

HCFI Dr KK Aggarwal Research Fund

Round Table Environment Expert Zoom Meeting on “Importance of Circular Economy in Addressing Waste Management Issues”

June 18, 2023 (Sunday, 12 noon - 1 pm)

- Circular economy is an economic system of closed loop which keeps the product, material and services in circulation for as long as possible.
- Earlier the material is used to make product which when they reached end-of-life became waste and were dumped in landfills and were not re-used.
- In circular economy, resources are mined in such a way that they are made into products and reused for as long as possible and then they become waste. This reduces material use, redesigns material, products and services are less resource-intensive and recaptures waste as a resource to manufacture new material.
- Circular economy is based on 7 R's: Rethink, Reduce, Reuse, Repair, Refurbish, Recover and Recycle. These form the basis to minimize waste and to gain wealth from waste.
- Circular economy is embraced within the sustainable materials approach.
- Benefits include improving security of raw material, boosting economic growth, job creation.
- Circular economy has the potential to address waste management issues, protect environment, reduce impact of climate change, improve economics and elevate social justice.
- The Government of India has brought in the concept of extended producer responsibility (EPR) in waste management. This reduces material consumption, use more of secondary material as much as possible and promotes ecodesign of products.
- Mission LiFE (Lifestyle for Environment) is a mass movement for “mindful and deliberate” use of resources instead of mindless and destructive consumption of resources. There are 75 action points in different sectors.
- Mission LiFE also gels with the circular economy; transition from throwaway culture to circular economy.
- The ultimate aim of circular economy is no waste. Maximum use of this concept will increase quantity of resources and reduce quantity of waste.
- Earlier waste was discarded, then came the term “waste is wealth” and now it is known as “displaced resource”. It is no more considered as waste.
- Bringing the waste into mainstream is circular economy.
- Niti Aayog has focused on 11 end-of-life products/ recyclable materials or waste: Municipal Solid Waste and Liquid Waste, Scrap Metal (Ferrous and Non-Ferrous), Lithium Ion (Li-ion) Batteries, solar panels, gypsum, Toxic and Hazardous Industrial Waste, Used Oil Waste, Agriculture Waste, Tyre and Rubber Recycling and End-of-life Vehicles (ELVs).
- Waste generated in the domestic sector needs to be quantified.
- Landfill site should be the last option. Minimum waste should go to landfill site.
- Incineration of waste at high temperature converts waste to air pollution and if dioxides and furans are not checked, they are released in the environment.
- Nature-based solutions should be adopted. Attitude needs to be changed.
- We still do not have adequate infrastructure. Waste has to be connected with infrastructure.
- Until the cycles and systems are established, success will not be easy.
- Municipalities need to be strengthened.
- Circular economy has always been ingrained in our Indian culture. We are a conservation-based society and not consumption-based society.
- Revival of this idea is good and that it is pushed by the government is also a very welcome step.
- More important than recycle is to reduce.
- Recycling of industrial waste cannot be handled by the common man. This should be done by producers to their ultimate destruction without damaging the environment.

- Consumers should reduce their consumption based on their needs.
- Today, we don't know how to reuse products. This may be due to lack of vocational training, which used to be imparted earlier.
- All our developmental indexes are consumption-based.
- Recovery of precious materials from e-waste is not as much as is being done in many European countries.
- Waste should be handed over only to authorized waste collector for scientific recycling of waste.
- PET plastic industry in India is estimated to be around 400 million US dollars, according to the National Chemical Laboratory.
- Municipal solid waste is the most serious issue mainly because of lack of segregation.
- All metro cities should have recycling plants. Delhi has no recycling plant for plastic.
- Lack of adequate infrastructure or funding or lack of will/intention could be the reasons for the slow progress.
- The Central Pollution Control Board (CPCB) portal is tracking the complete process of EPR in plastic waste management, which has become mandatory now.
- E-waste and battery waste rules also have provisions for EPR.
- The producers should draw up a complete process of recycling of product after end of life and educate the public about it. This should be mandatorily written on the package.

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Coronavirus Updates

Covid cases in India continue to decline

With 169 new COVID cases recorded 8th June, the total number of active cases in the country has declined to 2555, as per latest data from the Health Ministry. The active cases now constitute 0.01% of the total infections. The national recovery rate currently stands at 98.81%. With two deaths occurring in the last 24 hours, the total death toll is 5,31,888. The case fatality rate is 1.18%. The total number of vaccine doses administered till date is over 220.66 crores... (Source: *Economic Times*, June 9, 2023).

EMA supports WHO call to update COVID vaccines

The European Medicines Agency (EMA) and the European Centre for Disease Prevention and Control (ECDC) have upheld the WHO's call to update the COVID-19 vaccine to target the currently circulating strains of the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) namely the XBB variants. According to these organizations, the monovalent XBB-containing vaccines could be considered a reasonable choice till further data is available... (Source: *Reuters*, June 6, 2023).

Health-related quality of life in long COVID worse than in advanced cancers

A study from the UK suggests that the health-related quality of life in patients with long COVID experience is worse than those with advanced cancers such as stage 4 lung cancer. They experience fatigue that is comparable to or worse than that seen in patients with cancer-related anemia or severe kidney disease ... (Source: *PTI*, June 8, 2023).

Rheumatic disease patients not at higher risk of long COVID

Patients with inflammatory rheumatic diseases are not at a significantly higher risk of long COVID, suggests a study presented at the 2023 annual meeting of the European Alliance of Associations for Rheumatology (EULAR).

The symptoms such as fatigue and poor fitness in these patients that resemble that of long COVID could be due to the underlying disease ... (Source: *Medscape*, June 7, 2023).

Safety of COVID vaccines in children younger than 5 years

Analysis of data of more than 2,47,000 COVID mRNA vaccine doses, Pfizer-BioNTech or Moderna, administered to children aged ≤5 years did not show any major side effects of the vaccine. No cases of myocarditis or pericarditis were reported within 21 days of taking the vaccine. One case each of pulmonary embolism and hemorrhagic stroke were found, but they were correlated to pre-existing congenital abnormalities... (Source: *Pediatrics*, June 6, 2023).

Less than 100 new cases recorded in India

A total of 96 new cases of COVID-19 were reported (15th June) in the country, according to latest data from the Union Health Ministry. While the total tally of COVID cases rose to 4,49,93,282, the number of active cases

declined to 2017 from 2,555 last week. Total deaths so far are 5,31,893... (Source: PTI, June 16, 2023).

FDA recommends monovalent XBB COVID vaccine

An FDA (Food and Drug Administration) advisory committee has recommended removing the wild strains of SARS-CoV-2 and formulating a monovalent COVID-19 vaccine, targeting only the XBB-sublineages, which now account for more than 95% of the circulating variants in the United States. The sublineages currently under consideration include XBB.1.5, XBB.1.16 or XBB.2.3... (Source: FDA, June 15, 2023).

Recovery of loss of smell or taste in COVID-19

Around 75% of patients who lost their sense of taste and smell recovered completely and nearly 21% had partial recovery. Less than 3% reported no recovery of taste and smell. Nearly 60% of the 36 million people who developed COVID-19 in 2021 reported loss of smell or taste. Recovery was less likely among those who had severe infection ... (Source: Laryngoscope, June 2, 2023).

Incident GI complications in long COVID

Patients with COVID-19 are at 36% greater risk of developing new-onset gastrointestinal (GI) complications within 30 days after recovery from the acute phase of the infection and experience disorders like functional dyspepsia, gastroesophageal reflux disease, peptic ulcer disease, acute gastritis, cholangitis, peptic ulcer disease, irritable bowel syndrome, acute pancreatitis. Constipation and diarrhea were also common among these patients... (Source: Nature Communications, March 2023).

Postural orthostatic tachycardia syndrome in COVID-19

Patients who recover from COVID-19 may develop postural orthostatic tachycardia syndrome (POTS) within 6 to 8 months of the infection. Fatigue, tachycardia (≥ 30 from the normal resting heart rate), orthostatic intolerance and cognitive impairment are major symptoms. Its early identification and management is crucial. A high index of suspicion is required for diagnosis... (Source: Cureus. March 31, 2023).

COVID-19 cases in India

With 40 new COVID infections recorded in 30th June, the total number of active cases has now declined further to 1,513 from 1,533 a day before, according to updated data from the Union Health Ministry. The

total numbers of COVID cases are nearly 4.5 crores. The recovery rate is 98.8%. Total COVID-related deaths are 5,31,906 with case fatality rate of 1.18%. Over 220.66 crore doses of COVID vaccine have been administered till date... (Source: The Hindu, July 1, 2023).

Moderna seeks FDA approval for its updated COVID vaccine

Moderna has developed a new COVID-19 vaccine targeting the XBB 1.5 strain, which is currently the dominant circulating strain. The company has applied to the FDA seeking approval of its new vaccine. According to Moderna, the common side effects of the new updated vaccine include headache, fatigue, chills, injection site pain... (Source: Medscape, June 26, 2023).

EU.1.1: A new variant of COVID virus

A new SARS-CoV-2 variant named "EU.1.1" has been detected in the United States. It is an XBB sublineage related to the XBB.1.5 variant and emerged in early June. The EU.1.1 currently accounts for ~2% of COVID cases in the United States. So far, detection of the new variant has not led to increase in hospital admissions. Although it is more transmissible than XBB.1.5, its parent lineage, there are no red flags so far... (Source: Medpage Today, June 27, 2023).

Prolonged prone ventilation associated with reduced mortality in intubated COVID patients

A study published in the journal *Chest* has found that 30-day and 90-day mortality was less when intubated COVID patients received prone position ventilation for prolonged duration amounting to 24 hours or more compared to those who received intermittent prone position ventilation. There was a small increase in facial edema in these patients, but the overall related complications remained the same... (Source: Chest, March 2023).

Persons with blood group A are at high risk of COVID-19

A new study has shown that the SARS-CoV-2 preferentially infects the blood group A cells suggesting that blood group may be a predictor of COVID-19 infection. In this study, the receptor binding domains of SARS-CoV-2, including Delta and Omicron variants, exhibited specificity for blood group A and displayed a preferential ability to infect blood group A expressing cells... (Source: Blood, June 27, 2023).

With inputs from Dr Monica Vasudev

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