



## News Analysis (18 Sep, 2018)

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### 'Future of Jobs' Report by WEF

The World Economic Forum (WEF) in its report 'Future of Jobs' found that machines are increasingly replacing jobs done by people. It projected that more than half of all workplace tasks will be carried out by machines by 2025.

- It predicts the loss of some 75 million jobs worldwide by 2022, but also says 133 million new jobs will be created.
- According to WEF, despite bringing widespread disruption, the advent of the Fourth Industrial Revolution could actually have a positive impact on human employment.

### Key Findings

- Four specific **technological advances**: universal high-speed mobile internet; artificial intelligence; widespread adoption of big data analytics; and cloud technology—are set to dominate the 2018–2022 period as drivers positively affecting business growth.
- By 2022, large proportions of companies are likely or very likely to have expanded their adoption of technologies such as the internet of things, big data analytics and app and web enabled markets, and to make extensive use of cloud computing.
- Companies across all sectors are most likely to **adopt the use of stationary robots**, in contrast to humanoid, aerial or underwater robots, however leaders in the Oil & Gas industry report the same level of demand for stationary and aerial and underwater robots, while employers in the Financial Services industry are most likely to signal the planned adoption of humanoid robots in the period up to 2022.
- When determining job location decisions, companies overwhelmingly prioritize the **availability of skilled local talent** as their foremost consideration. A range of additional relevant factors such as the flexibility of local labour laws, industry agglomeration effects or proximity of raw materials were considered of lower importance.

- In 2018, humans performed an average of 71% of total task hours across the 12 industries spanning manufacturing, services and high tech. By 2025, that will drop to just 48%. Machines will perform the remaining 52% task.
- Among the range of established roles that are set to experience increasing demand in the period up to 2022 are Data Analysts and Scientists, Software and Applications Developers, and Ecommerce and Social Media Specialists, roles that are significantly based on and enhanced by the use of technology.
- **Roles that leverage distinctively human skills**, such as Customer Service Workers, Sales and Marketing Professionals, Training and Development, People and Culture, and Organizational Development Specialists as well as Innovation Managers, are expected to grow.
- There is extensive evidence of **accelerating demand for a variety of wholly new specialist roles** related to understanding and leveraging the latest emerging technologies: **AI and Machine Learning Specialists, Big Data Specialists**, Process Automation Experts, Information Security Analysts, User Experience and Human-Machine Interaction Designers, Robotics Engineers, and Blockchain Specialists.
- By 2022, no less than 54% of all employees will require significant re- and upskilling. Proficiency in new technologies is only one part of the 2022 skills equation, however, as human skills such as creativity, originality and initiative, critical thinking, persuasion and negotiation will likewise retain or increase their value.
- **Emotional intelligence, leadership and social influence** as well as service orientation also see an exceptionally large increase in demand relative to their current prominence.

## Suggestions

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- The need for a comprehensive '**augmentation strategy**', an approach where businesses look to utilize the automation of some job tasks to complement and enhance their human workforces' comparative strengths and ultimately to enable and empower employees to extend to their full potential.
- Rather than narrowly focusing on automation-based labour cost savings, an augmentation strategy takes into account the broader horizon of value-creating activities that can be accomplished by human workers, often in complement to technology, when they are freed of the need to perform routinized, repetitive tasks and better able to use their distinctively human talents.
- To unlock this positive vision, workers will need to have the appropriate skills enabling them to thrive in the workplace of the future and the ability to continue to retrain throughout their lives.
- Crafting a sound lifelong learning system, **investing in human capital** and collaborating with other stakeholders on workforce strategy should thus be key business imperatives, critical to companies' medium to long-term growth, as well as an important contribution to society and social stability.

- A mindset of **agile learning** will also be needed on the part of workers as they shift from the routines and limits of today's jobs to new, previously unimagined futures.
- Finally, **policy-makers, regulators and educators** will need to play a fundamental role in the development of new agile learners in future workforces by bringing improvements in education and training systems, as well as updating labour policy to match the realities of the Fourth Industrial Revolution.

## In Context of India

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- An overreliance on **automation is expected to shrink job creation** in India. Automation and robotics in industrial manufacturing are better suited for countries with low productive populations. But it does not suit countries like India, where 12–13 million people enter the job market every year.
- There is a **natural fear of job loss** resulting from automation and robotics in India. Repetitive processes are being increasingly automated. Banks in India are already using chatbots and even humanoid robots. For eg. HDFC Bank has the **Ira robot**, which helps customers choose the right service and financial products.
- However, loss of jobs can be countered by reskilling, and by creating new opportunities.
- Fourth Industrial Revolution also brings **tremendous opportunities** to leapfrog many stages of development, hastening its journey towards becoming a developed economy. In many ways, the Fourth Industrial Revolution can be seen as a leveller. The technologies being used in India will be the same as those in use in the developed world. Robots, AI, IoT are all technologies transforming industry in the West and are ready to do the same in India.
- New industry sectors are being created. These have potential to create work for millions. There is already industry associations for producing and promoting the use of drones in India.
- India needs a collaborative effort. It will have to create a long term ecosystem that trains and educates professionals. India could collaborate with the US, Germany, and the EU. The central government can consider a joint platform between ministries, state governments and industry bodies to create a mission for making the most of the Fourth Industrial Revolution technologies.

## Fourth Industrial Revolution

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- The **first Industrial Revolution** began in Britain in the last quarter of the 18th century with the **mechanisation of the textile industry, harnessing of steam power**, and birth of the modern factory.

- The **second revolution** began roughly a century after the first and peaked at the beginning of the 20th century, exemplified in **Henry Ford's** creation of the moving **assembly line that resulted in mass production**. Factories could produce countless numbers of identical products quickly and cheaply.
  - The **third industrial revolution**, beginning in 1970s, was digital and **applied electronics and information technology** to processes of production.
  - The **fourth industrial revolution** is conceptualised as an **upgrade on the third revolution** and is marked by a fusion of technologies extending the physical, digital and biological worlds. The speed of change is utterly unprecedented as it is disrupting almost every industry in every country, and it heralds the transformation of entire systems of production, management, and governance.
  - WEF describes the new revolution as the advent of **cyber-physical systems** which, while being reliant on the technologies and infrastructure of the third industrial revolution, represent entirely new ways in which technology becomes embedded within societies and even our human bodies. Examples, include genome editing, new forms of machine intelligence, and breakthrough approaches to governance that rely on cryptographic methods such as blockchain.
  - It is **marked by emerging technology breakthroughs** in a number of fields, including **robotics, artificial intelligence, nanotechnology, quantum computing**, biotechnology, the Internet of Things, the Industrial Internet of Things (IIoT), fifth-generation wireless technologies (5G), additive manufacturing/3D printing and fully autonomous vehicles.
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## NITI Aayog Report on Shifting Cultivation

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A recent NITI Aayog publication on shifting cultivation has recommended that the Ministry of Agriculture should take up a “mission on shifting cultivation” to ensure inter-ministerial convergence.

The report titled "**Shifting Cultivation: Towards a Transformational Approach**" is prepared by one of the five thematic working groups set up by NITI Aayog in 2017 which aims to encourage well-being of the people in the Indian Himalayan Region (IHR).

### Why the Need to Manage Shifting Cultivation?

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- Managing transformations in shifting cultivation areas is fundamental to agricultural development in the uplands of northeast (NE) India and an important element of the **Act East Policy**.

- There is a **lack of updated and authentic data** on the area under shifting cultivation as well as the total number of households practicing shifting cultivation.
  - While different programmes designed to address the management of shifting cultivation have claimed drastic reductions, the Forest Survey of India's (FSI, 2015) reports over the years continue to attribute large scale deforestation and loss of forest cover in NE India to shifting cultivation.
  - There is an urgent need to **update data on the area under shifting cultivation** as well as the total population still involved with the practice.
- There is need to blend traditional knowledge on resource use and management with modern scientific approaches.
 

The approaches for transformation and supportive research and development (R&D) should not summarily dismiss traditional land use, but try to **blend the traditional with the modern** and, wherever possible, improve the productivity of existing practices through **locally acceptable technological interventions**.
- **Access to credit** for shifting cultivators is denied because they are unable to offer shifting cultivation land as collateral for loans in the absence of land titles.
 

Credit guidelines should be amended to **allow group guarantee (from village/clan authorities) for loans** instead of land title deeds in these areas.
- State agencies like agricultural marketing, forest development corporations of concerned states should take steps to formalize, promote and organize **marketing of products** from shifting cultivation.
  - The value addition to such products, ensuring opportunities for large scale involvement of the rural youth and women will address income generation and youth employment while providing a comparative advantage for such products, contributing to several SDGs.
  - Encouraging States and relevant Central Ministries to **recognise home gardens** as a distinct land use category with dedicated schemes and programmes for promotion of home gardens and the promotion of niche crops and other products found in shifting cultivation systems. This will provide income generation and entrepreneurship development opportunities for upland farmers.

- Shifting cultivation lands fall under the purview of agriculture during the cultivation phase, but come under Forests during the fallow phase – the **same piece of land under two subjects at different time periods**.
  - This ambiguity needs to be addressed and shifting cultivation lands with long fallow cycle should be categorized as a distinct land use, thus removing their categorization as 'abandoned land', 'wastelands' and 'Unclassed State Forests'.
  - All government departments should consider **jhum land as a distinct land use**, with an exceptionally long fallow phase.
  - Shifting cultivation fallows must be legally perceived and categorized as **'regenerating fallows'**, which may, if given sufficient time, regenerate into secondary forests.

### Shifting Cultivation

- Shifting cultivation, locally called '**Jhum**', is a widely practiced system of crop cultivation among the indigenous communities of Northeast India. The practice, also known as **slash-and-burn** agriculture, is when farmers clear land by slashing vegetation and burning forests and woodlands to create clear land for agricultural purposes.
- This provides **very easy and very fast** method of the **preparation of the land** for the agriculture.
- The bush and the weeds can be removed easily. The burning of waste materials **provide needed nutrients** for the cultivation.
- It gives a family its food, fodder, fuel, livelihood and is **closely linked** to their identity.
- Because of cutting of forests and trees, this practice **leads to soil erosion** and may also effect the course of rivers.

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## NCSK Data on Manual Scavenging Deaths

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Recently, five manual scavengers died after inhaling toxic fumes in Delhi's Moti Nagar Area.

- The National Commission for Safai Karamcharis (NCSK) collected data regarding deaths of Manual Scavengers in India since January 2017.
- It is the first such official attempt to account for the deaths of sewer and septic tank cleaners.

### Report Findings

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- Since January 1, 2017, 123 people employed in manual scavenging lost their lives i.e. on an average one person has died every five days while cleaning sewers and septic tanks across the country.

- Of the 28 states and seven union territories, the NCSK data has reported deaths from only 13 states and UTs.
- The number of manual scavenger deaths is highest in Haryana followed by Uttar Pradesh, Delhi, and Gujarat.
- In NCSK data, Larger states like Maharashtra and Madhya Pradesh have shown two deaths and zero manual scavenger deaths since January 2017 respectively.

## Issues

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- **Under-Estimation of Data**

- As per the Socio-Economic Caste Census (SECC) 2011, rural Maharashtra has 35% of the total 1.82 lakh such households in rural India where at least one member of the household is working as Manual Scavenger. But in NSCK data, Maharashtra has reported only two deaths.
- The state with the second highest number of manual scavenging in its villages, Madhya Pradesh at 23,105 as per SECC doesn't show any deaths in the NCSK data.
- According to data and post-mortem reports maintained by the NGO, Safai Karamchari Andolan, the actual death count since January 2017 is about 300.

- **Unavailability of Data**

- There are no data available on those employed in sewer and septic tank cleaning. All previous and ongoing exercises at compiling data have been restricted to accounting for those removing human excreta from dry latrines, open drains, and single pit toilets in villages.
- Due to lack of data regarding Manual Scavengers, sometimes family member of victims are denied their compensation. As per NCSK data, the Rs 10 lakh compensation mandated under the law in case of manual scavenging deaths, has been paid in only 70 of the 123 cases.

- A survey was carried out by the Ministry of Social Justice and Empowerment in 2017 to count the number of manual scavengers.

- States have identified up to thirteen thousand manual scavengers up to June 2018.
- This data also seems like gross under-estimation as it does not include all the districts in India.
- The count was limited to only 170 districts in 18 states and it also excluded sewer cleaners entirely as well as any form of manual scavenging in urban areas.
- Bezwada Wilson, the founder of Safai Karamchari Andolan (SKA), has asked the central government to extend the survey to include another 300 districts and sewer-septic tank cleaners.

## **Prohibition of Employment of Manual Scavengers and their Rehabilitation Act, 2013**

- The Act prohibits employment of manual scavengers, manual cleaning of sewers and septic tanks without protective equipment, and the construction of insanitary latrines.
- Section 7 of the Prohibition of Employment as Manual Scavengers and their Rehabilitation Act, 2013 prohibits the employment of a person as a manual scavenger for cleaning sewerage and septic tanks. Under provisions of this Act engagement of a person as Manual Scavenger is a punishable offense with imprisonment for a term which may extend to one year or with fine which may extend to fifty thousand rupees or both.
- Under the provision, no person, local authority or agency (like Municipal Corporations) should engage or employ people for hazardous cleaning of sewers and septic tanks. Mechanised cleaning of septic tanks is the prescribed norm.
- It seeks to rehabilitate manual scavengers and provide for their alternative employment. Each local authority, cantonment board, and railway authority is responsible for surveying insanitary latrines within its jurisdiction. They shall also construct a number of sanitary community latrines.
- Each occupier of insanitary latrines shall be responsible for converting or demolishing the latrine at his own cost. If he fails to do so, the local authority shall convert the latrine and recover the cost from him.

### **SC judgment in *Safai Karamchari Andolan & Others Vs. Union of India***

- The practice of manual scavenging has been directed to be closed.
- Entering sewer lines without safety gears should be made a crime even in an emergency situation.
- The persons included in the final list of manual scavengers have been directed to be rehabilitated as per the provisions of Part IV of the 2013 Act.
- Compensation of Rs.10 lakhs has been directed to be paid to the dependent family members of all persons, who had died in sewerage work (manholes, septic tanks) since 1993.

### **Way Forward**

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- It is necessary that the law Prohibition of Employment as Manual Scavengers and their Rehabilitation Act, 2013 and Supreme Court observations in *Safai Karamchari Andolan & Others Vs. Union of India* must be implemented in its letter and spirit.
- In the absence of political will and social pressure, more lives could be lost because more tanks are being built in rural and urban areas as part of the drive to construct toilets under Swacchh Bharat Abhiyaan. It is necessary that State governments should address the lack of adequate machinery to clean septic tanks. The Ministry of Drinking Water and Sanitation in its manual of 2016 on toilet design has noted that in rural areas, mechanical pumps to clear septic tanks are not available.



- The Swachh Bharat Abhiyan should make expansion of the sewer network a top priority and come up with a scheme for scientific maintenance that will end manual cleaning of septic tanks.
- When a person engaged for cleaning of sewer/septic tank dies while cleaning the same, his family/ kin should be given Rs. 10 lakh compensation as mandated under Prohibition of Employment as Manual Scavengers and their Rehabilitation Act, 2013.

### **National Commission For Safai Karamcharis**

- The National Commission for Safai Karamcharis (NCSK) was constituted on 12th August 1994 as a statutory body by an Act of Parliament viz. 'National Commission for Safai Karamcharis Act, 1993'.
- The act "The National Commission for Safai Karamcharis Act, 1993" lapsed in February 2004.
- The Commission is acting as a Non-Statutory body of the Ministry of Social Justice and Empowerment whose tenure is extended from time to time through Government Resolutions.

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## Important Facts for Prelims (18th September 2018)

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### **The most influential judgments in the Supreme Court's history**

- In India's common law system, judgments are critical for setting a precedent that serves as the foundation for delivering justice. For eg:
  - The Maneka Gandhi case epitomized the shift in legal jurisprudence in the late 1970s, with the Supreme Court taking on a more active role and trying to assert its legitimacy after the Emergency.
  - Similarly, Kesavananda Bharati Case, the judgment prevented Parliament from altering its 'basic structure' which is widely known for protecting the Indian state from collapsing like many of its South Asian counterparts, whether through totalitarian rule or other extra-constitutional means.
- At high courts and lower courts, the precedent set by the Supreme Court is crucial for dealing with procedural issues as, under Article 129 of the Constitution, the Supreme Court shall be a court of record and shall have all the powers of such a court including the power to punish for contempt of itself.