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### New Zealand: Encouraging Agricultural Professions

New Zealand is an ocean locked nation in Oceania with a population of 4.794 million (The World Factbook: New Zealand). It might be most known for its once 22:1 sheep to human ratio, but this cannot be said any longer. Although New Zealand has diversified its agricultural production to other things like beef, dairy, deer, and cereal crops, it still has a potential to produce far more than current data shows with opportunities to export to markets around the globe. In addition to lowered production numbers, many young people are not pursuing professions in agriculture. The current age of a New Zealand farmer is fifty-six. This median has continually increased since 2006 in all specific areas of production, which shows that there are few, if any, young people beginning to farm. The industry is dominated by the same farmers that have been doing it for years. Within the next twenty years, hundreds of thousands of agricultural positions will need filled. The question is, who will fill them?

New Zealand is an established country located in Oceania in the South Pacific Ocean, about 1,500 kilometers east of Australia (The World Factbook: New Zealand). There are over 15,134 kilometers of coast around the water-locked nation. The terrain is mostly mountainous with large coastal plains. Most mountainous rocks are hard and brittle, which leads to easy shattering. Additionally, there are many fault lines across the land that cause weakness in rocks. These reasons are direct causes of many landslides and earthquakes. New Zealand also has a maritime climate because of its location, so there is a high amount of rainfall which also contributes to landslides and earthquakes (Te Ara Encyclopedia of New Zealand).

In terms of population, the 2017 census states that the population is 4.794 million, with the population density about six people per square mile. The largest city is Auckland, boasting one third of the nation's population. 71% of the population is of European decent, followed by 14.1% Maori, 11.3% Asian, and 3.6% of other (The World Factbook: New Zealand). The country's primary language is English. The most popular religions are Christian with 44.3% and Atheist or no religion at 38.5% (The World Factbook: New Zealand).

In terms of New Zealand's history, it was colonized over 700 years ago when it was discovered and settled by the Polynesians. They were originally going to make it a religious colony. The Polynesians developed a strict Maori culture focused on the land. In 1840, the Treaty of Waitangi was signed declaring that New Zealand was a colony of Britain. By 1907, the United Kingdom granted New Zealand "Dominion" status within the British empire. Moreover, the government system is a parliamentary democracy (New Zealand Parliament) under a constitutional monarchy, in this case a Commonwealth realm where Queen Elizabeth II is the reigning constitutional monarch and head of state.

Family structure can differ greatly between various cultures and ethnic groups. The average New Zealand household is three people and the average New Zealander woman typically has 2.01 children, which is a record low. The average age for women to give birth is age 28, which is the highest on record (The World

Factbook: New Zealand). In a direct correlation, In Vitro Fertilization methods are at an all-time high for use and are only expected to continue increasing. When analyzing the population demographics, 3 out of 4 families live in an urban city with a population of over 10,000. 1 out of 7 families currently live in a rural environment (Te Ara Encyclopedia of New Zealand). In terms of employment, the number of citizens employed in an agricultural field has steadily declined since 1901, when 37% were involved in an agriculture profession. Recently, in 1992 this number declined to 10.8% and has continued decreasing to the current 6.7%. The current unemployment rate is 4.3%. Connected to employment, the median income of a person in New Zealand is \$48,800 annually, with a \$23.50 hourly wage (The World Factbook: New Zealand).

New Zealand is home to an extremely successful education system, so children have access to a quality education in all areas of the nation. The nation easily makes its way into the top twenty educational systems compared to countries around the world on almost all charts. The educational system is similar to the United States, with government funded education through age sixteen, followed by access to high quality postsecondary and vocational programs. The country has achieved these programs by developing a student-centered system that allows youth to progress every year and use their learning to prepare for their future pathways (Education in New Zealand).

The education has three different parts: Early childhood education, schooling, and tertiary education. Early childhood education is for children from newborn to age six that can occur in kindergartens, playcentres, or child care services. These education services are not state-owned or funded, so only approximately half of youth under the age of five will attend. By the age of 6, though, 95% of youth will attend (Ministry of Education). Next is schooling. It is for youth ages six through sixteen, although most students start at age five. It is fully managed and funded by the state. This year it is estimated that 2,581 schools will be in operation with 760,859 enrolled students. Instead of the United States' system referring to levels as grades, the nation refers to them as years. Primary school starts at year one and continues to year seven or eight. It is not uncommon for years seven and eight to be completed at a specialized primary school or intermediate middle school. Secondary education covers years nine through thirteen when students are typically age thirteen to seventeen. Secondary schooling institutions are typically referred to as high schools, colleges, area schools, or simply secondary schools. Both single sex and co-ed institutions are available and both options are typically government funded. Maori and Pasifika education mediums are available as well to accommodate both cultures. The final type of education is Tertiary. The term 'tertiary education' describes all aspects of post-secondary education and training. This includes technical/vocational education, higher or degree level education, industry training or teacher education. Operates similar to a university or college in the United States. Half of New Zealanders hold some form of a tertiary qualification (Ministry of Education). Although there is a quality system, it lacks diversity in some areas. Particularly there is a lack of agriculture education.

New Zealand has an extremely diverse topography which leads to a wide range of agricultural production. With varying soil fertility, pitch of land, and land structures such as mountains (Te Ara Encyclopedia of New Zealand), there is a suitable place for the production of many types of agricultural commodities. New Zealand is most known for their sheep production. Most people immediately think of rolling hills filled with white, woolly sheep when they hear the name of the country, which would have been an extremely frequent sighting in 1982 when there were twenty-two sheep for every person. Although there

are still many sheep in the nation, this number has greatly declined to approximately twenty-seven million sheep in 2018, which as a ratio is just shy of six sheep per person. The decline of sheep production is directly linked to an incline in other commodities. Many farmers transitioned to producing dairy, beef, and deer as new technologies came into the industry with the hope to maximize profits on the growing markets. All dairy, beef, and deer numbers have steadily increased since, with a current 5.26 million dairy cattle, 3.61 million beef cattle, and 1.7 million deer. In addition to livestock production, flat areas with fertile soil are commonly used for crop production. Wheat, oats, barley, and corn are the most popular crops, although they make up a small percentage of the export percentage, a slim 2.9%. These crops commonly referred to as cereal crops are the fastest growing part of the country's exports, showing a 20.1% increase from 2017 to 2018. There is also a wide range of vegetable production, but it is primarily used within the country and not exported.

Two of New Zealand's most prevalent issues include not maximizing on export markets and the failure to give young people opportunities to pursue an agricultural career. To begin, New Zealand has outstanding conditions for diversified livestock production. With different topography, soil, and landmarks around the country, every region suits a different part of agricultural production well. But, one of the industries dating back the farthest is rapidly declining: Sheep production. In 1982, there were over 70 million sheep supported by the nation. Now, there are currently only around 22 million. Although the country has utilized more diversified agriculture with dairy, beef, and deer production, along with crops, this number rapidly plummeted due to the lack of young individuals pursuing agricultural careers. Due to the lower numbers, prices have increased and Australia is beginning to increase their production to meet the demand. All the while, New Zealand is continually decreasing production when there is an open market.

A second large issue facing New Zealand is recruiting a new generation to begin farming. The average age of a current farmer is fifty-six years old (Te Ara Encyclopedia of New Zealand). This number has steadily increased in all specific areas of production since 2006 as well, which shows that there is not a large number of young people joining the profession. This conclusion can be drawn from multiple reasons, but most importantly because of the lack of agricultural education programs available. In addition to a low number of programs, the two tertiary agricultural institutions, Taratahi and Telford, are liquidizing. Without experience, hands on learning, and cost effective educational opportunities, young people will not choose agriculture as a profession, even though it powers the rest of the world.

The first issue to address in New Zealand is recruiting the young generations to choose agriculture as a profession. It has been proven by countless studies that young individuals will choose a career based upon what they have been exposed to throughout their life. This is a key factor in exposing youth to new technologies and things beyond their immediate line of sight to find new interests. Countries like the United States are a great example of having diverse organizations that allow youth to follow their interests and pursue them while learning lifelong skills like public speaking, leadership, and citizenship. A few of the United States' most participated organizations include 4-H, Boys and Girls Club of America, Boy Scouts, Girl Scouts, and the National FFA Organization. In New Zealand, however, youth organizations have been on a steady decline since the 1980s. The more popular organizations include Scouts, similar to Boy Scouts of America, and Girl Guides, similar to Girl Scouts of America. Both of the organizations teach practical and outdoor skills. Also, the YMCA organization was the first developed in the country around 1855 but has been rebranded multiple times, but always focused on physical fitness. Many see the

organizations as outdated as participation continues to rapidly decline every year. To increase enrollment, new concepts must be introduced. Youth want to feel apart of something, so student-led organizations would increase involvement. Also, presenting different organizations with a different concept would also involve more youth. All organizations currently available are focused on religion, outdoor skills, fitness, or domestic skills. Presenting a new organization centered around student leadership, communication skills, and broad project areas would allow youth to pursue new avenues to find their passions. Through this search, many more young people will choose to pursue an agricultural profession. Once there is a driving force wanting post secondary agricultural education, institutions will reopen for education. Young people will then be able to step up to fill the void of agricultural jobs and utilize the market to begin farming.

To begin youth interest in this subject area and in student-led organizations, a first step could be requiring a Career Technical Education(CTE) credit for graduation. Options to achieve this credit can include a variety of classes covering agriculture education, construction/shop skills, business, finance, health science training, or family consumer sciences. With the requirement of these classes, students will gain hands on experience and improve their skills in these areas. They can establish their likes and dislikes, which can help them discover new interests and possible career options. With encouraging teachers and school faculty, students can dive into these new interests and many levels, but specifically through youth organizations that will give them more experiences in the area and an opportunity to be evaluated on their skills and improve. Student-led organizations are the key for youth to pursue careers out of their direct line of sight, especially within the agriculture industry.

Once youth pursue new organizations and become active in agricultural professions, there will be markets open for them to pursue in production. Market prices are closing in on their highest in ten years with a huge demand from the European Union, United Kingdom, and China for more. New Zealand sheep producers also have an advantage to other places around globe because of their lower production costs, high quality, and aggressive trade programs. There is also a wide range of opportunities to engage in diversified agriculture because of the rising beef, dairy, deer, and cereal crop industries. With open markets, high prices, and the opportunity to diversify, young farmers can be successful in the profession if they become interested through new youth organizations.

Overall, New Zealand is full of rich agricultural traditions and practices, but many young people are not choosing agriculture as a profession. To encourage involvement, the nation must provide new youth organizations that allow young people to discover new things and find new interests. Through exposure to new things, young people will follow the things they enjoy, particularly agriculture, that they may have never been exposed to before.

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