Predicting Salt Yield From Pond Parameters

Problem Identification Statement

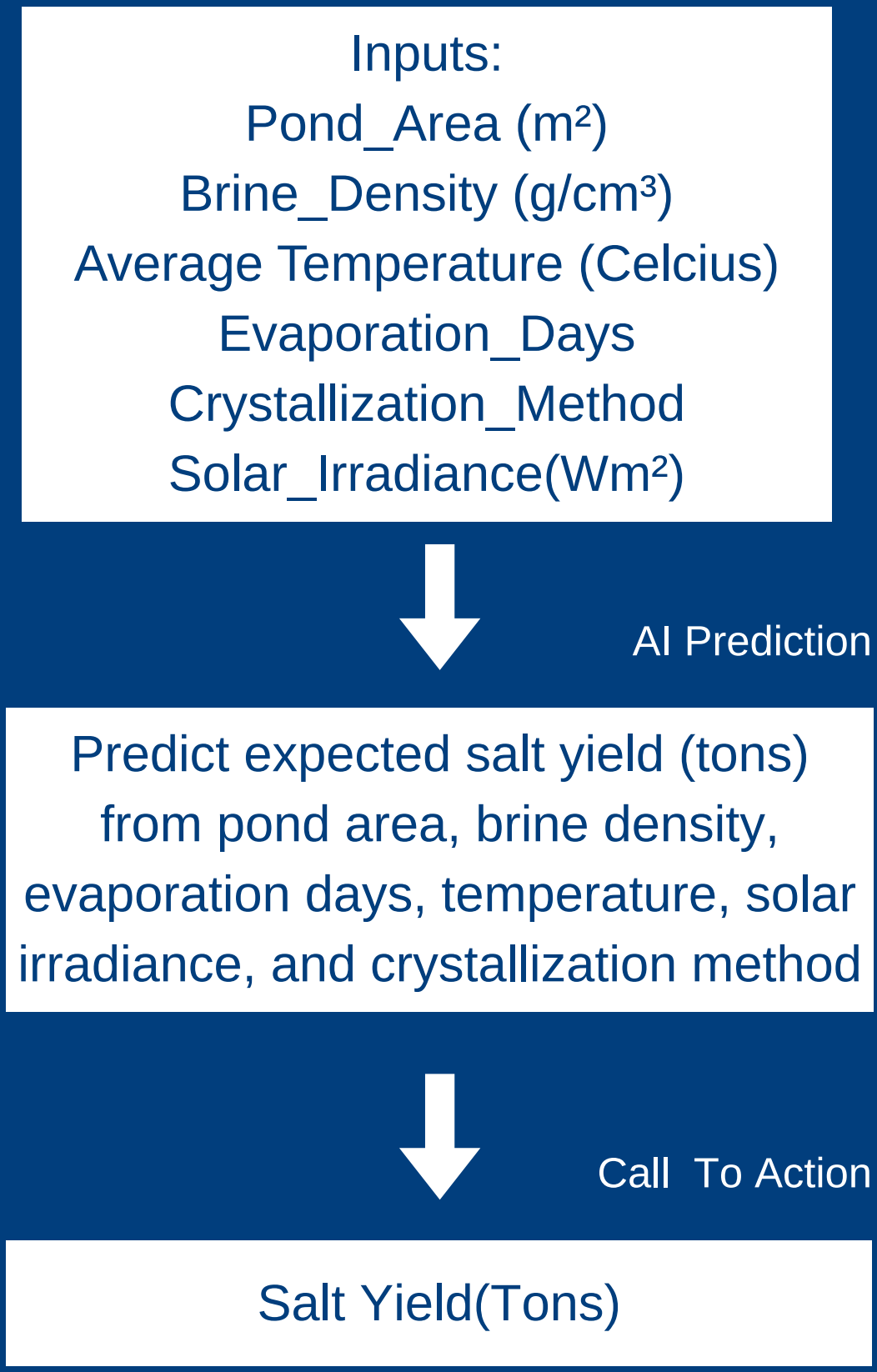
A Coastal Salt Farm and wants a quick forecasting tool that estimates salt yield (tons) for each production cycle using pond and climate measurements.

They already collect pond area, brine density, evaporation days, average temperature, a numeric climate temperature range (°C), solar irradiance, and whether the pond uses Batch or Continuous crystallization.

Help the Salt Farm to predict their harvests in Salt Yields.

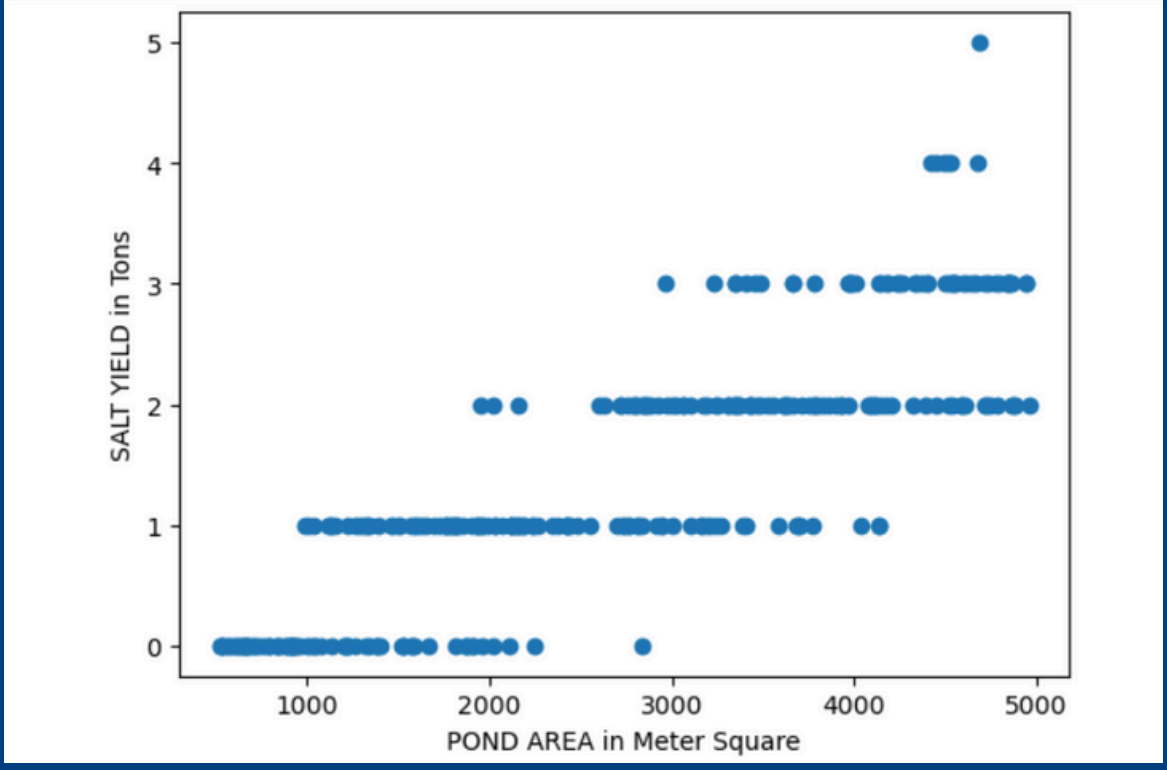
3 - Stages

Stage 1	Domain Selection	Machine Learning
Stage 2	Learning Selection	Supervised Learning
Stage 3	Under Supervised Leanring	Regression


Inputs:
Pond_Area (m²)
Brine_Density (g/cm³)
Average Temperature (Celcius)
Evaporation_Days
Crystallization_Method
Solar_Irradiance(Wm²)
AI Prediction
Predict expected salt yield (tons) from pond area, brine density, evaporation days, temperature, solar irradiance, and crystallization method
Call To Action
Salt Yield(Tons)

Pond Area Vs Salt Yield

```
[129]: plt.scatter(dataset['Pond_Area_m2'],dataset['Salt_Yield_tons'])
       plt.xlabel('POND AREA in Meter Square')
       plt.ylabel('SALT YIELD in Tons')
       plt.show()
```



R2 Score

```
# Evaluation Metrics
```

```
from sklearn.metrics import r2_score
```

```
r_score=r2_score(y_test,y_pred)
```

```
r_score
```

```
0.7496563929756983
```

Result

```
Salt_Pan_Yield=loaded_model.predict([[2185.4,1.165,15.1,24.2,7.9,855,1]])
```

```
C:\Users\rampr\anaconda3\Lib\site-packages\sklearn\utils\validation.py:273
ted with feature names
  warnings.warn(
```

```
Salt_Pan_Yield
```

```
array([[0.80394168]])
```

Submitted By
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