



# IAS PARLIAMENT

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## Prelim Bits 04-06-2023 & 05-06-2023 | UPSC Daily Current Affairs

### Kavach System

*In the recent happening of Odisha train accident, the KAVACH system is not installed in the mishaped trains.*

- It is an indigenously developed Automatic Train Protection (ATP) system by the Research Design and Standards Organisation (RDSO) in collaboration with the Indian industry.
- It is a state-of-the-art electronic system with Safety Integrity Level-4 (SIL-4) standards.
- **SIL Standards** - Safety Integrity Level (SIL) is a measure of the reliability of the safety function performing to specification.
- 4 SILs are defined - SIL 4 the most dependable and SIL 1 the least.
- **Objective** - To provide protection by preventing trains to pass the signal at Red and avoid collision.
- It activates the train's braking system automatically if the driver fails to control the train as per speed restrictions.

### Working of Kavach

- Traffic collision avoidance system (TCAS) is equipped with on board the locomotive and transmission towers at stations.
- It is connected with [Radio Frequency Identification \(RFID\) tags](#), helps in two-way communication between the station master and loco-pilot to convey any emergency message.
- The instrument panel inside the cabin helps the loco-pilot know about the signal in advance without visual sighting, and the permissible speeds to be maintained.
- If a red signal is jumped and 2 trains come face to face on the same line, the technology ***automatically*** takes over and applies sudden brakes.
- Additionally, the hooter activates by itself when approaching a level crossing which serves as a big boon to loco-pilots during fog conditions when visibility is low.
- The system also relays SoS messages during emergency situations.
- An added feature is the centralised live monitoring of train movements through the Network Monitor System.



## References

[The Hindu | What is Kavach?](#)

## Adverse Possession

*The 22<sup>nd</sup> Law Commission has said in its recent report that there is no justification for introducing any change in the law relating to adverse possession.*

- It is a legal concept that allows a person who has unlawfully occupied someone else's land for a certain period of time to claim legal ownership of that land.
- In India, adverse possession has been a part of the legal framework for a long time and is rooted in the idea that land must not be left vacant and instead be put to judicious use.
- The law on adverse possession is contained in the *Limitation Act, 1963*.
- **Limitation Act, 1963** - Under the Act, any person in possession of private land for over 12 years or government land for over 30 years can become the owner of that property.

## Supreme Court's criticism

- The law permitting adverse possession has been condemned by the Supreme Court of India.
- It observed that the law of adverse possession ousts an owner on the basis of inaction within limitation and is irrational, illogical, and wholly disproportionate.

## Law Commission's stand

- The 22<sup>nd</sup> Law Commission in its 280<sup>th</sup> report has taken a different stand vis-a-vis the Supreme Court.
- It advocates the preservation of law on adverse possession as they currently exist on the law book.
- The report states that there is also no justification to enlarge the period of 12 years under Articles 64, or 65.
- However, two of its *ex officio* members, filed a dissent note saying that the law promotes false claims and recommended for the law to be struck down.

## References

[The Indian Express | What is Adverse possession?](#)

## Biochar

- Biochar is a carbon-rich material that is made from biomass through a thermochemical conversion process known as **pyrolysis**.
- **Pyrolysis** - In this process, organic materials, such as wood chips, leaf litter or dead plants, are burned in a container with very little oxygen.

- As the materials burn, they release little to no contaminating fumes and the organic material is converted into biochar, a stable form of carbon that can't easily escape into the atmosphere.
- The energy or heat created during pyrolysis can be captured and used as a form of clean energy.
- **Physical Attribute** - Biochar is black, highly porous, lightweight, fine-grained and has a large surface area.
- Approximately 70% of its composition is carbon.
- The remaining percentage consists of nitrogen, hydrogen and oxygen among other elements.
- It is produced using a specific process to reduce contamination and safely store carbon.

*According to the UN's Intergovernmental Panel on Climate Change (IPCC), biochar could potentially be used to capture 2.6 billion of the 40 billion tonnes of CO<sub>2</sub> currently produced by humanity each year.*

## Advantages

- Enhancing soil structure
- Improves soil quality
- Produces energy as a byproduct
- Increasing water retention and aggregation
- Decreasing acidity
- Reducing nitrous oxide emissions
- Improving porosity
- Regulating nitrogen leaching
- Improving electrical conductivity
- Improving microbial properties

*One tonne of biochar or bio coal can stock the equivalent of 2.5 to 3 tonnes of CO<sub>2</sub>*

## Role of biochar in climate change

- Biochar production is a **carbon-negative process**, which means that it actually reduces CO<sub>2</sub> in the atmosphere.
- In the process, the unstable carbon is converted into a stable form of carbon that is then stored in the biochar.
- When biochar is applied to the soil, it stores the carbon in a secure place for potentially hundreds or thousands of years.
- By heating the feedstocks and transforming their carbon content into a stable structure that doesn't react to oxygen, biochar technology ultimately reduces CO<sub>2</sub> in the atmosphere.
- Biochar also contributes to the mitigation of climate change by enriching the soils and

reducing the need for chemical fertilizers, which in turn lowers greenhouse gas emissions.

- The improved soil fertility also stimulates the growth of plants, which consume CO<sub>2</sub>.

## References

1. [The Hindu | Biochar](#)
2. [Regeneration International | What-is-biochar](#)

## Bima Sugam

*IRDAI has set up a 24-member committee to synergise Bima Vahak, Bima Vistaar and the digital platform - Bima Sugam.*

- It is a one-stop online portal for all insurance related queries, policy purchase, claim settlement and insurance advice.
- Web aggregators, brokers, insurance agents, bank agents, etc would act as facilitators on this platform for selling insurance policies.
- The portal would provide all such facilities to policyholders having an e-insurance account (E-IA).
- Several insurance companies (both general and life insurers) would become major shareholders of the Bima Sugam platform.

*IRDAI's goal - Insurance for all by 2047*

## Bima Vahak

- It is another initiative by the IRDAI to reach the last mile.
- It refers to a dedicated distribution channel to reach out to every Gram Panchayat.
- Each Gram Panchayat would have a 'Bima Vahak' who would be tasked to sell and service simple parametric bundled insurance products.
- Bima Vahak intends to form a women-centric insurance distribution channel.
- The initiative will foster greater trust and build awareness about insurance products in the rural areas of India.
- The activities of Bima Vahak range from collection of proposal information, KYC documents and submissions to coordination and support in policy and claims-related servicing.
- However, the insurer will remain responsible for ensuring KYC and Anti-Money Laundering compliance with respect to the policies sourced through the Bima Vahaks.

## Bima Vistaar

- It will target the untapped geographies and provide a social safety net for rural population.
- It aims to develop and suggest an affordable, accessible, and comprehensive cover for

the rural population.

- It is currently under processing and is going to be launched on the insurance regulator's pet project Bima Sugam.

## References

[The Economic Times| Bima Sugam, Bima vahak, Bima vistaar](#)

## Global Vaccine Research Collaborative

*India urges G-20 countries to join the proposed vaccine research collaborative on the sidelines of the 3<sup>rd</sup> meeting of the [G-20 Health Working Group](#).*

- **Aim** - It aims to leverage expertise and resources from various stakeholders to expedite vaccine development and mitigate the impact of future pandemics.
- The Department of Pharmaceuticals is working with a non-profit Program for Appropriate Technology in Health (PATH) and the Coalition for Epidemic Preparedness Innovations (CEPI) to build this collaborative.
- This initiative will focus on addressing major gaps in vaccine R&D before the next pandemic, establishing a structure and principles for better preparedness.
- It will create a mechanism to improve coordination and foster an enabling environment for vaccine R&D.

## References

[The Hindu| Global Vaccine Research Collaborative](#)



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