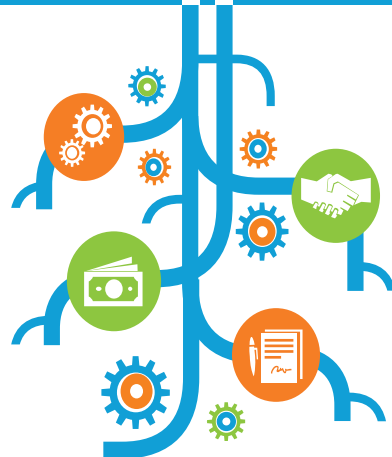




**Austrade – ADB
Joint Knowledge-sharing and
Business Opportunities
Webinar, Session 3,
Digital Technologies**



**Thomas Abell
ADB Chief of Digital Technology
for Development**

Introduction – Thomas Abell



Thomas Abell

Asian Development Bank
Advisor, SDCC and Chief of Digital Technology for Development

Biography

Thomas Abell leads ADB’s Digital Technology for Development Unit, a new group focused on supporting digital solutions within ADB programs and member countries. Prior to ADB, Thomas worked in the technology industry for 25 years in technical and strategic roles. Thomas has degrees in engineering and management from the Massachusetts Institute of Technology.

Technology Industry Experience

- Accenture, Qualcomm, Hewlett-Packard, Google, Microsoft, Samsung, Motorola, United Technologies, Sony, Lenovo

Asian Work Experience

- Philippines, Singapore, Malaysia, China, Cambodia
Indonesia, India, Sri Lanka, South Korea, Kazakhstan

Development Sector Experience:

Financial Inclusion

1. World Bank/CGAP
2. World Bank/IFC
3. Mastercard
4. Financial Sector Deepening Africa
5. Central Bank of Tanzania
6. Gates Foundation
7. NetHope

Education

1. Stanford Graduate School of Education
2. Inter-American Development Bank
3. World Bank/CGAP
4. Ethiopia Ministry of Education
5. Haiti Ministry of Education
6. Tanzania Ministry of Education
7. Accenture Strategy College
8. University of California San Diego

Agriculture

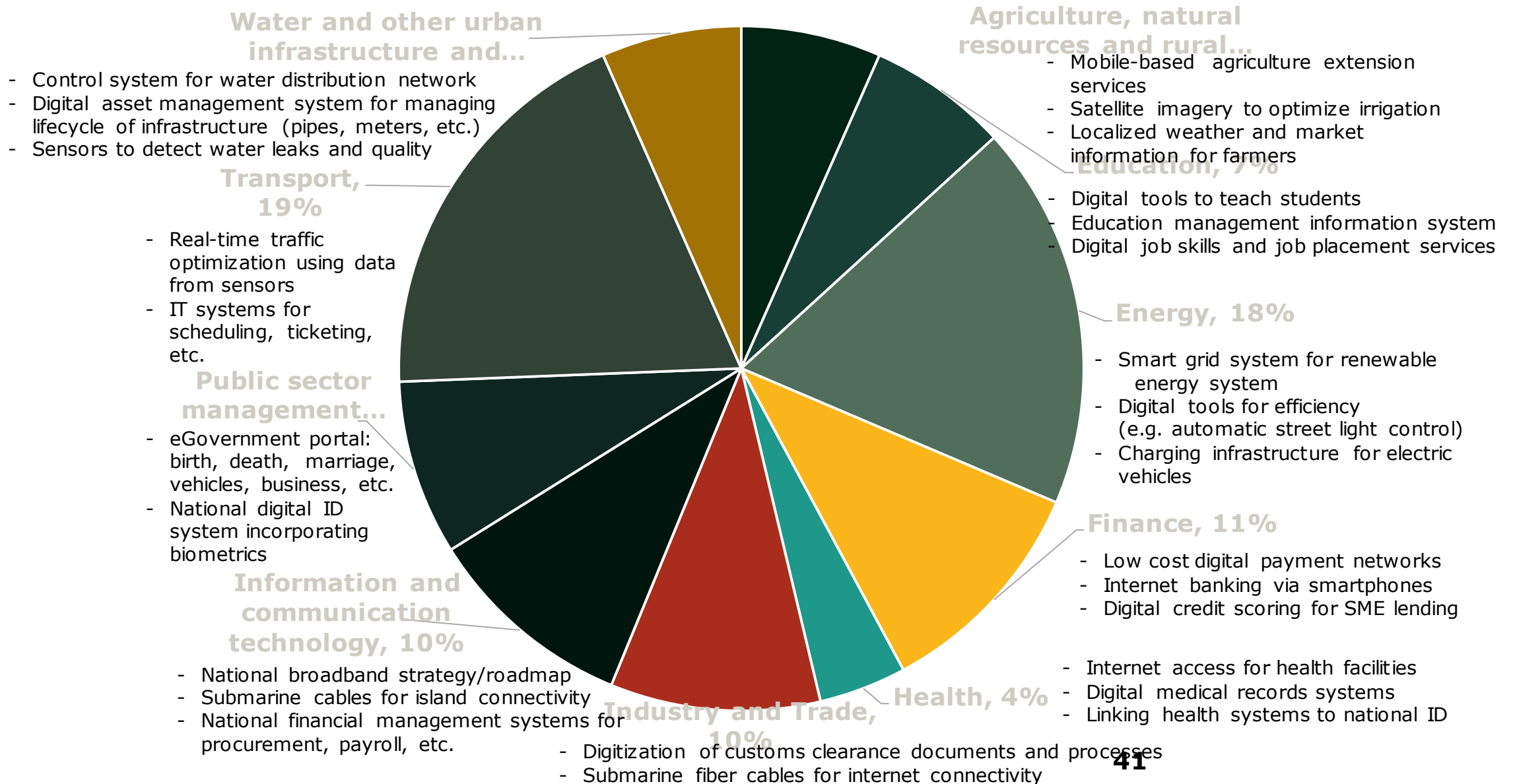
1. CGIAR
2. FSD Tanzania
3. International Livestock Research Institute (ILRI)
4. International Water Management Institute
5. Gatsby Foundation Tanzania

What are Digital Technologies?

These digital technologies are likely to be important for ADB's development objectives.

Technology	Description
1. Broadband Communications	Mobile networks (5G), undersea cables, satellite networks, etc.
2. Smartphones	Low-cost personal devices for broad public internet access
3. Digital Identification	Critical for deploying personal digital services
4. Digital Payments	Critical for enabling digital commerce
5. Cloud Computing	Enables data storage and processing without physical infrastructure
6. Internet of Things (IoT)	Low cost sensors that collect data from everyday life and are connected to the internet to enable digital services
7. Artificial Intelligence	Using big data, collected from a variety of data sources such as sensors and social media, to build intelligent systems for development projects
8. Robotics/Drones	Using intelligent systems to power autonomous machines
9. Cybersecurity	Improving the privacy and security of users
10. Geospatial Information Systems (GIS)	Digital location, mapping and routing services (e.g. ridesharing apps enabled by GPS, digital maps and digital routing)
11. Earth Observation	Using satellite and drone imagery for planning and analysis tasks
12. Genetics	Genetic sequencing and editing for health and agriculture

ADB Digital Technology Project Breakdown and Examples (2010 to 2019)



AI + Earth Observation Example: Identifying Coffee Plantations in Timor Leste

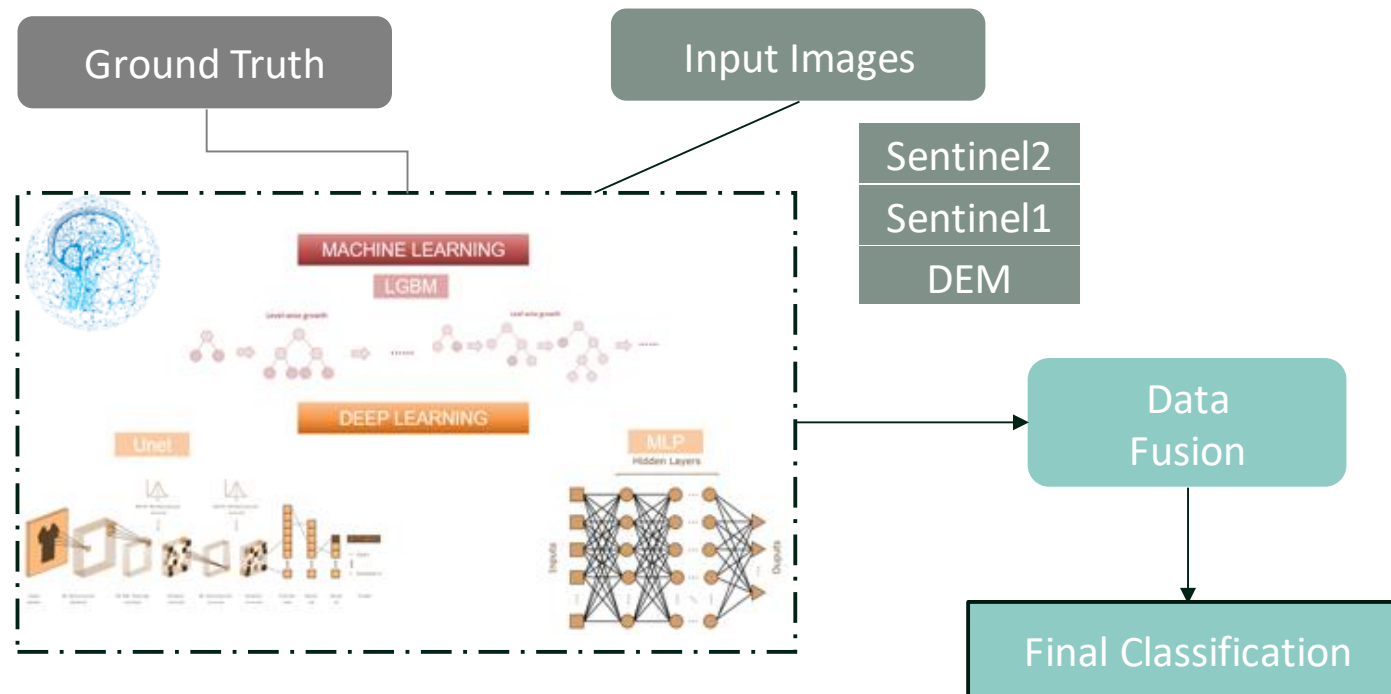
Features:

Use of multispectral Imaging: 10+ spectral bands.

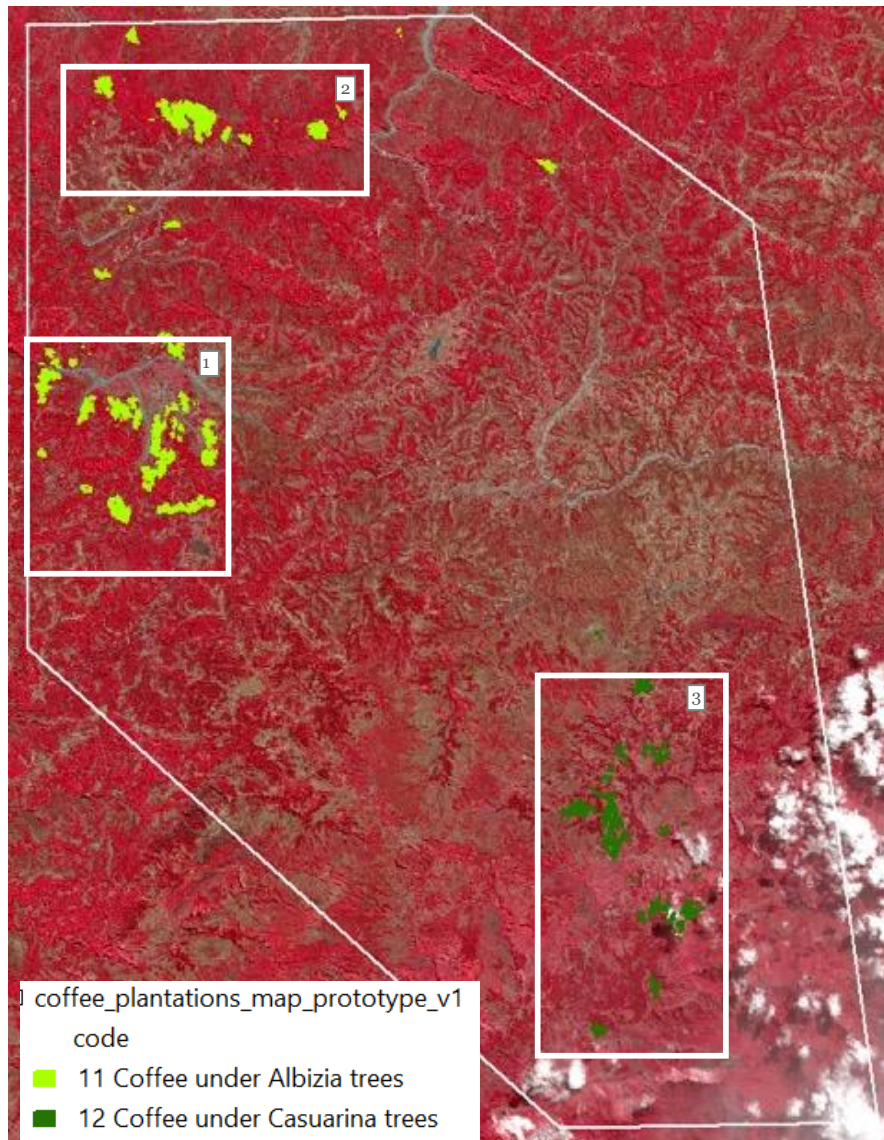
Use of medium-resolution imaging: 10m resolution

Use of AI (Machine Learning) to classify images from ground truth data samples.

ML model can identify coffee beneath forest canopy.



Coffee plantation map using AI/EO model



- Newly identified coffee plantations highlighted in green
- Resulting extended plantations mapped in the Northern area and new plantations in the Southern area.
- Model includes differentiation of canopy tree species
- Model leverages open-source ESA multispectral imaging data at 10m image resolution
- Result represents a valuable tool for national agriculture modeling and planning



Thank You – Q&A

Thomas Abell

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