

WRAP Exams · wrapexams.com

Prelims PYQ, Mains model answers, and copy evaluation. Write to the desk for this paper, a doubt, or the AI waitlist.

ask@wrapexams.com · +91 85951 84903 · wrapexams.com

Q20

Elucidate the relationship between globalization and new technology in a world of scarce resources, with special reference to India.

UPSC Civil Services Mains 2022 · GS I · 15 marks · Globalisation and Indian Society

Effects of globalization on Indian society.

Core demand of the question

- Elucidate the relationship between globalization and new technology in a world of scarce resources, with special reference to India
- Show how tech and global markets both ease and tighten scarcity of energy, water, land, and skills
- Keep a 15-mark length

Revision summary

Globalisation carries new technology across borders as machines, patents, and platforms.

Scarcity of oil, water, land, and minerals is the test of that pair.

Yield-raising, digital, and renewable tools can stretch Indian resources.

The same pair fuels consumption, e-waste, and imported mineral thirst.

India's way is public digital and green technology, not resource-blind consumer globalism.

Introduction

Globalisation moves goods, capital, and ideas across borders; new technology changes how much resource each unit of output needs. In a world of scarce oil, water, land, and rare minerals, the two together can save resources or burn them faster. India lives both sides.

Body**How the two forces join**

- Open trade after 1991 let India import machines, seeds, and later smartphones, so new technology arrived as a global package, not only as a domestic lab.
- Digital networks, the internet, and now renewable hardware are global production systems; no country, including India, makes the whole stack at home.
- **Scarcity is the third term:** hydrocarbons, groundwater, fertile land, and **critical minerals** are finite, so technology is asked to decouple growth from depletion.

Easing scarcity

- The **Green Revolution's** high-yield seed, later drip and satellite weather, and now soil sensors show technology stretching land and water, even as they created new chemical loads.
- Solar modules, wind turbines, and LED lighting, traded globally, let India cut some oil for power and lighting despite poor domestic oil reserves.

- UPI, Aadhaar-enabled delivery, and remote work reduce some travel and leakages, which is a resource saving in time, fuel, and subsidy waste.
- Indian IT and generic pharma used global demand and licensed or off-patent technology to earn without a matching claim on domestic mines.
- Recycling, electric mobility, and efficiency standards are the scarcity-facing face of the same global tech market.

Tightening scarcity and unequal access

- Global middle-class consumption, copied in Indian cities, raises meat, air-travel, and gadget demand that technology often serves rather than caps.
- Export agriculture and data centres are thirsty; chips and batteries need minerals India does not dominate, so scarcity is offshored, not abolished.
- E-waste, leftover patents, and a digital divide mean new technology can waste rare metals and leave the water-poor farmer outside the saving.
- **TRIPS**-era rules can raise the price of green and health technologies unless public procurement and compulsory paths are used.
- Climate change, itself a global-technology-and-growth product, makes Indian monsoon water more scarce in some regions even as apps improve forecasts.

India's special reference

- India must use global technology to leapfrog dirty industrial stages, and must regulate global consumption models that treat groundwater and clean air as free.
- Public digital infrastructure plus renewable manufacturing is the scarce-resource path; uncritical consumer globalisation is the waste path.

Flow diagram

Global markets -> New technology
New technology -> Stretch water energy land
New technology -> More consumption e-waste
Scarce resources -> Stretch water energy land
Scarce resources -> More consumption e-waste
India DPI renewables -> Stretch water energy land

Conclusion

Globalisation delivers new technology at speed; scarcity decides whether that technology is used to stretch land, water, and energy or to multiply wants. India's task is to import and make saving technologies while refusing a global lifestyle that treats finite resources as infinite.

Facts & figures

1991 liberalisation

Opening that sped the import of capital goods, IT, and later consumer technology.

Green Revolution

Earlier global-science package that raised grain on scarce land, with water and chemical costs.

UPI and public digital stack

Indian networked technology that cuts some transaction waste at population scale.

Solar and wind hardware

Globally traded energy technologies India uses to ease oil and peak-power stress.

TRIPS

WTO intellectual-property regime that shapes the price of medicines and some green tech.

Critical minerals

Lithium, cobalt, and rare earths in batteries and electronics, unevenly located and now a scarcity politics.

WRAP Exams · Write. Read. Analyse. Practice. · <https://wrapexams.com/upsc/mains-answers/gs-1/2022/elucidate-the-relationship-between-globalization-and-new-technology-in-a-world-of-scarce-resources-with-special-reference-to-india/>
· ask@wrapexams.com · wrapexams.com