

CROP YIELD AND RAINFALL PREDICTION FOR TUMKUR DISTRICT FARMERS USING MACHINE LEARNING

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CONTENT

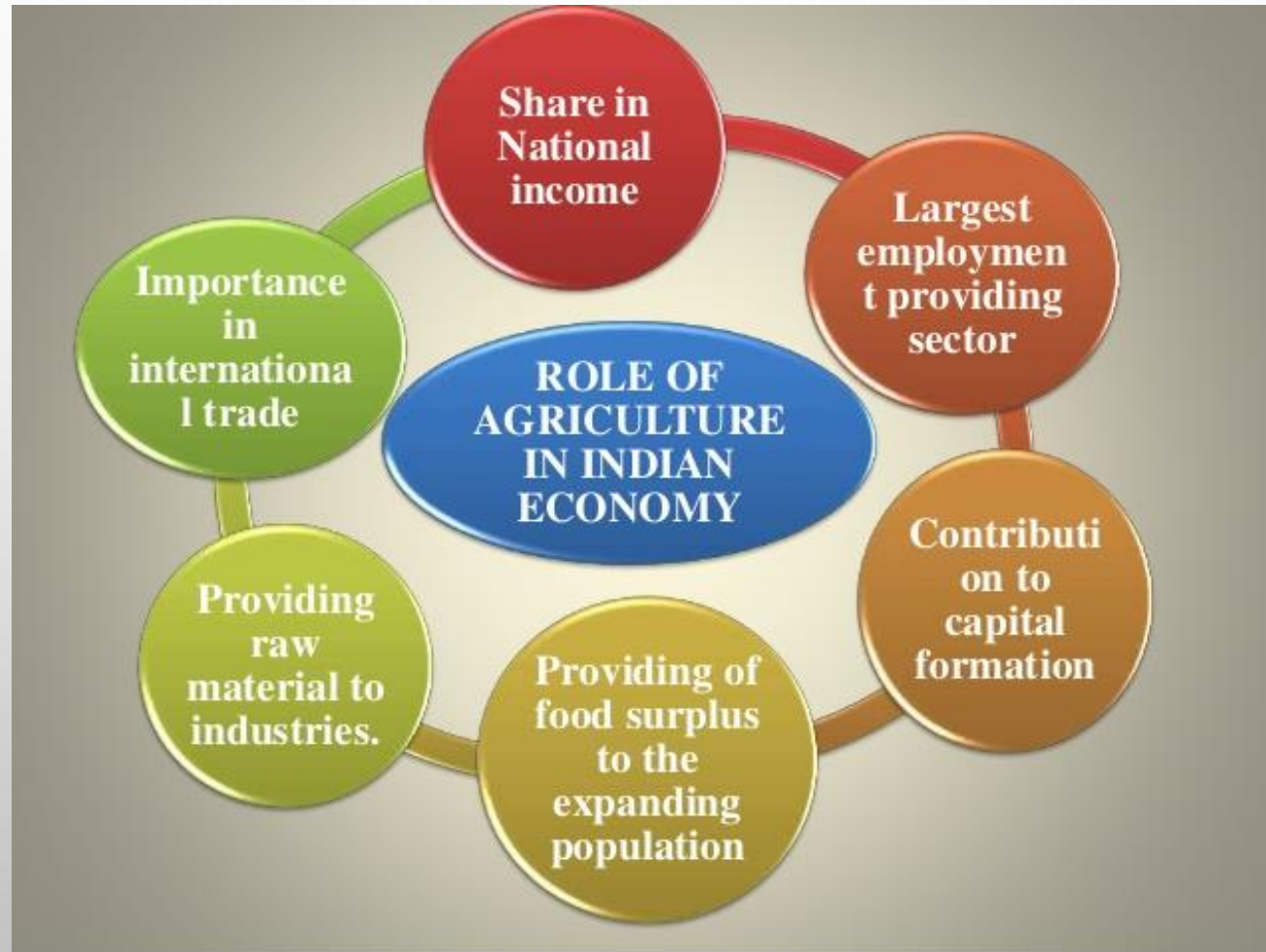
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AGRICULTURE



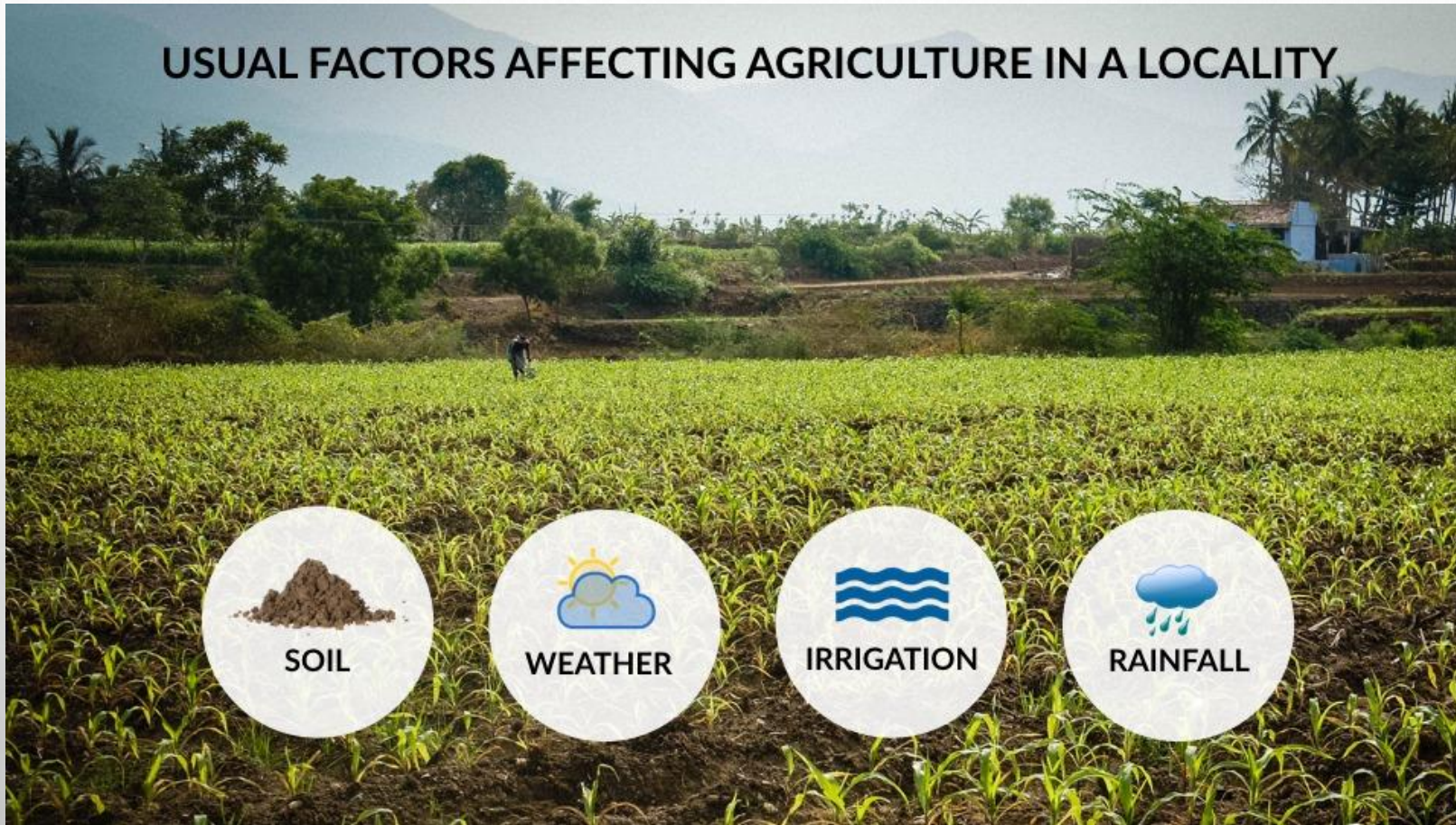
The science or practice of farming, including cultivation of the soil for the growing of crops

ROLE OF AGRICULTURE



AGRICULTURE DEPENDS ON

USUAL FACTORS AFFECTING AGRICULTURE IN A LOCALITY



MAIN CROPS IN TUMKUR DISTRICT

Coconut



Areca nut



PROBLEM STATEMENT



POOR QUALITY OF PRODUCT

Farmer is not using the improved seeds and fertilizers so quality of production is very poor and its prices are low in the market.



EXISTING SYSTEM

- Farmers cannot get proper information about the future rainfall details and also market price.
- In existing system there is no such prediction system in agriculture to help the farmers.

PROPOSED SYSTEM

- To solve the existing problem, we proposed a project that uses a prediction algorithm to predict the rainfall data and crop yield by predicting market price.

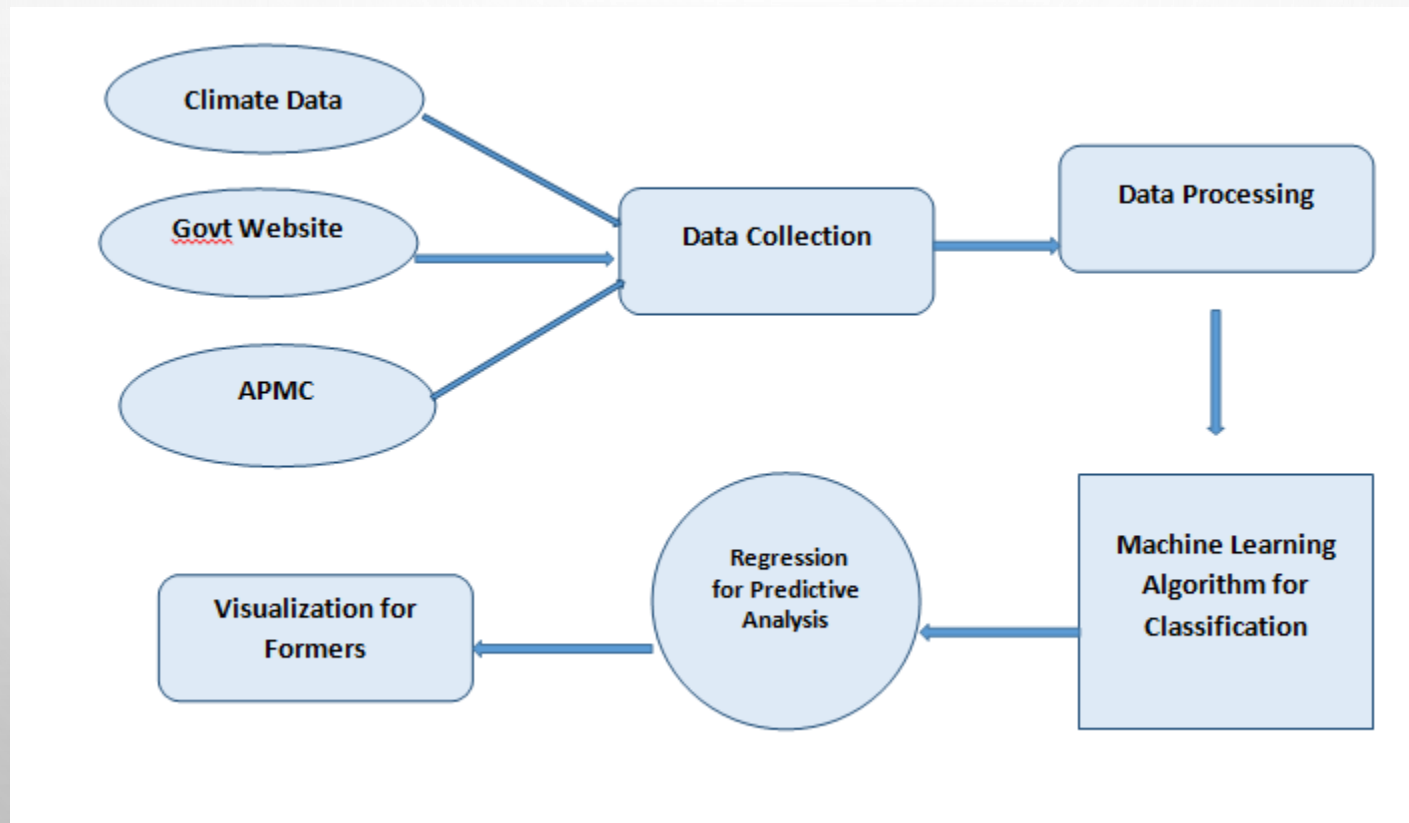


Fig: System Architecture



PREDICTION ALGORITHMS

Some of prediction algorithms used in our project are:

- **Linear Regression Algorithm**
 - **SVM Algorithm**
 - **KNN Algorithm**
 - **Decision Tree Algorithm**
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ALGORITHM EFFICIENCY TABLE FOR RAINFALL DATA

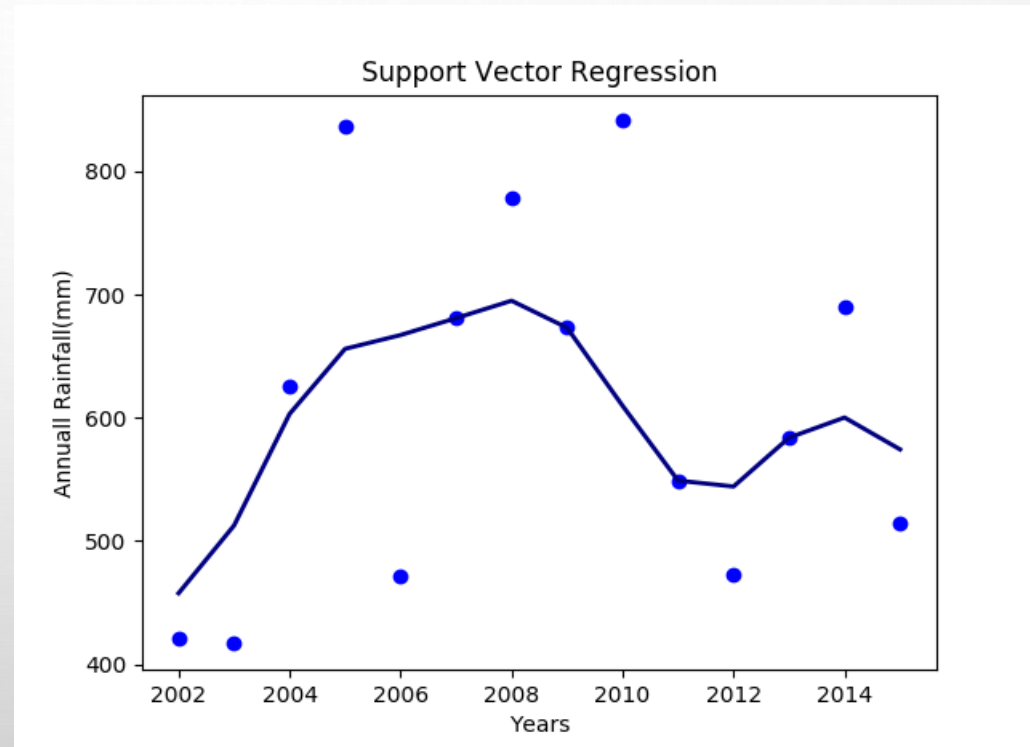
Algorithm	Input		Expected Output Range	Predicted Output	Efficiency
	Year	Rainfall (mm)			
SVM	2016	515	450-650	551	93% efficient
K-NN	2016	515	450-650	602	85% efficient
Linear regression	2016	515	450-650	645	79% efficient
Decision tree	2016	515	450-650	637	80% efficient

SVM ALGORITHM FOR RAINFALL DATA

Sample data:

Year	Rainfall (mm)
2012	473
2013	584
2014	690
2015	511
2016	515

Graph:

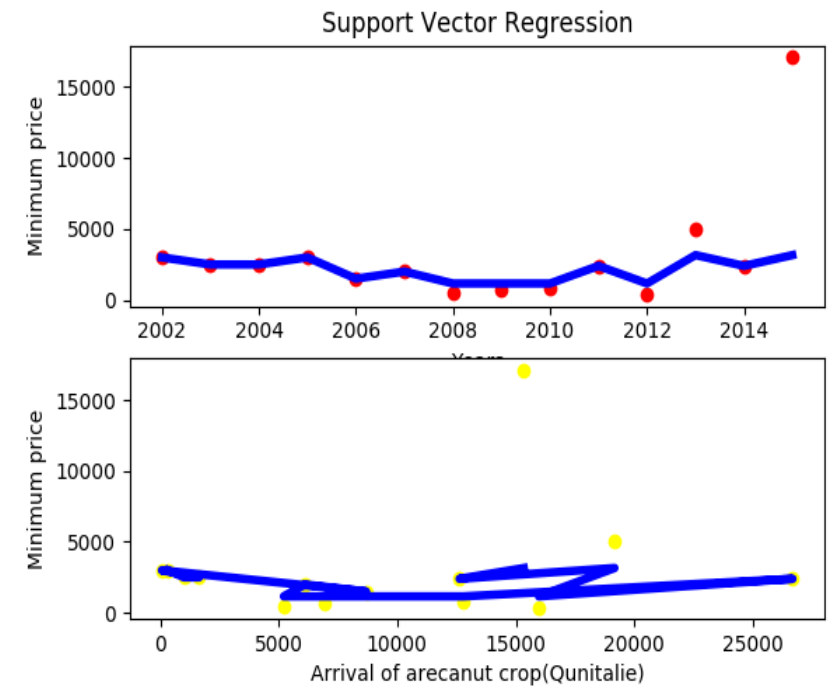
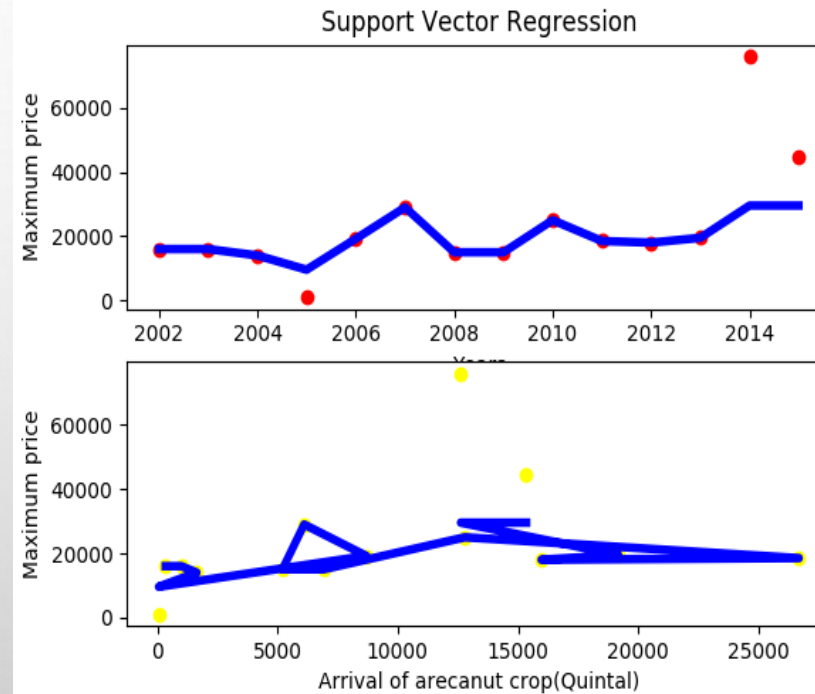


ALGORITHM EFFICIENCY TABLE FOR MARKET DATA

Algorithm	Input		Expected Output Range		Predicted Output		Efficiency
	Year	Arrival (quintal)	Min	Max	Min	Max	
SVM	2016	21948	500-17500	11000-50000	2162	19563	89% efficient
K-NN	2016	21948	500-17500	11000-50000	6067	41848	52% efficient
Linear regression	2016	21948	500-17500	11000-50000	3700	19000	86% efficient
Decision tree	2016	21948	500-17500	11000-50000	17100	44500	49% efficient

SVM ALGORITHM FOR MARKET DATA

Year	Arrival (quintal)
2012	15966
2013	19177
2014	12617
2015	15351
2016	21948



OUTCOME

- **Our proposed project can be implemented in the Government sectors, APMC yard and other agricultural centres.**
- **Using our proposed project farmers can easily get the information about crop production and also market price.**

CONCLUSION

- In this project we have performed the predictive analysis using some real time data collected from agricultural department and some government website.
- By applying predictive analysis on the collected data we can suggest the farmers about crop yield and rainfall.

FUTURE WORK

- **In future we are planned to predict the disease of the crop by using image processing to increase the yield of the crop.**
- **We are planning to develop an web application that gives information about crops and predicted details of crops.**
- **In future planned to develop mobile application this can be accessed in remote areas by farmers.**

REFERENCE

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