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15 October 2024

Empowering Rural India: NABARD Survey on Rural Financial Inclusion

Context: On October 10, 2024, NABARD released the findings of its second All India Rural Financial Inclusion Survey (NAFIS) for 2021-22. This comprehensive survey, based on data from 100,000 rural households, highlights various economic and financial indicators in the post-COVID period. The inaugural survey was conducted for the agricultural year 2016-17, and the latest results provide insights into the evolution of rural economic conditions over the past five years.

Key Findings from NAFIS 2021-22

- **Increase in Average Monthly Income:** Average monthly income rose by 57.6%, from 8,059 in 2016-17 to 12,698 in 2021-22. Agricultural households reported a higher average income of 13,661 compared to 11,438 for non-agricultural households.
- **Rise in Average Monthly Expenditure:** Monthly expenditure increased from 6,646 to 11,262, with agricultural households spending 11,710 and non-agricultural households 10,675.
- **Increase in Financial Savings:** Annual average financial savings grew from 9,104 to 13,209. Savings were reported by 66% of households, up from 50.6%. Agricultural households led with 71% reporting savings.
- **Kisan Credit Card (KCC) Adoption:** 44% of agricultural households possessed a KCC, with 77% of larger landholders having a valid card.
- **Insurance Coverage:** Households with at least one insured member increased from 25.5% to 80.3%. Vehicle insurance was most common, covering 55% of households.
- **Pension Coverage:** The percentage of households with a member receiving any form of pension rose from 18.9% to 23.5%. Among households with members over 60, 54% received pensions.
- **Financial Literacy:** Financial literacy improved significantly, with 51.3% demonstrating good understanding, up from 33.9%. Sound financial behaviors also increased from 56.4% to 72.8%.

About NABARD:

- National Bank for Agriculture and Rural Development (NABARD)
- The National Bank for Agriculture and Rural Development (NABARD) is a pivotal institution in India, founded on July 12, 1982. Headquartered in Mumbai, Maharashtra, NABARD plays a crucial role in facilitating rural development and improving the economic conditions of rural areas across the country.

	Agricultural Households	Non-Agricultural Households	All Households
All Sources Combined	13,661 (100)	11,438 (100)	12,698 (100)
Cultivation	4,476 (33)	-39 (0)	2,521 (20)
Livestock Rearing	1,677 (12)	-8 (0)	947 (7)
Other Enterprises	2,010 (15)	1,809 (16)	1,923 (15)
Wage Labour	2,238 (16)	2,927 (26)	2,536 (20)
Govt./ Pvt. Service	3,150 (23)	6,599 (57)	4,643 (37)
Other Sources	110 (1)	150 (1)	127 (1)

Functions of NABARD

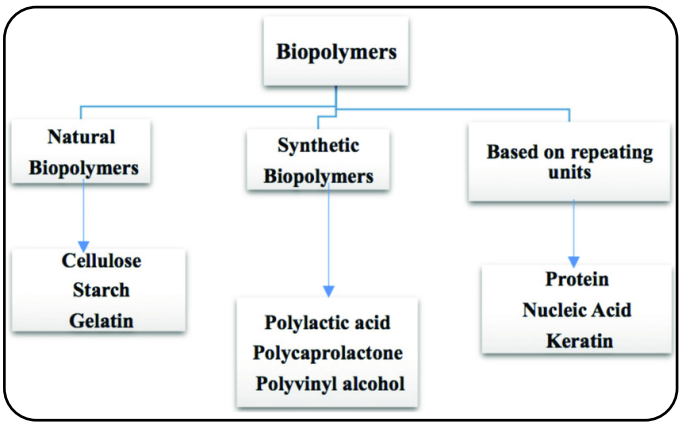
- **Refinance Support:** Provides refinance assistance for building rural infrastructure projects.
- **Credit Planning:** Prepares district-level credit plans to guide and motivate banks in achieving rural financing targets.
- **Development Scheme Design:** Involved in designing and implementing development schemes for the Union government.
- **Training and Support for Artisans:** Provides training to handicraft artisans and helps them develop marketing platforms for their products.
- **International Partnerships:** Collaborates with leading global organizations and World Bank-affiliated institutions for rural development and agricultural optimization.
- **Supervision of Cooperative Banks and RRBs:** Supervises Cooperative Banks and Regional Rural Banks (RRBs), assisting them in developing sound banking practices.

India's First Demonstration Facility for Biopolymers Inaugurated

Context: Union Minister Dr. Jitendra Singh inaugurated India's first Demonstration Facility for Biopolymers in

Jejuri, Pune. Built by Praj Industries, this facility is a significant stride toward making India a global leader in the bioeconomy and sustainable practices.

- It focuses on the production of Polylactic Acid (PLA) bioplastic, which represents an eco-friendly alternative to conventional fossil-based plastics, thereby addressing the pressing global plastic pollution crisis.
- This facility exemplifies how technological advancements in bioplastics can lead to economic growth and sustainability. Dr. Singh highlighted India's commitment to transitioning from traditional plastics to sustainable solutions, which aligns with the broader objectives of the government's initiatives.



Current State of Biotechnology in India%

- India ranks among the top 12 biotechnology destinations globally, with a thriving biotech ecosystem that has gained momentum, particularly following the Covid-19 pandemic. The country has witnessed significant advancements in vaccine development, diagnostic tests, and medical devices.
- **Biotech Startups:** In 2021, India saw a record 1,128 biotech startup registrations, the highest since 2015. By 2022, the total number of biotech startups reached 6,756, with expectations to hit 10,000 by 2025.
- **Bioeconomy Growth:** India's bioeconomy has risen dramatically from USD 10 billion in 2014 to over USD 130 billion in 2024, with projections to reach USD 300 billion by 2030. The biopharma sector remains the largest segment, accounting for 49% of the bioeconomy's total value, estimated at USD 39.4 billion. Furthermore, the vaccination market is projected to be worth Rs. 252 billion (USD 3.04 billion) by 2025.
- **Bioresources:** India's vast biodiversity, particularly in the Himalayas and its 7,500 km coastline, provides a substantial advantage in biotechnology. The Deep Sea Mission aims to explore and harness the biodiversity beneath the seas, further enhancing India's potential in this field.

BioE3 Policy: A Catalyst for Sustainable Growth

The BioE3 Policy (Biotechnology for Economy, Environment, and Employment) is an important governmental initiative designed to promote sustainable biomanufacturing across various sectors, including high-value bio-based chemicals, biopolymers, precision biotherapeutics, and climate-resilient agriculture. Its objectives include:

- **Economic Growth:** Targeting a contribution of 5-6% to India's GDP by 2030, the policy aims for a bioeconomy valued at 24 trillion (approximately $300 billion).
- **Job Creation:** The establishment of biomanufacturing centers and bio-AI hubs is expected to generate numerous job opportunities, particularly in tier-II and tier-III cities.
- **Sustainability:** By supporting the transition to biofuel-based solutions, the policy aligns with India's net-zero carbon emissions goal.
- **Innovation and Collaboration:** The policy encourages R&D in biotechnology, fostering collaboration between industry, academia, and government to expedite the commercialization of innovative solutions.

PM's Internship Scheme

Context: Prime Minister Narendra Modi recently launched the Prime Minister's Internship Scheme, aimed at equipping Indian youth with essential skills for the evolving job market.

- This initiative is part of the government's broader strategy to promote skill development and employment opportunities, targeting one crore young individuals over the next five years.

Key Features of the Scheme:

- Announced in the Union Budget for 2024-25, the scheme began with a pilot project targeting 1.25 lakh internships for the financial year 2024-25. It covers 24 sectors, including oil, gas, energy, travel, hospitality, automotive, and banking and financial services.

- The companies selected for this pilot were chosen based on their corporate social responsibility (CSR) expenditure over the past three years; ensuring participants are placed in organizations committed to ethical practices.
- It is independent from existing skill development programs, apprenticeships, and student training initiatives across all states and union territories. By focusing exclusively on internships, the Prime Minister's Internship Scheme aims to create a tailored experience that enhances employability and provides real-world exposure to young people.

Financial Assistance:

- Interns under the Prime Minister's Internship Scheme will receive a monthly stipend of 5,000 throughout their internship duration, structured as follows:

Contribution Breakdown:

- 500 will be contributed by partner companies, based on attendance and conduct.
- The remaining 4,500 will be provided by the government via Direct Benefit Transfer (DBT) to the intern's Aadhaar-seeded bank account.

Additional Grant:

- Interns will also receive a one-time grant of 6,000, disbursed through DBT upon joining the internship.

Insurance Coverage:

- All interns will be covered under the government's insurance schemes:
  - » Pradhan Mantri Jeevan Jyoti Bima Yojana
  - » Pradhan Mantri Suraksha Bima Yojana
- The government will pay the premiums for these insurance policies. Partner companies may also offer additional accidental insurance coverage for their interns.

Implementation through the PM Internship Portal:

- The scheme operates through a centralized online portal that manages the entire internship lifecycle. This platform allows eligible candidates to create resumes, browse internships, and apply for positions in their preferred sectors. Emphasis is placed on diversity and social inclusivity, ensuring representation from marginalized communities.

X-band Radar to Monitor Landslides in Wayanad

Context: In July 2024, devastating floods and landslides in Kerala's Wayanad district claimed over 200 lives. In response, the Union Ministry of Earth Sciences approved the installation of an X-band radar in the region to enhance disaster preparedness.

- The torrential rains triggered a massive landslide near Punchirimattom, resulting in catastrophic debris flows and significant destruction.

Understanding Radar Technology

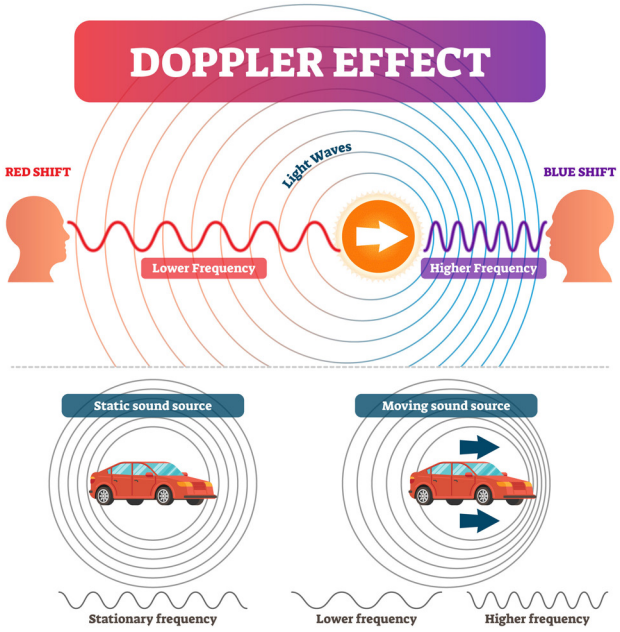
What is Radar?

- Radar stands for 'radio detection and ranging.' It uses radio waves to detect objects and measure their distance, velocity, and characteristics. A transmitter emits a signal aimed at an object (e.g., clouds). The signal reflects off the object and returns to the receiver for analysis.
- **Doppler Effect:** This principle describes how the frequency of waves changes as the source moves relative to an observer, allowing radar to track cloud movement, direction, and speed.

X-Band Radar:

- X-band radar operates in the 8-12 GHz range with wavelengths of 2-4 cm, which allows for higher-resolution imaging by detecting smaller particles, such as raindrops or fog. However, higher frequency radiation tends to attenuate faster, resulting in a shorter operational range. In Wayanad, the X-band radar will be utilized to monitor soil movements, aiding in the prediction of landslides. Its

capacity for high-temporal sampling will allow for rapid tracking of changes in the environment



India's Meteorological Radar Network:

- India began deploying weather radars in the 1950s. The first indigenously made X-band radar was installed in New Delhi in 1970.

Current Capabilities:

- The country currently employs both X-band and S-band radars for various meteorological applications. S-band radars, operating at 2-4 GHz, are primarily used for long-range detection; the first of these was set up in Visakhapatnam in 1970.

Future Developments:

- The government plans to install 56 additional Doppler radars as part of the 2,000-crore 'Mission Mausam,' aiming for up to 60 new meteorological radars by 2026.
- Ten new X-band Doppler radars are being procured for improved weather forecasting in the northeastern states and Himachal Pradesh's Lahaul and Spiti districts.

International Collaboration: NISAR Project

- The NASA-ISRO Synthetic Aperture Radar (NISAR) is a joint effort to create high-resolution maps of Earth's landmasses using radar imaging.
- Components: The satellite will include an L-band radar (1.25 GHz, 24 cm) from NASA and an S-band radar (3.2 GHz, 9.3 cm) from ISRO to track natural changes.
- Launch Plans: Scheduled for 2025 aboard an ISRO GSLV Mk II rocket, NISAR has a total cost of $1.5 billion, primarily funded by NASA.

Power Packed News

Indo-US Endowment Awards: Boosting AI and Quantum Tech Collaboration

- On October 12, 2024, Union Minister Dr. Jitendra Singh presented the Indo-US Endowment Awards to 17 collaborative teams. These teams, part of the U.S.-India Science & Technology Endowment Fund (USISTEF), focus on advancing AI-enabled technologies and quantum communication.
- Both governments have executed agreements to boost innovation ecosystems, with India introducing reforms such as Design Linked Incentives (DLI) for semiconductors and PLI schemes for sectors like automobiles and drones.
- Dr. Singh highlighted India's growing start-up ecosystem, which has expanded from 350 startups in 2014 to over 1,40,000, including 110 unicorns.
- This initiative reinforces Indo-US relations and positions both nations as leaders in cutting-edge technologies.

Dragon Drones

- In the ongoing Russia-Ukraine conflict, a new and deadly weapon known as "dragon drones" has emerged, capable of

releasing a molten substance called thermite.

- Thermite, a combination of aluminum and iron oxide, burns at an astonishing temperature of 2,427 degrees Celsius and is difficult to extinguish, making it a potent incendiary agent. When ignited, it can penetrate various materials, causing severe burns and extensive damage to both military equipment and personnel.
- Initially deployed by Ukrainian forces to target Russian troop positions by igniting vegetation for cover, the use of these drones has since been adopted by Russian forces as well.
- While thermite has a historical precedent in warfare, including use in both World Wars, its application in modern conflict raises significant ethical concerns.
- Although not explicitly prohibited under international law, the use of thermite against civilian targets is restricted by the Convention on Certain Conventional Weapons, which emphasizes its indiscriminate nature and potential for severe harm.