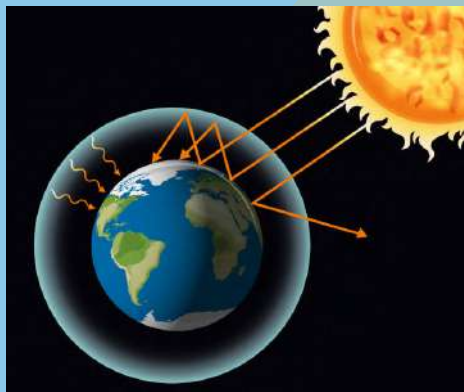


Surviving the Struggle: Challenges in Securing Food and Water

Access to water and sanitation as a human right

The United Nations has recognized and included in the International human rights law “the right to safe and clean drinking water and sanitation as a human right that is essential for the full enjoyment of life and all human rights” (A/RES/64/292). Establishing that everyone, without any type of discrimination, must have access to water, as a right that can be demanded as a human being. That being said, International human rights law obliges States to work towards achieving universal access to water and sanitation for all.



The greenhouse effect is what is called the effect of sun rays, that when they penetrate the earth’s atmosphere cannot reflect into space because of the obstruction of some gasses. As a result, the atmosphere has an excess of heat that causes well-known global warming. Like a greenhouse, the heat is kept inside.

This excess of temperature has been going on for an extremely long period but it has been exponentially increasing these last hundred years due to the burning of fossil fuels, which in turn causes more emission of gasses that cause the greenhouse effect.



Global warming has consequently brought about Climate change, and even though it is used as a synonym, they do not represent the same issue. Climate change is the variation of weather patterns and growing seasons worldwide, which is the direct cause of extreme temperatures, which lead to significant issues such as long unmerciful precipitations that end up in floods, sudden droughts, the melting of glaciers which contribute to rising sea levels, etc.



These global phenomena represent a direct threat to life as we know it, difficulting access to primordial necessities such as food and, principally, water.



Uruguay

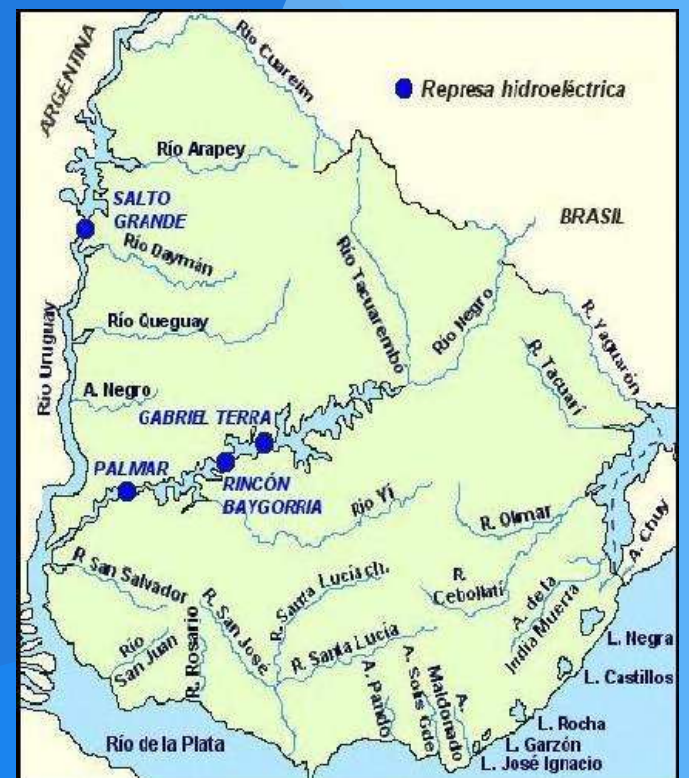


The biggest issue at the moment is: Drought

This concept, according to the World Meteorological Organization (WMO, 1992) is “a period with meteorological conditions that are abnormally dry, prolonged enough so that the lack of precipitation causes a serious hydraulic unbalance”.

Reservoir "Canelón grande"

Uruguay has been facing a critical situation regarding water supplies, as the country is being struck by what is being said to be the worst drought of the century. The situation has come to such a dire extent that some reservoirs, the supplies of drinkable water, such as the ones situated in “Canelón Grande” (principal water supplier of Canelones) and “San Francisco” (great supplier of Minas) have completely dried, an occurrence never seen before.



Minas, Lavalleja (First days of May 2023)

The city of Minas, located in the department of Lavalleja, is in a very complicated situation, as it has been informed they only have water reservations enough to last a month. Under this prospect, OSE (“Obras Sanitarias del Estado”), State Sanitary Works, has decided to reduce the water pressure for the inhabitants of Minas, to stretch the water supplies as much as possible.





Measurements taken by the government (First days of May 2023)

As OSE has announced that the reserves of drinkable water are running out and are at a critical point, it has been decided to increase the salinity in drinking water, for said water to last as long as possible.

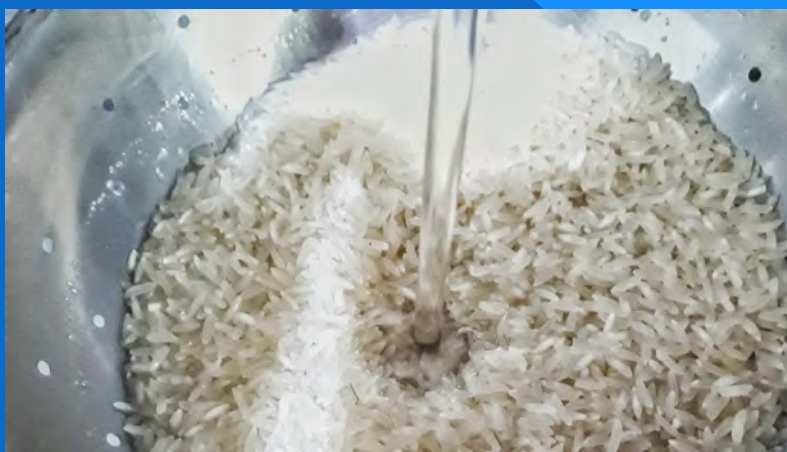
This measurement was approved and taken into action in the last days of April 2023. The sodium has been increased to 280 milligrams per liter (450 mg/L), and the chloride has increased to 450 mg/L. A few days later, the MSP ("Ministerio de Salud Pública"), Ministry of Public Health, authorized an even greater increase: 400 mg/L and 700 mg/L.



Ministerio de Salud Pública

Originally, the norm states a limit of 250 mg/L salinity levels on water, so nowadays that limit has been far overstepped. But the OSE and MSP have stated that this increment has no severe consequences on health, merely affecting the water taste.

However, water is highly used in the day-to-day lives of every citizen, as it is used for cooking, making infusions such as tea, coffee, and "mate" (typical Uruguayan drink), and as a medium for swallowing medicine. The fact that water has higher levels of chemicals violated the International human rights to clean drinking water, as it is strongly advisable for anyone that has a condition or chronic disease linked to sodium, such as hypertension, to drink mineral (bottled) water and minimize the consumption of food with high sodium contents. Therefore, water should be consumed awarely and measured.



"Mate", uruguayan infusion



"Dear customer: maximum of six drums per person"

Due to this decision, bottled water sales have gone through the roof, and the new threat of a stockout is boiling on everyone's minds. For this reason, supermarkets have limited the number of drums that a person can buy in one go, trying to ensure bottled water for everyone.

Current situation (last days of May 2023)



The decision of increasing chloride and sodium in water remains, as well as the concern and increasing paranoia of the population. These last days of the month it has been raining, though not enough to restore the normal levels of the reservoirs of water.

As the massive buying of water continues, the MEF ("Ministerio de Economía y Finanzas"), Ministry of Economy and Finances, enabled the purchase of imported bottled water with tax exemption, only because of the current situation. In addition, the consumer defense unit of the MEF has committed to publishing a weekly price comparison for bottled water in Uruguay, with the aim that the population can monitor the values and prices of each and buy the most suitable for them.

To temporarily solve the minimum levels of the Paso Severino dam, the Uruguayan government has decided to start the construction of a new emergency dam on the Santa Lucía River. This will mix the waters of the Santa Lucía River, which provides fresh water, with that of the Rio de la Plata, which provides its majority of salty water, at the expense of increasing the water available.



Santa Lucía's dam being built

Another of the measures taken by the government was to buy a desalination plant, which would provide immediate solutions to the lack of drinking water in the urban area. It was intended for the machine to arrive in a few days from Houston on the plane named Hercules, but there was an unexpected inconvenience. Due to some adjustments done to the plant, it does not fit on the designated plane to bring it here for 15 cm, thus, we will have to wait a couple of weeks until it gets here.



Hercules plane



Hercules' inside



The desalination plant

The plant has a capacity of 150,000 liters, which could be used to supply fresh water to a lot of people, having a special emphasis on hospitals and sanatoriums. The idea of acquiring this machinery was from the Technological University (UTEC) which will provide training and advice on the machinery.



Economic problems

The principal sector of the economy Uruguay focuses on is the primary sector, the one in charge of extracting natural resources to make them raw materials, that later are sold to manufacturers. Therefore, in Uruguay's specific case, the country is focused on livestock and agriculture, being an agricultural country. This being the situation, the drought is not only affecting the local population but also the production as watering the crops and properly giving water to the cattle is not quite possible, potentially affecting the whole economy.



Cattle of the Aberdeen Angus cow species



MGAP (“Ministerio de Ganadería, Agricultura y Pesca”), the Ministry of Livestock, Agriculture and Fisheries calculates an economic impact of at least 1.8 billion dollars due to the drought. The physical decrease in production is the main reason behind this figure.

The overall situation up to the 24th of May

- OSE's water has an increased amount of Sodium and Chloride, making it unsafe to drink in large amounts
- Water usage is being restricted and measured
- Bottled water prices are higher, corresponding to the growing demand of the population
- A new dam is being built on Santa Lucia's river
- It is expected for the desalination plant to get to Uruguay in a few weeks
- Great economic loss regarding production

To sum up, Uruguay is going through a tough situation. The drought caught everyone off guard leading to such extreme and urgent decisions as the ones the Uruguayan government is making. Knowing that solutions are planned to be implemented as soon as possible, only time will tell how the south american country will end up after suffering the worst drought in its history.



AFRICA



Africa, including Chad, has indeed faced significant challenges related to food security for a long time. Several factors contribute to this situation:

Desertification: Desertification according to the Cambridge dictionary "the process by which land changes into desert, for example because there has been too much farming activity on it or because a lot of trees have been cut down". It has affected various regions in Africa, including Chad. The process of desertification reduces the availability of arable land, making it difficult for farmers to cultivate crops and sustain their livelihoods. Such is the example of Lake Chad.

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Conflicts and wars: Many African countries, including Chad, have experienced frequent conflicts and wars. These conflicts disrupt agricultural activities, displace people from their homes and farmlands, and lead to the destruction of infrastructure. As a result, food production is severely affected, and populations suffer from food shortages and malnutrition.

Historical colonization: The colonization period in Africa involved the exploitation of the continent's resources by colonial powers. Valuable resources, such as agricultural land, minerals, and natural reserves, were often extracted without benefiting the local population. This legacy has had long-lasting impacts on the economic development and food security of African nations, including Chad.

3

In summary, the lack of food security in Chad and other African nations can be attributed to factors such as desertification, conflicts, historical colonization, and the challenges posed by climate change. Addressing these issues requires concerted efforts in land restoration, conflict resolution, sustainable economic development, and climate change adaptation and mitigation.



The Lake Chad region serves as a clear example of the consequences of desertification. The lake has dramatically shrunk over the past four decades due to factors such as excessive water use, prolonged droughts, and climate change. This shrinkage has had a profound impact on the local population, as the lake was a crucial water source for irrigation and farming. Additionally, the decline in fish populations due to the lake's deterioration has affected both the local food supply and the income generated through exports.



Climate change exacerbates the challenges faced by African countries. Droughts, floods, and other extreme weather events have become more frequent and severe. These phenomena result in crop failures, loss of livestock, and subsequent famine. The reliance of many African nations, including Chad, on subsistence farming and livestock rearing makes them particularly vulnerable to climate-related shocks.

Furthermore, the uneven inclusion of African countries in the global political economy has hindered their development and contributed to food insecurity. The historical focus on resource extraction, such as cotton and crude oil, has not promoted local industrialization or agricultural self-sufficiency. This dependence on exporting primary commodities without developing diverse and sustainable economies has left the majority of the population in Chad and other African countries living in uncertainty and hunger.



Antarctica

Population, Regulations, and National Presence

Antarctica is probably the centerpiece of the most phenomenal geopolitical dispute of the 21st century, thanks to the amount of freshwater it contains. It is one of the most attention-grabbing territories in the world, capturing the interest of various global powers.

It is the fourth largest continent in the world by size, with a surface area of 14 million square kilometers. Ninety percent of the planet's ice is found there, which equates to 70 percent of the world's freshwater.

Around 98 percent of its vast territory is covered by an ice sheet over one and a half kilometers thick.



There is no native population throughout its territory. Unlike the Arctic, where the Inuit, Saami, and Athabaskan Indians live, Antarctica has no permanent residents. Even scientists do not live there permanently: those who inhabit research stations stay for about a year before returning. Occasionally, stays are extended due to climatic reasons.

The majority of researchers visit the white continent in the summer. Taking into account the population of the 66 Antarctic research stations, there are usually about 4,000 people in the summer and about 1,000 in the winter.

Although Antarctica holds 90 percent of the world's freshwater, the problem is that it is frozen. In winter, the most challenging task is melting the snow.

Water in Antarctica

One of the first recommendations made to those who set foot on the military installation in the white continent is to be very careful with water. The time spent in the bathroom must be appropriate and necessary, with just five minutes for a shower as quickly as possible. During the summer, water is extracted from artificial ponds fed by snow. However, when there is no snowfall for a long time, the ponds dry up and there are no nearby glaciers. Three years ago, during the southern summer, the pond almost completely dried up and the research station ran out of drinking water.



The restrictions on all tasks related to obtaining water also face another obstacle, limited energy. To produce water, a special fuel called "Antarctic diesel" is needed, which contains additives that lower its freezing point compared to regular fuel used on the continent.

Each person can only do their laundry once a week, and to wash dishes, a large basin is filled for washing and another for rinsing instead of letting the tap water run. People are only allowed to take one shower per week, but those who perform certain jobs, such as cooks and those working in the power plant who handle fuel, can shower every day. Water purification is also a significant task, carried out through the use of filters and chemical products.

In conclusion, Antarctica's population, fresh water supply challenges, and energy limitations present unique restrictions on daily activities and water usage for those present in this remote and captivating continent.

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