Feasting on Planet Earth

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The World Climate Summit in Sharm el-Sheikh is taking place these days. Sadly, despite the critical goals set by established world leaders, the well-rehearsed campaigns and tens of thousands of participants, it seems that yet again, some of the climate related burning issues are of off the discussion table: the livestock industry and its devastating impact of plant earth.

The World Climate Summit COP27 is currently taking place in Sharm el-Sheikh, in which member states and stakeholders, who signed the UN international environmental treaty (**UNFCCC)** are participating. The main subject, to which the states have previously committed to by signing the treaty, is to combat dangerous human interference with the climate system, in part by stabilizing greenhouse gas concentrations in the atmosphere. At the prominent 2015 UN Climate Change Conference in Paris, the parties have agreed to aim to limit global warming to less than 2 °C, and try to limit the increase to 1.5 °C by the end of the 21st century. A higher rise will bring us to the tipping point from climate change perspective, which will bring more frequent recurrences of extreme weather conditions, such as floods, wildfires, drought and heatwaves. Additionally, the summit participants will re-examine how to fill the climate finance gap for poor nations, and how to encourage them to integrate the infrastructure which will enable them to shift to green energy. Truthfully, the budget target, which was previously agreed on during COP26 in Glasgow, is far from being met. Moreover, according to a UN report published in October, the nations will only be able to achieve up to 10% decrease in greenhouse gas emissions, which is insufficient and very far from the 45% decrease target. The report forecasts a rise of 2.5 degrees Celsius, which with high confidence will bring apocalyptic-like weather catastrophes.

Approximately 30,000 participants will attend COP27 in Sharm el-Sheikh, and they will focus their discussion on 4 key topics: reducing greenhouse gas emissions, funding plan for the emerging economies with carbon-heavy energy systems, accelerating collaboration for climate ambitions across sectors, and coping with the current dire implications of the growing climate crisis.

Funding the emerging economies is by far the most challenging issue, as these nations rely on extensive economic support in order to react to national climate disasters, and are struggling to focus on proactively diverting funds to build green infrastructure.

Unfortunately, the livestock industry, which is one of the most crucial discussion points, relative to the climate crisis, will doubtfully get any spotlight in COP27.

In a couple of decades, the world population is expected to grow by an additional 2 billion people. To meet the growing demand and produce food such as fish, eggs, meat and dairy – the livestock industry, as well as farming areas would need to massively expand, which will take a tremendous toll on the health of the environment. Animal agriculture is a contributor to greenhouse gas emissions, responsible for 20% of gas emissions globally including nitrous oxide and methane, causing water pollution and the destruction of forests and other wild areas that help to regulate the planet's atmosphere.

Despite the significant impacts of the livestock sector on the environment, assessed as early as 2006 in a UN report “the Livestock long shadow”, in the COP27 climate summit, this issue seems to have fallen between the cracks.

Research by the US National Academy of sciences, comparing the resources required to gain 1 megacalorie from animal-based sources as opposed to plant-based sources, concluded that meat production is 10 times more costly from resources perspective.

Therefore, to provide sustainable nutrition, a global adaptation of plant-based nutrition is required. However, since the option to fully switch to a plant-based nutrition is not currently viable, another solution is required.

This solution comprises producing alternative proteins, which are simulating the taste of animal-based proteins, commonly consumed across the global population.

So, what are alternative proteins, exactly?

Alternative proteins were created to replace all animal products – such as eggs, meat, and dairy, from both taste experience and cost perspective. Israel is a leading innovator in this market, where many food-tech startups operate, and new startups are frequently founded. There are two types of alternative proteins: 1. Plant-based products, replacing traditional meat, eggs and dairy. 2. Cultivated meat, also known as cultured meat, which is genuine animal meat (including seafood and organ meats) that is produced by cultivating animal cells directly. This production method eliminates the need to raise and farm animals for food.

The major challenge which currently delays mass production of these solutions is the high production rates, that are currently not market competitive to traditional animal-based products.

In addition to alleviating the cattle and livestock's suffering, and adhering to moral standards, switching our nutrition to alternative proteins will reduce the wasteful usage of earth's natural resources, which is currently directly caused by livestock farming. Thus, alternative proteins related innovation is crucial in order to meet the Paris UN Climate Change Conference goal to limit global warming to less than 2 °C. Moreover, switching our nutrition to alternative proteins will decrease greenhouse gas emissions by 20%, as plants consume CO2 and require smaller farming spaces. Alongside cultured meat consumption, land usage could decrease by 95% and prevent further deterioration of ocean ecology. If mankind will be able to enjoy quality food, with a similar taste to their familiar animal-based products, while reducing the devastating effects of the livestock industry on both animals and planet earth – then this is a undoubtfully a WIN-WIN situation.

On top of its significant contribution to the ecological state, the alternative proteins realm has also many health-related benefits. As an example, since animals consume 70% of the antibiotics globally, moving to alternative proteins will eliminate the risk of developing antibiotics resistance, and of potential future pandemics. Lastly, global plant-based nutrition will both increase food security across the globe and will enable frequent safe enrichments of this nutrition type.

The Israeli booth in Sharm el-Sheikh will host 36 events, where the main emphasis is on agriculture related innovation, Food-Tech and alternative proteins. Remilk, a successful Israeli startup developing a unique system to produce milk proteins using a microbial fermentation technology, will represent Israel. Another start up presenting in the summit is the established Aleph Farm, which specializes in cultured meat production.

Due to the conflicting political interests of key players in the global economy, and to the strict regulations surrounding the climate related issues, it's hard to believe this summit will bring the winds of change. Nevertheless, these strategic discussions, as well as the rising awareness and transparency related to the climate crisis must continue. These will drive a growing public and investors interests, and sooner rather than later, more firms will hopefully adapt the alternative proteins concept as a sustainable solution.

- The author is an activist for MAF, a non-profit organization promoting the development of alternative proteins.

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