

# Modeling and Decision Support Tools for Climate-Smart Agriculture



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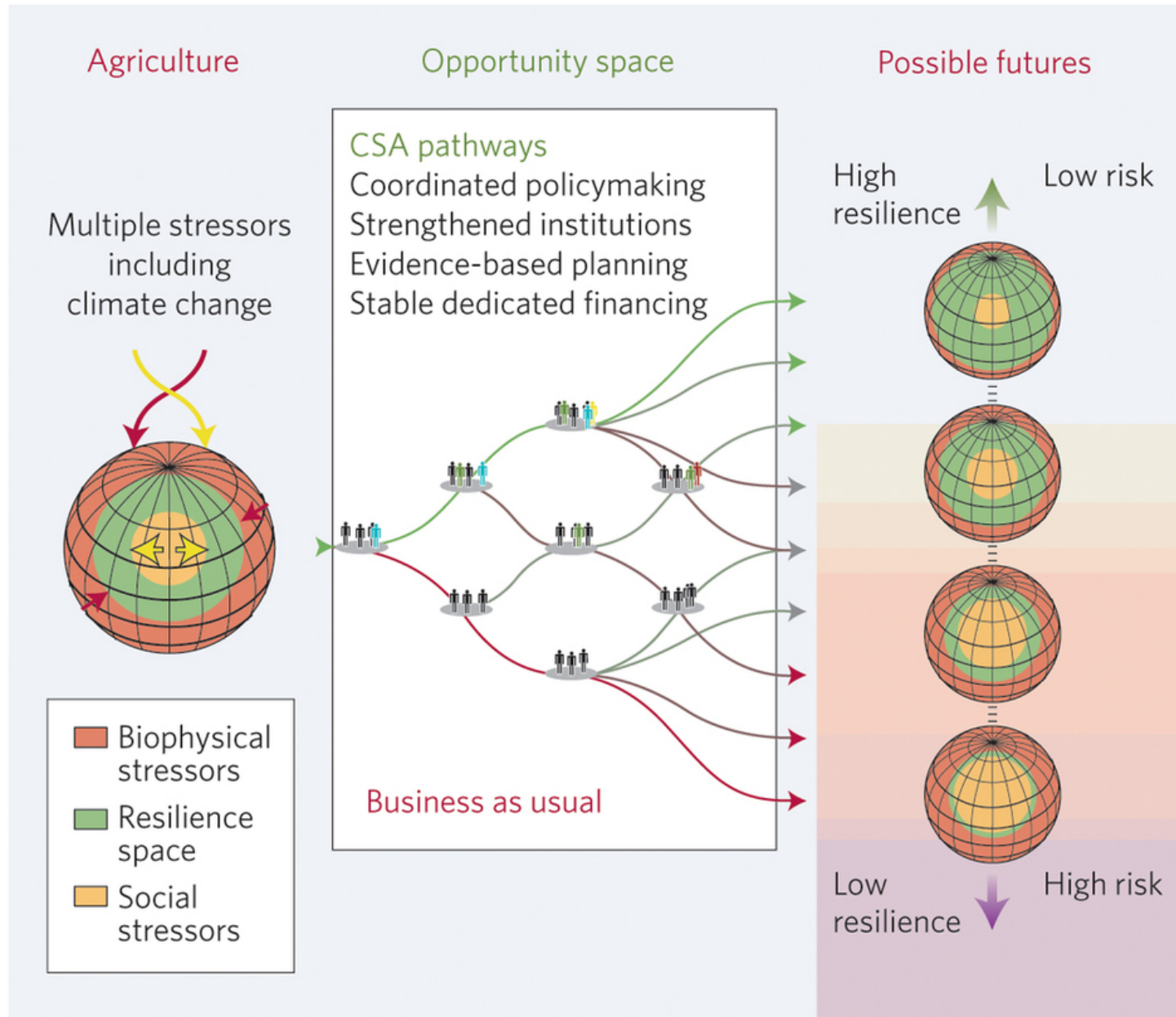
# Climate Smart Agriculture

**CSA is an approach for transforming and reorienting agricultural systems to support food security under the new realities of climate change.**

**CSA comprises 3 major pillars**

- 1) Sustainably increasing agricultural productivity to support equitable increases in incomes, food security and development;
- 2) Adapting and building resilience to climate change from the farm to national levels; and
- 3) Reducing or capturing GHG emissions where possible

# Climate Smart Agriculture: What do we need



# Emerging opportunities

**WB current commitments to agriculture \$8.3 billion, and are likely to grow**

## **Mandatory requirements**

- 1) Screen IDA projects for climate and disaster risks and where risks exist, **incorporate resilience measures**
- 2) GHG appraisals of agriculture projects to **determine carbon footprints** of investment lending

# CSA knowledge priorities (GACSA Survey, 2014)

1. Technical interventions and practices in CSA
2. Evidence base of CSA **AND**
3. Support, services and extension for CSA (joint 2<sup>nd</sup>)
4. Inclusive knowledge systems for CSA
5. Integrated planning and monitoring for CSA

**CSA Indicators and DSS Tools !**

# **Why CSA Indicators (1)**

- 1. Provide evidence base for identifying viable climate-smart options and the necessary enabling activities;**
- 2. Select contextually relevant technologies/practices for different locales;**
- 3. Guide CSA investments;**
- 4. Assess policy and institutional support for CSA; and**
- 5. Monitor CSA results**

**WB recently developed indicators for Policy, Technology, and Results**

# **Why CSA DSS Tools (2)**

- 1. Spatial and temporal scales appropriate for national and local level planning**
- 2. Problem oriented approaches to adaptation planning**
- 3. Evaluate adaptation and mitigation potentials of different policies and technologies**
- 4. Identify barriers to the adoption of climate-smart practices**
- 5. Big Data Analytics to improve farmers access to timely, cost-effective and personally relevant information on agronomic practices, markets, prices, inputs, weather**