**Description of the Gender-Inclusive Agriculture Dataset**

The Gender-Inclusive Agriculture Dataset represents a scenario where agricultural activities consider and involve gender-inclusive practices. This dataset includes information related to gender, resource access, women empowerment metrics, crop types, soil types, soil health indices, and social impact indices. The objective is to examine the role of gender in agriculture, assess the impact of gender-inclusive practices, and understand how they influence agricultural outcomes and social dynamics.

## **Features**

1. Gender: The gender of individuals involved in agricultural activities ('Male', 'Female','Transgender', 'Gender neutral', 'Non-binary', 'Agender', 'Pangender', 'Genderqueer', 'Two-spirit', 'Third gender').
2. Resource\_Access: The level of access individuals has to agricultural resources, categorized as Limited, Moderate, or Abundant.
3. Women\_Empowerment\_Metrics: Metrics quantifying the empowerment of women involved in agriculture.
4. Crop\_Type: The type of crops cultivated in the agricultural setting.
5. Soil\_Type: The classification of soil on the farm (e.g., Sandy, Loamy, Clayey).
6. Soil\_Health\_Index: An index representing the health and fertility of the soil.
7. Social\_Impact\_Index (target): An index indicating the social impact of gender-inclusive agricultural practices.

## **Possible hypothetical research questions**

These research questions aim to explore the intersection of gender, resource access, empowerment metrics, and agricultural outcomes. Machine learning models can provide insights into the complex relationships within the dataset, facilitating the development of gender-inclusive agricultural strategies for sustainable and equitable farming practices.

1. **Gender disparities in resource access**
   1. How do gender disparities in resource access influence agricultural outcomes, and can a machine learning model predict the impact on crop yield and social impact?
2. **Women empowerment metrics and agricultural productivity**
   1. What is the correlation between women empowerment metrics and agricultural productivity, and how can this correlation be leveraged for sustainable agriculture?
3. **Effectiveness of gender-inclusive practices**
   1. How effective are gender-inclusive practices in promoting soil health, and can these practices be optimized for different soil types?
4. **Social impact of gender-inclusive agriculture**
   1. How does gender-inclusive agriculture contribute to social impact, and can a model assess the social implications across diverse agricultural settings?
5. **Resource access and crop diversity**
   1. Does the level of resource access influence the diversity of crops cultivated, and how does this impact overall farm resilience?
6. **Gender-inclusive practices and soil health**
   1. What are the specific gender-inclusive practices that positively correlate with soil health, and can these practices be recommended for sustainable farming?
7. **Empowerment metrics and crop selection**
   1. Do women empowerment metrics influence the selection of specific crop types, and can a model predict optimal crop choices based on empowerment indicators?
8. **Social impact across different soil types**
   1. Is there a variation in the social impact of gender-inclusive agriculture across different soil types, and how can this information guide agricultural policies?
9. **Predicting social impact indices**
   1. Can machine learning models accurately predict social impact indices based on a combination of gender-inclusive practices and agricultural settings?
10. **Generalizability of gender-inclusive practices**
    1. To what extent can gender-inclusive practices identified in this dataset be generalized to different geographic regions and cultural contexts, and what factors contribute to variations in social impact?