



มหาวิทยาลัยเกษตรศาสตร์
KASETSART UNIVERSITY

“Agricultural Forecast: The ways are Paving for...”

Assist.Prof.Dr. Sutkhet Nakasathien

Dean of the Faculty of Agriculture, Kasetsart University



RESEARCH
UNIVERSITY
NETWORK

Development of Smart Thai Agriculture Using Big Data

การพัฒนาการเกษตรไทยสู่ระบบอัจฉริยะ

ด้วยการใช้ข้อมูลขนาดใหญ่

Research University Network: RUN

โครงการความร่วมมือเครือข่ายพันธมิตรมหาวิทยาลัยเพื่อการวิจัย

Sutkkhet Nakasathien, Research Manager

Cluster: Agriculture and Food

Rationale

Production Risk

Climate Change

Crop / Animal Pests

Limited Land

Limited Water



Ecological Risk

Contamination

Envi. Pollution



Socio-Econ Risk

Labour

Knowledge

Farmer's Debt



Market Risk

Price Volatility



The loss?

The economic impact?

The well being?

High Efficiency
Agriculture using
Big Data and
Digital
Technology



Reduction cost
of production

Crop Insurance

Productivity
Improvement

National Ag
Policy and
Planning

Reduction of ag
pest chemicals
usage

Ag product
logistics planning
and system
improvement

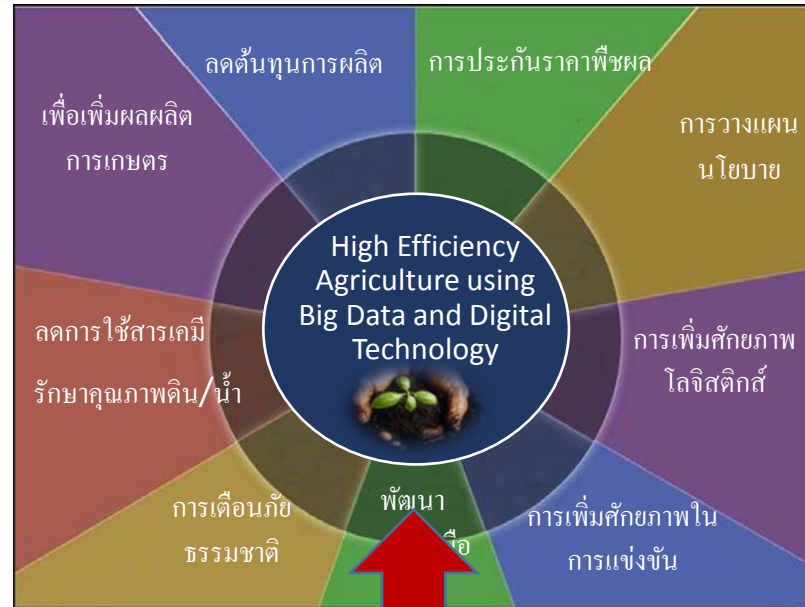
Soil and water
quality
Improvement

Ag disaster
warning

Ag equipment
improvement

Ag business
competitiveness
improvement

OBJECTIVES

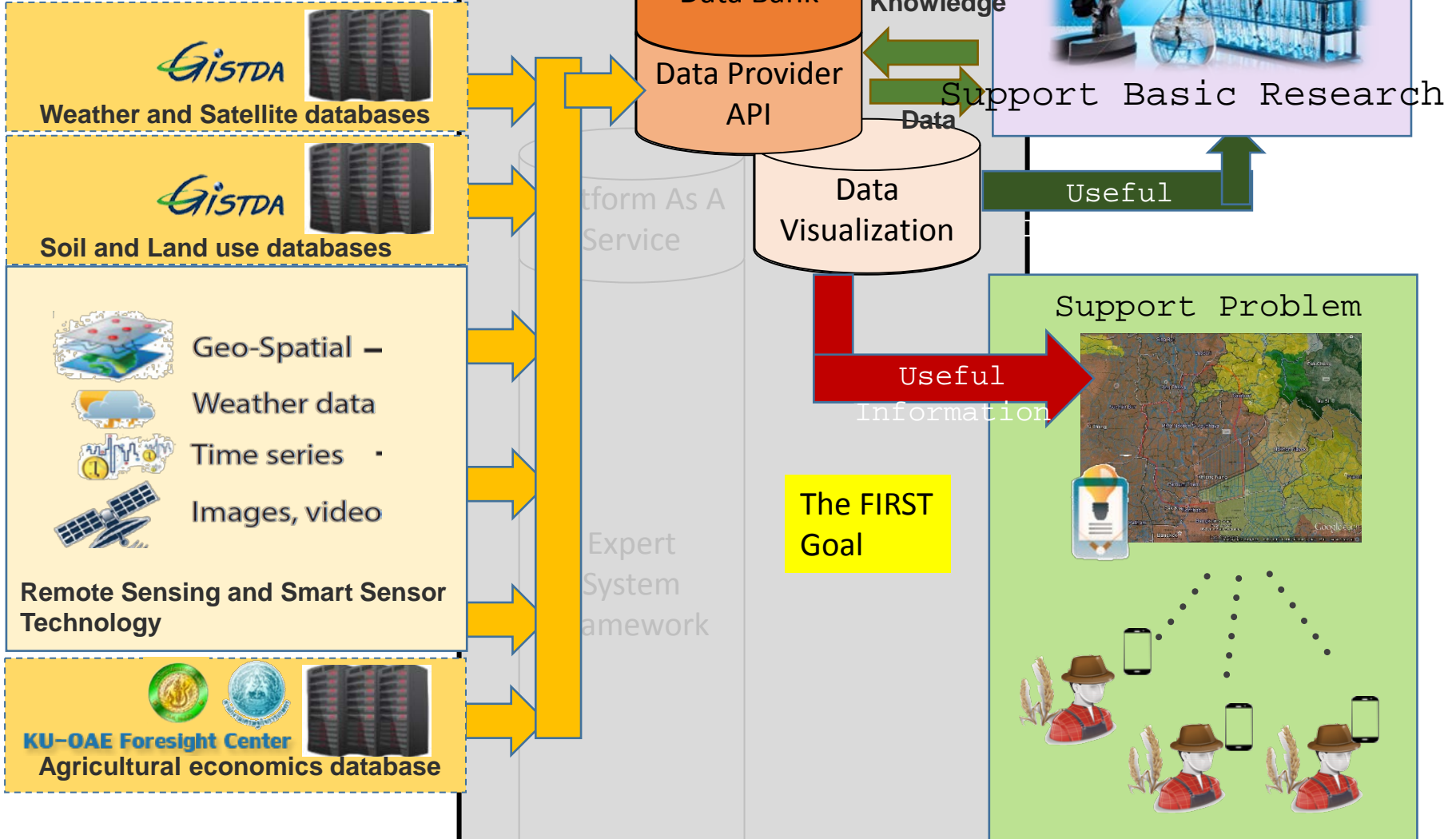


Big Data and Digital Technology

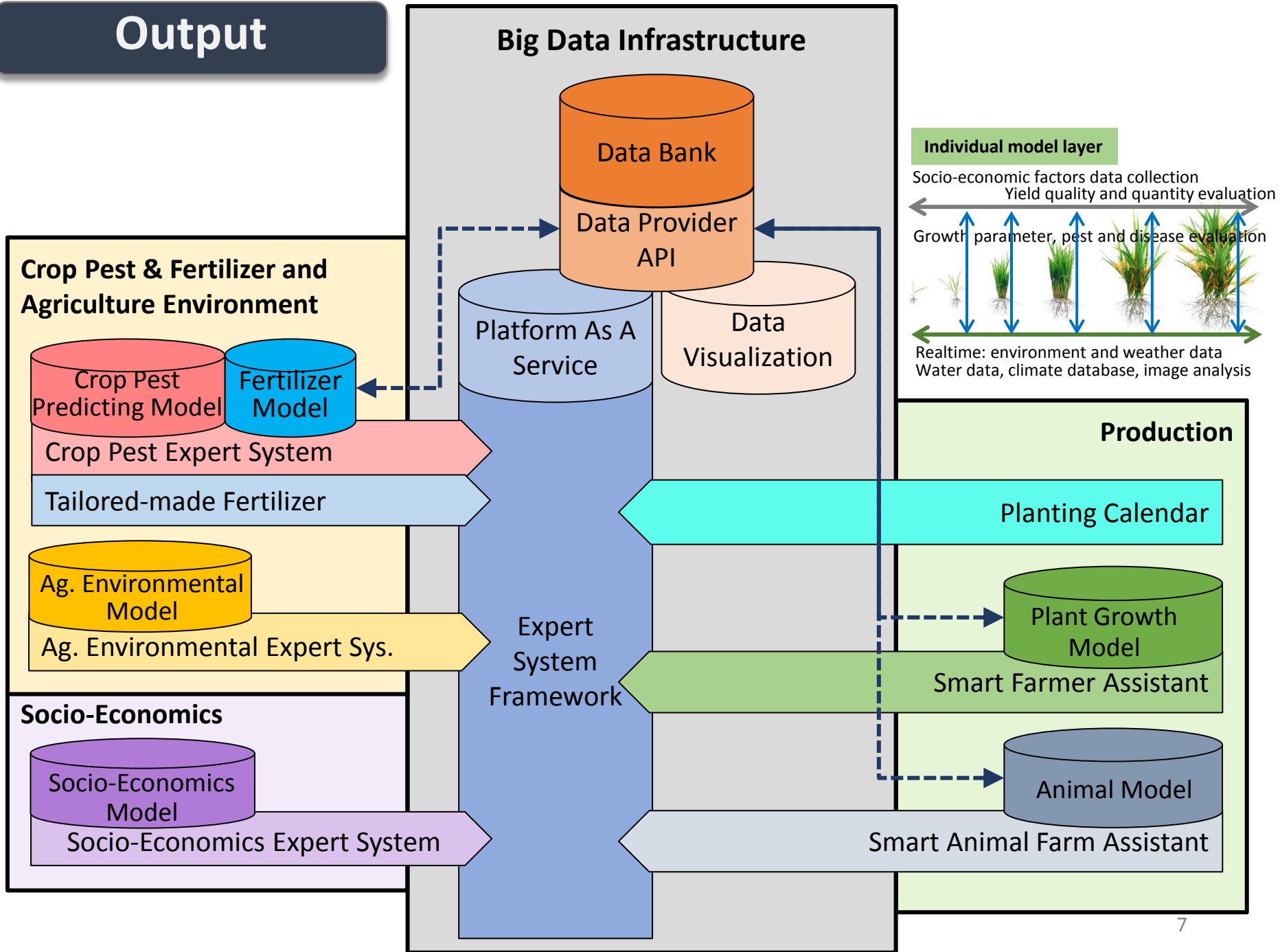
DIGI-Farming

Output

Big Data Infrastructure



Output

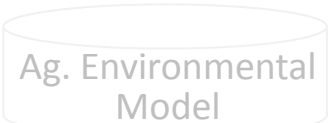


Collaboration



Big Data Infrastructure

Crop Pest & Fertilizer and Agriculture Environment



Ag. Environmental Expert Sys.

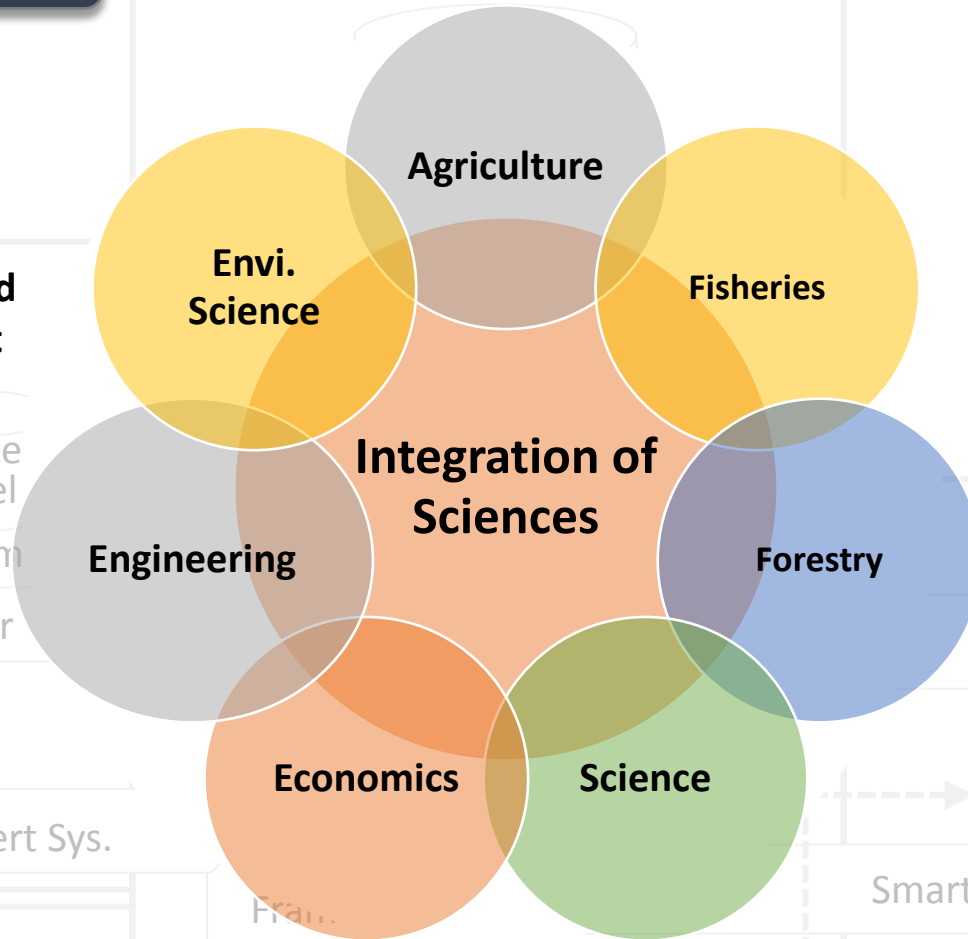
Socio-Economics



เครือข่ายพันธมิตรมหาวิทยาลัยเพื่อการวิจัย : Research University Network (RUN)

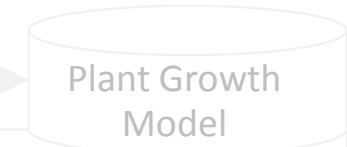
จุฬาลงกรณ์มหาวิทยาลัย มหาวิทยาลัยเกษตรศาสตร์ มหาวิทยาลัยขอนแก่น

มหาวิทยาลัยเชียงใหม่ มหาวิทยาลัยธรรมศาสตร์ มหาวิทยาลัยมหิดล มหาวิทยาลัยสงขลานครินทร์



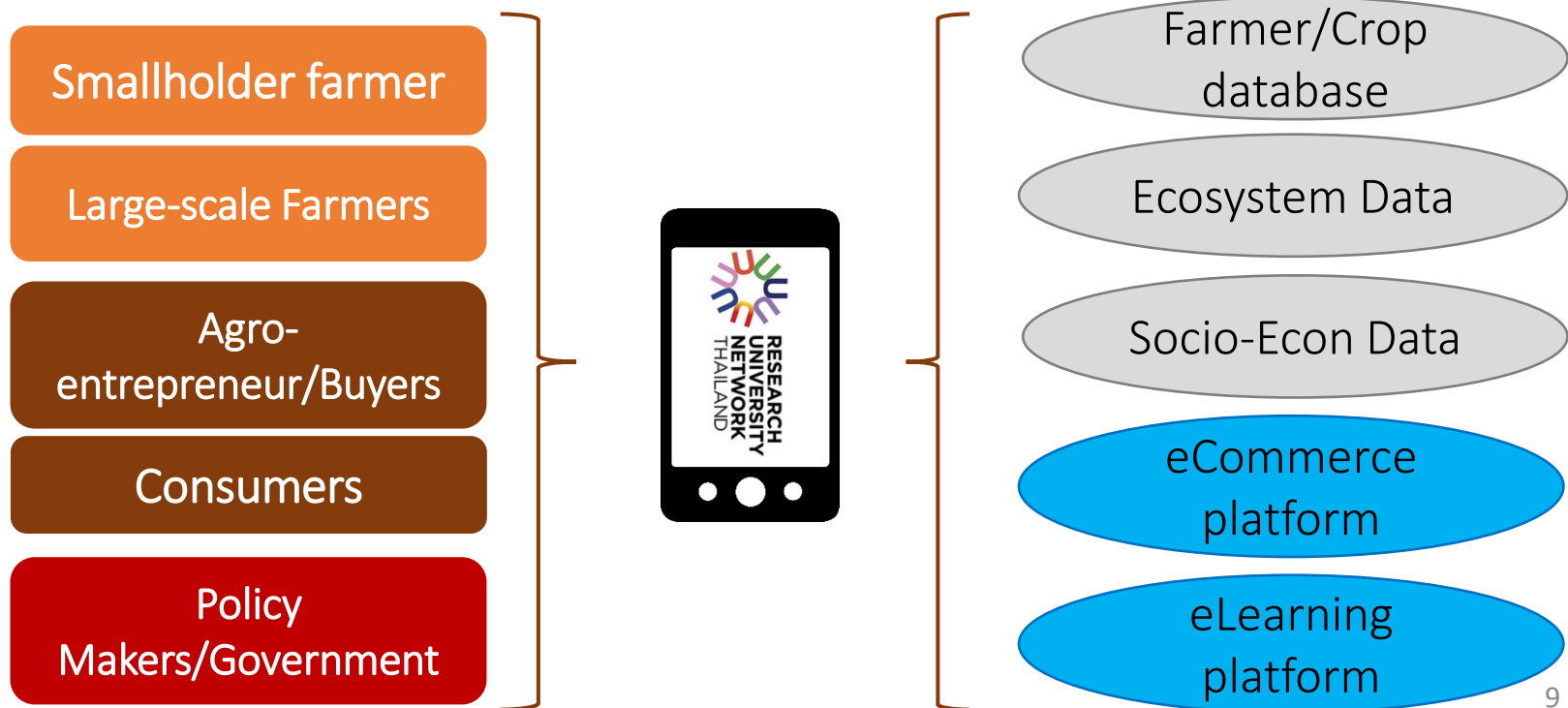
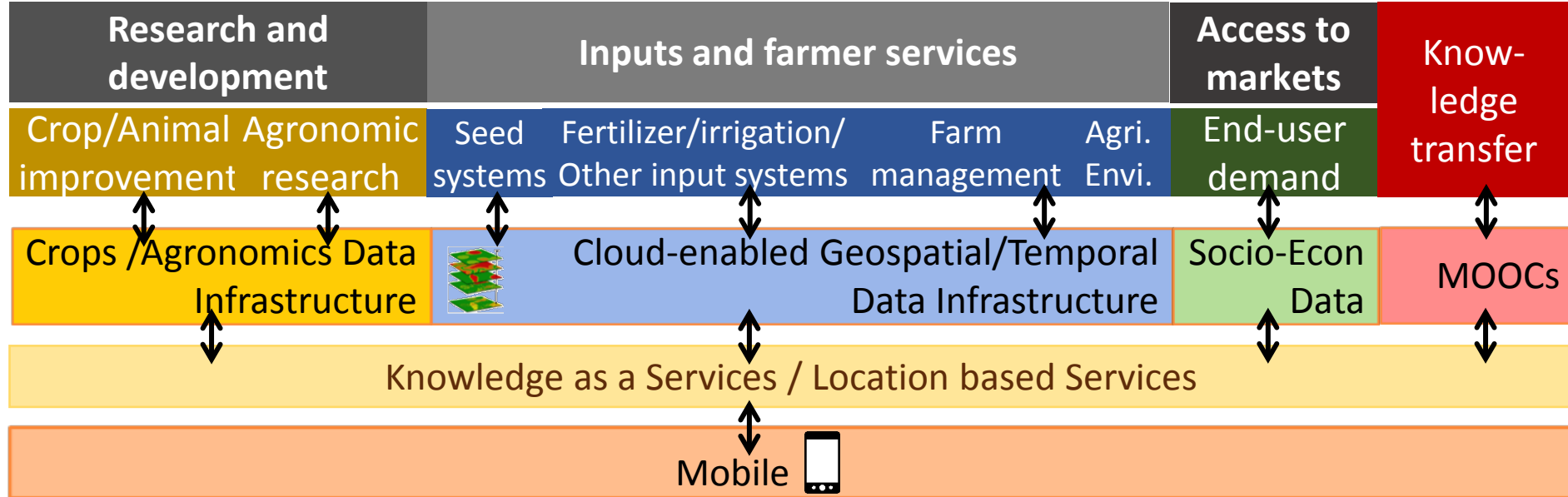
Production

Planting Calendar



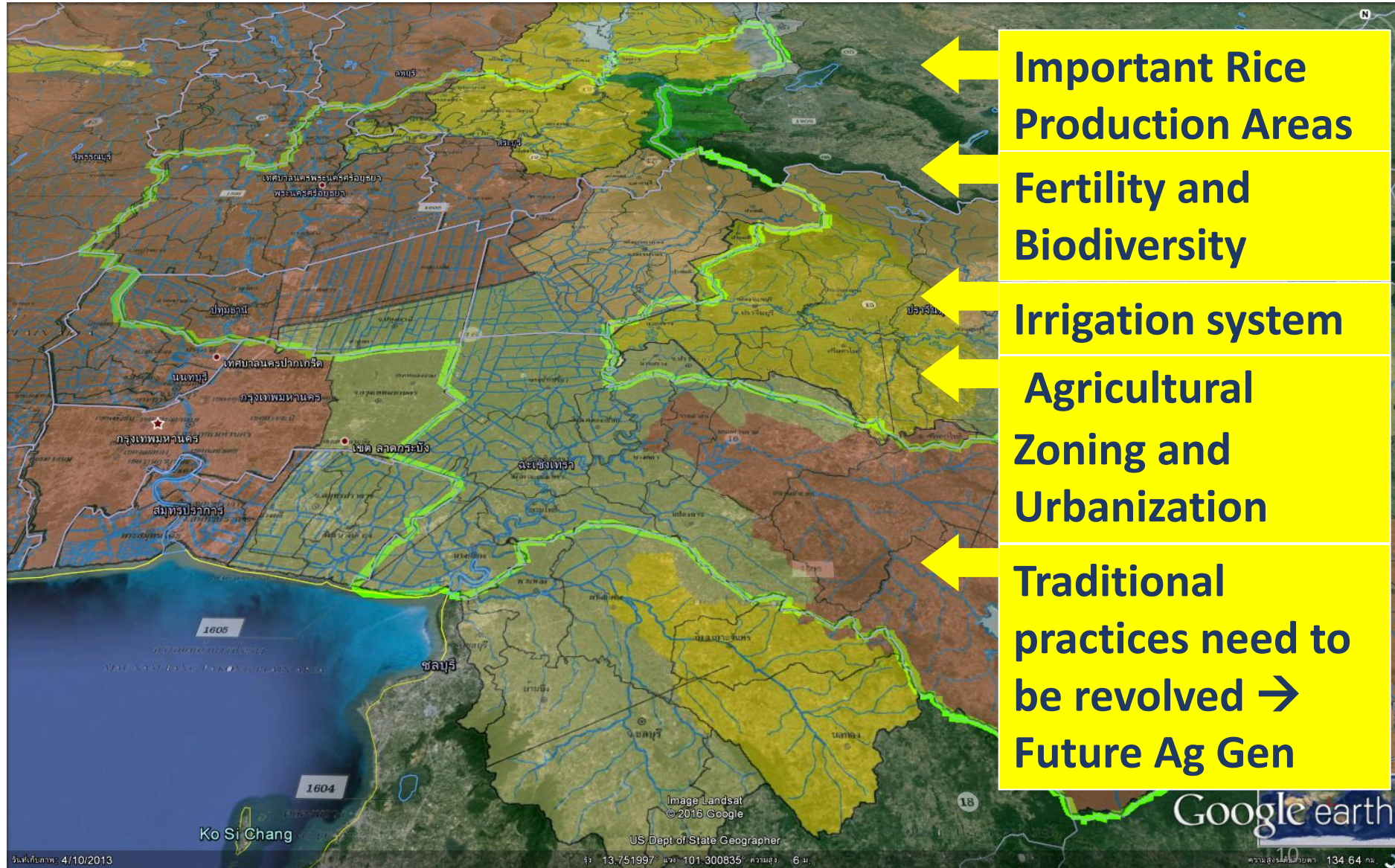
Smart Farmer Assistant

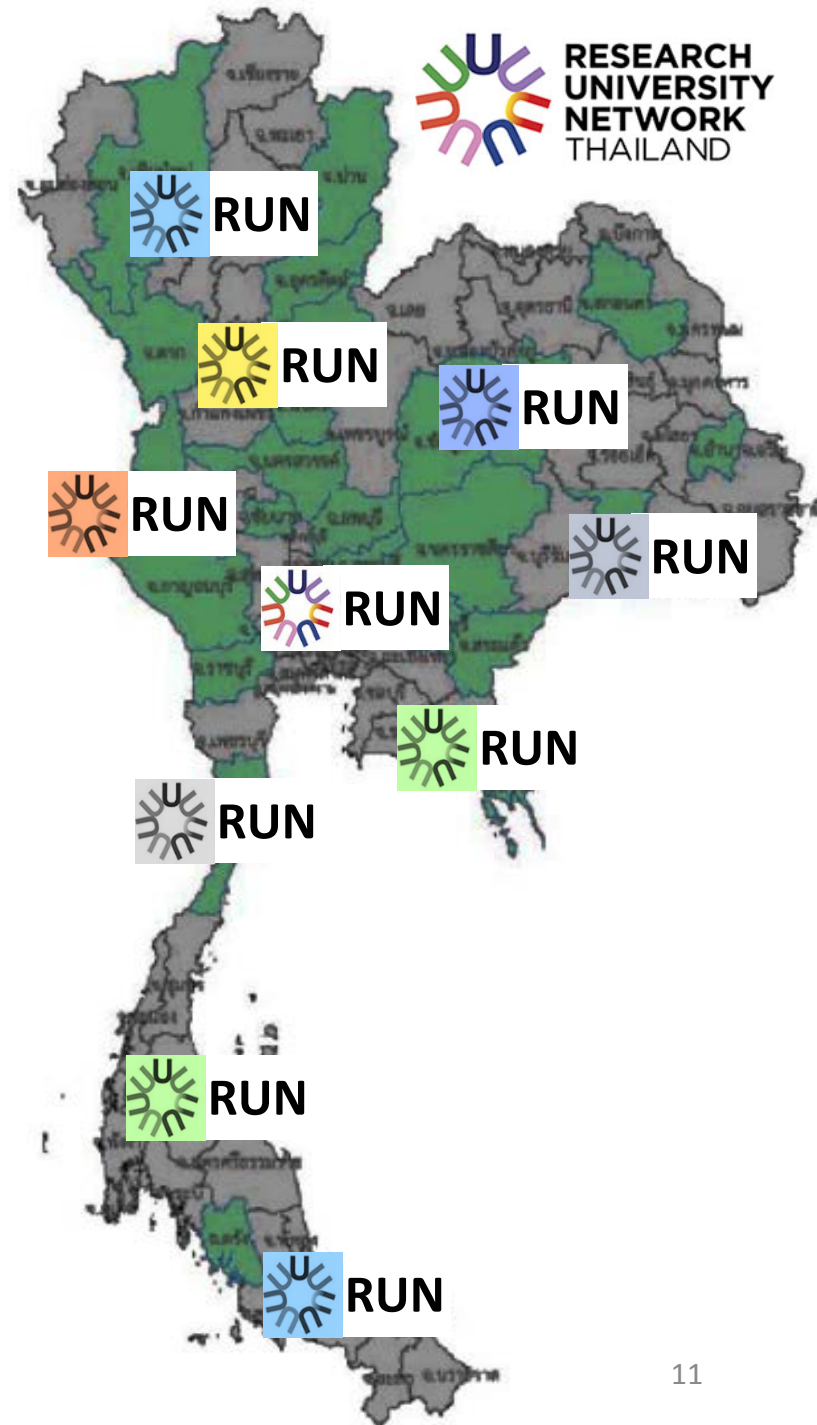
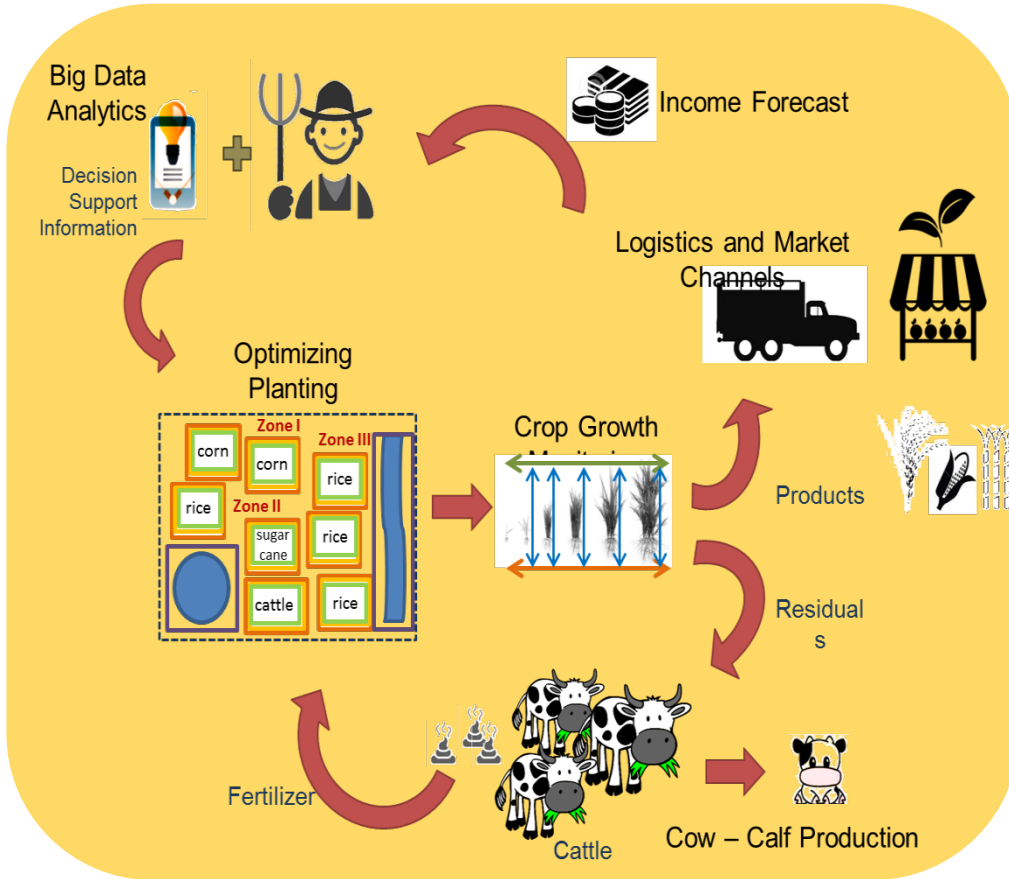
MOAC, MOI, MOC, MOST, Private Sectors and Int'l Partners



Rangsit Plain

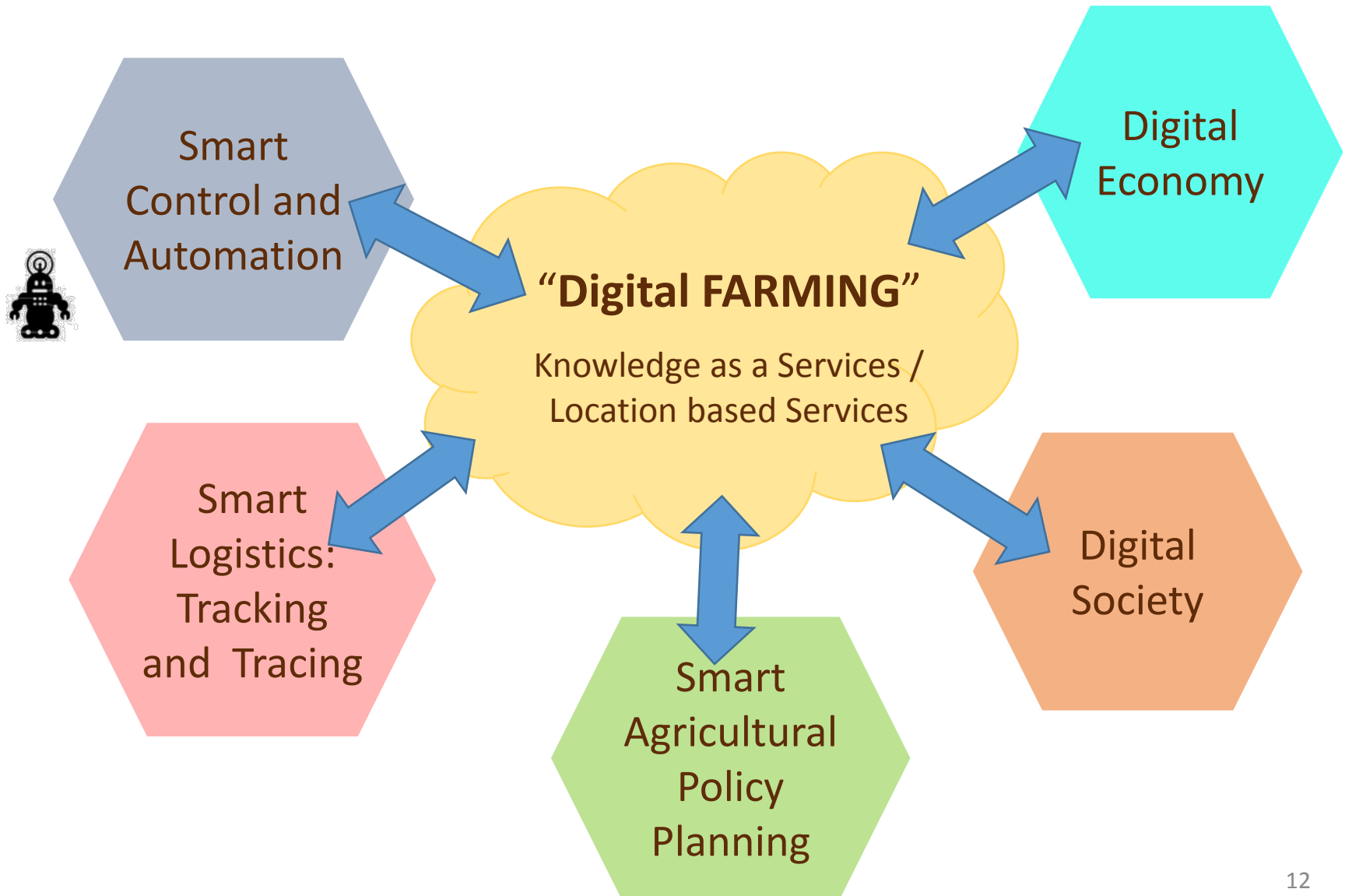
Pathumtani, Ayudhaya, Nakhonnayok,
Saraburi, Chachoengsao, Bangkok

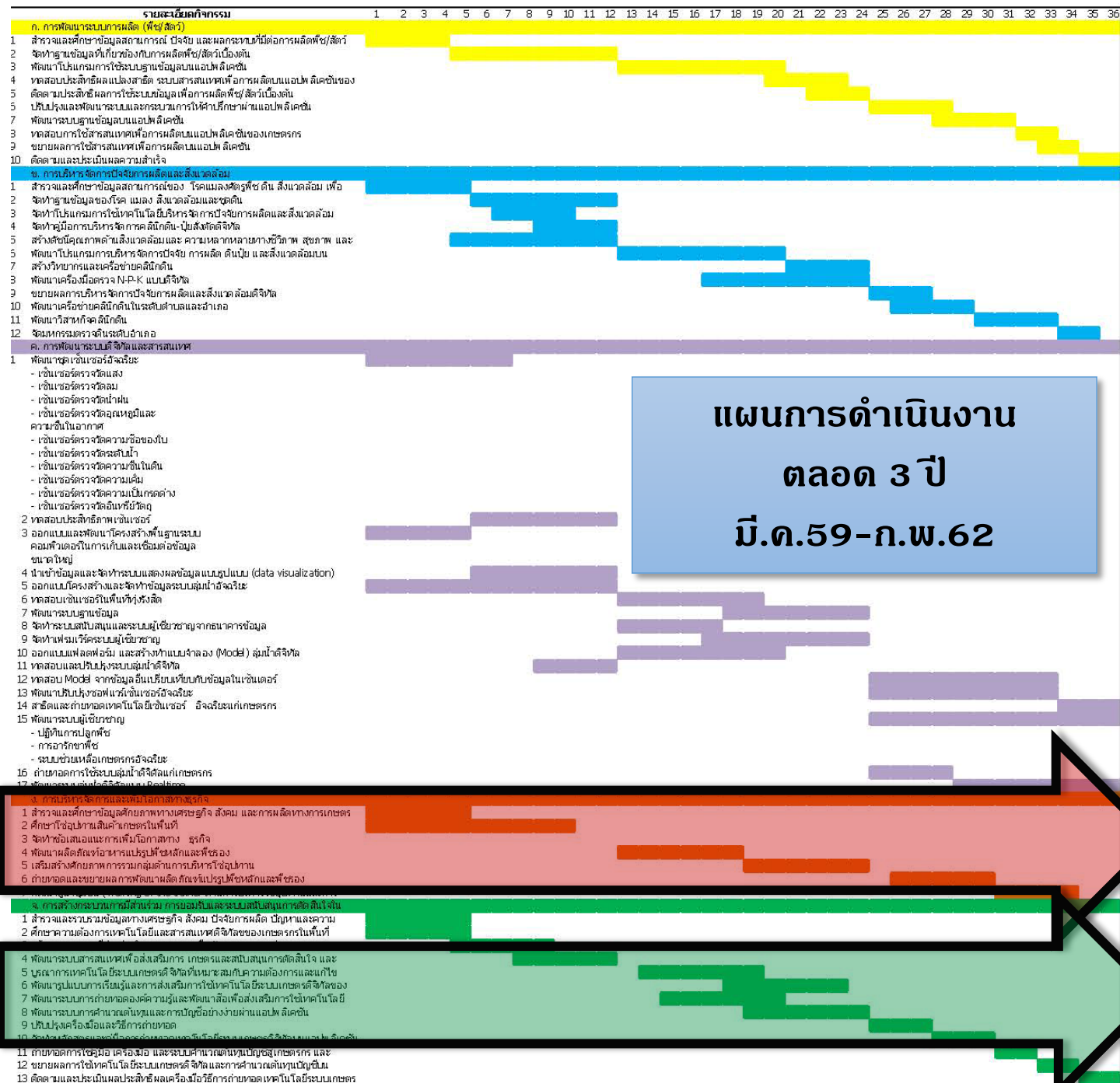




Area-Based Reforming of Thai Agriculture Using Digital Systems

The Future of Thai **DIGITAL FARMING**: Integration with IoTs, Digital economy, and Digital society





แผนการดำเนินงาน
ตลอด 3 ปี
มี.ค.59-ก.พ.62

การพัฒนา
ระบบการผลิต

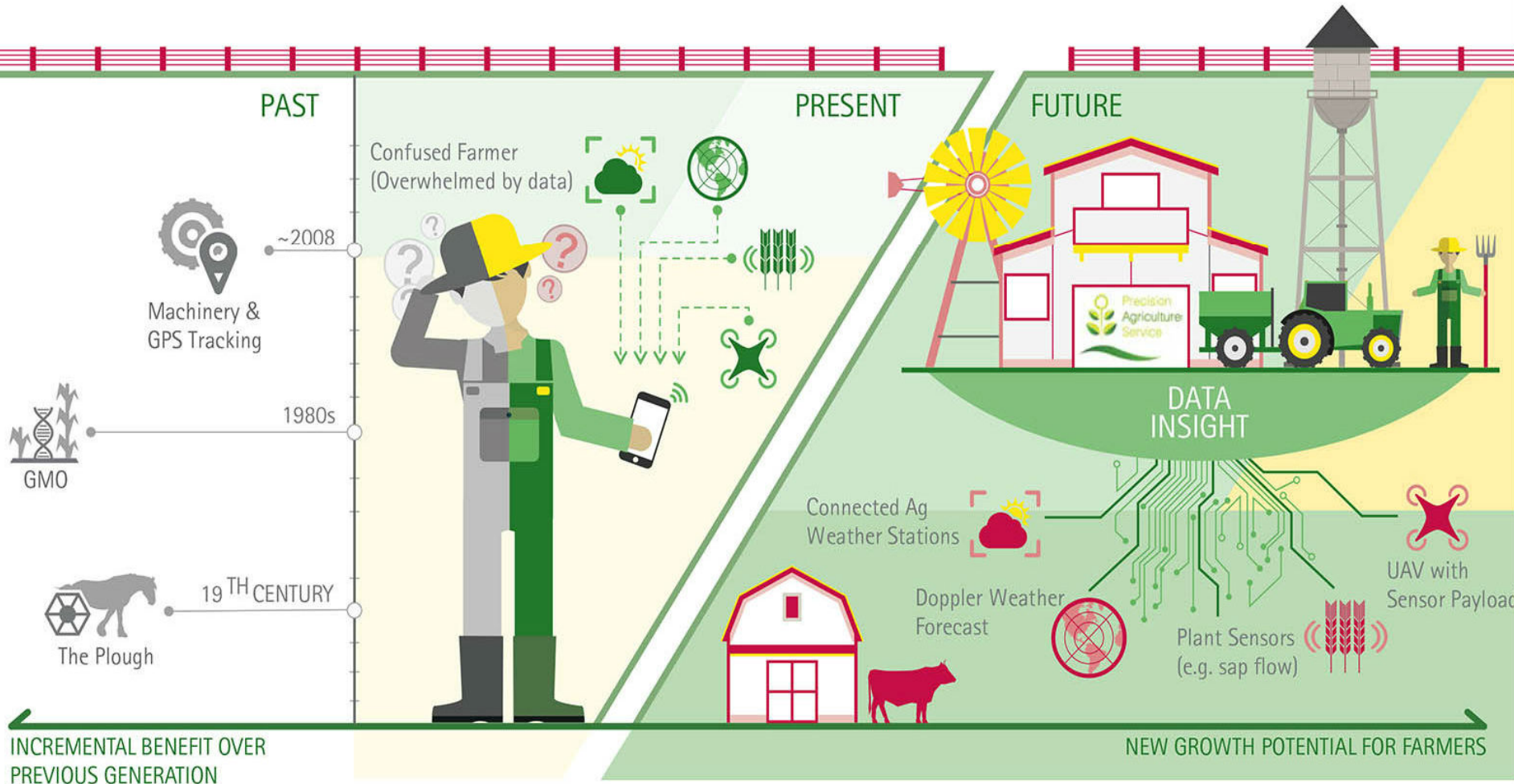
การบริหารจัดการ
ปัจจัยการผลิตและ
สิ่งแวดล้อม

การพัฒนา
ระบบดิจิทัล
และสารสนเทศ

Farm Management and Ag
Business Opportunities

Participatory Approaches
and Decision Making
Support System for
Farmers

High Efficiency Agriculture using Big Data and Digital Technology



Ref: Accenture Precision Agriculture Services

SEEK and INVITATION
for
RESEARCH PARTNERS

BIG DATA FOR AGRICULTURE

- Agricultural meteorological data
- Digital Watershed
- Agricultural environment data
- Satellite imaging for agriculture and natural Resources
- Remote sensing

PRECISION AGRICULTURE

- Crop pest warning: Diseases, Insect pests
- Crop growth and development monitoring: cereals (rice, corn) and big trees (fruit trees, oil palm)
- Soil map and fertility: Tailored-made fertilizer (area based)
- Animal farm management: Beef and diary Cows
- Fisheries: Automatic cultural system and monitoring (Tilapia)
- Agricultural Economics: Crop price forecast, market channels, agricultural supplies, tracking and tracing

DRONES AND AGRICULTURAL SENSOR TECHNOLOGY and RELATED TECHNOLOGY

- Multi-drone operation
- Spraying technology using drones
- Automatic farm operational control for both crop and livestock
- Automatically environmental control technology for greenhouse and animal evaporative houses or close farms

Possible Collaboration (within 6-month planned)

- Research collaboration
- Staff Exchange
- Post doctoral fellowship (outbound from RUN)

Future Plan (1-yr plan)

- International Conference or Workshops: Precision Agriculture, Big Data for Agriculture
- Develop a collaborative research proposal



ขอบคุณครับ

THANK YOU