Natural Disaster Risk and Impact Assessment

Peet's Coffee and Tea

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Executive Summary

This report is a natural disaster risk and impact assessment and will be based on the company Peet's Coffee and Tea. The information provided in the report will cover Peet's Coffee's business model, a risk analysis of the area, an impact analysis, and recommendations for Peet's Coffee.

Peet's Coffee and Tea is a well-known business in the United States, they are located in nine states predominantly in California. They are set on providing the freshest and highest quality coffee to their community through strong relationships with their suppliers, customers, and employees.

Being that Peet's Coffee is mainly in California this report will focus on the risks the natural disasters in California pose to Peet's Coffee. California is prone to wildfires, earthquakes, and floods which are very damaging. Through extensive research, it was found that wildfires pose the biggest threat and risk to Peet's Coffee because of how common, fast-growing, and damaging they are to the state as a whole.

When conducting the impact analysis it was clear that wildfires are natural disasters that every business and family in California needs to be well prepared for.

The most beneficial recommendations to help prepare and protect Peet's Coffee in the event that a wildfire occurs are to get appropriate coverage for regional disaster, put aside funds to cover several weeks of expenses, transfer all business documents to the cloud and have an extensive emergency plan.

Summary of Business Model

Peet's Coffee and Tea is a retail chain in nine states across the U.S, predominantly in the state of California with almost 200 locations. Peet's Coffee is committed to sourcing the highest quality coffee and tea possible for its customers. According to Peet's Coffee, they want their customers to receive nothing but the best and they know that starts with the long-lasting relationships they have built around the world with their suppliers. In order to deliver value to its customers, Peet's Coffee ensures best-in-class training for bringing fresh, high-quality coffee to each location. This includes verified sourcing to help breed climate-smart coffee plants with direct trade from countries with Arabica beans.

Adding to that, Peet's Coffee has worked with producers and coffee supply chain partners, for decades, to provide the highest quality coffee in a responsible manner. To top off how Peet's Coffee creates value, they leave their distribution team responsible for ensuring the freshest beans to make it to the grocery store shelves, so that not only are you getting the freshest cup of coffee at Peet's Coffee but that you can also get it in the comfort of your own home. All of these factors are what bring the customers into Peet's Coffee and of course the amazing tasting coffee. Customers are not only buying from the physical coffee shops, but they are also ordering online and buying from grocery stores in their communities which maximizes profits. With Peet's Coffee's innovative offers, diverse options, A La Carte program, and rewards program it's hard for customers not to come back. What really helps is Peet's Coffee's "customer journey", this is where loyalty is established with sales being made in their modern store design and their focused marketing to capture all potential customers.

Now, the biggest revenue generators are the key physical resources that Peet's Coffee relies on for its organization. Some of those resources are Arabica beans, milk, spices, and wheat. Peet's Coffee made sure to gather all of the finest ingredients to ensure the highest quality coffee. When looking at resources that do not go into the coffee but are still needed we are seeing items like gasoline, natural gas, and specialized machinery throughout the steps of making the coffee. When you walk into a Peet's Coffee store you are stunned by the modern design and the calming atmosphere. Peet's Coffee in Berkeley, California is a beautiful scene, seating is accompanied by pillows while tables are paired with soft spotlights and don't forget the wall of flowers to bring in the natural appeal Peet's Coffee and Tea brings to each customer.

Risk Analysis

Now that we know the majority of Peet's Coffee shops are located in California we can focus on some geographical factors Peet's Coffee should keep in mind while operating on the West Coast. Natural disasters are unavoidable and unpredictable, it is important as a business owner to ensure that you are always informed and prepared to minimize the damage in the case that a natural disaster does occur. Being that California is prone to multiple kinds of natural disasters Peet's Coffee will need to be informed about the most common ones which are wildfires, earthquakes, and floods, according to the article "know and understand natural disasters".

Wildfires

When looking at wildfires in California the California Department of Forestry and Fire Protection estimates that significant portions of the state face a high to extreme threat of wildfires, including most forested regions of the state, as shown in Figure 6 (See Appendix K). The figure also indicates that not only are millions of acres in high risk zones but also millions of acres are in extreme high risk zones. Many areas in California are prone to destructive wildfires based on their local weather and the health of the forest. According to US today, deadly wildfires such as the ones raging in California can begin with a small spark, such as a flat tire or cigarette butt and combined with dry forests and winds that is all that is needed for a catastrophic wildfire to start, not ending for a long period of time. Now, do those at risk zones shown in Figure 6 remain at risk throughout the entire year or just peak season? (See Appendix K). According to Calmatters, history shows that September and October, with their hot, fierce winds, are the worst months for fire. Although fires can happen throughout the year they are most commonly seen in the fall months.

Earthquakes

Moving on to earthquakes and the impact they have on California. According to USGS, An earthquake is what happens when two blocks of the earth suddenly slip past one another. This can cause a little rumble underneath your feet or it can cause your entire house to collapse. Mentioned on LAO, “damage from earthquakes depends not only on the earthquake's magnitude, but also on other factors, including the depth of the earthquake, the distance from the center of the earthquake, the type of soil in the area, and the amount and type of local development”. Shown in figure 8 California has several significant fault lines increasing the possibility of highly damaging earthquakes in those areas (See Appendix L). Also mentioned on LAO, “The state has experienced a number of destructive earthquakes in its history. Including the major earthquake that came in 1994, Northridge caused 57 deaths and close to 12,000 injuries with $15 billion losses”. Figure 9 shows the history of destructive earthquakes in California, here you can see that there is no specific pattern the earthquakes just happen, but they tend to be a few years apart (See Appendix M).

Floods

Research from LAO shows that California suffers from flooding accompanied by storms, “Since 1992, every county in California has been declared a federal disaster area at least once for a flooding event”. The article goes on to explain that there are still areas that are more prone to floods than others, such as Sacramento Valley and areas in poverty. Now, something that caught my eye was that although the whole state is at risk of flooding, when you look at figure 5 you see that the timeline of major floods in California are many years apart and the last one they had before the one in 2017 was in 1997, almost 20 years apart (See Appendix J). With this information, we know that while residents of California are at risk of major flooding, it does not happen too frequently.

Most Impactful Natural Disaster

After researching and reviewing the most common natural disasters in the state of California it has become clear that the most prevalent and damaging natural disaster to affect Peet’s Coffee lies with wildfires. It may seem that earthquakes cause more lives and money to be lost but when you look at the timeline of earthquakes, in figure 9, you see that the last one to occur was about six years ago and the one before that was 20 years ago (See Appendix M). When looking at floods it is clear that they will always be a concern for California but they also do not happen as often as fires do in this current day and age, seen in figure 5 (See Appendix J). As mentioned above, millions of acres are at extreme risk of damaging fires all of California. According to USA Today, "Large fires are becoming more common: In terms of acres burned in California, 15 of the state's 20 largest wildfires have occurred since 2000". Unlike earthquakes and floods, fires are not only becoming more common year after year but also more dangerous. Stated by USA Today and NY Times, the fire named, "Camp Fire", was burning the equivalent of 60 football fields per minute. That fire is considered the deadliest and most destructive in the state of California, burning down thousands of homes and killing 86 people, not to mention the amount of wildlife it killed. Another reason that wildfires show to be the most risk to not only to Peet's Coffee but to the state of California is global warming. According to USA Today, over the past two months, the areas now burning have had far less precipitation than normal for this time of year, while experiencing above-average temperatures," said Jacob Bendix, a geographer at Syracuse University. Of course, global warming issues are reflected upon human beings' actions, we pollute the air with greenhouse gases and an abundance of other toxins into our beautiful home we call earth. To make matters worse humans are the most unpredictable when it comes to starting fires and causing the fires. USA Today mentioned, "About 84 percent of wildfires in the USA are started by people, according to a comprehensive study in 2017 published in the Proceedings of the National Academy of Sciences". Floods and earthquakes only occur through natural disasters but human beings are causing the fires and they are the most unpredictable and uncontrollable, which is why business owners, families, and the government needs to be prepared for wildfires and the risks they pose. To show how concerning these wildfires are here is a quote from CNBC, "The number of S&P 500 firms flagging "wildfire" as a potential risk factor in annual reports has risen over the past decade — from 9 in all of 2010 to 37 so far in 2019." With that being said wildfires have shown to be of utmost concern out of all of the natural disasters California and Peet's Coffee may face in the near future.

Impact Analysis

Taking a closer look at Peet's Coffee's 200 plus locations in California it is clear that they are distributed all over the state, from San Francisco to Los Angeles. Referring back to figure 6, Los Angeles is in the extreme risk wildfire zone, along with San Diego (See Appendix K). While cities like San Jose and San Francisco are not in the extreme risk zone they are still in a high risk zone, this further supports the fact that wildfires in California will affect many of Peet's Coffee's locations and company as a whole. According to The Guardian, "over the last few years, California and the American West at large has seen progressively worsening wildfire seasons, with more acreage burned, over longer periods of time, devastating more human life and property". When thinking about the number of businesses and homes damaged by a wildfire that is burning acres at a time for longer amounts of time you do not realize how much these fires truly destroy. Referring back to the horrific wildfire named Camp Fire, Market Place says that just this one fire destroyed over 2,000 businesses in 2018, with the majority of them burned to the ground. This is very concerning for Peet's Coffee being that they have over 200 locations in California. LAO says that wildfires are increasing the most out of all other natural disasters in the state of California, which is why it is most important to be prepared for a wildfire. Access Corp mentioned 40% of businesses fail to reopen after a natural disaster like COVID-19. This pandemic is not a wildfire, it is a virus, so while 40% of businesses fail to reopen from the loss of money this pandemic caused, think about being out of work for months because the entire building was burned to the ground.

You not only are losing money because you're out of business you also have to find the funds to rebuild your locations.

In the event that a wildfire does occur in California, two things could happen, it could either get controlled rather quickly and not do as much damage or it could get out of hand and last for weeks at a time.

Most Common Scenario

In most scenarios, the residents in a certain proximity of wherever the wildfires are burning are placed under a voluntary evacuation. The fire department continues to control the fire with regular precautions such as using fire hoses and retardant dropped from air tankers. Stated in the article "How WildFires Work", it is a chemical retardant that contains phosphate fertilizer, which helps to slow and cool down the fire, that is the red stuff that you often see being dropped from planes and helicopters. If there are only 1 to 3 fires the fire department can control it and most of the time this stops the fire from spreading, which is when the firefighters can die the fire out. According to CEF, smaller fire's usually cause less physical damage such as the soil in the area being destroyed, plants and trees gone, erosion, and the pollution from the smoke but it is different for the small businesses in the area. Stated by Mashable fires burned for an average of six days, which means businesses that had their employees evacuated and their customers evacuated are losing that business for about 6 full business days. Business owners do not have to pay their employees if they make the decision to evacuate under voluntary terms. In this case, it is most likely a few of Peet's Coffee locations were affected by the voluntary evacuation and fire damage since their stores are spread out across California.

Worst Case Scenario

Now, if the wildfire spread into 5 to 10 different fires which are very common in California, this is when a mandatory evacuation occurs. Also mentioned by Mashable, when the more severe fires occur they can last to nearly seven and half weeks (52 days). That means businesses are out of work for 52 days but still need to pay their employees for those 52 days according to NOAA, this could cause major devastation for some companies like Peet's Coffee. Not only could Peet's Coffee and other companies lose profits they could also lose their entire physical store or stores. Mentioned earlier by Market place, over 2,000 small businesses were burned to the ground in the 2018 fire named Camp Fire. The New York Times states that more than 600,000 acres had burned in the year 2018 due to three different wildfires burning at the same time.

This could cause Peet's Coffee to lose more than just two or three locations if an event like this were to occur it would have a major impact on the company as a whole, losing daily profit for the entirety of these natural disasters and the costs to rebuild in the aftermath.

Recommendations for Business Continuity

With that being said it is important for Peet's Coffee to be prepared for an event like this when they are in high risk areas. Some preparation actions Peet's Coffee could take to lower the impact of these wildfires are to get appropriate coverage for regional disaster, put aside funds to cover several weeks of expenses, transfer all business documents to the cloud and have an extensive emergency plan.

Proper Coverage/Insurance

Obtaining appropriate coverage for regional disasters could be a difficult and confusing task for employers but as a major company with many locations, Peet's Coffee needs to ensure all bases are covered. Stated by Hartford, California business income insurance helps your business replace income when you cannot operate due to a covered property loss such as damage from wind, theft or fire. If Peet's Coffee obtained the business income insurance it's employees will not go a day without pay and it will not go a day without some sort of income, depending on what they qualify for. This will be very helpful to Peet's Coffee being that fires are so common in California. Along with business income insurance, Peet's Coffee could obtain a business owner's policy (BOP). Also mentioned by Hartford, a BOP is often used to provide coverage for small businesses that want to protect business equipment that can be damaged in a fire, theft or another disaster. This way not only will they have insurance for income Peet's Coffee will also be covered for damaged goods. Obtaining the coverage can be done before the physical location is finished or if the location is already in business they can apply for the insurance. Peet's Coffee will be able to have some peace of mind if one or more of its locations gets burned down in a fire but its insurance replaces everything. It will make the process of rebuilding a bit easier.

Emergency Funds

Another recommendation for mitigating the impact and risk of a wildfire would be to have funds put aside to cover several weeks of expenses. Stated by INC, well before disaster strikes, small business owners should be saving enough funds to cover at least two weeks of operating expenses, payroll and inventory management. This will help ensure that Peet's will not struggle during the rebuilding process. If they have not started saving it is never too late to revise their budget and create a savings section to ensure they have backup money in an event like a wildfire. Also mentioned by INC, 40 percent of owners who have both insurance and savings responded as confident that their business could survive a natural disaster if they were forced to close for more than one month. This goes back to the first recommendation to obtain coverage for Peet's business. If they have both the coverage and savings Peet's will be smooth sailing when they are shut down due to the disaster and during recovery. It will give them peace of mind that they have two forms of financial back up during horrific times.

Cloud Document Storage

The next proposed recommendation tactic is to make sure that Peet's Coffee is continuously transferring all business documents to the cloud. When a wildfire occurs it destroys everything in its path if one or more of Peet's locations happens to get burned down, Peet's Coffee needs to ensure that their company documents and financials are protected and stored in more than just a physical location but also in the cloud. Stated by INC, whether your business is threatened by a hurricane or a fire, the loss of paper documents and physical records can be devastating. If this happens Peet's Coffee would lose their payroll records, invoices, and projects in progress. Peet's Coffee can either start their business with documents being stored in the cloud every time a physical document is made, therefore it would be constantly up to date or they can hire someone to transfer all of their physical documents on to the cloud and then move into the up to date process from that point on. This recommendation will also help Peet's Coffee recuperate after a wildfire or any natural disaster that has the potential to destroy documents.

Emergency Plan

The last recommendation for Peet's Coffee is to have an emergency plan in steps to rebuild and prepare its company. According to Safety Management, "preparing for a natural disaster is half the battle in recovering. An emergency plan could help business owners save thousands, if not billions, of dollars". That is why along with the recommendations above Peet's Coffee should have an emergency plan in place to hence the protection of his company. The steps of the emergency plan should contain a threat analysis, continuity plan, emergency preparedness checklist, run multiple safety drills, and have a crisis communication plan. This seems like a lot but it is all necessary for protecting Peet's Coffee and its employees. In regards to conducting a threat analysis, all Peet's Coffee has to do is keep up with weather trackers and the latest news on the situation to always be a step ahead of the disaster. The continuity plan will help employees, vendors, and customers up to date with what actions Peet's Coffee is going to take in preparing for this disaster. The emergency checklist is one of the most important aspects, to ensure all bases are covered, according to Safety Management, the red cross provides a standard checklist for businesses. When performing the safety drills we are educating our customers and employees on how to react in the situation of a crisis. This also ties in with communicating all the necessary steps everyone in the organization has to take in order to be prepared throughout the natural disaster.

With these four recommendations for business continuity, Peet's Coffee should be able to mitigate and reduce the risk and/or impact of the wildfire(s). With coverage for regional disaster, funds aside to cover several weeks of expenses, all business documents transferred to the cloud and an emergency plan in place, Peet's Coffee will have all of their bases covered. Although it will still be hard to rebuild after a wildfire it will be a lot easier with all of these recommendations in action.

References

Arango, T., & Del, J. A. (2019, November 4). 5 Lessons We Learned From the California Wildfires. Retrieved April 21, 2020, from https://www.nytimes.com/2019/11/04/us/fires-california.html

Bonsor, K. (2020, January 27). How Wildfires Work. Retrieved April 21, 2020, from https://science.howstuffworks.com/nature/natural-disasters/wildfire4.htm

Cagle, S. (2019, November 1). California's fire season has been bad. But it could have been much worse. Retrieved April 21, 2020, from https://www.theguardian.com/us-news/2019/nov/01/california-wildfire-season-2019

Cart, J. (2019, August 30). What to know as California's peak fire months loom. Retrieved April 21, 2020, from https://calmatters.org/environment/2019/08/what-to-know-california-fire-season-peak-months/

Coffee farmers. (n.d.). Retrieved April 21, 2020, from http://www.fairtrade.org.uk/Farmers-and-Workers/Coffee

House, B. (2018, May 8). Is Your Small Business Prepared for Disaster? Retrieved April 21, 2020, from https://www.inc.com/bob-house/is-your-small-business-prepared-for-disaster.html

Jacob Bendix, Professor, Geography. (2020, March 4). Retrieved April 21, 2020, from https://www.maxwell.syr.edu/geo/Bendix,_Jacob/

References

JRReed. (2019, November 12). A rising number of US companies are flagging wildfire risk as suppression costs climb. Retrieved April 21, 2020, from https://www.cnbc.com/2019/11/10/more-companies-are-flagging-wildfire-risk-as-suppression-costs-climb.html

Kaufman, M. (2018, August 15). How long does it take for today's violent wildfires to go out? Retrieved April 21, 2020, from https://mashable.com/article/wildfire-burn-how-long-climate-change/

Know and Understand Natural Disasters. (n.d.). Retrieved April 21, 2020, from https://www.cdph.ca.gov/Programs/EPO/Pages/BI_Natural-Disaster_Know-and-Understand.aspx

NOAA Implementing Procedures for Use of Evacuation Pay.doc. (n.d.). Retrieved April 21, 2020, from https://www.wfm.noaa.gov/NOAAProc_forUseEvacuationPay.html

Northern California fires leave local businesses with few options to rebuild. (2019, April 29). Retrieved April 21, 2020, from https://www.marketplace.org/2018/12/17/northern-california-fires-leave-local-businesses-few-options-rebuild/

Rice, D. (2018, November 13). How do wildfires start? All it takes is a spark. Retrieved April 21, 2020, from https://www.usatoday.com/story/news/nation/2018/11/13/california-fires-how-do-wildfires-start-they-getting-worse/1987691002/

References

Rinkesh, A. (2016, December 25). Causes, Effects and Solutions to Wildfires. Retrieved April 21, 2020, from https://www.conserve-energy-future.com/causes-effects-and-solutions-of-wildfires.php

Study: 40 percent of businesses fail to reopen after a disaster. (2020, April 21). Retrieved April 21, 2020, from https://www.accesscorp.com/access-in-the-news/study-40-percent-businesses-fail-reopen-disaster/

The Challenge of Reopening a Business after a Natural Disaster. (2019, January 17). Retrieved April 21, 2020, from https://safetymanagement.eku.edu/blog/the-challenge-of-reopening-a-business-after-a-natural-disaster/

Types of California Business Insurance Coverages Offered California Business Owner's Policy. (n.d.). Retrieved April 21, 2020, from https://www.thehartford.com/business-insurance/california

WE'RE STILL BREWING. (n.d.). Retrieved April 21, 2020, from https://www.peets.com/

(2019, January 10). Retrieved April 21, 2020, from https://lao.ca.gov/Publications/Report/3918

References

(n.d.). Retrieved April 21, 2020, from https://www.usgs.gov/natural-hazards/earthquake-hazards/science/science-earthquakes?qt-science_center_objects=0#qt-science_center_objects

(n.d.). Retrieved April 21, 2020, from https://www.sec.gov/Archives/edgar/data/917968/000114420412013982/v303252_10k.htm

Appendix A

Business Model Canvas: Value Propositions

Peet’s Coffee and Tea was established in 1966 with one thing on their agenda, “to be deeply committed to sourcing the highest quality coffees and teas so that our customers receive nothing but the world's best”. Peet’s Coffee understands that to keep their promise they need to establish solid, meaningful long term relationships with their suppliers all over the world, which they have for decades. By providing the best quality of coffee and tea across the US they are satisfying their customers daily needs, according to Fair Trade, around 125 million people worldwide depend on coffee for their livelihoods. That means Peet’s Coffee is helping those people whether they are college students or health care professionals on a daily basis. Peet's Coffee is there to help them get through the day. Being that they have different customer segments Peet’s Coffee has innovative offers where they have ready to drink cold brew as well as premium offers of either organic, fair trade, or hand-roasting. On top of that, they have diverse options from light to dark coffees. Peet's Coffee delivers its commitment to diverse high quality coffee and tea to their customers every day.

Appendix B

Business Model Canvas: Customer Segments

When it comes to customer segments Peet's Coffee has about three different segments including colleges & universities, business & industry, and healthcare institutions. Each segment of customers has interest and needs for different products, Peet's Coffee has catered to each of their needs. For college students, they offer healthy options with earth-friendly and sustainable packaging as well as merchandise. Their coffee is responsibly sourced so students can fuel themselves while knowing they are not damaging the earth. For the business & industry segment, Peet's Coffee offers a reward program because the customers in this segment tend to return frequently. Lastly, in the customer segment for healthcare institutions, they offer reduced sugar options and beverages with healthy ingredients because they know how important it is to health care workers to remain in good health. Peet's Coffee goes above and beyond to provide for all of their customers.

Appendix C

Business Model Canvas: Customer Relationships

Along with Peet's Coffee's top priority to provide the highest quality coffee to its customers, they also have a high priority for customer relationships. Mentioned on Peet's Coffee's website, "our team is responsible for making sure the freshest beans make it to our grocery shelf, so you can enjoy the most flavorful cup in the comfort of your home, with our distribution team, you can trust that you're buying the freshest coffee possible". They go on to explain how they help meet their customer's needs with premium self-serve to a full program of coffee beverages, for each of their customer segments. These programs are integrated with their business model to ensure Peet's Coffee is providing the highest quality coffee to each of its customers. While it seems to be a costly process it actually brings in more revenue due to reaching more customer segments. Having all of these programs is a good tactic for Peet's Coffee because it allows them to connect with each customer in a unique way.

Appendix D

Business Model Canvas: Key Partners

Just like Peet's Coffee's customers, their key partners are very important to the company. Being that they value high quality trade and natural resources they want to ensure they are treating their partners with their best foot forward. Some of their long term partners, shown on their website, are KIMSSA, Coffee Kids and Grounds for Health. Each of these organizations provides a great service to the community around them that Peet's Coffee wants to take part in. KIMSSA is an organization that provides underprivileged students to succeed in school through tutoring, training, and cultural programming. Coffee Kids is a program for young farmers looking to start their own coffee business, to do this they train and mentor the farmers to respond to challenges they will face in the field. Lastly, Grounds for Health focuses on training the medical industry and helps coordinate screening/treatment services to the community. Now, if we take a look at Peet's customer segments, colleges & universities, business &

industries, and healthcare institutions, we see that they are aligned with Peet's partners to ensure strong relationships.

Appendix E

Business Model Canvas: Channels

There are many channels through which Peet's Coffee reaches its customer segments. Some of those channels are grocery stores, online hand delivery, and of course the physical locations of Peet's Coffee and Tea spots. The most cost efficient channels are the physical locations and grocery stores. This is because they have already had these practices integrated into their business plans since they opened. Now, these different channels are incorporated with their customer's routines very well. For the health industry, the grocery store channel is best for them because they are always on the run at different hours of the night and day and need to have their coffee on hand at home so they can prepare for their shifts. While the college students and business industry benefit more from the physical locations because they tend to do work while at the coffee shop. When it comes to the online delivery this pertains to each of Peet's Coffee's customer segments, once in a while everyone has a day where they do not have time to make their own coffee or stop and get one. Peet's Coffee does a great job of reaching all its customers through all of its channels.

Appendix F

Business Model Canvas: Key Activities

When it comes to key activities within Peet's Coffee they want to ensure all of their actions align with their value propositions, which is to provide the highest quality coffee to their customers. To do this Peet's Coffee claims that their "coffee beans come from verified sourcing, to provide training to coffee farmers, to help breed the climate-smart coffee plants of tomorrow, Peet's is redefining what it means to be a responsible coffee purveyor today". This really shows the lengths that this company goes to in order to stay true to their word and promised values. For many people in their customer segments, it is important that throughout the entire process of making the coffee and getting the materials that it is done in a humane and Earth friendly way. People do not want to partake in something that is going to harm other beings or the Earth and Peet's Coffee ensures that is not happening when each customer walks through their doors.

Appendix G

Business Model Canvas: Key Resources

According to Peet's Coffee's website, they have been partaking in responsible sourcing, "for decades, we have worked with producers and other coffee supply chain partners to ensure we source the highest quality coffees for our customers in a responsible manner. Over time, we've evolved our approach to better understand the realities growers face and the methods they use to grow and mill coffee. Through several programs we manage, we are gaining the insights that help point to places where we can celebrate successes and collaborate even more effectively with coffee producers to make improvements over time". This was a lot of information to take it but to break it down Peet's Coffee basically analyzed every step of the coffee making process from where they get their beans to how it gets to America and made sure that each step was responsible for the environment, people, and the places that are involved in the entire process. Not a lot of companies go to this extent to ensure good quality.

Appendix H

Business Model Canvas: Cost Structure

Many costs go into the process of making coffee from coffee beans in another country. Almost all of the ingredients in coffee are commodities that tend to fluctuate in price over time. According to the securities and exchange commission, "commodity coffee prices have been extremely volatile ranging from a low of $1.32 per pound and peaking at $3.05 per pound." With this being said it can be rather difficult for Peet's Coffee to adapt to the constant fluctuations in their goods. Mentioned by Peet's Coffee's annual report, "the price that we paid for our coffee was 42% higher per pound than what we had paid, the increased cost affected our profitability negatively as coffee costs as a percent of sales increased from 15% to 21%". It is shown here that their coffee is the biggest cost struggle due to the process they go through to obtain it. It is important for them to stay on top of these fluctuations in order to stay afloat as a company, especially when they have other commodities they are exposed to such as milk, wheat, and natural gas that also tend to fluctuate in price.

Appendix I

Business Model Canvas: Revenue Streams

In regards to Peet's Coffee's revenue streams, it goes hand in hand with the cost structure mentioned above. Mentioned in their annual report, "If we are not able to purchase sufficient quantities of high-quality Arabica beans due to the fluctuations, we may not be able to fulfill the demand for our coffee, our revenue may decrease and our ability to expand our business may be negatively impacted". Therefore, all of the issues Peet's Coffee has with its commodities fluctuations could potentially negatively affect their company as a whole. Being that one of their commodities is fuel it could indirectly lead to higher transportation and electricity cost for Peet's Coffee as well. Also mentioned in their annual report, "To the extent we are unable to pass along such costs to our customers through price increases, our margins and profitability will decrease". This is something they have to keep their eye on in order to maintain profitability. Peet's Coffee will have to continuously adjust their pricing in stores to make up for the extra costs in commodities, which in the long run might affect their customers' outlook on the company. Since Peet's Coffee and Tea is located in nine states and has over 250 locations, it is apparent they are dealing with the fluctuations well and have coped with the issue over time to improve their profits.

Appendix J

Figure 5

Figure 5

History of Major Floods in California

1825
Los Angeles River Course Change. Flood created by large mountain storms caused the Los Angeles River to jump its banks, establishing the southerly course it follows today.

1862
"The Great Flood." Weeks of heavy precipitation created the largest flood in California's recorded history, lasting several weeks and inundating the entire Central Valley and most of Orange County.

1905
Formation of Salton Sea. Large breaches in irrigation canals inadvertently diverted the Colorado River into a desert basin in the Imperial Valley, reestablishing a long-dry prehistoric lake.

1928
Collapse of St. Francis Dam. Catastrophic failure of dam in Los Angeles County caused flood wave that killed around 450 people.

1938
Southern California Floods. Flash flooding and debris flow from heavy rainfall led the Los Angeles, San Gabriel, and Santa Ana Rivers to burst their banks, resulting in more than 100 deaths and massive damage across much of the region.

1955
Yuba City Flood. Feather River overtook its banks and levees on Christmas Eve, destroying much of Yuba City, nearly destroying Marysville, killing 38 people, and forcing 30,000 people to flee.

1964
North Coast Tsunami. Tsunami caused by earthquake in Alaska destroyed several towns in Northern California.

1964
"Christmas Flood." Severe flooding from heavy precipitation in the northern part of the state, particularly along the coast. State of disaster declared in 34 counties.

1969
Winter Storms and Floods. Serious flooding from thaw of heavy snowfall across numerous mountain ranges across the state. Resulted in disaster declarations in 40 counties, 47 people killed, 161 people injured, and $300 million in economic losses.

1982
Northern California Flooding and Landslides. Massive landslides and debris flows from rainfall throughout Northern California. Santa Cruz received 25 inches of rain in 36 hours.

1997
"New Year's Flood." Major flooding in Central and Northern California from week of heavy rainfall. Resulted in disaster declarations in 48 counties and $1.8 billion in economic losses.

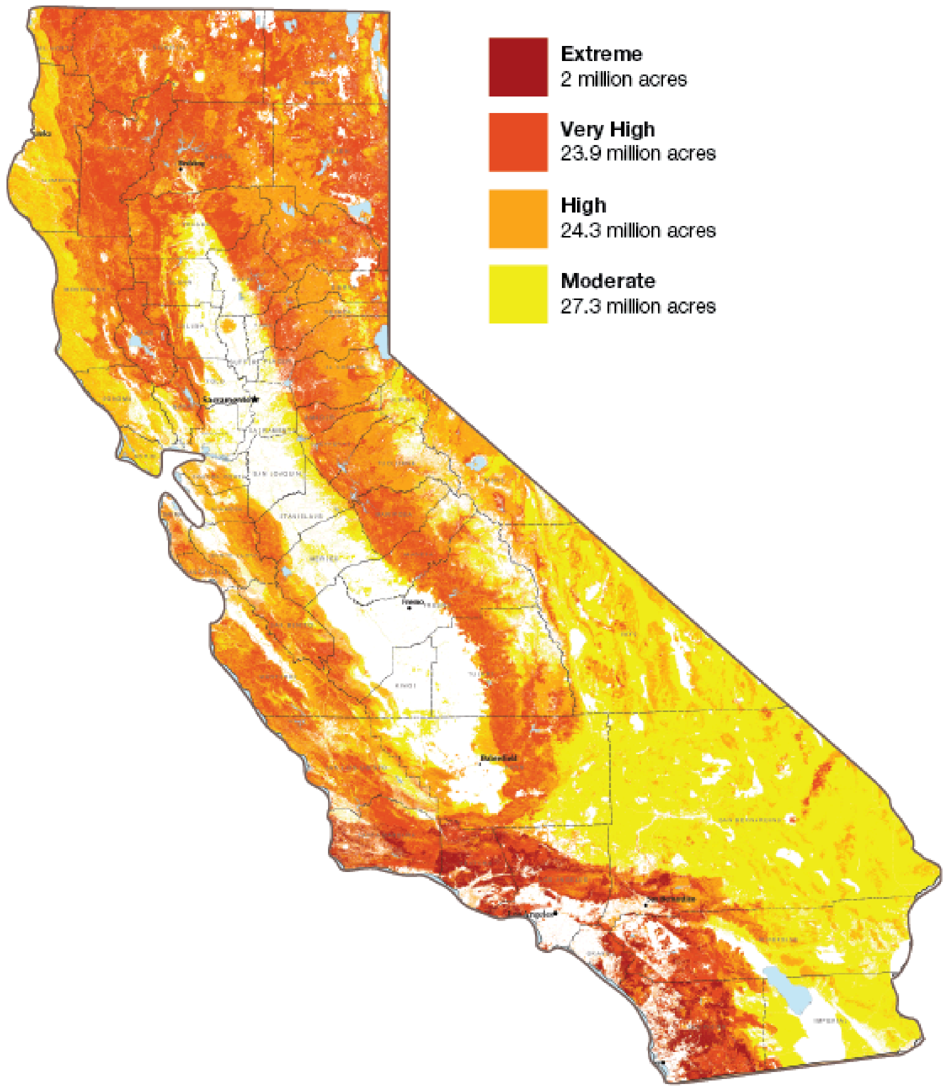
2017
Winter Storms and Oroville Dam Damage. Exceptionally high rates of precipitation cause localized flooding, mudslides, flood warnings, and road damage around the state. Governor declares state of emergency in 50 counties. Erosion damage to spillways at Oroville Dam leads to risk of catastrophic flooding, evacuation of nearly 200,000 residents, and presidential disaster declaration.

Appendix K

Figure 6

Figure 6

Many Areas of the State Face High Risk of Wildfire



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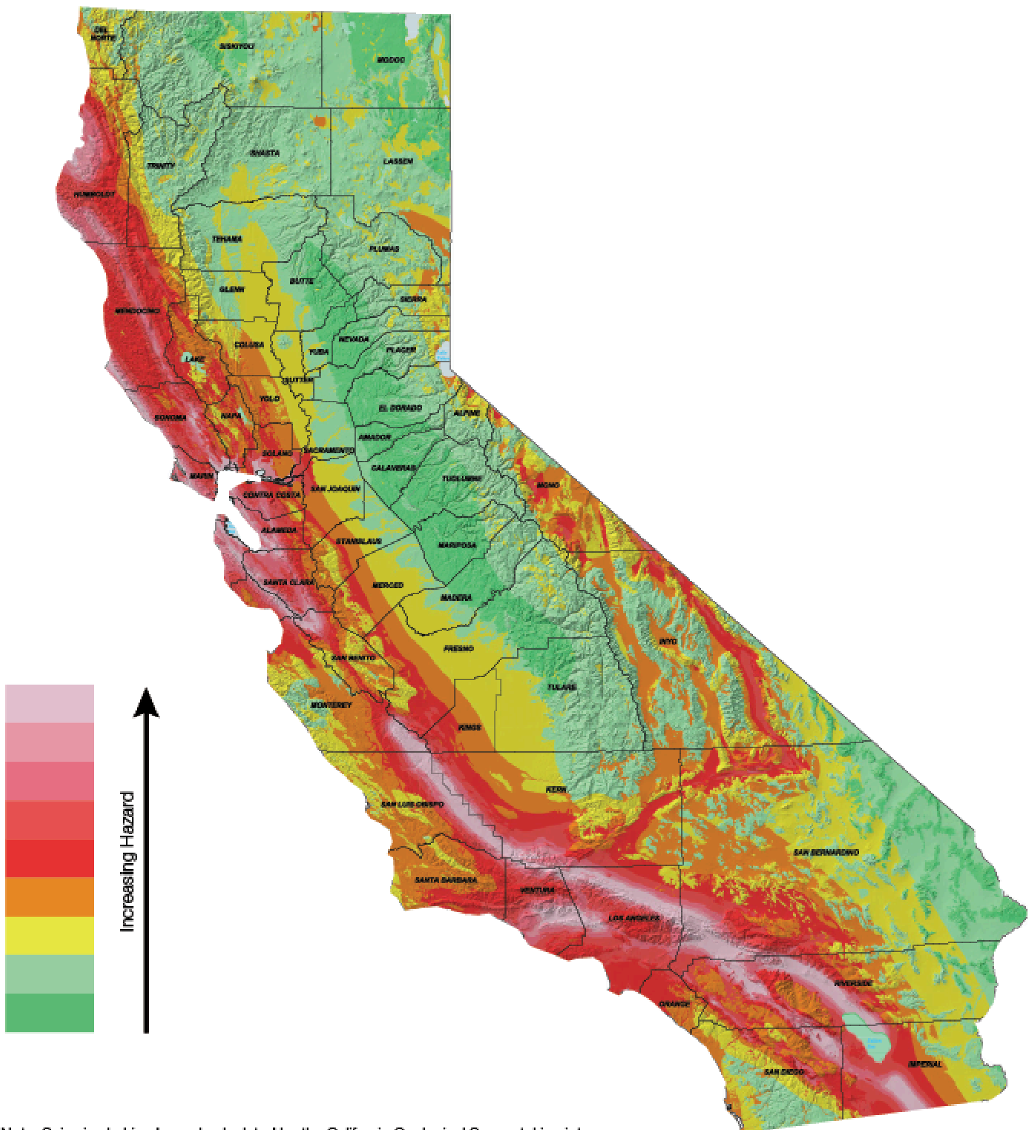
Appendix L

Figure 8

Figure 8

Earthquake Risk in California



Note: Seismic shaking hazard calculated by the California Geological Survey taking into account the likelihood of earthquakes and the level of ground shaking that they would cause.

LAO

Appendix M

Figure 9

Figure 9

Recent History of Destructive Earthquakes

1971
San Fernando (Sylmar) Earthquake. Earthquake of magnitude 6.5 caused heavy damage to infrastructure such as the Olive View Medical Center, a Veterans Administration Hospital, and the Van Norman Dam. Responsible for 58 deaths and about 2,000 injuries.

1987
Whittier Earthquake. Earthquake of magnitude 5.9 destroyed about 1,500 single-family homes and apartment buildings and caused major damage to about 2,500 more. Responsible for eight deaths and over 200 injuries.

1989
Loma Prieta Earthquake. Earthquake of magnitude 6.9 struck the San Francisco Bay Area during the World Series. Caused extensive damage to buildings and public infrastructure, such as the San Francisco-Oakland Bay Bridge and Interstate 880. Responsible for 63 deaths and over 3,700 injuries.

1992
Landers and Big Bear Earthquakes. Earthquakes of magnitudes 7.3 and 6.3 stuck about 100 miles east of Los Angeles. Responsible for one death and about 400 injuries.

1992
Cape Mendocino Earthquake. Earthquake of magnitude 7.2 and associated fires caused significant damage to portions of Humboldt County. Responsible for over 350 injuries.

1994
Northridge Earthquake. Earthquake of magnitude 6.7 damaged or destroyed 7,000 single-family homes, 5,000 mobile homes, and 49,000 apartments. Earthquake also caused extensive damage to public infrastructure—such as freeways and schools—and many commercial buildings. Responsible for 57 deaths and nearly 12,000 injuries.

2014
South Napa Earthquake. Earthquake of magnitude 6.0 was the largest to hit the Bay Area since Loma Prieta. Responsible for one death and close to 300 injuries.

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