

**WHITE PAPER**

# **HARNESS AI TECHNOLOGY TO OPTIMIZE SUGARCANE HARVEST**

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**KEY  
STRATEGIES**

**S I N C E 2 0 0 8**

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## OVERVIEW

Advanced systems that leverage automation and artificial intelligence (AI) provide accurate, regularly updated data, allowing for more efficient planning and adaptability to the dynamic changes in the field and office.

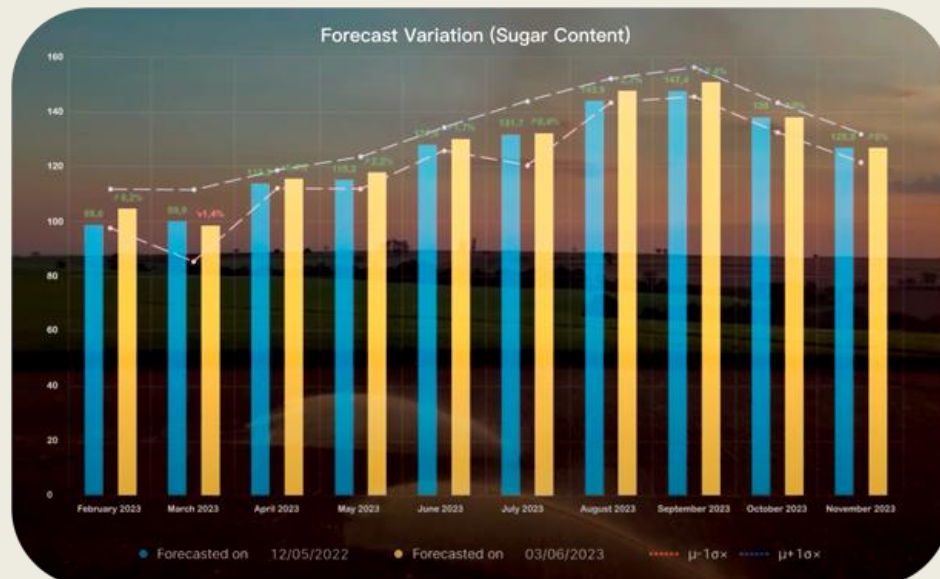
These technological advancements have a far-reaching impact, promoting sustainable business practices, improved resource utilization, cost reduction, and increased productivity without expanding the cultivated area. They also contribute to better mill management, creating opportunities for short, medium, and long-term profit growth. NWNS as an agronomic intelligence solutions provider for sugarcane, exemplifies this approach through its AI tools.

### HERE ARE THREE AI-DRIVEN STRATEGIES TO OPTIMIZE THE SUGARCANE HARVESTING PROCESS:



#### ACCESS ACCURATE AND TIMELY SUGARCANE DATA

AI-based automation tools offer optimization advantages by providing precise, regularly updated data and insights to complement management plans. This technology maps the current crop situation using remote sensing information, taking into account constantly changing weather conditions, and with the help of AI, provides a week-by-week crop development forecast for the rest of the season. With weekly automated updates, excellent visualization tools, and easy comparison of various periods, these tools help make timely decisions and support planning processes, driving operational efficiency.





### **INCREASE ACCURACY AND SPEED OF DATA ACQUISITION**

Having accurate forecasts for sugar content and yield is vital for optimizing harvest and guiding operational tactics throughout the season. Unlike traditional methods where specialists carefully sample only selected fields, this system “samples” every 100m<sup>2</sup> of the farm on a weekly basis using satellite images. This approach allows for the consideration of important factors such as water stress, pest outbreaks, nutrition challenges, and chemical application impacts. Accuracy reaches almost 97% for sugar content and 95% for yield biomass estimation. This process not only saves time and money on sampling but also allows sugar mills to make well-informed decisions.



### **OPTIMIZE HARVESTING SCHEDULE**

Precise and accurate forecasts, reflecting the actual crop status, enable significant improvements in sugar mill operations' profitability. The sugar yield maximization feature helps find the best harvesting window for each field. The optimization algorithm's settings can be adjusted to individual mill situations, allowing for the development of optimization scenarios that precisely fit local conditions and challenges. Using information on actual crop status versus traditional methodologies and taking operational costs into account allows for step-change opportunities in yield and productivity improvement. The AI is trained on real-life operations of customers in Brazil, the USA, India, and Southern Africa, farming more than 3 million hectares of sugarcane area. Our team continuously works on improving model precision and reliability in various climatic and agroecological environments.

**TO LEARN MORE ABOUT NWN'S SERVICES OR TO REQUEST A DEMO, PLEASE CONTACT US.**