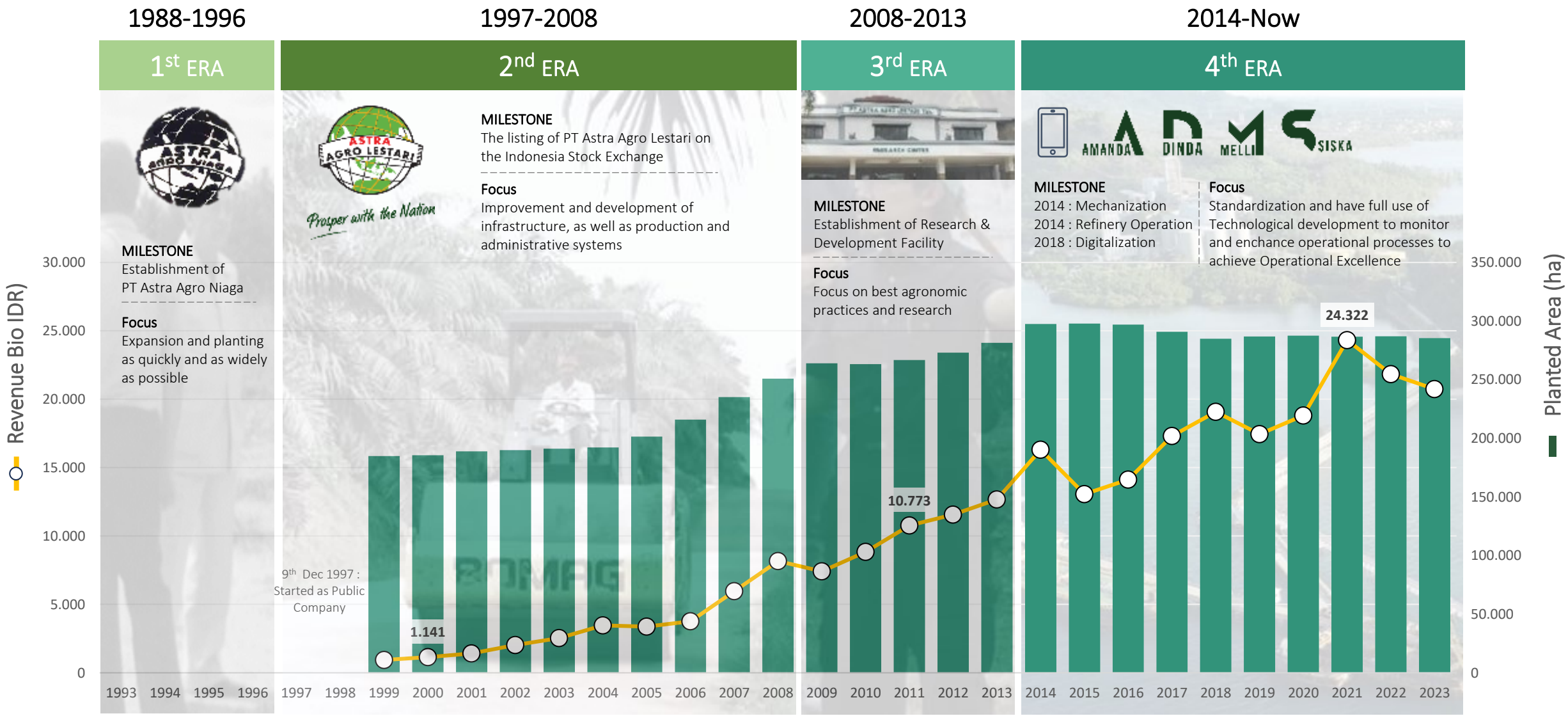
Shaping the Future of Palm Oil:
AI Innovations for Sustainable Growth and Long-Term Success

PT Astra Agro Lestari

Astra Agro Lestari begin the digitalization in 2018 and continuously improve

To Drive/ Pursue Sustainable Growth, Astra Agro Continuously Innovates And Implements Transformative Changes To Attain More Effective And Efficient Business Process.
Divided Into Four Significant Eras, As We Strive For Operational Excellence In Our Hearts And Minds, We Embed Technology In Our Most Recent Milestones: Digitalization.



Astra Agro Lestari's Digital Transformation Journey: From Foundational Steps to Future Innovations

2018

Operation Control

Develop digital mobile apps as a data-driven insight and decision-making

2024

Data Analytics

Optimize operation productivity by using machine learning and deep learning model

BEYOND

Gen AI & Robotics

Advancing technology with automated robotics and sensor

The applications are integral parts of the Plantation Information Management System, designed to improve operational efficiency, traceability, and maintenance management, and lay the groundwork for future innovations.

DINDA
Daily Indicator of Astra Agro

AMANDA
Aplikasi Mandor Astra Agro

MELLI
Mill Excellent Indicator

ALMIRA
Aplikasi Maintenance Astra Agro

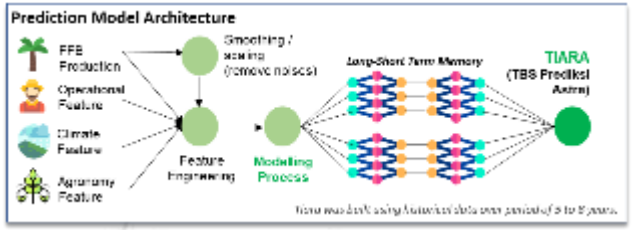
SISKA
Sistem Informasi Kemitraan

Astra Agro Lestari implements Artificial Intelligence in the operational process

1 Forecasting Planning

TBS Prediksi Astra (Tiara)

Replacing manual FFB production plan with predictive analytics. Model will learn historical FFB production with climate and agronomy features as an additional variable.



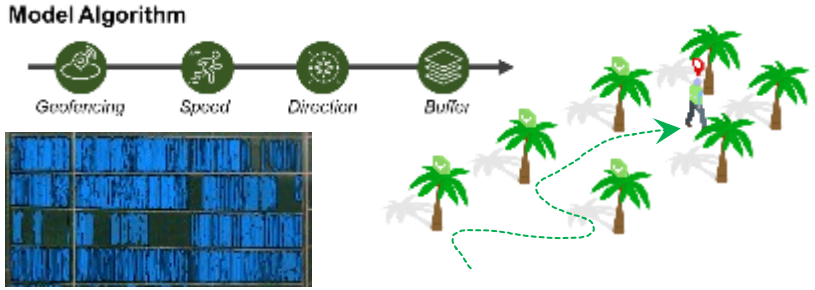
Replanting Model

Long-term replanting forecasting (20-year window) using machine learning for decision-making support in replanting schemes.

2 Productivity Model

Harvest and Upkeep Worker Productivity Model

Monitoring harvest and upkeep worker productivity in hectare coverage using machine learning and geospatial analytics.



Tracking Unit

GPS-based unit monitoring and route optimization through machine learning and geospatial analytics.

3 Computer Vision

Automated Counting FFB in Field

Replacing manual bunch counting with photo-based computer vision.

Automated Validation of Machine Indicator in Mill

Replacing the validation process of machine indicators from manual and sampling-based to fully automated validation using computer vision.

Automated Counting and Grading FFB in Mill

Replacing manual bunch counting and grading with video-based computer vision.

Digital Transformation: Driving Organizational and Workforce Upskilling

1 Forecasting Planning

Workers move from making decisions based on gut feeling or experience to relying on data-driven insights. This shift encourages a more analytical approach to decision-making.

2 Productivity Model

Worker's familiarity with new tools, such as GPS-based mobile systems, allows them to focus on performance optimization, leading to improved productivity.

3 Computer Vision

Drives workers to be more accountable for their roles, marking the beginning of a transformation towards a more organized operation.

AAA
Astra Agro Academy

takes place to upskill workers, enabling smooth adaptation to utilize technology and innovation.

- Training program/workshop
- Mentorship and peer support
- Cross-functional training

Astra Agro Lestari establishes the CENTER of INNOVATION in AGTECH (CIA) to innovate and develop future-ready solutions

Center of INNOVATION in AgTech

Create a small, agile team focused on improving processes. Each member is responsible for driving enhancements in their area of expertise.

Team members are selected from key functions, including harvesting, upkeep, transportation, maintenance, and mill operations. This ensures a collaborative approach to improving all critical processes.

January 2020

THANK YOU