Aqua Rejuvenation Plant (ARP)

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In news

CSIR-Central Mechanical Engineering Research Institute, Durgapur unveiled the first-ever WasteWater Treatment Technology Model which purifies WasteWater for Irrigation/Farming purposes. Aqua Rejuvenation Plant facilitates an Organic Farming Model through treated Waste Water

What is Aqua Rejuvenation Plant?

It is an Integrated Waste Water Rejuvenation Model which has **Six-Stage purification profile** for comprehensive treatment of Waste Water, based upon diverse purification parameters.

Key features of the Aqua Rejuvenation Plant (ARP)

- The approx**. 24,000 litres of Water that can be rejuvenated using ARP** will be sufficient for almost 4 acres of Agricultural Land (barring seasonal variations in water requirements).
- The **used filtration media have been specially developed to handle Indian Sewage Water Parameters** and **based upon Geographical Variations** they may be modified.
- The filter media is also locally source-able, so as to ensure that there would not be any stress in the Supply Chain for scaled-up Manufacturing of ARP.
- The **treated water** which is now being used for irrigation **can be used even for drinking purpose** also when little more time is given for settling.
- The system has dual benefit as while the treated water is being used for irrigation purpose, **the filtered sludge generated is also utilized as manure / fertilizer.**
- The biochar prepared from dry leaves falling in autumn

season is also used for mixing in soil as it reduces the water requirement for irrigation thus saving precious water.

- The Institute was earlier also using alternate technologies like sprinkle system and others for reduced water requirement for such purpose.

The Council of Scientific & Industrial Research (CSIR)

- CSIR, known for its cutting edge R&D knowledge base in diverse S&T areas, is a contemporary R&D organization.
- CSIR covers a wide spectrum of science and technology – from radio and space physics, oceanography, geophysics, chemicals, drugs, genomics, biotechnology and nanotechnology to mining, aeronautics, instrumentation, environmental engineering and information technology.
- It provides significant technological intervention in many areas with regard to societal efforts which include environment, health, drinking water, food, housing, energy, farm and non-farm sectors. Further, CSIR's role in S&T human resource development is noteworthy.
- Pioneer of India's intellectual property movement, CSIR today is strengthening its patent portfolio to carve out global niches for the country in select technology domains.
- CSIR is granted 90% of US patents granted to any Indian publicly funded R&D organization. On an average CSIR file about 200 Indian patents and 250 foreign patents per year.
- About 13.86% of CSIR patents are licensed – a number which is above the global average. Amongst its peers in publicly funded research organizations in the world, CSIR is a leader in terms of filing and securing patents worldwide.
- CSIR has pursued cutting edge science and advanced knowledge frontiers. The scientific staff of CSIR only constitute about 3-4% of India's scientific manpower but

they contribute to 10% of India’s scientific outputs.

- CSIR has put in place CSIR@80: Vision & Strategy 2022 – New CSIR for New India.
- CSIR’s mission is “to build a new CSIR for a new India” and CSIR’s vision is to “Pursue science which strives for global impact, the technology that enables innovation-driven industry and nurtures trans-disciplinary leadership thereby catalyzing inclusive economic development for the people of India”.

Central Mechanical Engineering Research Institute

- The Central Mechanical Engineering Research Institute is a public engineering research and development institution in Durgapur, West Bengal, India.
- It is a constituent laboratory of the Indian Council of Scientific and Industrial Research.
- CMERI is the apex R&D institute for mechanical engineering under the aegis of the Council of Scientific and Industrial Research (CSIR).
- Being the only national level research institute in this field, CMERI’s mandate is to serve industry and develop mechanical engineering technology so that India·s dependence on foreign collaboration is substantially reduced in strategic and economy sectors.
- Besides, the institute is facilitating innovations and inventions for establishing the claims of Indian talent in international fields where Indian products shall ultimately compete.
- In the new millennium, CMERI is poised to expand its horizon of research activities so as to steer the country forward in cutting-edge and sunrise fields.