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“Breaking news. The island of Dominica has just been brutally attacked by Category 5 Hurricane Maria, whose passage has left both the island and islanders in complete desperation and distress. In other news, Hurricane Irma has demolished the island of Barbuda, forcing inhabitants to evacuate to neighboring countries, as the island has been made uninhabitable. Hurricane Florence is deemed to be one of the strongest and most dangerous storms experienced in over 20 years, and this had resulted in the people of North Carolina being asked to evacuate as it approaches their area. Florida residents have been asked to evacuate the area as Category 4 Hurricane Michael closes in on the vicinity. A 6.5 magnitude earthquake has left Japan in ruins, while one of the most deadliest typhoons has formed in the Pacific Ocean ”.

In recent years, apart from stories of politics and sports, the presence and impact of natural disasters has dominated the global news forum, and there is only one reason for this: climate change. For many years, humanity has been informed about the detrimental situation of climate change, and we have been educated on how the everyday activities that we indulge in fuel this dangerous entity. However, we paid no attention to the warnings, believing that the effects of climate change would not be as adverse as they have been said to be or some people share the sentiment that climate change is not real.

However, in the year 2018, we can see that climate change was neither a folklore passed down by ancestors nor a teaching mechanism used to ensure that people care for their surroundings: it is real. Real as your neighbors scream as they run for cover due to their roof being swept away.

Real as the cracking you see while the earth crumbles under your feet as the third tremor for the day passes. Real as the fear you feel when you recognize that the worst effects of climate change are yet to come. Although it is definitely too late to prevent climate change, we can take actions now that will enable us to mitigate the horrendous effects of climate change in the future, which will aid in making us resilient.

Whether it be in the business world or life in general, policies or advice cannot be generated and given if an analysis of the present situation is not carried out. This is because the analyst or advisor would have no idea where to begin in formulating a solution due to the lack of intensive knowledge about the problem. The same reasoning can be applied to this situation of climate resiliency as if one does not know in what area or where the country lacks resiliency, the individual will not be able to develop accurate solutions to combat the issue. Using this assumption as a fundamental principle, a brief analysis had been carried out over countries of the world, pinpointing similarities within them which made them prey to the harsh effects of climate change. These have been used to develop some ways to fix this issue throughout this essay. Climate change has been an issue of global interest and has increased in importance as the effects of its presence has become more prevalent and dangerous; however, Dominica and other small islands can become more resilient to its negative effects by restructuring housing, adjusting infrastructure, exhibiting flexibility in terms of income generation , anticipating and preparing for natural disasters along with investing time towards the human resource and by working together.

Before venturing into the depths of this essay, it is of vital importance that the key terms- climate change and resilient- be defined. Climate change refers to a long-term and large-scale

shift in the weather pattern and average temperature of the Earth according to www.metoffice.gov.uk while resiliency is defined as the capability to recover from extremities and difficulties. The sentiment can be confidently made that a relationship exists between the two terms, as one should be able to bounce back after the difficulties that the effects of climate change can bring about.

From observing countries after the passage of natural disasters through visuals from online and personal experience, it was observed that the housing sector was most affected.

The leading causal factor as to why so many houses were destroyed was the material used to construct houses as the majority of homes which failed to survive the disasters were ply board structures with galvanize roofing.

This observation is one of vital importance as both the governments and civilians of countries can utilize it to aid in them becoming climate resilient. Seeing that wooden structures are more susceptible to being damaged by natural disasters such as weather systems, more concrete structures with concrete or hurricane roofs should be built in areas that are very prone to hurricanes and tropical disasters.

One may say that the lack of money to build such structures is a hindrance to this idea; however, there are many ways that this obstacle can be eradicated, and the governments of these islands play a major role. Firstly, the governments can assist people who are unable to build such houses on their own by giving them the material, money and workmanship to do so. The island of Dominica with the help of non governmental organizations has already brought this plan into action as houses are being constructed following these guidelines. Secondly, the

materials to build concrete structures are costly; therefore, these governments can subsidize the price of such materials. This in turn acts as an incentive as more individuals will be willing to construct concrete structures due to the reduction in prices.

Many individuals may disagree with this trend of thought by stating that concrete structures are not invincible to natural disasters and would just be a waste of money as they will still be affected; however, allow me to defend my idea with the use of a hypothetical scenario. Peradventure an island where majority of its inhabitants have wooden houses is struck by a category 4 Hurricane, the islanders along with the government now have both the responsibility and expense to rebuild these homes. They indeed rebuild but construct ply board structures once again which are then destroyed by another weather system a short while after. Applying reasoning here, it can be seen that rebuilding of wooden houses will not be cost effective in the long run as they are easier to be demolished by natural disasters unlike concrete structures which may just need a few repairs.

After housing, infrastructure was the variable that felt the wrath of these disasters the hardest. Infrastructural flaws can be detected in the construction of transportation, water and electrical systems as their set ups make them vulnerable to climatic conditions.

Firstly, in terms of roads, the observation has been made that when it rains, the water runs on the surface of roads and this frequently occurring can lead to flooding. The opinion is then that road flooding occurs due to a mishap in road construction which happens as a lack of the anti resilient proprieties of the materials used to create them.

Asphalt has been the most recommended substance when it comes to road construction whether it may be as a consequence of its availability, expense or durability. However as time progresses and conditions get more intense, we can see that asphalt is not invincible to any of these as roads are being destroyed.

Although plain asphalt has been default road building material for many years, the time has come to find an alternative product. Through research it has been discovered that polymer modified bitumen (PMB) can be mixed with asphalt in order to make it more flexible to the ever changing climatic conditions.

Replacing asphalt roads with those of tile is another unique but effective way to gain resiliency. Tiled surfaces allow water to seep into the Earth which lessens the occurrence of flooding as the rain water will not be running on the Earth's surface. This idea has already been implemented in Copenhagen, Denmark. In Copenhagen, one of the streets, Helenevej, has been transformed into a climate resilient street made from tiles. Asphalt has been replaced with tiles which allow water to seep into the Earth. After this, the rain water is infiltrated before it reaches groundwater aquifers and gaps between the tiled transport the water to below the Earth's surface. There is a certain amount of water that the tiles and gaps are able to infiltrate without affecting its carrying capacity. Beneath the tiles, there is a reservoir which consists of 40 cm of gravel which holds water in case of extreme levels of rainfall. Alongside the road, the water flows between 4 chambers that are capable of connecting with sewage systems in instances where surface water is frozen; consequently, the system prevents the water from being stored in the reservoirs. The road has been shown to work effectively in times of heavy rainfall.

From analyzing this road climate resilient strategy, it can be seen that it is both a preventative and curative climate resilient project. This is because it aids in making the roads less vulnerable whereby protecting them against harsh weather conditions, as well as supply individuals with water in time of need.

Another variable that poses an issue towards small countries gaining climate resiliency in terms of their roads is the location of the infrastructural pieces. In order to clearly bring about this point, I have decided to use the Commonwealth of Dominica as an example. Although all roads on the island have suffered damage, the two which are located in the villages of Marigot and Antrim have been most heavily affected on a number of occasions. After scrutinizing these two areas, I have realized that the common denominator between the two was a water body in close proximity to the roads. Taking this observation into account, the government should either construct the roads further away from water or make thicker roads as this will prevent them from constantly being undermined.

The water infrastructural system is another highly gullible one due to the fact that it operates on the surface of the Earth and this in turn makes it prone to destruction if a tropical system or another disaster happens to pass. In an attempt to combat this issue, the owners of water systems should try to function under the Earth. This means that wires and pipelines should be below the Earth as this will keep them from being damaged.

Secondly, instead of seeing the influx of water during a natural disaster as an obstacle, it could be seen as something beneficial. Seeing that we are in the 21st century where technology is at an all time high and will continue to advance as time progresses, it would only be right that this

extra water be put to good use. It is my belief that a dam should be made to trap the rain water. Seeing that the water will be filled with impurities due to trees and leaves along with dirt getting into it, the next step would be to send the water which was collected to a filtration plant. In this stage, the water will be purified and treated before it is pumped into houses. The purpose of this idea is that water will be readily available during and after a storm as this is the time that individuals should have water instead of struggling to find it due to the water systems being shut down.

The third aspect of infrastructure, electricity, is as crucial to life as it is vulnerable. Just like the water systems, electrical systems operate above the ground and this makes them easy to be affected. A solution to this is to operate electrical systems under ground as well. Consequently, intense rain and wind will have no effect on electricity.

Another way that electrical services could be modified in an attempt to make them more resilient could be by investing in renewable energy sources. When a hurricane strikes and generators are swept away, electricity goes with them. Countries can become resilient in terms of electricity by incorporating renewable energy into their power supply. Energy such as wind and water are abundant during natural disasters; therefore, it would make sense to use them in a good way. The major issue with an excess supply of energy lies in the fact that the energy may be too much to control; therefore, the solution to this problem is to effectively utilize it.

When a country is affected by a natural disaster, this has a major effect on its economy as it impacts items of income generation . It is then important that economic resiliency exists within a country as this will prevent it from falling into a deep recession. A country can become

economically resilient by being flexible in the ways that it generates income. From analysis and general knowledge it was seen that agriculture is one of the building blocks of the economies of many countries of the world; therefore, it is important to ensure that it is maintained especially when a disaster happens. To our benefits, agriculture in itself is rather resilient as a consequence of the diversity that it holds. Agricultural crops vary from apples that thrive in the cold to dasheens that thrive in rainy conditions right back to sweet potatoes that grow all year round. This is very helpful in combating climate change as countries can be able to find a substitute crop to grow in case the climate conditions prevents their main produce from thriving.

Looking at agricultural adaptation from another angle, individuals can adapt to climatic conditions by changing the way that they plant their agricultural produce . Methods such as terracing, crop rotation and many others have proven their effectiveness in the past and can be implemented today at personal levels as attempts to mitigate the effects of climate change.

If a country does not thrive on agriculture, the idea of economic resiliency can still apply to it. This country can scrutinize its economy to see what other service it can offer that will thrive economically. Money generating factors such as tourism, fishing and many others can be modified in order to help these small countries become both economically and climate resilient.

Another way that countries can become more resilient to climate change is by anticipating and preparing for natural disasters and their effects. Weather conditions are ever present in the world; therefore, the educated thing would be to just expect them and prepare for their arrivals.

Countries can anticipate weather systems by being up to date on their developments, and this can be done with the help of weather forecasting. The meteorological services play a crucial part

in the level of preparation that countries have towards weather systems; therefore, it is imperative that countries invest the adequate time and money into this venture.

Countries can utilize the geographic information that they obtain from meteorological sources to aid in their resiliency. After being informed that a storm is approaching, countries can take the necessary precautions, and preparation can be split on an individual, societal and governmental level. Civilians can prepare for disasters by stocking up on water and other food supplies as well as making the necessary adjustments to make themselves and their dwellings secured. On a societal level, companies can implement safety measures by cutting off services or whatever else they may do in times of a disaster. Lastly, the governments, after analyzing the situation such as the intensity and severity of the weather systems can decide what actions they need to take in order to protect life and property, such as dismissing work and school and declaring a state of emergency. The ideology that prevention is better than cure comes into place here as these measures help to minimize the effects of the disasters before they strike.

Normally when resiliency is discussed, the focus is usually placed on physical and economic resiliency, completely forgetting about the human resource; however, with the human resource being left vulnerable, all other aspects of resiliency would not come to pass. Therefore, it is imperative that the individuals of these countries be able to contribute to climate resiliency by them in themselves firstly being resilient. The two main categories that should be targeted when it comes to human resiliency is education and health as a man is as dead without education as he is with poor health.

Education is a vital tool in ensuring that people and their countries by extension be resilient in all aspects of life including environmentally. Climate change can be made a major part of school syllabuses and not merely something that is briefly discussed in a science class. Seminars and talk shows along with walks could also be held in order to educate the adult population about climate change and its effects.

Although learning is taught, it can also be conditioned. This means that if someone is penalized or rewarded for his or her actions, this individual could learn from this situation. This indicates that if the clichéd sharing of information from teaching in a class does not seem to help the situation, incentives could be implemented. Harsh fines and penalties can be issued to persons who are involved in activities that contribute to the diverse effects of climate change. Conversely, people could be awarded for engaging in activities that don't aid in destroying environmental conditions.

Health is a very crucial variable in ensuring societal success, and seeing that climate change is a societal and global issue by extension, it would be expected that good health would be necessary in order to ensure that climate resiliency becomes a reality. In most instances, post a natural disaster, many individuals die due to the lack of specialists and equipment to care for their ailments. Making sure that there are trained personnel along with the adequate and necessary equipment to treat injuries, less individuals will succumb to their medical problems.

The sentiment is that the hardest health factor to cure is not physical but rather mental damage. Post disasters, individuals have been seen to suffer from mental illnesses at a higher rate due to the post traumatic stress and anxieties that they experience. In an effort to combat this,

countries should ensure that mental facilities are actively running so that the human resource can counter their fears of past and future disasters. This can be done by investing in and upgrading mental health facilities such as psychiatric units and rehabilitation institutions as some individuals are likely to start indulging in drugs.

" No man is an island. No man can stand alone". Although there are many islands in the world, these words of wisdom can still apply to this situation of achieving climate resiliency. As climate change is a global issue, attacking it globally may be more effective than trying to combat it individually. The leaders of small countries could come together and join their resources to achieve their main goal which is to control climate change and become resilient. Although they are working towards one goal, they could then divide and make countries specialize in different areas of interest as this will allow things to move more smoothly and efficiently. A Global Climate Resilient Act (GCRA) could be formed in which all climate resilient objectives could be outlined, and a Global Climate Resilient Fund (GCRF) could also be constructed to provide the monetary aid to different projects that countries may want to embark on in order to fight climate change.

Referring to health but still focusing on countries acting in cohesion, small countries that are in close proximity to each other could put a central health institution that they all could benefit from in place. For example, the small islands of the Caribbean are unable to individually construct health institutions that are able to cover all the health complications that can arise due to island topography and most importantly, the lack of funding to do so. Therefore, to the benefit of them all, a regional health institution can be developed in the most suitable island, and neighboring islands could fly in for medical assistance when needed.

It is clear to see that climate change is no longer a figment of our imagination but is brutally real; therefore, countries need to be able to fight against climate change and its effects in the quickest and efficient ways possible. Although climate change can no longer be prevented, countries can work to make sure that they are able to protect themselves if any disaster should attack, allowing them to experience the utopian condition of climate resiliency.