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Research Paper

Carbon Based Gases in Our Atmosphere- Appendix

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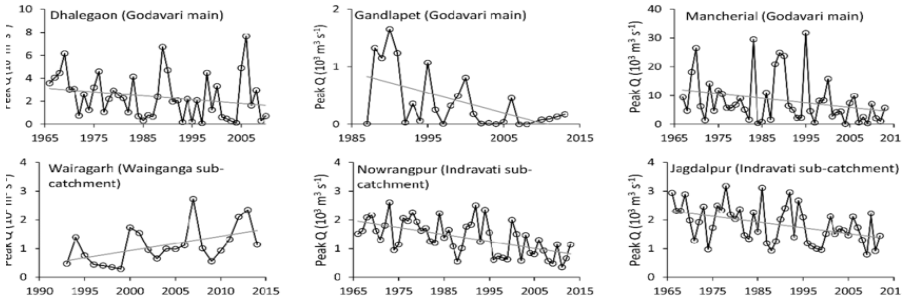
This paper is appendix to earlier paper named "**Carbon Based Gases in Our Atmosphere"** *Accepted on 09 Nov., 2025, Published in Volume 11 ~ Issue 11 (November 2025) pp: 32-34* ***www.questjournas.org***
This paper presents arguments in favour of Appeal number- 3, made at the end of paper, which reads as below-
All the man- or machine-made dams larger than one square kilometre, created to hold river waters must be permanently opened for free flow of water, so that marine life can regenerate itself in rives & thereby rivers are cleaned by natural process.

Arguments supporting/ In addition to above appeal-
A clear relation has been established between "significant reduction in average annual quantity of water flow in Rivers" and "beginning of operation of Dams constructed on respective Rivers". The quantum of decline in average annual quantity of water flow in Rivers is far greater than what is expected due to normal use of Waters from respective Dams. This is evident from analysis of graphical representations made by various authors in their respective research papers.
There is only reason for such decline and that is "Continuous pushing back of fraction of waters stored in Dams to underground depths of the Earth's crust".
The water is pushed back to underground depths of the Earth's crust either through manmade Rig holes or naturally existing faults in the Earth's crust.
1st scenario "through manmade Rig holes" is already covered under 1st part of the appeal, which reads as "Surface openings of all the man- or machine-made Bore holes, deeper than 90 meters from local elevation, must be covered sufficiently & permanently closed. Thereby completely & permanently closing Crude oil industry. Any infrastructure & knowledge of technology which can enable future excavations or drilling or going underwater below local earth or water surface must be completely & permanently destroyed".
But 2nd scenario "naturally existing faults in the Earth's crust" is not covered under 1st part of the appeal, hence the 3rd part of appeal becomes necessary. A very limited quantity of riverine waters is usually lost even under normal flow of river through naturally existing faults in the Earth's crust. But permanent storage of waters over such faults or manmade Holes causes large scale decline in total quantum of water flow. This kind of phenomenon is dangerous for natural way of the Earth's internal lifecycle. It is also dangerous for over the surface local ecology & economy surrounding respective Rivers, whose waters are lost.
Extracts of some of analysed research papers regarding water bodies are being presented here-

1. Godavari:
Paper a. Increasing and decreasing trends in extreme annual streamflow in the Godavari catchment, India by Sumit Das & others dated May 2022, published in Current Science 122(9):1085-1089
presents below graphs-

ak discharge at a rate of 47.76 $m^3 s^{-1} yr^{-1}$. However, the downstream most gauging station

olavaram) do not indicate any significance although a declining trend at a rate of 21.04 $m^3 s^{-1}$ is observed.



Paper b. Research paper on Interrelation between factors controlling sediment yield in the largest catchment of Peninsular India by Sumit Das & Others published in Journal of Hydrology Volume 622, Part B, July 2023 states about sediments, as below

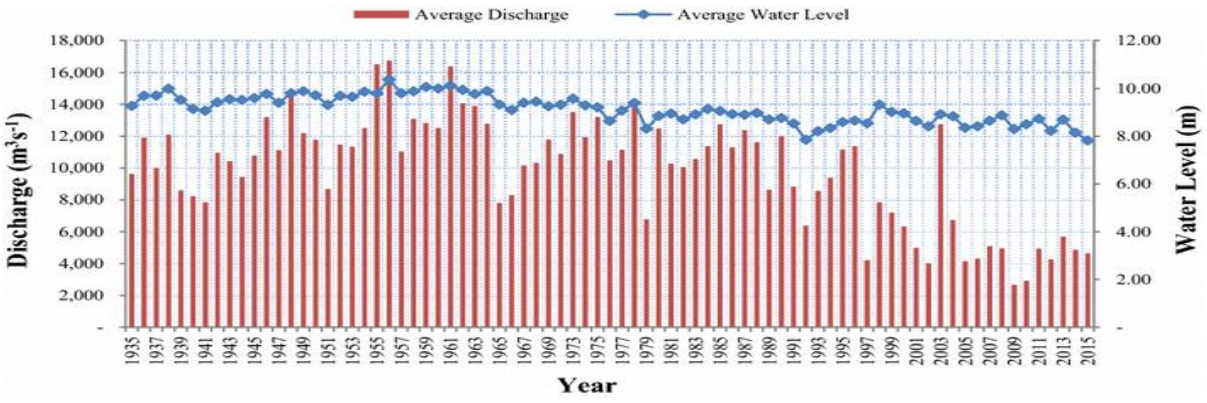
"A few early studies on the largest Peninsular Indian river, the Godavari (Bikshamaiah and Subramanian, 1980, Biksham and Subramanian, 1988, Subramanian, 1993) improved our understanding by establishing the annual hydrological and sediment flux to the Bay of Bengal and successively amplified by the recent studies (e.g., Das, 2021a, Das et al., 2021, Das et al., 2022). The early estimation indicated that between 1969 and 1980, the Godavari annually transported 170 × 10^6 t sediment to the Bay of Bengal on average. However, extensive dam constructions from 1985 to 2000 reduced the modern-day (after 2000) average sediment load to 45.54 × 10^6 t (Das, 2021a)."

c. During my two personal visits to Ramkund, Nashik around 10 & 12 years back, it was found that waterflow of Godavari at that place was -Nil- & Negligible.

2. Ganges

Research paper: Impacts of Farakka barrage on hydrological flow of Ganges River and environment in Bangladesh by Md. Mahbubur Rahman & Muhammad Mizanur Rahaman published in Sustainable Water Resources Management 4(1):1-14, December 2018

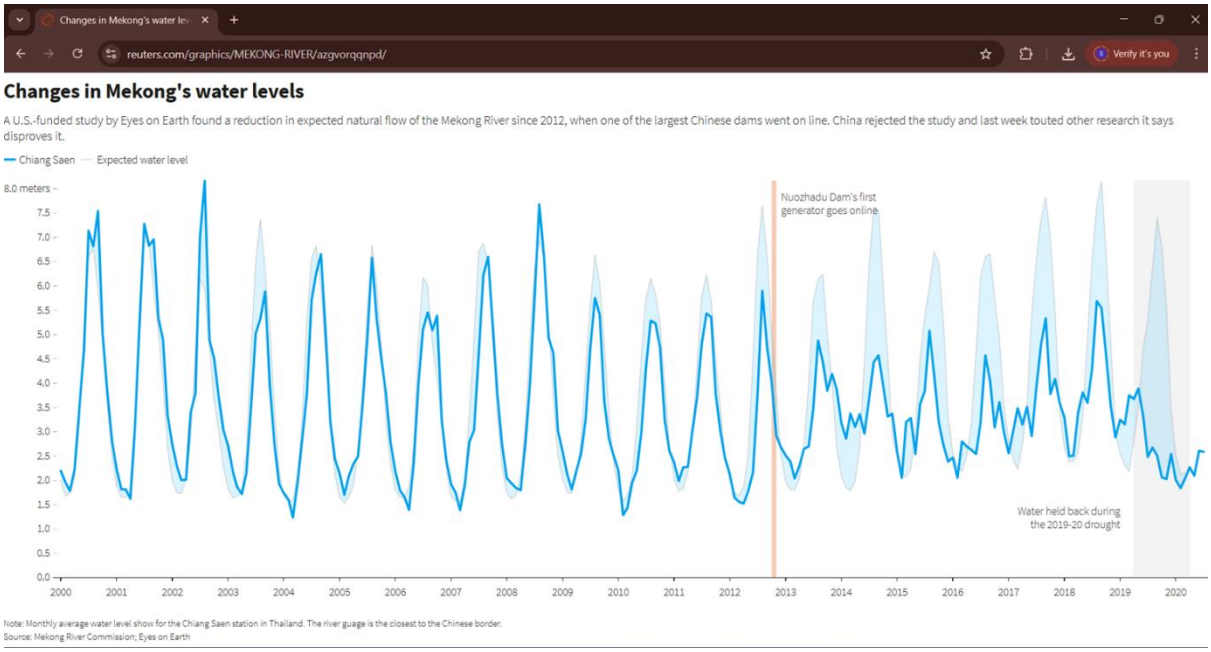
The Paper Presents below graphical image, which clearly indicates sharp decline in average discharge of Water from Farakka barrage, since 1997, as at Hardinge Bridge.



A treaty on sharing of Ganges waters between India & Bangladesh was signed in 1996. Wikipedia page on Farakka Barrage states that water diverted is just 10%. It clearly indicates that almost 50% of water is missing.

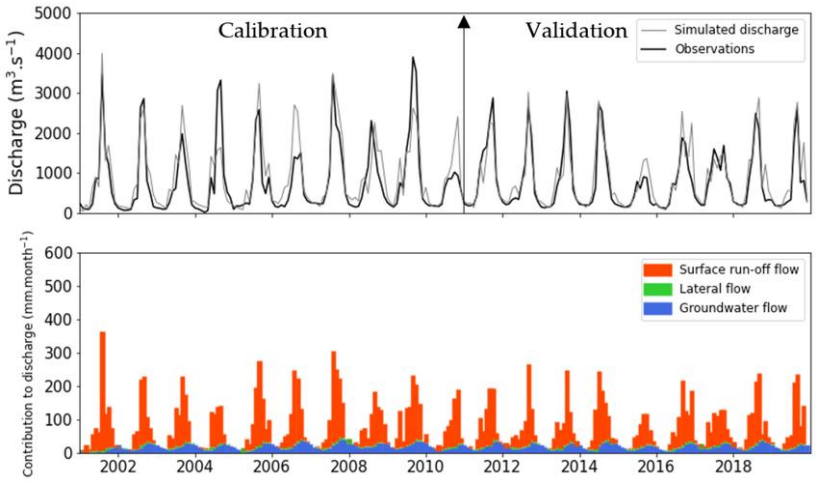
3. Mekong:

Below graph is taken from https://www.reuters.com/graphics/MEKONG-RIVER/azgvorqqnpd/



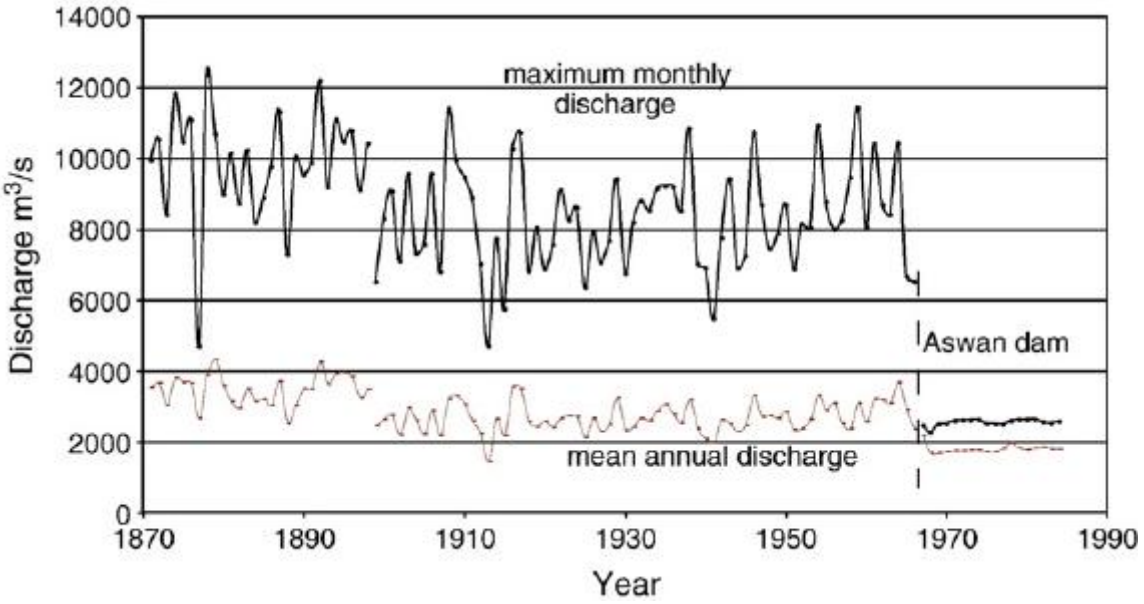
The above data based on observation at Chiang Saen, Thailand clearly indicates that average water levels, post Nuozhadu Dam have dropped by about 18%.

4. Srepok River (Tributary of Mekong):
Research paper: Prolonged and Severe Drought in the Most Dammed Tributaries of the Lower Mekong Basin by Kimsan Chann & others, Sustainability (Published by MDPI), Dec 2022



From above graph of the Research paper, it is observed that size of buon tarah, largest dam on Srepok river is less than one square kilometre. Based on available data for limited period, no major variation in average surface run-off flow of the rivers is observed.

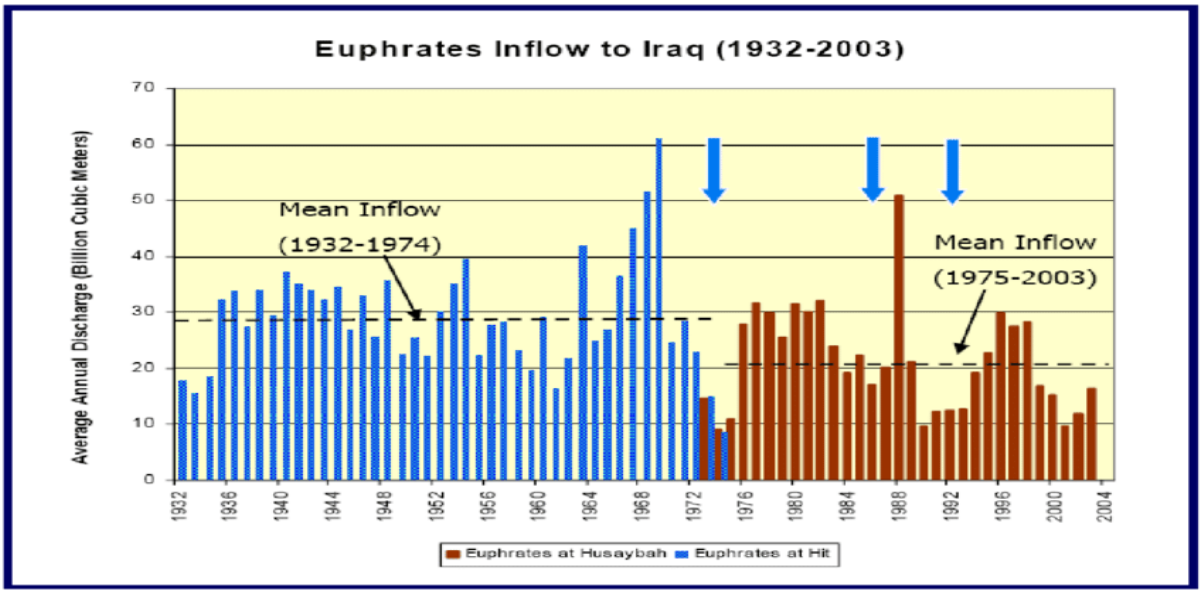
5. Nile River:
Research paper: Morphodynamics of Deltas under the Influence of Humans by Jaia Syvitski & Yoshiki Saito published in Global and Planetary Change, June 2007



The curves from above Research paper clearly reflect sharp fall in mean annual discharge of Nile river, post 1970 operationalisation of Aswan dam.

6. Euphrates River:

Research paper: Study of the Effects of Water Level Depression in Euphrates River on the Water Quality by Sadeq Oleiwi Sulaiman, Journal of Civil Engineering and Architecture 7(2):238-247, February 2013

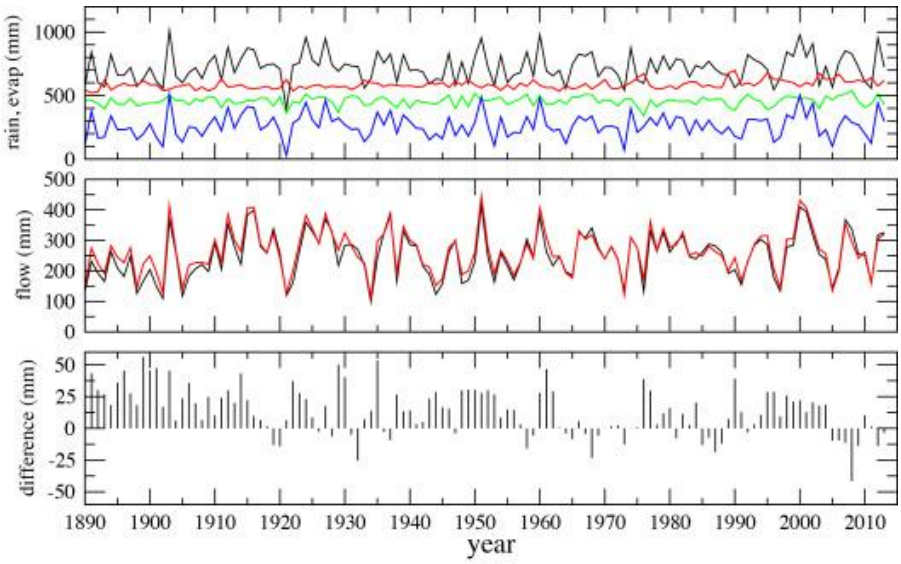


Inflow of Euphrates River in Iraq. Source: UNEP (2001)

It is observed from graph of above Research paper that inflow of Euphrates in Iraq has significantly declined post construction of Tabqa Dam in Syria.

7. Thames River:

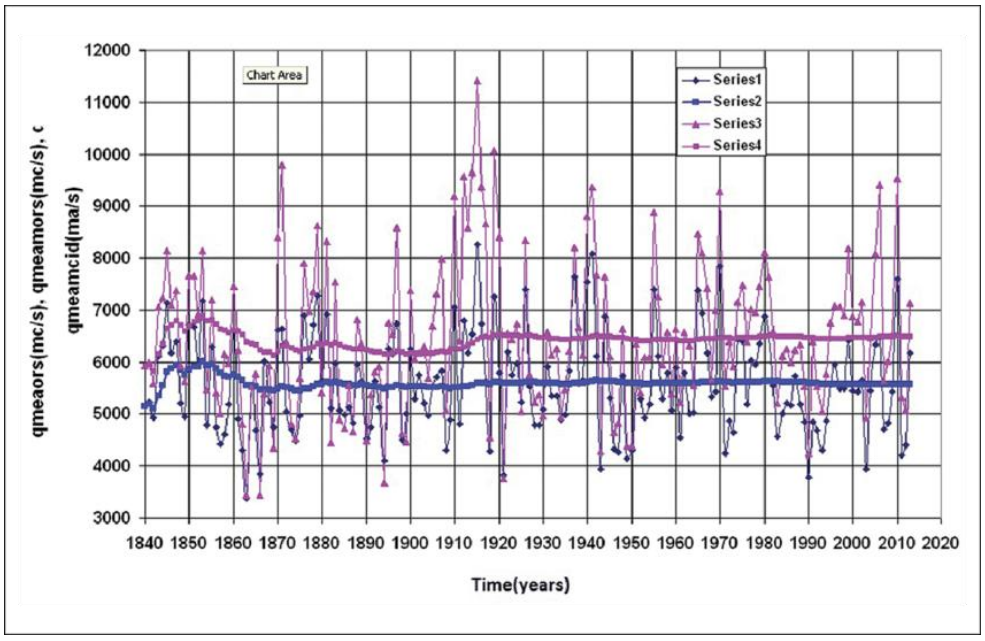
Research paper: Simulation of river flow in the Thames over 120 years: Evidence of change in rainfall-runoff response? By S.M. Crooks & A.L. Kay published in Journal of Hydrology: Regional Studies Volume 4, Part B, September 2015



From above graph of this paper, It observed that average flow (mm) of the river is quite consistent over last 120 years. Important point to note is that there are no Dams built on this river.

8. Danube River:

Research paper: Sediment transport on the Romanian section of the Danube River by C. Bondar, Gabriel Iordache, National Institute of Marine Geology and Geo-Ecology (GeoEcoMar), 23-25 Dimitrie Onciul St., 024053 Bucharest, Jan 2016



The variation in time of the Danube annual average water discharge (qmeaors) and of the multiannual average water discharge (qmeamors) at Orsova (Series 1 and respectively 2) and at Ceatal Ismail (Series 3 and respectively 4) between 1840 and 2013

Even though there are large scale Dams built on Danube River, there is no long-term variation in annual average water discharge. This indicates that no unethical acts, which would have led in reduction of volume of river water, are being practiced in case of Danube River.

9. Amu- Syr River:

The Nurek Dam is located on the Vakhsh River in Tajikistan. The Vakhsh is a tributary of the Amu Darya, which has a dam and generates electricity and irrigates land. The Oxus River itself had a historic dam, the Gurgānj Dam, which was destroyed by Genghis Khan.

Research Paper: Modelling of cascading hazards in naturally dammed lakes by Anish Ratna Shakya, University of Twente, the Netherlands, June 2020

The paper states "The basin formed by Usoi Dam now holds Sarez Lake, a 55.8-kilometre (34.7 mi)-long lake holding 16.074 cubic kilometres (13,031,000 acre·ft) of water. Water does not flow over the top of the dam, which would quickly cause it to erode away; instead, water seeps out of the base of the dam at a rate which approximately matches the rate of inflow, maintaining the lake at a relatively constant level. The level thus only rises an average of 20 cm per year. The flow averages about 45 cubic meters per second, with an annual variation of 35-80 cubic meters per second and dissipates about 250 megawatts."

2.1. Case study area 1: Lake Sarez

Lake Sarez is located at coordinates 38°12'06" N and 72°45'27" E at 3268 masl. The lake is located in both Murghob and Rushon districts of the GBAO region in Tajikistan (Figure 2.1). An earthquake of M7.2 with epicentre at 38.2°N/72.8°E struck the Pamir Mountains of eastern Tajikistan, north of the Murghab River on February 18, 1911, which resulted in a huge rockslide as shown in Figure 2.3.

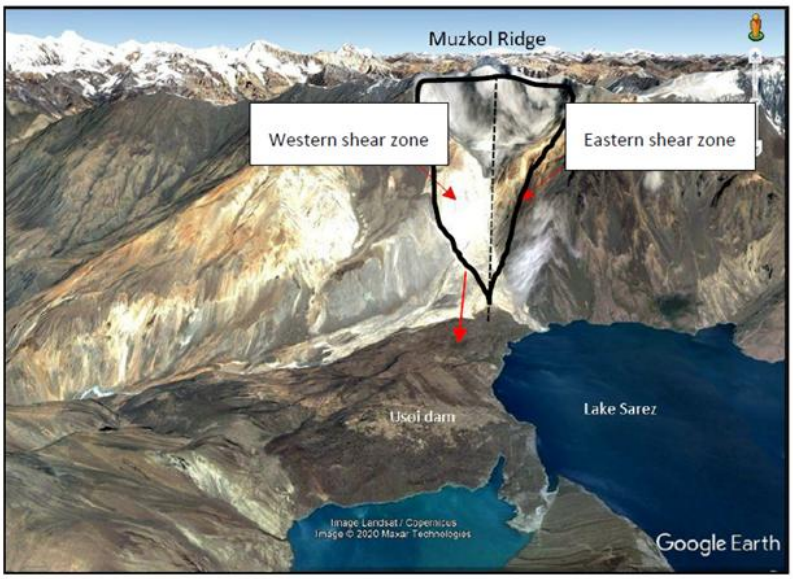
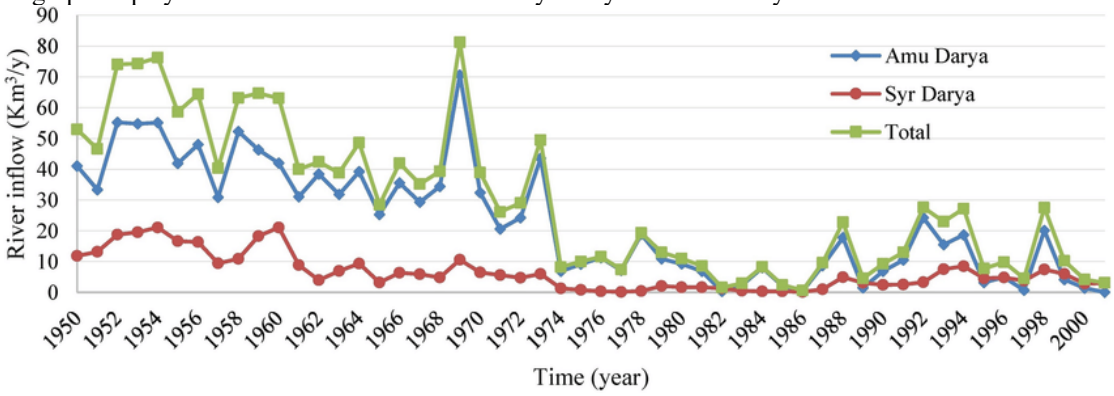


Figure 2.3: Illustration showing the two shear zones of an active wrench fault (dashed line) forming a wedge of failure (black polygon) from Muzkol Ridge resulting rockslide and formation of Usoi dam [adapted from Hanisch & Söder (2000)]

Source: Modelling of cascading hazards in naturally dammed lakes by Anish Ratna Shakya, University of Twente, the Netherlands, June 2020

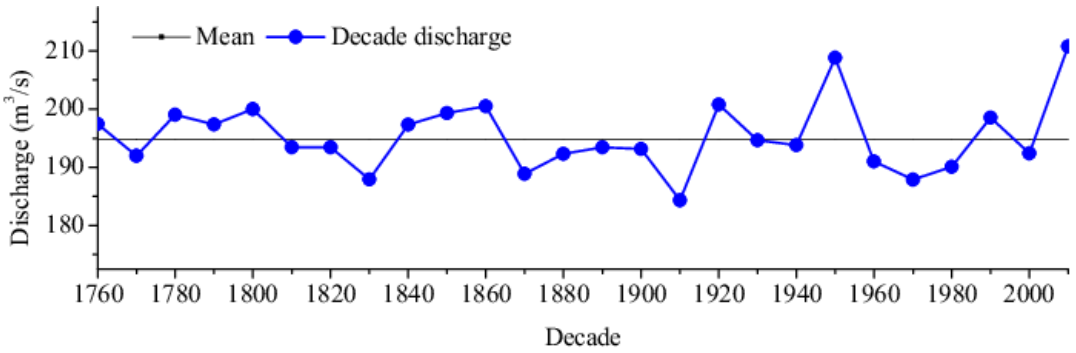
From above paper it is concluded that creation of Usoi Dam, which holds Sarez Lake is only reason behind reduction of water discharge from Amu Darya to Aral Sea. The above pictorial representations clarify that creation of Sarez Lake, with hole in its bottom is not a natural phenomenon, but it is man made one.

Below graph displays how flow of waters in Amu & Syr Darya are drastically reduced.



Source: Assessment of human-induced environmental disaster in the Aral Sea using Landsat satellite images by Sayed Ishaq Deliry & Others, Environmental Earth Sciences, Oct 2020, through ResearchGate

Research Paper: Natural discharge changes of the Naryn River over the past 265 years and their climatic drivers, by Ruibo Zhang & Others, Climate Dynamics 55(5-6), September 2020



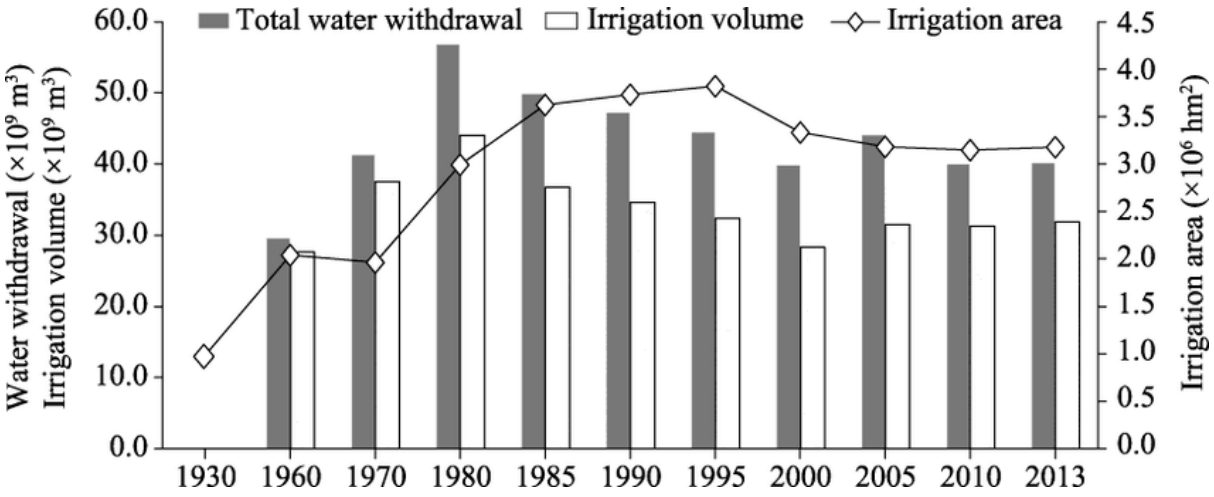
Above graph from this paper on water discharge of Naryn river shows long term consistency in its flow, despite of number of Dams built over this River.

Research Paper: Long-term variations in runoff of the Syr Darya River Basin under climate change and human activities by Sanim Bissenbayeva & Others, Journal of Arid Land, January 2021

Below is list of dams built on Syr River.

Year	Development of water conservancy facility	Description
1930	Big Fergana Canal was put into operation	Capacity of headwork: 200 m^3/s
1930	North Fergana Canal was put into operation	Capacity of headwork: 110 m^3/s
1951	South Golodnostep Canal was put into operation	Capacity of headwork: 300 m^3/s
1959	Kairakum Reservoir was built and put into operation	Purpose: irrigation and energy; river: Syr Darya; nominal volume: 5.2×10^9 m^3
1965	Chardara Reservoir was built and put into operation	Purpose: irrigation and energy; river: Syr Darya; nominal volume: 4.0×10^9 m^3
1963–1972	Charvak Reservoir was built and put into operation	Purpose: irrigation and energy; river: Chirchik; nominal volume: 2.0×10^9 m^3
1978	Andijan Reservoir was built and put into operation	Purpose: irrigation and energy; river: Karadarya; nominal volume: 1.9×10^9 m^3
1982	Toktogul Reservoir was built and put into operation	Purpose: irrigation and energy; river: Naryn; nominal volume: 19.5×10^9 m^3

Below graph displays that volume of total waters withdrawn from Syr river, wherein most of part is contributed by Irrigation.



From above two graphs related to Syr Darya, it is observed that waters of Syr darya are being consumed by irrigation. No conclusion could be drawn on reduction or nil discharge of syr river waters to Aral Sea, which is in contrast to historic discharge to Aral sea.

10. Volga & Northern Caspian Sea

Research paper: Changes in the Hydrological Regime of the Volga River and Their Influence on Caspian Sea Level Fluctuations by Elnur Safarov & Others, *Water* 2024, *16*(12), 1744, 20 June 2024

Below graph through blue line displays the quantum of change in discharge of Volga waters to Northern Caspian Sea.

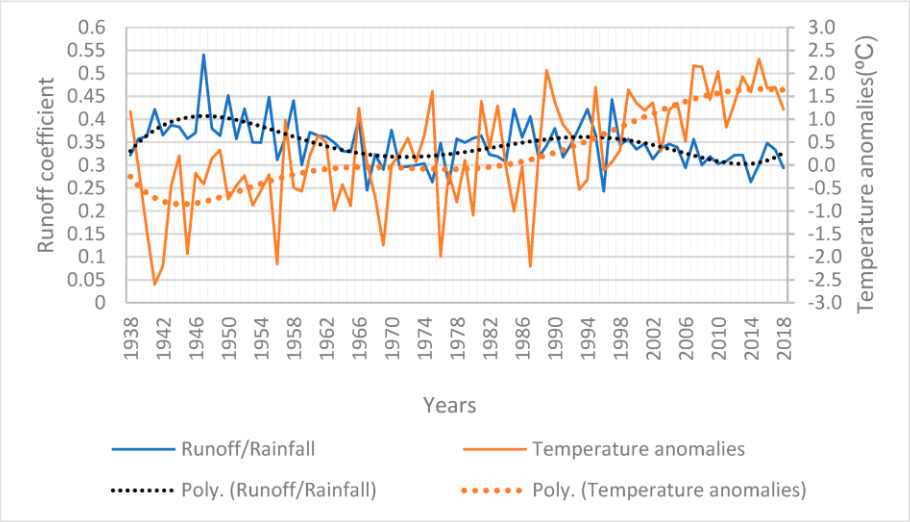


Figure: Dynamics of annual runoff according to data of the hydrological station Verkhneye-Lebyazhie, located in the southern part of the Volga River, and the amount of annual precipitation averaged over the river basin.

Below graph displays change in water surface level of Caspian sea.

Figure: Changes in the annual average water level of the Caspian Sea during the period of 1900–2021 observations, according to the data of Mahachcala hydrological station (Russia).

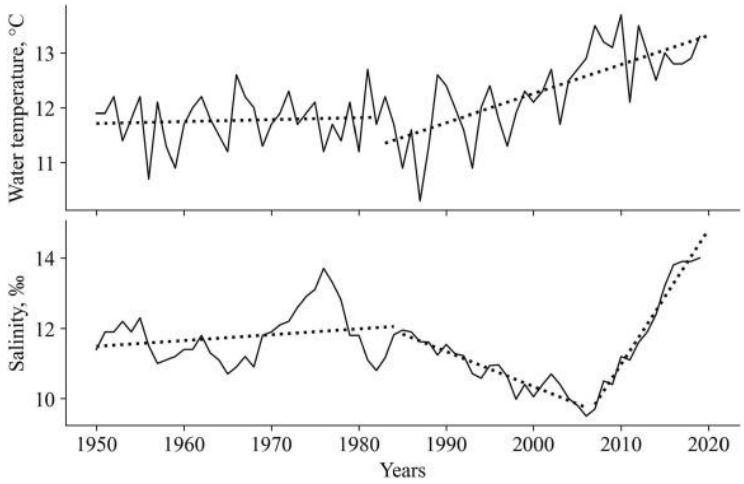
By parallel study of above two graphs of Volga discharge & water level of Caspian Sea, it could not be understood that even after consistent water discharge from the river, why water level of the Sea is drastically reduced.

11. Sea of Azov

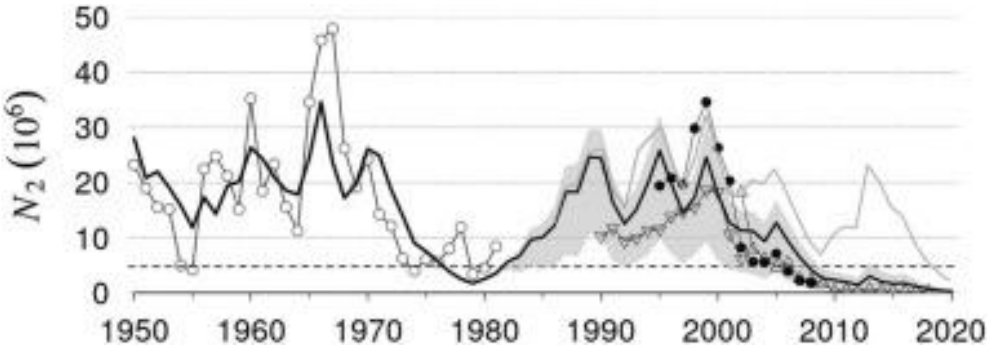
Research paper: Marine indicators of climate change in the Azov Sea ecosystem by Sergey V. Berdnikov & Others, Journal of Sea Research Volume 193, June 2023

Here the author's state

"Thus, by the beginning of the 21st century the two main rivers of the Sea of Azov were completely regulated and hydrology and hydrochemistry in the lower reaches of the Don and Kuban rivers depend entirely on the way water discharge is controlled with the help of Tsimlyansk and Krasnodar Dams, tailoring it to the needs of shipping and water traffic, hydropower, public utilities, agriculture, and fisheries."



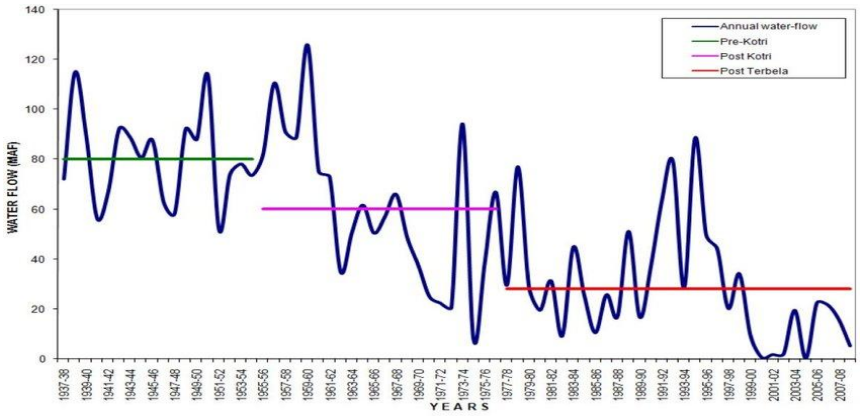
"The intensive increase in water temperature at the turn of the century (1993–2010) and the low-water period that started in 2007 formed the conditions for the Sea of Azov transitioning to a new state, which has not been previously observed for almost 100 years of research – significant positive anomaly of water temperature and salinity (Berdnikov et al., 2022)."



The absence in Nitrogen levels indicates death of Phytoplanktons, the controllers of carbon di oxide exchange between sea water & atmosphere.

12. Indus

Research Paper: Spatio-temporal assessment of agriculture & mangroves and its impact on socioeconomy of people in indus delta by Gohar Ali Mahar & Nayyer Alam Zaigham,



Line graph shows the Indus River water flow rate from Kotri barrage during the period from 1937-38 to 2007-08. Average flow trend lines show the average difference of decrease after or before mega projects.

The author states "Land use situation of agriculture and land cover situation of mangroves forests in the delta are traditionally old. Spatial expansion of agriculture and mangroves forestsis has not remain same in current

situation. Results detected from the satellite images shows that cultivated lands are decreasing and the mangroves forests are increasing."
As per above graph, the water flow of Indus is continuously declining, in spite of satellite images showing decline in quantum of cultivated land. This phenomenon is beyond logic.

13. Colorado

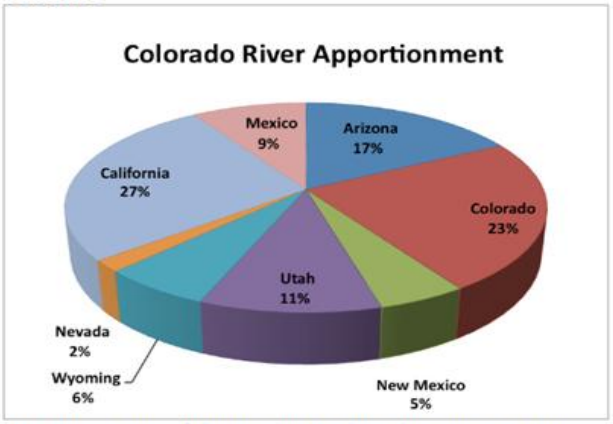
Wikipedia Page named "All-American Canal" gives below description-

The **All-American Canal** is an 82-mile-long (132 km) aqueduct, located in southeastern California. It conveys water from the Colorado River into the Yuma Project, the Imperial Valley, and to nine cities. It is the Imperial Valley's only water source, and replaced the Alamo Canal, which was located mostly in Mexico. The Imperial Dam, about 30 miles (48 km) northeast of Yuma, Arizona, on the Colorado River, diverts water into the All-American Canal, which runs to just west of Calexico, California, before its last branch heads mostly north into the Imperial Valley. Smaller canals branching off the All-American Canal move water into the Yuma Valley and the Imperial Valley. These canal systems irrigate up to 630,000 acres (250,000 ha) of crop land and have made possible a greatly increased crop yield in this area, originally one of the driest on earth. It is the largest irrigation canal in the world, carrying a maximum of 26,155 cubic feet per second (740.6 m^3/s). Agricultural runoff from the All-American Canal drains into the Salton Sea.

Below information is taken from Web page "Mission 2012 clean water" wide below link https://web.mit.edu/12.000/www/m2012/finalwebsite/problem/coloradoriver.shtml

The river itself is apportioned to the previously mentioned seven states and Mexico as shown in Chart 1:

CHART 1

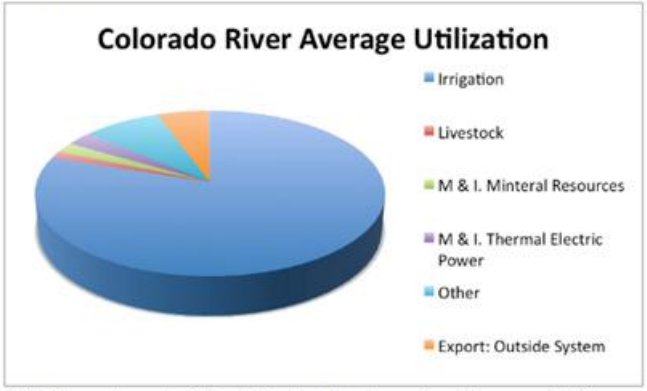


(US Department of the Interior Reclamation Bureau, 1971 - 2005 [USDIRB])

Source: https://web.mit.edu

The use of the Colorado River is diagrammed in Chart 2.

CHART 2



(US Department of the Interior Reclamation Bureau, 1971 - 2005 [USDIRB])

Source: https://web.mit.edu

A good amount of the Pie chart is stated as “EXPORTED OUTSIDE SYSTEM”.

web.mit.edu states “Increased consumption by agriculture, as well as municipal and industrial users, severely threatens the sustainability of the Colorado River through increased demand and decreased supply. From the figures above, it can be seen that the largest consumptive user of the river water is agriculture - consuming, on average, 5,507,780 acre feet annually. Municipal and industrial thermoelectric power consumes 1,872,633 acre feet annually on average, and mineral resources consumes 132,000 annually on average. Other municipal and industrial uses account for 555,700 acre feet of consumptive use. Trends show that consumption due to thermoelectric power, mineral resources, and other municipal and industrial uses has been rising steadily during the last few decades. This increase in consumption, coupled with extremely high use by agriculture, leads to an unsustainable water supply, with the demand greater than the available water (US Department of the Interior Reclamation Bureau, 1971 - 2005 [USDIRB]).

Not only is the flow threatened by climate change and overconsumption, but the reserves, especially those in Lake Mead and Lake Powell, are being significantly depleted. It took nineteen years to fill Lake Mead to a level of 24 million acre feet in 1998, and between then and 2007, the lake's level had decreased by 54%, leaving only 11.5 million acre feet of water behind the Hoover Dam (Colorado River District, 2007, 13 [CRD]). In fact, research at the Scripps Institution of Oceanography indicates that there is a 50% chance that Lake Mead will by completely dry by the year 2021. This result is if current water use is not curtailed, in addition to the negative effects of climate change. It is also predicted that by 2017 hydroelectric power generation in the Hoover Dam will be impossible due to the low water levels in Lake Mead. (Scripps Institute of Oceanography, 2008 [SIO]). Lake Powell, behind the Glen Canyon Dam, is experiencing a similar situation. It took seventeen years to fill Lake Powell to its full capacity of 27 million acre feet, and in just six years, between 1999 and 2005, the level of the lake had been reduced by 60% (CRD, 2007,13). This water use is clearly unsustainable, and the shortage in this lake negatively affects Colorado, Utah, Wyoming, and New Mexico (the Upper Basin states) directly and also the Lower Basin. The Glen Canyon Dam can only continue to generate hydroelectric power as long as there is water behind it, and so the reduction in the level of Lake Powell has the potential to negatively effect a vast population of the American west.”

The Colorado case clearly display large scale manipulation of Water resources by Governments.

The above case studies must necessarily be considered as a joint exercise of Governments of politically powerful countries of our world, and not as isolated cases. This statement is supported by the fact that “graph, based on the Vostok ice core, a Russian-drilled core from Antarctica” is not available to public through any Russian agency but it is available through Wikipedia from U.S. Global Change Research Program through http://www.usgcrp.gov/usgcrp/images/Vostok.jpg, which is a USA government body.

This clearly indicate that USA & Russia or other powerful nations for that matter are only pretending to be enemies, internally all of them are one & runs their joint agendas. They misuse Water resources through Dams & in turn blackmail countries/ states at receiving end of riverine waters.

To conclude “Let the waters of global rivers decide their course on their own”. Waters entering in any territory are for use of animals & plants, to the level they can use by their self-physical efforts. Waters are not property of any Nation/s.