Reduce the Virtual Water Footprint in Supply Chains

CONTEXT

- The virtual water footprint is the total freshwater used to produce a product, including water used in raw material extraction, manufacturing, and transportation.
- Reducing this footprint is crucial for water conservation and minimizing environmental impacts.

CHALLENGE

- Your task is to design or propose a digital platform or solution that can assess and minimize the virtual water footprint across supply chains.
- Your solution may include one or more areas as mentioned below:
    - Propose a data-driven solution which includes dashboards and water footprint analysis
    - Design a digital platform which will propose an alternate solution which will use less water footprint based on inputs.

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STEPS TO DEVELOP YOUR PROJECT

1. **Supply Chain Mapping**

    - Identify a specific supply chain or product category to analyze. (Preferably Xylem Products. Link: https://www.xylem.com/en-us/products--services/)
    - Map the entire supply chain network, including but not limited to raw material, sourcing, manufacturing, distribution, transportation, etc. You can also choose to study any part of the entire supply chain as per your interest.
    - Gather data on water usage at each stage.

2. **Water Footprint Assessment**

    - Develop a methodology to calculate the virtual water footprint for the selected supply chain or product category.
    - Consider factors such as water usage in raw material extraction, manufacturing processes, cooling systems, cleaning operations, transportation, etc. (Reach out to people, connect, research, and gather data. Include all research links, contacts, and references in the document.)
    - Identify the most water-intensive stages.

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STEPS TO DEVELOP YOUR PROJECT

3. **Solution Proposal**

    - **Evaluate alternative material/process/method/route/etc to the identified stages in step 2 which can help reduce virtual water footprint.**

    - **Prepare graphical visualization/ dashboard to compare water footprint of existing and proposed solution.**

- **<u>If you are creating a digital platform then refer to the below steps:</u>**

    - **Design and develop a user-friendly digital platform that integrates the water footprint assessment and optimization strategies.**

    - **Use data visualization tools (e.g. Power BI) to illustrate the virtual water footprint and identify hotspots.**

    - **Enable data input for customized reports and recommendations.**

    - **Integrate the platform with existing supply chain management systems or databases for seamless data exchange.**

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STEPS TO DEVELOP YOUR PROJECT

4. Evaluation

    - Measure and quantify the potential water savings and efficiency improvements achieved through the proposed recommendation.
    - Evaluate the proposal's usability, scalability, and effectiveness.

5. Implementation (Optional)

    - Pilot the digital platform within a selected supply chain or product category.
    - Refine and iterate the platform based on user feedback and real-world implementation experiences.

GOAL

This challenge aims to promote sustainable water management practices within supply chains by leveraging digital technologies and data-driven insights. Your solution should demonstrate a clear understanding of the virtual water footprint concept and present innovative strategies to minimize water consumption across various stages of the supply chain.

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JUDGING CRITERIA

- Accuracy of Water Footprint Assessment (Methodology, Factors considered, Data quality)
- Data Accuracy and coverage (Data points collected and their relevance)
- Scalability and usability of the platform (Scalability, User-feedback, Long-term viability)
- Documentation and presentation (Clarity, Presentation, Engagement)

SUBMISSION GUIDELINES

- Introduction (Team /Individual - Names, college, graduation)
- What is the problem?
- Methodology & Approach to the solution in which show Block/flow diagram explaining steps followed to solve problem.
- Which hardware or software were used in this solution.
- Reference links, book details explaining data/solution.
- Up to 5 members per team
- Deadline: Sunday | August 11 – 11:59 PM IST

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