



# 2-Minute Series

*A compilation of foundational topics prerequisite for Civil Services*

For the 2nd Week of

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# 1. Geography

## 1.1. Circular Bioeconomy

### Definition:

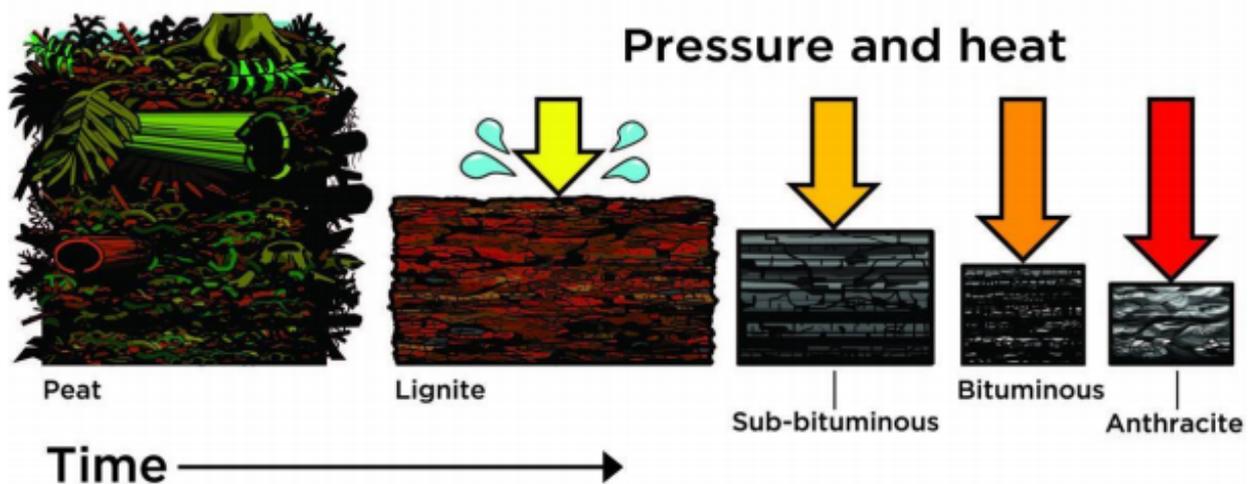
- The “circular bioeconomy” is defined as the intersection of bioeconomy and circular economy.

### Bioeconomy

- The bioeconomy means using renewable biological resources (biomass) from land and sea, like crops, forests, fish, animals and micro-organisms to produce food, materials and energy.

### Example

Coal



- **Ex:** dead plant matter submerged in **swamp environments** is subjected to the geological forces of **heat and pressure** over hundreds of millions of years. Over time, the plant matter transforms from moist, low-carbon peat, **to coal**, an energy- and carbon-dense black or brownish-black sedimentary rock.
- **Plants – coal – non-renewable – millions of years to form – not sustainable**
- Electricity + products – gases - **global warming**
- Renewable materials – raw material that are replaced at least the amount they are consumed – sustainable – regenerate at steady amounts.
- **Ex:** Tree- Paper

### Definition

- The bioeconomy means using **renewable biological resources (biomass)** from land and sea, like crops, forests, fish, animals and micro-organisms to produce food, materials and energy.

### Circular Economy

- A circular economy is an industrial system that is restorative or regenerative by intention and design.

- Circular systems employ reuse, sharing, repair, refurbishment, remanufacturing and recycling.
- A circular economy is an economic system aimed at eliminating waste and the continual use of resources.
- Ex: Smart Cities Mission

### **Circular Bioeconomy**

- Circular Economy + Bio - Economy
- A circular bioeconomy offers a conceptual framework for using renewable natural capital to transform and manage our land, food, health and industrial systems, with the goal of achieving sustainable wellbeing in harmony with nature.

## 2. History

### 2.1. Nagpur Session (1920) of the Indian National Congress

#### December 1920 At the Nagpur session of the Indian National Congress

- The programme of non-cooperation was endorsed.
- An important change was made in the Congress creed: now, instead of having the attainment of self-government through constitutional means as its goal, the Congress decided to have the attainment of Swaraj through peaceful and legitimate means, thus committing itself to an extraconstitutional mass struggle.
- Some important organizational changes were made:
  - ✓ a Congress Working Committee (CWC) of 15 members was set up to lead the Congress from now onwards;
  - ✓ Provincial Congress Committees on linguistic basis were organized;
  - ✓ Ward Committees was organized; and entry fee was reduced to four annas.
- Gandhiji declared that if the non-cooperation programme was implemented completely, swaraj would be ushered in within a year.

## 3. Polity

### 3.1. Right To Protest

- Fight for Independence
- Mohandas Karamchand Gandhi aka Mahatma Gandhi, who is also known as the father of the Indian nation taught the Indians citizens, the power of peaceful protest.
- Minorities, Students, Activists, Farmers.
- Since 'Law and Order' is a State subject, the permissions to organise a protest will vary from state to state.
- Article 19(1)(a) of the Constitution states that right to free speech and expression. It includes that every person has the right to express their personal opinions but subjected to reasonable restrictions.
- Article 19(1)(b) states about the right to assemble peaceably and without arms. Thereby, the right to peaceful protest is bestowed to Indian citizens by our Constitution.
- Article 51A makes it a fundamental duty for every person to safeguard public property and to avoid violence during the protests and resorting to violence during public protests results in infringement of key fundamental duty of citizens.
- Article 19(2) imposes reasonable restrictions on the right to assemble peaceably and without arms and to freedom of speech and expression as none of these rights are absolute in nature.

#### What are these reasonable restrictions?

- If the security of the state is in jeopardy;
- If the friendly relationship we share with a neighbouring country is at stake;
- If public order is disturbed;
- If there is contempt of court;
- If the sovereignty and integrity of India are threatened.
- Section 144 of the Cr. PC empowers the Magistrate to issue orders in 'urgent cases of nuisance'. It revolves around the idea of unlawful assembly and prevents people from assembling in a particular place to protest or agitate.
- In the case of *S. Rangarajan v. Jagjivan Ram* (1989) 2 SCC 574, the Supreme Court noted, "the problem of defining the area of freedom of expression when it appears to conflict with the various social interests enumerated under Article 19(2) may briefly be touched upon here. There does indeed have to be a compromise between the interest of freedom of expression and special interests. But we cannot simply balance the two interests as if they are of equal weight."
- In *Re-Ramlila Maidan Incident Dt vs Home Secretary and Ors* (W.P CrI No.122 of 2011), the Supreme Court contextualised freedom of speech and expression as the essence of a democratic system. "There could be no expression without these rights. Liberty of thought enables liberty of expression. Attainment of the preambled liberties is eternally connected to the liberty of expression."

## 4. Economy

### 4.1. What is Potential GDP

- Potential output shows the level that could be achieved.
- It is the level of output that an economy can produce at a constant inflation rate.

#### Can We Produce More than the Potential GDP

- Yes, an economy can temporarily produce more than its potential level of output.
- But it comes at the cost of rising inflation.

#### WHAT ARE THE FACTORS ON WHICH POTENTIAL GDP DEPENDS

#### Potential output depends on the:

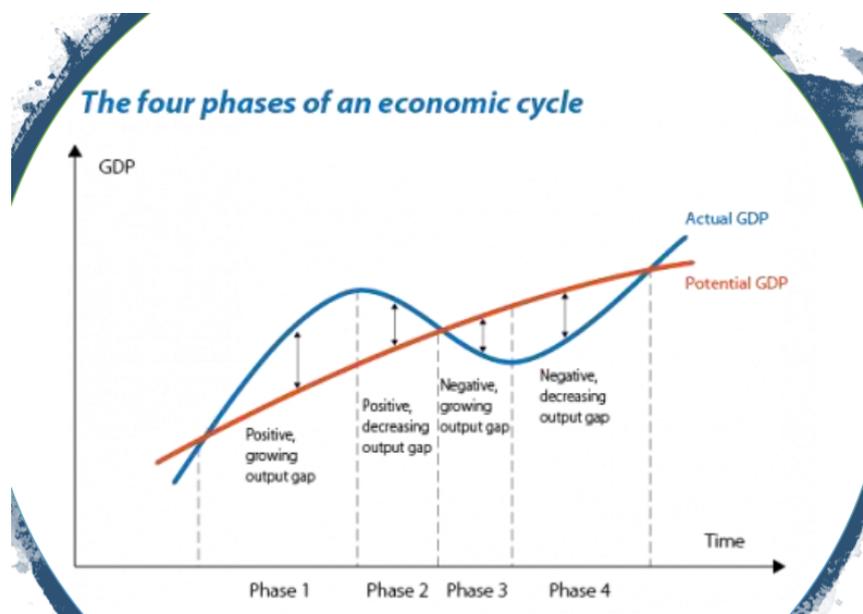
- Capital stock.
- Potential labour force (which depends on demographic factors and on participation rates).
- Non-accelerating inflation rate of unemployment (NAIRU).
- The level of labour efficiency.

#### Output Gap

- The output gap is an economic measure of the difference between the actual output of an economy and its potential output.
- Just as GDP can rise or fall, the output gap can go in two directions: positive and negative.
- Neither is ideal.

#### +ve and -ve Output Gap

- A positive output gap occurs when actual output is more than full-capacity output.
- This happens when demand is very high and, to meet that demand, factories and workers operate far above their most efficient capacity.



- A negative output gap occurs when actual output is less than what an economy could produce at full capacity.
- A negative gap means that there is spare capacity, or slack, in the economy due to weak demand.
- An output gap suggests that an economy is running at an inefficient rate—either overworking or underworking its resources.

### **Use of Potential GDP In Policymaking**

- The output gap can play a central role in policymaking.
- For many central banks, maintaining full employment is a policy goal.
- Full employment corresponds to an output gap of zero.
- Nearly all central banks seek to keep inflation under control, and the output gap is a key determinant of inflation pressure.
- Fiscal policy that is expansionary—that raises aggregate demand by increasing government spending or lowering taxes— can be used to close a negative output gap.
- By contrast, when there is a positive output gap, contractionary or “tight” fiscal policy is adopted to reduce demand and combat inflation through lower spending and/or higher taxes.

### **UPSC & Potential GDP**

#### **UPSC MAINS 2020**

- Define potential GDP and explain its determinants.
- What are the factors that have been inhibiting India from realizing its potential GDP?

(Answer in 150 words) 10 Marks.

## 5. Environment

### 5.1. National Action Plan for Vulture Conservation 2020-2025

#### Introduction

- India has nine species of vultures in the wild. These are the-
  - ✓ Oriental White-backed Vulture (*Gyps bengalensis*)
  - ✓ Slender billed Vulture (*Gyps tenuirostris*)
  - ✓ Long billed Vulture (*Gyps indicus*)
  - ✓ Egyptian Vulture (*Nephron percnopterus*)
  - ✓ Red Headed Vulture (*Sarcogyps calvus*)
  - ✓ Indian Griffon Vulture (*Gyps fulvus*)
  - ✓ Himalayan Griffon (*Gyps himalayensis*)
  - ✓ Cinereous Vulture (*Aegypius monachus*)
  - ✓ Bearded Vulture or Lammergeier (*Gypaetus barbatus*).

#### The population of three species i.e.

- ✓ White-backed Vulture
- ✓ Slender billed Vulture
- ✓ Long billed Vulture
- In the wild has declined drastically over the past decade.
- The decline of *Gyps* genus in India has been put at 97% by 2005.
- The International Union for Conservation of Nature (IUCN) has declared all these three species in its highest risk category -Critically Endangered.

#### Importance of Vultures

- The ecological, social and cultural significance of vultures in India may be summed up as -
  - ✓ Scavenging on animal carcasses of animals and thereby helping keep the environment clean
  - ✓ Disposal of dead bodies as per the religious practices of the Parsi community.
- Removal of a major scavenger from the ecosystem will affect the equilibrium between populations of other scavenging species and/or result in increase in putrefying carcasses.
- In the absence of carcass disposing mechanisms, vulture declines may lead to an increase in the number of putrefying animal carcasses in the country side.
- In some areas the population of feral dogs, being the main scavenging species in the absence of vultures, has been observed to have increased.

- Both increases in putrefying carcasses and changes in the scavenger populations have associated disease risks for wildlife, livestock and humans.
- In the absence of any alternative mode of disposal of animal carcasses, they continue to be disposed off in the open, and with increasing numbers of feral dogs, there is increased risk of spread of rabies, and livestock borne diseases like anthrax.
- The decline in vultures has also affected the traditional custom of the Parsis of placing their dead in the 'Towers of Silence' for vultures to feed upon.

## Threat to Vultures

- Neck drooping' was first observed in Keoladeo National Park, where birds would exhibit this behaviour for protracted periods over several weeks before collapsing and falling out of trees, at the point of, or just prior to death.
- Visceral gout, an accumulation of uric acid within tissues and on the surfaces of internal organs, was observed in 85% of dead vultures found. Death was caused by renal failure, Experiments showed that captive vultures are highly susceptible to Diclofenac, and are killed by kidney failure within a short time of feeding on the carcass of an animal treated with the normal veterinary dose.

## Action Plan for Vulture Conservation 2020 - 2025

- The action plan was approved by the National Board for Wildlife (NBWL) October 5, 2020. An earlier one was formulated in 2006 for three years.
- The new plan has laid out strategies and actions to stem the decline in vulture population, especially of the three Gyps species:
  - ✓ 1. Oriental white-backed vulture (*Gyps bengalensis*)
  - ✓ 2. Slender-billed vulture (*Gyps tenuirostris*)
  - ✓ 3. Long-billed vulture (*Gyps indicus*)
- This would be done through both ex-situ and in-situ conservation.
- The plan has also suggested that new veterinary non-steroidal anti-inflammatory drugs (NSAIDs) be tested on vultures before their commercial release. NSAIDs often poisons cattle whose carcasses the birds prey on.

## Features

- Important objectives for the Action Plan for Vulture Conservation 2020-2025 (APVC) are:
  - ✓ Prevent the poisoning of the principal food of vultures, the cattle carcasses, with veterinary NSAIDs, by ensuring that sale of veterinary NSAIDs is regulated and is disbursed only on prescription and by ensuring that treatment of livestock is done only by qualified veterinarians.
  - ✓ Carry out safety testing of available molecules of veterinary NSAIDs on vultures. The new molecules should be introduced in the market only after they are proved to be safe following safety testing on vultures.
  - ✓ The Drugs Controller General of India must institute a system that automatically removes a drug from veterinary use if it is found to be toxic to vultures. Such a system would ensure that drugs other than diclofenac that are toxic to vultures like aceclofenac and ketoprofen are banned for

veterinary use.

- ✓ Conservation breeding of red-Headed vultures and Egyptian vultures and the establishment at least one vulture-safe zone in each state for the conservation of the remnant populations in that state. It is proposed to set up one centre each in Uttar Pradesh, Tripura, Maharashtra, Karnataka and Tamil Nadu, which will cover most parts of the country.
- ✓ Four rescue centres have been proposed for different geographical areas like Pinjore in the north, Bhopal in Central India, Guwahati in Northeast India and Hyderabad in South India.
- ✓ Coordinated nation-wide vulture counting, involving forest departments, the Bombay Natural History Society, research institutes, non-profits and members of the public.
- ✓ A database on emerging threats to vulture conservation, including collision and electrocution, unintentional poisoning, etc.

## 6. Science & Technology

### 6.1.COVID-19 Vaccination in India

- COVID-19 vaccination drive will begin on Jan 16
  - ✓ Priority given to healthcare and frontline workers (around 3 crore), followed by those above 50 years of age and the under-50 population groups with co-morbidities (27 crore).
  - ✓ People with active infection or associated symptoms not advised to come to vaccination camps. They may seek vaccine 14 days after symptoms abate.
  - ✓ Taking vaccine is entirely voluntary
- India has approved two vaccines – Covishield and Covaxin – for emergency use
  - ✓ Both are two-dose vaccines.
  - ✓ Both are easy to store as they require to be kept at 2-8 degree Celsius. Most vaccines commonly used in India are kept at this temperature range.

#### CoWIN App

- Covid Vaccine Intelligence Network is repurposed from the e-VIN platform that will provide realtime information of vaccine stocks, their storage temperature and individualised tracking of beneficiaries.
- Currently self-registration is not allowed on the application.
- At a later stage of implementation, Co-WIN will also be available as an application or as a website in multiple Indian languages so that beneficiaries can access it to keep track of their own progress and be connected organically to the system, if questions were to arise. It will also be a tool for others to “register” for a vaccine once the first line of targeted beneficiaries is cleared.

#### Covishield

- Developed by Oxford University scientists in collaboration with pharmaceutical company AstraZeneca.
- Its trial in India undertaken by Serum Institute of India (SII). SII is also manufacturing the same for mass vaccination drive.
- Developed using the adenovirus that causes common cold infections among chimpanzees. Its genetic material is same as that of the spike protein of SARS-CoV-2 coronavirus.
- It is developed using a weakened version of adenovirus.
- Efficiency pegged at 70 per cent (far below than the vaccines developed by Pfizer-NBiotech and Moderna, but above the qualifying efficacy benchmark of 50 per cent set by several countries)

#### Covaxin

- Developed by Bharat Biotech in collaboration with ICMR.
- Trial is in final stage.
- Developed using dead coronavirus (inactivated vaccine).
- No efficacy rate made public as of now.