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About the publication:

3 Main Points:

How does Türkiye's Southeastern Anatolia Project (GAP) transform upstream water

control into geoeconomic leverage over Syria and Iraq? This article argues that expanded hydropower and irrigation infrastructure convert hydrological dominance into domestic economic gains, producing asymmetric interdependence and downstream vulnerability. It concludes that GAP functions as a geoeconomic instrument enabling Türkiye to extract political, security, and development-related concessions.

Highlight Sentence:

"Asymmetric interdependence emerges when Türkiye's upstream water control creates unequal costs, leaving Syria and Iraq more vulnerable to supply disruptions than Türkiye is to retaliation."

Definition:

Hydro-hegemony is a power structure in transboundary river basins where an upstream state uses infrastructural control of water flows to dominate downstream economic and political outcomes.

Title: Hydro-Hegemony as Geoeconomic Strategy: Türkiye's Infrastructural Leverage over Syria and Iraq.

Introduction

Earth is warming up and the Middle East is increasingly becoming more arid, subsequently, water is transitioning from a renewable natural source to an economic and strategic asset. As climate change, rapid population growth and regional instability accelerate, the ability to control the upstream flow of transboundary rivers allows states to convert physical geography into durable political and economic influence.

The Euphrates-Tigris basin is shared by Türkiye, Syria and Iraq is one of these theatres of 'hydro-hegemony' where the most powerful actor in the river basin can

increase their leadership position through a combination of infrastructure and strategic resource capture (Zeitoun & Warner, 2006). Current projections suggest a potential 30% decline in river flows by 2050, a crisis that threatens the GDP of downstream nations by as much as 14% (Belhaj, 2025). Within this high-stakes environment, Türkiye's Southeastern Anatolia Project (GAP) represents more than a domestic engineering marvel; it is a structural transformation of the regional balance of power.

This article addresses the following question: How does Türkiye's Southeastern Anatolia Project (GAP) convert upstream hydrological control into asymmetric economic interdependence and geoeconomic leverage over downstream states? It argues that the GAP functions as a geoeconomic instrument that transforms hydrological control into durable leverage over Syria and Iraq. By expanding upstream infrastructure, Türkiye generates domestic economic gains, specifically in energy security and agricultural surplus, that simultaneously impose acute vulnerabilities on downstream riparians. This process fosters a condition of "asymmetric interdependence," wherein water releases are increasingly utilised as a bargaining tool in regional security and diplomatic negotiations (Kibaroğlu, 2021).
The analysis proceeds in four stages. First, it examines the structural conditions of power created by the geographical and infrastructural asymmetry of the basin. Second, it analyses Türkiye's domestic economic gains as a source of "geoeconomic capital." Third, it assesses the costs and loss of autonomy experienced by downstream states. Finally, it explores the strategic leveraging of these asymmetries in regional politics, including recent "oil-for-water" and security-linked agreements.

Structural Conditions of Power: Geography, Hydrology, and Infrastructure

Upstream hydrological control in the Euphrates–Tigris basin is a product of inherent geographical asymmetry, which has been materially expanded and solidified by the infrastructure of the Southeastern Anatolia Project (GAP). The power dynamics of the basin are rooted in a geographic advantage that favors the upstream state.

Türkiye contributes approximately 89% of the Euphrates' annual flow and 52% of the Tigris' flow, yet the rivers serve as the primary lifeblood for downstream Syria and Iraq (Food and Agriculture Organization, 2023). This creates an "exogenous" dependency, where downstream states rely on precipitation and snowmelt that falls entirely outside their sovereign borders. Consequently, any hydrological shift at the headwaters, whether due to climate change or human intervention, is felt with amplified intensity by riparians at the end of the river course.

While geography provides the opportunity for control, the GAP provides the physical means to exercise it. The project, encompassing 22 dams and 19 hydroelectric plants, has fundamentally altered the basin's natural rhythm. The centerpiece, the Atatürk Dam, possesses a reservoir capacity of 48.7 billion m^3, a volume that exceeds the entire average annual discharge of the Euphrates river itself (Daoudy, 2005). By 2026, the full operation of the Ilisu Dam on the Tigris has further institutionalized this control, allowing Ankara to regulate flows into Iraq with surgical precision, effectively transforming the river into a managed "tap" (Chatham House, 2025).

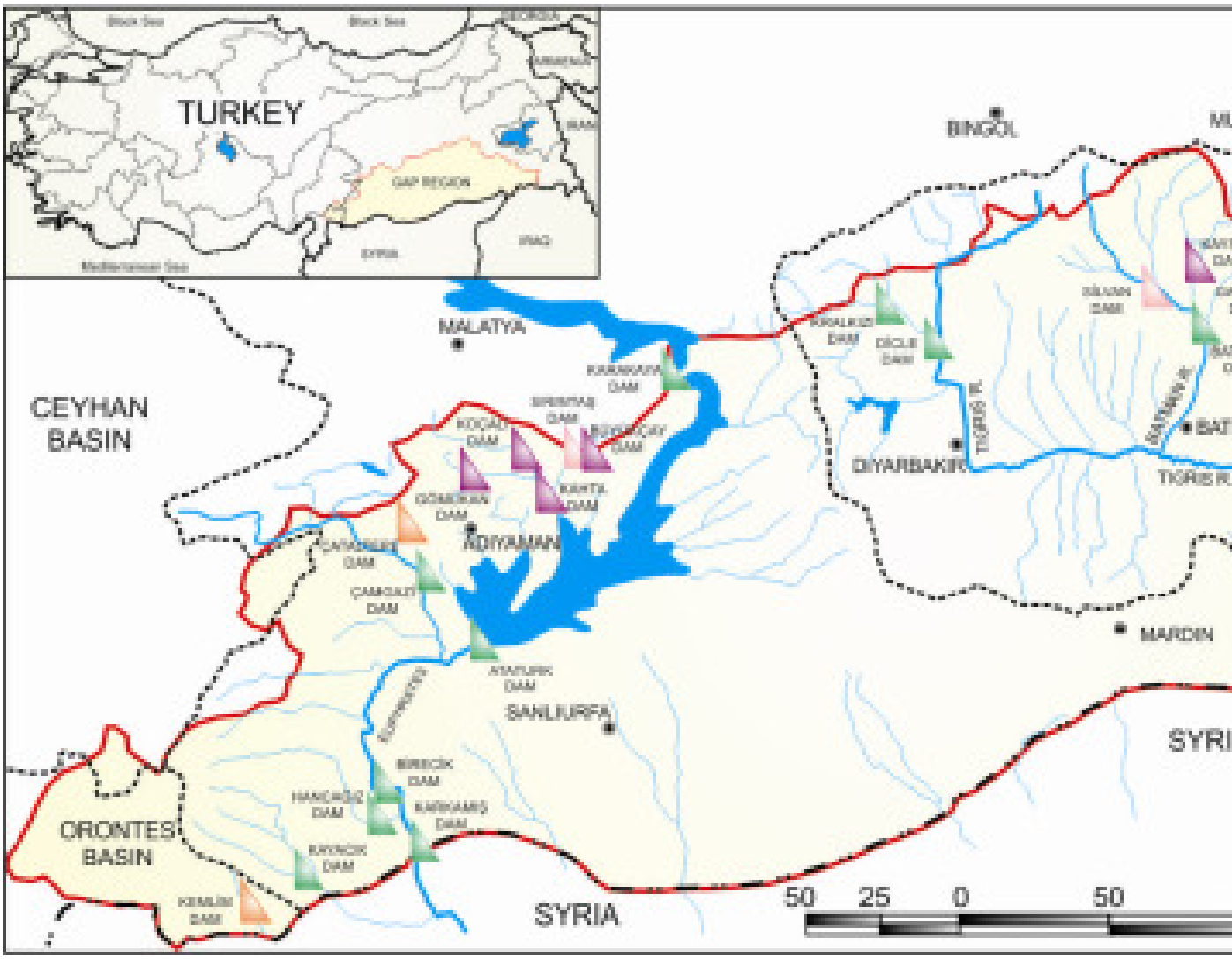

Figure 1: The GAP project (Kankal M. et al, 2016)

The structural advantage of the GAP extends beyond volume to water quality. As Türkiye expands its irrigation networks, the return-flow water entering Syria and Iraq carries higher salinity and agricultural runoff. Recent spatiotemporal analysis indicates that salinity levels and pollutant concentrations in the Euphrates system are significantly exacerbated by upstream discharge, particularly as the water crosses into Iraqi territory (Oleiwi et al., 2025). This degradation represents a form of **governance spillover**; while potentially a side effect of agricultural optimization, it results in the "export" of environmental degradation to downstream actors, further weakening their agricultural viability and bargaining position (Kibaroğlu, 2021).

Türkiye’s Economic Gains: How GAP Creates Upstream Geoeconomic Capital

Beyond the immediate hydrological advantages, the Southeastern Anatolia Project has yielded substantial macroeconomic dividends for the Turkish state. The GAP enhances Türkiye’s national economic capacity and strategic autonomy, providing the material "geoeconomic capital" necessary to exercise external leverage.

A primary objective of the GAP is the expansion of Türkiye’s domestic energy production to reduce strategic dependency on foreign hydrocarbon imports. As of the end of 2024, Türkiye’s total installed hydraulic capacity reached approximately 32.77 GW, the highest conventional hydroelectric fleet in Europe (International Hydropower Association, 2025). Hydropower currently contributes nearly 20% of the national electricity generation mix (Low Carbon Power, 2026). This significant domestic output is a cornerstone of Türkiye’s 2025–2027 Medium-Term Program, which projects a 2.4% reduction in the national energy import bill, totaling roughly $64 billion, facilitated by the integration of large-scale renewable projects like the GAP (Daily Sabah, 2025). By insulating the national economy from global energy price volatility, the GAP infrastructure grants Ankara a degree of "strategic autonomy" that bolsters its position in regional negotiations (Kibaroğlu, 2021).

The GAP has fundamentally reoriented the economy of Southeastern Anatolia by converting semi-arid plains into high-yield agricultural zones. By December 2024, approximately 680,000 hectares were opened for irrigation, with the physical completion rate for energy projects exceeding 91% (Hidropolitik Akademi, 2025). This expansion has turned the region into a "food superpower"; for instance, cotton yields in the Harran Plain have tripled, making the region Türkiye’s top producer and supporting a national agricultural export target of $31 billion by 2026 (Farmonaut, 2025). This agricultural surplus not only provides economic stabilization for the traditionally volatile southeastern provinces but also grants Türkiye "soft power" as a vital food supplier to a region increasingly plagued by scarcity.

The multi-billion dollar "sunk-cost" of the GAP has created a path-dependency that reinforces Türkiye's commitment to its water policies. This domestic economic resilience serves as a foundational source of bargaining strength. While downstream riparians are highly vulnerable to flow fluctuations, Türkiye's diversified economy and increasing renewable capacity, where solar and wind are now beginning to complement hydro, reduce its own vulnerability to regional retaliation (Ember, 2025). Consequently, Türkiye operates from a position of economic "depth," where the domestic gains from the GAP provide the security needed to prioritize national interests over downstream demands in transboundary water disputes (Daoudy, 2005).

Downstream Economic Dependency: Costs, Vulnerabilities, and Loss of Autonomy

Conversely, the economic dividends reaped upstream find their opposite in the structural disadvantages imposed upon downstream actors.The structural regulation of the Euphrates and Tigris by Türkiye imposes acute economic vulnerabilities on Syria and Iraq, creating a state of asymmetric interdependence where downstream survival is decided by upstream political decisions.

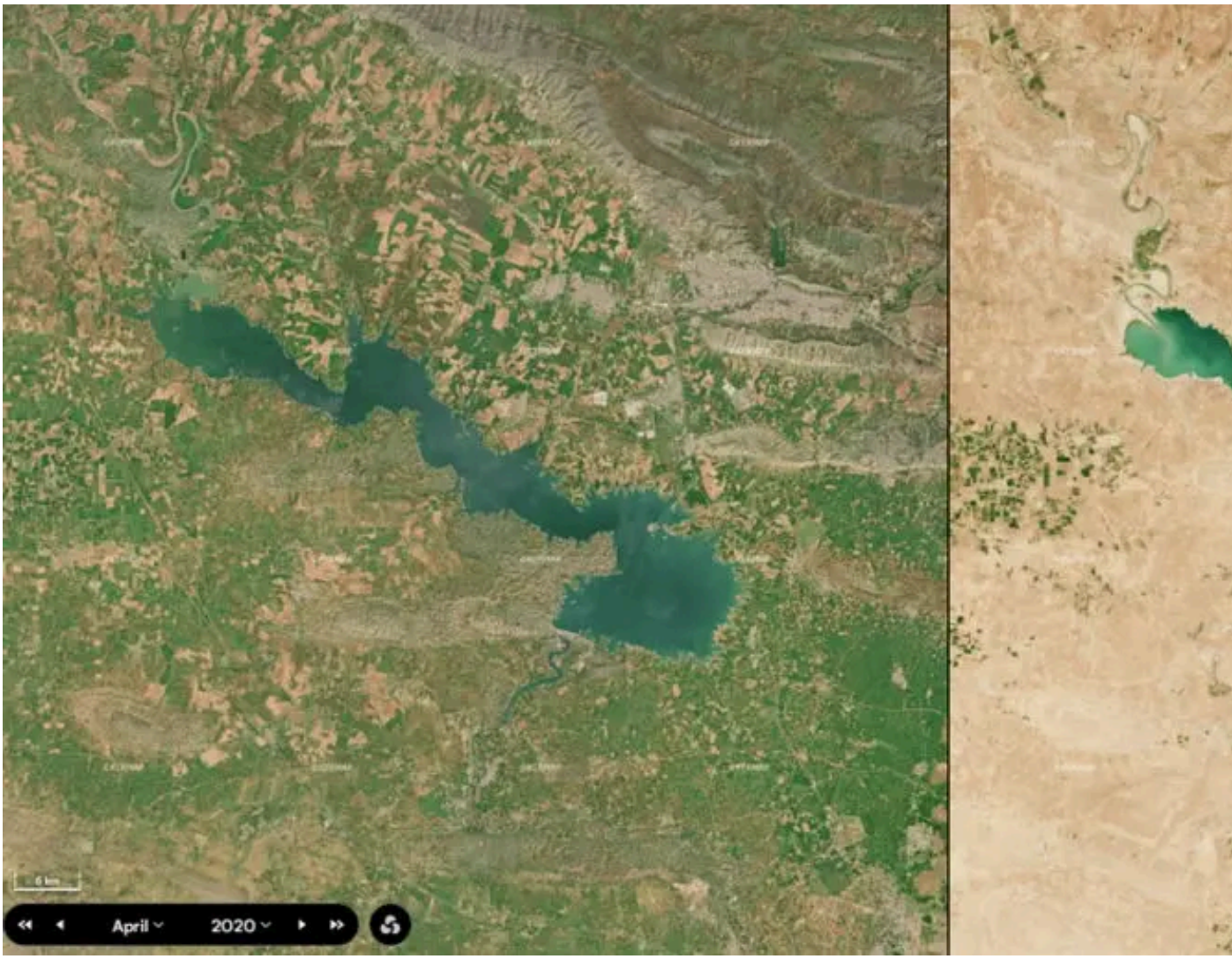

Figure 2: *Satellite imagery/Data comparison of the Euphrates-Tigris basin (2020 vs. 2025), illustrating the dramatic reduction in surface water levels and the expansion of arid zones in downstream Syria and Iraq*. (Daoulas Y., 2022)

Downstream riparians have witnessed a catastrophic decline in water volumes, exacerbated by both upstream infrastructure and climate-induced stressors. By late 2025, Iraq's water reserves plummeted to approximately 4 billion cubic meters, an 80-year low compared to the 60 billion cubic meters held in 2020 (UNESCO, 2026). In Syria, the winter of 2025 was the driest since 1958, with rainfall reaching only 25% of seasonal norms (ReliefWeb, 2025). This physical scarcity is not merely environmental; it is institutionalized by the ability of upstream dams to withhold flows

during these "exceptional" drought periods, forcing downstream states to move from a position of "riparian rights" to one of "negotiated favors" (Chatham House, 2025).

The lack of reliable water has triggered a systemic failure in downstream agrarian economies. In Iraq, the government was forced to ban summer and winter cropping for over 4 million hectares in 2025 to prioritize drinking water, leading to a 50% drop in anticipated wheat and barley yields (UNESCO, 2026; FAO, 2025). Syria faces a similar trajectory, with a wheat shortfall of 2.73 million tonnes reported in late 2025, leaving 75% of the country's rain-fed farmland crippled (World Weather Attribution [WWA], 2025). These losses have catalyzed massive internal displacement: as of late 2025, over 186,000 people in Iraq remained displaced due to climatic factors, with rural households migrating to overcrowded urban centers in search of livelihoods (UNESCO, 2026).

This economic fragility has solidified a condition of asymmetric interdependence. While Türkiye utilizes the GAP to enhance its "food superpower" status, Iraq and Syria have become "import-dependent" actors, increasingly reliant on international markets, and often Turkish exports, to fill food security gaps. The substitution of water is physically impossible, making the structural dependency absolute. Recent developments in 2025 show that Iraq has been forced into "short-term water negotiations," seeking month-to-month releases from Ankara rather than a permanent treaty (Fanack Water, 2025). This shift indicates a profound loss of autonomy, as fragile downstream states lack the bargaining power to retaliate against upstream restrictions without risking total agricultural or humanitarian collapse (IISS, 2025).

Leveraging Asymmetry: GAP as a Geoeconomic Tool in Regional Politics

How is this used concretely? How do actors take political advantage of their own potential for control to turn it into actual geoeconomic leverage? Türkiye strategically utilizes its infrastructural control to transform economic and hydrological dependency into a decisive instrument of foreign policy and regional security.

The physical capacity to regulate the flow of the Euphrates and Tigris allows Ankara to practice "issue-linkage," where water volume is traded for security or political concessions. This was historically codified in the 1987 Protocol, but the practice has intensified in the mid-2020s. In April 2024, during a historic visit to Baghdad, Türkiye utilized the promise of a "guaranteed" water release as the primary incentive for Iraq to designate the PKK (Kurdistan Workers' Party) as a banned organization and to secure cooperation on the $17 billion "Development Road" project (Chatham House, 2025; Daily Sabah, 2024). This "Water-for-Development" logic demonstrates that water is no longer treated as a separate environmental issue, but as a central currency in Türkiye’s geoeconomic strategy.

The economic fragility analyzed in previous sections directly diminishes the sovereign bargaining capacity of Syria and Iraq. By maintaining downstream states in a condition of "perpetual scarcity," Türkiye effectively limits their ability to project power or challenge Turkish regional interests. For example, in Northern Syria, the periodic disruption of the Alouk water station has been analyzed not merely as a technical failure, but as a tactical exercise that creates domestic unrest and forces local actors to prioritize basic survival over political resistance (IISS, 2025). When a state must devote its entire diplomatic capital to securing the next month's water release, it loses the "strategic depth" required to contest Turkish military or economic expansion.

The GAP is the cornerstone of Türkiye's transition from a middle power to a "Hydro-Hegemon" (Zeitoun & Warner, 2006). By positioning itself as the "battery" and "breadbasket" of the region while controlling its neighbors' most vital input, Türkiye has achieved a form of "structural power." This power is reinforced by the "Strategic Framework Agreement" signed with Iraq in 2024, which seeks to integrate Iraqi energy resources with Turkish water management (Middle East Monitor, 2024). This creates a regional order where the survival of downstream regimes is functionally linked to their alignment with Ankara’s geopolitical objectives, completing

the transformation of the GAP from a development project into a geoeconomic weapon.

Conclusion

The analysis presented in this article confirms that Türkiye's Southeastern Anatolia Project (GAP) has transcended its original identity as a regional development initiative to become a sophisticated geoeconomic instrument. By systematically converting geographical advantage into a centralized infrastructural "tap," Ankara has established a condition of hydro-hegemony that dictates the economic and political realities of the Euphrates-Tigris basin. As this study has shown, the power of the GAP lies not merely in the physical withholding of water, but in the creation of a durable, asymmetric interdependence that leaves downstream riparians with few viable alternatives to cooperation.

Throughout this discussion, three central pillars of Türkiye's leverage have emerged. First, the structural architecture of the basin, materially solidified by the Atatürk and Ilisu dams, has shifted the river systems from natural flows to managed assets. Second, the domestic economic capital generated through hydropower and agricultural expansion has granted Türkiye the strategic autonomy to weather regional tensions while simultaneously exposing Syria and Iraq to acute supply volatility. Finally, this economic vulnerability has been successfully converted into political leverage, as evidenced by the recent "water-for-security" and development-linked negotiations between Ankara and Baghdad.

Looking forward, the persistence of this asymmetric relationship faces two significant stressors: the accelerating impact of climate change and the growing obsolescence of existing international water law. With river flows projected to decline further by 2050, the "weaponization of scarcity" remains a potent threat to regional stability. While Türkiye continues to operate under a doctrine of absolute territorial sovereignty, the rising human and economic costs in Iraq and Syria may soon necessitate a transition from bilateral "favors" to a truly multilateral, climate-resilient

legal framework. Ultimately, the GAP serves as a definitive case study in how modern states can deploy critical infrastructure to transform natural geography into a decisive tool of regional power.

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