call them and if needed they will send an expert out to the site. Through the extension program they could teach the workers how to deal with the problems they are faced with.

One of the easiest ways to finance the education of workers in Chile is have multiple people help. Don't expect the government to pay for all of the education or the educated workers will only work for state owned enterprises. Through a cooperation of the Chilean government, private businesses such as Marine Harvest and non government funded organizations like International Assessment of Agricultural Science and Technology for Development (IAASTD), financing a project like this could easily work. It wouldn't take educating the whole population, just educating a few from each company or region and letting them teach the others when they are finished. Financing the education may not be as big of problem as people think.

Through educating the people Chile can regain a stable middle class and strengthen their economy. Bringing in more experts, companies like the construction industry can start new projects. Having more engineers and architects they can start multiple projects at a time and that will create more jobs for the working class. More jobs will reduce the unemployment and people will be able to make the money to pay for everyday needs like food, shelter, and medical expenses. Creating more jobs and a stable middle class will help boost the economy and build up their infrastructure. With a growing and more vibrant Chile it could slowly work its way to other countries in south america. With the possibilities of the mining industry and the fish industry Chile could be a dominant country in these fields. With a long coastline Chile has the ability for a large scale fishing operation. They could be one of the top producers of fish to the world. With already exporting large amounts of farmed Atlantic salmon to the U.S., Europe, and China. Chile has the opportunity to become the world supplier of farmed Atlantic salmon. With education the Chilean people could grow their economy and become a stable and strong country.

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