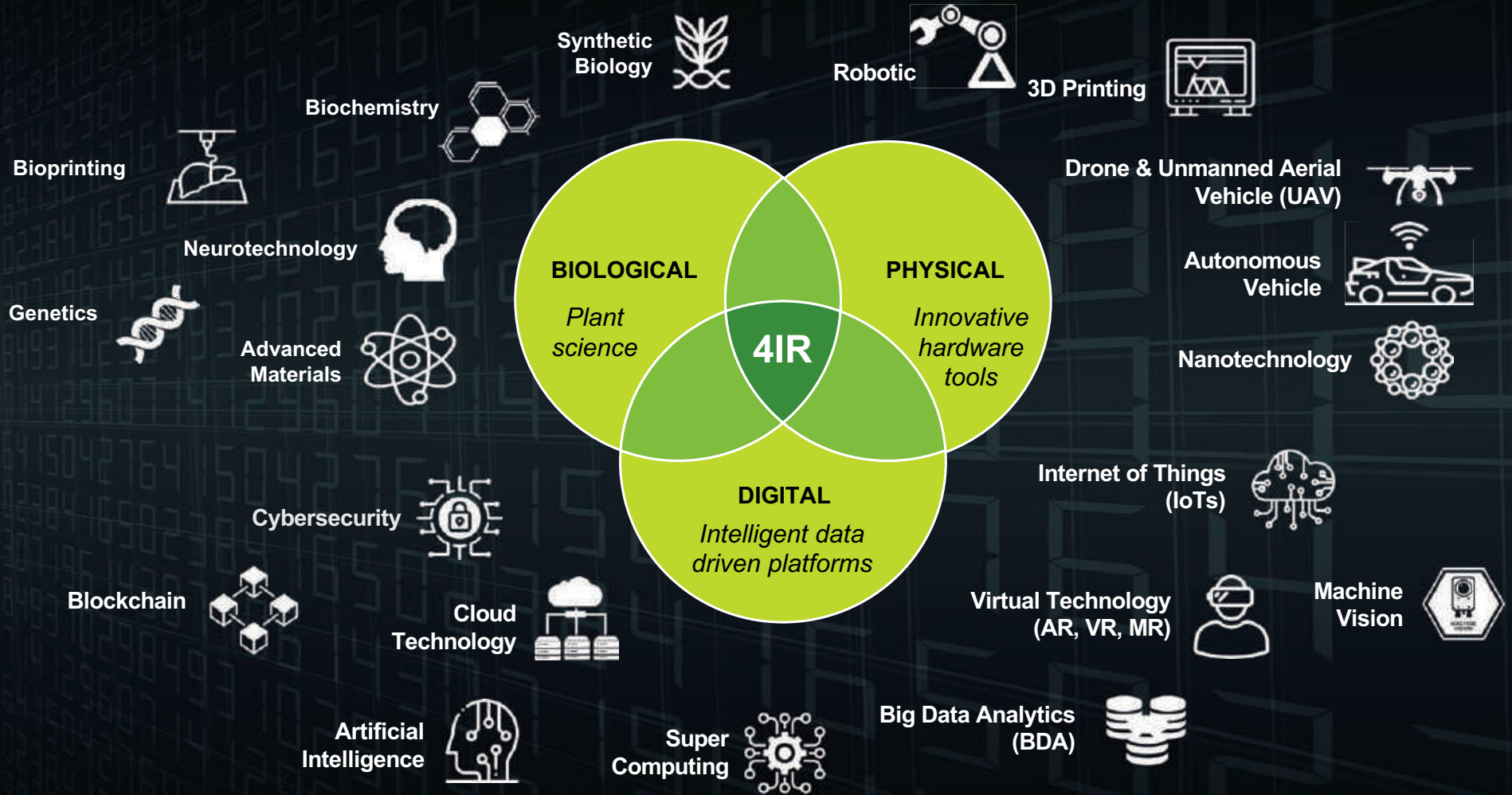


# 4<sup>th</sup> Industrial Revolution - Technology



# Technology Applications In Agriculture



**Autonomous vehicles and AI** : Smart farming bots, autonomous seeding, weeding vehicles coupled with AI



**Drones for field monitoring**: efficient monitoring and analytics to the farmers

**IoT in Irrigation** : Subsurface Drip Irrigation coupled with soil and weather sensors



**E-commerce for agriculture x Big Data Analytics** : Analyse vast amount of data in weather, consumer demand etc & bridging the gap between farmers to the retail market



**The future, Blockchain for traceability & transparency** but the right size has to be identified for the smallholder and apply it at the appropriate part of the supply chain.

# Some Technology Use Cases In The Oil Palm Industry

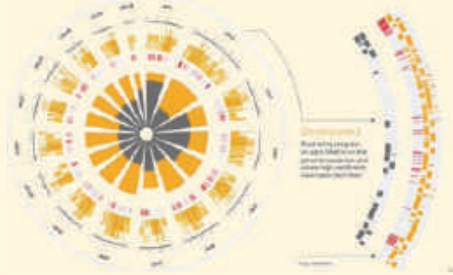


Asian Agri Connected Plantation (AACP) program collects data into tablet computers, providing real-time picture of operations and allowing better forecasting. Use of data for optimising the tree harvesting to improve overall quality.

IOI implemented a dual system with ERP system & e-Plantation Monitoring System via handheld device for crop quality control and crop movements to factories. Future application may involve robotic processing automation.



**Data for sustainability**



Sime Darby's Genome Select promised to triple the average yield, producing 11.5 tonnes of crude palm oil per hectare per year. Withstanding increasing drought and 'rain-bombs'.

World Resources Institute's (WRI) focuses its efforts on spatial information and monitoring, providing real-time information (forest fire, long-term climate trends, etc) on forests on an interactive online platform for members



**Technology for sustainability**



# Issues Faced By Plantations Especially on The Digitalisation of The Field Activities



## Low Visibility in Data at Estate Level or In-Field Operations

- Manual data capture leads to delay information reporting and data inaccuracies due to human error
- Lack of oversight on machineries, inventory level, fertilisers, labour productivity output, environment and sustainability data



## Manual Accounting Documentation Process

- Difficult to generate ad-hoc financial reporting due to manual recording system of information
- Unable to generate breakdown of financial reporting by estate level



## Rigid & Non-Connected Systems

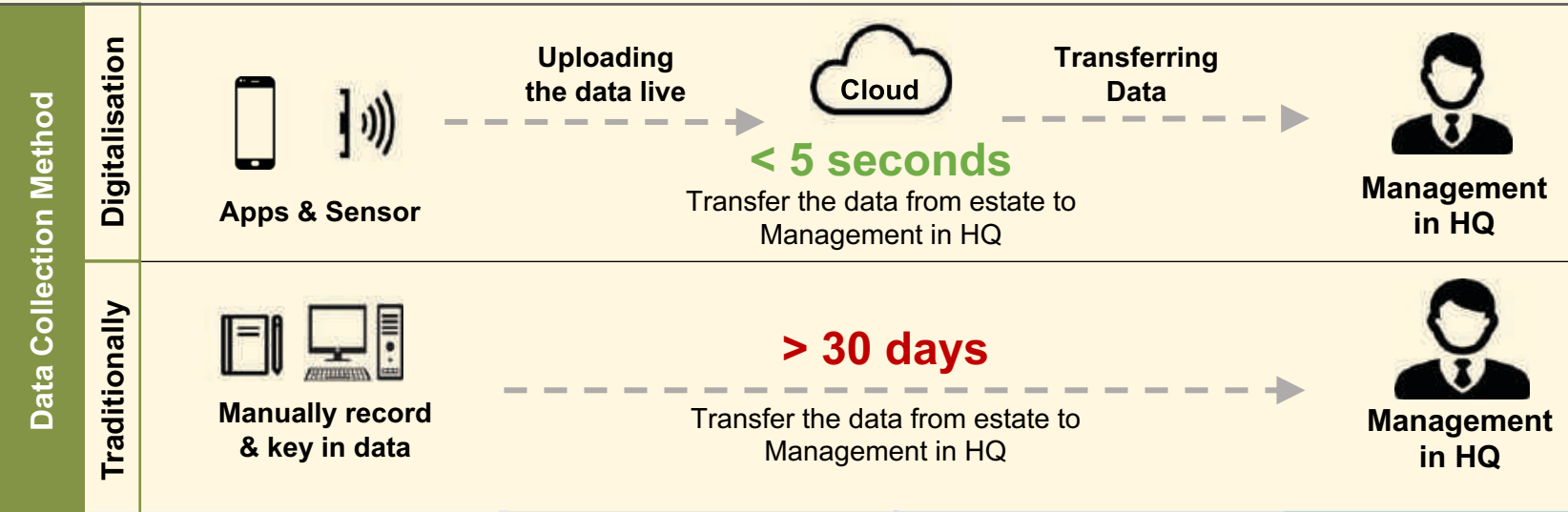
- Primitive & rigid features of existing plantation management systems with insufficient use of connected devices & sensors



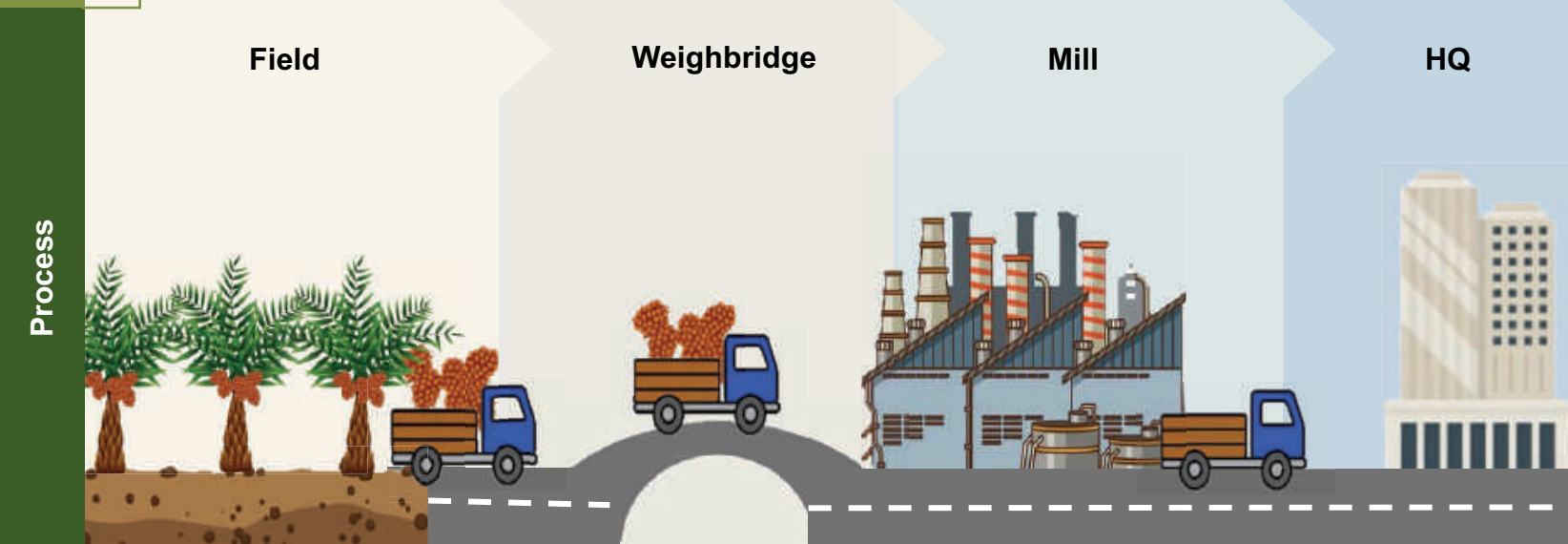
## Disjointed Reporting Systems for HQ Level

- Silo reporting systems which unable to provide a consolidated view of the overall performance
- Unable to perform analysis on harvester performance, estate productivity

# Digitalisation of Plantation Operations and Field Management



The plantations industry has been rated slow on the uptake of integrating digital technology into their field operations as many companies are unmotivated to upgrade themselves.



# IRGA's Products & Solutions

**HARVI**  
Intelligent Precision  
Harvesting Cutter



**ARIAL**  
Above Canopy Drone

**HARVI APP**  
Harvesting Operation App

**iPLANT**  
Plantation Operation  
Management Platform



# Key Takeaway

## Digital Transformation & Sustainability



RE-ENGINEERING

**4IR**

FOR

**GLOBAL FOOD  
SECURITY**

*Video Link : [https://youtu.be/bJpM3MJS5\\_Y](https://youtu.be/bJpM3MJS5_Y)*



# THANK YOU



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