



ECOBUZZ

A BUZZ TO THE GREEN FUTURE!!

RIO SUMMIT 1992
21 KEY AGENDAS

DECEMBER'2025
EDITION

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Greetings from Faculty of Law, GLS University!

After a successful series on Sustainable Development Goals, I am very happy to learn that for the next EcoBuzz series we explore the five basic elements of nature –the *panchamahabhutas* – which inhere the properties of earth (prithvi), water (jala), fire (tejas), wind (vayu) and space (akasha).

Reconnecting to the nature outside of us can help us reconnect to our true, inner nature. When we spend more time outside in the elements, we start to rebalance ourselves physically, mentally and energetically.

The current edition of EcoBuzz shall focus on the element “Prithvi” – the Earth. It’s surprising just how easily we can lose connection to the earth. Spending long periods indoors, driving cars and fixating on screens all creates a disconnection between ourselves and the earth. The longer we’re disconnected from the earth and the outside world, the more we forget our interconnected role within nature. Thus, the more we tend to focus on ‘I, me, my’ – the ego.

Our Mother Earth is currently dealing with a wide range of issues, despite efforts in recent decades to address environmental challenges. Due to the terrifying pace at which the Environment is being exploited the legal framework for addressing environmental issues at the global and domestic levels seems inadequate without the collective effort of the human-kind.

I feel happy that the students have decided the ‘MOTHER EARTH’ as the theme for this month's EcoBuzz and our constant efforts towards a green and clean Earth, will continue to raise awareness on the alarming issues that the mother Earth is facing.

Let’s come together for organised actions with the sole objective of saving mother earth while thriving to keep it alive, green, and clean.

Regards,
Dr. Mayuri H. Pandya
Dean, Faculty of Law, GLS University

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National Updates

● Amendment in GEAC Rules (MoEF&CC):

The Genetic Engineering Appraisal Committee (GEAC) rules were amended to improve transparency, expert selection procedures, and conflict-of-interest norms.

The objective is to ensure ethical decision-making and safe approval of genetically modified crops and organisms.

● DBT Biosafety & BSL-3 Laboratory Guidelines (2024):

The Department of Biotechnology issued updated guidelines for the establishment and certification of BSL-3 laboratories.

The aim is to strengthen biosafety standards, containment protocols, and laboratory safety for high-risk biological research.

● Expansion of National Biosafety Laboratory Network:

The government approved the expansion of BSL-2 and BSL-3 laboratories across India under the MoHFW and DHR.

This move enhances disease surveillance, epidemic preparedness, and safe handling of infectious pathogens.

State Updates

● Gujarat - Biotechnology Policy (2022-27):

Gujarat's Biotechnology Policy promotes the growth of the biotechnology sector through financial incentives, incubation centres, and strong industry-academia collaboration. The policy also emphasizes regulatory compliance, biosafety standards, and the development of safe and sustainable biotechnology manufacturing practices within the state.

● Gujarat - Strengthening Biotech Infrastructure and Incubation:

The state has focused on strengthening biotechnology infrastructure by supporting research parks, innovation hubs, and startup incubation centres. These initiatives encourage innovation while ensuring adherence to biosafety norms and ethical research practices.

● Gujarat - Regulatory Oversight and Biosafety Compliance:

Gujarat has reinforced regulatory oversight through coordination with national authorities to ensure compliance with biosafety and environmental regulations. Regular monitoring, capacity-building programmes, and awareness initiatives aim to promote responsible biotechnology research and application across the

मणिर्नगच्छेत्प्रवृद्धं शनं वायुः पतञ्जलिः।
प्रतिवासोमा पिशाचं ग्रामवृद्धं पुनः शंछि।

One should not pollute nature, its sources, and keep them undisturbed for the well-being of all beings, as nature's power is boundless. Living in harmony with nature brings peace and avoids harm to all beings.

GREEN JUSTICE

Gene Campaign v. Union of India (2024)

This case dealt with the approval of genetically modified mustard (DMH-11) without adequate assessment of its potential carcinogenic effects or meaningful stakeholder consultation. Justice B.V. Nagarathna quashed the approval, holding that the decision violated the precautionary principle and the doctrine of intergenerational equity. The Court emphasized that biotechnology approvals must be science-based, transparent, and participatory. It mandated stakeholder consultations, proof of non-carcinogenic impact, involvement of health experts, and formulation of a national GM crop policy to ensure ethical and safe use of biotechnology.

Air Quality Monitoring Committee v. States of Punjab & Haryana (2024)

Although primarily concerning air pollution, this case highlights the governance failures relevant to environmental and biotechnological regulation. The Supreme Court criticized the Commission for Air Quality Management (CAQM) for failing to initiate prosecutions against stubble burning, despite technological alternatives being available. The Court stressed that mere meetings and policy discussions are insufficient without strict enforcement. The judgment underlines the importance of effective regulatory action when scientific and technological solutions exist, reinforcing accountability in environmental and technological governance.

Haryana State Pollution Control Board's Winter Action Plan (2024-25)

In response to severe air pollution during winter months, the Haryana State Pollution Control Board introduced a comprehensive Winter Action Plan targeting pollution from vehicles, industries, construction activities, and agro-residue burning. The plan integrates national frameworks such as the National Clean Air Programme with state-specific enforcement strategies. It reflects the role of scientific planning, data monitoring, and stakeholder participation in managing environmental risks associated with technological and industrial activities.

आत्मनरक्षितं भवेत् किम् आत्मं वासमं स्तुतिम् ।

विनाःपरम् आदितिः नार्थमनं हितमात्मनः ॥

One who is free from excessive desire and attachment lives peacefully. Avoiding unnecessary wants allows one to focus on a higher purpose and sustainable living.

GREEN LAWS

1. Environment (Protection) Act, 1986

This is the core environmental law under which biotechnology regulation in India is actually implemented. Provides the legal basis for controlling activities that might impact the environment, including handling of genetically modified organisms (GMOs). Under this Act, the Rules for Manufacture, Use, Import, Export & Storage of Hazardous Micro-organisms, Genetically Engineered Organisms or Cells, 1989 were notified – the main biosafety rules in force. These Rules govern the manufacture, research, release, import/export and storage of GMOs/hazardous microorganisms to ensure environmental and human safety.

2. Biosafety Rules – 1989 (under EPA)

These rules specifically regulate genetic manipulation, research, field trials, environmental release and storage of genetically engineered organisms. Often called the biosafety rules, these specifically regulate genetic manipulation and GE organisms. The Review Committee on Genetic Manipulation (RCGM) under the Department of Biotechnology, evaluates research proposals and oversees biosafety compliance at the research and development stage. These rules are continuously updated with guidelines and SOPs for safe research and application of biotechnology.

3. Biological Diversity Act, 2002

Enacted to give effect to the Convention on Biological Diversity (CBD). Governs access to biological resources and associated traditional knowledge, and ensures fair and equitable sharing of benefits arising from their use. Implements a three-tier institutional structure: National Biodiversity Authority (NBA), State Biodiversity Boards (SBBs), and Biodiversity Management Committees (BMCs).

4. Food Safety & Standards Act, 2006

Regulates food safety – including foods derived via biotechnological methods (e.g., GM foods) – through the Food Safety and Standards Authority of India (FSSAI).

5. National Biotechnology Development Strategy (Policy)

Aims to balance scientific innovation with environmental protection and public welfare. Encouraging responsible research and development in biotechnology. Strengthening biosafety regulations and risk-assessment mechanisms. Promoting environmentally friendly applications such as bio-fertilisers, bio-pesticides and clean bio-energy. Reinforces the precautionary approach by integrating environmental safeguards into biotechnology innovation.

नेहाभिक्रमनाशोऽस्तिप्रत्यवायो न विद्यते |
स्वल्पमप्यस्यधर्मस्य त्रायते महतो भयात् ||

No effort in the pursuit of righteousness goes to waste. Even a little effort in this direction protects from great dangers.

MANAGING BIOTECHNOLOGY: ENSURING SAFE AND ETHICAL USE OF BIOTECH

-Mitanshi Singh

Biotechnology has emerged as a powerful tool capable of transforming agriculture, healthcare, and environmental management. While its potential benefits are immense, unregulated or unethical use poses serious risks to human health, biodiversity, and ecological balance. Managing biotechnology therefore requires a robust legal framework grounded in precaution, transparency, accountability, and public participation.

One of the most significant judicial interventions in this domain is *Gene Campaign v. Union of India* (2024), which addressed the approval of genetically modified mustard (DMH-11). The Supreme Court quashed the approval on the ground that it was granted without adequate assessment of carcinogenic risks and without meaningful stakeholder consultation. The Court emphasized the precautionary principle and intergenerational equity, holding that technological advancement cannot override public health and environmental safety. It further mandated stakeholder participation, involvement of health experts, and the formulation of a national policy on genetically modified crops to ensure ethical governance of biotechnology.

The importance of effective regulatory enforcement was reiterated in *Air Quality Monitoring Committee v. States of Punjab & Haryana* (2024). Although the case primarily dealt with stubble burning and air pollution, it highlighted serious governance failures where scientific solutions existed but were poorly implemented. The Supreme Court criticised regulatory authorities for holding ineffective meetings and failing to initiate prosecutions. The judgment underscores that scientific and technological interventions, including biotech-based solutions, must be backed by strict enforcement mechanisms rather than symbolic compliance.

Complementing judicial oversight, administrative initiatives such as the Haryana State Pollution Control Board's Winter Action Plan (2024–25) demonstrate the role of science-driven governance. The plan integrates monitoring, enforcement, and stakeholder participation to address pollution from multiple sources. Such frameworks reflect how technological tools must be implemented within strong institutional and regulatory systems to achieve environmental and public health objectives.

Further reinforcing accountability, *Arvind Kumar Agrawal v. Secretary to Government of Tamil Nadu* (2023) dealt with environmental damage arising from illegal construction in violation of pollution norms. The Supreme Court upheld a substantial penalty, affirming the polluter-pays principle and recognising health impacts as a key component of environmental compensation. This judgment is relevant to biotechnology governance as it reinforces that technological or developmental activities must operate within ethical and legal boundaries.

In conclusion, managing biotechnology in India demands a careful balance between innovation and regulation. Judicial pronouncements and policy measures collectively stress that biotechnology must be governed through precaution, transparency, stakeholder participation, and strict enforcement. Ethical and safe use of biotechnology is not merely a scientific concern but a constitutional obligation linked to environmental protection and the right to life.

Gene Campaign v. Union of India, (2024) Supreme Court of India.
Air Quality Monitoring Committee v. State of Punjab & Haryana, (2024) Supreme Court of India.
Arvind Kumar Agrawal v. Secretary to Government of Tamil Nadu, (2023) Supreme Court of India.
Haryana State Pollution Control Board, Winter Action Plan 2024–25.

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UPCOMING EVENTS

NATIONAL EVENTS

International Conference on Biotechnology and Biomedical Engineering

January 11, 2025 | India

Focuses on recent advances in biotechnology and biomedical engineering with emphasis on safe research practices and ethical innovation.

Annual Meeting of the Indian Society of Human Genetics

January 20–22, 2025 | India

Addresses human genetics, genomic research, and ethical concerns related to biotechnology in healthcare and society.

Workshop on In Vivo and In Vitro Models for Preclinical Research

January 27–29, 2025 | India

Concentrates on biosafety, regulatory compliance, and ethical testing frameworks in biotechnology research.

National Conference on Biotechnology Innovations and Sustainability

January 31, 2025 | India

Highlights responsible use of biotechnology for sustainable development and environmental protection.

INTERNATIONAL EVENTS

International Conference on Molecular Biology, Biochemistry and Biotechnology (ICMBBB)

January 5, 2025 | Multiple international locations

Discusses molecular and biotechnological advancements with attention to ethical research standards.

International Conference on Biotechnology and Bioengineering (ICBB)

January 5, 2025 | Global venues

Explores applications of bioengineering while emphasizing safety, regulation, and responsible innovation.

World Biological Science and Technology Conference (BioST-2025)

January 9–11, 2025 | Macau, China

Focuses on global developments in biological sciences and biotechnology governance.

Arab Health 2025

January 27–29, 2025 | Dubai, UAE

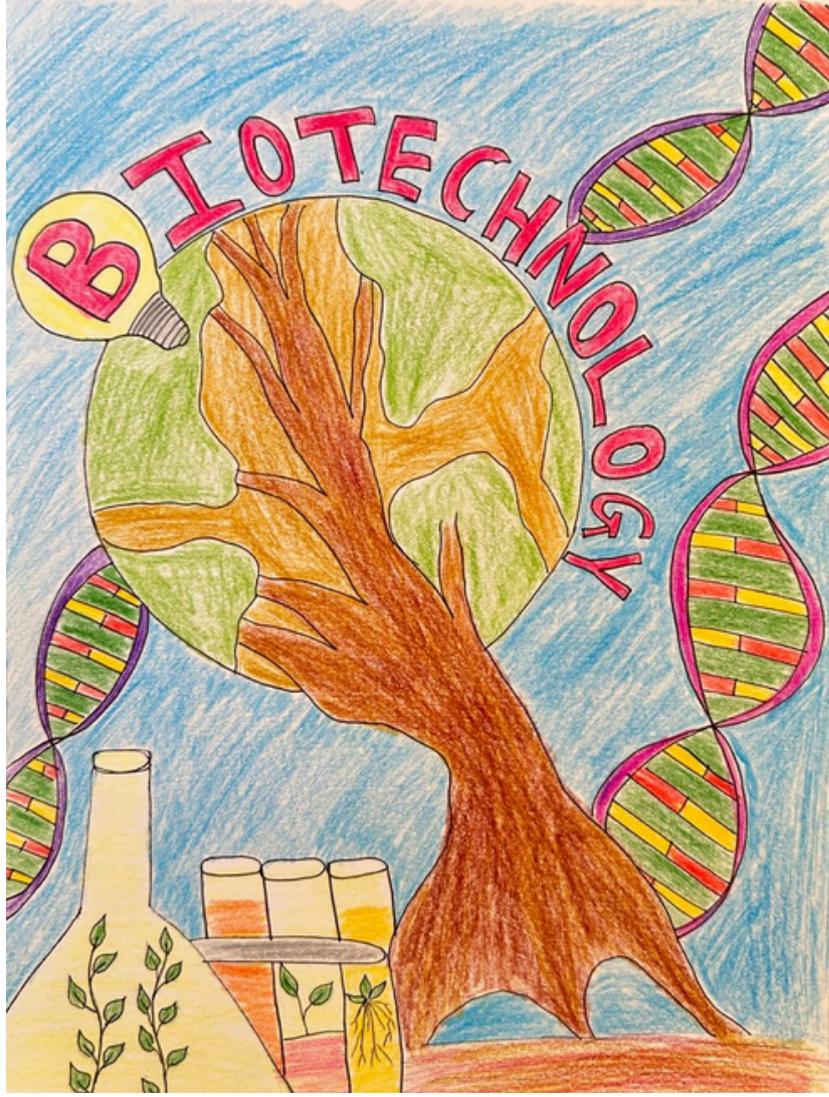
Covers healthcare biotechnology, medical innovation, and ethical use of advanced biomedical technologies.

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CREATIVE CORNER



THIS VIBRANT ILLUSTRATION HIGHLIGHTS THE INTERCONNECTION BETWEEN NATURE AND SCIENTIFIC INNOVATION THROUGH THE LENS OF BIOTECHNOLOGY. IT FEATURES A CENTRAL GLOBE SUPPORTED BY A TREE-LIKE HAND, FRAMED BY COLORFUL DOUBLE-HELIX DNA STRANDS AND LABORATORY EQUIPMENT, INCLUDING A CONICAL FLASK AND TEST TUBES CONTAINING BOTANICAL SAMPLES. CROWNED WITH THE WORD “BIOTECHNOLOGY“ AND A BRIGHT LIGHTBULB, THE ARTWORK SYMBOLIZES THE INNOVATIVE ROLE OF GENETIC SCIENCE IN SOLVING GLOBAL ENVIRONMENTAL CHALLENGES AND ADVANCING AGRICULTURAL SUSTAINABILITY.

संगच्छध्वंसंवदध्वंसंवोमनांसिजानताम्।
देवाभागंयथापूर्वसंजानानाउपासते॥

Move together, speak together, let your minds be in harmony — just as the ancient gods shared their portion in harmony.