Asian PGPR Society for Sustainable Agriculture

(https://asianpgpr.com)

- Established in 2009
- Over 1500 Life members
- Global, but Asian focused Association

  - PGPR (Biofertilizers, Biofungicides, Bioherbicides, Bioinsecticides, etc), Biostimulants, Plant Microbiome
  - Organic & Sustainable Agriculture
  - IPM and Conventional Strategies
  - Regulatory & Commercial
  - MOU's with International Institutions
  - International Net Working

7:05-7:25	20		What Young Innovators (students) Need to be Prepared for Modern Digital and Sustainable Ag	Dr. Ben Houlton, Dean, Cornell College of Ag & Life Sciences
7:25-7:50	35			Dean Dr. Ben Houlton, Panel Chair, PANELISTS: Dr. Mason Earles, Asso Professor UC Davis Plant Sciences, Prof MS Reddy Chairman Asian PGPR society

Prof. M. S. Reddy

Asian PGPR Society & Auburn University, USA

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Ist Asian PGPR -Hyderabad, India

Future Conferences

1st Indonesian Asian PGPR Conference, Bali, Indonesia, Aug 28-30, 2021

6th Asian PGPR National Conference Bhopal, MP, India, Sept 3-4, 2021

7th Asian PGPR international conference, KL, Malaysia Aug 23-25, 2022

2nd Asian PGPR - Beijing, China

3rd Asian PGPR – Manila, Philippines

4th Asian PGPR –Hanoi, Vietnam

5th Asian PGPR – Bogor, Indonesia

6th Asian PGPR – Tashkent, Uzbekistan

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ASIAN PGPR

Chapters

ASIAN PGPR SOCIETY FOR SUSTAINABLE AGRICULTURE

ESTD: 2017

INDONESIA CHAPTER

ASIAN PGPR SOCIETY FOR SUSTAINABLE AGRICULTURE

ESTD: 2019

MALAYSIA CHAPTER

ASIAN PGPR SOCIETY FOR SUSTAINABLE AGRICULTURE

ESTD: 2017

INDIA CHAPTER

ASIAN PGPR SOCIETY FOR SUSTAINABLE AGRICULTURE

ESTD: 2019

SAUDI ARABIA CHAPTER

ASIAN PGPR SOCIETY FOR SUSTAINABLE AGRICULTURE

ESTD: 2018

UZBEKISTAN CHAPTER

ASIAN PGPR SOCIETY FOR SUSTAINABLE AGRICULTURE

ESTD: 2017

PAKISTAN CHAPTER

ASIAN PGPR SOCIETY FOR SUSTAINABLE AGRICULTURE

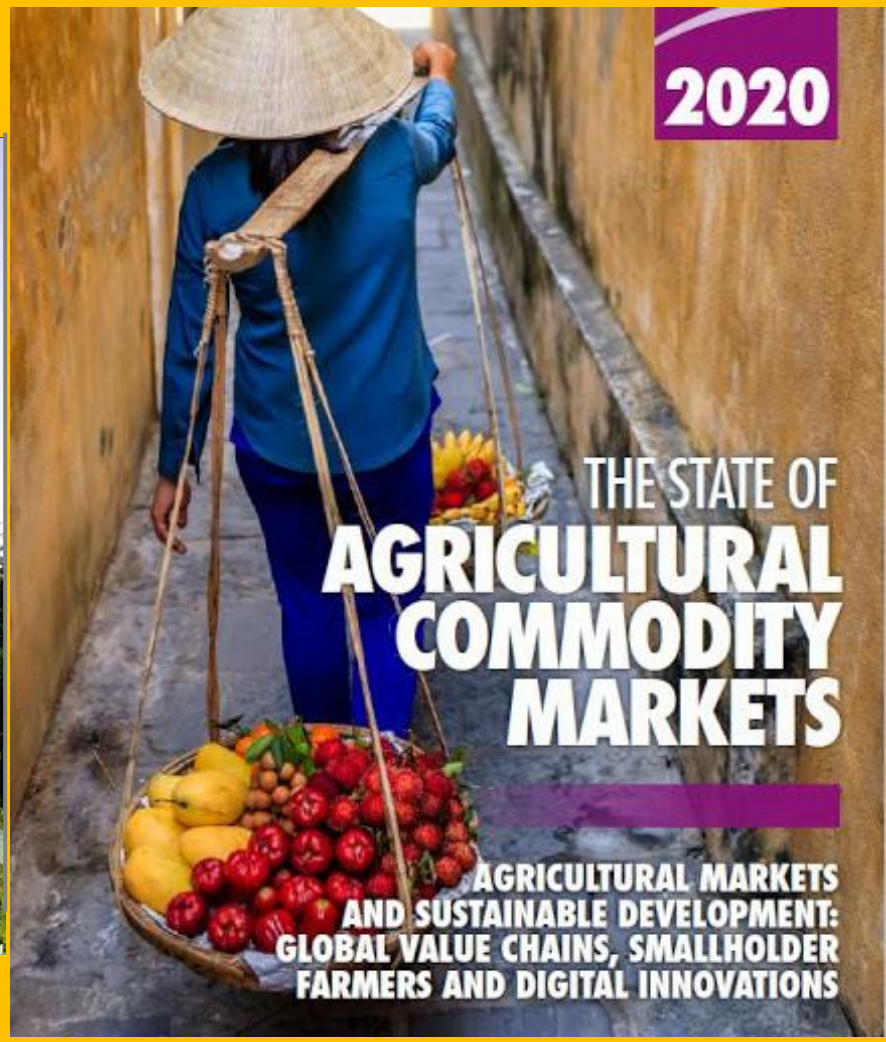
ESTD: 2019

TURKEY CHAPTER

ASIAN PGPR SOCIETY FOR SUSTAINABLE AGRICULTURE

ESTD: 2017

SRILANKA CHAPTER



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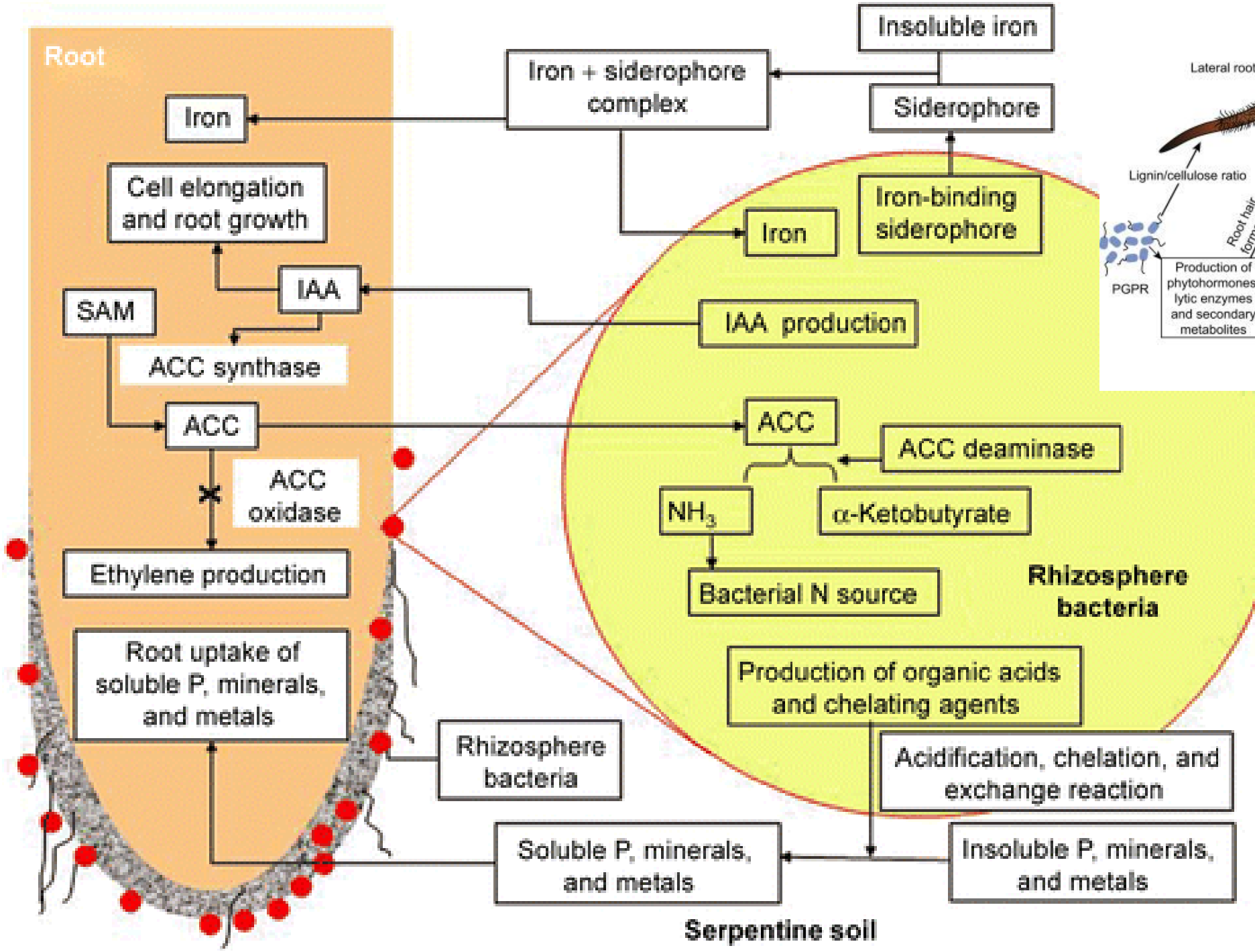

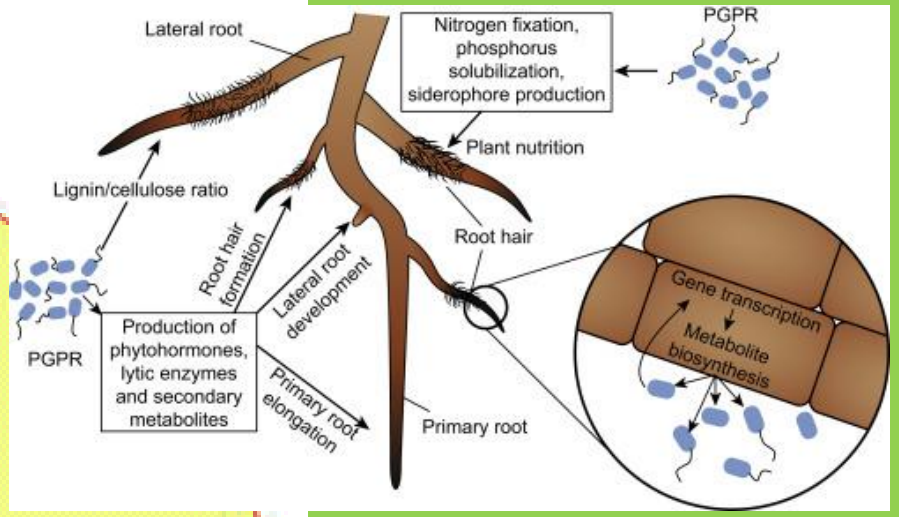

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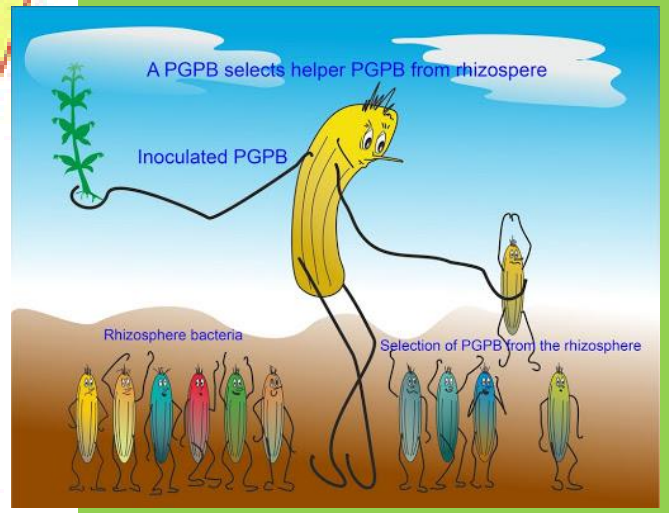

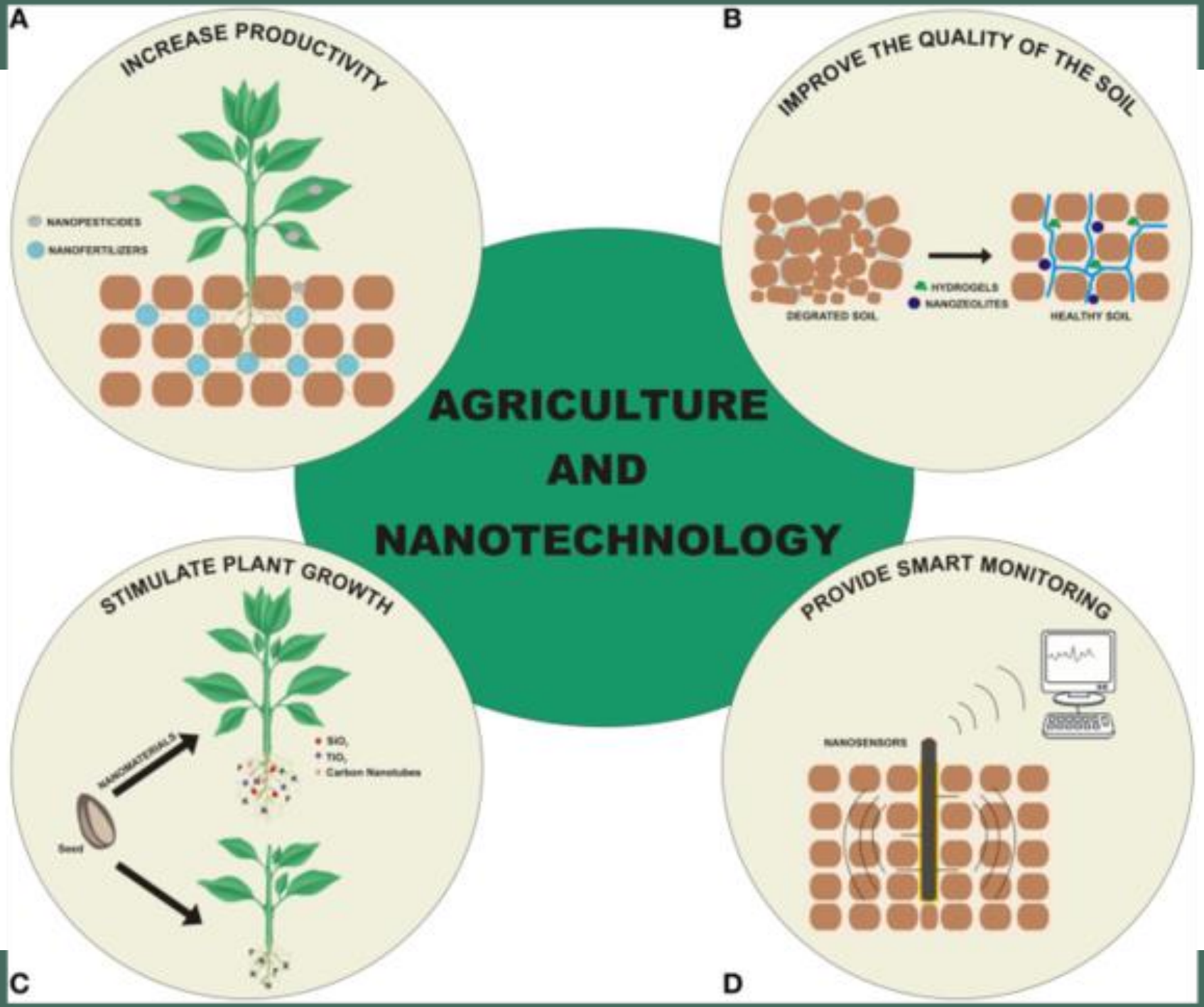

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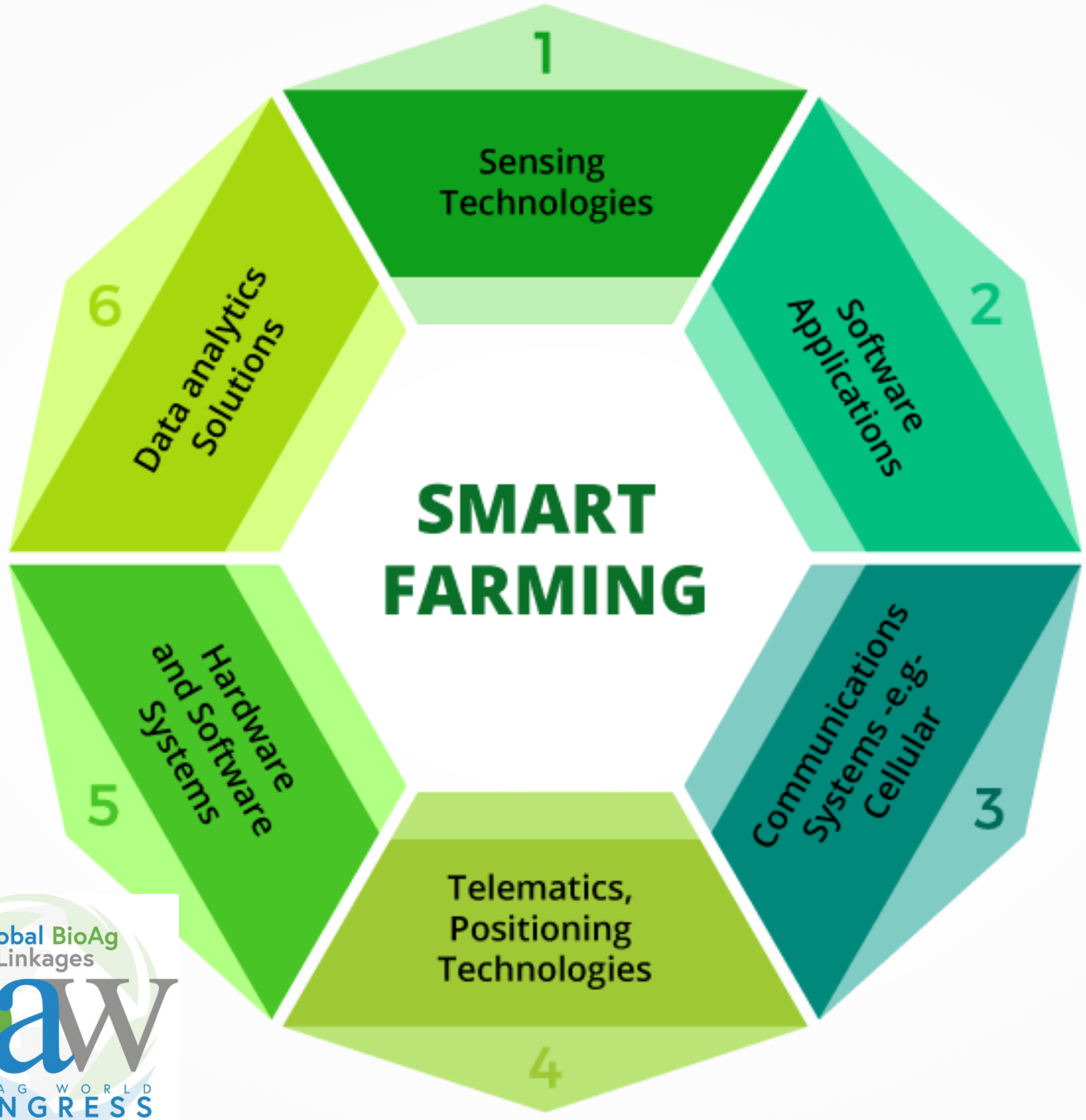

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1. Support Digital Agricultural Innovations

Digital Solutions

- Production
- Market
- Finance
- Supply Chain
- Intelligence

Digital Technologies

- Robots
- Blockchain
- AI

2. Enable Big Data and Analytics

Quality Content

- Drones
- Satellites
- Sensors

Digital Identity

- Businesses
- Individuals
- Institutions

3. Facilitate Business Development Services

Who Pays?

- Governments
- Smallholder Farmers
- Commercial Farmers
- NGOs
- Coops and Federations
- Financial Institution
- Input Suppliers
- Buyers and Processors
- Donors

4. Promote Enabling Environment

Digital

- E-Policies
- Mobile Internet
- Data Governance

Non-Digital

- Roads
- Knowledge
- Energy

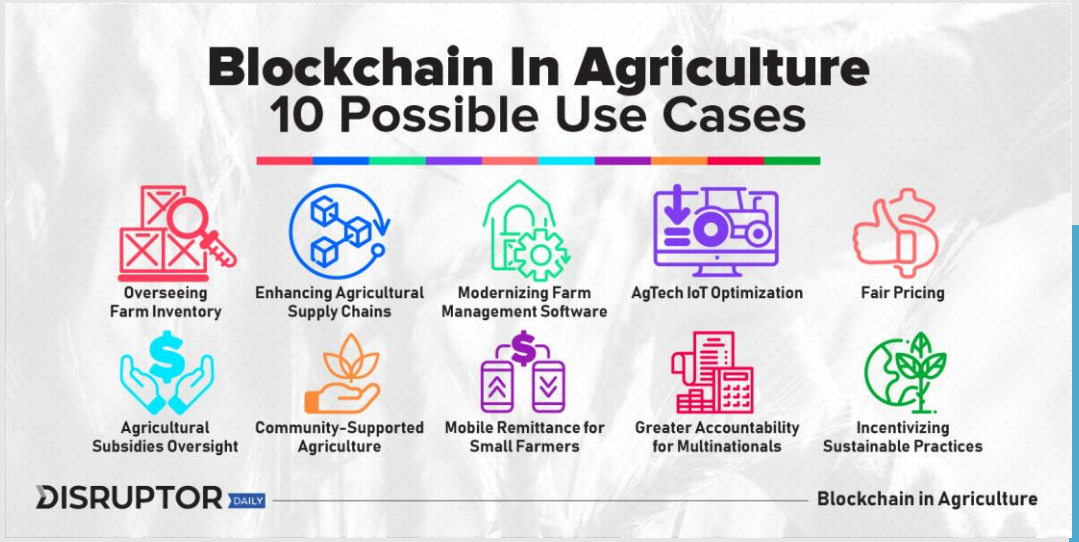
D4Ag

Future Agricultural Inventions

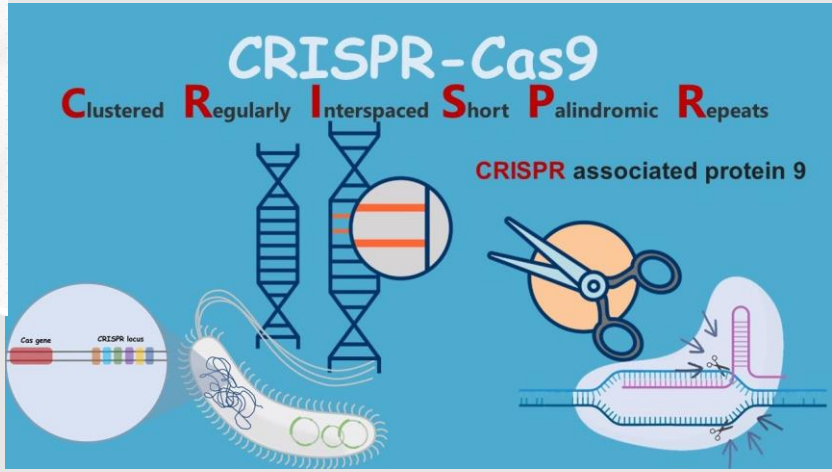
1. Bees and drones

2. Artificial intelligence, automation and the Internet of Things

4. Urban agriculture and vertical farming



3. Blockchain technology



5. Genetic editing

Valorizing Agricultural Waste, Through Its Conversion into Biostimulants, Biofertilizers, and Biopolymers

Fruit and vegetable wastes

Crop residues

BIOSTIMULANTS

phenolic rich extracts, phytohormones, protein and amino acids, plant derived hydrolyzed extracts, organic acids, sugars, flavonoids, lignin

agars, alginates, carrageenans, fucans and phlorotannins, Lignosulfonates, peptides, hydrolysable tannins as biostimulants

NATURAL BIOPOLYMERS

BIOFERTILIZERS

digestate and compost derived respectively from anaerobic digestion and composting of agricultural wastes

natural-based polymeric hydrogels based on polysaccharides and proteins (controlled release by starch, chitosan, gelatin, lignin, cellulose and k-carrageenan

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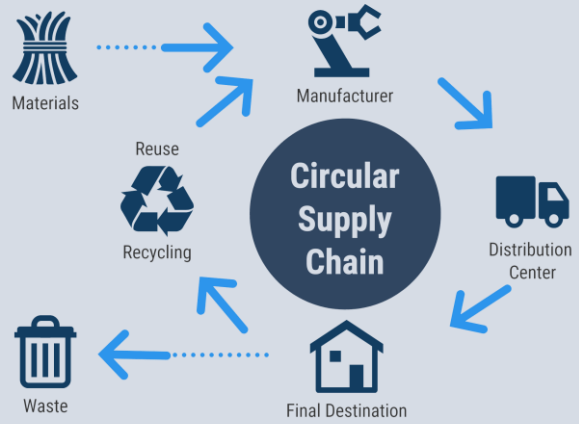
DECENTRALIZING FOOD PROCESSING

Early Stage Value Addition At The Farm Gate Using Low Cost Processing Machinery

Centralized	Decentralized
Transportation costs relatively high	Transportation costs relatively low
Economies of scale-non-adaptable to waste reduction	The local matter is a local resource adaptable to the reduction
Low-quality compost	High-quality compost
Need advanced technology	Simple technology needed
Large facilities	Small facilities
High treatment cost	Low treatment cost

BUILDING A FARMER FRANCHISE NETWORK

Establishing A Physical Network Of Rural Processing Infrastructure Across The Country



DISRUPTING THE POST-HARVEST SUPPLY CHAIN

Delivering High Quality Farm Processed Produce Directly To The Consumers At Best Prices

TURNING FARMERS INTO AGRI ENTREPRENEURS

Empowering Enterprising Farmers With Technique And Knowledge For Primary Food Grading And Processing

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FOSTERING RURAL DEVELOPMENT

Generating Sustainable Income For The Farmer And Local Employment For The Rural Youth

1. Adoption of modern agriculture:

2. Mechanisation post-WW1:

3. The green revolution:

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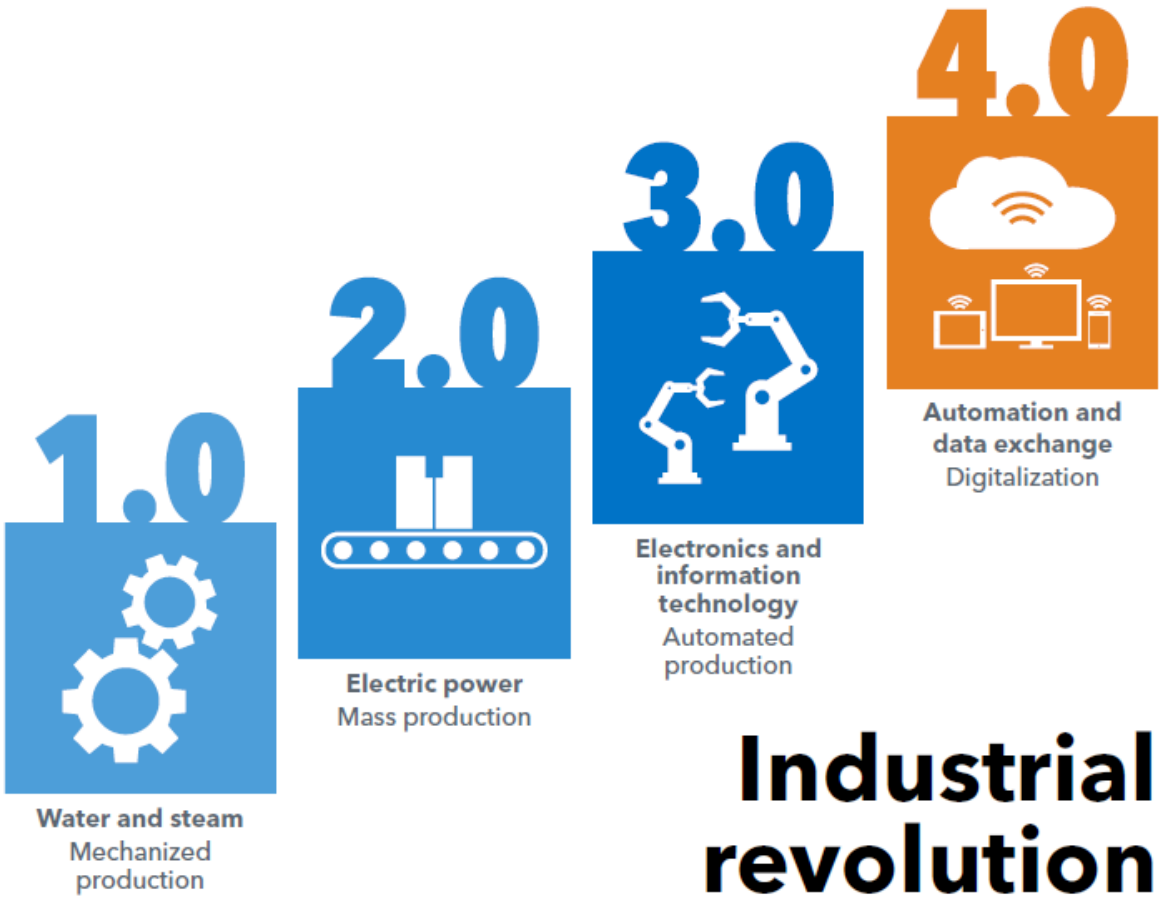
4. The digital revolution



Industrial revolution

FROM INDUSTRY 1.0 TO INDUSTRY 4.0

1.0	1784	Based on mechanical production equipment driven by water and steam power.
2.0	1870	Based on mass production enabled by the division of labor and the use of electrical energy.
3.0	1969	Based on the use of electronics and IT to further automate production.
4.0	TOMORROW	Based on the use of cyber-physical systems.

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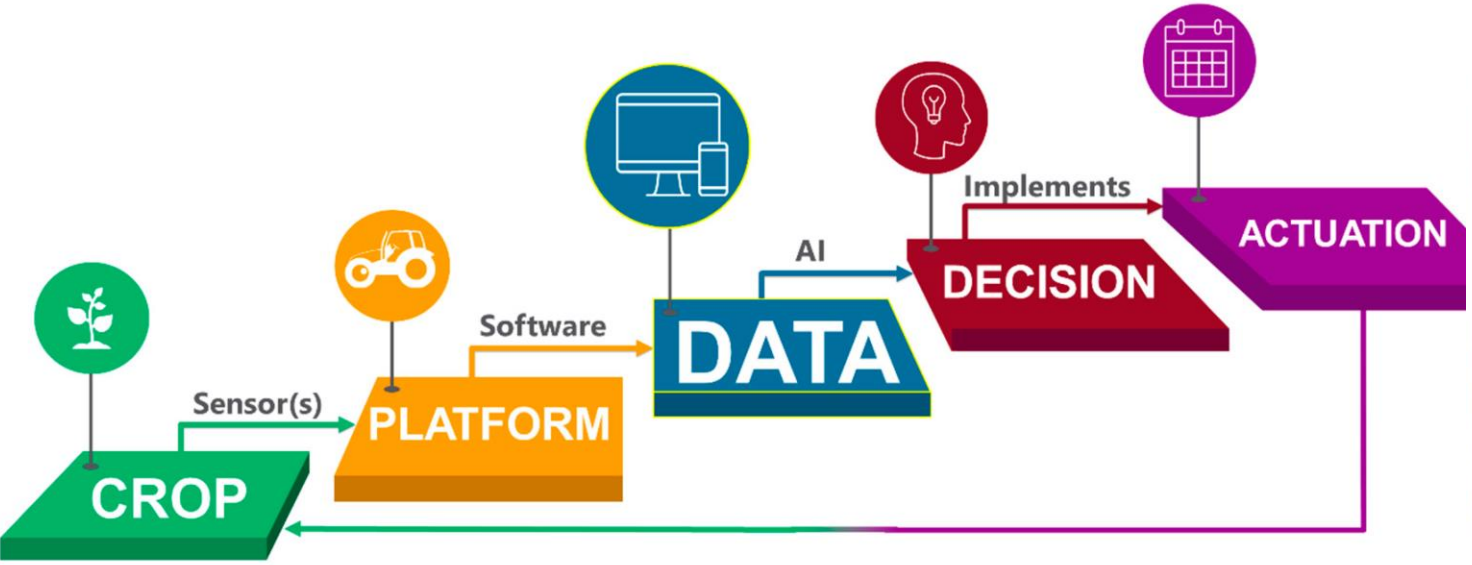
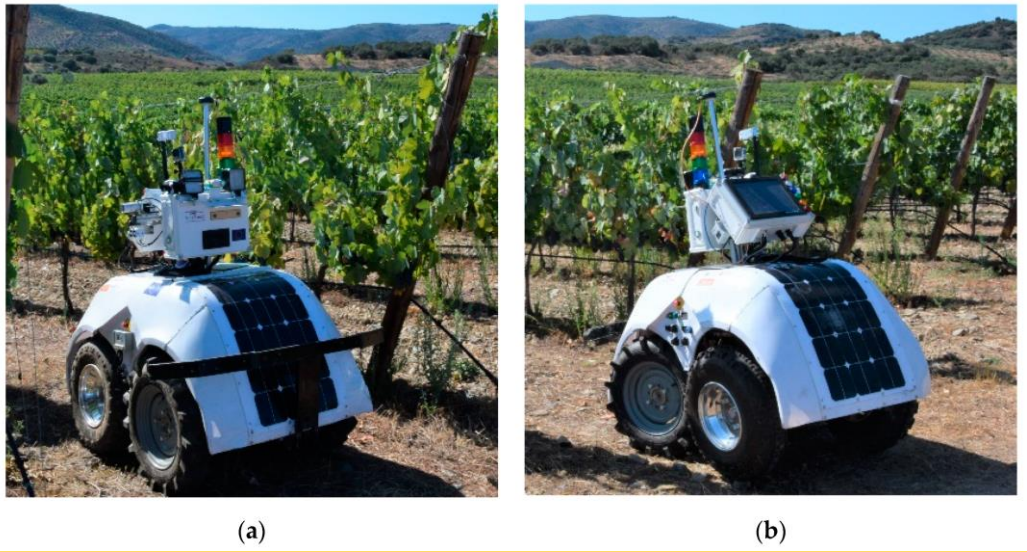
- **Data-driven agriculture, with the help of robotic solutions incorporating artificial intelligent techniques, sets the grounds for the sustainable agriculture of the future**

- **The current status of advanced farm management systems by revisiting each crucial step, from data acquisition in crop fields to variable rate applications, so that growers can make optimized decisions to save money while protecting the environment and transforming how food will be produced to sustainably match the forthcoming population growth**



Information-based management cycle for advanced agriculture



Vine Scout autonomous robot: Front (a) and rear (b)