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PRITHVI Scheme Unveiled - Comprehensive Revolution in Earth Sciences

The Indian government, under the visionary leadership of Prime Minister Shri Narendra Modi, has embarked on a groundbreaking venture into Earth sciences with the launch of the PRITHVI (PRITHvi Vlgyan) scheme. This ambitious program, managed by the Ministry of Earth Sciences (MoES), marks a transformative leap forward in the study and application of Earth sciences in India. With a substantial budget of Rs. 4,797 crore allocated for the period 2021-26, PRITHVI promises to redefine our understanding of Earth's diverse systems and set new standards for research and application.



(Source: PSCB)

Objectives of PRITHVI Scheme

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(Source: News Point)

- 1. Long-Term Observations: A Vigilant Eye on Earth's Vital Signs:** PRITHVI's primary objective is to fortify and sustain long-term observations of Earth's essential components. These include the atmosphere, oceans, geosphere, cryosphere, and solid earth. The scheme aims to establish a robust monitoring system to record vital signs and detect changes over time, providing invaluable data for scientific analysis.
- 2. Model Development: Advancing Predictive Capabilities:** A key focus of PRITHVI is the development of advanced modeling systems to enhance our understanding of weather, oceanic patterns, and climatic hazards. These models not only facilitate accurate weather forecasting but also deepen insights into the intricate science of climate change, aiding in preparedness and mitigation efforts.
- 3. Polar and Oceanic Exploration: Unlocking Earth's Mysteries:** Venturing into unexplored territories, PRITHVI aims to explore polar and high seas regions to discover new phenomena and untapped resources. This exploration holds the potential to unveil hidden treasures and contribute to scientific knowledge about Earth's extremities, fostering a more comprehensive understanding of our planet.
- 4. Technology Advancement: Sustainably Harnessing Oceanic Resources:** A critical aspect of the scheme involves the development of cutting-edge technology for the exploration and sustainable harnessing of oceanic resources. PRITHVI envisions translating scientific innovations into practical applications for societal benefit, ensuring responsible exploitation of our oceans and fostering environmental sustainability.
- 5. Knowledge Translation: Bridging the Gap between Science and Society:** PRITHVI underscores the importance of translating knowledge and insights from Earth systems science into services for societal, environmental, and economic benefit. The scheme seeks to bridge the gap between scientific discoveries and practical applications, fostering a direct and positive impact on the well-being of the community.

Role of Ministry of Earth Sciences (MoES)



(Source: News Point)

- 1. Weather Forecasts and Warnings: A Shield Against Natural Disasters:** MoES plays a pivotal role in translating scientific knowledge into essential services for society. Weather forecasts, warnings for natural disasters such as cyclones, floods, and tsunamis, and monitoring earthquakes are among the critical services provided. These services have proven instrumental in saving lives and mitigating property damage during calamities.
- 2. Ten Institutes of MoES: Collaborative Powerhouses:** The research and operational activities of MoES are carried out by ten prestigious institutes, each specializing in specific aspects of Earth sciences. These institutes, including the India Meteorological Department (IMD), National Centre for Medium Range Weather Forecasting (NCMRWF), and others, work collaboratively to address the multifaceted challenges posed by Earth's dynamic systems.
- 3. Fleet of Research Vessels: Navigating Uncharted Waters:** MoES operates a fleet of oceanographic and coastal research vessels that provide essential research support for the PRITHVI scheme. These vessels contribute to groundbreaking research in diverse areas, including marine living and non-living resources, furthering our understanding of the oceans and coastal regions.

Prithvi Scheme: Operational and Research Framework



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MoES institutes, such as IMD, NCMRWF, Centre for Marine Living Resources and Ecology (CMLRE), and others, form the backbone of the PRITHVI scheme. These institutes, equipped with state-of-the-art facilities, collaborate to seamlessly integrate research and operational efforts. The scheme benefits from the collective expertise of these institutes, ensuring a comprehensive and effective approach.

Earth System Sciences: A Multidisciplinary Tapestry



(Source: The Eco)

1. Holistic Study of Earth's Components: Earth System Sciences encompass the study of the Earth's atmosphere, hydrosphere, geosphere, cryosphere, and biosphere. MoES's PRITHVI scheme adopts a holistic approach to these disciplines, recognizing the intricate interplay between these components. This multidisciplinary approach is essential for a comprehensive understanding of Earth sciences.

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2. Integrated R&D Efforts: Tackling Grand Challenges: PRITHVI fosters integrated, multidisciplinary research efforts across different MoES institutes. This collaboration aims to address the grand challenges posed by weather and climate, oceanography, cryospheric studies, seismology, and the sustainable utilization of living and non-living resources.

Impact of PRITHVI

1. Unifying Disciplines: A Symphony of Collaboration: PRITHVI's comprehensive approach unifies various disciplines under the umbrella of Earth sciences. This collaborative effort ensures that researchers from different fields work together, breaking down silos and fostering a more integrated understanding of Earth's complex systems.

2. Addressing Significant Challenges: A Stride Towards Sustainability: By focusing on critical areas such as weather, climate, oceanography, cryospheric studies, and seismology, PRITHVI aims to address significant challenges facing society. The scheme's emphasis on sustainable resource utilization aligns with global efforts towards environmental conservation and responsible exploitation.

Shaping the Future of Earth Sciences

In conclusion, the PRITHVI scheme represents a significant leap forward in the realm of Earth sciences in India. It not only enhances our understanding of Earth's complex systems but also ensures that this knowledge is transformed into practical applications for societal benefit. With its comprehensive approach and robust framework, PRITHVI is set to make a lasting impact on how we interact with and understand our planet. As India positions itself at the forefront of Earth sciences, PRITHVI stands as a beacon of innovation and collaboration, shaping the future of scientific research and services for the betterment of society. The scheme's multifaceted approach promises to revolutionize Earth sciences, paving the way for sustainable and informed interactions with our dynamic planet.

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