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REDUCING FUTURE PANDEMIC RISK THROUGH CONSUMER AWARENESS

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Abstract - India is presently grappling with COVID 19, Cyclone Amphan and Locust attacks. Last year was the second hottest year on Earth and May 2020 the hottest recorded May, according to NASA. The rapidly heating earth results in biodiversity loss and vice-versa. The paper presents existing evidence on how uninformed human action directly impacts biodiversity and therefore make zoonotic diseases, like COVID 19, more frequent and devastating. The objective is to provoke individuals to take ownership of making the planet safer for their own survival, by making informed choices about services and products they consume. Two everyday items of use- food and palm oil, are used as case studies to understand how individual choices impact people and planet. The paper also appeals for the use of knowledge/awareness to reduce single-use plastic, which has reached unprecedented levels due to COVID 19, causing irreversible ecological damage. The paper ends with thoughts on over-consumption and the need for frugality.

Key Words- Consumer Awareness, Climate Action, Pandemics, Responsible Consumerism, Frugality,

I. INTRODUCTION

In Leo Tolstoy's story 'How much land does a man require', Pahom, a peasant, feels that if only he had a lot of land, he would have nothing to fear [1]. He spends all his efforts on acquiring land. The story ends with him dropping dead with exhaustion, in his quest of acquisition, and being buried in a small plot of land – which answers the question asked in the title of the story.

GDP per capita in the world, has been increasingly steadily over the past years and more people are living above the poverty line than ever before. Demand for goods and services have never been higher. On the other hand, 76.7 Billion USD is the moderate estimate of loss caused by COVID 19, as per Statista (www.statista.org), a global business data firm. The financial implications of frequent natural disasters hitting the world, are equally high. The consumption driven high economic growth has come with a heavy price. Over the last 20 years, the incidence of Zoonotic diseases, like Nipah, Ebola, MERS-CoV (Middle Eastern Respiratory Syndrome-

Coronavirus) have become more frequent, widespread and devastating. Zoonotic diseases spread from animals to humans when there is a change in their habitat and biodiversity. While large corporates are responsible for deforestation leading to loss of biodiversity, the consumer plays an important role as their demand fuels the manufacturing of such products. By being aware of the impact of what we consume, we can prevent damage to the planet, and reduce the risk of such pandemics becoming the norm.

II. CLIMATE CHANGE, BIODIVERSITY LOSS AND DISEASE

World Health Organisation (<https://www.who.int/>) has established clear links between climatic factors and the spread of infectious diseases. We intuitively know that hot and humid season is when vectors breed and flourish. This is also a great setting for germs – for the want of a more technical term- to incubate and stay longer outside the host, making it easier to get transmitted. For example, Punjab had frequent incidence of malaria in the beginning of the 20th century. WHO was able to link it to unprecedented levels of rain, which made it easy for mosquitoes to breed and survive. Their report on the effect of climate change on infectious diseases, talks about specific human activities and their impact on disease propagation.

A latest report by WWF (World Wildlife Fund – www.wwf.org) studies the link between deforestation in West Africa, and the Ebola virus outbreak of 2014. Steady encroachment on forest land, may have lead to higher contact between the bats, carriers of the virus, and humans.

Things that we know about Zoonotic diseases are that -

- They spread from animals to humans
- They spread when there is a change in the environment of the animal or human. This can happen because of encroachment of human on 'animal habitat, reduction of animal biodiversity which further reduces natural resistance to the disease.

A 2016 report on 'Emerging issues of environmental concern' by UNEP (United Nations Environment



Program- www.unep.org) shows that 75 percent of all zoonotic diseases emerge from wildlife. But it's uncommon for pathogens to jump from wildlife to humans directly. They need a bridge, which could be provided when wild animals are bought in close contact to humans, through wet-markets. Now map this to COVID 19. The wet-markets in China, where porcupines and the occasional crocodile, is also sold for meat, could be such a bridge. There is evidence that past viruses may have sprung from these but they continue to exist. Would consumers of wildlife be able to digest their meal, knowing that their behaviour is leading to widespread misery in the form of zoonotic diseases? I would like to hope that such insensitivity does not exist and it is about not understanding facts and underlying causes. I would like to believe that if it were established beyond doubt that the wet markets caused the virus, no one would want to eat that baby crocodile, however much they craved it.

On studying epidemic events over the last century, it is noted that the occurrence of these events have been happening at an alarming rate over the past two decades, as compared to before. We have had Ebola, Zika, MERS, SARS, Nipah in a span of a few years. 31% of such outbreaks have now been directly linked to deforestation, according to the World Economic Forum (www.weforum.org). There is evidence showing that as the planet warms up, gaps between pandemics will decrease further – as the environment gets more and more suitable for pathogens to live longer and move to newer regions which were earlier too cold.

While it's critical to have a COVID 19 vaccine created and disbursed widely, is that the only sustainable solution as we wait for the next zoonotic waiting to happen? Or the vaccine resistant variant to hit us over the next few years? Also, the economically weaker sections will have to depend on the Public Health system of their respective countries, to get vaccinated. Will that be too late?

Organisations and countries are seeing the need to delve deeper, into understanding root cause and finding solutions which are long-term. Similarly, it is the responsibility of each of us to question our consumption patterns and do what is responsible. A big step towards that is to become aware. Below are two important components of our daily lives, their impact on the planet and therefore on people, and what can we do, to reduce the adverse impact of these products.

III. PALM OIL AND BIODIVERSITY LOSS

We know that palm oil cultivation leads to deforestation and images of baby orangutans, displaced from their homes, come to mind. Not only does it harm the planet because large tracts of tropical forests are cleared for its cultivation, but also because its stubble is burned to allow

new crop to be planted in a hurry, leading to pollution. Indonesia's greenhouse gas emission temporarily exceeded USA's, in 2015, because of this [2].

The Borneo Orangutan species has halved in just 40 years. Humans and Orangutans have 97 percent DNA in common. Reducing their population makes it easy for diseases to jump from them to us. We are setting the stage for the next pandemic. The forests of Borneo are home to a diverse and large species of flora and fauna – like the clouded leopard, pygmy elephants and their mascot, the orangutan. Palm oil cultivation may soon reduce this vibrant ecosystem, and one of the oldest tropical forests in the world, to a palm oil plantation, with negligible biodiversity. While palm oil cultivation has brought in easy money for the farmers, it has damaged their health and robbed them of their indigenous farming practices, which were good for them and the planet.

It is important to note, that Indonesia is suffering one of the highest fatality rates due to COVID 19. The correlation between pulmonary health and COVID 19 fatality has been established. Presently, Indonesian's chronic tobacco addiction is being blamed for poor lung health. However, European countries like Greece and Germany have comparable percentage of population who smoke. But they haven't been hit by COVID 19 as badly as Indonesia. It stands to reason that poor air quality will also affect lung health. Could that be the reason then, for the poor resilience against COVID 19, in Indonesia?

Palm oil is the most consumed vegetable oil in the world and is in almost every processed item that we use. Look out for the following, in the list of ingredients. These are derivatives of Palm Oil.

INGREDIENTS: Vegetable Oil, Vegetable Fat, Palm Kernel, Palm Kernel Oil, Palm Fruit Oil, Palmate, Palmitate, Palmolein, Glyceryl, Stearate, Stearic Acid, Elaeis Guineensis, Palmitic Acid, Palm Stearine, Palmitoyl Oxostearamide, Palmitoyl Tetrapeptide-3, Sodium Laureth Sulfate, Sodium Lauryl Sulfate, Sodium Kernelate, Sodium Palm Kernelate, Sodium Lauryl Lactylate/Sulphate, Hydrated Palm Glycerides, Etyl Palmitate, Octyl Palmitate, Palmityl Alcohol

Source- WWF - <https://www.worldwildlife.org/pages/which-everyday-products-contain-palm-oil>

You probably start your morning with a toothpaste which has palm oil. As does your breakfast cereal and bread and you might clean your dishes with a palm-oil containing detergent. You cannot escape it and you need not. Palm oil is easy to use, increases shelf life of products and consumes less time and resources to reach the end consumer. So it's here to stay. Which is not a problem if it's sourced sustainably, ensuring livelihoods and good

health of local people. Responsibly sourced palm oil also ensures prevention of biodiversity and natural habitat loss. So suddenly going off palm oil is not sensible for two reasons. It may negatively impact farmers who are growing it sustainably. And the alternatives will be more resource intensive than Palm Oil, defeating the purpose entirely. The solution is to buy products with RSPO (Roundtable on Sustainable Palm Oil- www.rspo.org) Certification, in case they do contain Palm Oil.

Ancient forests like the Amazon and Kalimantan in Borneo, are the planets natural carbon sinks. Our small

step in buying sustainable palm oil and generating awareness about it, can help preserve them and in turn, preserve ourselves.

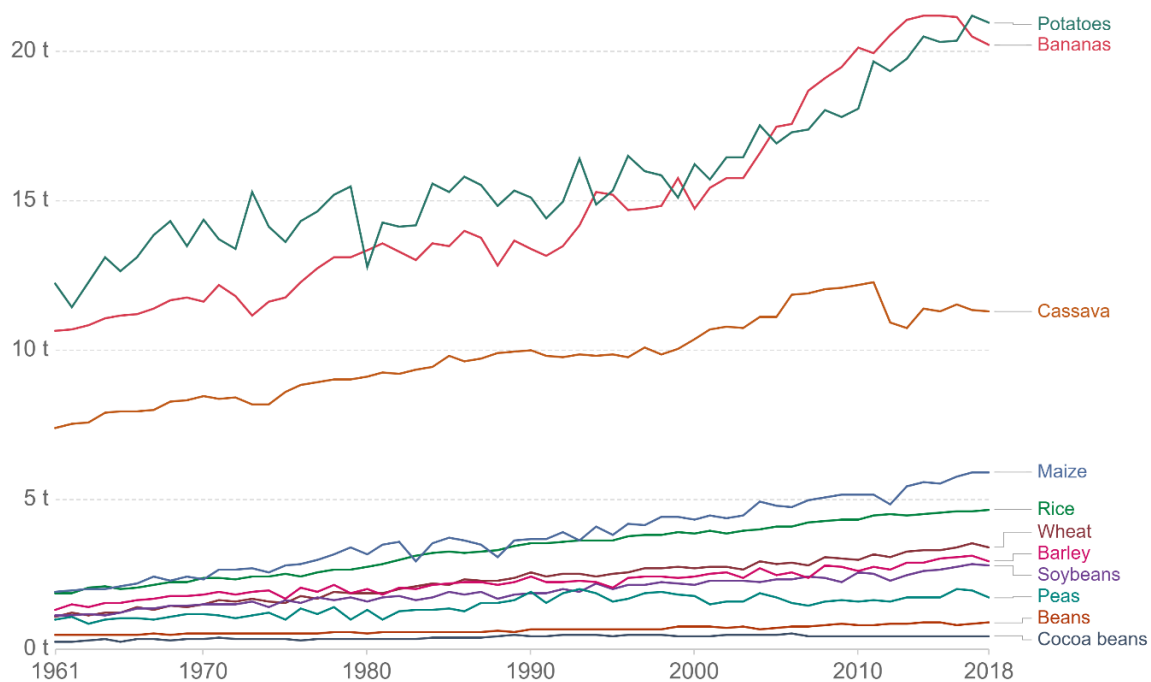
Adverse impact of monoculture

Change in our consumption patterns, as depicted in the graph below, is responsible for change in how land is used. UNCCD (United Nations Convention to Combat Desertification – www.unccd.org) states that change in land use has resulted in productivity loss of 23% of previously fertile land.

Figure 1

Crop yields, World, 1961 to 2018

Crop yields are measured in tonnes per hectare.



Source: UN Food and Agricultural Organization (FAO)

OurWorldInData.org/crop-yields • CC BY

The adverse effects start surfacing, after the first few years of monoculture-

According to FAO (www.fao.org) two-thirds of the world's crop production comprises nine species of plants. There are a total of 6000 species of food plants in the world. The demand for food across the world, is becoming homogeneous as traditional food is taking a back seat. Monoculture, or the practice of cultivating one or a couple of similar crops in a plot of land, has become lucrative for farmers, thanks to the world's demand getting concentrated on a few products. It is good money as large food processing companies continuously pump in investments and offer convenient buy-back schemes.

- The soil gets depleted of nutrients. When the same crop is being planted, the same nutrients are being used, from the soil. The farmer has no choice but to compensate with fertilizers, which in turn damages the soil over a long period of time.
- Crops get prone to disease. As in the case of the Irish potato famine of 1845, when identical plants occupy majority of the fields, it's easy for diseases to spread. Potato made up a large part of the common Irish person's food intake, in the 19th century 3. Such a strong dependence on just



one crop, not only made it easy for the disease to cause havoc but also lead to widespread famine and loss of farmer livelihood.

- Water dependency may increase. An increase in pesticide and fertilizer use makes the soil thirsty. Large parts of the world are water scarce and ironically, those are also the countries producing a majority of the world's food. For eg. India and China are both water deficient and both are the top producers of Rice, a water intensive crop. Artificial irrigation systems are not always available to the small paddy farmer.
- Decline in Pollinator numbers. Unhealthy soil is unable to support healthy plants, forcing the farmer to use pesticides at a much higher rate than when soil nutrients were naturally balanced by different variety of crops. Such high pesticide usage is obviously harmful for human health but another catastrophic side-effect is the reduction in pollinator numbers. With narrowing of crops, pollinator numbers have been on a rapid decline over the years. Adding to that, pesticides have been killing off bees and other pollinators at an unprecedented pace – posing large risks to future food production. 70% of our foods are pollinated by bees.

Monoculture reduces the water table, encourages use of higher amounts of pesticides and fertilizers than multiculture and makes the marginal farmer dependent on expensive agriculture methods for survival. Another frightening outcome of monoculture is nutritional deficiencies in future generations. Such a deep dependence on a narrow range of foods leave out the advantages of ancient foods, which are designed to take care of people in a particular region and in different seasons. Additionally, as we have seen, monoculture crops tend to have a higher concentration of pesticides and fertilizers which one could do without. With the rise of infectious and medicine resistant diseases, we cannot afford to compromise on immunity giving-nutrition. In India, festivals are aligned with the agricultural cycle. There are celebrations after harvesting and before sowing. Seasonal food and drink form an important part of these celebrations and are nature's way of protecting us from seasonal diseases, along with the providing the obvious benefits of eating food grown naturally and locally. Such celebrations are slowly becoming redundant as our ancient customs don't recognise these handful of crops, most of which have come into our country only over the past few hundred years.

We don't have to stop eating potatoes and suddenly move to a sorghum and root based diet. We can simply look for USDA Organic certifications for the food we buy. While that still won't ensure the product wasn't a result of

monoculture farming, it's highly likely it wasn't. Unless it's genetically modified which is another story all together. The simple solution would be to seek food that our grandparents ate. Thank fully, these foods are back on the super market shelves, though in a small corner, behind unending rows of potato-rice-wheat-corn-sugar based products.

IV. THE ROLE OF CONSUMERS

The consumption of palm oil and monoculture produce is highest in South East Asia, predominantly China and India. So the less affluent eastern hemisphere is consuming most of what's being produced and is in a position to demand responsible production. If we look at per capita consumption of say, potatoes, Eastern Europe and Russia turn out to have the highest numbers – more than the western hemisphere. Large corporates are indeed the ones using palm oil and monoculture products like potatoes and should be deeply concerned about how they are causing irreversible damage to the planet and each of us. However, the responsibility for creation of more responsible products doesn't lie only with them. The power to demand human rights and climate protection is ours as we demand these products. Countries and organisations will create frameworks for responsible production, if we, the consumer become aware and refuse irresponsibly manufactured produce. Organisations like Unilever, a leading consumer of Palm Oil, is doing its bit to ensure sustainable palm oil production. They follow the guidelines set by RSPO (Round table on Sustainable Palm Oil) and have a comprehensive set of parameters, which they use before selecting their suppliers.

V. THE PLASTIC PANDEMIC

The use of single-use plastic in America is estimated to have increased by 250 to 300% this year, according to ISWA (International Solid Waste Association), which manages solid waste in 102 countries across the world. Similar figures can be gathered from rest of the world, as people stock up on plastic gloves, visors and masks, to prevent COVID 19 infection. From the Thames in London to the deserted Soko Island in Hong Kong, water bodies are seeing a surge of plastic disposables being washed ashore, at alarming levels [3]. WHO (World Health Organisation) guidelines clearly state that social distancing is the key to protecting ourselves from the virus, along with regular washing of hands. Cloth masks are sufficient for non-health workers, as the virus droplets are unlikely to permeate a multi-layered cloth mask, if distance is being maintained. The Indian Government has been advocating the use of cloth masks and a large number of small industries have started work on manufacturing them using recycled material. What better



way to boost the MSME sector, while reducing carbon footprint. However there is still a large population of people, unable to understand the damage they are unnecessarily causing to the planet, without any advantage to themselves. Plastics impact the ocean biodiversity, our biggest carbon sink, by killing marine life and plankton. 15% of the species affected by plastic in oceans are in the IUCN's (International Union for Conservation of Nature) critically endangered list [4]. And this is just in the seas. Biodiversity loss in the plant world is also significant due to leaching of plastics into the soil, possibly reducing its fertility.

That single-use plastic is being unthinkingly used to prevent a zoonotic infection, is ironic. Distancing and not plastic, will protect us from the virus. However plastic will surely lead to future zoonotic pandemics, caused by the biodiversity loss it causes. Not to mention the myriad health hazards of ingesting nanoplastics through food and water [5].

VI. RESPONSIBLE CONSUMPTION

The burgeoning middle class has led to the world consuming, and at times wasting, at an unprecedented rate. Taking the example of potato again, the global per capita potato consumption has gone up by almost 10 times, over the past fifty years, according to FAO data. Abhijit Banerjee and Esther Duflo talk about how high-value consumption could possibly be just a way to catch up with others – or to put it bluntly – show off [6]. In their book 'Good Economics for Hard Times', they present an experiment where people were not particularly concerned about 'brand' if their self-worth was high. Abraham Maslow, in his seminal work talks about a hierarchy of needs, which may help understand the over-consumption world that we live in today [7]. A large percentage of the world has now become capable of taking care of what Maslow describes as lower order or basic needs of safety, security, food. The next higher need is that of esteem and maybe acquisition of products has somehow got linked to esteem. The highest need, according to Maslow, is that of 'self-actualisation', where an individual's need is to be the best they can, contribute to higher purposes. Banerjee and Duflo refer to this perhaps, when they say that people who feel they are making worthwhile contributions, do not feel the need to 'show-off' material acquisition. Is that the key then, to consuming less?

While demanding responsibly produced and sourced goods is critical, we have exceeded the world's resources for even that. Before we lose any more forests to fields of cotton, being cultivated purely for our increasing demand for 'fast fashion', or for potatoes and palm oil, we need to stop and think about how much do we really need. COVID 19 has helped understand that 'less is more'. We've learnt that changing our wardrobe every season is really quite a

waste. The same pair of jeans look equally good ten years later, if one is healthy, fit and have a sense of purpose.

There is still time to change our habit of taking action without considering its impact. More importantly, there is still time to connect the next generation to our planet and its wonders, so that they may grow up to be responsible consumers [8].

VII. CONCLUSION

Governments and corporates are responsible for taking climate action and ensuring our biodiversity is maintained. Without urgent action, the cycle of pandemics and natural disasters will eventually make the planet uninhabitable. Individuals play an important role in this as they have been demanding planet destroying products, at an increasing rate and higher amount than ever before. Unless they make it a habit to check ingredients/source/certifications of products before they buy, they will be putting their lives at risk. More importantly, unless they start asking – "do we really even need this?" before acquiring another thing, they will really never break free from the consumption cycle, and live a life of higher purpose.

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