



N NEXT WORLD
NETWORK SERVICES

WHITE PAPER

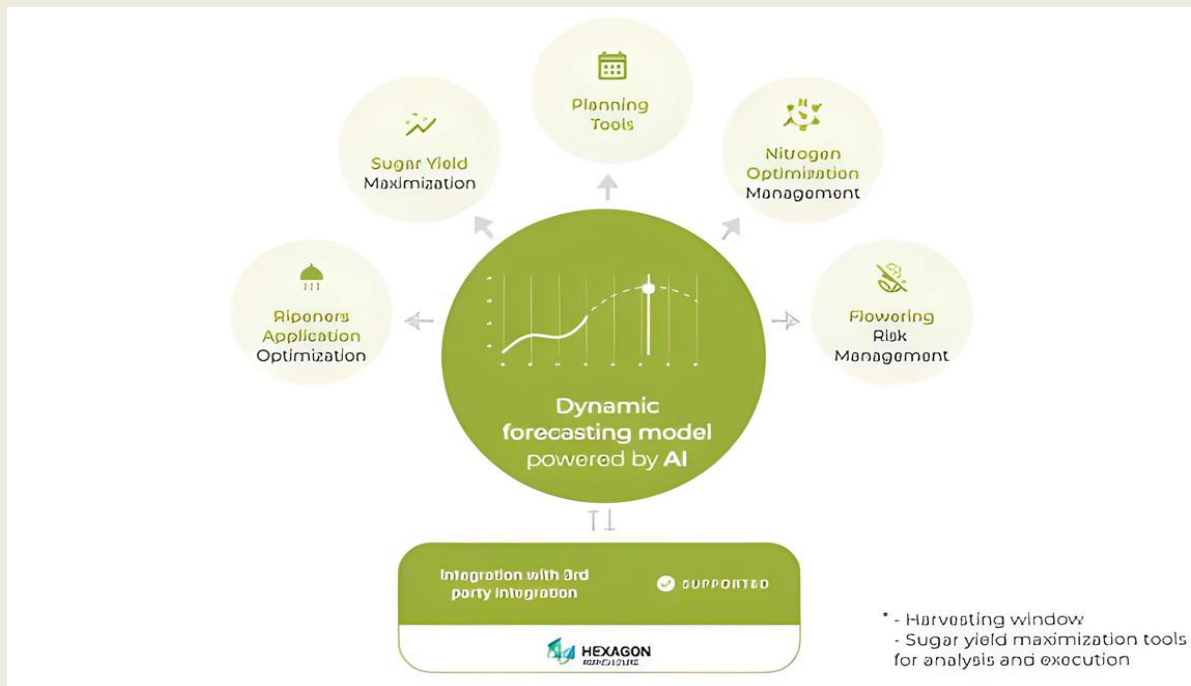
HOW WE IMPROVE SUGARCANE YIELD WITH ARTIFICIAL INTELLIGENCE

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As AI continues to penetrate every industry, agriculture is undergoing a similar transformation. At NWNS, we are leading this technological revolution, utilizing advanced AI techniques to drive growth and efficiency in the sugarcane sector world-wide.

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Our core engine for sugarcane growers is the forecasting model, which predicts crop development throughout the full vegetation cycle. This capability is essential for sugarcane mills, as accurate forecasting enables them to make key operational decisions, including budget planning, commercial decisions, optimizing harvesting operations, preventing biological risks, and optimizing fertilizer applications. Accurate forecasting is directly linked to sugar or ethanol production, the primary KPIs in the sugarcane industry.

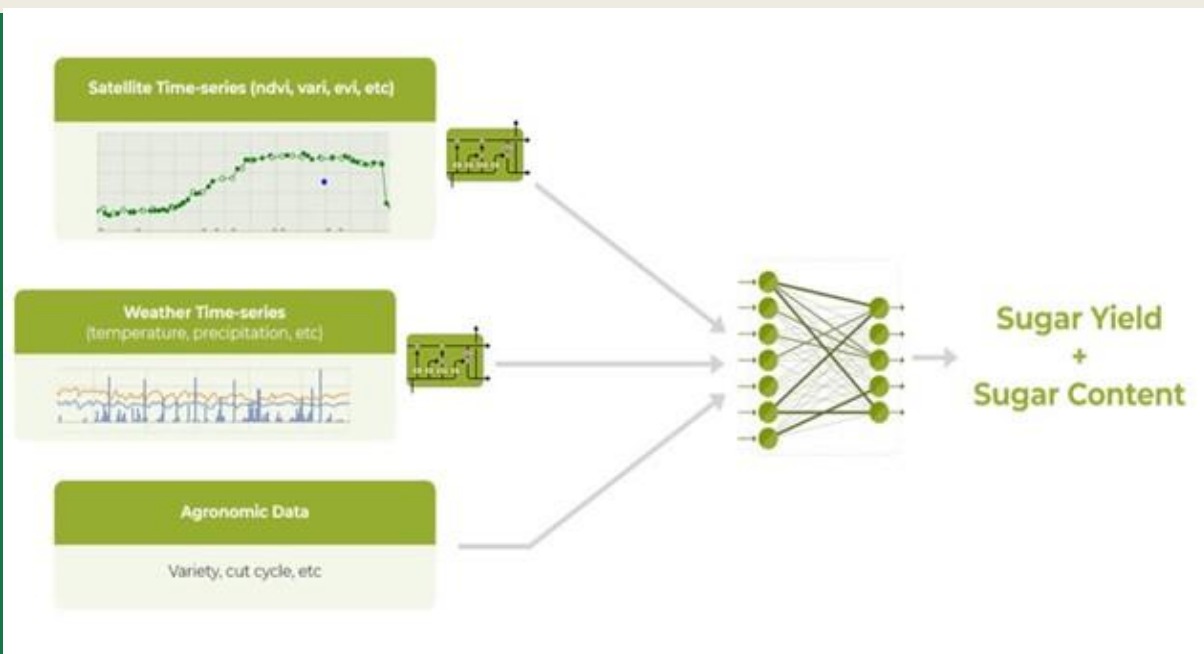


Our data science models estimate biomass yield and sugar content for any time point in the future on a weekly basis, enabling mills to make the best operational decisions to improve business performance and reduce sugar content.



AND THIS IS HOW THIS WORKS

To measure the performance of our yield and sugar content predictive models, we use two metrics: mill level error and field level error. The mill level error is the average amount of biomass (ton/ha) for the entire mill, which is a highly precise number directly related to the total biomass harvested by a sugarcane mill. The field level error is the average relative error measured across



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each individual sugarcane field. This number may contain errors due to manual errors or missing data recorded during harvesting operations. Our deep learning approach has enabled us to improve the accuracy of our yield and sugar content predictive models significantly. We have achieved exceptional accuracy metrics of up to 94% at the single parcel level and up to 98% at the full farm level. However, we believe we can further enhance the performance of our models by leveraging new data sources, such as higher resolution and more frequent weather and satellite imagery, new sensors, and more historical data.

Our team is currently experimenting with these data sources to improve the precision of our models, which will better handle cross-seasonal climate variations. Additionally, we are working on extrapolating our modelling experience to model changes in soil organic content, which is essential for verifying carbon removal programs in the sugarcane sector.

At NWNS, we are committed to revolutionizing the agriculture industry by developing and utilizing cutting-edge technology to drive growth and efficiency in sugarcane production. Our predictive analytics models for sugarcane Yield and Sugar content are just one of the many ways in which we are accomplishing this goal.