



Green Alert



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Eco-Product

The focus of Environmental Information System (ENVIS) is to disseminate environmental information to decision makers, policy planners, scientists and researchers across the world.

The CERC-ENVIS Resource Partner focuses on 'Environment Literacy - Eco-labelling and Eco-friendly Products' This bi-monthly e-bulletin features latest news, developments and innovations in the field.

turn generate 15GWh of electricity each year, as well supplying the heat demand for the AD process. To further meet the renewable energy goal, Severn Trent's second food waste plant at Stourbridge recently opened. The plant accepts food waste from a variety of sources including food and drinks manufacturers, food processing companies, hospitality and food service outlets, local authorities, schools, supermarkets, and retail stores. With a capacity of 48,500 tons of both packaged and unpackaged food waste, the plant generates energy output of 2.4 MW, the equivalent to the amount of electricity required to power over 4,000 homes for a year.

There are energy crop anaerobic digestion plant which are used to generate biogas. In these plants, decomposition takes place through anaerobic process. In the absence of oxygen the bacteria breaks down the crop material and releases methane. These methane rich biogas is used to fuel Combine Heat and Power Plant Units (CHP). CHP is an energy efficient technology that generates electricity and captures the heat that would otherwise be wasted to provide useful thermal energy-such as steam or hot water-that can be used for space heating, cooling, domestic hot water and industrial processes. The electricity thus generated can be used onsite or can be exported to the nearby national grids.

In August 2010, Severn Trent commissioned its energy crop anaerobic digestion plant at Stoke Bardolph, Nottingham. It was built to help power the nearby sewage treatment works using crops grown on contaminated farmland which is not suitable for food production. The energy crop plant was sized to convert 37,000 tonnes of maize silage each year into a methane rich biogas to fuel 2 (No.) 1MWe combined heat and power plants (CHP). The CHP units would in



Source: <https://bit.ly/3lcRwzP>

Source: https://waterprojectsonline.com/custom_case_study/stoke-bardolph/#:~:text=In%20August%202010%2C%20Severn%20Trent,not%20suitable%20for%20food%20production.https://www.ourfuturewater.com/2018/12/10/the-urban-water-energy-food-nexus-three-mini-case-studies/

Green Issue

Water, Food & Energy: Nexus

Food, water and energy nexus is defined as the interconnected relation between the three systems. These systems are very crucial for humans to survive. The interrelations of these systems are as follows:

1. Water for Food: Water is needed for crop irrigation and food processing.
2. Energy for Food: Energy is needed for pumping of irrigation water, fertilizer manufacture, harvesting, post-harvest processing, transportation, food packaging manufacturing, use of cooking fuels etc.
3. Food for Energy: Biomass is digested under aerobic and anaerobic processes to produce bio fuels.
4. Energy for Water: Energy is used for portable water production, waste water processing and desalination. Energy is also consumed in utilizing water in different processes.
5. Water for Energy: Water is used in the resource extraction and in cooling processes of energy production. Energy is also produced through hydro power.

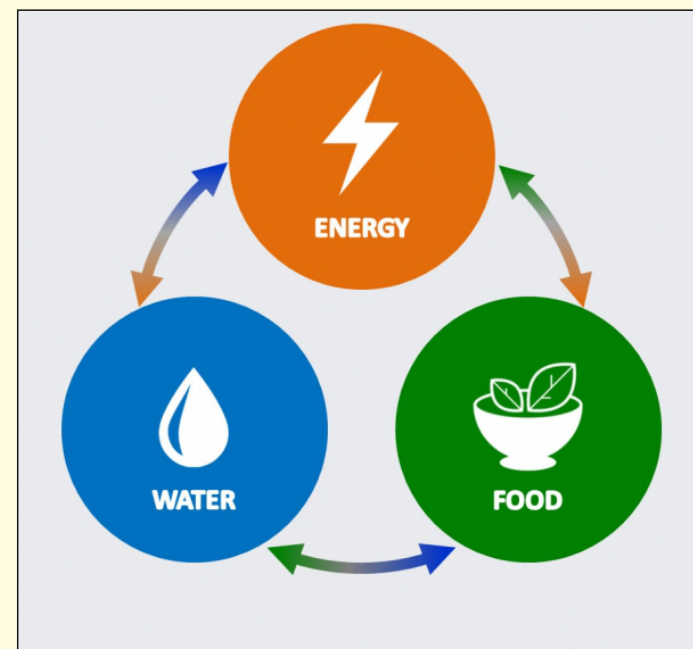
While to a layman, this interconnection might never have been of concern or even seemed obvious, but it can't be denied that the implications of this nexus affect him deeply.

When these systems come in conflict it causes worrying consequences for human health, the natural world and the economy as well. Alternatively, our actions too end up having a deep impact on the three systems.

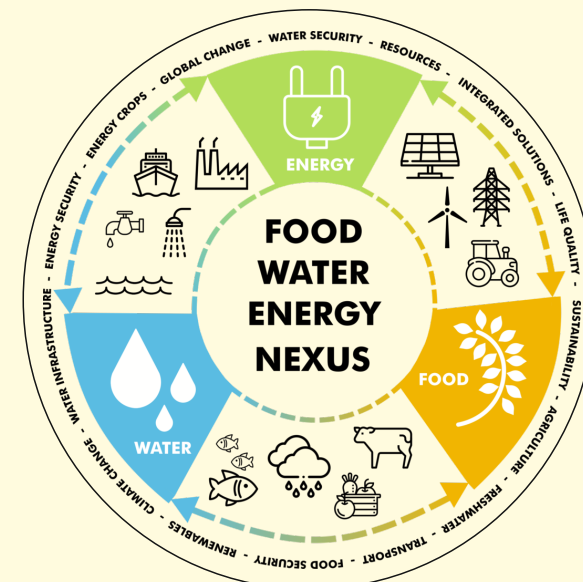
Demand for all three resources is shooting up, driven by a growing world population, rapid urbanization, change in diets and economic growth. Over-exploitation of natural resources burdens it up. With modern lifestyle the demand for food water and energy increases. More demand also increases the risk of more wastage.

A population like India is already facing a dire water crisis today. A hotter planet is pushing demand for air conditioners which in turn releases harmful gases in the atmosphere. Water is needed for food production. Energy is needed for irrigation, fertilization, mechanization, processing and storage of food. While governments and corporates have woken up towards sustainable development, we as individuals to have a vital role to play in maintaining the nexus balance. A simple act of using less water, fixing leaking taps, incorporating rainwater harvesting techniques, etc. can have a positive impact in the long run. Food wastage of any sort is a crime especially when a big part of the world goes to sleep without a full meal. To curb that wastage and to adapt healthy sustainably produced diet is one step closer to sustainable development. Energy efficient lighting, appliances and fixtures can help in reducing energy consumption. Solar panels too are proving to be a boon in countries like India where energy supply is unable to meet the rising population's demand.

Sustainable development is the only viable option left for us. By embracing a sustainable lifestyle, we can assure a better future for our progeny.



Source: <http://www.agrolabs.eu/news/item/18-water-energy-food-nexus-a-case-study-on-medicinal-and-aromatic-plants>



Source: <https://glacull.boku.ac.at/food-water-energy/>

Eco-Tips

Sustainable development is a tough puzzle to solve. But it's a fight we can win for sure.
Balancing this nexus is vital for the existence of humanity as we know it.

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