



Crop Production Prediction

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Problem Statement

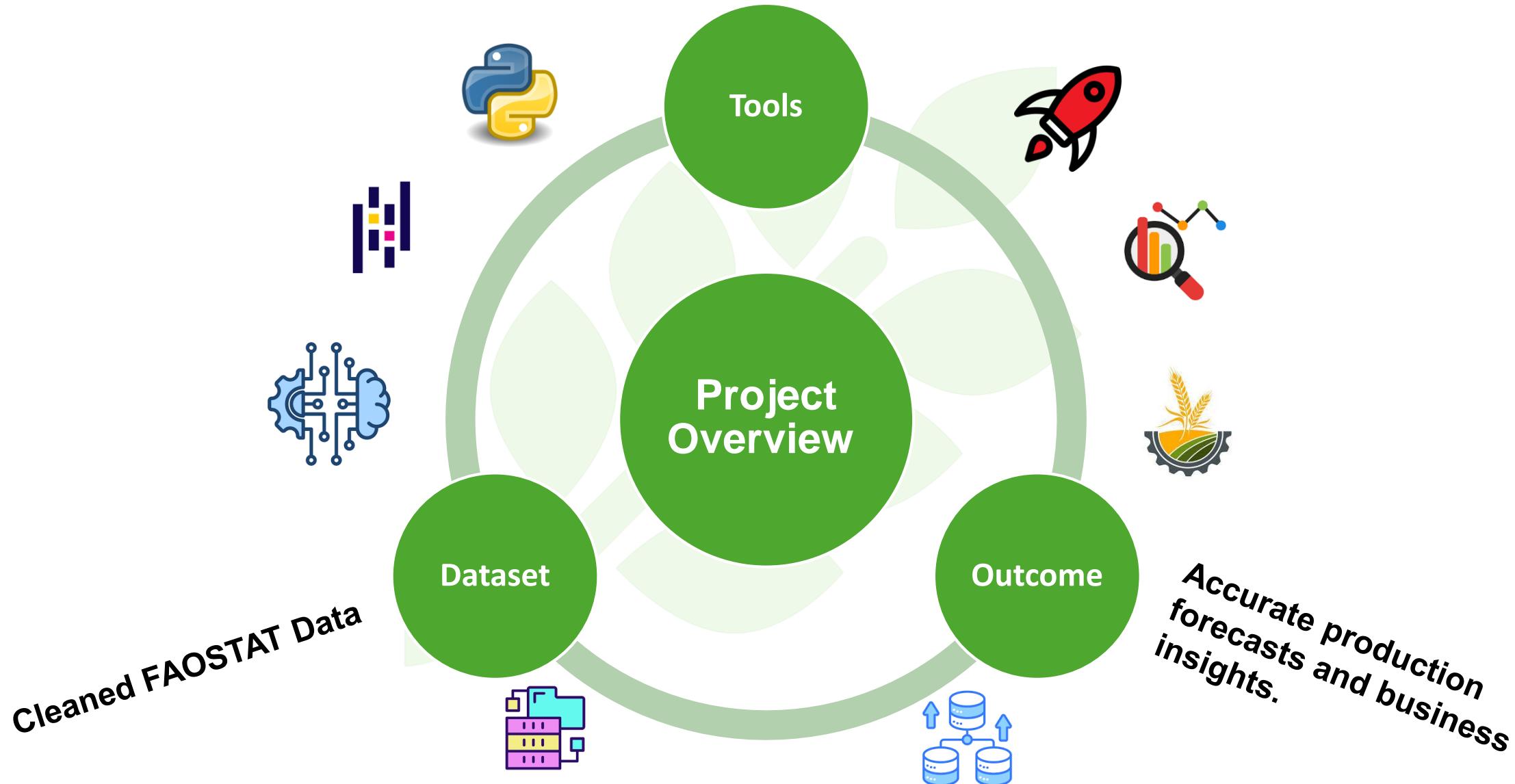


Why Predicting Crop Production Matters

- Agriculture is vital to the economy and food security.
- ↗ Crop production forecasting faces challenges like:
 - Inconsistent or missing data
 - Unpredictable weather patterns
 - Fragmented data across regions and sources
- **Project Goal:**
 - Build a smart dashboard using machine learning
 - Inputs: Area Harvested, Yield, Year
 - Output: Predict total crop production (in tons)
 - Deliver actionable insights for planning and business



Python, Pandas, Streamlit, Regression Models



Handling Dataset

Remove the noise

- Deleted empty rows and columns to declutter the dataset

Fill the Gaps Intelligently

-  **Mean** for small, simple datasets
-  **Median with IQR** to handle outliers smartly
-  **Mode** for categorical fields like crop types or regions

Predict what missing

-  Used a **Regression Model** to estimate missing production values with Machine Learning.

Business use case

Fuel agri-startups with predictive models and smart farming tools.

Predict crop supply, and support food safety programs.

Enable data-backed decisions on subsidies, insurance management, and disaster.

Guide farmers to choose the best crops and optimize resources.

Help farmers and traders maximize profits by forecasting trends.





Thank you!

உழுதுண்டு வாழ்வாரே வாழ்வார்மற் றெல்லாம்
தொழுதுண்டு பின்செல்வார்.

Those who live by tilling the soil truly live;
Others merely follow, living in servitude.