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NEWS TODAY

9th October, 2025

Ministry of Labour & Employment (MoL&E) Unveils Draft "National Labour & Employment Policy - Shram Shakti Niti 2025"

The draft policy presents a renewed vision for a **fair, inclusive, and future-ready world of work** aligned with the national aspiration of a **Viksit Bharat by 2047.**

Strategic Objectives of Policy

- **Universal and Portable Social Security:** Involves creating a Universal Social Security Account(USSA) by integrating major schemes e.g., Employees Provident Fund Organization (EPFO), Pradhan Mantri Jan Arogya Yojana (PM-JAY), e-SHRAM, etc.
- **Occupational Safety and Health (OSH):** Implementation of the OSH Code, 2020 with risk-based inspections and gender-sensitive standards.
- **Employment and Future Readiness:** Positioning MoL&E as an Employment Facilitator and using the National Career Service (NCS) as the Digital Public Infrastructure for Employment.
- **Women and Youth Empowerment:** By increasing women's participation in the labor force to 35% by 2030.
- **Ease of Compliance and Formalization:** Through a single-window digital compliance system with self-certification and simplified returns for MSMEs.
- **Leveraging Technology and Green Transition** (Promoting green jobs).
- **Achieve coherence across institutions, data systems, and jurisdictions** through a unified digital labor-governance framework.

Institutional and Digital Architecture

National Level: National Labour and Employment Policy Implementation Council (NLPI) – apex inter-ministerial body chaired by the Labour & Employment Minister.

State Level: State Labour Missions – ensure contextual implementation and coordination.

District Level: District Labour Resource Centres (DLRCs) – single-window hubs for worker registration, job matching, skilling, start-up incubation, and grievance redressal.

Study Reveals decline in India's Sunshine Hours (SSH) due to rising aerosol pollution

Scientists attributed **"solar dimming" over the last thirty years** to higher anthropogenic aerosol emissions i.e. **industrial emissions, biomass burning and vehicular pollution.**

Key Findings of Study

- **Decline in Sunshine:**
  - **North Indian plains** showed the steepest drop: **−13.1 hours/year (h/y).**
- **Northeast Region:** It showed slight seasonal leveling-off (stable) in sunshine hours due to **regional weather** and the **Twomey effect.**
  - Twomey effect describes how **increased anthropogenic aerosol emissions** make clouds brighter by creating more tiny droplets, which **reflect more sunlight** and **cool the climate.**
- **Causes of Solar Dimming:** The long-term solar dimming is attributed to **higher aerosol concentrations** due to industrial emissions.
  - These aerosols **act as condensation nuclei,** causing **cloud droplets to be smaller and longer-lived,** which results in skies remaining overcast for extended periods.

Aerosol and its types

- Aerosols are **tiny solid or liquid particles** suspended in the atmosphere (gas medium).
- **Types:**
  - **Primary Aerosols:** Directly emitted particles, e.g. **sea spray, dust, smoke, and volcanic ash.**
  - **Secondary Aerosols:** Formed from gases through chemical reactions, **e.g., sulfates from industrial emissions or biomass burning.**

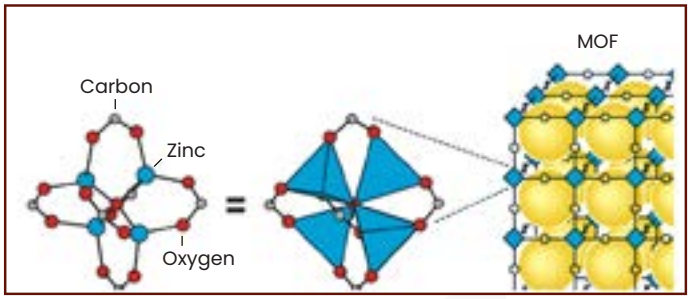
Impact of Aerosol

- **Climate and Weather:** It scatters or absorbs sunlight, influencing local cooling or warming, affecting cloud formation, monsoon patterns, rainfall distribution, etc.
- **Health:** Fine particles cause lung irritation, respiratory damage, cardiovascular disease, and premature death.
- **Ecology:** Mineral dust delivers nutrients that affect ecosystems, like **Amazon rainforest fertilization, ocean phytoplankton blooms, etc.**
- **Solar Power:** Aerosols reduce sunlight reaching solar panels, lowering energy output.

Royal Swedish Academy of Sciences announced the Nobel Prize in Chemistry 2025

Nobel Prize in Chemistry has been awarded to **Susumu Kitagawa, Richard Robson** and **Omar Yaghi** for their role in development of first Metal Organic Frameworks (MOF).

- Their pioneering work led to development of tens of thousands of different MOFs.



About MOFs

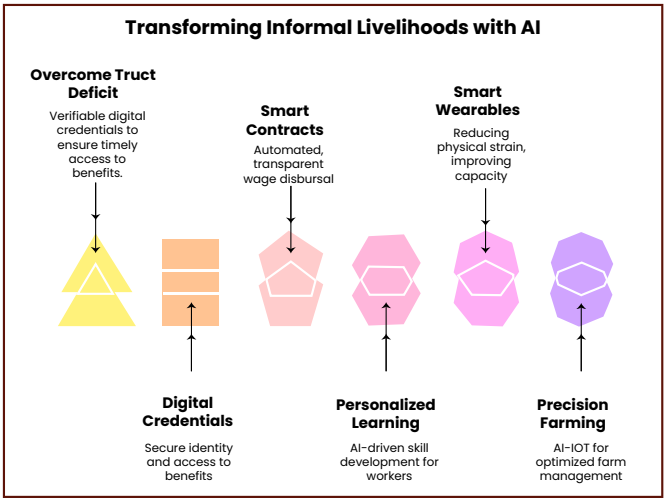
- MOFs are a form of **molecular architecture that packs vast amounts of space into tiny structures** just like Hermione Granger's handbag in the Harry Potter novels, **storing huge amounts of gas in a tiny volume.**
  - One gram of a MOF material can have **so many pores that it can expose as much internal surface area as a football pitch.**
    - These pores act like **tiny molecular rooms** that can trap, separate, transform or transport gases, ions and other molecules.
    - In a way, MOFs are like **molecular hotels with countless doors, each programmed to admit only certain guests.**
- MOF structure is **composed of metal ions connected by organic (carbon-based) molecules,** forming a three-dimensional network with **large, porous cavities.**
  - The **applications of MOFs stem from their porosity** – which allows gases and liquids to pass through.
  - And, by **varying the building blocks** used in the MOFs to control the **size and shape of cavities,** chemists can design them to **capture and store specific substances.**

Applications of MOF:

- **Water Harvesting:** MOFs can capture water vapour from desert air during the night and releasing potable water in morning heat.
- **Removal of Pollutants:** They can filter out harmful substances like Perfluoroalkyl and Polyfluoroalkyl Substances (PFAS), and catalyse decomposition of crude oil and antibiotics in polluted water.
- **Industrial Applications:** Can be used for mining rare-earth elements from wastewater, store hydrogen, and capture carbon dioxide.
- **Healthcare:** They are proving instrumental in **delivering pharmaceuticals** in the body, **managing extremely toxic gases**, and encapsulate enzymes that break down traces of antibiotics in the environment.

NITI Aayog Unveils Groundbreaking Roadmap on AI for Inclusive Societal Development

It aims to leverage the **power of Artificial Intelligence (AI)** and frontier technologies to **transform the livelihoods** of India's **490 million informal workers.**



Current State of Informal Workers in India

- **Largest employment generator:** Employs about 90% of the country's labor force.
- **Low Productivity:** i.e., approximately $5 per hour (Half of the overall average).
- **Social Security Gap:** Social security coverage reaches **only 48% of informal workers.**

Challenges Faced by Informal Workers

- **Financial Fragility:** Irregular wages, **payment delays, no contracts, lack of timely access to benefits.**
- **Market Access & Demand Linkages:** Fragmented job access, **no verified identities, limited platform visibility.**
- **Skilling & Adoption:** Outdated methods, no formal training (only 2-5% have vocational training), missing worker data.
- **Social Protection & Occupational Safety:** No safety standards, **health insurance, pension, or accident compensation.**
- **Productivity Gaps:** Manual workflows, limited mechanization, no digital tools.

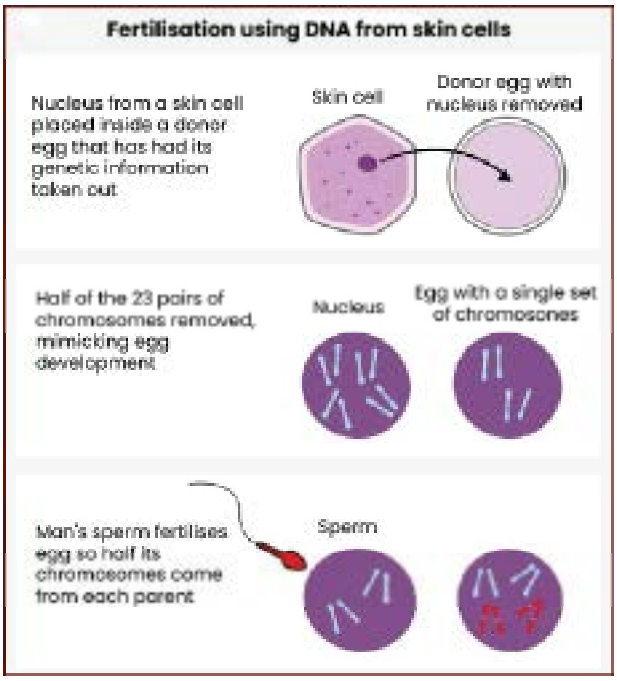
Key Recommendations by NITI Aayog

- **Mission Digital ShramSetu:** Create a **national mission to empower informal workers with AI** to ensure a future-ready labor force.
- **Inclusive AI Infrastructure:** Develop **multilingual, voice-first AI tools** to overcome literacy and language barriers.
- **Multi-Stakeholder Engagement:** Localize **implementation via states** and community networks.
- **Leverage Existing Digital Schemes:** Integrate **AI with platforms like e-Shram and UDYAM for enhanced delivery.**

Researchers develop functional eggs from human skin cells

Scientists have created **egg-like cells capable of fertilization using DNA from ordinary skin cells** in a major breakthrough for infertility research.

- The breakthrough offers a potential avenue for infertility treatment through a technique called **in vitro gametogenesis (IVG).**
  - IVG refers to the **process of generating gametes** (functional eggs or sperm) **in laboratory setting using the patient's own genetic material** (isolated germ cells or induced Pluripotent stem cells (iPSC)).



About Research

- To make eggs, researchers **transplanted the nucleus of a human skin cell** into a donor egg that had been stripped of its nucleus.
  - This technique is known as **Somatic Cell Nuclear Transfer (SCNT),** a form of **in vitro gametogenesis (IVG).**
- However, the key challenge with IVG that the researchers had to surmount was making sure the **reprogrammed fertilized egg had the right number of chromosomes.**
  - Gametes — sperm and eggs — **each have 23 chromosomes, half of the 46** found in ordinary human cells such as skin cells.
  - To **remove extra 23 chromosomes from derived eggs,** researchers devised a technique called **"mitomeiosis", mimicking natural cell division in a way that causes one set of 23 chromosomes to be discarded.**

Also In News

Snow Leopards

Snow leopards have very low genetic diversity likely due to a persistently small population size throughout their evolutionary history rather than recent inbreeding.

- Genetic diversity is the **total variety of inherited traits** and **different genes** within a population or species.
  - It is **crucial for a species' ability to adapt and survive** environmental changes and stresses.

About Snow Leopards

- **Geographical Spread:** Flagship species in the mountainous regions of South and Central Asia, spanning 12 countries.
  - In India, found in Jammu and Kashmir, Ladakh, Himachal Pradesh, Uttarakhand in Western Himalayas and Sikkim and Arunachal Pradesh in the Eastern Himalayas.
- **Conservation Status:**
  - **IUCN Red List:** Vulnerable.
  - **Schedule I** of the **Wildlife (Protection) Act, 1972.**
- **Declared As:** State animal of Ladakh and Himachal Pradesh.
- **Characteristics:** Do not roar, solitary animals, most active at dawn and dusk.

Electronic Bank Guarantees (e-BGs)

National e-Governance Division and National E-Governance Services Limited (NeSL) signed a MoU to integrate digital document execution for e-BGs.

- NeSL is **India's first Information Utility (IU),** registered with the **Insolvency and Bankruptcy Board of India (IBBI)** to serve as a repository of legal evidence for debts and claims.

About Electronic Bank Guarantees (e-BGs)

- It **eliminates the physical documentation** usually associated with issuance of BG.
- It reduces the turn-around time of the BG issuance and delivery to the beneficiaries.
- A bank guarantee is a **financial instrument from a bank promising to pay a third party (the beneficiary)** if their customer (the applicant) fails to fulfill a contractual obligation.

Agrienics Programme

MeitY announced the transfer of technology under the Agrienics Programme.

About Agrienics Programme

- It is a **national programme of MeitY** involving research, development, deployment, demonstration, and commercialization of technologies in agriculture and environment domain.
- It is being implemented by **Centre for Development of Advanced Computing (C-DAC), Kolkata,** as the nodal agency.

The Great Green Wall Initiative

Despite ambitious goals, **Great Green Wall project** faces significant challenges in Africa.

About Great Green Wall Initiative

- **Launched in:** 2007 by African Union
- **Objective:**
  - To restore 100 million hectares of currently degraded land; sequester 250 million tons of carbon and create 10 million green jobs by 2030.
  - Aims to increase the **amount of arable land in the Sahel Region, the region bordering Africa's Sahara Desert.**
  - It promises to **be a compelling solution for climate change, drought, famine, conflict and migration.**

Global Electricity Mid-Year Insights 2025

According to Energy think tank Ember's report, **in the first half of 2025, renewable energy overtook coal** to become the **largest source of electricity globally.**

Key Findings of Report

- Among major economies, **fossil fuel generation decreased in China and India,** where clean generation outpaced demand growth.
- **Emissions:** Despite global electricity demand rising by 2.6%, **emissions fell in China (-46 MtCO2) and India (-24 MtCO2)** while increased in EU and US.
- **Clean Energy Growth:** Solar **(+25%)** and wind **(+29%)** set record growth, **pushing clean energy share higher.**

Pradhan Mantri Kisan Urja Suraksha evam Utthan Mahabhiyan (PM-KUSUM)

India is set to **scale up its flagship scheme PM-KUSUM** and **replicate its success** across **developing nations, through the International Solar Alliance (ISA).**

About (PM-KUSUM)

- **Ministry:** Ministry of New and Renewable Energy
- Launched in 2019 to provide **energy and water security** to farmers, **de-dieselise farm sector** and reduce environmental pollution.
- **Target:** To add Solar capacity of about 34,800 MW by March 2026.
- **Components:**
  - **A:** Setting up of **10,000 MW** solar capacity through small solar power plants.
  - **B:** Installation of **Stand-alone Solar Agriculture Pumps.**
  - **C:** Solarisation of **Grid Connected Agriculture Pumps including** Feeder Level Solarization.

Plutonium Management and Disposition Agreement (PMDA)

Russia's lower house **approves withdrawal from Plutonium Management and Disposition Agreement (PMDA)** with the U.S.

- Previously, Russia in 2016 suspended implementation of the agreement, citing U.S. sanctions.

About PMDA

- The agreement **signed in 2000** commits the U.S. and Russia to each irreversibly dispose of **at least 34 metric tons of weapons-grade plutonium.**
  - **Plutonium (atomic number 94)** is a radioactive material with a **high melting point, and the heaviest naturally occurring element.**
- **Disposition Goal:** Convert plutonium into safer forms (MOX fuel, reactor irradiation).

Place in News

Myanmar (Capital: Nay Pyi Taw)

Myanmar military dropped bombs on protesters.

Political Features

- **Location:** Western portion of mainland **Southeast Asia.**
- **Bordering Nations:** China (North and Northeast), Laos (East), Thailand (South East), Bangladesh (West), India (North West).
- **Bordering Water Bodies:** Andaman Sea (South), Bay of Bengal (South West).

Geographical Features

- **Major Mountain Ranges:** Rakhine Mountains, Shan Plateau, Dawna Range, Tenasserim Mountains, etc.
- **Highest Point:** Mount Hkakabo Razi.
- **Major Rivers:** Irrawaddy, Chindwin, Sittang, Salween, Yangon River.