CHAPTER-16
ENVIRONMENTAL MANAGEMENT PLAN (EMP)

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Introduction of Groasis waterbox in garden:

The Groasis Waterbox is a Jordanian invention that launched in June 2011, the Groasis nurtures a sapling's growth without the hands-on fuss of shovelling soil and topping up water, and it uses a principle of 'biomimicry technology', an artificial copy of the way nature shelters seeds in humidity to grow in the most eroded sites and deserts without human intervention. The introduction of Groasis water box in the garden will help to manage water scarcity.

Using a Groasis Waterbox also helps:

- Collect rainwater and prevent rapid evaporation, saving farmers a trip and money
- Prevent the development of weeds near the new plant
- Prevent pests and smaller rodents and birds from harming the plant
- Prevent erosion of the soil around the plant
- The Waterbox claims to create a perfect oxygen level in the soil to influence growth positively
- It stimulates a balanced climate, cooling the plant and preventing burning
- Because of the minimal space and soil requirement, traditional irrigation is not needed so that the Waterbox can be used on mountain slopes, rocks and in burned embers

Fig-32:Groasis Waterbox

Bioconversion of garden waste through mushroom production

The waste generated in the garden is plant origin containing lignocellulosic compounds, which are used by the mushroom as a carbon source, and due to the diverse enzymatic system of mushrooms, these waste generated would be utilized and hence reduce the burning. However, care must be taken to select the substrate for mushroom cultivation because all waste could not be suitable.

Conversion of Biomass of garden waste into biochar

Biochar is a carbon-charcoal product obtained by combusting biomasses like wood, manure, leaves, or animal debris in a closed container with little or no available air, or biochar is the substance obtained by thermoconversion of organic substrates in the limited presence of oxygen and at a temperature range of 250 ^{o}C–700 ^{o}C. Conversion of biomass to biochar is reported to be producing sustainable renewable energy and reduce carbon dioxide content in the atmosphere; usage of biochar in the soil as a fertiliser is beneficial for plant health. It improves the physical and chemical properties of the soil by preventing the leaching of nutrients from the soil(Singh et al., 2022). Biochar is obtained from various biomasses through the thermochemical process by numerous techniques and methods, but all the production techniques or methods are not farmer-friendly. Due to the outrageous cost of setting up a unit for biochar production, the most efficient method conceivably is the TLUD method because this method is user-friendly and portable and has a meagre production cost. Successful biochar application is an ancient practice; however, its application in horticultural is not a very old practice. Long-term application of biochar would help reclamation contaminated soil, reduce soil toxicity and sequestration of carbon, reduce nutrient leaching, provide a niche for microbes, and assist in the effective management of agri-waste. However, proper dosages based on soil type and specific requirements should be optimized, as an accurate characterization of biochar and its probable fate in the soil needs extensive research.

Environmental awareness

Every Member of the University, including teacahing non-teaching staff and the students, must be aware of environmental issues prevailing nowadays and the concepts of climate change with possible steps to mitigate the adverse changes, time to time a common talks over the environment in each department will be helpful for the maintaining ecosystem of the University.

Artificial intelligence in Green Audit

It is a term that refers to automated technology in a broader meaning. Organizations invest in artificial intelligence (AI) research and applications to automate, augment, or mimic human intelligence – human analytical and/or decision-making — and the internal auditing profession must be ready to engage in these initiatives fully. Deep learning, machine learning, image recognition, natural language processing, cognitive computing, intelligence augmentation,

cognitive augmentation, machine enhanced intelligence, and augmented intelligence are just a few names used to describe AI.

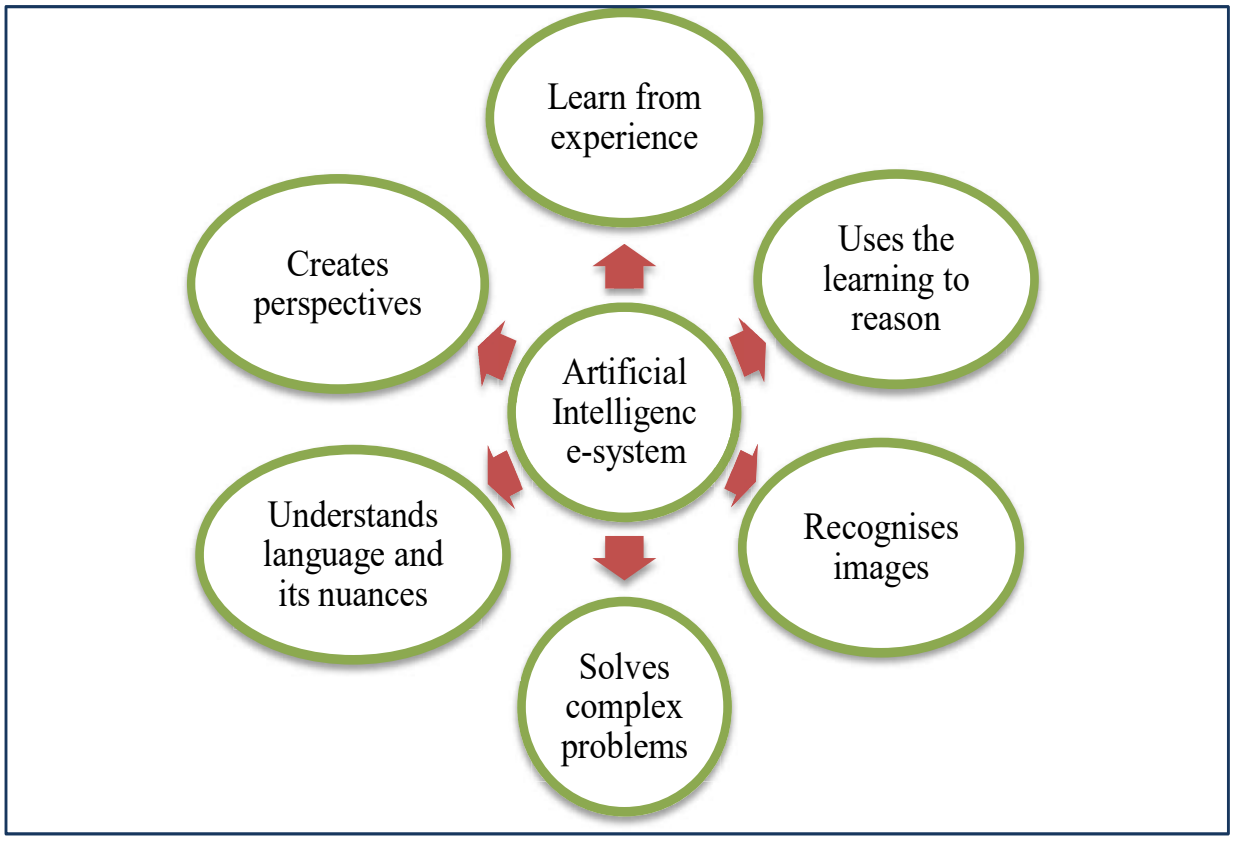

Fig-33: Working of AI

The AI opportunity for our environment

The most crucial factor in AI development is ensuring that it benefits humanity, which involves being both "human-friendly" and "earth-friendly." Five of the world's most pressing environmental concerns are highlighted, together with the priority action areas for successfully addressing them.

Climate change

• Clean power • Smart transport options • Sustainable production and consumption • Sustainable land-use • Smart cities and homes.

Biodiversity and conservation

• Habitat protection and restoration • Sustainable trade • Pollution control • Invasive species and disease control • Realizing natural capita

Water security

• Water supply • Catchment control • Water efficiency • Adequate sanitation • Drought planning

Clean air

• Filtering and capture • Monitoring and prevention • Early warning • Clean fuels • Real-time, integrated, adaptive urban management

Weather and disaster resilience

• Prediction and forecasting • Early warning systems • Resilient infrastructure • Financial instruments • Resilience planning

Use of AI in Green Audit

It is increasing intending to enforce environmental laws. Auditing software, FinTech instruments, and monitoring equipment are all examples of how AI is employed for the environment. Because authorities can discover or foresee future infractions cost-effectively, businesses are exposed to increased scrutiny and regulatory oversight. As a result, there is a greater chance of potential infractions being discovered and fines being imposed. To automate environmental checks, artificial intelligence and machine learning are being applied. This is commonly accomplished by evaluating photos captured by various technologies, such as satellites and drones. The reach and scope of inspections can be expanded utilizing AI and integrated technologies, which is critical for improving the overall effectiveness of environmental policies. Machine learning approaches can also aid resource allocation by anticipating where manual inspection resources on the ground would be most beneficial. Furthermore, AI Blended financial accounting computer programmes can analyze the impact of products utilized by a company that will leave a larger carbon footprint.