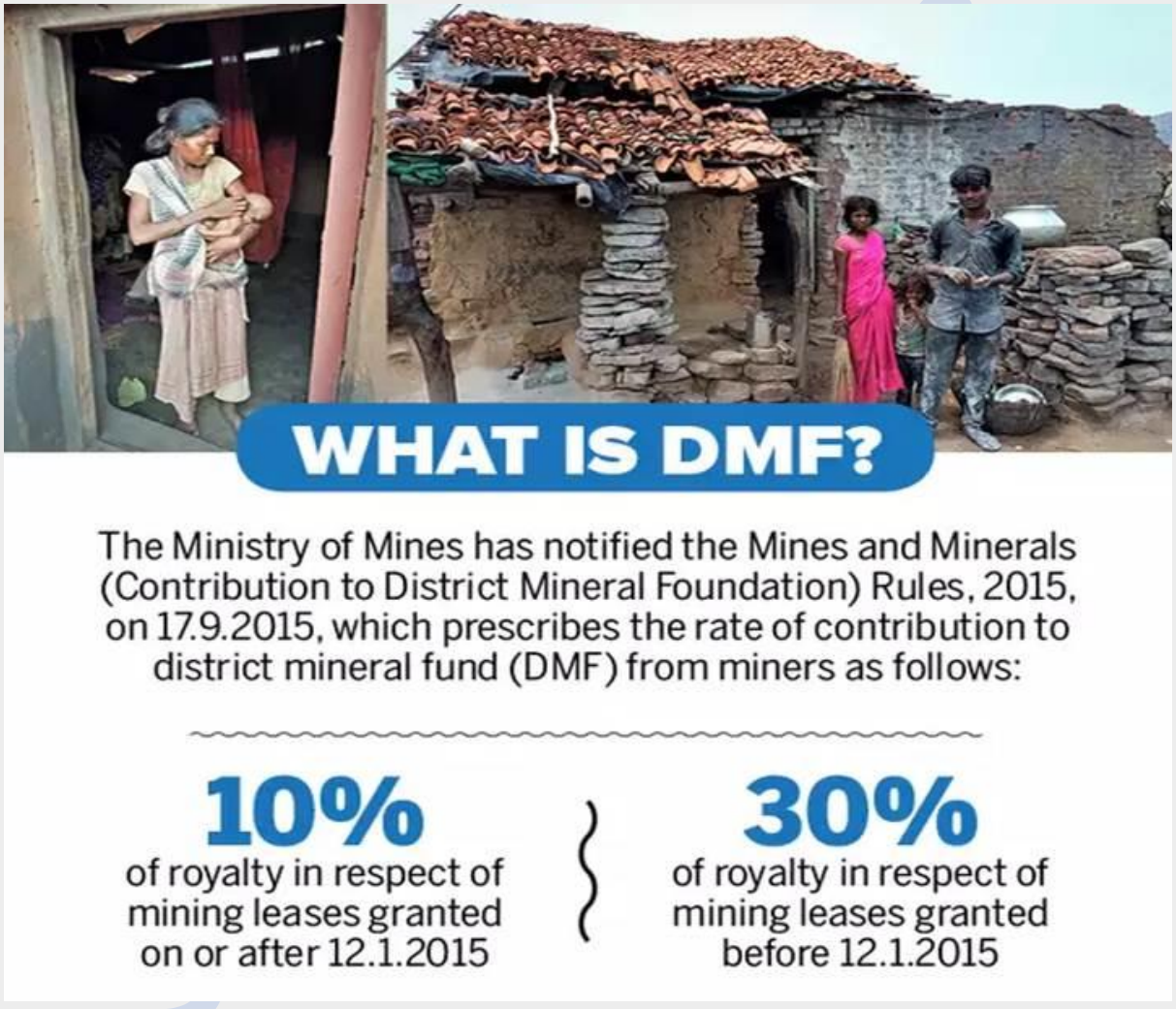
1. 'Over half of ₹1-lakh crore collected for the welfare of mining districts not spent'

District Mineral Foundations

The DMFs are non-profit trusts set up in mining districts and tasked with ensuring that a portion of the revenues generated from mining is spent on the development of the districts. They have been established in 645 districts across 23 States.



In 2015, the Centre launched the Pradhan Mantri Khanij Kshetra Kalyan Yojana (PMKKKY) to drive change in mining-affected areas through investments in various developmental projects. The PMKKKY is implemented through funds accrued to the DMFs.

Findings of Recent report

The report was prepared by iForest, an independent research group.

A first-of-its-kind analysis of the District Mineral Foundations (DMF) shows that despite collecting about ₹1-lakh crore in the past decade, more than half the funds is unspent.

Moreover, the funds are often diverted to activities that are not directly linked to the welfare of mining districts — a contravention of the Centre's guidelines.

Odisha accounts for the highest share of DMF funds, about 29% (₹30,126 crore) of the country's total, followed by Chhattisgarh (₹14,564 crore) and Jharkhand (₹13,791 crore).

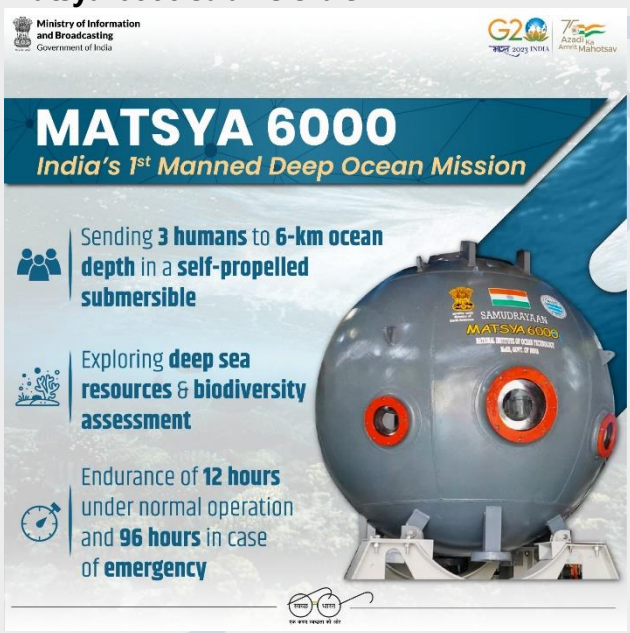
Funds utilised towards infrastructure

The prime focus of DMF and PMKKKY is to alleviate poverty and deprivation, which requires a balanced investment in human resources and infrastructure. However, this balance has not been achieved in any district. Consider the example of Dhanbad. Out of 1,164 projects sanctioned in Dhanbad till 2024, only ₹1.86 crore have been allocated for skill development and livelihood generation. The rest of the amount has been used for development of infrastructure.

Relevance: GS Prelims & Mains Paper II; Governance
Source: PIB

2. Why India needs to develop its deep sea capabilities

Matsya-6000 submersible



Last month, India completed wet testing of its Matsya-6000 submersible, capable of diving up to 6 km below the surface to look for underwater minerals off the coast. The launch of the first deep-sea manned vehicle is planned for later this year — it will put India in a select group of nations with the capability to send humans to these depths.

Last week, China unveiled a compact deep sea cable-cutting device that can be mounted on certain submersibles — and which is capable of severing the world's most fortified underwater communication or power lines. China reportedly operates the largest fleet of submersibles in the world.

India's EEZ Depth

Average depth in the Indian Exclusive Economic Zone (EEZ) is 3,741 metres — this is more than four-and-a-half times the height of Burj Khalifa, the world's tallest building. But it is shallow compared to the deepest ocean — the bottom of the Challenger Deep in the Mariana Trench in the western Pacific lies more than 10 km under the surface, more than the cruising altitude of most aircraft.

Need of Distinct Technology

Operating in the deep sea requires a distinct technology and extremely specific capabilities that are challenging and expensive to develop. Consider:

* While sound can travel long distances underwater, its propagation is seriously affected by hydrological conditions such as temperature, pressure, and salinity. Generally speaking, the lower the frequency of the sound wave, the better the propagation of sound underwater.

Very low frequency (VLF) and extremely low frequency (ELF) sound technologies represent the cutting edge of science, and require deep research and enormous funding to develop.

* Pressure underwater increases by approximately one atmosphere (atm) for every 10 metres of ocean depth. One atm is roughly equivalent to the mean sea-level atmospheric pressure on Earth. The pressure at the ocean bed in the Indian EEZ is upwards of 380 atm, or 380 times that on the surface of the Earth.

Vessels that descend to such depths need to be constructed using particular material and processes in order for them to operate safely.

Need for such technology

It is, however, imperative that India overcomes the challenge posed by the deep sea. To be able to ride on the blue economy in the future, India must have the technologies to harness the resources of the ocean and the seabed.

The ocean is a storehouse of resources, from fish, minerals, gas hydrates, oil and gas, and nutraceuticals to oceanographic data that may help in combating climate change and contribute to meteorological research. It is essential to harness these resources to maximise India's economic potential.

Relevance: GS Prelims & Mains Paper III; Science & Technology
Source: Indian Express

3. Studio Ghibli

Why Now?

AI chatbot ChatGPT upgraded its 4o model to include native image generation capabilities, featuring a "natively multimodal model capable of precise, accurate, photorealistic outputs." Users have replicated various popular artistic styles, most notably the distinctive animation of Studio Ghibli.

What Is Studio Ghibli?

Studio Ghibli is a Japanese animation studio founded in 1985 by legendary animators Hayao Miyazaki, director Isao Takahata, and producer Toshio Suzuki. Its films feature hand-drawn, vivid frames with a rich colour palette and acrylic paints, with minimal use of computer techniques.

The word 'ghibli' is Italian for "hot wind blowing through the Sahara Desert". It refers to Italian scouting aeroplanes during World War II. Miyazaki, named the studio after his love of planes and Italy.

Two films from the studio – Spirited Away (2001) and The Boy and The Heron (2023) won the Academy Award for Best Animated Feature. Five other films have also been nominated for the Oscars.

The studio has worked on 25 films (production and/or animation) and created TV specials, commercials, short films and video games.

Who Is Hayao Miyazaki?
Hayao Miyazaki is a Japanese animator and filmmaker, known as the face of Studio Ghibli.

Born in 1941 in Tokyo, he witnessed the effects of World War II. He studied economics and political science before embarking on a career as an animator in 1963. Miyazaki initially struggled to draw people and spent years drawing planes, battleships and tanks, all of which have found their way into his films.

WHAT HAS MIYAZAKI SAID ABOUT AI?
Miyazaki has expressed strong reservations about using AI to create art. In 2016, Miyazaki said he was disgusted by AI-generated animation and called it an "insult to life itself".

The animator was shown a clip of an AI-animated zombie, which the presenter described as a form of grotesque dancing. "Artificial intelligence could present us (with) grotesque movements that we humans can't imagine," the presenter said.

Miyazaki responded by saying the clip reminded him of a disabled friend who could not move his muscles without experiencing severe pain, or give him a high-five.

"Thinking of him, I can't watch this stuff and find (it) interesting. Whoever creates this stuff has no idea what pain is whatsoever. I am utterly disgusted. If you really want to make creepy stuff, you can go ahead and do it. I would never wish to incorporate this technology into my work at all. I strongly feel that this is an insult to life itself," he said.

With rapid developments in AI, questions of creativity and ownership have also emerged. Questions on what it means for a studio to have a particular style, and what happens when thousands of people may use technology to re-create it, are yet to receive definitive answers.

Relevance: GS Prelims; Science & Technology
Source: Indian Express