

Transforming agriculture and food systems for enhanced food security and socio-economic outcomes



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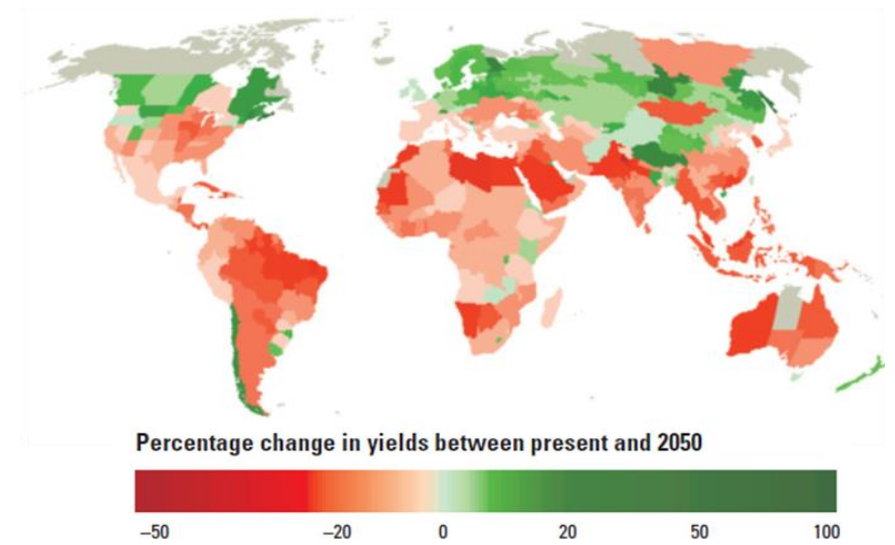
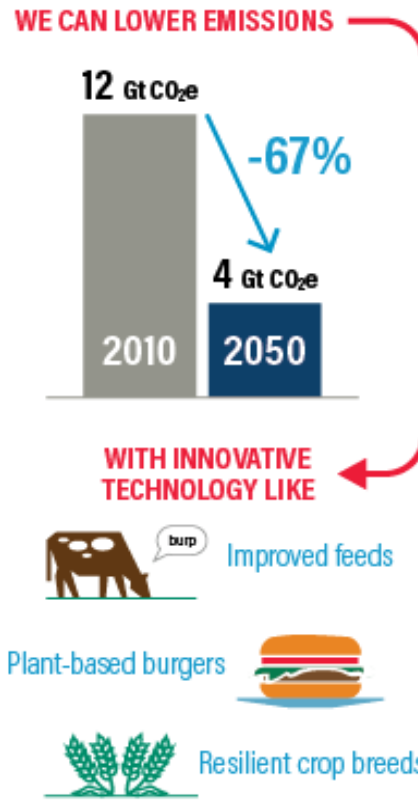
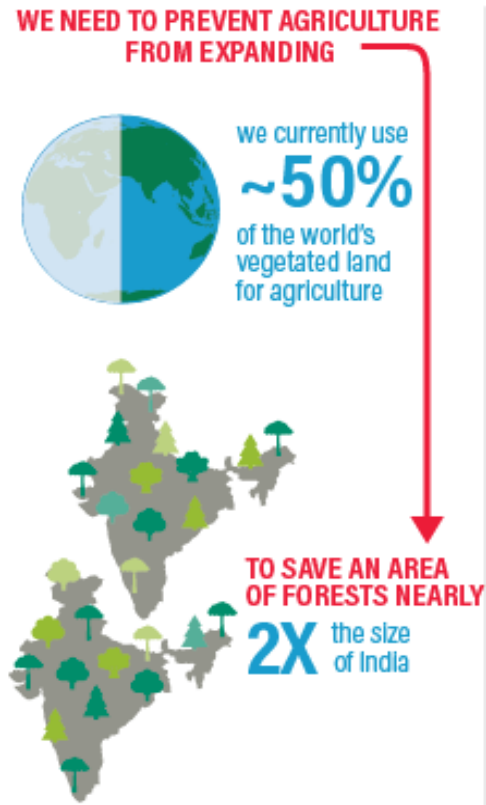
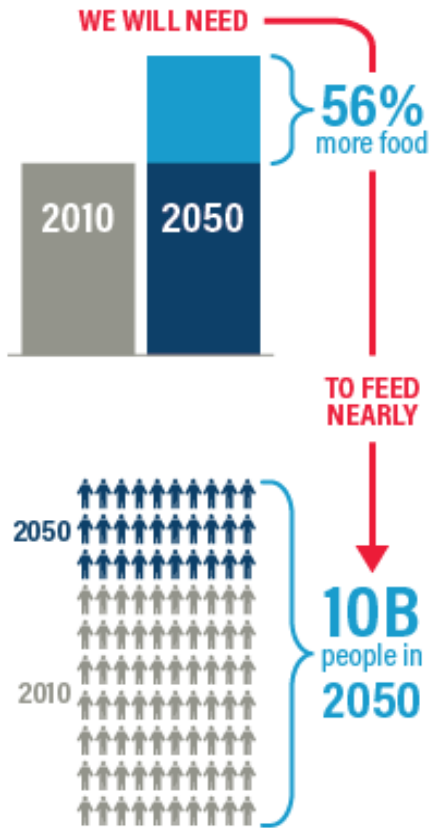
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How do we feed 10 billion people...

...without using more land...

...while lowering emissions?

...while improving climate resilience reducing water stress and biodiversity loss



...and lifting the extreme poor who work in the food system out of poverty

Source: wri.org/sustfoodfuture

COVID-19 impacts exemplify and amplify the risks but also reinforce the need to reimagine our global food system...



- **Habitat conversion or degradation** contributes to animal-to-human disease transmission
- **Over 60% of infectious diseases** affecting humans have their origins in animals.
- **Food systems** often drive emergence of infectious diseases, and this trend has accelerated as a consequence of global changes in the way food is globally produced, moved and consumed
- **Vulnerability of food supply chains:** lockdowns have caused disruptions causing significant increases in FLW. Strong interest by private sector to improve resilience.
- **Importance of healthy diets:** malnutrition is associated with weakened immune systems, overweight and obesity with non-communicable diseases leading to pre-existing conditions that increase vulnerability to COVID-19



A food system that helps deliver by 2030

**Vision/
interrelated targets**

Currently off track

Healthy economy
(inclusive incomes, jobs & livelihoods)

- Increase incomes of poor people that work in the food system
- Support structural transformation

- 2030 end poverty target unlikely to be met, significant lag in FCVs



Healthy people
(secure and safe food and nutrition)

- End hunger and acute food insecurity
- Improve health outcomes [lower micronutrient deficiency and obesity, improved food safety, less zoonotic disease, and reduced AMR]

- Increase in hunger since 2015
- 135 million acutely food insecure
- 2 billion micro-nutrient deficient
- 2 billion overweight or obese
- Increase in zoonotic diseases
- Anti-microbial resistance



Healthy planet
(environmentally sustainable practices)

- Operate within safe planetary boundaries for sustainable resource use

- Land degradation
- Water scarcity
- Pollution
- 25% of global GHG emissions
- Biodiversity loss
- High loss and waste`

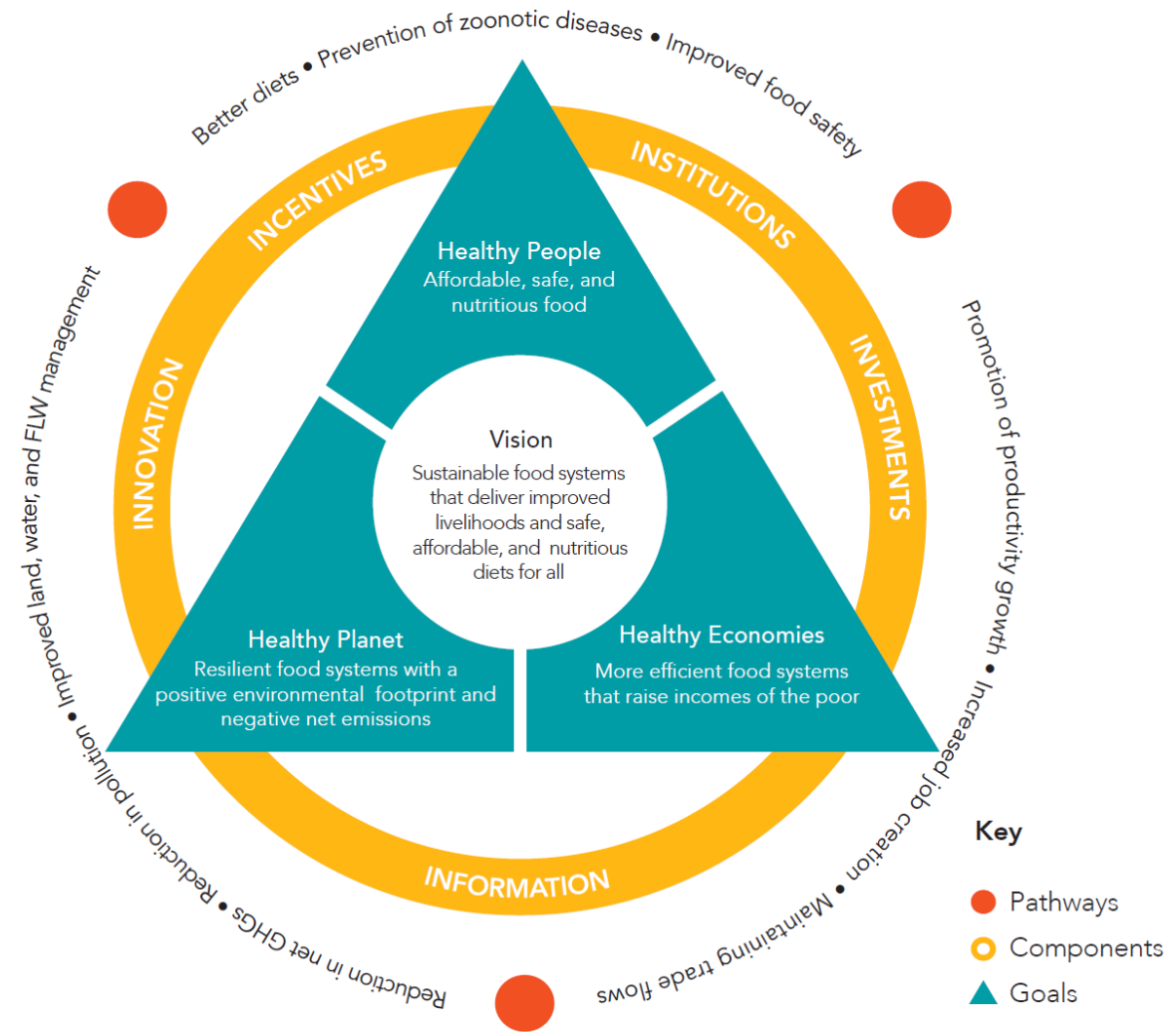
Food System Transformation: Theory of Change

What change is needed?

Food systems that holistically address human, planetary, and economic health through innovations, incentives, institutions, investments, and information.

How do we add value to the change process?

- By generating simultaneous co-benefits across all three goals.
- By raising catalytic funding to leverage public financing.
- By de-risking private financing for investments.
- By re-orienting consumer food spending



Transformative, interconnected pathways to change

Healthy People

Better diets

One Health/Prevention
of zoonotic diseases
Improved food safety



Healthy Planet

Reduction
in GHGs

Reduction in pollution
Improved land, water
and food loss and
waste (FLW)
management



Healthy Economies

Promotion
of productivity
growth

Increased job creation
Maintaining trade
flows



Challenges and opportunities for scale-up



Innovation

Agricultural innovation systems are not efficient, they delay the cycle of research, development, piloting, scaling, and adoption of technological improvements.



Incentives

Limited availability of credit, limited implementation of novel financing mechanisms and safety nets, and inaccessible markets are key barriers to scaling CSA.



Institutions

Institutions are weak, siloed and not well aligned across landscapes to help scale climate action effectively and realise positive socioeconomic and food security outcomes.



Investments

Current levels of investment in agricultural value chains are insufficient to achieve food security outcomes.



Information

Information is currently not effectively empowering farmers to make more robust decisions in the context of climate change.

Support applied research organizations, civil society organizations, and national and regional bodies to develop innovations and interventions that could potentially be suitable for scaling up.

Identify suitable entry points to support countries to redirect resources to incentivize climate action in agriculture and the broader food system, especially cross-sectoral and integrated strategies.

Analytical and capacity building work that can transform traditional institutional boundaries and become suitable for actions which need to be implemented across landscapes and/or value chains.

Crowding in private investment to help achieve these goals and optimizing the use of scarce public resources will be needed.

Improving information access that focuses on risk management, transparency, and traceability.

Actions must:

1. Be as inclusive and demand-driven as possible to meet farmers' economic and social needs.
2. Be underpinned by an integrated landscape approach.

Incentivizing sustainable food production

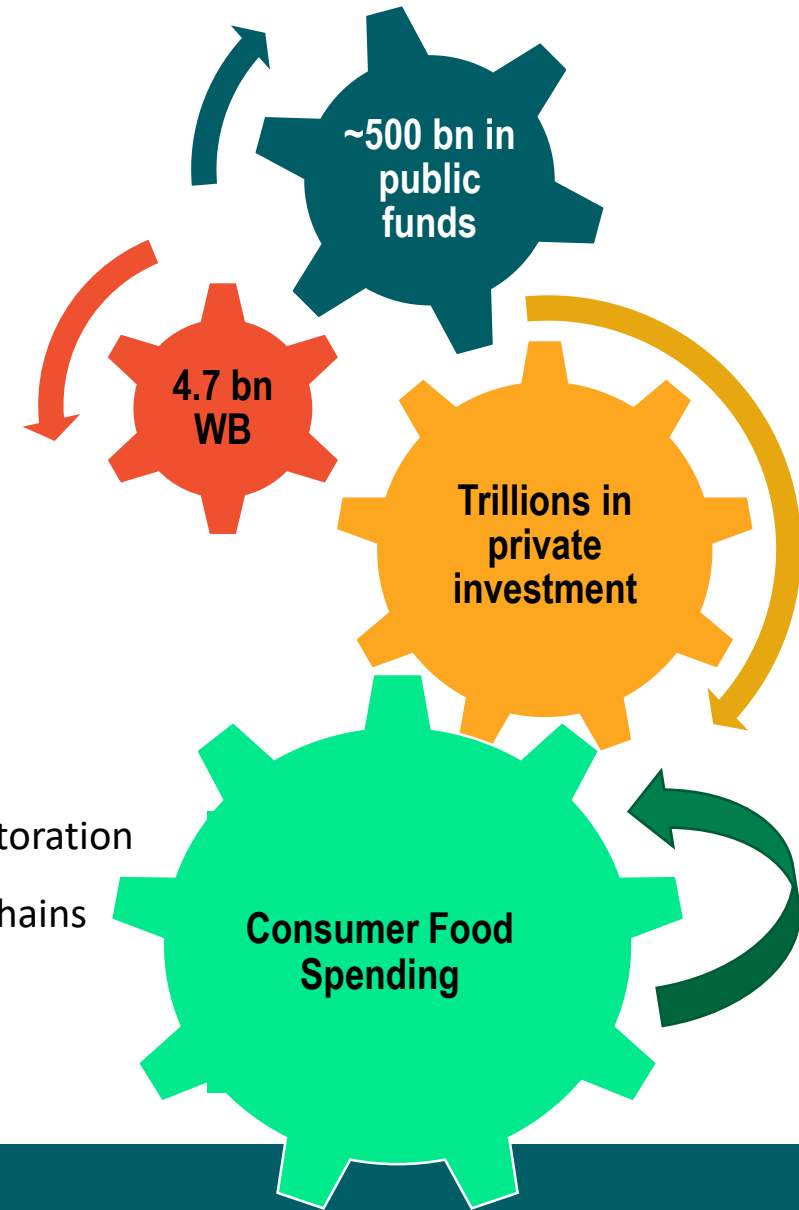
- Total public investment in agriculture is ~\$500b/year

Issue: Public support insufficient and reinforces unsustainable food system

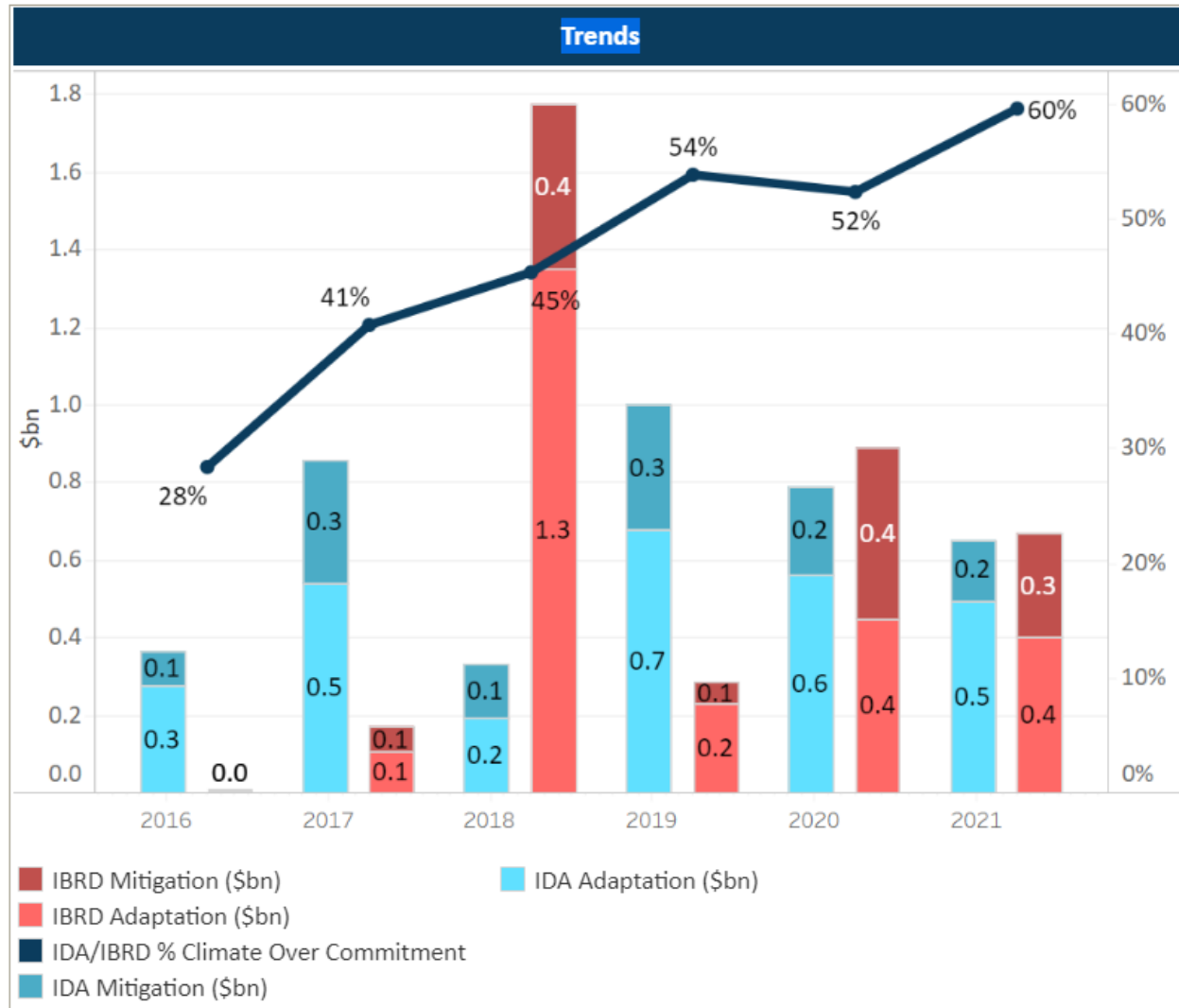
- Additional \$350 b/year needed to reach SDG goals
- 1/3 of investment gap (\$100bn) in Africa
- 84% current support is direct or indirect subsidies
- Misses opportunity to drive trillions in private investment towards sustainable practices

WB Approach: Maximizing Finance for Development strategically directs public finance to -

- **Provide incentives to smallholders** to invest in sustainable production practices and restoration
- **De-risk private sector investments**, especially for SMEs, to invest in green food supply chains
- **Better policies** that orient consumer demand towards healthier diets



The World Bank is committed to Climate Change action in Agriculture and Food



- Lending: the goal is to expand the share of projects with climate-smart agriculture “triple wins”, aiming to reach 66 percent of agriculture projects over the next 5 years in at least 20 countries, reaching 10 million farmers by deploying the full range of **analytical** and **lending** instruments.
- Analytical: Expanding tools.
 - Climate Smart Investment Plans (CSAIPs),
 - [Already CSAIPs identify CSA investments of more than US\\$ 2.5 billion](#)
 - Climate Smart Country Profiles,
 - [More than 30 countries profiled](#)

Operational commitments underpinning CSA mainstreaming: setting goals and measuring progress

We require all projects to complete five Climate Change related processes:

NEW

Climate & Disaster Risk Screening

Identify projects' exposure to climate and disaster risks

RISKS

GHG Accounting

Ex-Ante determination of gross and net GHG emissions using the Ex-Act tool and other tools developed by FAO

EMISSIONS

Shadow Price of Carbon

Accounting for carbon externalities in economic and financial analysis

VALUATION

Climate Finance Tracking (Co-Benefits)

Determine projects' share of climate finance by identifying adaptation and mitigation Co-Benefits

FINANCE

Climate Indicators

Monitor and track the progress of climate results; measuring outputs or outcomes of mitigation and/or adaptation interventions

MONITORING

World Bank 2025 Climate Change Commitments: Additional tools and approaches being developed

Catalyzing private sector investments: Vietnam - Reduced GHG Emissions Challenge Project

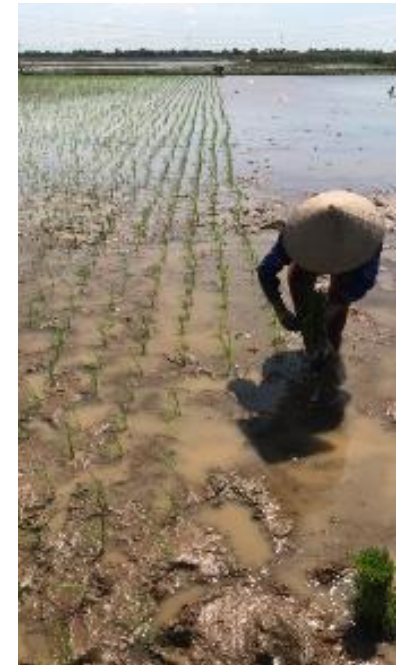
Project:

- AgResults activities introduce stakeholders to a Pay-for-Results prize competition to attract companies to participate and finance scale-up of technology packages that **achieve GHG emission reduction and better yields and income for farmers.**
- Prizes are designed to maximize competition without overpaying for results and to attract both SMEs and large companies.
- Invested in a verification system with a cloud-based data capture tool linked to a results modeling system.



Lessons:

1. Prize competitions (payment for results) can be very useful in increasing private sector participation, and adoption by rewarding actors (private sector and farmers).
2. It is important to ensure that **target beneficiaries can derive an immediate, tangible benefit from the innovation** being scaled out, and that the **price point is attractive enough for the market to keep growing beyond the competition.**
3. These interventions need to be Linked to a country's larger goals such as NDC targets.
4. Significant **effort needs to be directed towards reducing the costs of MRV systems** (e.g. verification costs) and burdens on both investors and competitors.



Investments: Kenya Climate-smart Agriculture Project

Kenya Agricultural Carbon Project (KACP)

- The first soil carbon project earning carbon credits
- Pilot project helped 60,000 farmers on 45,000 hectares (ha) to adopt sustainable agricultural land management practices leading to carbon sequestration
- First credits earned in 2016 - 10,790 VCUs since then.

Kenya Climate-smart Agriculture Project (KCSAP) (\$250m)

Purpose:

- Increase agricultural productivity and enhance resilience to climate change risks in smallholder farming and pastoral communities

How:

- Up-scaling climate smart agricultural practice (including improving soil investments, promoting crop diversification, and agro-forestry) and strengthening the enabling environments

Impact:

- Project will benefit about 522,000 households of smallholder farmers, agro-pastoralists, and pastoralists directly, 340,000 households benefiting from the county-level and public-private partnership investments and over 600 micro-small-and-medium enterprises.

Implementing an Integrated M&E Framework

Resilience in M&E design reflects multiple good practices:

- Engaging stakeholders in project component design and creation of a web-based M&E platform to facilitate tracking and increase transparency
- Development of county level CSA Profiles to identify the vulnerability context
- Securing resources to deploy demand-driven data collection and analysis.



Information: Unlocking the potential of information to manage risk



Ag Observatory

Combines Big Data and Artificial Intelligence to connect 1.5 million Virtual Met Stations to provide climate and moisture data for every 9 km data, updated in every 6 hours

The Bank has a growing cadre of information services that support decision making and risk management in agriculture in client countries. The Ag Observatory and now a developing Food Security Hub.

Purpose of information platforms:

- To access and deploy high resolution agrometeorological data and information for near real-time decision support.
- To make use of multiple information sources and analytics to improve decision-making and lower the risk of disasters and crises that are related to climate and other hazards.



Food security information hub

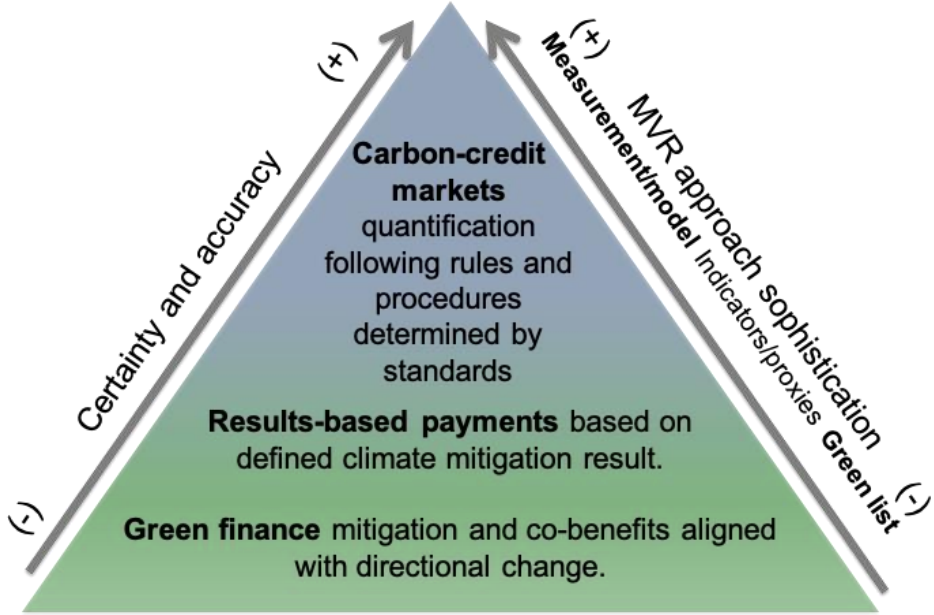
Combines different sources of information into a one-stop shop and provides analysis to support access to food security data.

Supports early detection and diagnosis of emerging food insecurity crises for early warning for early action.

Innovation and Technology: Tools for Monitoring, Reporting and Verification (MRV) e.g. Soil Health

Monitoring, Reporting and Verification (MRV) bottlenecks represent a significant barrier to investment in key areas such as soil health because of the high costs:

- Measurement of soil organic matter would enable farmers to benefit from carbon assets
- Promising solutions combine pragmatic and user-friendly tools with site-specific modelling
- Innovation is needed to develop combined data and remote sensing approaches that are robust, reliable and economical
- Cost-effective at scale soil health measurements would unlock soils as an anchor variable for public support to Agriculture.



Fit-for-purpose MRV of soil carbon.

1. At present result-based payment approaches seem manageable as we work towards more high-grade market approaches.
2. We need to continually work to reduce uncertainty and increase accuracy, while making use of improved and costs effective modelling measurement technology for fit-for-purpose MRVs to support enhanced private and public investments.

Take home messages and priority actions

1. Strong and well-coordinated institutions enable action across landscapes and value-chains.

- ❖ *Extend support for institutional strengthening and active engagement of institutions to catalyze positive transitions to integrated and geospatial approaches.*

2. Tailor solutions to local context.

- ❖ *Support the scaling up of prioritization tools such as the Climate Smart Agriculture Investment Plan series (CSAIPs) which can help identify context specific priorities for investment and policy.*

3. Incentivize adoption of improved technologies and practices.

- ❖ *Support the facilitation of discussions amongst countries on current subsidy regimes to identify possibilities for repurposing for positive climate, food security and livelihood outcomes.*
- ❖ *Pay farmers for ecosystem services that society demands.*
- ❖ *Identify and promote best practices to de-risk private sector investments and to improve livelihood outcomes.*

4. Bring farmers on board

- ❖ *Ensure that farmers understand that CSA is good for their bottom-line*

5. Don't let the perfect be the enemy of the good.

- ❖ *Support and promote fit-for-purpose MRV systems to inform investments in interventions that are impactful for food security and livelihoods.*

THANK YOU



[A warming world means it's high time to rethink the composition of agricultural support](#)



[Transforming local economies for an inclusive and sustainable recovery](#)



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