

The background of the cover is a complex technical drawing. It features several large, overlapping gears of different sizes. In the center, there is a detailed drawing of a keyboard, with individual keys visible. The drawing is rendered in a light gray, semi-transparent style, allowing the text to be clearly legible. The overall aesthetic is that of a scientific or engineering blueprint.

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EARTH OVERSHOOT DAY AND THE CASE OF CENTRAL ASIAN COUNTRIES (HUMAN DEVELOPMENT VS. RUNNING OUT OF RESOURCES)

Anvar Qanoatovich Shirinov
anvarsh@yahoo.com
Bukhara State University

Abstract: In the following article the Overshoot day is reconsidered according to the available present data related to the global trends considering the info presented by the Global Footprint Network. The data on the countries of Central Asian countries are indicated based on the use of land, mineral and renewable. By the impact of COVID-19 epidemic the Overshoot Day came later than expected. The misbalance in the use of resources is shown based on the data of the European and Central Asian countries which has direct impact on the human development and its capital.

Keywords: footprint, Earth Overshoot Day, Global Footprint Network, "demand-supply", supply chains

Introduction. From today onwards, we have used every last bit of natural resources that Earth can provide within one calendar year and are now living on ecological credit. In 2020, Earth Overshoot Day occurred on August 22. It marked the imaginary point when humanity's demand exceeds what Earth can regenerate in that year. The international research organization *Global Footprint Network*, which has been calculating this date since 1970, estimates 1.6 planets are required to support our population's way of life.

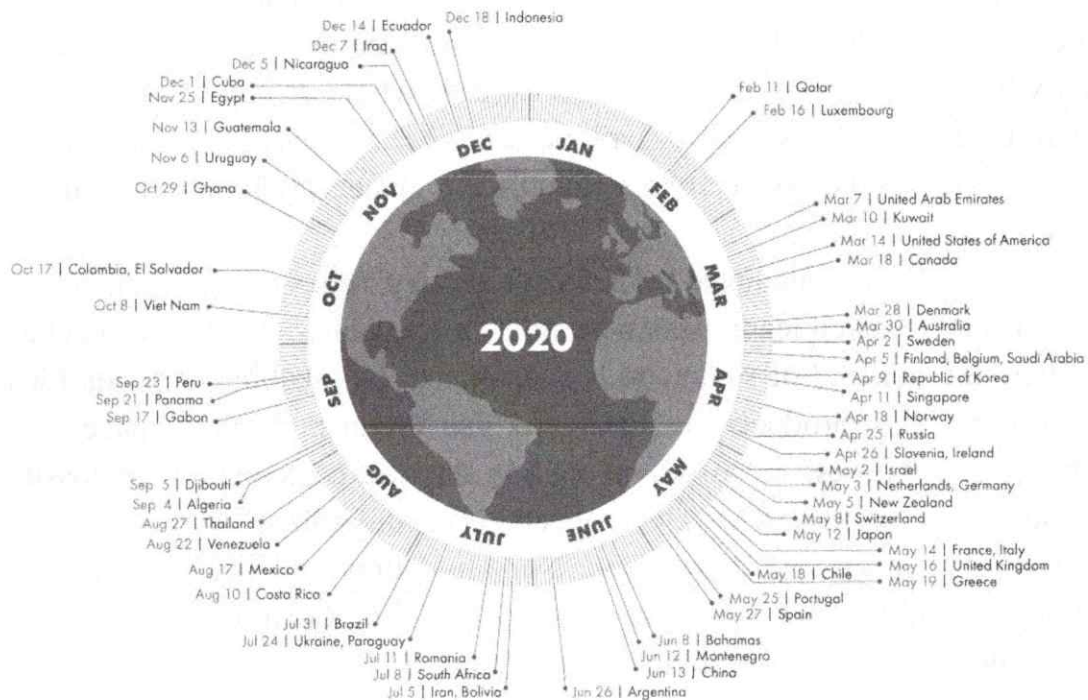
How is the date calculated? The methodology relies on a "demand-supply" calculation. The research team measure a state's biocapacity - productive land and sea areas. Then, the demand of said state is subtracted: its inhabitants' needs for plant-based food and fiber products, livestock and fish products, timber, space for urban infrastructure, and forest to absorb its carbon dioxide emissions from fossil fuels. Both results are expressed in global hectares, standardized with world average productivity for the sake of comparison. If a population's demand for natural assets outnumbers the supply, that area runs an ecological deficit and the organisation sets a symbolic date to mark the beginning of this deficit.

Which countries have the biggest ecological footprint? August 22 is the average overshoot day globally but each country starts living on ecological debt at different times. To maintain the deficit, countries will either liquidate their own ecological assets (by overfishing for instance), overproduce (emitting more carbon dioxide into the atmosphere) or import missing resources from their neighbours. No nation makes it to the end of 2020 without widening this deficit. While one planet would almost be enough to support the needs of Indonesians, we would need a little less than two Earths if we were to live like Qataris. The worst student in the European class is Luxembourg with the country overshoot day set as early as February 16. At the other end of the spectrum, Moldova is only 23 days away from having enough domestic natural resources to supply its population's needs. System of supply chains are devastating the renewable resources at alarming rates.

What impact has the COVID-19 crisis had? For the first time in years, the global overshoot day has moved back. Last year, it landed on July 29 - nearly a month earlier. Sadly enough though, this can mainly be attributed to the coronavirus pandemic and its aftereffects: shutting down industries for the most part. It led to a "9.3% reduction in the global Ecological Footprint compared to the same period last year according to the Global Footprint Network's latest reports and projections.

Country Overshoot Days 2020

When would Earth Overshoot Day land if the world's population lived like...



Source: Global Footprint Network National Footprint and Biocapacity Accounts 2019



Globally "Overshoot day" corresponded to 29 December 1970, in 1980 it coincided with November 4, respectively 11 October 1990, on 23 September 2000, 7 August 2010, 29 July 2019 [1.].

Based on the data available the humanity is spending the natural resources such as water, soil and fresh air. The humanity uses 1,75 times more than the planet renews itself[2.].

The 22 August, 2020 was Earth Overshoot Day, the point where scientists say we've used all the ecological resources the planet can produce in 12 months. As consumption grows, that day is getting earlier. However, because of Covid this year it's been pushed back by three weeks.

Mathis Wackernagel, founder of the Global Footprint Network which carries out the calculation for Earth Overshoot Day explains: "Everything we use puts a demand on nature in terms of space; the potato that takes space, I want milk from the cow, it takes space, to absorb the extra CO₂ from burning fossil fuels takes space." This year, the calculation estimates that we've exceed demand by 56% - even with the pandemic. But lockdown has reduced our consumption, meaning Earth Overshoot Day has been delayed for the first time. The calculation is made using UN data which began to be collected in 1961. Just nine years later, around 1970, we passed the point where our consumption couldn't be replenished. The question now, is how to change it in a world where success is measured by exponential growth.

Personal choices. "As an individual, your own small personal choices may seem insignificant but as long as you talk about them and tell people about them they multiply up," he says. "If lots of us do it, then it multiplies up in a really big way. "We've seen lots of big changes in what we're offered to buy and that's because people have put those pressures on." Scotland's farmers point to evidence that livestock is the best use of the country's significant amounts of grass land. But Jaime Toney, professor of environmental science at Glasgow University, says we do need to adapt. She said: "I think it's going to require huge changes and huge commitments in terms of the way that we live." We do recycle and things like that but (there are) certain practices such as eating meat, for example, or at least eating meat that's imported from very long distances. "We should be thinking about switching to vegetarian diets, thinking about how wasteful we are in terms of energy." The launch of the campaign in Scotland was spearheaded by the environmental regulator Sepa. Its chief executive Terry A'Hearn said: "Regulators are set up basically to stop bad stuff from happening; to stop factories from polluting, to stop farmers having run-off from their farms into rivers. He points out that society came together successfully to find alternatives to CFCs when it became clear they were damaging the ozone layer - and he says we can do it again.

Catalyst for change. Scotland's environment secretary Roseanna Cunningham accepts government has a role to play and the 2045 target for net-zero emissions should be a catalyst for change. But she adds: "Governments set the parameters, they choose targets, they give the signals. But that can't mean people think it's only government that can do this. Government cannot do this on its own. So, realistically, can the ecological depletion be reversed? Mathis Wackernagel says: "We will live within the means of nature. The only question is whether we do it by disaster or by design"[3].

The European Union's 28 countries consume the Earth's resources faster than they can be renewed and none of them has sustainable consumption policies, a report released on Thursday said, as EU leaders met to discuss priorities for the next five years. "All EU countries are living beyond the means of our planet. The EU and its citizens are currently using twice more than the EU ecosystems can renew," the report here by the World Wide Fund(WWF) and Global Footprint Network said. French President Emmanuel Macron said before the summit that climate change was among his key priorities and it was included in the bloc's 10 "commitments" for the future until 2024, agreed by all the 27 leaders meeting in Sibiu. Climate protection and sustainable development is also an important topic in the election campaign for the May 23-26 European Parliament elections, which will influence the leadership of European institutions and their programs. The European Commission has been pushing for the EU to become climate neutral by 2050 through reducing carbon emissions that will otherwise boost the Earth's average temperatures with devastating consequences. "The EU uses up almost 20 percent of the Earth's bio-capacity although it comprises only 7 percent of the world population," the WWF report said. "In other words, 2.8 planets would be needed if everyone consumed at the rate of the average EU resident," it said. It said the EU's smallest and richest country, Luxembourg, was also the one which used up renewable resources the fastest last year. Just 46 days into the year, it had consumed its full share of the Earth's resources, it said. The EU's poorest nation, Romania, took the longest to arrive at that point, on July 12th. But that was still earlier than the world's average of August 1, called Earth overshoot day. Let's take Switzerland's 2020 overshoot day, for example, using the 2019 edition(with data for 2016):

- The Ecological Footprint for Switzerland is 4.64 gha per person (in 2016)
- Global biocapacity is 1.63 gha per person (in 2016)

Therefore, it would take $(4.64/1.63)=2.8$ Earths if everyone lived like the Swiss, OR we can determine Switzerland's overshoot day, given that 2020 is a leap year, as $366 * (1.63/4.64) = 129$ th day in the year. The 129th day of 2020 is the 8th of May, Switzerland's Overshoot Day.

Not all countries will have an overshoot day. By way of the country overshoot equation above, a country will only have an overshoot day if their Ecological Footprint per person is greater than global biocapacity per person (1.63 gha). Countries whose Ecological Footprint per person are less than global biocapacity per person (1.63 gha) and do not have an overshoot day are therefore not included in our list below. In leap years, we compare the date against 366 days of the year, rather than the usual 365[4].

Researchers calculate the date humanity overshoots its planetary budget by looking at "all the human demands" for food, energy, space for houses and roads and what would be needed to absorb global CO₂ emissions, Wackernagel said. Comparing that with what is sustainably available, they estimate that humanity is using 60 percent more than can be renewed -- the equivalent of 1.6 planets. The study estimated that the pandemic had driven a 14.5-percent decrease in humanity's carbon footprint compared to 2019, while forest products saw an 8.4 percent fall, largely because of smaller harvests anticipating poor demand.

Unsustainable, wasteful, destructive. Global Footprint Network has said that efforts to control the pandemic show that changing consumption habits in a short time frame is possible, adding that the overshoot date is "an unprecedented opportunity to reflect on the future we want". Speaking at the launch presentation Marco Lambertini, the head of WWF International, said the pandemic had hit the vulnerable hardest and brought into focus "our unsustainable, wasteful, destructive frankly, relationship with nature". He called for a "decoupling" of economic development from environmental degradation. "We can develop, but not at the expense of the planet because we know that the planet in crisis is a society in crisis, and an economy in crisis," he added. In a report earlier this month, an international team of researchers said that global emissions from the burning of coal, oil and gas could fall up to eight percent in 2020 due to unprecedented measures to control the pandemic. The 2015 Paris climate deal saw nations commit to limit temperature rises to "well below" two degrees Celsius (3.6 Fahrenheit) above pre-industrial levels through sweeping emissions cuts. It also set a safer goal of a 1.5 C cap. The United Nations says for this to be possible, global emissions must fall 7.6 percent annually this decade[5].

In Central Asian context November 6, 2020 corresponded to the Overshoot day for Uzbekistan; 22 April, 2020 corresponds to the Turkmenistan; 17 April, 2020 for Kazakhstan; 26 December 2020 for Kyrgyzstan. The list is headed by the Qatar and Luxemburg which have already consumed their limit on 11 February and 16 February 2020 respectively [6].

The above-mentioned data shows that all the counties of the world should be engaged in the responsible use of the land, fossil resources and should mostly rely on

the renewables which are the main engines of the human development, including human capital.

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