PRATIYOGITA DARPAN

Gist of Essential Magazines

(Yojana, Kurukshetra, Down to Earth and Science Reporter)

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Indian Constitution

GIST
OF
YOJANA

1. "75 YEARS OF THE INDIAN CONSTITUTION : A JOURNEY TOWARDS ABSOLUTE GLORY"

The Indian Constitution, adopted on 26 November, 1949 and coming into effect on 26 January, 1950, has been a cornerstone of Indian democracy, upholding the principles of justice, liberty, equality and fraternity. Marking 75 years, this document has played a foundational role in shaping India into a democratic, inclusive and progressive nation. Over the decades, it has demonstrated remarkable resilience, evolving in response to changing socio-political dynamics while preserving its core values.

Landmark Events in the Making of the Indian Constitution

1. **Government of India Act, 1935 :** This Act was a significant precursor to the Indian Constitution, introducing provincial autonomy and establishing the federal structure that would later influence India's governance model.

2. **Post-World War II Developments :** Following WWII, growing demands for independence led to the Cabinet Mission Plan of 1946, which proposed the formation of the Constituent Assembly to draft a constitution for independent India.

3. **Formation of the Constituent Assembly :**
   - **First Meeting on 9 December, 1946 :** The Constituent Assembly convened for the first time, initiating the drafting process.
   - **Adoption of the Objective Resolution on 13 December, 1946 :** This resolution, moved by Jawaharlal Nehru, outlined the guiding principles of the Constitution.
   - **Drafting Committee :** Chaired by Dr. B.R. Ambedkar, the committee drafted the Constitution, incorporating diverse views and principles.

4. **Adoption of the Constitution :**
   - **26 November, 1949 :** The Constitution was adopted by the Assembly (now celebrated as Constitution Day).

- **26 January, 1950 :** The Constitution came into force, marking Republic Day and establishing India as a Republic.
- **First Amendment (1951) :** This amendment addressed land reform issues and introduced limitations on freedom of speech, setting a precedent for subsequent amendments.

Evolution of Constitutional Values

The Indian Constitution has undergone over 100 amendments, reflecting its flexibility and adaptability to societal changes. Ultimately, the Constitution remains a 'living document' that mirrors societal evolution while maintaining its core principles.

Landmark Judgements and Constitutional Interpretation

1. **Kesavananda Bharati *Vs*. State of Kerala (1973) :** Established the sic Structure Doctrine, ensuring that certain fundamental principles of the Constitution remain unalterable.

2. **Minerva Mills Ltd. *Vs*. Union of India (1980) :** Reaffirmed the Basic Structure Doctrine, emphasizing the balance between fundamental rights and directive principles.

3. **Maneka Gandhi *Vs*. Union of India (1978) :** Broadened the interpretation of Article 21 (Right to Life and Personal Liberty), strengthening the protection of individual freedoms.

4. **Vishaka *Vs*. State of Rajasthan (1997) :** Led to the formulation of guidelines to prevent workplace sexual harassment, emphasizing women's rights.

5. **Shayara Bano *Vs*. Union of India (2017) :** Declared instant triple talaq unconstitutional, advancing gender equality & justice.

6. **Navtej Singh Johar *Vs*. Union of India (2018) :** Decriminalized consensual homosexual acts, supporting LGBTQ+ rights.

7. **Joseph Shine *Vs*. Union of India (2018) :** Struck down the adultery law, viewing it as discriminatory.

8. **Justice K.S. Puttaswamy *Vs*. Union of India (2017) :** Recognized the Right to Privacy as intrinsic to Article 21, significantly impacting privacy laws in India.

9. **Abrogation of Article 370 :** The constitutional revocation of Article 370 redefined Jammu & Kashmir's status, illustrating the

dynamic application of constitutional provisions.

Role of the Judiciary in Shaping the Constitution

The judiciary has been instrumental in interpreting and expanding the Constitution through progressive judgements that address evolving societal needs. This proactive approach has preserved the Constitution's relevance and protected citizens' rights, ensuring that it remains a 'living document' that upholds justice, equality and democratic values.

Conclusion

As India celebrates 75 years of its Constitution, this milestone offers an opportunity to reflect on its enduring legacy and achievements. The Indian Constitution, with its adaptability, resilience and commitment to justice, liberty, equality and fraternity, has guided India's journey as a democratic republic. While challenges remain, particularly regarding federalism, inclusivity, and socio-economic equity, the Constitution continues to be a beacon of hope and progress.

2. EVOLUTION OF THE INDIAN CONSTITUTION : CONSTITUTIONAL AMENDMENTS

Historical Background

The Councils Act of 1909, the Government of India Act, 1919 and the Government of India Act, 1935 are three major milestones in India's Constitutional development. The salient features of these acts were the Parliamentary form of government, Rule of Law, Federalism and a strong Central government.

Need for Constitutional Amendments

Amendments allow the Constitution to adapt to new challenges, address current issues, uphold justice and fulfill the changing aspirations of the people. Thus, amendments are essential for the Constitution to remain relevant.

Procedure for Amending the Constitution

The Indian Constitution specifies amendment procedures under Article 368, with three main types :

1. **Simple Majority :** Certain provisions require only a simple majority in both houses of Parliament.
2. **Special Majority :** Most amendments need a special majority, *i.e.*, two-thirds of the members present and voting.
3. **Special Majority with Ratification by States :** Amendments impacting federal structures require ratification by at least half of the states, in addition to a special majority in Parliament.

Does Parliament Have Unbridled Powers to Amend the Constitution ?

1. Shankari Prasad Case (1951) :

- **Judgement :** The Supreme Court ruled that Parliament has the power to amend any part of the Constitution, including Fundamental Rights.
- **Significance :** This affirmed Parliament's unrestrained authority to amend the Constitution under Article 368.

2. Sajjan Singh Case (1964) :

- **Judgement :** The Supreme Court upheld Shankari Prasad's ruling, reiterating Parliament's power to amend any part of the Constitution.

3. Golaknath Case (1967) :

- **Judgement :** The Supreme Court ruled that Parliament could not amend Fundamental Rights, placing a restriction on its power.
- **Significance :** Established that Fundamental Rights were beyond Parliament's amending scope, limiting its authority.

4. 24th Amendment Act (1971) :

- **Context :** Passed in response to Golaknath, it explicitly affirmed Parliament's power to amend any part of the Constitution, including Fundamental Rights.

5. Kesavananda Bharati Case (1973)–Basic Structure Doctrine :

- **Judgement :** The Supreme Court ruled that while Parliament has the power to amend the Constitution, it cannot alter its 'basic structure'.
- **Basic Structure Doctrine :** Certain core principles, such as democracy, secularism, federalism, and judicial review, cannot be amended by Parliament.

6. 42nd Amendment Act (1976)

- **Context :** This 'mini-Constitution' amendment aimed to give Parliament virtually unrestricted power.
- **Significance :** It attempted to curtail judicial review and expand executive power but was later challenged for violating the basic structure.

7. Minerva Mills Case (1980)

- **Judgement :** The Supreme Court struck down parts of the 42nd Amendment that

limited judicial review, reaffirming the basic structure doctrine. Hence, the Parliament cannot alter the Constitution's core principles.

8. IR Coelho Case (2007)

● **Judgement :** Expanded judicial oversight Laws placed under the Ninth Schedule (shielded from judicial review) could be reviewed if they violated the basic structure.

9. 99th Amendment Act (2014) - NJAC and Judicial Appointments :

● **Context :** Sought to establish the National Judicial Appointments Commission (NJAC), reducing the judiciary's role in judicial appointments.

● **Judgement :** The Supreme Court struck down the 99th Amendment, declaring it violated judicial independence, a part of the basic structure.

● **Significance :** Emphasized that amendments undermining judicial independence would be invalid.

Landmark Constitutional Amendments Since 1950

1. **First Amendment Act (1951) :** Addressed land reform, freedom of speech and affirmative action.

2. **Seventh Amendment (1956) :** Reorganized States and Union Territories on linguistic lines.

3. **42nd Amendment (1976) :** Added 'Socialist' and 'Secular' to the Preamble, restricted judicial review and enhancing executive power. Faced rollback after the Minerva Mills judgment.

4. **44th Amendment (1978) :** Reversed parts of the 42nd Amendment, restoring judicial review and curtailing emergency powers.

5. **52nd Amendment (1985) :** Introduced the Anti-Defection Law to prevent political instability.

6. **61st Amendment (1988) :** Reduced the voting age from 21 to 18, empowering youth participation in democracy.

7. **73rd and 74th Amendments (1992) :** Institutionalized Panchayati Raj and Urban Local Bodies, strengthening local governance.

8. **99th Amendment (2014) :** Introduced the NJAC for judicial appointments, later struck down for violating the basic structure.

9. **101st Amendment (2016) :** Implemented the Goods and Services Tax (GST), creating a unified tax structure across India.

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3. ROLE OF THE INDIAN CONSTITUTION IN PROMOTING SOCIAL JUSTICE

The Indian Constitution plays a crucial role in promoting social justice, driven by the concept of transformative constitutionalism. This approach emphasizes the state's role in fostering an equitable society through intervention and enshrined rights.

Transformative Constitutionalism and Social Justice

Transformative constitutionalism in India involves using the Constitution as a tool for social justice, requiring active state intervention to address and rectify social inequalities. This concept was heavily influenced by India's nationalist movement, which envisioned a society rooted in fairness and justice. Through transformative constitutionalism, the Constitution seeks to create a society where all citizens enjoy equal freedoms and opportunities, free from oppression or exploitation.

Distinction from Liberal Constitutionalism

While, liberal constitutions often prioritize individual freedom and limited state power, the Indian Constitution supports active state involvement to curb societal inequalities.

Key Provisions Promoting Social Justice

(a) **'We the People' :** 'We the People' creates a new identity that equalizes opportunities and status for those whose identities were previously shaped by caste, religious and ethnic systems. An 'individual' detached from the principles generated from the framework formed the basis of this identity.

(b) **Universal Adult Franchise :** In a hierarchical society, the establishment of the Univerpsal Adult Franchise, which was founded on the tenets of 'one person, one vote, one value', was revolutionary. Full citizenship in India is on the concept known as the categorical principle of inclusion.

(c) **Abolition of Untouchability :** Untouchability is outlawed in all forms under Article 17 of the Indian Constitution. It aimed to break with the past by putting an end to the long-standing humiliation that some castes had to endure.

(d) Right to Equality : The Constitution recognizes the idea of substantive equality by going beyond the idea of formal equality and stating that special protective laws that advance the interests of marginalised groups are not to be interpreted as unlawful discrimination.

(e) Directive Principles of State Policy : The Directive Principles of State Policy provide a more concise definition of social revolution. The aim of DPSP is to liberate the Indian masses from social and natural constraint.

Conclusion

The idea of transformative Constitutionalism revolves around the ideal of social justice. It focuses on giving the state the power to change society in egalitarian manner.

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4. THE FUTURE OF AI IN INDIA : NAVIGATING PROFILING CONCERNS AND CRIMINAL INVESTIGATIONS

Artificial Intelligence (AI) has transformed various sectors, enhancing efficiency in business, governance and security. However, as AI becomes increasingly integral to data handling, it also brings forth challenges related to privacy and misuse. With India's new *Digital Personal Data Protection Act (DPDP) 2023* and *Bharatiya Nyaya Sanhita (BNS) 2023*, AI's role in data management and criminal investigations faces new challenges.

1. AI and Profiling

- Profiling by AI, whether for content recommendations or consumer behavior predictions, raises concerns over privacy and the misuse of sensitive data.

2. The Digital Personal Data Protection Act (DPDP) 2023

- **Privacy and Rights :** The DPDP Act prioritizes citizens' rights over data and mandates data protection, providing a balance between innovation and privacy.
- **Business and Compliance :** It impacts business processes by setting strict guidelines on data use, aiming to build trust among users.
- **Alignment with Global Standards :** India's DPDP Act aligns with global data privacy norms, such as the EU's General Data Protection Regulation (GDPR).

3. AI's Role in Criminal Investigations

- AI's predictive capabilities support law enforcement, especially in identifying potential suspects and predicting crime patterns.
- However, profiling in criminal investigations raises ethical concerns, especially regarding privacy, discrimination and human rights.

4. Power of AI

- Use of Predictive AI by law enforcement agencies, which is different from e-commerce, requires investment in training and tools, and to build systems that are fair, transparent and accountable to avoid abuse of power.

5. AI in Action at the National Crime Agency (NCA), UK

- The UK's National Crime Agency (NCA) exemplifies how AI can be leveraged in criminal investigations in identifying patterns in criminal activities, helping law enforcement predict and prevent crimes effectively.
- However, ethical frameworks when using AI in law enforcement is required.

### 6. Challenges in AI Adoption for Criminal Justice

- **Ethical Concerns in Profiling :** Profiling by AI in criminal investigations raises concerns around potential biases, discrimination and the risk of profiling based on incomplete or biased data.
- **Privacy and Data Misuse :** The misuse of AI-driven data analytics can infringe on citizens' rights, especially in contexts involving sensitive personal information.
- **Accountability and Transparency :** As AI systems are complex, establishing accountability and ensuring transparency in AI-driven decisions remain critical challenges.

7. The Road Ahead

- **Regulatory Framework and Public Trust :** The DPDP Act and BNS 2023 represent India's steps toward a balanced approach, integrating AI while ensuring transparency and public trust.
- **Responsible AI Practices :** Emphasis on ethical AI use, data privacy and fair practices will be crucial to leveraging AI effectively in criminal justice.
- **Continuous Evaluation and Adaptation :** As AI technology evolves, continuous review and adaptation of regulatory frameworks will be needed to address emerging privacy and ethical concerns, ensuring AI's role remains beneficial and aligned with public welfare.

5. CRIMINAL JUSTICE SYSTEM REFORMS : EVALUATING THE IMPACT OF BNS

India's criminal justice system has undergone a significant transformation with the introduction of three new legal codes : Bharatiya Nyaya Sanhita (BNS), Bharatiya Nagarik Suraksha Sanhita (BNSS) and Bharatiya Sakshya Adhiniyam (BSA). These laws, which came into effect from 1 July, 2024, replace the colonial-era Indian Penal Code (IPC), Criminal Procedure Code (CrPC) and Indian Evidence Act, marking a shift towards a justice-centric approach rather than a purely punitive one.
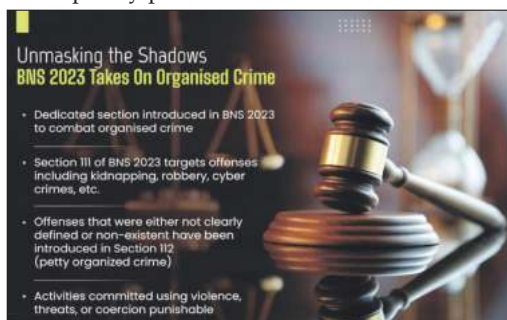
From Punishment to Justice : The New Approach

One of the most significant changes in the Bharatiya Nyaya Sanhita (BNS) is its focus on justice over punishment. While the IPC was largely punitive, the BNS aims for fair treatment of both victims and accused persons, emphasizing timely and impartial justice. This approach seeks to minimize delays and ensure that justice is neither denied nor postponed.

Key Additions and Amendments

The new codes introduce specific offenses and address gaps in the previous legal framework :

- **Section 69 :** Expands the legal definition of sexual assault, including cases where consent was obtained fraudulently.

- **Section 111 :** Targets offenses related to organized crime syndicates, covering activities such as kidnapping for ransom, trafficking, extortion, and cyber offenses.

- **Section 117 :** Provides clearer definitions and stricter penalties for grievous hurt, aligning with the need for improved victim protection.

- Mandates medical treatment for grievous hurt victims, reflecting a victim-centric approach that ensures timely assistance.

Provision for Community Service : A New Form of Punishment

One of the most innovative changes is the introduction of community service as an alternative punishment for minor offenses :

- **Section 304 :** Recognizes community service as a penalty, providing a constructive alternative to incarceration for minor offenses.

- This approach aims to reduce the burden on the prison system and encourage rehabilitation rather than purely punitive measures.

- Community service assignments may include tasks like cleaning public spaces, teaching, or assisting in community programs.

Conclusion

The introduction of Bharatiya Nyaya Sanhita (BNS), Bharatiya Nagarik Suraksha Sanhita (BNSS) and Bharatiya Sakshya Adhiniyam (BSA) marks a paradigm shift in India's criminal justice system. By prioritizing victim rights, streamlining legal procedures and addressing modern crimes, the new laws aim to create a more efficient and fair legal framework.

6. IMPACT OF THE BHARATIYA NYAYA SANHITA (BNS) ON LABOUR DISPUTE RESOLUTION IN INDIA

Historically, labour disputes in India have been regulated by various Central Acts, such as the Industrial Disputes Act (1947) and the Trade Unions Act (1926). These laws aimed to manage labour relations, promote workers' rights and foster industrial development. Recently, the Industrial Relations Code (IRC) of 2020 sought to consolidate these acts, but gaps in efficient dispute resolution and compliance with international standards remained. The introduction of the BNS addresses these gaps by implementing new provisions that emphasize balanced, alternative dispute resolution (ADR) methods, aiming for a more harmonious labour landscape in India.

Key Areas of Focus

1. Dispute Resolution : Labour Issues in India

- **Historical Context :** Labour issues have traditionally been influenced by acts like the

Industrial Disputes Act (1947) and the Trade Unions Act (1926), which provided frameworks for addressing industrial conflicts.

- **Challenges :** The existing framework faced challenges in addressing employer-employee tensions and ensuring fair compensation for workers. Over time, the need for more flexible and efficient dispute resolution methods, aligned with international standards, became evident.

2. Challenges with the Industrial Disputes Act

- **Limited Flexibility :** The Industrial Disputes Act (IDA) was focused on adjudication rather than conciliation or arbitration, often leading to prolonged court battles.

- **Gap in Addressing Wage Disparities :** While, the IDA provided a structure for managing disputes, it lacked mechanisms to address wage inequalities and fair treatment comprehensively.

- **Slow Resolution Process :** The Act relied heavily on formal dispute mechanisms, which were often slow and failed to address urgent labour issues, leading to unrest and strikes.

3. Labour Disputes : Dispute Resolution under the BNS

- **Alternative Dispute Resolution (ADR) Focus :** The BNS introduces a stronger emphasis on ADR mechanisms like arbitration, conciliation and negotiation to handle labour disputes more effectively.

- **Alignment with Global Standards :** The BNS provisions aim to align with international labour standards, addressing issues such as labour exploitation, safe working conditions and fair wage distribution.

- **Employer and Employee Balance :** By focusing on both worker rights and industrial requirements, the BNS encourages a balanced approach, reducing industrial tensions.

4. Practical Challenges and Future Outlook

- **Judicial Interpretation :** The successful implementation of the BNS depends on how well the judiciary interprets and applies the new provisions in varying industrial contexts.

- **Adaptation by Employers and Workers :** The shift to ADR mechanisms will require adaptation by both employers and employees, who may need training and awareness programs to fully benefit from the BNS.

- **Institutional Framework :** For BNS to be effective, a robust institutional framework that includes trained mediators, conciliators and arbitrators is essential.

5. Labour Dispute and BNS : The Path Forward

- **Promoting Efficient Dispute Resolution :** The BNS aims to expedite dispute resolution through ADR, helping reduce industrial disputes and improve relations between labor and management.

- **Encouraging a Collaborative Culture :** By moving away from strictly adversarial dispute resolution, the BNS encourages a more cooperative approach, which could foster better industrial relations in the long term.

- **Future Amendments and Revisions :** As the judiciary applies BNS provisions, further revisions may be required to address emerging labour issues in India's evolving industrial landscape.

7. REDEFINING LAW IN A CYBER AGE : INDIA'S LEGISLATIVE SHIFT AGAINST MODERN CRIME

Unlike conventional crimes, cybercrimes transcend physical boundaries, complicating the process of investigation and prosecution. Cybercriminals exploit vulnerabilities in online systems, often employing sophisticated techniques to evade detection. This evolving landscape demands an updated legal response that can keep pace with the new-age threats.

Introduction of three new laws—Bharatiya Nyaya Sanhita (BNS), Bharatiya Nagrik Suraksha Sanhita (BNSS) and Bharatiya Sakshya Adhiniyam (BSA) provide the foundation for tackling cyber crimes through :

- Addressing the challeges of jurisdiction.
- Evidence collection.
- Prosecution in the digital realm.

Bharatiya Nyaya Sanhita (BNS) : A Modern Approach

The Bharatiya Nyaya Sanhita (BNS) has been crafted with a focus on addressing the unique challenges posed by cybercrime. Key objectives of the BNS include :

- **Enhanced Investigation Powers :** The BNS empowers law enforcement to conduct technology-driven investigations, allowing for faster detection and prosecution of cyber offenders.
- **Streamlined Jurisdictional Procedures :** Given the cross-border nature of many cybercrimes, the BNS includes provisions for seamless collaboration between national and international agencies, facilitating effective legal action.
- **Focus on Digital Evidence :** Recognizing the importance of digital proof in cyber-crime cases, the BNS has adapted its evidence collection procedures, ensuring that digital evidence is handled with utmost care and admissibility.

Supporting Laws : BNSS and BSA

The introduction of the Bharatiya Nagrik Suraksha Sanhita (BNSS) and Bharatiya Sakshya Adhiniyam (BSA) complements the BNS by enhancing the overall framework against cyber threats.

1. Bharatiya Nagrik Suraksha Sanhita (BNSS) :

- This legislation focuses on strengthening citizen security in the digital space. It equips law enforcement agencies with cutting-edge digital tools and techniques, ensuring a robust response to cyber threats.
- BNSS emphasizes the protection of personal data and safeguards against unauthorized access, aiming to build a secure digital environment for Indian citizens.

2. Bharatiya Sakshya Adhiniyam (BSA) :

- The BSA addresses the complexities of digital evidence collection, providing detailed guidelines for the preservation and authentication of digital records.
- It includes provisions to streamline the admission of digital evidence in court, recognizing the unique challenges associated with electronic data.

Conclusion

The implementation of these laws will be council in protecting India's digital infrastructure and safeguarding India's businesses, individuals and institutions from cyber threats.

GIST
OF
KURUKSHETRA

Topic : Social Security & Welfare

November 2024

1. SOCIAL SECURITY VITAL FOR DEVELOPMENT AND PROSPERITY

The International Labour Organization (ILO) defines social protection as a set of policies aimed at reducing poverty and preventing social and economic exclusion.

The World Social Protection Report 2024-26 by the ILO highlights universal social protection as a core aspect of human rights and development. The companion report for Asia and the Pacific addresses the region's unique challenges and suggests policy solutions to safeguard vulnerable populations, reduce inequality and promote inclusive economic growth.

Social Security in India

India has developed a comprehensive social security framework addressing the needs of its diverse population, including education, food security, health insurance, employment guarantees and welfare for senior citizens and unorganized sector workers.

1. Social Security with Right to Education :

- **Right to Education (RTE), 2009 :** Mandates free and compulsory education for children aged 6 to 14, recognizing primary education as a fundamental right.
- **Sarva Shiksha Abhiyan (SSA), 2001 :** A flagship program aimed at universalizing elementary education, focusing on infrastructure, quality and accessibility.
- **National Education Policy (NEP), 2020 :** Emphasizes inclusive, equitable quality education, aiming to position India as a global knowledge hub.
- **Mukhya Mantri Kanya Utthan Yojana (Bihar) :** Provides financial incentives to promote girls' education and empowerment in Bihar.
- **Mid-Day Meal Scheme (renamed PM Poshan Scheme) :** Initially aimed at increasing enrollment and nutrition, now also addresses malnutrition and hunger.

2. Social Security with Right to Food :

- **National Food Security Act (NFSA) :** Ensures food security by providing subsidized food grains to around two-thirds of India's population.
- **Food Corporation of India (FCI) and Targeted Public Distribution System (TPDS) :** Distribute food grains at subsidized rates, ensuring availability to marginalized groups.
- **COVID-19 Response :** The government doubled monthly food grain entitlements under the Pradhan Mantri Garib Kalyan Anna Yojana (PMGKAY) during the pandemic.
- **Antyodaya Anna Yojana (AAY) :** Provides highly subsidized food grains to the poorest households.
- **Fortified Rice :** Introduced to combat malnutrition through public distribution channels.
- **State-Level Initiatives :** States like Tamil Nadu, Rajasthan and Karnataka provide affordable meals through subsidized food canteens for marginalized and low-income populations.

3. Social Security with Health Insurance :

- **Universal Health Coverage (UHC) by 2030:** India aims to achieve UHC by 2030, offering comprehensive health services to all.
- **Ayushman Bharat - Pradhan Mantri Jan Arogya Yojana (AB PM-JAY) :** The world's largest health insurance scheme, providing free healthcare to over 500 million low-income individuals.

4. Social Security with Right to Work :

- **Code on Social Security, 2020 :** Defines social security as protection provided in cases like unemployment, old age and health issues.
- **Historical Perspective :** The 1943 UN Hot Springs Conference highlighted poverty and lack of work as primary causes of hunger. Mahatma Gandhi also stressed that work is vital to overcoming poverty.
- **Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA), 2005 :** Guarantees 100 days of wage employment to rural households to reduce poverty and ensure livelihood security.
- **COVID-19 Support and Preparedness :** The World Bank-funded Crisis Risk and Preparedness Support Program supports schemes under the PM Garib Kalyan Yojana (PMGKY), enhancing resilience during economic crises.

5. Social Security for Senior Citizens :

- **Atmanirbhar Bharat Rojgar Yojana :** Encourages employment generation, indirectly benefiting senior citizens through economic stability.
- **Employees' Pension Scheme (EPS) :** Provides financial support for retired individuals.

- **Atal Vayo Abhyuday Yojana (AVYAY) and Rashtriya Vayoshri Yojana (RVY) :** Focus on the welfare and dignity of senior citizens.
- **Indira Gandhi National Old Age Pension Scheme (IGNOAPS) :** Offers financial assistance to elderly citizens in need.
- **Senior Citizens' Savings Scheme (SCSS) and Reverse Mortgage Scheme, 2007 :** Ensure financial security for elderly citizens with steady post-retirement income.

6. Social Protection for Workers in the Unorganized Sector :
- **Pradhan Mantri Jeevan Jyoti Bima Yojana (PMJJBY) :** Provides life insurance for low-income individuals.
- **Pradhan Mantri Suraksha Bima Yojana (PMSBY) :** An accident insurance scheme for unorganized sector workers.
- **Pradhan Mantri Shram Yogi Maandhan (PM-SYM) :** Offers a pension for unorganized workers, ensuring income security in old age.

Road Ahead for Social Security

India's journey towards comprehensive social security requires further efforts :

- **Expanding Coverage :** Include more individuals, particularly in informal sectors, under social security schemes.
- **Strengthening Implementation :** Effective and transparent implementation is essential to maximize the impact.
- **Addressing Emerging Challenges :** Social security programs must evolve to address new vulnerabilities, including automation, urbanization and climate change.
- **Financial Sustainability :** Ensure adequate funding to maintain long-term effectiveness of social security schemes.

Conclusion

Universal social protection is essential for an equitable, inclusive and resilient society. India's diverse social security measures covering education, food, health, work and elder care demonstrate its commitment to building a robust social safety net for all. Strengthening and expanding these programs, with improved implementation, will be key to safeguarding vulnerable populations and promoting sustainable development in India.

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2. SOCIAL SECURITY AND WELFARE OF FARMERS FOR BUILDING 'VIKSIT BHARAT'

Ensuring social security for farmers is a crucial component in India's journey towards 'Viksit Bharat' (Developed India) by 2047. This goal highlights the importance of supporting the agricultural sector and strengthening the welfare of farmers, recognizing their significant contributions to the nation's economy and food security.

Need for Farmers' cial Security

- **Resilience Amidst Challenges :** Social security is essential to help farmers face challenges like climate change, economic fluctuations and market volatility.
- **Boosting Agricultural Productivity :** Social security provides farmers with a safety net, enabling them to adopt modern practices, which in turn enhances productivity and stability in the sector.

Components of Farmer Welfare

1. **Income Stability :** Providing direct income support to protect farmers' earnings.
2. **Access to Healthcare :** Ensuring healthcare facilities are available and accessible to farmers.
3. **Financial Security :** Offering pension and insurance schemes to secure farmers' livelihoods.

Income Support Schemes

1. Pradhan Mantri Kisan Samman Nidhi (PM-KISAN) :
- Provides ₹ 6,000 annually to small and marginal farmers in three equal installments through Direct Benefit Transfer (DBT).
- Helps farmers meet agricultural expenses and supports rural economic stability.

2. PM-KISAN Mobile App :
- Facilitates easy access to information related to PM-KISAN, payment status and grievance redressal.

3. PM-KISAN AI Chatbot and KISAN E-Mitra :
- **AI Chatbot :** Offers real-time assistance and guidance to farmers on PM-KISAN-related queries.
- **KISAN E-Mitra :** Provides digital assistance to farmers on a range of agricultural practices and services.

Crop Insurance and Risk Mitigation

1. Pradhan Mantri Fasal Bima Yojana (PMFBY) :
- Provides coverage against crop losses due to natural calamities, pests, and diseases,

ensuring income stability and risk mitigation.

2. Interest Subvention Scheme :

- Offers short-term crop loans at subsidized interest rates, making credit more affordable for farmers.

3. Negotiable Warehouse Receipts (NWR) :

- Allows farmers to store produce in certified warehouses and obtain loans against receipts, reducing the need for distress sales.

4. Kisan Credit Cards (KCC) :

- Provides easy credit access to farmers at low interest rates, enabling them to meet agricultural expenses.

Financial Security for Farmers

1. Pradhan Mantri Kisan Maandhan Yojana (PM-KMY) :

- A pension scheme for small and marginal farmers, offering financial security after the age of 60.

2. Atal Pension Yojana (APY) :

- Ensures a stable income post-retirement for informal sector workers, including farmers.

3. Pradhan Mantri Jeevan Jyoti Bima Yojana (PM-JJBY) :

- A life insurance scheme providing financial support to farmers' families in case of accidental death.

Sustainable Farming and Environmental Security

1. Paramparagat Krishi Vikas Yojana (PKVY) :

- Promotes organic farming to reduce reliance on chemical fertilizers and pesticides, fostering environmentally sustainable agriculture.

2. Per Drop More Crop (PDMC) :

- A micro-irrigation scheme that promotes efficient water use, supporting water conservation in agriculture.

3. Pradhan Mantri Krishi Sinchai Yojana (PMKSY) - Har Khet Ko Paani :

- Aims to increase irrigation coverage and ensure water availability to all farms.

4. Rashtriya Krishi Vikas Yojana - Remunerative Approaches for Agriculture and Allied Sector Rejuvenation (RKVY-RAFTAAR) :

- Supports holistic agricultural development by funding infrastructure, research, and sustainable practices.

Digital Platforms for Farm Mechanization and Technology

Digital platforms provide farmers with affordable access to machinery, weather information and best practices. They improve productivity and cost efficiency by allowing farmers to rent equipment and receive real-time updates.

Farmers' Collectives

- **Farmer Producer Organizations (FPOs) :** Empower small and marginal farmers with collective bargaining power, enabling them to access inputs at lower costs, secure better market prices and reduce dependency on intermediaries.

Marketing of Farm Produce

1. Integrated Scheme for Agricultural Marketing (ISAM) : Supports infrastructure development, enhancing farmers' market access and reducing post-harvest losses.

2. e-National Agriculture Market (e-NAM) : An online trading platform connecting mandis across India, expanding market reach and enabling competitive pricing.

3. Agricultural Produce Market Committees (APMC Mandis) : Regulate agricultural trade, ensuring transparency and fair prices for farmers.

Empowering Marginalized Entrepreneurs

1. Stand Up India : Promotes entrepreneurship among marginalized communities, providing loans to set up agriculture-related enterprises.

2. Pradhan Mantri Jan Dhan Yojana (PMJDY) : Enhances financial inclusion by providing bank accounts and access to credit, insurance, and pension facilities.

3. Agriculture Infrastructure Fund (AIF) : Supports infrastructure development, such as cold storage and warehouses, to enhance value addition and reduce post-harvest losses.

Way Forward

To ensure sustainable welfare for farmers, the government must continue to strengthen social security measures, expand digital integration, and promote sustainable farming practices. The key focus areas for the future should include :

- **Financial Literacy :** Educating farmers about financial management and risk mitigation.
- **Digital Empowerment :** Expanding access to technology and digital platforms.
- **Sustainable Practices :** Encouraging environmentally friendly farming methods.
- **Robust Marketing Avenues :** Improving market linkages and price transparency.

Conclusion

Social security and welfare measures are essential for building a resilient, inclusive and prosperous agricultural sector in India. By supporting farmers, India can foster a stable and productive farming community that contributes significantly to the vision of 'Viksit Bharat' by 2047. Through collaborative efforts between the government, private sector and farmers, India can ensure a sustainable agricultural future that benefits both the farmers and the nation.

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3. GOVERNMENT SCHEMES MAKING THE PATH EASIER FOR DIVYANGJAN

The term 'Divyangjan', meaning 'people with divine abilities', highlights India's commitment to empowering differently-abled individuals with dignity. Through various government schemes, the aim is to remove barriers, foster independence and ensure that Divyangjan can contribute meaningfully to society.

Key Government Schemes for Empowerment and Inclusion of Divyangjan

1. Individual Empowerment Schemes for Divyangjan :

- **Assistance to Disabled Persons for Purchase/Fitting of Aids and Appliances (ADIP Scheme) :** This scheme provides durable and modern assistive devices such as hearing aids, wheelchairs and prosthetics to enhance mobility, communication, and independence for Divyangjan.

- **National Fellowship for Persons with Disabilities :** Financial assistance is provided to students with disabilities pursuing higher education, specifically M.Phil. and Ph.D. programs, supporting their academic and professional growth.

- **Deendayal Disabled Rehabilitation Scheme (DDRS) :** This scheme supports NGOs that offer special education, vocational training, and rehabilitation services, helping Divyangjan gain independence and social integration.

2. Schemes for Assistive Devices :

- **ADIP Scheme (As Mentioned Above) :** Beyond individual empowerment, the ADIP scheme ensures Divyangjan receive assistive devices that help them perform daily activities independently, thereby enhancing their quality of life.

- **Sugamya Bharat Abhiyan (Accessible India Campaign) :** This campaign works towards making public spaces, transportation, and digital platforms accessible for Divyangjan, promoting equality and ensuring dignity in accessing facilities.

3. Programs for Social Respect and Inclusion :

- **Inclusive Education for Disabled at Secondary Stage (IEDSS) :** This scheme integrates Divyangjan into mainstream education by providing an inclusive learning environment from an early age, fostering social respect and equality.

- **National Awareness Creation Programs :** Various government programs raise awareness about the rights and needs of Divyangjan, promoting understanding and social respect for them within the broader society.

4. Economically Empowering Schemes :

- **National Handicapped Finance and Development Corporation (NHFDC) :** NHFDC provides financial assistance to Divyangjan for self-employment ventures, offering loans at concessional rates to encourage entrepreneurship and economic independence.

- **Pradhan Mantri Kaushal Vikas Yojana (PMKVY) :** This skill development scheme includes provisions for training Divyangjan, enabling them to secure employment or start businesses, thus supporting financial independence.

5. Schemes by National Trust for Empowering Divyangjan :

The National Trust, under the Ministry of Social Justice and Empowerment, has introduced specialized schemes that cater to the holistic development and support of Divyangjan :

- **DISHA (Early Intervention and School Readiness Scheme) :** Designed for children up to 10 years old, this scheme provides early intervention services, including therapies and special education, to prepare them for mainstream schooling.

- **Day Care Centres :** These centers offer daycare services to Divyangjan, allowing them a safe environment to learn and grow, while enabling families to manage work and caregiving responsibilities.

- **SAMARTH (Respite Care Residential Scheme) :** This scheme provides short-term residential facilities for Divyangjan, giving temporary relief to families from caregiving duties while ensuring the continuity of care.
- **GHARAUNDA (Group Home for Adults) :** GHARAUNDA offers long-term residential facilities for adults with disabilities, providing a stable and dignified living environment.
- **NIRAMAYA (Health Insurance Scheme) :** NIRAMAYA provides health insurance coverage to Divyangjan, addressing healthcare needs and reducing the financial burden on families.
- **SAHYOGI (Caregiver Training Scheme) :** SAHYOGI trains caregivers to assist Divyangjan in daily activities, ensuring proper and respectful care is available.
- **GYANPRABHA (Educational Support Scheme) :** This scheme provides scholarships to students with disabilities, encouraging them to pursue higher education and become financially independent.
- **PRERNA (Marketing Assistance Scheme) :** PRERNA supports the marketing of products made by Divyangjan, promoting their economic independence through self-employment opportunities.
- **SAMBHAV (Aids & Assistive Devices Training and Distribution) :** SAMBHAV centers showcase and provide training in using assistive devices, fostering greater independence for Divyangjan.
- **BADTE KADAM (Awareness and Community Participation Scheme) :** BADTE KADAM promotes awareness about Divyangjan's potential and rights, encouraging community participation in their empowerment journey.

Conclusion

The Government of India's wide array of schemes and programs for Divyangjan underscores its commitment to creating an inclusive society. By addressing economic, educational, and social needs, these initiatives aim to foster self-reliance, respect and dignity for Divyangjan. Empowered with these tools and opportunities, Divyangjan are increasingly becoming respected, integrated and productive members of society, contributing to a more progressive nation.

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4. **ENSURING DIGNITY IN OLD AGE : A PATHWAY TO SOCIAL SECURITY FOR SENIOR CITIZENS**

In India, changing socio-economic conditions, rapid urbanization and evolving family structures have weakened traditional support systems for the elderly. As the elderly population grows, the need for comprehensive social security measures has become essential.

Rising Elderly Population and Demographic Trends

India's elderly population (60+ years) is projected to rise sharply, placing increasing demands on healthcare, financial resources and social support systems. Additionally, there is a significant rise in the 'oldest-old' group (80+ years), further intensifying the need for specialized care and services.

Key Government Schemes for Social Security of Senior Citizens

1. Pension and Insurance Schemes :

- **National Social Assistance Program (NSAP) :** Provides financial assistance to elderly individuals below the poverty line through old-age pensions.
- **Atal Pension Yojana (APY) :** Offers pension benefits to workers in the unorganized sector, aiming for long-term financial security.
- **Pradhan Mantri Vaya Vandana Yojana (PMVVY) :** A pension scheme for senior citizens providing a guaranteed 8% interest per annum for ten years.
- **Employees' Pension Scheme (EPS) :** Provides pension benefits to retired employees, supported by employer contributions.
- **Pradhan Mantri Suraksha Bima Yojana (PMSBY) :** An accident insurance scheme offering coverage for accidental death or disability.

2. Healthcare Initiatives for Senior Citizens :

- **Rashtriya Swasthya Bima Yojana (RSBY) and Senior Citizen Health Insurance Scheme (SCHIS) :** Health insurance schemes covering hospitalization for senior citizens below the poverty line.
- **National Programme for Health Care of the Elderly (NPHCE) :** Offers dedicated healthcare facilities for the elderly at various health centers.
- **Rashtriya Vayoshri Yojana (RVY) :** Provides physical aids and assistive devices to disabled senior citizens.

- **Pradhan Mantri Jan Arogya Yojana (PM-JAY) under Ayushman Bharat :** Offers health coverage up to INR 5 lakh per family annually, including senior citizens.

In a significant move, the Union Cabinet approved a major expansion of the Ayushman Bharat Pradhan Mantri Jan Arogya Yojana (AB PM-JAY) on September 11, 2024.

AYUSHMAN BHARAT
PRADHAN MANTRI JAN AROGYA YOJANA
(AB PM-JAY)

Major Expansion for Senior Citizens Aged 70 and Above

Health Coverage
₹5 lakh annually for all senior citizens aged 70+, regardless of income.

Health Coverage
New health card issuance and an extra top-up of `5 lakh for those already enrolled in AB PM-JAY.

Choice of Schemes
Seniors can retain existing public health schemes or switch to AB PM-JAY.

- **Senior Citizens' Welfare Fund (SCWF) :** Supports welfare programs for destitute or neglected elderly persons.

3. Livelihood and Skilling Initiatives :

- **Senior Able Citizens for Re-Employment in Dignity (SACRED) Program :** A digital platform that connects skilled senior citizens with employment opportunities.
- **AGRASR Groups :** The Ministry of Social Justice and Empowerment (MSJE) launched the AGRASR Groups to encourage senior citizens to form SHGs and share their time constructively. Groups focused on livelihood and engagement activities for elderly individuals.

4. Housing and Welfare Schemes

- **Old Age Homes :** Government-supported old age homes provide shelter, food and medical care to elderly individuals who lack family support.

5. Legal Protection and Rights for Senior Citizens

- **Maintenance and Welfare of Parents and Senior Citizens Act, 2007 :** Mandates that children and legal heirs provide for senior citizens. It includes provisions for monthly maintenance and protection from neglect or abuse.
- **National Policy for Senior Citizens (2011):** Focuses on ensuring economic and social security, health and well-being of senior citizens, promoting active and productive aging.

Challenges in Implementing Social Security for Senior Citizens

- **Resource Constraints :** Insufficient funds and resources for implementing comprehensive social security measures.
- **Awareness and Accessibility :** Many elderly people, especially in rural areas, are unaware of available schemes or lack access to them.
- **Fragmented Infrastructure :** Lack of dedicated facilities and trained personnel in healthcare and social welfare sectors hampers effective implementation.
- **Dependence on Families :** Social norms and lack of awareness make many elderly people hesitant to seek government aid, relying instead on informal family support.

The Way Forward

- **Increase Awareness and Outreach :** Enhance information dissemination, especially in rural areas, through community programs and digital platforms.
- **Strengthen Institutional Infrastructure :** Invest in dedicated healthcare and welfare infrastructure, particularly in underserved regions.
- **Focus on Inclusive Policies :** Develop targeted policies that address the specific needs of various age groups within the elderly population.
- **Promote Financial and Digital Literacy :** Equip senior citizens with the knowledge to access digital services and financial schemes independently.

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5. SOCIAL SECURITY OF SCHEDULED TRIBES AND SCHEDULED CASTES IN THE NORTH-EASTERN REGION

The indigenous economic system in India's North-Eastern region, especially within tribal communities, is closely tied to natural resources like land, water and forests. The traditional practices of these communities promote harmony between ecology and livelihood. How-

ever, since the colonial era, these natural resources have faced increasing pressures, threatening the social and economic security of Scheduled Tribes (STs) and Scheduled Castes (SCs) in the region.

Demographic Overview

The North-Eastern region of India, comprising eight states, has a high percentage of tribal populations, making it unique in its social structure :

- **ST Population :** Arunachal Pradesh has the highest proportion of STs at 68·8%, followed by Nagaland (86·5%), Meghalaya (86·15%) and Mizoram (94·5%). Other states with significant ST populations include Sikkim (33·8%), Assam (12·4%), Manipur (35·1%), and Tripura (31·8%).
- **SC Population :** SC representation is relatively lower in the region, with notable numbers only in Assam, Manipur, Tripura and Sikkim.

Socio-Economic Challenges

- **Land and Resource Dependency :** The North-East's indigenous economic model relies on forest, land and water resources. Industrial and developmental pressures often displace these communities, impacting their traditional livelihoods.
- **Cultural Threats :** Rapid development and urbanization threaten tribal cultures, which are deeply connected to natural ecosystems. Traditional community ownership is increasingly replaced by individual or state control.
- **Displacement and Alienation :** Infrastructure projects, deforestation and mining displace these communities, alienating them from their ancestral lands.

Government Initiatives for Social Security

- **Pradhan Mantri Janjatiya Vikas Abhiyan :** This program promotes development in tribal areas by addressing health, education and economic opportunities.
- **Forest Rights Act, 2006 :** Grants land ownership rights to forest-dwelling communities, helping them secure land and forest resources.
- **Special Central Assistance (SCA) and Tribal Sub-Plan (TSP) :** These initiatives fund welfare programs and development projects focused on tribal areas.

Traditional Governance and Autonomy

Many tribes in the North-East practice traditional governance systems, wherein community leaders manage resources collectively. This autonomous model promotes unity but often faces challenges with State and Central government policies that impose new regulations on land and resources.

The Way Forward

For the North-Eastern tribes and SCs to achieve true social security, policies should :

- Respect traditional land rights and ensure minimal disruption to tribal habitats.
- Promote sustainable development models that align with local ecological practices.
- Enhance participation of ST and SC communities in policy-making through autonomous bodies.

Conclusion

Preserving the cultural and economic security of North-Eastern STs and SCs requires a balanced approach between development and traditional values. Government schemes must focus on empowering these communities, respecting their unique identities and providing a secure future in harmony with nature.

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6. IMPORTANCE OF ENHANCING SOCIAL SECURITY FOR UNORGANIZED SECTOR WORKERS

The unorganized sector is a significant part of India's workforce, encompassing a diverse range of jobs, from street vendors to agricultural labourers. These workers often lack access to stable employment benefits, making social security measures crucial to improving their quality of life and financial stability.

Prevalence of the Unorganized Sector

- Approximately 93% of India's total workforce is employed in the unorganized sector. These workers are often trapped in a cycle of poverty due to limited access to healthcare, financial aid, and other basic facilities.
- The informal nature of their jobs makes it challenging for them to secure consistent benefits, highlighting the critical need for robust social security measures.

Government Initiatives for Social Security

The Indian government has implemented several schemes aimed at improving social security for unorganized sector workers. These include :

1. Social Security Code 2020 :

- Consolidates and streamlines existing social security laws.

- Aims to broaden the coverage of welfare measures and ensure a unified approach to social security for all workers.

2. Pradhan Mantri Jan Dhan Yojana (PMJDY) :

- Focuses on financial inclusion by offering bank accounts to all, thus facilitating access to banking services and direct benefit transfers.
- Helps workers in the informal sector connect with social welfare schemes through their bank accounts.

3. Atal Pension Yojana (APY) :

- Provides pension benefits to workers in the unorganized sector, allowing them to save for retirement.
- Offers guaranteed monthly pensions based on contributions made during their working years.

4. Insurance Schemes :

Pradhan Mantri Jeevan Jyoti Bima Yojana (PMJJBY) and Pradhan Mantri Suraksha Bima Yojana (PMSBY) offer affordable life and accident insurance coverage to unorganized workers, providing financial support in cases of death or disability.

Challenges in Implementation

Despite these initiatives, many workers remain outside the social security net due to :

- Lack of awareness about the available schemes.
- Complex enrollment procedures.
- The informal and transient nature of their work, making it difficult to track and include them in formal programs.

Key Schemes and Reforms for Enhanced Social Security

1. E-Shram Portal :

- Launched by the Ministry of Labour and Employment in August 2021, the E-Shram portal creates a centralized database of unorganized workers across sectors like construction, domestic work, and agriculture.
- Workers receive an E-Shram card with a unique identification number for accessing various welfare schemes.
- The portal integrates with other initiatives such as the Pradhan Mantri Suraksha Bima Yojana (PMSBY), providing accident insurance coverage of up to ₹ 2 lakh.
- **Impact :** It aims to ensure a unified social security net and reduce the risk of workers being excluded from benefits.

2. Pradhan Mantri Shram Yogi Maan-Dhan (PM-SYM) :

- A voluntary pension scheme launched in 2019 for workers aged 18-40 years, earning less than ₹ 15,000 per month.
- Beneficiaries contribute a small amount monthly, with a matching contribution from the government.
- At the age of 60, beneficiaries receive a monthly pension of ₹ 3,000.
- Workers are issued a PMSYM card, which serves as proof of enrollment and ensures streamlined access to pension benefits.

3. Employees' State Insurance Corporation (ESIC) :

- Provides comprehensive healthcare, disability, maternity and unemployment benefits to workers in the organized sector.
- Recent reforms aim to extend ESIC coverage to unorganized workers, including those in the gig economy.
- The scheme includes benefits like cash compensation during illness, medical care, and maternity support.
- Integration with the E-Shram database ensures seamless access to these benefits for unorganized sector workers.

4. Labour Reforms :

- The government introduced four key Labour Codes to streamline labour laws :
  - ❏ Code on Wages
  - ❏ Industrial Relations Code
  - ❏ Social Security Code
  - ❏ Occupational Safety, Health and Working Conditions Code
- **Objective :** Simplify compliance for businesses while enhancing social security measures for workers, particularly in the informal economy.

- **Significance :** The Social Security Code 2020 includes provisions for extending benefits like provident fund, health insurance and maternity benefits to unorganized workers.

5. Pradhan Mantri Suraksha Bima Yojana (PMSBY) :

- Provides accident insurance coverage at a nominal premium.
- This scheme, integrated with the E-Shram portal, ensures coverage for accidental death and disability, enhancing the overall security for unorganized workers.

Recommendations for Improvement

- **Awareness Campaigns :** More extensive efforts are needed to educate unorganized sector workers about the available schemes and benefits.

- **Simplified Processes :** Streamlining the enrollment and claims processes will make it easier for workers to access benefits.
- **Local Administration Involvement :** Effective coordination with local bodies and community organizations can help bridge the gap in reaching the targeted population.

Conclusion

The enhanced focus on social security for unorganized sector workers through initiatives like the E-Shram portal, PM-SYM, ESIC expansion and new labour reforms is a step towards inclusive growth. These measures aim to provide a safety net, ensuring that even the most vulnerable workers have access to financial stability, healthcare and retirement benefits.

7. A SAFETY NET FOR ALL : INDIA SCALES HEALTHCARE FOR SOCIAL SECURITY

The article highlights India's ongoing efforts to enhance healthcare access and social security, with a special focus on initiatives like Ayushman Bharat. The government's approach aligns with the Sustainable Development Goals (SDGs), emphasizing health equity and social justice for all citizens, including vulnerable groups like women, the elderly, and transgender communities.

Key Highlights

1. Healthcare and Poverty Linkage :

- Each year, over 100 million people worldwide fall into poverty due to high healthcare costs and approximately 800 million face catastrophic health expenses.
- In India, unexpected health issues often lead to severe financial distress. The International Labour Organization's (ILO) World Social Protection Report (2022) indicates that only 47% of the global population has access to social protection, underscoring the need for India to strengthen its social security framework to reduce the economic burden of healthcare.

2. Ayushman Bharat Scheme :

- **Ayushman Bharat :** Pradhan Mantri Jan Arogya Yojana (PM-JAY) is the largest health assurance scheme globally, offering coverage of up to ₹ 5 lakh per family per year for hospitalizations. It is designed to support vulnerable groups, including women, the elderly and transgender individuals, reducing the financial burden on low-income households.

- The scheme integrates Primary and Secondary Care Services through the establishment of Health and Wellness Centers (HWCs), which provide comprehensive primary healthcare, preventive services and screenings for non-communicable diseases.

3. National Health Mission (NHM) :

- The National Health Mission (NHM) strengthens healthcare infrastructure through two sub-missions : the National Rural Health Mission (NRHM) and the National Urban Health Mission (NUHM).
- NHM focuses on improving healthcare access for underserved regions and vulnerable populations, ensuring a wider reach of healthcare services across urban and rural India.

4. Importance of Health Equity :

- India's progress in healthcare is marked by advancements in digital health solutions and policy reforms. However, achieving true equity requires addressing persistent issues like inequality, limited medical access and historical disparities.
- The government's Aarogya Setu app, launched during the COVID-19 pandemic, exemplifies the push towards inclusive digital healthcare, offering real-time health updates and access in multiple languages, thus serving diverse sections of the population.

5. Strengthening Social Protection Systems :

- Strengthening social protection systems is crucial for providing a safety net against

health-related financial shocks. This involves improved coordination of healthcare services across states, aimed at achieving Universal Health Coverage (UHC).

- National health insurance programs are aligned with UHC objectives, focusing on reducing out-of-pocket expenses and expanding healthcare access for economically disadvantaged communities.

Focus on Women, Elderly and Transgender Communities

1. Women : Ensuring Gender-Sensitive Healthcare

- Women face significant healthcare challenges, particularly in maternal health and reproductive services. Many women in low-income households struggle with access to essential healthcare services due to financial and social barriers.

- Ayushman Bharat prioritizes maternal health, offering free screenings and coverage for childbirth and complications. Additionally, the National Health Mission (NHM) addresses women's health needs through its Reproductive, Maternal, Newborn, Child, and Adolescent Health (RMNCH+A) strategy, aiming to reduce maternal and child mortality rates.

2. Elderly : Addressing Geriatric Health Needs

- The elderly population is particularly vulnerable to chronic illnesses and many rely on pensions or limited savings, making healthcare costs a significant burden. Under Ayushman Bharat, there is an emphasis on geriatric care, covering treatments for chronic diseases like diabetes and hypertension.

- Telemedicine services have been integrated into the healthcare system to cater to the needs of elderly patients who may face mobility issues, offering them access to consultations and follow-up care from home.

3. Transgender Communities : Towards Inclusive Healthcare Policies

- Transgender individuals often experience discrimination in healthcare settings. In response, the government has expanded Ayushman Bharat coverage to include transgender persons, providing them with comprehensive medical care, including surgeries, hormone therapy and mental health support.

4. Technology as the Great Equalizer in Healthcare

- Digital health platforms like the Aarogya Setu app removed language barrier and expanded access to healthcare information, particularly during the pandemic especially to marginalised communities.

- Telemedicine has emerged as a critical tool, enabling remote consultations and access to healthcare services, especially for those living in remote or underserved areas, or mobility constraints.

- The National Digital Health Mission (NDHM) aims to create a unified health ID system, integrating patient data across healthcare providers. This ensures continuity of care and helps avoid medical errors, particularly benefitting vulnerable groups who frequently encounter fragmented healthcare services.

Conclusion

Initiatives like Ayushman Bharat and the expansion of the National Health Mission are crucial steps in delivering comprehensive healthcare to marginalized communities by leveraging digital platforms and strengthening social protection systems.

However, sustained efforts and targeted interventions are necessary to overcome remaining challenges and ensure health equity for all citizens.
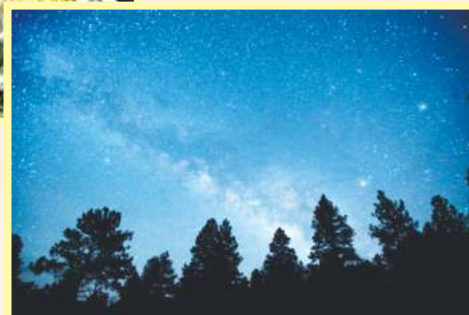
GIST

OF

DOWN TO EARTH

1. INDIA FACES DISASTERS ON 93% OF DAYS IN 2024

Key Highlights :

1. Monsoon and Cyclonic Impact :

- India experienced unusually heavy rainfall this year, first from an intense southwest monsoon (June–September) and then from cyclonic depressions in southern states.

- The southwest monsoon officially ended on October 15, followed immediately by the onset of the northeast monsoon, bringing rain to Coastal Andhra Pradesh, Tamil Nadu, Kerala and parts of Karnataka.

2. Extreme Weather Events :

- Extreme weather conditions occurred on 255 out of 274 days (93%) as per Down To Earth's Extreme Weather Atlas, with continuous heavy rains, floods, and landslides.

3. Human and Agricultural Toll :

- These disasters resulted in 3,216 deaths and impacted 2·83 million hectares of cropland.

- Maharashtra reported crop damage over 1·95 million hectares, while Kerala suffered the highest death toll (550), followed by Madhya Pradesh and Uttar Pradesh.

2. EUROPE EXPERIENCES SURGE IN MOSQUITO-BORNE DISEASES DUE TO CLIMATE CHANGE

Key Highlights :

1. Climate Change Impact : Rising temperatures and altered rainfall patterns across Europe are creating ideal breeding conditions for mosquitoes, making the region more susceptible to mosquito-borne diseases.

2. West Nile Virus (WNV) Outbreak : In 2024, 19 European countries reported West Nile virus cases, with Ukraine facing a severe outbreak, recording 88 cases & 11 deaths since July.

3. Increase in Dengue Cases : Europe has also observed a rise in dengue cases in recent years, as warmer climates enable the spread of mosquito populations.

4. Medical and Educational Response : European medical institutions are intensifying training on mosquito-borne diseases, while the European Network on Climate and Health Education is preparing healthcare providers to address climate-related health risks.

3. DROUGHTS CAUSE POWER OUTAGES WORLDWIDE

Key Highlights :

1. Global Impact of Drought on Hydropower :

- Severe droughts are causing electricity outages in countries heavily dependent on hydropower.

2. Country-Specific Effects :

- **Zambia :** El Niño-induced drought has severely affected the Kariba Dam, resulting in blackouts lasting up to three days.

- **Ecuador :** Facing its worst drought in 60 years, with power cuts due to reduced reservoir levels affecting hydroelectric generation, which supplies 70% of its energy.

- **Brazil :** Persistent drought in the Amazon has led to critical water shortages in hydroelectric dams.

- **Costa Rica :** Water scarcity has led to electricity rationing.

3. Climate Factors :

- According to the European Commission's 'Global Drought Overview—September 2024', drought conditions are intensified by the combined effects of El Niño, the Indian Ocean Dipole and the Tropical North Atlantic, impacting regions like South America, Southern Africa and parts of Europe.

4. GM POLICY MUST BE FARMER-CENTRIC

On July 23, 2024, the Supreme Court of India directed the Union government to develop a comprehensive national policy on genetically modified (GM) crops for research, cultivation, trade and commerce through public consultation.

Key Issues with GM Crops

1. **Environmental and Health Risks :** Experts argue that GM crops harm soil, water, and biodiversity, with synthetic toxins affecting both pests and beneficial organisms. The use of viral and bacterial genes, herbicides,

and antibiotic resistance markers has raised environmental and health concerns, such as microbial resistance and cancer risks.

2. **Dependence on Foreign Technology :** GM technology, patented by multinational corporations, encourages dependency on expensive, proprietary inputs, marginalizing traditional and more sustainable agricultural practices.

3. **Alternatives to GM :** Experts advocate for molecular and genomic tools alongside traditional breeding techniques to develop resilient crop varieties, thereby reducing chemical inputs and promoting biodiversity conservation.

Policy Recommendations

1. **Focus on Farmer Welfare and Socio-economic Considerations :** Experts stress that the policy should prioritize farmer welfare, environmental protection and socio-economic impacts over corporate interests. Lessons from Bt cotton's introduction reveal that GM models driven by commercial interests disproportionately harm small-scale farmers.

2. **Need for Biosafety and Regulatory Reforms :** Past parliamentary committees have recommended robust biosafety legislation to ensure comprehensive environmental and health assessments before GM crop introduction. Currently, India lacks such legislation, with GM regulation primarily governed by subordinate rules.

3. **Broad, Inclusive Consultation :** There is a call for wide-ranging consultations similar to those conducted for Bt brinjal in 2010, involving farmers, scientists, and civil society to ensure that the policy reflects diverse perspectives and India's unique agricultural context.

Conclusion

As highlighted by the Supreme Court, the Union government, must adopt a balanced, farmer-centric approach in shaping a GM policy that aligns with India's agro-ecological needs, promotes sustainable agricultural practices and limits dependency on multinational corporations.

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5. GROUND REALITY OF SOIL DEGRADATION IN PUNJAB'S AGRICULTURE

Issue of Soil Degradation

- According to the Union Ministry of Agriculture's nutrient dashboard, the Punjab's organic carbon in soil has drastically fallen to 6·9% in 2024-25 from 12·7% in 2023-24, while the national average is 17·9%.

- Declining microbial activity, particularly mycorrhizal fungi that aids nutrient absorption, has weakened the soil's health and nutrient uptake.
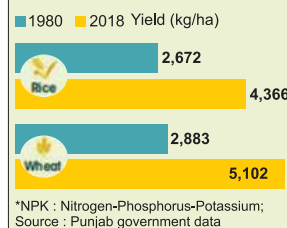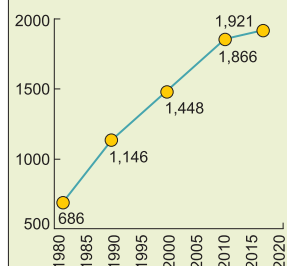
Agricultural Practices and Impact

- Intensive cultivation due to the Green Revolution introduced the rice-wheat cropping system, leading to soil compaction and reduced water percolation, affecting microbial life.

- Widespread stubble burning to clear fields further deteriorates soil health, and excessive fertilizer use has led to chemical dependency, perpetuating a cycle of soil fatigue and reduced yields.

- Increasing use of urea, now at 560 kg per hectare (up from 125 kg two decades ago), reflects how soil 'demands' more fertilizers for even modest yields.

Support System

Rise infertiliser usage has helped Punjab farmers increase their rice and wheat yields in 1980-2018

○ NPK* fertiliser usage (in thousand tonnes)

- 2000
- 1,921
- 1,866
- 1,448
- 1500
- 1,146
- 1000
- 686
- 500
- 1980 1985 1990 1995 2000 2005 2010 2015 2020

■ 1980 ■ 2018 Yield (kg/ha)

Rice: 2,672 / 4,366

Wheat: 2,883 / 5,102

*NPK : Nitrogen-Phosphorus-Potassium; Source : Punjab government data

Government Intervention : Soil Health Card Scheme

- The Soil Health Card scheme, launched in 2015, aims to educate farmers on balanced fertilization, but issues such as uniform recommendations across farms have led to skepticism.

- Punjab farmers contribute minimally to national soil testing, with only 2,587 samples out of 2·27 million nationwide in 2024-25.

Potential Solutions

- Crop diversification, suggested by the SS Johl Committee in the 1980s and nitrogen-fixing legumes like chickpeas and sorghum could revitalize soils but lack consistent market support.

- Slow reduction in fertilizer use combined with organic farming practices is recommended for sustainable productivity.

Conclusion

To break the cycle of chemical dependency and degraded soils, Punjab's agriculture requires a gradual shift to sustainable practices, market-supported crop diversification, and organic farming incentives.

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6. LIGHT POLLUTION : A RISING ENVIRONMENTAL AND HEALTH CONCERN

On March 7, 2024, social activist Rohit Manohar Joshi moved the Bombay High Court demanding for the removal of decorative lights on trees in Mumbai due to concerns over light pollution. Similar objections have surfaced against extensive artificial lighting around Vadale Lake in Raigad, Maharashtra, where environmentalists highlight its adverse effects on local wildlife. Such pushback reflects a larger global issue : the impacts of light pollution on ecosystems, human health, and stargazing.

The Growth of Artificial Lighting and Its Consequences

Since, the invention of electric light by Humphry Davy, artificial lighting has transformed modern life, boosting economic growth and quality of life. However, excessive lighting in urban spaces has led to widespread light pollution. DarkSky International categorizes this pollution into four types :

- **Trespass :** Light spilling into unintended areas, like homes.
- **Glare :** Excessive brightness, as from headlights, which impairs vision.
- **Clutter :** Over-illumination common in urban and tourist areas.
- **Sky Glow :** Brightened skies over urban areas that obscure stargazing.

The World Atlas of Artificial Night Sky Brightness (2016) highlighted the extent of light pollution across North America, Europe, and Asia, showing that the majority of urban populations cannot view celestial bodies due to this issue.
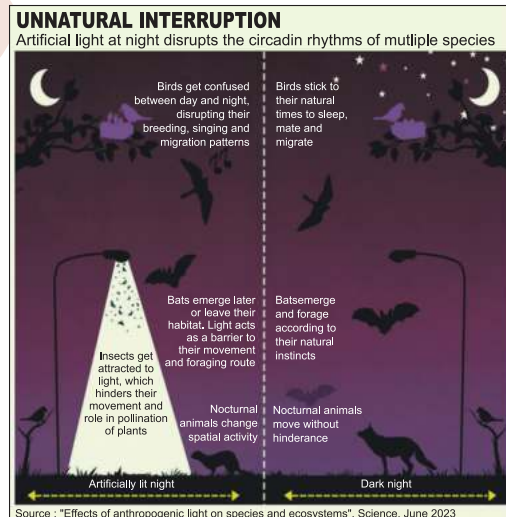
Ecological and Health Impacts of Light Pollution

Light pollution disrupts the natural day-night cycle, affecting both wildlife and humans. Excessive artificial light can cause ecological and health disturbances, often termed as a 'neglected pollutant'.

Impacts on Wildlife

Artificial lighting disrupts natural behaviours in several species :

- **Birds :** Migratory species like flamingoes may become disoriented by artificial lights, leading to fatal collisions with buildings.
- **Sea Turtles :** Hatchlings, guided by moonlight to reach the sea, become confused by artificial lights, which reduces their survival chances.
- **Nocturnal Animals :** Light-sensitive species like bats avoid illuminated areas, disrupting their foraging and natural movement patterns, essential for ecosystem balance.
- **Insects :** Attracted to light, insects become vulnerable to predators, impacting pollination cycles and reducing populations, which threatens food security.

UNNATURAL INTERRUPTION
Artificial light at night disrupts the circadin rhythms of mutliple species

Source : "Effects of anthropogenic light on species and ecosystems", Science, June 2023

Impacts on Human Health

Human exposure to artificial light at night disrupts circadian rhythms, which regulate sleep, hormone production and other bodily functions. The suppression of melatonin from prolonged light exposure, especially from blue-

spectrum light, has been linked to sleep disorders, obesity, cardiovascular issues, and even cancer.

Broader Ecological Disruptions Due to Light Pollution

1. **Impact on Bats :** Artificial light delays bats' emergence, obstructing their natural foraging routes and altering their ecological role.

2. **Effect on Insects and Pollination :** Insects, drawn to artificial lights, face disrupted movement and natural behavior, which in turn impacts plant pollination and reproduction cycles.

3. **Birds' Confusion and Stress :** Birds often mistake artificial light for daylight, which affects their breeding, singing, and migration patterns. Exposure to white light elevates stress hormones, impairing reproductive success.

4. **Disruption to Nocturnal Animals :** Light exposure changes the movement and feeding behaviours of nocturnal animals, which can destabilize entire ecosystems.

5. **Stress in Plants :** Trees near street lights show signs of physiological stress, as many processes essential to growth and repair require darkness. Plants like the saguaro cactus, which depend on nocturnal pollinators, experience disrupted reproduction due to nearby artificial light.

6. **Insect Decline and Food Security :** Artificial light exposure reduces insect populations, creating an 'insect apocalypse' that threatens biodiversity and crop pollination, which are crucial for food security.

Mitigation Measures and Responsible Lighting

To mitigate the adverse effects of light pollution, experts advocate for adaptive lighting strategies :

1. **Adaptive Lighting :** Shielding outdoor lights, using low-blue lighting, and limiting unnecessary nighttime exposure can help reduce light pollution.

2. **Design Adjustments :** Modifying lighting on roads, bridges, and buildings to minimize environmental impact can significantly lower light pollution.

These strategies can help balance development with ecological preservation, minimizing the harmful effects of light pollution on both ecosystems and human health.

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7. ANALYSIS : CLIMATE CHANGE AND ITS IMPACT ON THE WESTERN GHATS' FORESTS AND COMMUNITIES

1. Landslides and Climate Change

- **Rising Incidence of Landslides :** Landslides in Wayanad, which claimed over 400 lives in July, have been tied to climate change, with scientists observing a warming-induced increase in severe rainfall events. Since 2018, landslide frequency has grown, especially across the Western Ghats' eastern slopes.

- **Data Supporting the Trend :** Historical rainfall data from Wayanad tea estates and local weather stations show a rise in daily rain events exceeding 300 mm and a temperature increase of 1·5°C over the past decade.

2. Climate Hotspots in Western Ghats

- **Temperature and Rainfall Shift :** Six forest regions in Karnataka and Kerala are now labeled 'climate change hotspots' by the Forest Survey of India, experiencing over 1·5°C of temperature rise and 20% or more changes in rainfall patterns. Similar patterns have been observed in Arunachal Pradesh and parts of Maharashtra.

- **Impact on Forest Stability :** The increase in heavy rains contributes to landslides by saturating forest soil, which leads to instability.

3. Shifting Seasonal Patterns and Dry Spells

- **Increased Drought Conditions :** Despite increased heavy rain events, Kerala has faced drier pre-monsoon and monsoon seasons in recent years, raising the risk of drought and forest fires.

- **Extended Dry Periods in Karnataka :** The dry patches in areas like Anshi National Park in Karnataka indicate reduced rainfall, affecting forest vegetation and increasing fire susceptibility.

4. Forest Produce and Food Scarcity

- **Reduced Crop Yields and Collection :** Climate change has significantly impacted food production within forests, essential for wildlife and local communities. In Uttara Kannada, shifts in rainfall have led to low yields of monkey jack fruit and reduced kokum and honey collections.

- **Extended Effects on Agriculture :** Shifting rainfall patterns have delayed planting cycles, as seen with tuber crops in Malappuram, Kerala, now planted weeks later than usual.

5. Invasive Weeds and Ecological Disruption

- **Spread of Senna Spectabilis :** This invasive species, originating in Central and Latin America, has proliferated in Wayanad, suppressing native vegetation and reducing food availability for local fauna. Local communities report that animals avoid the weed, which exacerbates its spread.

Conclusion

The Western Ghats' ecology is increasingly vulnerable to climate change, impacting the stability of forested regions, food security, and agricultural cycles. Climate-induced shifts, such as increased landslides, fires, and the spread of invasive species, underscore the urgent need for conservation strategies tailored to these changing conditions.

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8. ANUSANDHAN NATIONAL RESEARCH FOUNDATION (ANRF) AND INDIA'S RESEARCH LANDSCAPE

Introduction to ANRF

- The Indian government has launched the Anusandhan National Research Foundation (ANRF) to reform and modernize the scientific research framework, replacing the previous Science and Engineering Research Board.
- The goal is to create a strategic research environment that encourages collaboration between industry, academia, and government for innovation.

Funding Challenges and Industry Reluctance

- Although ANRF is modeled after the US National Science Foundation, with a proposed budget of ₹ 50,000 crore for 2023-28, a large portion (₹ 36,000 crore) is expected to come from private sources.
- In India, industry contribution to research and development (R&D) is low at 36·4%, compared to 77% in China and 75% in the US.
- Government investment in research has stagnated at 0·64% of GDP, well below global standards, highlighting financial and operational limitations.

Concerns Over Government Influence and Industry Representation

- The ANRF's governing board lacks significant representation from Indian industry, state universities, and local research institutions, though it includes renowned scientists like Subra Suresh and academics from abroad.
- Indian research governance continues to be bureaucratic, with a notable presence of government officials and limited industry input.

Positive Signs and New Directions

- Subra Suresh's involvement is a positive aspect, given his background in implementing impactful research-to-commercialization programs, like the US I-Corps.
- The ANRF also intends to incorporate humanities and social sciences alongside science and technology, aiming for a more holistic approach to research.

Challenges and Outlook

- Despite promising changes, structural and cultural differences pose challenges, with India's bureaucratic and historically constrained approach potentially limiting ANRF's effectiveness.
- ANRF will need to overcome traditional limitations and gain industry support to successfully transform India's research landscape.

Conclusion

ANRF is a step toward reorienting India's research priorities, but it faces funding constraints, bureaucratic inertia, and an unresponsive private sector, suggesting that substantive change will require time and consistent effort.

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9. SUSTAINABLE STEEL PRODUCTION IN INDIA

Steel's Role in Economic Growth

- India aims to double its GDP by 2030, with the steel sector as a core driver.
- The National Steel Policy (2017) targets an increase in steel production from 122 MT to 300 MT by 2030.

Environmental Chllenges and Emission Reduction

- Steel contributes to 8% of global emissions. India is working to balance increased capacity with reduced emissions by embracing sustainable practices.

Steel Scrap Recycling and Circular Economy

- The Steel Scrap Recycling Policy (2019) supports using steel scrap to reduce environmental impact, aiming for self-sufficiency in scrap supply by 2030.
- Each tonne of scrap saves significant amounts of resources and reduces emissions.

Green Technologies for Steelmaking

- New technologies, like hydrogen-based processes and direct reduced iron, aim to achieve 77% sustainable production by 2050.
- India's first green stainless steel hydrogen plant (2024) will cut substantial carbon emissions over 20 years.

Global Collaboration and Trade

- India's sustainable steel goals rely on international trade in steel scrap due to local limitations.
- Engaging in global steel market discussions, trade agreements, and the OECD Steel Committee will help India access resources and align with global standards.

Future Vision

- India aims to sustainably meet industrial steel demands through recycling, innovative technologies, and proactive trade strategies, fostering global environmental sustainability in the steel sector.

10. REVIEW THE TREATMENT

The article addresses issues in faecal sludge treatment in Uttar Pradesh, identifying design flaws that render the system inefficient and costly.

Key Points

1. Background and Progress :

- Following India's Open Defecation Free (ODF) status, the focus shifted to safe treatment and disposal of wastewater and biosolids.
- The National Faecal Sludge and Septage Management Policy (2017) led to the establishment of over 1,500 Faecal Sludge Treatment Plants (FSTPs), with Uttar Pradesh starting its initiative in 2018 under programs like Namami Gange and AMRUT.

2. Issues in Design :

- A 'one-size-fits-all' approach in design capacity under AMRUT has led to misalignment with local requirements, creating underused or overburdened FSTPs.
- Over-engineering is common, with redundant systems like screw press machines and drying beds leading to unnecessary costs.

3. Specific Flaws in Co-Treatment Plants :

- Some co-treatment plants feature redundant secondary treatment modules, such as anaerobic baffled reactors and phytorid beds, which duplicate existing processes at STPs.
- Mismatches between inlet design and desludging vehicles in several cities further complicate operations.

4. Lessons and Recommendations :

- **Design Adaptability :** Consider climate and sludge characteristics in primary treatment, using natural drying beds in arid regions and mechanical dewatering in humid areas.
- **Incremental Scaling :** Start with smaller plants in small and medium towns, expanding as needed to reduce costs.
- **Streamlining Co-Treatment :** Limit co-treatment plants to dewatering septage, avoiding unnecessary secondary treatment to optimize costs.

The analysis emphasizes that learning from Uttar Pradesh's experiences can guide more efficient and sustainable faecal sludge treatment across India.

11. DIGGING A DISASTER

The essay highlights the environmental and social impacts of soapstone mining in Bageshwar district, Uttarakhand, focusing on abandoned villages, pollution, and degradation.

Key Points

1. Environmental Impact :

- **Land Subsidence :** Villages like Talla Dhapoli, Kandekanyal, and Dabti Vijaypur

suffer from land subsidence, with houses and roads developing cracks due to intensified mining activities.

- **River Pollution :** The Punghar river, which flows through Bageshwar, has become polluted, affecting water levels and availability, disrupting local agriculture and ecosystems.
- **Tree Loss :** Oak trees have been cleared without permission from the village's van panchayat to construct roads for mining operations, leading to deforestation.

2. Social Consequences :

- **Migration and Abandoned Homes :** Residents are forced to leave due to dust, noise, and environmental hazards from mining. Terrace farming, a traditional practice, has been disrupted, resulting in many empty homes.
- **Animal Health Risks :** Dust from mining settles on vegetation, affecting cattle health, forcing locals to procure clean feed from neighbouring areas.

3. Legal and Administrative Response :

- The National Green Tribunal (NGT) and Uttarakhand High Court have taken note of the environmental degradation and ordered responses from stakeholders and the state government, indicating growing legal oversight on mining impacts.

The essay sheds light on the severe challenges communities face due to mining, highlighting the urgent need for sustainable practices and stricter regulations.

12. A SPRIG TO CARE FOR

This article delves into the medicinal, cultural, and ecological significance of the *punarnava* (Boerhaavia diffusa), a resilient plant native to tropical and subtropical regions, now rarely seen in urban areas like Delhi due to urbanization.

Key Points

1. Botanical Background :

- *Punarnava*, meaning 'renewal' or 'rejuvenation' in Sanskrit, is known for its ability to regenerate from old rootstock after summer dormancy.
- The plant exists in two variants—white-flowered (*Boerhaavia verticillata*) and red-flowered (*Boerhaavia diffusa*).

2. Medicinal Uses :

- **Ayurveda and Tribal Medicine :** Used for anemia, inflammation, abdominal disorders and eye issues (cataracts). The plant appears in Ayurvedic Pharmacopoeia under India's Drugs and Cosmetics Act.

- **Ethnobotanical Applications :** Tribes across India use *punarnava* for various ailments—snake bites, wounds, jaundice, urinary issues, and digestive health. Studies reveal it as a diuretic and beneficial for heart health.
- **Bioactive Compounds :** Modern research highlights its content of phenolics, rotenoids, and flavonoids, supporting its traditional uses with scientifically documented therapeutic properties.

3. Culinary and Cultural Role :

- In regions like Assam and West Bengal, *punarnava* leaves are a culinary ingredient, added to dals and curries for their health benefits. High local demand has made it available in markets.

4. Conservation Concerns :

- Increasing urbanization and concrete landscapes have reduced its presence in cities like Delhi, where it once grew widely.

13. ALL-INDIA RURAL FINANCIAL INCLUSION SURVEY 2021-22

The National Bank for Agriculture and Rural Development's survey highlights the economic landscape of India's agricultural households, revealing both income patterns and financial challenges faced by rural populations.

Key Findings

1. Dependence on Agriculture :

- 57% of rural households depend on agriculture, though income from cultivation comprises only about one-third of total earnings.

- Most agricultural income is supplemented by wage labour, government services, and private sector jobs.

2. Income Disparities :

- Households with larger landholdings (over 2 hectares) earn significantly more than small and marginal farmers, with income from cultivation diminishing as land size decreases.

3. Income Diversification :

- Over 56% of agricultural households rely on multiple income sources (three or more), in

contrast to 66% of non-agricultural house-holds relying on a single source.

- Households with diverse income sources report higher overall earnings, demonstrating resilience amid low cultivation income.

4. Financial Constraints :

- High debt burdens affect agricultural households, with average debt reaching ₹ 91,231, nearly seven times their monthly gross income.
- Despite modest income growth, many families face financial hardships due to crop failures, price volatility and increasing

expenditure on essentials, leaving little savings or surplus.

5. Economic Vulnerabilities :

- Crop failures (30%) and price fluctuations (12%) exacerbate financial insecurity.
- Consumption expenditure averages ₹ 11,710 per month, with minimal surplus, especially for small and marginal farmers.

The survey illustrates the adaptability of rural agricultural households but also under-scores their persistent financial challenges, low surplus and reliance on multiple income streams to survive amidst agrarian distress.

Down to Earth (16-31 October, 2024)

14. MULTIPLE DISEASE OUTBREAKS IN AFRICA AMID CHALLENGES

African countries are experiencing a surge in disease outbreaks due to factors like extreme weather, conflicts, and weak healthcare systems. Recent outbreaks highlight the region's vulnerability:

Key Points

1. Marburg Outbreak in Rwanda :

- Rwanda reported its first Marburg disease outbreak on September 27, leading to 11 deaths within days. The country implemented Ebola-like containment measures for this highly fatal viral infection.

2. Mpox Immunisation :

- In response to a growing mpox crisis, Rwanda launched Africa's first mpox immunization program on September 17.

As of October 5, mpox has affected 34,000 people across 15 African countries.

3. Cholera Outbreaks :

- Water-borne diseases like cholera emerged following summer floods, with cases reported in Kenya and other regions.

4. Challenges in Healthcare Focus :

- An Impact Global Health report in October indicates that public health efforts tend to rise during crises but diminish afterward, highlighting the need for sustained healthcare focus.

This multifaceted crisis underscores the urgent need for resilient healthcare strategies to handle recurring and emerging disease threats across Africa.

15. INDIA'S UNUSUALLY WARM END TO MONSOON

India is experiencing an unusually warm end to the monsoon season, with temperature surges in the northeast and northwest regions :

Key Points

1. Record Temperatures in Assam :

- Assam saw temperatures nearing 40°C in late September, with Guwahati and other areas recording their highest-ever temperatures due to a 'heat dome', a high-pressure system causing hot, dry conditions.

2. Northeast Heat Factors :

- Unusual air circulation patterns and reduced soil moisture in September intensified the dry, hot weather in the Northeast.

3. Post-Monsoon Heat in Northwest India :

- Early October saw temperatures in Delhi, Haryana, and Rajasthan reach 35-40°C, with the India Meteorological Department (IMD) attributing this to reduced cloud cover and higher humidity.

4. Forecast :

- IMD expects above-normal rainfall in October, which may be followed by a particularly cold winter and active north-east monsoon.

This unusual warmth signals shifting weather patterns, with potential impacts on seasonal rainfall and winter severity.

16. DEBT RELIEF FOR CLIMATE-AFFECTED NATIONS

Debt relief for countries affected by climate change is gaining global support, with Australia recently joining efforts to ease financial burdens for nations hit by climate disasters.

Key Developments

1. Australia's Debt Relief Initiative :

- Australia has announced plans to offer Pacific nations affected by climate-induced disasters the ability to pause debt repayments, with climate-resilient debt clauses set to be included in sovereign loans by 2025.

2. Global Movement :

- Since 2023, the US, UK, and the World Bank have implemented similar debt relief measures. Australia's move follows Grenada's historic invocation of a debt suspension clause post-hurricane, allowing it to focus on recovery rather than repaying $ 30 million in debt.

3. Caribbean Advocacy for Climate Justice :

- In response to climate-related damage, Caribbean countries, including Grenada and the Bahamas, have petitioned the UN's International Court of Justice (ICJ) to assess climate obligations, with an oral hearing on climate liabilities scheduled for December.

Implications

This global debt relief trend highlights the growing recognition of climate change impacts on national economies, particularly for vulnerable nations, fostering a shift towards climate-resilient financial policies.

17. A RIVER LOST

The Hindon River, a rain-fed river originating in the Shivalik Hills in Saharanpur, has transformed from a natural water source to a toxic drain due to unregulated industrial effluents and untreated sewage. This contamination has devastating health consequences for communities along the river, affecting districts in Uttar Pradesh such as Muzaffarnagar, Shamli, and Meerut, before it joins the Yamuna in Gautam Buddha Nagar.

Key Issues and Health Impacts

1 Pollution Sources :

- **Industrial Effluents :** Numerous factories, including paper, sugar, and chemical industries in Saharanpur and Muzaffarnagar, discharge untreated waste directly into the river, particularly during rains, contaminating groundwater sources.

- **Sewage Discharge :** Insufficient sewage treatment plants (STPs) result in untreated domestic wastewater flowing into the Hindon, exacerbating the pollution load.

2. Health Consequences :

- Villages like Shimlana Mu recording unusually high incidences of cancer due to contaminated drinking water.

- Chronic diseases such as jaundice and liver infections are widespread, with limited access to clean water and healthcare, forcing residents to rely on expensive RO systems or private hospitals.

3. Environmental Degradation :

- **Dissolved Oxygen Depletion :** Pollution has reduced dissolved oxygen levels to zero in parts of the river, rendering it uninhabitable for aquatic life.

- **Biochemical Oxygen Demand (BOD) :** The BOD in the river has risen dramatically, signaling severe organic pollution. The latest reports show BOD levels as high as 126 mg/L in parts of the river, far above the 3 mg/L threshold for safe recreational use.

4. Government and Legal Actions :

- The National Green Tribunal (NGT) has intervened multiple times since 2014, mandating water supply to affected villages and the shutdown of non-compliant industries. Despite these orders, pollution persists due to limited enforcement and incomplete infrastructure.

- **Court Orders and Compliance :** In 2022, new litigation by activists challenged authorities to address ongoing pollution, highlighting the lack of progress in sewage treatment and clean water provision for affected communities.

Current Status and Future Directions

Despite efforts from the NGT and Central Pollution Control Board (CPCB), effective pollution control remains limited. The extensive contamination highlights the urgent need for enforcement of treatment protocols, expansion

of STP capacity, and alternative clean water sources for affected populations. Addressing the Hindon's pollution could offer a model for revitalizing other severely impacted rivers in India, fostering both environmental and public health improvements.

18. THE GOLDEN 100 DAYS : INDIA PREPARES BATTLE BLUEPRINT FOR THE NEXT PANDEMIC

Current Pandemic Landscape
- COVID-19 remains a persistent health threat globally, with ongoing weekly cases even after WHO lifted the emergency status in May 2023.
- The WHO has identified 30 viral and bacterial families that could potentially cause future pandemics, emphasizing the need for global readiness.

India's 100-Day Response Framework
- In September 2024, NITI Aayog released a framework for pandemic preparedness, focusing on an immediate response within the first 100 days of an outbreak.
- The framework includes four core areas :
  - ❏ **Governance and Legislation :** Proposes the creation of the Public Health Emergency Management Act (PHEMA) to address health-specific crises.
  - ❏ **Data Management and Surveillance:** Strengthening predictive warning systems and integrated human-animal health data for early detection.
  - ❏ **Research and Innovation :** Focusing on vaccine and diagnostic development for prototype pathogens within WHO-listed viral families.

- ❏ **Community Engagement and Partnerships :** Improving communication strategies and building partnerships for quick response.

Institutional Overhauls
- PHEMA is proposed to replace outdated legislation, like the Epidemic Diseases Act, and to establish clear public health governance.
- An Empowered Group of Secretaries (EGOS), chaired by the Cabinet Secretary, is suggested to coordinate rapid pandemic response efforts.

Key Takeaways
- **First 100-Day Strategy :** Emphasizes preemptive vaccine and diagnostic development, reducing response time for potential outbreaks.
- **Enhanced Communication :** To combat misinformation, public health departments are advised to collaborate with social and behavioural scientists.

India's 100-day pandemic response strategy aims to build a robust and responsive health system, ready for future public health emergencies.

19. THE INVASIVE THREAT OF KAPPAPHYCUS ALVAREZII TO INDIA'S MARINE ECOSYSTEMS

- *Kappaphycus alvarezii*, an exotic seaweed species, poses a growing threat to India's marine ecosystems.
- Originally introduced for commercial purposes, it has significant economic value, especially in the carrageenan industry.
- However, this invasive species is now endangering delicate coral reef ecosystems and affecting coastal communities' livelihoods.

1. Introduction and Spread of *Kappaphycus* alvarezii
- Introduced for its high yield and commercial viability, especially for producing carrageenan (used in food, cosmetics and agriculture).

- Promoted under the Pradhan Mantri Matsya Sampada Yojana with significant investments for commercial cultivation.
- Known for its rapid spread; even small fragments can regrow, making containment difficult.

2. Environmental Impact on Coral Reefs
- *Kappaphycus alvarezii* has been documented to smother coral reefs, reducing biodiversity and threatening native marine species.
- Major impact observed in the Gulf of Mannar, Tamil Nadu, where it has overgrown and weakened coral health.
- Potential for further spread to regions like Goa, posing risks to other sensitive marine environments.

3. Economic and Social Implications

- Carrageenan extracted from *Kappaphycus alvarezii* has high commercial value, supporting local livelihoods in coastal communities.
- However, the ecological harm caused by this invasive species could disrupt fisheries and tourism, affecting long-term economic stability.
- Balancing the economic benefits of seaweed cultivation with environmental preservation remains a key challenge.

4. Challenges in Controlling the Spread

- Manual removal efforts face limitations as *Kappaphycus alvarezii* regenerates from small fragments left behind.
- The aggressive nature of its growth makes eradication efforts costly and labour-intensive.
- Lack of comprehensive regulatory frameworks complicates containment and monitoring efforts.

Conclusion

- The unchecked spread of *Kappaphycus alvarezii* highlights a critical environmental issue where economic gains are clashing with ecological preservation.
- While seaweed cultivation offers valuable economic benefits, sustainable practices must be prioritized to protect coral reefs and other marine ecosystems.
- India must focus on developing stringent control measures, alternative cultivation strategies, and raising awareness to ensure that marine biodiversity is safeguarded for future generations.

20. ODISHA'S PLAN FOR GENETIC RESCUE OF SIMILIPAL TIGERS

The Similipal Tiger Reserve in Odisha, home to a unique population of melanistic tigers, is facing concerns about inbreeding depression due to genetic isolation. These rare tigers, distinguished by their dark stripes, have been increasing in number, with nearly 60% of the population being pseudo-melanistic. However, this inbreeding poses risks to their long-term survival due to reduced genetic diversity.

To address this, the Odisha forest department plans to introduce two new female tigers to the reserve, a move aimed at improving genetic diversity and avoiding inbreeding. This initiative, if successful, will be the first genetic rescue effort in India and is modeled after similar successful efforts in other regions, such as the introduction of female Texas pumas to the Florida panther population.

Genetic simulations are being used to predict outcomes and ensure the success of the relocation, although the final success depends on the introduced tigers' adaptation, reproduction, and contribution to the gene pool. Monitoring will be essential to ensure the long-term health of the tiger population.

21. THE GOVERNMENT'S PUSH FOR PANCHAYATS TO ALIGN WITH UN SDGs

In a bid to align local governance with the United Nations' Sustainable Development Goals (SDGs), Union government has introduced initiatives to accelerate India's progress towards meeting global SDG targets by 2030, with particular focus on poverty alleviation, education, sanitation and water supply.

Key Developments

- **Panchayat Awards :** The government initiated National Panchayat Awards in 2023 to evaluate how effectively Panchayats are working toward achieving SDGs. These awards assess performance across various categories like poverty-free villages and education-friendly villages.
- **Thematic Focus :** The Union Ministry of Panchayati Raj has divided the 17 SDGs into nine themes, aligning them with the 29 subjects under panchayat jurisdiction. Villages are encouraged to focus on one theme, ranging from poverty alleviation to clean water and sanitation.
- **Gram Vikas Panchayat Plans (GVPP) :** Villages are tasked with preparing development plans based on these themes. However, there is no extra funding provided by the government for these projects; resources are drawn from existing panchayat funds.

Challenges to Implementation

- **Lack of Coordination :** There is often poor coordination between government departments, making it difficult for panchayats to align their schemes effectively with SDG goals.

- **Capacity Issues :** Many Panchayats, especially in rural and tribal areas, struggle with administrative, financial, and technical capacity to implement large-scale projects. In some cases, even sarpanches (village heads) are unaware of SDG targets, and the data required for tracking progress is not readily available.
- **Over-reliance on Panchayats :** Experts caution that relying solely on Panchayats to meet SDGs may lead to superficial declara-

tions, as seen in some cases where villages were declared open-defecation-free based on panchayat claims without actual ground-level improvements.

While integrating SDGs into Panchayat activities has potential to accelerate India's progress, but its success depends on addressing these challenges and ensuring that Panchayats have the necessary resources and support to meet the targets effectively.

22. PUT THE PATIENT FIRST: REVISITING GUIDELINES FOR WITHDRAWAL OF LIFE SUPPORT

The article discusses the draft guidelines for the withdrawal of life support in terminally ill patients, critiquing their complexity and lack of consideration for patient autonomy.

Key Points

- **Passive Euthanasia and Advance Directives :** The author highlights India's progress in recognizing passive euthanasia and advance directives. The 2011 Aruna Shanbaug case led to landmark judgements allowing passive euthanasia under certain conditions, and later, the introduction of advance directives for both mental and physical health.
- **Criticism of the Draft Guidelines :** The author argues that the draft guidelines for the withdrawal of life support, currently under public comment, fail to prioritize the interests of terminally ill patients. The guidelines are criticized for being bureaucratically complex, with excessive red tape and unclear definitions, especially concerning conditions like persistent vegetative state (PVS) and withdrawal procedures.
- **Key Issues with the Guidelines :**
  - ❏ The guidelines assume a standardized experience for all patients, which may not be the case, especially in non-ICU settings.
  - ❏ The term 'surrogate' should be replaced with 'competent authority' to avoid confusion with commercial surrogacy laws.
  - ❏ There is an emphasis on conditions like brain death and coma that may not be applicable in all cases of irreversible illness.
  - ❏ The need for a simplified, ethical approach to withdrawing life support, with fewer bureaucratic layers and a clearer, patient-centered framework.

- **Advocating for Dignity in Death :** The author calls for a more humane approach to the withdrawal of life support, suggesting a simpler process involving fewer medical oversight layers, with a focus on dignity and patient autonomy. The practice of 'tapering' (gradually reducing life support) should be recognized, as it allows for a dignified death.

Riddled with red tape
Proposed pathway for passive euthanasia overrides terminally ill patients' rights and possible wishes, and creates unnecessary oversight in the decision-making process

Source : "Guidelines for withdrawal of Life Support", Union Ministry of Health and Family Welfare
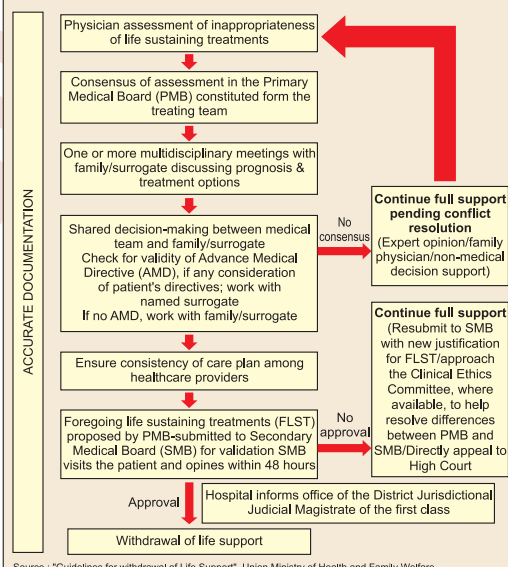
Conclusion

The piece advocates for revising the draft guidelines to reflect a more compassionate, streamlined approach that puts the patient's dignity and rights first. It emphasizes reducing bureaucratic hurdles and ensuring that patients and their families can make decisions with minimal interference, aligning with the principles of autonomy and respect for life.

23. CULINARY MELON IN SOUTH INDIA

- **Culinary Melon :** Often mistaken for different varieties of cucumbers (*e.g.*, Mangalore cucumber, Madras cucumber), the culinary melon is actually a single type of melon, *Cucumis melo* variety *acidulus*, used primarily as a vegetable in southern India.
- **Appearance and Usage :**
  - ❏ The melon varies in appearance across states :
    - ✪ *Mangalore cucumber* (Karnataka) is ovate with a green rind.
    - ✪ *Vellarikka* (Kerala) and *Madras cucumber* (Tamil Nadu) have yellow skin.
    - ✪ *Dosakaya* (Andhra Pradesh and Telangana) is small and globular with a yellow rind.
  - ❏ Commonly used in dishes like sambar, stir-fries, and dals (*e.g.*, *dosakaya pappu* in Andhra Pradesh).
- **Nutritional and Medicinal Value :**
  - ❏ Low in fat and cholesterol, high in vitamin C, fiber, and minerals like silica and magnesium.
  - ❏ Seeds contain oil rich in polyunsaturated fatty acids and essential fatty acids.
- **Cultural Importance :** While underutilized, the melon is valued for its versatility, long shelf life (65-300 days), and nutritional benefits.
- **Geographical Origin :** Likely originated in Africa, with domestication occurring independently in Southeast Asia, Eastern Asia, and India.
- **Research and Development :** Studies suggest potential for breeding hybrids that could combine the long shelf life of culinary melons with the taste of musk melons. Improved varieties like Mudicode, Arunima, and Saubhagya have been developed for better yield and shelf life.

24. NO BOOST TO FARMER INCOME

- **Food Price Increases :** High food prices typically trigger government action to control inflation, protecting consumers. However, it's often assumed that these price increases should also lead to higher incomes for farmers. A study by the International Food Policy Research Institute (IFPRI) in 2023 found that rising food prices can reduce poverty in agrarian countries, but this is not always the case in urban or non-agrarian areas.
- **Indian Context :** A Reserve Bank of India (RBI) report analyzed how much of consumers' spending on food reaches farmers. It found that :
  - ❏ Dairy and egg farmers receive 70-75% of the consumer's spending.
  - ❏ Poultry meat farmers receive 56%.
  - ❏ Farmers growing tomatoes, onions, and potatoes get only 33-37% of the selling price.
  - ❏ Pulses farmers receive 65-75% of the consumer price.
- **Income Disparity :** Despite the rise in food prices, farmers in poultry and vegetable sectors often earn less than their production costs due to inefficient marketing systems. Farmers in these sectors face a 'boom-and-bust' cycle, where they are forced to discard crops or sell at a loss during the flush season, while consumers pay high prices during lean periods.

Conclusion

The growing gap between what farmers receive and what consumers pay suggests that higher food prices do not necessarily lead to increased farmer incomes, mainly due to an inefficient marketing system and lack of integrated value chains.

GIST
OF
SCIENCE REPORTER

Topic : 21st Century Skills for Future Success

November 2024

1. EVERY CHILD DESERVES A BRIGHTER TOMORROW : NURTURE THE FUTURE

In a world that is constantly evolving, childhood too has undergone a significant transformation. The way children grow up today is vastly different from how it was merely 15-20 years ago. The changes are apparent in almost every aspect of a child's life, from their daily activities to the values they imbibe.

The Changing Face of Childhood

Fast forward to today, and the scene looks very different. Kids are increasingly opting for junk food over nutritious home-cooked meals. The rise of digital technology has introduced a new type of play—one that is often solitary and screen-based. Children spend a large portion of their time glued to smartphones, tablets and television screens, with significantly less time spent outdoors or engaging in physical activities.

While technology has opened up new avenues for learning and entertainment, it has also led to a sedentary lifestyle among children. Screen time has replaced playtime, impacting not only their physical health but also their emotional well-being. The lack of active play can hinder their development, reducing opportunities for them to learn vital life skills.

The Call for Change

It's high time we acknowledge these changes and work towards creating a balanced environment for our children. We must encourage them to step outside, explore nature, play with friends, and engage in activities that foster physical fitness and mental growth. As parents, educators, and members of the community, we hold the responsibility to nurture a future where every child has the opportunity to experience a well-rounded childhood.

This involves making conscious efforts to limit screen time, promoting healthy eating habits, and bringing back family activities that encourage bonding and interaction. Whether it's a simple game of badminton in the park, a cooking session in the kitchen, or a family board game night, these small yet significant actions can help bridge the gap between the childhood of the past and the present.

Conclusion

The world may be changing, but the fundamental needs of children remain the same they require love, attention, and opportunities to grow in a healthy and stimulating environment. By fostering an atmosphere that values physical activity, creativity, and family time, we can ensure that every child gets a chance to build happy memories and grow into a well-rounded individual.

2. 21ST CENTURY SKILLS FOR STUDENTS' FUTURE SUCCESS

A skill is defined as the ability to perform a task well, often acquired through training, experience, or practice. Unlike natural abilities like memory, skills are learned behaviors. For instance, while memory is an innate ability, the act of effectively recalling information is a skill.

Types of Skills : Hard Skills and Soft Skills

1. Hard Skills : Hard skills are specific, teachable abilities or knowledge sets that are job-focused. They pertain to what you can do and often involve technical expertise. Examples of hard skills include :

- **Mobile Repairing :** The technical know-how to fix smartphones.
- **Jewelry Making :** The craft of designing and creating beautiful ornaments.
- **Music Composition :** The ability to create original musical pieces.
- **Carpentry :** The skill of working with wood to build furniture and structures.

These skills are usually acquired through formal education, training programs, or hands-on experience.

2. Soft Skills : Soft skills, on the other hand, are interpersonal skills that relate to how you work with others. They focus on attributes like communication, adaptability and emotional intelligence. Examples of soft skills include :

- **Public Speaking :** The ability to convey ideas clearly and confidently in front of an audience.
- **Leadership :** The capacity to guide and inspire a team.
- **Creative Thinking :** The ability to come up with innovative solutions.
- **Decision Making :** The skill of making sound choices based on analysis and judgement.

Soft skills are essential for building strong relationships and working harmoniously with colleagues, making them equally important as hard skills in the modern workplace.

The Importance of a Balanced Skill Set

In the 21st century, job success requires a blend of both hard and soft skills, often referred to as a comprehensive skill set. Together, they form a holistic approach to career readiness, preparing students not just to perform tasks but also to excel in collaborative and dynamic environments.

To Foster these Skills, it's Essential to Provide

● **Experiential Learning :** Opportunities for hands-on practice & real-world experience.

● **Skill-Based Education :** Curriculum that integrates technical training with personal development.

● **Mentorship and Guidance :** Support from educators and professionals to nurture both hard and soft skills.

Conclusion

The emphasis on skills is growing as industries increasingly value candidates who can adapt to the challenges of the digital age. Schools and educational institutions must focus on equipping students with both hard and soft skills to ensure they are ready for the complexities of the future workforce.

3. ANXIETY IN CHILDREN

The Nature of Anxiety

Anxiety is not a primary emotion like anger, jealousy, or sadness. Instead, it is a state of being often triggered by these primary emotions. For instance, experiencing hurt or disappointment can lead to feelings of anxiety, making it one of the most common secondary emotions. In recent years, there has been a noticeable increase in anxiety disorders among children and adolescents, making it a growing concern for parents, educators, and healthcare professionals.

Prevalence of Anxiety Disorders in Children

According to the World Health Organization (WHO), one in seven individuals aged 10-19 years globally experiences a mental disorder, accounting for about 13% of the global disease burden in this age group. In India, recent statistics indicate that approximately 10-15% of children suffer from anxiety-related issues. Among these, adolescents are particularly vulnerable, showing higher rates of depression, anxiety, and behavioral disorders compared to younger children. Additionally, issues such as stress, fear, and loneliness are becoming increasingly prevalent among the youth, with numbers continuing to rise.

Factors Contributing to Anxiety in Children

Several factors contribute to the rising incidence of anxiety in children today :

● **Increased Screen Time :** Excessive use of smartphones, tablets, and other devices has been linked to higher levels of anxiety, as children become overstimulated and disconnected from physical activities and face-to-face interactions.

● **Academic Pressure :** The emphasis on academic success and performance can be overwhelming for many children, leading to heightened levels of stress and anxiety.

● **Social Isolation :** Changes in lifestyle, including reduced outdoor play and social interactions, have contributed to a sense of loneliness among children, exacerbating feelings of anxiety.

Recognizing Signs of Anxiety in Children

It is important for parents, caregivers, and educators to be vigilant about the signs of anxiety in children. Some common symptoms include :

● **Excessive Worrying :** Persistent concerns about various aspects of their daily life, including school, friendships, or family matters.

● **Physical Symptoms :** Complaints of headaches, stomachaches, or general discomfort without an obvious physical cause.

● **Avoidance :** Reluctance to participate in activities or social interactions that they previously enjoyed.

● **Sleep Disturbances :** Difficulty falling asleep, staying asleep, or experiencing nightmares.

Addressing Anxiety in Children

Early intervention and support are crucial in helping children cope with anxiety. Strategies that may help include :

● **Open Communication :** Encourage children to express their feelings and listen without judgment. Creating a safe space for them to share can alleviate some of their worries.

● **Limiting Screen Time :** Setting boundaries on screen usage and encouraging physical activities can help reduce anxiety levels.

- **Mindfulness and Relaxation Techniques :** Practices like deep breathing, meditation, or yoga can help children manage stress and calm their minds.
- **Professional Help :** If anxiety symptoms persist or interfere with daily life, seeking guidance from a mental health professional, such as a child psychologist, may be necessary.

Conclusion

Anxiety disorders in children are a pressing issue that requires attention and action. As the prevalence of anxiety continues to rise, it is essential for parents, educators, and healthcare providers to work together to support children's mental health. By recognizing the signs early and implementing effective strategies, we can help our children navigate their emotions and build resilience for the future.

4. SCREEN TIME AND SIGHT : PROTECTING YOUNG EYES IN A DIGITAL WORLD

Good vision is essential for children's development, affecting their academic performance, social skills and overall quality of life. However, the rapid rise in digital device usage, combined with changing lifestyles has led to an alarming increase in vision problems among children in the 21st century.

The Digital Age : A Double-Edged Sword

Studies by the All India Institute of Medical Sciences (AIIMS) reveal that Indian children spend an average of 6-8 hours per day on screens, a figure that has escalated during and after the COVID-19 pandemic. Unlike earlier times when screen exposure was limited primarily to television, today's children use a variety of devices throughout the day, all of which contribute to eye strain and potential vision issues.

How Screen Time Affects Young Eyes

Excessive screen time can lead to a range of vision-related problems, commonly referred to as Digital Eye Strain (DES) or Computer Vision Syndrome (CVS). The symptoms include :

- **Eye Strain and Fatigue :** Prolonged focus on screens can cause discomfort, fatigue, and difficulty in refocusing the eyes.
- **Dry Eyes :** When kids stare at screens, they blink less frequently, leading to reduced moisture in the eyes and discomfort.
- **Blurred Vision :** Spending long hours looking at digital screens can result in temporary blurred vision, making it difficult for kids to focus on other tasks.
- **Headaches and Neck Pain :** Poor posture and constant eye strain can cause headaches, neck pain, and general discomfort.

The Impact on Children's Vision Development

The World Health Organization (WHO) has identified digital screen usage as a key factor contributing to Myopia in children. Excessive screen time can not only lead to immediate discomfort but may also affect their long-term visual health, potentially leading to persistent issues like myopia progression.

Tips for Reducing Eye Strain in Children

Protecting children's eyes in a digital world requires a combination of good habits and conscious effort from both parents and educators. Here are some effective strategies:

1. **Follow the 20-20-20 Rule :** Encourage children to take a break every 20 minutes by looking at something 20 feet away for at least 20 seconds. This helps relax the eye muscles and reduce strain.
2. **Limit Screen Time :** Set boundaries for screen usage, especially during non-educational activities. Encourage children to engage in outdoor play and physical activities instead.
3. **Ensure Proper Lighting :** Make sure the room is well-lit when children are using screens. Avoid using digital devices in dark environments, as it increases the strain on their eyes.
4. **Adjust Screen Settings :** Reduce the brightness of screens and use blue light filters to lessen the impact of harmful blue light emitted by digital devices.
5. **Encourage Blinking :** Remind children to blink frequently while using screens to keep their eyes moist and prevent dryness.

Conclusion

As screen time becomes an unavoidable part of daily life, it is crucial to educate both children and parents about the importance of taking preventive measures to protect young eyes. Prioritizing eye health from an early age will ensure that children have the vision needed for their development and success, both academically and socially.

5. BITUMINOUS STEEL SLAG ROAD : BUILDING SUSTAINABLE ROADS

The CSIR-Central Road Research Institute (CSIR-CRRI) in New Delhi has spearheaded a groundbreaking R&D project funded by the Ministry of Steel, in collaboration with four major industries, to explore the potential of using steel slag for road construction. Steel slag, a byproduct of the steel manufacturing process, is produced during the separation of molten steel from impurities in steel-making furnaces. This byproduct solidifies upon cooling and, when processed into aggregates, can serve as an innovative material for road development.

Turning Waste into Wealth : Utilizing Steel Slag

India is the second-largest steel producer in the world, generating a substantial amount of steel slag about 19 million tonnes annually—as solid waste from various steel plants. With predictions estimating a significant rise in steel production, it is anticipated that the amount of steel slag generated could double by the year 2030. The disposal of this slag has been a major environmental challenge for the industry, leading to landfills and associated pollution risks. However, the utilization of steel slag for road construction offers a sustainable solution, transforming waste into a valuable resource.

Advantages of Using Steel Slag in Road Construction

Steel slag has emerged as a promising alternative to traditional road construction materials like natural aggregates and asphalt. Here are some key benefits :

- **Enhanced Durability :** Roads built with steel slag aggregates have shown increased strength and durability, making them less prone to wear and tear compared to conventional roads.
- **Cost-Effective :** Using steel slag reduces the need for natural aggregates, which are becoming scarce and costly. This helps in lowering the overall cost of road construction projects.
- **Eco-Friendly :** By repurposing industrial waste, the use of steel slag reduces the environmental impact of steel production. It helps in conserving natural resources and minimizes the carbon footprint associated with road construction.
- **Improved Road Performance :** Steel slag has excellent binding properties, making it suitable for use in bituminous road layers. It also offers better resistance to high temperatures and traffic loads, enhancing road performance.

Conclusion

As India's steel production continues to rise, so does the potential for utilizing steel slag in a way that benefits both the industry and the environment. By turning industrial waste into a valuable resource, projects like this can contribute to building a more resilient and eco-friendly infrastructure for the country.

6. EMOTIONAL INTELLIGENCE : THE SKILL YOU DIDN'T KNOW YOU NEEDED

According to a report titled "Student Suicides : An Epidemic Sweeping India," published in August 2021 and based on data from the National Crime Records Bureau (NCRB), the rate of student suicides has been increasing at twice the rate of overall suicides in the country. This disturbing trend underscores the pressing need to shift the focus from academic pressures to nurturing emotional well-being among students.

The Role of Emotional Intelligence

Emotional intelligence refers to the ability to understand, manage, and express emotions effectively. It involves recognizing one's own emotions and the emotions of others, which is essential for navigating stressful situations and building healthy relationships. In the context of the growing mental health challenges faced by students, enhancing emotional intelligence can be a powerful tool for prevention and support.

Understanding Emotions : A Key to Mental Health

Although everyone experiences a range of emotions like happiness, sadness, anger, or fear, the intensity and frequency of these emotions can differ greatly, based on personality, gender life experiences and individual coping mechanism. Recognizing and acknowledging these differences is crucial in developing a better understanding of emotional responses and supporting mental health.

Building Emotional Intelligence in Students

- **Self-Awareness :** Recognizing one's own emotions and understanding how they affect behaviour.
- **Self-Regulation :** Learning to control impulsive responses and managing stress effectively.
- **Empathy :** Understanding and sharing the feelings of others, which fosters better relationships and a supportive environment.
- **Social Skills :** Enhancing communication and conflict-resolution abilities, which are vital for successful interactions.

Educational institutions can play a pivotal role in fostering emotional intelligence by integrating counseling services, stress management programs, and activities that promote self-reflection and emotional expression. This holistic approach can help reduce the impact of academic pressures and support students in developing resilience.

Shifting Focus : From Competition to Well-Being

The competitive nature of India's educational system often emphasizes academic achievements at the expense of emotional health. However, as the rise in student suicides suggests, this narrow focus can have devastating consequences. It is critical for schools and parents to prioritize mental well-being alongside academic performance. By creating a more balanced environment that values emotional growth and provides the necessary support systems, we can help students cope better with the challenges they face.

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7. HOLISTIC NUTRITION FOR CHILD HEALTH AND WELL-BEING

Global and National Efforts for Child Health

On a global scale, organizations like UNICEF (United Nations Children's Fund) and the World Health Organization (WHO) are working diligently to promote the health and well-being of children. These institutions focus on combating malnutrition, ensuring access to clean water, promoting hygiene, and providing essential vaccinations. Initiatives such as the Integrated Child Development Services (ICDS) and the National Nutrition Mission (POSHAN Abhiyaan) of Union Government aims to address the diverse health needs of children.

The Unresolved Burden of Malnutrition

According to UNICEF's Nutrition Strategy 2020-2030, the issue of malnutrition continues to persist, affecting an estimated 200 million children worldwide as of 2020. Malnutrition is a complex issue influenced by various factors, including inadequate dietary intake, poor maternal health, and limited access to nutritious foods. It can lead to stunted growth, weakened immune systems, and impaired cognitive devlopment, which have long-term impacts on a child's future and the nation's human capital.

Addressing the Causes : A Holistic Approach

- **Maternal Health :** Ensuring mothers receive adequate nutrition and healthcare before and during pregnancy is critical to the health of the child.
- **Diverse Diets :** Promoting a balanced diet rich in proteins, vitamins, and minerals is key to preventing nutritional deficiencies. This means incorporating a variety of foods like grains, pulses, dairy, fruits, and vegetables into children's daily meals.
- **Public Health Interventions :** Programs like mid-day meal schemes in schools and community nutrition programs help provide access to nutritious foods for children who might otherwise go without.
- **Education and Awareness :** Educating families and communities about the importance of nutrition, hygiene, and sanitation is vital for creating lasting behavioural changes that promote health.
- **Holistic Nutrition :** This approach takes into consideration not only what children eat but also factors like regular physical activity, safe drinking water, adequate sleep, and a stress-free environment, which together contribute to their overall growth and development.

Conclusion

The road to achieving holistic nutrition and well-being for children is a long one, filled with complex challenges. However, with coordinated efforts from governments, international organizations, healthcare providers, and communities, progress can be made. While the current statistics may paint a grim picture, they also serve as a call to action. By prioritizing child health and taking concrete steps to address malnutrition, we can pave the way for a healthier, more vibrant future generation.

8. SNOWBALLING SUSTAINABILITY THROUGH SCHOOLS : SKILLING STUDENTS TO GROW FOOD

Schools play a pivotal role in fostering sustainable habits among children, and one of the most effective ways to do so is by teaching them how to grow their own food through school gardens.

The Power of School Gardens

By engaging in activities like planting, watering, and harvesting, students gain a deeper understanding of the connections between food, nutrition, well-being and the environment. These gardens offer hands-on experience in clean farming practices, teaching students about the importance of soil health, water conservation, and the broader impact of food production on the ecosystem.

A Legacy of Learning : The Origins of School Gardens

The concept of school gardens is not new. The first recorded instance dates back to the early 1900s in the United States. In 1904, educator Miller published a manual on cooperative gardening for school children, promoting the idea of transforming young learners from mere consumers to active producers.

Benefits of Skilling Students in Sustainability

Teaching students to grow their own food has several far-reaching benefits :

1. **Promotes Environmental Awareness :** Students learn the importance of sustainable farming practices and the impact of their choices on the environment.
2. **Enhances Nutrition and Well-being :** By growing their own fruits and vegetables, children gain an appreciation for fresh, healthy food and the role it plays in their overall health.
3. **Builds Life Skills :** Gardening instills valuable life skills like patience, responsibility, teamwork, and problem-solving, as students work together to cultivate their gardens.
4. **Encourages a Connection with Nature :** In today's digital age, a school garden offers a much-needed opportunity for children to reconnect with nature, fostering a sense of calm and well-being.
5. **Supports Economic Understanding :** Students gain insight into the economics of food production, understanding the value of labor, the cost of resources, and the benefits of local, self-grown produce.
6. **Creating a Sustainable Future :** Schools that integrate gardening into their curriculum contribute to building a generation of environmentally conscious individuals who are equipped with the knowledge and skills needed to tackle future challenges.

Conclusion

In a world grappling with environmental crises, initiatives like school gardens represent a simple yet profound step towards a greener, more sustainable society. It's time to sow the seeds of sustainability in our schools and let them flourish in the minds of our young learners, ensuring a better tomorrow for all.

9. GLOW GUARD : BRIGHTEN, ALERT, PROTECT

The Hidden Danger of Glass Structures

Millions of birds die every year as they crash into these glass facades, unable to differentiate the reflective surface from the sky or trees it mirrors.

A Risk to Humans Too

People often walk into glass doors or walls, mistaking them for open spaces. The consequences range from minor bruises to severe injuries like concussions or fractures.

The Need for a Solution : Glow Guard

Glow Guard acts as a visual cue, making glass surfaces more noticeable without compromising the aesthetics of the structure.

1. **Brighten :** By adding a subtle, glowing layer to glass, Glow Guard ensures that the surface is more visible even in low light conditions.
2. **Alert :** The reflective properties of Glow Guard help birds and humans alike recognize the presence of a glass barrier, reducing the chances of accidental collisions.
3. **Protect :** By preventing direct impacts, Glow Guard helps protect both wildlife and people from injuries.

Conclusion

It's essential for architects, city planners and building owners to consider the unintended consequences of glass structures and adopt measures like Glow Guard to enhance safety, without compromising on safety, creating a more bird-friendly and human-friendly environment.

10. THE QUANTUM BREAKTHROUGH

The Heart of QVM Lab

The Quanto Vibrational Medicine (QVM) lab is a space where quantum science intersect with medicine, where groundbreaking experiments are conducted to explore vibrational medicine—a novel field attempting to decode the effects of quantum vibrations on biological systems and to harness quantum technology in the fight against cancer.

Building the Future of Medicine

The QVM lab, under the leadership of Professor Gayathri is a fusion of quantum mechanics with biology was no longer a far-fetched dream but an emerging reality. Their work was poised to make a significant impact, potentially paving the way for novel cancer therapies that could operate at the subatomic level, targeting diseased cells with unprecedented precision.

11. THE KAKAPO : A UNIQUE PARROT ON THE BRINK OF EXTINCTION

The Kakapo (*Strigops habroptilus*), or "owl parrot," is a rare, flightless parrot native to New Zealand. Its distinctive owl-like face, nocturnal habits, and moss-green camouflage set it apart. As the world's heaviest parrot, the Kakapo faces critical endangerment due to habitat loss and predation by introduced species.

With fewer than 300 individuals left, conservation efforts like the Kakapo Recovery Programme have relocated the birds to predator-free islands. Despite slow breeding cycles, these initiatives have shown positive results. The Kakapo symbolizes the importance of biodiversity and the power of focused conservation efforts to save species on the brink of extinction.