The Jus Semper Global Alliance

In Pursuit of the People and Planet Paradigm

Sustainable Human Development

June 2021 ESSAYS ON TRUE DEMOCRACY AND CAPITALISM

Water as the Pandora's Box of Ecological Debacle from South and Central America

The hydrological cycle unleashes a Pandora's Box of greenhouse gas emissions in the Amazon, the Andean Glaciers, the Gran Chaco in Argentina and Paraguay and in Central America

The Amazonia, the Andean Glaciers, the Gran Chaco in Argentina and Paraguay

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Introduction

Since the origins of the Earth some 4.5 billion years ago, water has played an essential role in the biological activity of the planet. Through it, mineral salts are diluted and organic substances are maintained in cells, which in turn enable vital reactions from the simplest to the most complex and specialised forms of life.

The end of the Ice Age released large quantities of nutrients into the ocean. From these nutrients, algae and animals appeared,[1] and as they diversified into zoological species, they moved from water to land and incorporated water into their own organism.[2] Water is an irreplaceable element in nature, as are air, land, atmosphere, biodiversity, plants, animal and human species. It is undeniable that water has exercised multivariate vital functions in living beings in the food chain since mankind has records of its existence, be they geological, biological, anthropological or from climate science.[3]

[1] ↩ Sara Romero. Resuelto el misterio de cómo surgieron los animales en la Tierra. https://www.muyinteresante.es/ciencia/articulo/resuelto-el-misterio-de-como-surgieron-los-animales-en-la-tierra-441502957366

[2] ↩ El agua motor del ecosistema. https://www.ambientum.com/enciclopedia_medioambiental/aguas/el_agua_motor_del_ecosistema.asp

[3] ↩ Water covers approximately 71% of the Earth's surface, occupying a volume of about 1,4 billion km3. In this context, 97,25% of the Earth's water is found in the oceans; the remaining 2,7% is located on the continents or in the atmosphere, the latter being a very small amount compared to the other reservoirs (0,001% of the total). Its distribution is highly variable: in some regions it is very abundant, while in others it is scarce.

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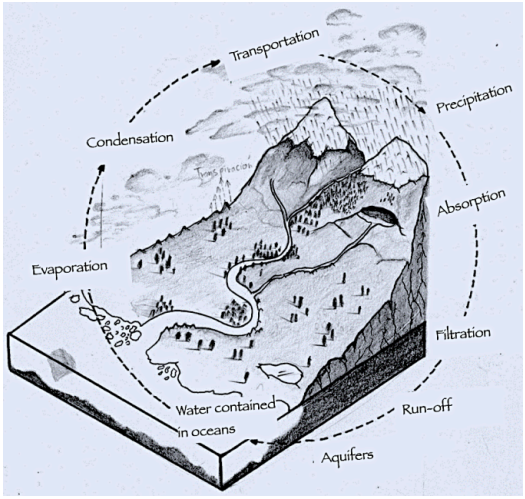
Broadly speaking, the history of water can be drawn from the geological traces left in millions of years above and below the Earth. It has delineated natural landscapes between mountains, rivers, streams, creeks, springs and waterfalls, as well as drawn geographical boundaries between communities, countries and regions. Cultures, economies and civilisations have developed around watersheds. In contrast, extreme droughts or floods have wiped out or driven entire peoples from their territories over the centuries.

The water cycle has been and will be an essential component in agriculture, conservation and the exchange of native seeds between farmers. Consequently, it is directly involved in the production of basic foodstuffs in each culture. Furthermore, it makes possible the sedentarisation or human permanence in territories favourable to economic and market activities. Such sedentarisation is in response to the solution of historical needs and satisfactions of peoples and countries with asymmetrical models of development and well-being.

The water cycle remains in motion. It has the property of moving from one place to another in successive exchanges of state: from liquid, to vapour, to ice, and vice versa between interconnected reservoirs: oceans, seas, rivers, lakes, springs, groundwater or the polar ice caps.

Approximately 80 % of the total evaporated water comes from the oceans, while the remaining 20% comes from water in continental regions and from transpiration of vegetation. Winds transport evaporated water.[4] Only 1% of the freshwater on the planet runs off between watersheds in the form of streams and rivers, which is then deposited in lakes, aquifers, springs and other surface water bodies. This form of water is regularly replenished through the hydrological cycle.[5]



Water Hydrological Cycle (Camilo Reneza Quintero)

Despite the technological development since the Industrial Age, people are hardly aware of how the laws governing the movement of nature, independent of human will and consciousness, work. Perhaps because of this ignorance, in less than two centuries of capitalist hegemony—more than any other species or creature—,humans have managed to alter and fracture the metabolism of the planet in the name of civilisation, technology, economic growth and the well-being of the countries of the global North.

[4] ↩ Ministerio de Educación, Ciencia y Tecnología. Ciencias Naturales. El ciclo del agua. http://www.bnm.me.gov.ar/giga1/documentos/EL002315.pdf.p. 3

[5] ↩ Jumapan. Distribución del agua en el planeta. http://jumapam.gob.mx/cultura-del-agua/distribucion-de-agua-en-el-planeta/

South and Central America (SACA) is the second most disaster-prone region in the world.

South and Central America (SACA) is the second most disaster-prone region in the world. *Since 2000, 152 million Iberian Americans and Caribbeans have been affected by 1205 disasters, including floods, hurricanes and storms, earthquakes, droughts, landslides, fires, extreme temperatures and volcanic events.*[6]

According to the UN, storms in Central America are becoming more powerful with abundant rainfall and large storm surges due to climate change. Indeed, the increase in climatic phenomena generates less time for recovery between events, as witnessed in the case of Dominica with Tropical Storm Erika in 2015 and then, in 2017, Hurricane Maria completely devastated the region, killing 64 people and causing irreparable damage to the island's resident population of some 71.293 people.[7]

In the last 20 years, the countries most devastated by storms have been Cuba, Mexico and Haiti, with 110.500 deaths, 29 million people affected and $39 billion in total damage. However, more than 85% of the deaths were in Haiti, the poorest and most vulnerable country in the Caribbean. Earthquakes followed: Chile in 2010, 8.8 on the Richter scale; Peru in 2001, 8.4; Chile in 2015, 8.3; Chile in 2014, 8.3; Peru in 2007, 8.0; Ecuador in 2016, 7.8; El Salvador in 2001, 7.7; and Haiti in 2010, 7.0. Sitting along the "Ring of Fire" from Mexico to Chile, the region is exposed to volcanic activity. In Central America and the Caribbean, active volcanoes are found in Montserrat, St. Vincent, the Grenadines, Guadeloupe and Martinique. The highly active submarine volcano Kick 'em Jenny is located in the Grenadine island chain just 8 km north of Grenada.[8]

Access to freshwater has been reduced by more than 20 per cent in the last two decades. Per capita, water availability has declined by 22% over the previous 20 years, attributed to population expansion, ecological fractures from mining, oil palm monocultures, fires, deforestation and the establishment of extensive cattle ranching for export to countries in the global North.

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In Colombia, more than 10 million people have suffered from this type of disaster in recent years, the largest population in the region. Floods are considered one of the most costly natural disasters due to the wide range and extent of damage, from direct losses to physical and environmental assets, including property and housing, ecological systems and production in all economic sectors, to health-related issues and loss of human life.[10]

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6 ↩ Because of the climate crisis, natural events take on the connotation of natural disasters caused by capitalist hegemony.

7 ↩ PNUMA. América Latina y el Caribe: la segunda región más propensa a los desastres.2020. https://news.un.org/es/story/2020/01/1467501

8 ↩ Ibid.

9 ↩ ONU. "El agua, un recurso que se agota por el crecimiento de la población y el cambio climático". 26 de noviembre de 2020. https://news.un.org/es/story/2020/11/1484732

10 ↩ PNUMA. América Latina y el Caribe: la segunda región más propensa a los desastres. Op. Cit.

The climate crisis does not stop. The 2015-2016 El Niño phenomenon has marked a turning point with the most substantial droughts in South America, extending to the Andean areas of Ecuador, Peru and Bolivia, as well as northeastern Brazil. In Central America, there were prolonged droughts in the Dry Corridor, specifically in Guatemala, El Salvador, Honduras and Nicaragua. Indeed, ecological fractures have shown breaks in the hydrological cycle with unknown consequences on the climate patterns involved in floods and droughts.

The IPCC report (2019) predicts further unknown impacts on biodiversity through species extinctions in terrestrial, coastal and freshwater ecosystems to be greater with global warming of 2 °C. According to UNESCO, climates will be more extreme and weather events more intense. Melting ice sheets will cause sea levels to rise, and permanent flooding in large coastal areas will also reach aquifers. Additionally, rising temperatures will exacerbate water pollution.[11]

In this way, the memory of water reminds human populations of the boundaries of their encroached watercourse and then reclaims them, taking with it the lives, collective infrastructures, goods and possessions of the affected populations. The water availability to meet human needs for food and energy production and the conservation needs of ecosystems will be decimated by variations in the hydrological cycle generated by climate change.

Another common and growing problem is the droughts that force hundreds of poor people to walk for miles in scorching weather, searching for water wells. This scenario is recurring with increasing frequency, as a multifactorial bundle of socio-economic, environmental and cultural variables come into play. For the time being, in the absence of institutions in the continent's states with real solutions, populations are mobilising in defence of their rights, others are migrating to the US, while others are begging for humanitarian aid. In response, governments respond with aggressive civil-military interventions and the proliferation of the politics of fear.

Human beings in emerging and industrialised countries, distant from nature, have taken on the mistaken idea that they will never run out of water, so it is squandered unchecked, wasted, and the domestic water bill is paid as if it were an infinite resource. As a result, less than half of one per cent of the planet's water reserves are available for human consumption, without the need to extract and empty the water reserves necessary to maintain the cycle.

We are depleting water from the commons with the speed of technological advancement, population growth, the buy-use-throw-away culture and the pressures of profit-hungry transnational capital. The forms of dispossession and disproportionate use are manifold. These forms include the export of 'virtual water' in food products labelled 'exotic'; the trade of large volumes of water from aquifers and watersheds through pipelines to the site of household aqueducts in the bottled water plants in urban areas. There is also the case of mining and extensive monocultures after clearing the earth's largest and most megadiverse tropical rainforests and dry tropical forests.

Finally, in the SACA countries, climate collapse is on the rise, with each environmental and ecological tragedy bringing sporadic humanitarian aid from international NGOs, FAO or other UN organisations. However, this aid is limited to the count of *natural disasters* at record highs due to the intensity and frequency of fires, droughts, floods, earthquakes, storms, thunderstorms and volcanic eruptions. There is no mention of the causes, even though they respond to nature's reactions to the fractures and damage inflicted both above and below ground in the name of the green economy and the welfare of the global North.

[11] IPCC. "Calentamiento global de 1,5°C. IPCC-Special-Report-1.5-SPM_es.pdf

Natural disasters have different causes: fires, deforestation and subsequent land conversion of tropical rainforests, wastelands with a common purpose: the accelerated expansion of oil palm[12] and cereal monocultures for animal and human consumption over the exploitation of nature's finite resources either by ruptures and diversions of surface and underground currents; the retreat of glaciers, etc. All of the above are underlying irreversible alterations of the hydrological cycle with a destructive impact on the human populations of the affected territories.

Indigenous peoples have conserved water, air, plant and animal biodiversity, and tropical rainforests in successive generations because they have always been on Earth.

The Earth's Commons

Indigenous peoples have conserved water, air, plant and animal biodiversity, and tropical rainforests in successive generations because they have always been on Earth. Water is not a natural resource in indigenous cultures as a mere object of economic exploitation (reification-instrumentalisation). The same is true for the concept of 'environmental goods' of the capitalist market. In indigenous peoples, socio-cultural representations prevail in the form of subjective expressions of cultures.[13]

In Ecuador, the Otavaleño indigenous people of Fakcha llakta consider that *life has its origin in water: Living beings are being formed within the water, and that is why, in this world, we cannot live without water... Water is the primordial life of the human body (Sj.2). Humans and animals are processing, from the womb in the source of water..., they are growing, they are nourishing themselves. Through water, we also have the breath, inside our mother!... (Sj.2)*.[14]

In the Andean Region, *water is associated with the blood of Mother Earth or Pachamama, which flows to give life, as it is also concentrated in a mother's womb and is considered Yacu Mama or mother water*.[15]

In the West, Richard Bocking also conceives of water, a part of the realms of the commons: *those things to which we are entitled just because we are members of the human family: the air we breathe, the fresh water we drink, the seas, the forests, the mountains, the genetic inheritance through which all life is transmitted, the diversity of life itself.*[16]

For Jonathan Rowe, water is part of the realm of nature outside the capitalist market and the state, which we all use without paying any fee or price. *Likewise, atmosphere and oceans, languages and culture, reservoirs of knowledge and wisdom, informal community support systems, the peace and tranquillity we want, the generic building blocks of life - these are all aspects of the commons.*[17]

The best representation of water as a commons, not yet violated by capital, is the water that falls from the sky in the form of rain stored in cisterns or tanks on the roofs of houses in traditional villages. Alongside the water demand, the climate crisis reveals the urgency of recovering food sovereignty based on ethno-afro and peasant agriculture as a common

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12 ↩ Nubia Barrera Silva, Capitalism of Dispossession in the Palm Oil Plantations in the Countries of the Global South -Contexts, Struggles and Peasant Resistance. The Jus Semper Global Alliance. August 2020.

13 ↩ Gustavo A. Ortega Guerrero et al., Estado Ambiental de Derecho o 'Estado de cosas inconstitucional ambiental': derechos colectivos y ambientales bajo amenaza en la era de las locomotoras normativas: (Bogotá DC: Universidad Nacional de Colombia, 2013). P. 54.

14 ↩ Trujillo Carmen, José Alí Moncada, Jesús Aranguren y Kennedy Lomas. Significados del agua para la comunidad indígena Fakcha Llakta, Cantón Otavalo, Ecuador. Ambiente & Sociedade n São Paulo. Vol. 21, 2018 n https://www.scielo.br/pdf/asoc/v21/es_1809-4422-asoc-21-e01003.pdf. P. 6

15 ↩ Ibid. P. 6.

16 ↩ Barlow, Maude. El Agua Nuestro Bien Común. México, Centroamérica y El Caribe. water_commons-es-2.pdf (boell.org). P. 9

17 ↩ Ibid. p. 9.

good, outside the institutional framework and the control of states allied with large landowners and transnationals dedicated to the commodification of fresh water in the global South.

It is worth noting that the ethnic-peasant population with communal irrigation systems has limited access to water use management. In other cases, droughts devour the communities, as in the Wayuu people in the Sierra Nevada de Santa Marta in Colombia. Finally, we must add the concentration of land, which has also become part of the demands of the agricultural peoples of the global South.

In addition, advanced technologies for the abusive plundering of aquifers through water pumping, a practice radically opposed to food sovereignty due to the destruction or disruption of the hydrological cycle, generally lead to rapid water shortages and, in a short time, create deserts and irreversible climate change.

They oppose these technologies due to the indisputable fact that 98% of the farmers plough the fields with their hands. They use their tools and animals and establish subsistence crops in the same way as in the early days of agriculture.

From the ethnic-peasant wisdom, there are two types of responses to the climate crisis. Firstly, they advance different processes of rehabilitation of the hydrological cycle, aimed at the sustainability of subsistence production with the planting of trees, shrubs and native vegetation that can retain soil moisture in the medium and long term. I summarise the second response below:

(i) Improved and sustainable water managements have ensured the collective right to use, recover, and conserve the common good; protection of watersheds, groundwater, waters in rain-fed areas and ecosystems.
(ii) The renewal of sustainable irrigation systems in irrigated areas based on climate justice for access to water for domestic and productive consumption.
(iii) Combining different experiences of peasant agriculture with inputs from researchers in agronomic sciences, new or improved drought-tolerant crop varieties have been introduced in combination with effective techniques of allocation and fixing of water rights and quotas to ensure equitable and sustainable access.
(iv) Offsetting the impact of droughts on food sovereignty based on ethno-peasant experiences of rainwater harvesting and storage.

Along these lines, Michal Kravcik has led the global crusade to save the Earth's hydrological cycle. This crusade takes place in the context of urban sprawl and the elimination of water-retentive landscapes in situations of soil desertification that prevent the return of water to fields, meadows, prairies, wetlands and streams.[18]

Human rights activists, environmentalists and climate change mitigation advocates are joining the struggles for water as a common good associated with food sovereignty in the global South.

Human rights activists, environmentalists and climate change mitigation advocates are joining the struggles for water as a common good associated with food sovereignty in the global South. For Kravcik, the hydrological cycle must be understood as a commons—even before it falls from the clouds as rain—and he claims the right of *residence* of a drop of water.[19]

[18] ↩ Ibid. p. 22
[19] ↩ Ibid.

It follows from the above that, in territories that have not yet been invaded, the effects of the use of water not being diverted in ecosystems contiguous to the territory, but affected by export monocultures, which take with them gigantic volumes to the detriment of food production for national consumption, are counteracted. It is worth noting that the ethnic-African and peasant population, often with communal irrigation systems, have limited access to the use and management of water. Moreover, land concentration has also become part of the demands of the agricultural peoples of the global South.

The Rise of Imperialism and the Bottled Water Trap

Bottled water is the ultimate expression of capitalist imperialism as opposed to water deposited in natural reservoirs. It defies nature by offering it freely to human, plant and animal populations. Based on this principle, SACA peoples have embraced the intra- and intergenerational tradition of appropriating water in terms of sustainability in subsistence food production, sale of surplus, and preservation of ecological sanctuaries at no cost in agricultural fields where it flows freely.

The water cycle is an essential component of food sovereignty. From this approach, I agree with Hernán Vega in replacing the "lightweight term of globalisation" with that of "imperialism", a concept banished from the vocabulary of social sciences close to evasive positivism using euphemisms in international economic and political exploitation.[20] But, on the other hand, it regulates the relations of dispossession of small and medium-sized properties through the strengthening of civil-military oppression in the subjugation of native peoples and peasants.

On the other hand, authors such as David Harvey, John Bellamy Foster and Robert Biel have introduced and revitalised the concept with that of new imperialism by the intensification of profit rates due to the reinforcement and renewal of slave practices skilfully embedded in the capitalism of agriculture 4.0 through the expropriation of land and the exploitation of the former owner converted into piece-rate labourers in the peripheral countries.

Thus, *the supreme objective is to keep capitalism functioning on a global scale, maintaining the structural differences between centres and peripheries following the international division of labour.*[21] From this perspective, the corporate bottled water business is pitted against community struggles to recover customary rights in native communities in the global South.

Water as a commodity fits into industrial production processes for the benefit of the few. Another problem is the commodification of drinking water in community aqueducts and two contradictory realities: while half the world lacks drinking water, the other half pays exorbitant amounts for bottled water as a luxury good despite ecological fractures, contaminated packaging, GHG emissions, excess energy consumption and gigantic waste generation.[22]

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[20] ↩ Vega, Renán. "El nuevo imperialismo y la geopolítica del despojo en Colombia". En Nuestra América en la encrucijada: pandemia, rebeliones y estados de excepción. Compilado por Adoue Silvia; Pinasi María; Feliz Mariano. Ediciones Herramienta, 2020.

[21] ↩ Ibid. P. 81

[22] ↩ Velásquez, E., Dinarés, Comercio internacional de agua embotellada- la hidromafia. VII Congreso Ibérico sobre Gestión y Planificación del Agua. 2011.Talavera de la Reina. https://fnca.eu/images/documentos/VII%20C.IBERICO/Comunicaciones/A3/33-Velazquez.pdf

Water Privatisation Between Transnational Regulation and Social Conflict

The success of informal community regulations in the conservation of the commons, compared to privatisation or nationalisation, is based on accumulated knowledge about using and exploiting the commons with better conservation strategies. This success is due to collective regulation that allows careful monitoring in the face of deterioration or unexpected changes in the interaction between the biophysical and the anthropogenic, usually imposed on the environment by economic actors. Additionally, the subsistence of communities depends directly on the conservation of these assets.[23]

The real objective of transnationals has been to replace the state public service with the participation of "deregulated private monopolies" and a laissez-faire approach to turn water into an economic good with high tariffs.

Since the 1980s, the concept of privatisation has been promoted by international financial institutions and governments of the global North with regulations and economic impositions in collusion with local SACA governments, through the empowerment of forms of complete transfer of ownership, including the transfer of management of public enterprises to the private sector.[24]

The arguments for privatisation policies implemented since the 1990s in the reorganisation of water and basic sanitation services have had little relation to solving the crises aggravated by lack of coverage in large sectors of the population, bureaucratic obstacles, corruption and low public investment in infrastructure renewal.

However, the real objective of transnationals has been to replace the state public service with the participation of "deregulated private monopolies" and a laissez-faire approach to turn water into an economic good with high tariffs. Among the World Bank's (WB) privatisation statements, ECLAC mentions the rationalisation of public enterprises, the broad distribution of ownership, the reduction of public sector expenditures, the capitalisation of foreign debt and a public demonstrative effect of the governments' economic policies.[25]

Another argument put forward in the introduction of privatisation processes has been to increase efficiency in the provision of services while effecting structural changes in the economy. In the beginning, it was used as a *macroeconomic tool* in the stabilisation of the economy. However, these changes were not transferred to society to provide efficient services and reduce tariffs. On the contrary, unstoppable social conflicts arose due to excessive tariff increases without the promised infrastructure.[26]

The privatisation of water has promoted poverty, leaving vast population sectors without access to drinking water services, and tariffs have become unaffordable, especially for the most impoverished population. In this way, water resources have been allocated through the market to the detriment of pre-existing collective or public rights.

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[23] ↩ Gustavo A. Ortega Guerrero et al., Estado Ambiental de Derecho o 'Estado de cosas inconstitucional ambiental': derechos colectivos y ambientales bajo amenaza en la era de las locomotoras normativas: (Bogotá DC: Universidad Nacional de Colombia, 2013). P. 55.

[24] ↩ Castro, J. Esteban. "Proposiciones para el examen teórico y empírico de la privatización: el caso de los servicios de agua y saneamiento en América Latina". En Água e Democracia na América Latina. EDUEPB, 2016, 427 p. rom: doi: 10.7476/9788578794866. http://books.scielo.org/id/tn4y9/epub/castro-9788578794866.epub. P. 57-58

[25] ↩ Public Demonstration: Privatisation involves both endogenous and exogenous factors. The former includes public opinion, capital market situations, public or private employment regulations, the economy in general, etc. The latter respond to questions about how it works, i.e. whether it is a public service or not, a decentralised unit, its financial situation, types of ownership, regulatory framework, possible prices, among others. Solanes, Miguel. "La privatización de los servicios públicos del agua". Solanes, Miguel. "La privatización de los servicios públicos del agua". En Revista de la Cepal, N° 56. Santiago de Chile.

[26] ↩ Ibid.

The study of several privatisation cases has probed the quality of water and sanitation services in Africa, Iberian America and Europe. I mention in this paper some examples from Argentina, Bolivia, Brazil and Mexico, where the main reason for the implementation of global policies has been articulated in the guidelines of international financial organisations and agents, from the Agency for International Development (USAID) to ECLAC in the 1990s. Thus, for example, the World Bank (WB) and the International Monetary Fund (IMF), through its Private Sector Participation in Infrastructure Group, *promoted private participation in infrastructure within the context of its overall objectives of supporting poverty reduction and sustainable development*, private investment and greater efficiency than the state sector.[27]

T.1 Some examples of trends in Iberian American countries:

Country	Company	Observations
Cochabamba Bolivia	Concession to Aguas del Tunari increased by 35%.	Privatised services in 1999. The increase in tariffs came to represent 22% of the minimum wage. Social mobilisations led to the cancellation of the contract and the resignation of the national cabinet. The company is currently suing the Bolivian state.
Buenos Aires Argentina	Aguas Argentina, increased by 88.2% (1993-2002).	The tariff affected the poor sector with an increase equivalent to 9% of household income for the lowest income decile, while for the average user it was only 1.9%.
Tucumán Argentina	Concession to the company Aguas de Aconquija	Increased the tariff by 106%. Introduced an "infrastructure charge", shifted responsibility for financing the network to users. There was a reaction of civil disobedience: not paying the bills (...) which included local small businesses and public bodies. After social conflicts, the concession was cancelled. As in Cochabamba, the company asked for compensation of 300 million dollars.
Mexican State of Aguascalientes	Services privatised in 1993	Nearly 70% of users were classified as "low income"—an increase of 170%. The financial crisis hit the country. The company was rescued by the government's renegotiation and transfer of responsibility for infrastructure investment to the state.

Source: Data extracted from José Esteban Castro. La privatización de los servicios de agua y saneamiento en América Latina.

Before privatisation, most South American countries lacked adequate diagnoses of the infrastructure and the socio-economic conditions of the populations that would be most affected, nor did governments appear to have clarified the fixed investment required in water services infrastructure. In Solanes: *the State does not know what it privatises, and the concessionaire has the possibility of claiming* [as undoubtedly happened in the failed privatisations mentioned in the previous table] *for hidden defects after the concession has been granted.*[28] It follows that the improvisation and lack of commitment of those in power when negotiating public goods and the subsequent failures in ambiguous and non-transparent procedures between the parties. This resulted in excessive increases in public services to the detriment of the public patrimony with enormous profits for international organisations, which were the only ones to benefit from privatisation in the distribution of drinking water.

The above cases represent only a few examples of the generalised failure of water privatisation in South America. Everywhere, the balance of the water market has left trails of corruption, exorbitant prices, service cuts to millions of people, worsening water quality, nepotism, pollution, worker layoffs and unfulfilled promises. History has repeated itself in developed countries that have opted for for-profit water supply systems.[29]

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[27] ↩ Ibid. Pp. 57-58.

[28] ↩ Solanes, Miguel. Ibid. Pp. 149-162.

[29] ↩ Barlow, Maude. El Agua Nuestro Bien Común. Op. Cit.

The neoliberal tendency of the WB to sell *privatisation as a neutral, apolitical, technical instrument fails to hide the model's essentially political and ideological character*[30] and add the financial component. The reality turned out to be quite the opposite: the WB recognised the failure of private investment. It did not replace the State's contributions as the foreign investors had guaranteed it would. The motto prevailed: the lion's share of water investments must always come from the public sector.[31]

In the 1990s, *because of the massive amount of resources needed, we believed that the private sector could make important investments that could save the water sector. But there was not much private sector investment; 90% of the resources remain in the public sector, even at the height of private participation*.[32]

However, despite the failure of the stated objectives of privatisation of water and sanitation services in South America, progress in implementing these policies has left a procedural burden, i.e. today, their inertial force continues to influence the organisation and management of these services.[33]

The bottled water business is putting small populations on the battleground on all continents without distinction. The first flagellum is the exclusion of communities from the beginning of negotiations between governments and corporations. Not only do they extract water without any retribution to the environment and the communities, but they also leave severe ecological fractures amid struggles and confrontations, from sit-ins and mobilisations to court cases.

In this asymmetrical struggle, the transnationals hire armies of unscrupulous lawyers. They know the smallest interstice of environmental legislation and the incompetence of local governments to defend regulations and norms related to collective interests. They turn them into advantages to avoid any social responsibility and the payment of fines and compensation for damages committed against the environment and the health of affected consumers.

From Commons Water to Bottled Water for the Transnational Market

Water is diverted to the transnational market, sometimes from the tap of local aqueducts and sometimes from surface or groundwater flows, free of cost, investment or maintenance, either in the natural reservoirs where it is extracted or in the communities that will later be affected by shortages in the provision of the service.

One major problem is that surface water represents an essential component of the water cycle in the troposphere. It incorporates a set of elements that intervene in the natural resources for the development of the physical, chemical and biological processes that govern its physical evolution.[34] Once bottled water in plastic bottles obstructs the hydrological cycle of water streams—that used to flow freely between surface or underground watercourses—, it endangers underwater life and spreads toxic substances in the food chain.

In human health, bottled water increased its 'stomach share' of the overall beverage market from 14,1% in 2009 to 25,5% in 2019. Carbonated soft drinks are in the second position, with 21,4% reflecting the trend of consumer choice in

30 ↩ Castro, J. Esteban. Op. Cit. P. 60

31 ↩ Castro, J. Esteban. https://nuso.org/articulo/la-privatizacion-de-los-servicios-de-agua-y-saneamiento-en-america-latina/. Nueva Sociedad. Febrero de 2007. P. 2

32 ↩ Ibid.

33 ↩ Castro, J. Esteban. "Proposiciones para el examen teórico y empírico de la privatización: el caso de los servicios de agua y saneamiento en América Latina". P. 19

34 ↩ It is the layer closest to the earth's surface. The temperature decreases with increasing altitude. The various meteorological phenomena involved in defining the weather occur in the troposphere.

It is now known that the bottled water industry is among the most polluting and least regulated on the planet.

choosing bottled water sold as healthy. Indeed, 66% of the increase in sales from 2006 to 2019 came from people switching from soft drinks and fruit drinks to bottled water, relying on the good faith of entrepreneurs in advertising campaigns about the array of health benefits.[35]

Among the sales strategies for bottled water, the undervaluing of tap water as "undrinkable" and polluted stands out. This ultimately discredits public water service as *inefficient*, a relentless slogan of neoliberalism.

It is now known that the bottled water industry is among the most polluting and least regulated on the planet. This is because plastic bottles are made from chemicals and fossil fuels, which permeate into groundwater and the human body and interfere with the hydrological cycle.

On CO_2 emissions, the most recent estimates for bottled water are higher than the figures given so far. The carbon footprint of tap water originates from pumping it from groundwater or surface water, purifying it for consumption, pumping it through pipes and then transporting it to the consumer. According to comparative studies, tap water produces approximately 1/300 or 1/1000 of the carbon footprint of bottled water. According to Nature magazine:[36] *As part of the consumption of about 480 billion plastic bottles in 2018 with an average size of 1 litre, the carbon footprint is between 67 billion and 192 billion kg CO_2 per year.* However, other hidden aspects such as microplastic contamination, wastewater and the origin of water sources are unknown. The plundering of water for bottling leaves communities scattered across the globe, from the Great Lakes of North America to rural villages in India, without water.

In South America, the leading companies in the bottled water business are Danone Group with 11,2% share, followed by PepsiCo Inc with 10,20% and Coca Cola Company with 9,80%. In Colombia, Postobón owns 52,2% of the most consumed brands with stakes in Agua Cristal and Oasis. Coca Cola, Agua Brisa and Manantial are in second and third place in the ranking. Projections for 2021 aim to increase the volume to 1117.0 million litres, equivalent to US$ 665,8 million.[37]

"Globally, of the tap water from community drinking water tanks that are packaged in plastic bottles, 9% of the plastic produced and consumed is recycled, 12% is incinerated, and the remaining 79% ends up in landfills. The same is true for plastic objects that end up in the sea. This situation is repeated with plastics in the ocean from accidental or deliberate dumping of rubbish from ships or discharges of sewage treatment plants and wastewater treatment plants. Eighty per cent of the waste we find at sea comes from land, while the remaining 20 per cent comes from maritime activity.[38]

Water in the advertising market is sold as cheap, light, clear, portable, recyclable and refreshing. However, plastic waste does not biodegrade. Instead, it breaks down to smaller pieces, even down to particles and, on a nanometric scale, into

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35 ↩ Jill Culora, "Actualización 2020 de la industria del agua embotellada". http://agualatinoamerica.com/2020/09/15/actualizacion-2020-de-la-industria-del-agua-embotellada/

36 ↩ Tapp Water. What is the carbon footprint of bottled water? https://tappwater.co/es/huella-de-carbono-agua-embotellada/

37 ↩ González, José. "Cristal, la marca que domina el mercado del agua embotellada". 2017. https://www.agronegocios.co/agricultura/cristal-la-marca-que-domina-el-mercado-del-agua-embotellada-2623052

38 ↩ Greenpeace. "¿Cómo llega el plástico a los océanos y qué sucede entonces?". ¿Cómo llega el plástico a los océanos y qué sucede entonces? - ES | Greenpeace España

a thousandth of a thousandth of a millimetre. The global market for packaged water is worth 170 billion US dollars and is expected to grow to 307 billion by 2024.[39]

In this way, plastic is resilient and easily dispersed from the Arctic to the Antarctic. Once at sea, plastic can be ingested by marine wildlife, remain on the seabed or even get trapped in Arctic ice. Plastics have been found at depths of more than 10.000 metres. Some 700 species of marine organisms are currently affected by this type of pollution. Every year, more than one million birds and over 100.000 marine mammals die due to all the plastics that find their way into the sea.[40]

Global research results on the presence of microplastics:

(i) The State University of New York at Fredonia has found that 93% of the world's bottled water contains microplastics, which we ingest when we drink. Up to 10.000 plastic particles per litre have been found in a supermarket bottle of water.[41] The university also found small pieces of plastic in more than 90% of bottled water.[42]

(ii) Tyree and Morrinson found plastic fibres in more than 80% of the samples collected on five continents. Microplastics have been shown to absorb toxic chemicals linked to cancer and other diseases and to release them when consumed by fish and mammals. The most common type of plastic fragment was polypropylene. This is the polymer used in caps.[43]

(iii) The bottles tested were purchased in the USA, China, Brazil, India, Indonesia, Mexico, Lebanon, Kenya and Thailand. Eleven brands were identified, including *Aqua and Evian (Danone), Nestlé Pure Life and San Pellegrino (Nestlé), Aquafina and Epura (PepsiCo), Bisleri (Bisleri International), Dasani (Coca Cola), Gerolsteiner (Gerolsteiner Brunnen), Minalba (Edson Queiroz Group) and Wahaha (Hangzhou Wahaha Group)*.

(iv) The National Geographic study of 259 bottles from eleven different brands in nine different countries found an average of 325 plastic particles per litre of bottled water. The presence of plastic microfibres in bottled water has been confirmed and is sometimes double the amount of plastic present in tap water.[44]

(v) Testing by the New Hampshire Department of Environmental Services has revealed dangerous levels of manufactured chemicals in bottled water marketed by CVS, Whole Foods and Market Basket.[45]

(vi) In Germany, more than 24.000 different chemicals have been identified in bottled water samples, many at levels sufficient to cause a worrying level of endocrine disrupters.

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39 ↩ Chris Tyree, Dan Morrinson, "Invisibles. "El plástico dentro de nosotros". Informe de investigación, orgmedia, https://orbmedia.org/stories/El_pl%c3%a1stico/

40 ↩ Greenpeace. "¿Cómo llega el plástico a los océanos y qué sucede entonces?". ¿Cómo llega el plástico a los océanos y qué sucede entonces? - ES | Greenpeace España

41 ↩ National Geographic España. "Detectan microplásticos en el 90% del agua embotellada" 27 de junio de 2019. ttps://www.nationalgeographic.com.es/ciencia/detectan-microplasticos-90-agua-embotellada_14456

42 ↩ It should be noted that the Nile red dye technique used has been questioned by Nestle, however, Dr Andrew Mayes of the University of East Anglia, the inventor of the technique, supports the relevance of the results. Ibid. Usually, transnationals produce studies with results contrary to those presented by private research institutes.

43 ↩Chris Tyree, Dan Morrinson, "Invisibles. El plástico dentro de nosotros. Informe de investigación, orgmedia, https://orbmedia.org/stories/El_pl%c3%a1stico/

44 ↩ National Geographic España. "Detectan microplásticos en el 90% del agua embotellada" 27 de junio de 2019. ttps://www.nationalgeographic.com.es/ciencia/detectan-microplasticos-90-agua-embotellada_14456 Ibid.

45 ↩ Waterlogic. "¿Qué contiene el agua embotellada?" 13 de septiembre de 2019. https://www.waterlogic.es/blog/sabes-lo-que-puedes-encontrar-en-el-agua-embotellada/ : In Spain, the Sistema de Información Nacional de Aguas de Consumo (National Information System for Drinking Water), which depends on the Ministry of Health, Consumption and Social Welfare, established the regulations, based on the European legislation Directive 98/83/EC, fixing the maximum concentrations of substances present in water.

Accordingly, dangerous levels of toxic chemicals have been found in major global brands in the bottled water trade due to the presence of microplastics, not to mention the repercussions in almost every sector of the economy and on the health of global families.

The global market has turned plastic into an indispensable and practical product. It has invaded consumers' lives addicted to the deplorable practices of buy, consume and throw away. In this sense, there are unlimited amounts of waste from millions of bottles, plates, bags or cups assailing public spaces. In addition to the plundering of their hydrological cycles, the countries of the South are burdened by the polluting pressure of loads of rubbish dumped on them by the consumerist societies of the North.

The easy habit of buying, dumping and buying has become a daily practice of accumulating and disposing of toxic waste. Muhammad Yunus states: *We knew that plastic is coming back to us through our food chain. Now we see that it is coming back to us through our drinking water. Do we have a way out?*[46] This is all the more unacceptable when considering that consumers pay extra for water sold as higher quality than tap water. Behind the marketing, the toxic substances assimilated by the human organism and that lead to illnesses are deliberately hidden.

The monopolisation of the bottled water industry is the target of attacks by activist groups. They aim to prevent bottled water companies from installing, licensing and re-licensing bottled water plants and targeting groundwater and public source bottling facilities.[47] Occasionally, communities are sometimes successful in making claims and demands on governments and large companies.

In summary, Castro (2006) elaborated the key principles of neoliberal policy in the management of water and sanitation services, which not only remain in place but have been strengthened by the hegemony of natural resource transnationals and agribusiness in the Countries of the Global South.[48] Water services:

(a) They have become economic goods purchased on the market. They exclude those who cannot afford to pay the established tariffs. This is the dead-end for water services as public or social goods.
(b) They are offered by private operators, under the premise of being more efficient than public ones. They are self-regulated by the market, with little or no state intervention.
(c) They have lost their character as a natural monopoly regulated by state institutions. Most operations are open to competition, perhaps for some basic ones. However, the existence of high transaction costs could make competition difficult. In these cases, they prefer a private monopoly to a public monopoly. The policy is to minimise regulation, or if possible, to abolish it altogether. Water users become consumers, and rights holders become customers.[49]

Water Transformed Into a Commodity Through Constitutional Concessions

Water in the context of supply and demand has gone a long way towards hydro-economic exploitation, contrary to the conception of water as a common or public good. Chile inaugurated the path of concessions. Since Pinochet's 1980

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[46] ↩ Premio Nobel de la Paz y fundador del Banco Grameen

[47] ↩ Jill Culora. Actualización 2020 de la Industria del Agua Embotellada. 2020. http://agualatinoamerica.com/2020/09/15/actualizacion-2020-de-la-industria-del-agua-embotellada/

[48] ↩ Castro, J. Esteban. "Proposiciones para el examen teórico y empírico de la privatización: el caso de los servicios de agua y saneamiento en América Latina". p.61

[49] ↩ Ibid. Pp. 176-177

Constitution, it has had the status of law. In southern Chile, 82% of this resource is owned by two foreign companies: the American AES Gener and the Italian Enel.[50]

Article 24 of the 1980 Water Code separates water from land ownership to benefit small power groups with price premiums of up to 600%. This legislation privatised rivers by handing over water rights in perpetuity to agricultural, forestry and mining companies to the detriment of Nature and the inhabitants.

Moreover, the owner of water rights pays no costs for maintenance, tenure or use, and is not required to protect the watercourse or compensate for potential adverse effects on water quantity and quality, which could affect other users. The rights of communities victims of the dispossession of water in their territories are left out of the equation.[51]

Parallel to the concentration of land tenure, the General Water Directorate, which is mainly made up of new agricultural entrepreneurs, granted 1.362 water rights in the province of Petorca, despite the depletion of the basins, which are underground in Nature. The imbalance in the basins of the annual groundwater abstraction reached 1,600 l/s as a yearly average, the recharge being only 870 l/s (Comisión Nacional de Riesgo, 2011). Thus, annually, there is an average deficit of 730 l/s, translated into progressive decreases in the water table of the basins.[52]

Irregularities in the abusive use of water sources and the improper use of wells and drains on the estates of prominent farmers determined to irrigate their crops with stolen water have led to complaints and street demonstrations. This is accompanied by criticism of the agro-export model and the privatisation of water in the country, resulting in demands for the repeal of the Water Code and the current Political Constitution, with no results favouring the communities.[53]

Chile is facing one of the worst drought crises in the region, with surface water depletion of up to 60%, with severe effects on the populations of the northern and central areas. Freshwater is destined for agro-industry and mega-mining for export.[54] The simulation by Pandez and Mancilla in the province of Petorca calculated for 64.604 inhabitants (last Population and Housing Census, 2017) based on the minimum standard defined by the WHO, 100 litres of water per person per day, obtaining 2.35 gigalitres of water. In one year, this value of human water consumption would represent less than a quarter of the total virtual water calculated on avocado production alone. In 2018, rural communities in the province, consequently, only had access to 50 litres per day as emergency support from the municipal and regional government through water trucks.[55]

The environmental balance sheet is bleak due to excessive water consumption and the contamination of more than 70 river basins due to extractive activities, industries, rampant urbanisation, the disappearance of glaciers, the loss of paramos and increasing deforestation due to climate change.

Next, *Ecuador is water: it has four times more surface water than the world average per capita. The Constitution recognises Nature as a subject of rights. It is a strategic national asset for public use, a common of society and a*

50 ↩ Gustavo Veiga. "Finalmente, fueron por el agua". Desde Abajo. 17 de diciembre de 2020. Finalmente, fueron por el agua (desdeabajo.info)

51 ↩ Alberto Acosa y John Cajas-Guijarro. "Wall Street líquido y sociedades sedientas. Aberraciones del capital", 17 de diciembre de 2020, Wall Street líquido y sociedades sedientas. Aberraciones del capital (sinpermiso.info). En Sin permiso. 17 de diciembre de 2020. P.4

52 ↩ Alexander Pandez Pinto, Pablo Mancilla Quiñones y Andrés Moreira Muñoz. "Agua, tierra y fractura sociometabólica del agronegocio". Bitacora 28. (3) 2018: 153-160. Universidad Nacional de Colombia. Bogotá. P. 158.

53 ↩ Ibid.

54 ↩ Ibid.

55 ↩ Ibid. P. 158

fundamental component of Nature, which has its right to exist and maintain its vital cycles.[56] Yet, in practice, the essential liquid continues to be privatised.

The environmental balance sheet is bleak due to excessive water consumption and the contamination of more than 70 river basins due to extractive activities, industries, rampant urbanisation, the disappearance of glaciers, the loss of paramos and increasing deforestation due to climate change. Likewise, the flooding of rivers on the coast and permanent erosion in the Sierra and its foothills generate repeated flooding along the Ecuadorian coast. As for the other SACA countries, mining companies pollute the water, do not pay for the water consumed, and, before the concession ends, declare bankruptcy and leave the country with absolute impunity.[57]

The World Bank-aligned Second World Water Forum (2000) declared water to be a "human need" rather than an "inalienable right", as is the case with oil and wheat, subject to deregulation and privatisation of this natural resource for the benefit of transnationals in global geopolitics.

Water in the Futures Markets of a Liquid Wall Street

A Liquid Wall Street emerges in the logic of commodification of water, which is adapted to the pricing policy dominated by financialisation and the so-called "futures market". The water turned into a commodity corresponds to the economic concept of the World Water Council, made up of representatives of the leading private water companies that dominate 75% of the world market.[58]

> *The holders of these papers do not buy water per se but the right to use it in the future. This enables a farmer, for example, to secure the resource for his irrigation plans in the medium term and also provides the owner of the title with a financial asset with which he can tap the stock market.*[59]

The World Bank-aligned Second World Water Forum (2000) declared water to be a "human need" rather than an "inalienable right", as is the case with oil and wheat, subject to deregulation and privatisation of this natural resource for the benefit of transnationals in global geopolitics.[60] In this way, although bottled water is already on the markets as a commodity, placing it on futures markets on the New York Stock Exchange is the sanctum sanctorum of speculation and an attack on life itself.

The US based CME Group will launch quarterly water contracts in California, a market worth 1,1 billion dollars. The liquid futures began trading at around $486 an acre-foot, based on prices of water sold in several Californian basins.[61]

Now, relative to the difference between life-cycle water and oil before the stock markets, Pedro Arrojo stated: *without oil, you cannot go somewhere by car, but you can go on foot; on the other hand, without water, you die in a week. That is why water is a human right and oil is not—he added. If the process of financialisation—subjecting the water to*

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56 ↩ Alberto Acosa y John Cajas-Guijarro. Op. Cit. P. 5

57 ↩ Ibid.

58 ↩ Mónica Bruckmann. "La centralidad del agua en la disputa global por recursos estratégicos". 22 de mazo de 2012.

59 ↩ IPS. "cotizar el agua en Wall Street es 'peligrosísimo'". 18 de diciembre de 2020. Cotizar el agua en Wall Street es "peligrosísimo" (ipsnoticias.net)

60 ↩ Mónica Bruckmann. Op. Cit.

61 ↩"The acre-foot measures the volume of water needed to cover one acre (0.4 hectares) to the depth of one foot, which is equivalent to 1.24 million litres.": IPS. Agencia de Noticias Inter Press Service. "Cotizar el agua en Wall Street es "peligrosísimo". 18 de diciembre de 2020. IPS. Op. Cit.

speculative market dynamics—is successful, the resource costs will rise. With the profits taken by stock market speculators, the bill will end up being paid by all of us, those of us at the end of the pipe.[62]

Officially, on 7 December 2020, the New York Stock Exchange began quoting water futures contracts based on the NQH20 index, trading at $486,53 per 1,233 cubic metres (around 1,4 million litres). In October 2018, the index traded at USD 371,11, i.e. the price increased by 131%. Although, strictly speaking, water futures are mainly used in agricultural, industrial and municipal transactions in California, the NQH20 index[63] could become a benchmark for estimating water prices in various corners of the world in a similar way to the indicators used for other commodities.[64]

In this way, water in the Wall Street futures market, according to the UN, violates fundamental human rights, and water is exposed to possible speculative bubbles. Moreover, futures of this kind could also attract speculators, repeating the food market bubble of 2008. *In this context, the risk is that prominent agricultural and industrial players and large-scale utilities will be able to buy in, marginalising and impacting the vulnerable sector of the economy, such as small farmers.*[65]

In the meantime, the peasant-ethnic peoples are resisting with different strategies to the rampant plundering of the invading transnationals backed by private and military armies of the governments of the subjugated countries where human rights and environmental defenders bear the dead and the massacred.[66] In this socio-cultural context of the SACA countries, *liquid Wall Street emerges. The arrival of hedge funds and global players already have, thanks to Wall Street, the indispensable financial tool to turn this right into wallpaper. It matters little to them what UN officials, environmentalists, jurists and academics have to say.*[67]

Despite the asymmetrical relations in the confrontation, the transnationals will not avoid the intensification of different forms of resistance in the communities, their usual contenders. The peasant-ethnic population considers itself to be the repository of the rights of nature, with the knowledge, skills and wisdom required to adapt to climate change, as stated in this paper. In Colombia, we have a concrete case: the Páramo de Santurbán, located between the departments of Santander del Norte and Santander, has a surface area of around 150,000 hectares, with mountains ranging from 2800 to 4290 metres above sea level. The water resources have been distributed in many springs, which supply more than two million people. This magical and ancestral place is among the most significant water sources in the world.[68]

The Páramo[69] de Santurbán, a vital ecosystem for the production, retention and distribution of water, was entered by the Canadian transnational company Greystar to exploit gold and silver. This involves removing several hectares of land with

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62 ↩ Relator Especial de las Naciones Unidas. Ibid.

63 ↩"The original NQH20 index formula estimated on a weekly basis the spot price of water use rights traded in the five major markets in the State of California. These water rights allow their owners to divert or pump vital water from rivers, streams and groundwater basins. Major participants in these water markets include municipalities, agricultural and industrial businesses, and environmental buyers. It is worth noting that California has had a water shortage problem due to several droughts since 2016.". Alberto Acosa y John Cajas-Guijarro. Op. Cit. P. 2

64 ↩ Alberto Acosa y John Cajas-Guijarro. Ibid. P. 2

65 ↩ 'Es de todos' : La ONU denuncia que la cotización del agua en el mercado de futuros viola derechos humanos básicos". 15 de diciembre de 2020.

66 ↩ Nubia Barrera. "Ethnic-Peasant Resistance in South America and Mesoamerica to the 4.0 Agriculture of Catastrophe Capitalism. The Jus Semper Global Alliance. January 2021.

67 ↩ Gustavo Veiga. El agua de Wall Street. https://gustavojveiga.wordpress.com/2020/12/17/el-agua-de-wall-street/

68 ↩ Páramo de Santurbán: ubicación, importancia, flora, fauna y más. PÁRAMO DE SANTURBÁN: Ubicación, importancia, flora, fauna y más (magicanaturaleza.com)

69 ↩"The moorlands are considered strategic ecosystems, especially for their role in the regulation of the hydrological cycle that sustains the supply of water resources for human consumption and the development of economic activities (...) These territories are characterised by their high biotic and socio-cultural richness and their vulnerability to climate change, and they also arouse special interest in different areas for their conservation and sustainable management". In El Ambiente es de todos. https://www.minambiente.gov.co/index.php/bosques-biodiversidad-y-servicios-ecosistematicos/paramos

Hence, the struggles in the South in defence of the hydrological cycle do not stop at the construction of resistance strategies. They will indeed adopt new modulations when the financialisation of water on Wall Street gets underway.

dynamite and the intensive use of water and cyanide to extract 7,1 million ounces of gold. The rejection in the Colombian nation has been unanimous. The populations have created a significant social movement of resistance and defence of water from different fronts and actors in civil society, academia and government. They have so far managed to stop Greystar's aspirations.

Among the strategies for the defence of the páramo, the "actor-network" stands out, assembled in three processes: to know, to inform and to anchor. Thus, the Committee has managed to become a spokesperson for water, *making use of the legal network, mobilisations and the production of knowledge to convey and endow it with scientific and political characteristics until it becomes an issue of social interest.*[70]

Hence, the struggles in the South in defence of the hydrological cycle do not stop at the construction of resistance strategies. They will indeed adopt new modulations when the financialisation of water on Wall Street gets underway. But, for now, the darkest shadows of all those endured in two centuries of dispossession, usurpation of land, seeds and forests is looming.

In conclusion, the outrageous news of water in the futures market of commodities such as wheat, oil or gold on Wall Street comes at a time when the planet is on high alert due to the advance of the Covid-19 pandemic. This overshadows the climate crisis concurrently with the alarming shortage of vital liquid, migrations, and natural disasters in the Global South countries.

However, this news should not surprise us if we consider the policy of concealment of impacts and debacles of digital capitalism in agriculture 4.0 in the geo-referencing and expropriation of land. We are adding now the concealment of effects on watersheds, rivers, streams and springs with the commodification of water, which is advancing towards the dispossession of one of the most sensitive spheres of our natural heritage.

Alpine ecosystems in the tropical Andes are home to exceptional biodiversity... This is why the emphasis placed by biologists and ecologists on predicting the behaviour of high Andean tropical biodiversity in the face of recent climate change is a priority.

Plundering Water Through Imperial Practices

Glaciers in the Tropical Andes

Alpine ecosystems in the tropical Andes are home to exceptional biodiversity. They possess a higher number of species than any other alpine *ecosystem in the world and a marked state of endemism: many species —animal or plant—are found only in the Andes*. Likewise, the ecosystems provide environmental services to populations, regulate water resources, stabilise soils, allow extensive grazing by herbivores and have a high organic carbon sequestration capacity. Under these conditions, their importance is crucial due to climate warming and the more substantial impact in the

[70] ↩ Parra, Adela y Gitahy Leda. "Movimiento social como actor-red: ensamblando el Comité para la defensa del Agua y del Páramo de Santurbán". Universidad Javeriana. http://revistas.javeriana.edu.co/index.php/univhumanistica/index. P. 116.

tropical Andean zone than in the extratropical Alpine zone. This is why the emphasis placed by biologists and ecologists on predicting the behaviour of high Andean tropical biodiversity in the face of recent climate change is a priority.[71]

Andean glaciers unequivocally reveal that deglaciation has reached a rate not recorded since the Little Ice Age on the scale of several decades. Between 1940 and 1960, Peru, Bolivia, and Colombia show a moderate retreat of about 0.5% annually.[72]

Between 1976 and 1980, a very significant retreat is experienced in small glaciers, except for a few wet and cold years (1999, 2000, 2008-2009). This retreat has been constant. "Small glaciers" such as Chacaltaya in Bolivia disappeared in 2010. Extrapolating these retreat rates, the glaciers of Broggi in the Cordillera Blanca (Peru), reduced to a pile of residual ice, or Carihuayrazo and Illiniza Sur (Ecuador) are expected to disappear in the coming years.[73]

In Colombia, Ecuador and Bolivia, the average annual temperature rose by about 0.8°C over the last century. It could still increase by two °C and five °C before the end of the 21st century. The southern Andes could rise by one and 7°C. Overall in SACA, the temperature rose from 0.7 to one °C since the mid-1970s, except for coastal Chile, which experienced one °C reduction.[74]

In Chile and Argentina, the retreat of low-lying glaciers is accentuated in Patagonia and Tierra del Fuego. The consequences affect millions of people due to droughts with collateral impacts on the economy, agriculture and food security, leading to the migration of hundreds of people in the tropical region.

> *Measurements in the tropical Andes over the last decades show that the water sheet flow of glaciers is increasing due to increased ablation. Therefore, the gradual emptying of glaciers is also growing. However, from a maximum already reached by the smallest glaciers, the water sheet will progressively decrease in all basins due to a reduction in glacier reservoir capacity. This trend is foreseeable in the absence of a significant increase in precipitation (Pouyaud et al., 2005).*[75]

Thus, water reservoirs located in mountain areas are connected in the cryosphere, lakes, rivers, surface water and groundwater. Consequently, the dynamics of water drainage in upper watersheds leads to water transfers in continuous flows. This connection is vital to understanding the destructive impact of mining-energy fractures on the hydrological cycle in natural reservoirs.[76]

I should add that temperature elevation, modifications, and the repartitioning of the water cycle between different reservoirs promote a redistribution of water with possible alterations in the times of water transfers between reservoirs in such a way that,

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71 ↩ Francou, B., Rabatel, A., Soruco, A. Glaciares de los Andes Tropicales víctimas del Cambio Climático. (Comunidad Andina, PRAA, Institut de Recherche por le Développement. https://www.ambiente.gob.ec/.../downloads/2014/07/Libro-Glaciar. P. 78

72 ↩ Ibid. Pp. 33-38-55

73 ↩ Ibid. p. 38

74 ↩ Cepal. La economía del cambio climático en América Latina y el Caribe. 2015. Santiago de Chile. https://repositorio.cepal.org/bitstream/handle/11362/37310/4/S14… p. 10. Unesco. https://es.unesco.org/news/lanzamiento-atlas-retroceso-glaciares-andinos-y-reduccion-aguas-glaciares. 2018: Tropical glaciers are located between latitudes 30° north and 30° south. 99% are located in the Andes: 71% in Peru, 20% in Bolivia, 4% in Ecuador and 4% in Colombia and Venezuela.

75 ↩ Francou, B., Rabatel, A., Soruco, A. Op. Cit. P. 66

76 ↩ Ibid.

glaciers are natural reservoirs that play a role in the supply of drinking water to large Andean cities. In La Paz and El Alto in Bolivia, an agglomeration of almost two million inhabitants, it is estimated that ~15% of the water available annually comes from glaciers. This value rises during the dry season to about 30%.[77]

I should also add the transformations experienced in various hydrological regimes. This is due to variations in hydrological balances at high altitude. So is their impact on downstream populations through pollution of surface streams, pesticides, sewage and wastewater discharged into their watercourses or flooding after rainfall.

Economic activities directly influence the functions of the hydrological cycle in Andean countries. The agriculture and mining sectors have prevailed in the economic tradition of several countries. Between 15% and 17% of the total arable land is located in the Andean mountains, especially in Peru, Colombia and Ecuador. Chile stands out with the largest open-pit copper mine in the world, followed by the copper mines in Chuquicamata, Argentina. Peru and Bolivia also have large deposits of silver, gold, tin, copper and zinc.[78]

Consequently, methods of managing drinking water or irrigation and energy consumption by hydroelectricity require constant frequency monitoring due to scarcity and uncertainty about future availability. Also of concern is the retreat of glaciers and the disappearance of small glaciers with impacts on communities, ecosystems and *peak water on many glaciers in the Andes, which means that meltwater runoff will continue to decrease in the future.*[79] Glacier water is essential to the survival of populations living west of the Andean mountain range downstream, particularly during the dry season in Bolivia and Peru.[80]

Amazon Basin: Hydrological Cycle, Fires and Loss of Primeval Forests

The Amazon Basin is home to complex webs of tropical rainforests with essential functions in regulating the hydrological cycle, creating the process of water evaporation and regional mesoclimatic humidity. It is the largest drainage basin in the world. It is composed of three major sub-basins, fed mainly by the Paraná, Paraguay and Uruguay rivers. The Parana and Uruguay rivers join the Rio de la Plata, which flows into the Atlantic Ocean near Buenos Aires.[81]

This transboundary basin is also of geopolitical interest, regulates regional and global climates and fixes carbon through CO_2 sequestration, and participates in the indiscriminate plundering of mineral raw materials, intensive livestock farming, and agriculture at the regional level.

Hydrological phenomena are very complex and intricate *in the succession of stages that water goes through as it passes from the land to the atmosphere and back to the land: evaporation from the ground, sea or inland waters, cloud condensation, precipitation, accumulation in the ground or water bodies and re-evaporation.*[82] As a reservoir and water supply, it serves economic, industrial, agricultural and food security functions for millions of people living the basin.

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77 ↩ Ibid. P.72

78 ↩ Ibid.

79 ↩ Ibid. P. 9.

80 ↩ Ibid. P. 65.

81 ↩ Schoolmeester, T., Johansen, K.S., Alfthan, B., Baker, E., Hesping, M. y Verbist, K., 2018. Atlas de Glaciares y Aguas Andinos. El impacto del retroceso de los glaciares sobre los recursos hídricos. UNESCO y GRID-Arendal. Unesco. P. 23

82 ↩ Sociedad Geográfica de Lima. Contribuyendo al desarrollo de una Cultura del Agua y la Gestión Integral de Recurso Hídrico. Perú. 2011. P. 10.

Since the mid-1990s, in Brazil's Araguaia and Xingu river basins in the Amazon, transnationals have destroyed large areas of primary native forests to benefit the agro-industrial market. The change in the natural biophysical, physical and atmospheric metabolism has also generated disruptions in the hydrological cycle. This leads to worrying alterations in the rainy seasons, which tend to create droughts and decrease carbon volume captured and in evapotranspiration in large quantities. Thus, *as trees transpire, they release hormones into the atmosphere, which act as condensation nuclei that clump together small water droplets, and as they gain mass, they precipitate.*[83]

Huge ecological fractures are caused in the mining areas of the Guiana Shield by gold mining in Bolivia, Peru and also in the border region between Colombia,[84] Venezuela and Brazil. This is aggravated mainly by the exploitation of coltan with adverse effects from chemical contamination and the excessive use of mercury and cyanide. In addition, these fractures have bio-accumulative impacts that have a knock-on effect on food chains.[85] In Colombia, the generalised plundering of natural resources (gold, coal, gas, oil using different methods and fracking) covers the country's entire geography.

The most representative ecological and environmental impacts on water resources are chemical contamination, increased sedimentation, increased turbidity, reduced flows, and watercourse alteration.

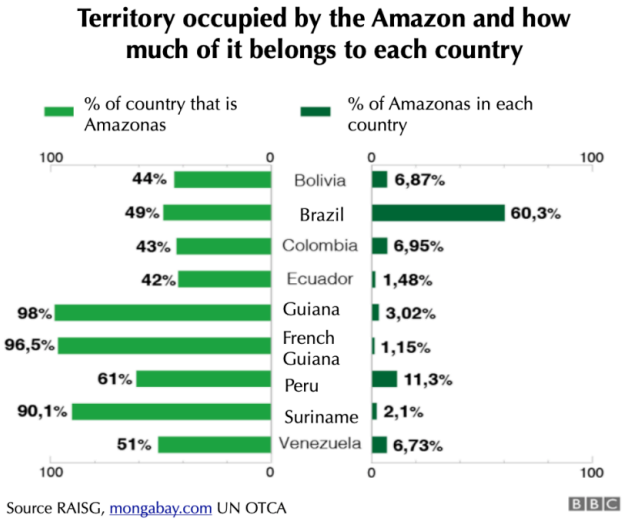
The most representative ecological and environmental impacts on water resources are chemical contamination, increased sedimentation, increased turbidity, reduced flows, and watercourse alteration. The main problem of mine drainage is the high concentration of metals that can reach hundreds of mg per litre. Heavy metals negatively impact human, plant, and animal health due to severe disturbance of their biochemical processes.[86]

Amazon distributes rainfall in SACA

In performing their functions, forests in their natural state provide abundant clean water to the planet, can filter water, reduce erosion, regulate rainfall, recharge water tables and buffer the effects of droughts and floods. Moreover, coastal forests provide tidal protection and are critical breeding grounds for marine life.[87]

Between 2002 and 2019 globally, 60.5 Mha of primary rainforest were lost, equivalent to 16% of total tree cover loss in the same time period. As a result, the total area of primary rainforest globally decreased by 5.9% during this period.[88]

Chart 1: Amazon's Share



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83 ↩ Agencia de Noticias UN. Deforestación altera ciclo hidrológico en la Amazonia. 28 de septiembre 2017. https://agenciadenoticias.unal.edu.co/detalle/article/deforestacion-altera-ciclo-hidrologico-en-la-amazonia.html

84 ↩ Of the 40% of the Colombian Amazon, almost 20% has been destroyed by different threats derived from extractivist economic dynamics without productive capacity. In Cepal. Amazonia posible y sostenible. Editorial Cepal. Junio de 2013. P. 11.

85 ↩ Ibid.

86 ↩ Ruling /-445 of August 2016. Scientific and sociological research document on the impacts of mining activity and the illegal exploitation of minerals on the ecosystems of Colombian territory. May 2019. http://www.humboldt.org.co/images/documentos/2-diagnstico-actividad-minera-y-explotacin-ilicita-expertos.pdf p. 26.

87 ↩ Global Forest Watch. https://www.globalforestwatch.org/topics/water/#intro

88 ↩ Ibid.

At this point, deforestation and fires in the Amazon, mainly in Brazil,[89] Bolivia,[90] Colombia and Peru, are positioned at the source of GHG emissions by transnational corporations. De Magalhaes states that aerosols generated by burning biomass, such as black carbon and dust particles, are transported by the wind to the tropical glaciers of the Andes. There they are deposited on the snow and blacken it, reducing the ability of snow and ice to reflect light instead of absorbing it. In the feedback of this process, the darker surface absorbs more energy from the Sun, which amplifies the melting of the glacier.[91]

T.2 Primeval Forest Loss in ASCA Countries

Country	Loss of tree cover	Decreases since 2000	CO_2 Emissions equivalents	Years with the most fires
Bolivia	6,11Mha	9,5%	1.86 GT	In 2019, 24.311 were recorded
Brazil	59,8Mha	12%	20.4GT	In 2020, 127.793 were recorded
Colombia	4,66Mha	5,7%	1.83GT	In 2020, 7.511 were recorded
Ecuador	871kha	4,6%	392Mt	In 2018, 1.597 were recorded
Guiana	221kha	1,2%	107Mt	In 2015, 441 were recorded
French Guiana	76,3kla	0,94%	43.9Mt	In 2015, 97 were recorded
Peru	3,39Mha	4,3%	1.61Gt	In 2020, 5.033 were recorded
Suriname	199kha	1,4%	113Mt	In 2015, 121 were recorded
Venezuela	2,23Mha	3,9%	693Mt	In 2020, 21.469 were recorded

Country equivalents and GHG emissions
Note: "2000 tree cover extent | >30% tree canopy | These estimates do not take into account tree cover gain".
https://www.globalforestwatch.org/dashboards/country/SUR/?category=summary& Data adapted from Global Forest Watch, 2 April 2021.

The tropical forest is characterised by a wide variety of fragile ecosystems, most of which are located on poor soils that are very vulnerable to rain and sun. For this reason, once the forest is cut down, soil fertility is rapidly depleted. Thus, the lavish exuberance of the forest is due to the particular functioning of its ecosystems, based on feeding cycles that the forest itself generates in environmental conditions of high humidity and prevailing heat. This characteristic accelerates the rupture of the hydrological cycle in the functioning of the ecosystems, which culminates in desertification.[92]

Nonetheless, forests allow water to circulate, filter pollutants and recycle carbon. Deforestation limits the capacity of forests to fulfil their functions within the ecosystem. Drought and flood cycles have become less predictable in recent years, thanks to various activities such as dam and road construction, pollution and overfishing, but mainly deforestation. The latter serves several purposes, including expanding the agricultural frontier for soy, paper, timber and

In the last decade, due to agrological and climatic peculiarities, studies have shown that a point of no return (Amazon dieback) has deepened in highly devastated areas of the Amazon.

89 ↩ The volume of deforestation increased by almost 30% over the previous year for livestock, it is the world's largest meat exporter.

90 ↩ More than 2 million hectares were destroyed. Chiquitanía is one of the areas most affected by the establishment of cattle ranching and soya production.

91 ↩ BBC. "Cómo los incendios en la Amazonia están afectando a los Andes". 29 de noviembre de 2019. https://www.bbc.com/mundo/noticias-50602365.

92 ↩ Cepal. 2013. Amazonia posible y sostenible. Op. Cit.

rubber industries (Stewart, 2013). The destruction of forests through deforestation causes a water imbalance inside and outside the watershed. An estimated 800,000 km2 have already been deforested, mainly in Brazil.[93]

In the last decade, due to agrological and climatic peculiarities, studies have shown that a point of no return (Amazon dieback) has deepened in highly devastated areas of the Amazon. *For example, in 2000, a study reported that by 2050 the Amazon forest would have lost its absorption capacity, leading to forest dieback and the release of stored carbon, with environmental effects on a global scale (Cox et al., 2000; Soares-Filho et al., 2006).*[94]

It is estimated that a mature forest holds captive about 170 tonnes of carbon per hectare; if slashed and burned, this carbon is released as CO_2 into the atmosphere. Among Colombian forests, the Amazon forests are the ones that retain the most carbon per unit area.[95]

One of the main problems in the Amazon is the construction of roads and dams, the latter being the worst, as it directly causes losses in large areas of forest, dysfunctions of the main ecological and hydrological roles, and the loss of biodiversity.

Another critical factor in this basin is the pollution of tributaries, ranging from domestic, industrial and mining wastewater to oil spills or their by-products. This pollution affects the aquatic fauna in the area and has a major impact on the communities' health (Fayanás, 2011). On the other hand, the forests of the Amazon are the essential extractors of carbon dioxide in the world, considering that carbon dioxide is the main greenhouse gas that contributes to climate change.

The Gran Chaco in Argentina, Paraguay and Bolivia

It is a forested ecoregion, second only in size and ecological biodiversity to the Amazon rainforest. However, unlike the Amazon rainforest, the Gran Chaco has a semi-arid climate. Much of it grow shrubs and deciduous trees that provide habitat for thousands of plant species and hundreds of animal species. They play a crucial role in regulating the climate, maintaining water flows and conserving soils.[96] In summer, temperatures can exceed 50°C.[97]

Argentina's Gran Chaco is home to four million people, many of whom are peasants and small farmers. About 8% of its inhabitants are indigenous people, mostly Wichi and Qom, who depend on the forest for food, water, timber and medicine. However, the expansion of agriculture and cattle ranching in the Chaco Park has encroached on land formerly occupied by forests, mainly in the provinces of Salta, Santiago del Estero, Chaco and Formosa.[98]

Between 2017 and 2018, Argentine beef exports increased by 77%. The primary destinations have been China (56%), Russia (11.5%), Chile (9.2%), Germany 6.8%, Israel (5.3%), the Netherlands (3.6%), Brazil (2.2%) and Italy (1.7%). The

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[93] ↩ Natural Zone. "Deforestación y el ciclo hidrológico de la Amazonía". http://www.natzone.org/index.php/areas-de-investigacion/educacion-ambiental/item/181-deforestacion-y-el-ciclo-hidrologico-de-la-amazonia

[94] ↩ Ibid. P. 13.

[95] ↩ Ibid.

[96] ↩ "The jaguar (Panthera onca) is the largest cat in the Americas, and the third largest in the world, after the Asian tiger (Panthera tigris) and the lion (Panthera leo). It has virtually disappeared from its northern and southern extremes, as well as from most densely populated areas, and many of its populations are seriously threatened. Greenpeace Argentina. El sacrificio de los bosques del Gran Chaco. 2019. https://greenpeace.org.ar/pdf/2019/07/INFORME El sacrificio de l... · Archivo pdf. p. 4.

[97] ↩ It covers an area of 1,066,000 km2 and includes the territories of Argentina (62.19%), Paraguay (25.43%), Bolivia (11.61%) and Brazil (0.77%). It is a forested ecoregion of exceptional environmental and social diversity. It covers an area of 1,066,000 km2. Ibid.

[98] ↩ Ibid.

agribusiness companies Carnes Pampeanas/Cresud operate and export meat to Europe and Israel. Carnes Pampeanas meat products have been registered with Lidl Germany, Metro Germany, Albert Heijn Holland, Zandbergen Brothers BV, Shufersal Israel.[99]

The boom in the livestock industry exceeds the deforestation of forested areas with negative results of global impact. Unfortunately, Argentinean regulations have not been observed. Instead, a prevalence of bribes and revolving door policies between the public and private sectors, and corruption in complex webs of subordination of national elites to transnationals prevails. It is a widespread phenomenon due to weaknesses in the legislation in force in the Global South countries.

T. 3 Top ten countries reporting an annual forest area loss, 2010-2015

	Country	Annual net loss of forest area	
		Area (thousand of ha)	Rate (%)
1	Brazil	984	0.2
2	Indonesia	684	0,7
3	Myanmar	546	1,8
4	Nigeria	410	5,0
5	United Republic of Tanzania	372	0,8
6	Paraguay	325	2,0
7	Zimbabwe	312	2,1
8	Democratic Republic of Congo	311	0,2
9	Argentina	297	1,1
10	Bolivia (Estado plurinacional)	289	0,5

Source: FAO Greenpeace Argentina. (2019).

Ecosystems have no borders; *the whole sequence of destruction and degradation, from lush forest to wasteland, often takes less than a decade.*[100] This period tends to grow due to the conjunction of soil, vegetation and climate variables. The IPCC's Fifth Assessment Report also confirms this: 4.3% of global deforestation occurs in Argentina. Deforestation in the Chaco forest has accelerated in the last decade due to agricultural expansion, making it the primary source of carbon emissions in northern Argentina. Between 1990 and 2014, 7,226,000 hectares of forest were lost.[101]

The Chaco in Paraguay's geography consolidates the extractivist model of extensive agriculture and livestock farming. This is the configuration of a catastrophic situation that dispossesses peasant and indigenous communities of their territory and flagrantly transgresses their way of life. This is the traditional story in SACA subjected to the power of transnationals and investors. In this sense, the last agricultural census of 2008 has amply demonstrated this.

99 ↩ Ibid. Pp. 11.13, 26, 43 y 45

100 ↩ Ganadería y deforestación. http://www.fao.org/3/a0262s/a0262s.pdf p. 2

101 ↩ Greenpeace Argentina. El sacrificio de los bosques del Gran Chaco. 2019. P. 47.

According to Ortega (2013), the price paid for land is the lowest in the region; it is the bait for attracting foreign investment. The other 'incentive' is the almost non-existence of taxes paid by soya producers, at 12.3% in 2013. In Argentina, the tax burden was 27.4%, Brazil 26% and Uruguay 18.6%. It is indeed a *tax haven*. Other business people characterise the Chaco as a livestock paradise. Thus, the price they pay for land ranges between 400 and 800 dollars per hectare, while, in the neighbouring country, the cost is between 7000 and 10000 dollars, almost 13 times more.[102]

The use of deforested land to expand the extractivist model boosts livestock production through the large-scale cultivation of soya and other fodder crops. *Between 1994 and 2004, the area under soybean cultivation in Iberian America more than doubled to over 39 million hectares* in response to the demand for livestock products, which tripled global meat production between 1980 and 2002. It explains the increase in output by intensive and large-scale operations in China and other East Asian countries.[103]

Based on the above, connections between deforestation and livestock farming can be deduced as follows: In Central America, the forest area has been reduced by almost 40% in the last 40 years due to the expansion of grazing areas in response to the accelerated growth of livestock population. In addition, large-scale burning, clearly seen in satellite images, is also taking place along the "agricultural frontier". Farmers and ranchers encroach on previously pristine forests and areas where croplands, pastures, and human settlements have also fragmented forests.[104]

Behind the extractive economy are the wildfires, causing ecological changes that have outstripped climate projections.

Behind the extractive economy are the wildfires, causing ecological changes that have outstripped climate projections. It falls on *the Pantanal, a complex, fragile ecosystem at high risk because it is being transformed from a wetland to a productive system.*[105] According to research results, the biome had 2,000 types of plants and has been home to several species of birds (582), mammals (132), reptiles (113) and amphibians (41).

The Guyra Paraguay Report states that there is sufficient evidence that large-scale landscape wildfires are recurrent cyclical phenomena over approximately ten years, with intermediate recurrences usually 1-2 years after a major event. However, some experts in Bolivia have described these wildfires as "sixth-generation" or "new generation" wildfires, promoted by global climatic changes. These uncontrollable wildfires develop the capacity to change the affected ecosystems. Unfortunately, studies to better understand them are still lacking.[106]

Jeremy Adelman (2020) used digital photography to show in striking images the redesign of nature imposed by capital:

> *As glaciers melt and forests burn... In the state of Mato Grosso, the Pantanal fire has devastated a quarter of the region. Still, in the photo report by journalist Arréllaga, no flames are visible. In the lower half of the image, the trees are blurred in a dark carpet, and the light barely filters through the thick fog in the upper half. What does*

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[102] ↩ Ortega Ríos, Guillermo. Extractivismo en el Chaco paraguayo : un estudio exploratorio. Red de Bibliotecas Virtuales de CLACSO. Asunción. Paraguay. 2013. ISBN: 978-99967-749-1-1 http://biblioteca.clacso.edu.ar/Paraguay/base-is/20170331050929/pdf_1239.pdf. P. 27

[103] ↩ Ganadería y deforestación. FAO. http://www.fao.org/3/a0262s/a0262s.pdf. P. 2

[104] ↩ Ibid.

[105] ↩ EFE y Última Hora. Paraguay perdió 22 millones de hectáreas por incendios en los últimos 19 años | Incendio forestal, Alto Paraguay, Bahía Negra, Chaco, Amazonía (ultimahora.com)

[106] ↩ José L. Cartes, Pier Cacciali. Guyra Paraguay. Informe de Incendios en el área del Pantanal Paraguayo 2019. Paraguay. guyra.org.py/.../Informe-de-Incendios-en-el-Pantanal-Paraguayo-2… · Archivo PDF

> *remain in sharp focus is the line separating the foliage from the smoke. This line is the border along which the flames are advancing.*[107]

Summing up, the FAO reports that between 1990 and 2015, the world's forest area declined from 31,6% of the world's land area to 30,6%, albeit the rate of loss has slowed in recent years. Most of this loss occurred in Sub-Saharan Africa, Iberian America and South East Asia. Deforestation is also the second leading cause of climate change after burning fossil fuels, accounting for almost 20% of all GHG emissions. These indicators outweigh the entire global transport sector. Of the total mitigation potential, 24%-30% can be achieved by halting and reducing tropical deforestation.[108]

Covid-19 Crosses into the Climate Crisis

In the time of Covid-19, fossil fuel consumption and mining-agro-industrial plundering increased, as the GREIN Report (2021) rightly points out.[109] Moreover, during the time of the pandemic, the countries opposing China have engaged in stigmatisation and conspiracies with political undertones, while humanity struggles with the effects of Covid-19, the worsening of poverty, unemployment, and the absence of health systems in keeping with one of the most technologically advanced eras in human history.

Nor have the imperialist powers accepted that Covid-19 responds to the loss of ecosystems through fires, deforestation, trade and the intensive breeding of animal species as initially proven by laboratory research from different branches of science.[110] The latest report of IPBES (Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services) states that there are 1.7 million unknown viruses in nature, which could at any moment jump to the human species in the process of zoonosis. According to scientist Fernando Valladares:

> *the destruction of nature is essential to understand the origin of this epidemic situation in which modern civilisations have been immersed.... Where there is a forest, there are populations of mammals and birds, there is biodiversity, which is nothing more than a protective shield that puts distance between humans and the pathogens concentrated in natural reservoirs.*[111]

In short, the macro fractures caused in nature are inexorably leading the Earth to the Sixth Great Extinction, comparable only to other great extinctions of species in the history of humankind. Yet, no function in nature is superfluous. For example, pollinating insects imply the dysfunction of the entire ecosystem. Moreover, ecosystems are irreplaceable for the process of photosynthesis, climate regulation, clean air and

Nature contains ecosystems that are essential components linked to life... If one is affected, the others suffer transformations, depending on the magnitude of the ecological fracture.

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107 ↩ Jeremy Adelman., "¿El fin del paisaje? Fotografía, globalización y cambio climático". La Historia del Día. 3 de marzo de 2021, https://lahistoriadeldiablog.wordpress.com/

108 ↩ FAO. "Se acaba el tiempo para los bosques: su superficie sigue reduciéndose" 6 de julio de 2018.

109 ↩ GREIN. Informe "El 'maquillaje verde' de las corporaciones". Op. Cit.

110 ↩ Nubia Barrera Silva, Capitalism of Dispossession in the Palm Oil Plantations in the Countries of the Global South -Contexts, Struggles and Peasant Resistance. The Jus Semper Global Alliance. August 2020. p. 5

111 ↩ Tena, Alejandro. "Y la guerra contra la tierra desembocó en una pandemia global" 15 de marzo de 2021. https://www.desdeabajo.info/ambiente/item/41915-y-la-guerra-contra-la-tierra-desemboco-en-una-pandemia-global.html

water, pollination, pedogenesis, erosion control, the supply of natural resources and minerals. Currently, 2/3 of planetary ecosystem services are deteriorating (CEEM, 2013).[112]

Conclusions

Financial capitalism's plundering of both the commons and the subsistence farmlands of small and medium-sized landowners reserved for food sovereignty has intensified. Nature contains ecosystems, biodiversity, land, the hydrological cycle, the atmosphere and the climate, all of which are essential components linked to life. Moreover, these elements are in permanent interaction. If one is affected or damaged, the others suffer changes or transformations in quality and quantity, depending on the magnitude of the ecological fracture.

Mining-energy dispossession and oil palm plantations, accredited as agrofuels in the so-called green economy of corporate capital, are no alternative to fossil fuels; on the contrary, they increase GHG emissions, leaving behind dreadful scenarios of expropriation of both nature and ethnic-peasant peoples in the ecological regions of what was once the most megadiverse continent on the planet:[113] Amazonia, the Andean Glaciers, the Gran Chaco of Argentina and Paraguay,[114] without ignoring other geographical areas equally or worse affected.

In the recent past, power plants and combined heat and power plants burned considerable palm oil volumes to generate heat and electricity for the Netherlands and Germany. Consumption then declined due to protests over the socio-environmental impacts of the plantations. However, Italy encourages its use through dirty green subsidies, and in the UK, it is used in agrofuels without stopping its use in electricity generation in power plants. The same can happen in the United States. In addition, palm oil is the primary raw material for airlines. The European aviation industry plans to use two million tonnes of biokerosene by 2020.[115]

In response to the above, the climate and environmental crisis account for the following volumes of GHG emissions:

> *Total GHG emissions in 2018 - encompassing those from land-use change - reached a record high: 55,3 GtCO2e. In the same year, CO2 emissions from fossil fuels for energy consumption and industrial processes, which make up the largest share of total GHG emissions, increased by 2% to 37,5 GtCO2e per year, a level that has never been seen before.*[116]

Transnational corporations and elites in the South are directly involved in land-use change with inappropriate technologies. Such change transforms fertile lands into deserts or saturates them with nutrients degraded by the disproportionate use of agrochemicals. Such processes occur after land dispossession, fires and deforestation during the early stages of agri-food value chains. Thus, we have the following:

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112 ↩ González, Luis. Colapso del capitalismo global y transiciones hacia sociedades ecomunitarias. Manu Robles Arangiz Fundazioa. 2020. www.mrafundazioa.eus. P. 27

113 ↩ The loss is 75% of the genetic diversity of major food crops. At: Barrera, Nubia. Ethnic-Peasant Resistance in South America and Mesoamerica to the 4.0 Agriculture of Catastrophe Capitalism — The Jus Semper Global Alliance. January 2021, P. 16

114 ↩ This essay does not address the Chaco, which corresponds to Bolivia and Brazil.

115 ↩ Jutta Kill y Winfridus Overbeek. "13 respuestas a 13 mentiras sobre los monocultivos de palma aceitera". Montevideo. Uruguay. Marzo de 2918. wrm@wrm.org.uy

116 ↩ ONU. Informe sobre la disparidad en las emisiones de 2019. https://wedocs.unep.org/bitstream/handle/20.500.11822/30798/EGR19ESSP.pdf?sequence=17

Firstly, the disproportionate volumes of emissions originating from fires, deforestation, fracking and diversions of the hydrological cycle in nature are hidden or covered up in Northern countries. Whilst, at the same time, they pretend a green transition from fossil fuels to agrofuels. It is "the great corporate, investor and government complicit scam",[117] all part of the arsenal of deceptions and failed promises of "net zero emissions" while deepening land grabbing, escalating emissions to unthinkable levels and amplifying ethnic-peasant resistance in SACA.

Second, Northern governments advocate the substitution of fossil fuels with agrofuels, including the design of smaller lithium-ion batteries and electric vehicles with minerals "available" in Andean glaciers. They argue that renewables supposedly emit no GHG emissions; however, they carry CO_2 quotas from the early stages of the supply chain in areas of natural extraction to the factories of cars and other technological gadgets or devices.

On the demand side of oil palm for agrofuels and natural energy consumption, the low prices imposed by capital and supply and consumer prices are comparable to the mega metabolic fractures, the diversions and ruptures of the hydrological cycle, the emptying of rainforests, dry forests and wastelands.

It is the leadership advanced by the transnationals in the transition phase towards the so-called green economy or clean energy through the production of lithium-ion batteries, cobalt, nickel, graphite, manganese, extracted from the earth in a similar way to fossil fuels at the pace of the skyrocketing demand in developed and emerging countries. A WB report considers that the market for lithium, cobalt and graphite minerals could grow by almost 500% by 2050.[118] However, this estimate exceeds nature's ability to meet this excessive demand. Equally important is that the Cone's salt flats' ecosystemic and environmental characteristics and latent vulnerabilities have not been investigated.[119]

Furthermore, the transport sector *accounted for approximately a quarter of global CO_2 emissions in 2019. Seventy per cent came from road transport.* Clearly, governments must curb these emissions in favour of the climate. From the sector of activist organisations, SOMO believes *that phasing out fossil fuel-powered cars in favour of electric vehicles may be an unacceptably high social and environmental cost.*[120] The figures speak for themselves:

> *Ninety-three million cars were manufactured in 2017. Around one billion cars are in circulation globally, with all that this represents in terms of expenditure on energy and raw materials used to manufacture them and the environmental pollution from the gases emitted and from the material from dismantling cars declared as end-of-life etc. In France alone, 1,5 million vehicles are dismantled each year, generating many tonnes of waste (liquid and solid) considered dangerous for the environment.*[121]

Although civilisation and capitalism are in crisis, strengthening capitalism's natural tendency towards the unlimited accumulation of profits continues. This will therefore continue to drive endless consumption needs at whatever ecological cost. Under this assumption, the corporate greenwash strategy blocks any action to control GHG emissions. Likewise, they have not delivered on the promises regarding the targets set out in the Paris Agreement (2015), albeit

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117 ↩ GREIN. El "maquillaje verde" de las corporaciones". Marzo 2021. El "maquillaje verde" de las corporaciones (alainet.org)

118 ↩ GREIN. El "maquillaje verde" de las corporaciones". Marzo 2021. El "maquillaje verde" de las corporaciones (alainet.org)

119 ↩ Fauba. "Litio: ¿Cuál es el impacto social y ambiental de las explotaciones?" obrelatierra.agro.uba.ar/litio-cual-es-el-impacto-social-y-ambiental-de-las-explotaciones/

120 ↩ González, Alejandro y De Hann, Ester. The battery paradox How the electric vehicle boom is draining communities and the plane. Amsterdam. December 2020. Centre for Research on Multinational Corporations. SOMO. SOMO-The-battery-paradox.pdf. Resúmen Ejecutivo. P. 4

121 ↩ Alejandro Teitelbaum. "The Progressively Accelerated Degradation of the Environment". The Jus Semper Global Alliance, Septiembre 2019. P. 3.

Corporate power and governments of the global North play a double game: they push to the limit the boundaries that nature itself has set for its creation, and their arrogance drives the consumerism of artificial needs amid the climatic and social debacle.

many of the big polluters, such as Nestlé and Shell, are now promising 'net zero emissions' (...). Food and agribusiness corporations are the main actors in this big scam.[122]

As can be seen, the corporate power and governments of the global North play a double game: on the one hand, they push the destruction of the natural heritage to the limit, transgressing the boundaries that nature itself has set for its creation. On the other hand, the arrogance of imperialism drives the consumerism of artificial and unlimited needs for more of the same and discards them amid the climatic and social debacle. It is a global mass suicide, only postponed for a short time. On the other hand, GHG emissions continue to rise. We must not forget that the UN's deadlines for extinction are becoming shorter and shorter in terms of projected time and geographical space on Earth.

Thirdly, the strategy of so-called green capitalism hides the connections between GHG volumes and the collapse of regional economies, and the natural and socio-ecological disasters of the populations expelled from their territories. At the same time, the overexploitation of nature continues in full swing until its final depletion. Thus, soon, it will be the water droplet added to the endless multifactorial problems and conflicts of millions of people on the planet, preferably in the most vulnerable countries.

The trend of the climate crisis is differential. It does not affect all continents, countries or geographical areas equally. Natural disasters depend on specific geographical characteristics, forms of land use, depletion of biodiversity, climate conditions, and socio-economic levels of populations in the face of extreme natural events. In these cases, the privatisation of public services (sanitation, electricity, aqueducts, etc.) leaves the urgent solutions required by populations adrift, with a notable increase in anger and particularly environmental and social conflicts, depending on the region, the country or the socio-economic conditions of the inhabitants.

Let us cite one case where the energy crisis left millions of homes and businesses in Texas and across the central United States without electricity, with unexpected economic consequences:

> *Fracking in major shale areas of the country stopped. Wheat futures rose as the polar wave affected grain shipments. In addition, shipments of coronavirus vaccines were delayed, and Amazon closed facilities from Illinois to Texas.*

More surprising, however, is the note from Paul Sankey, oil sector analyst at Sankey Research: The current energy crisis is much bigger than most people realise. *This is a global crisis (...)—the largest power outage in US history in the middle of a brutal winter worldwide. Stay tuned; this crisis is just beginning.*[123] This is a pale example of the looming hecatomb also in industrialised countries. Socio-economic and natural disasters appear without warning at a moment's notice. No technology provides on-the-spot and urgent solutions.

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122 ↩ GREIN. Informe "El 'maquillaje verde' de las corporaciones". Marzo de 2021. El "maquillaje verde" de las corporaciones (alainet.org). p. 2

123 Catherine Traywick, "La crisis energética de Texas empeora cada vez más en medio de una ola de frío extremo". *Bloomberg,* 17 de febrero de 2021. https://www.elfinanciero.com.mx/mundo/la-crisis-energetica-de-texas-empeora-cada-vez-mas-en-medio-de-una-ola-de-frio-extremo

In general terms, acute water shortages are projected to affect 45% of the world's population in less than ten years. Water tankers supply only a few litres of water to people hit by drought, loss of fertile soils, and freshwater depletion, for example, in cities in India, Ethiopia, Chile, neighbourhoods in southern Mexico, the United States and Spain. Arguably, geographic areas enduring high temperatures, drip irrigation and drought are beginning to be identified in all countries. In this desolate panorama, the logic of the commodification of water into a *liquid Wall Street commodity* is spreading.

In the near future, it will be the drop of water that will be added to the endless multifactorial problems and conflicts of millions of people on the planet, preferably in the most vulnerable countries. But, broadly speaking, the underlying factors in the synthetic GHG emissions indicator must be identified at the pace of unprecedented climate chaos in the anthropocentric era. These are connections between natural causes and effects intertwined with highly sensitive socio-economic and cultural factors in the Pandora's Box of climate collapse.

In the near future, it will be the drop of water that will be added to the endless multifactorial problems and conflicts of millions of people on the planet, preferably in the most vulnerable countries.

On the other hand, the climate crisis is driving the migration of people from Africa to Europe or from Central American countries to the USA, and they have a common denominator: the absence of food sovereignty from the agricultural production of their former lands, now expropriated; poverty, natural disasters, corruption, militarised violence, among others, are only a pale reflection. Although the rulers and politicians of these colonising powers in more than 500 years of oppression and violence ignore the connections of these conflicts with climate chaos, they are not exempt from responsibility and commitment towards their citizens and the rest of the planet.

The latest UN report is blunt: *the Earth is on track to record an additional 3.5 degrees warming (1.9 degrees Celsius), which is much higher than the international targets agreed in the Paris agreement.*[124] This warning falls flat in the face of global decision-makers. Everything surrounding catastrophe capitalism is permeated by arrogance, greed and unlimited profits for the wealthiest 1%. Noam Chomsky states:

> *Corporations are the closest thing to totalitarianism that humans have been able to create; in 1987, Thatcher sentenced: 'Society does not exist, there are only individual men and women' (...). Milton Friedman [complements] 'the only responsibility of business is to increase its profits.*[125]

For Álvaro de Regil, *corporate social responsibility is a deception, for the simple reason that the vast majority of corporations had as their sole focus the short-term maximisation of shareholder value, and this priority was built into their DNA. So they approached CSR as a way of polishing their public image, only pretending to change so that everything would remain the same.*[126]

On the other hand, De Regil agrees with GREIN (2020): *Agricultural and food companies are among the worst performers (...) Corporations are undoubtedly the main obstacle to meaningful action on the climate crisis. These*

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[124] La ONU advirtió que la humanidad "está librando una guerra insensata y suicida contra la naturaleza". Infobae. 19 de febrero de 2021. La ONU advirtió que la humanidad "está librando una guerra insensata y suicida contra la naturaleza" - Infobae.

[125] Enric Llopis. "Las corporaciones son lo más cercano al totalitarismo que los humanos han podido crear". 9 de enero de 2021. https://rebelion.org/las-corporaciones-son-lo-mas-cercano-al-totalitarismo-que-los-humanos-han-podido-crear/

[126] Álvaro J. de Regil. "Why Corporate Social Responsibility is a Hoax" — Commentary on Corporations in the Crosshairs: From Reform to Redesign — The Jus Semper Global Alliance. January 2020. P. 2

omnipotent actors have spent the last twenty years undermining the scientific consensus, blocking related legislation and disguising their responsibility.[127]

Finally, how much time do we have left before the unstoppable escalation of final collapse if the current rates of overexploitation of nature's finite resources and the war unleashed on social leaders and organisations in South and Central America continue? This is the question being asked by scientific projections, activist organisations, NGOs advising communities and ethno-afro-peasant organisations.

The governments of underdeveloped countries have hidden the causes and consequences of climate change from the communities. However, the sectors that have noticed significant changes in temperature are precisely the farmers due to drastic changes in the sowing seasons, plant growth, rainy season and the quality and quantity of harvests.

In the tragedy of the commons, resistance and peasant struggles are being waged daily, and the motto is Resistance.

From this perspective, some ethnic-peasant organisations work with agronomic research centres and universities to adapt traditional crops, restore the hydrological cycle and recover forms of storage by using ancestral techniques adapted to the new climate conditions.

In the tragedy of the commons, resistance and peasant struggles are being waged daily, and the motto is Resistance.

[127] GREIN. Informe "El 'maquillaje verde' de las corporaciones". Op. Cit. Pp. 2-3.

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❖ **About Jus Semper:** The Jus Semper Global Alliance aims to contribute to achieving a sustainable ethos of social justice in the world, where all communities live in truly democratic environments that provide full enjoyment of human rights and sustainable living standards in accordance with human dignity. To accomplish this, it contributes to the liberalisation of the democratic institutions of society that have been captured by the owners of the market. With that purpose, it is devoted to research and analysis to provoke the awareness and critical thinking to generate ideas for a transformative vision to materialise the truly democratic and sustainable paradigm of People and Planet and NOT of the market.

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