

Climate and resources

IB DP Geography SL core units 2-3 full package (shared with HL)

1. Climate and resources at a glance

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IB Geography SL core units 2 and 3 (shared with HL): global climate (vulnerability and resilience) and global resource consumption and security, framed by sustainability, process and scale.

Must-know: natural versus anthropogenic causes; instruments, ice cores and sea level as evidence; Paris well below 2 degrees pursuing 1.5; vulnerability as exposure plus sensitivity minus capacity; mitigation versus adaptation; footprint 2.6 versus biocapacity 1.6 (about 1.7 Earths); renewables and sustainable yield; agriculture about 70 percent of water withdrawals; the four food pillars; stewardship versus consumerism.

2. Climate: vulnerability and resilience

Climate: vulnerability and resilience

Causes: orbital cycles, solar variability and volcanoes naturally; fossil-fuel carbon dioxide and methane anthropogenically. Evidence triangulates: about 1 degree of instrument warming, 800 000 years of ice cores, rising sea level. The Paris Agreement sets the scoreboard: well below 2 degrees, pursuing 1.5.

Vulnerability is exposure plus sensitivity minus capacity: deltas and arid margins are exposed; climate-dependent livelihoods sensitive; poverty subtracts little. Resilience reorganises: Bangladesh cut cyclone death tolls from hundreds of thousands to tens with shelters and warnings. Mitigation attacks causes (decarbonise, reforest); adaptation adjusts to impacts (sea walls, drought-tolerant crops, managed retreat).

3. Resource consumption and security

Resource consumption and security

Consumption is uneven and rising; the ecological footprint scores it: about 2.6 gha per person against about 1.6 gha of biocapacity, roughly 1.7 Earths of overshoot.

Renewables regenerate within human timescales if harvested at their sustainable yield; non-renewables are stocks. The energy transition is judged on cost, storage, land and its own mineral demands.

Water: agriculture takes about 70 percent of withdrawals; water security is access to safe water, not raw availability. Food security stands on availability, access, utilisation and stability - famine can strike amid availability when access fails. The strategic close: consumerism versus stewardship, with the footprint as scoreboard.

Check yourself

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Natural versus anthropogenic causes; the three evidence streams; the 2 and 1.5 degree frame.

The vulnerability formula term by term; the Bangladesh resilience contrast; mitigation versus adaptation with named examples.

Footprint versus biocapacity (about 1.7 Earths); renewable and the sustainable-yield condition; transition trade-offs.

Agriculture about 70 percent of water use; the four food pillars with access failing amid availability; stewardship versus consumerism.