Unlocking the potential of agricultural innovation to achieve sustainable development goals

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Global challenges and innovation pathways in agri-food systems

• Innovation is the central driving force which can transform food systems and lift smallholder farmers out of poverty

• Help the world to achieve food security, sustainable agriculture and the Sustainable Development Goals (SDGs)
Understanding agricultural innovation

- Agricultural innovation is the process whereby individuals or organisations bring new or existing products, processes or ways of organisation into use.
- First time in a specific context in order to increase effectiveness, competitiveness, resilience to shocks or environmental sustainability.
- Contribute to food security and nutrition, economic development or sustainable natural resource management.
Innovation is more than technology

- Innovation in agriculture involves different social, organizational or institutional processes
  - Beyond apps, drones or farm machinery
  - Ranges from access to markets, credit or extension services to marketing produce
- Innovation is a complex process where multiple actors play different roles
  - Governments, civil society, farmer organizations, research bodies and the private sector
Potential Areas of Agricultural Innovation

- Use of new genetically improved varieties in intensive agriculture systems
- Agro-ecological practices
- New post-harvest technologies
Potential Areas of Agricultural Innovation

New ways of testing for aflatoxins and food safety

New approaches to training farmers

New ways of farmers organizing themselves and linking to the markets
Agriculture Innovation Systems

AGRICULTURE INNOVATION SYSTEM

Research and Education
- Agricultural Research (public, private, civil society)
- Education (secondary, tertiary and vocational)

Bridging Institutions
- Stakeholder Platforms
  - Agricultural Extension (public, private, civil society etc.)
  - Contractual Arrangements

Business and Enterprise
- Agricultural Value Chain Actors & Organizations
  - (agribusiness, farmers, farmers organizations, cooperatives, smallholders etc.)

Partnership
- Innovation Policies
  - Investments (Public, Private etc.)
- Enabling Environment
  - Agricultural Policies
  - Mindsets & Attitudes
- Informal Institutions
  - Practices

G20 Meeting of Agricultural Chief Scientists (MACS 2020), 19 February 2020
Innovations in advanced plant breeding tools

- Very rapid advancements in the field of biotechnology (e.g. sequencing of plant genomes is now quicker/cheaper)
- New tools, particularly gene editing approaches involving CRISPR-Cas9, offer significant promise
- Issues of access, as well as potential opportunities and risks, for smallholder farmers are fundamental
Innovations in farm management decision support systems

• Allow farmers to use big data and the Internet of Things to make more informed decisions
• A wide range of decision support systems are now available
• Bring benefits to farmers regarding their use of pesticides, fertilisers, water use in irrigated systems, nitrogen use and more
Adoption of innovations

- Strengthening the ‘agricultural innovation system’ through multi-stakeholder processes is essential

- Particular focus is needed on extension and advisory services (EAS) because they are key catalysts which allow innovation to happen
FAO’s work to strengthen adoption of cutting-edge technologies and practices

Knowledge sharing platforms: Facilitate knowledge exchange and sharing related to agricultural innovation. For example,

- TECA, TAPipedia, Inpho etc
Support to strengthen Agricultural Innovation Systems

18 countries supported to strengthen/reform extension & advisory services
10 countries supported in strengthening innovation system (CD4AIS)
13 countries in the pipeline
International Digital Council for Food and Agriculture

- Its vision “to become a key actor to support governments and other stakeholders in the agri-food system to maximize their potential in using digitalization to increase production, productivity and sustainability in an inclusive and equitable manner and to help achieve the SDGs”

- Concept accepted by the Global Forum for Food and Agriculture (GFFA)
International events on agricultural innovation

• International Symposium on Agricultural Innovation for Family Farmers (Rome, 21-23 November 2018)
• Digital Agriculture Transformation Seminar: The challenges to be addressed (Rome, 12-13 June 2019)
Thank you