

Climate resilient agriculture: key features, controversies and way forward



RESEARCH PROGRAM ON
**Climate Change,
Agriculture and
Food Security**



Bruce Campbell



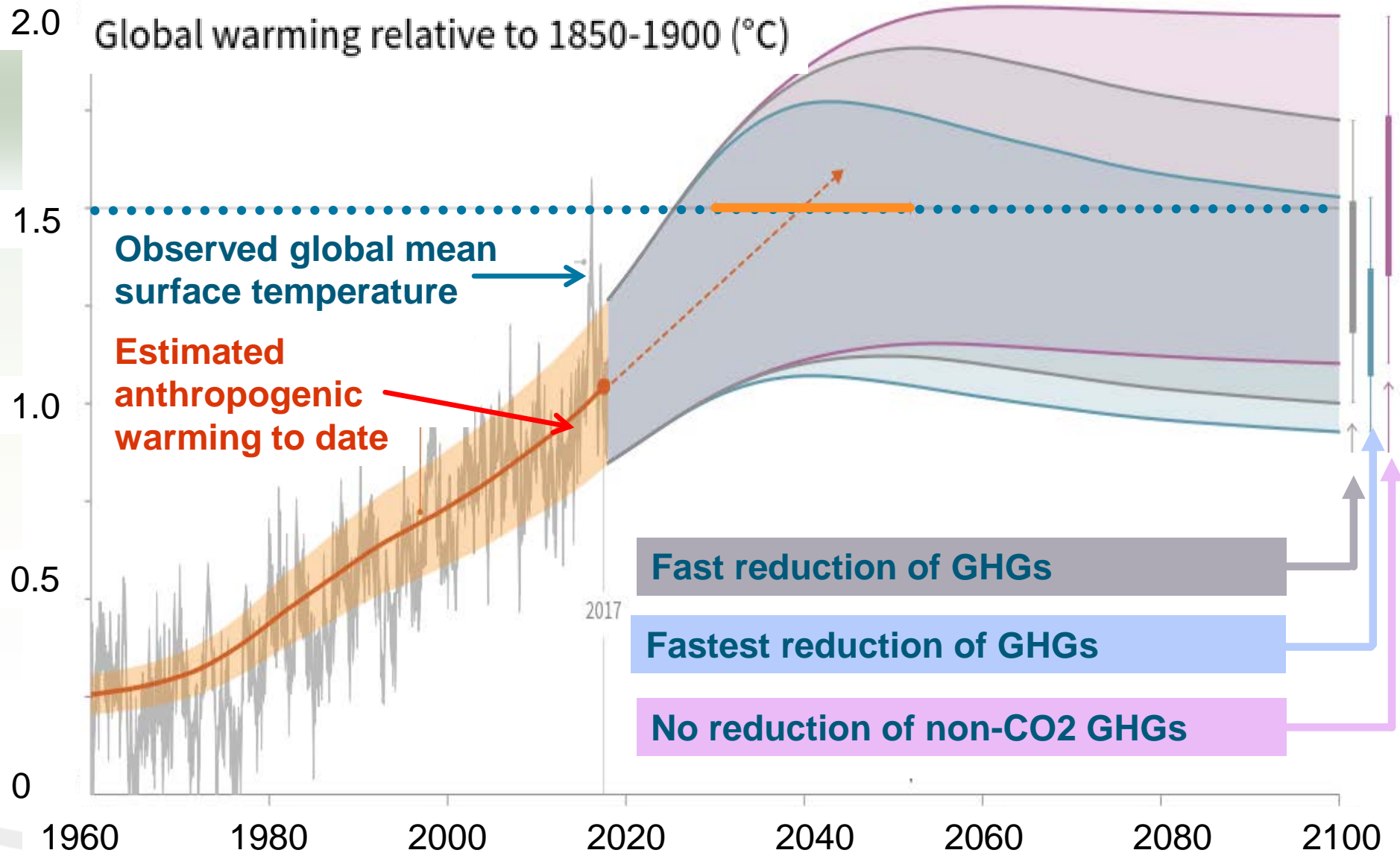
Photo: G. Smith (CIAT)

Outline – key messages

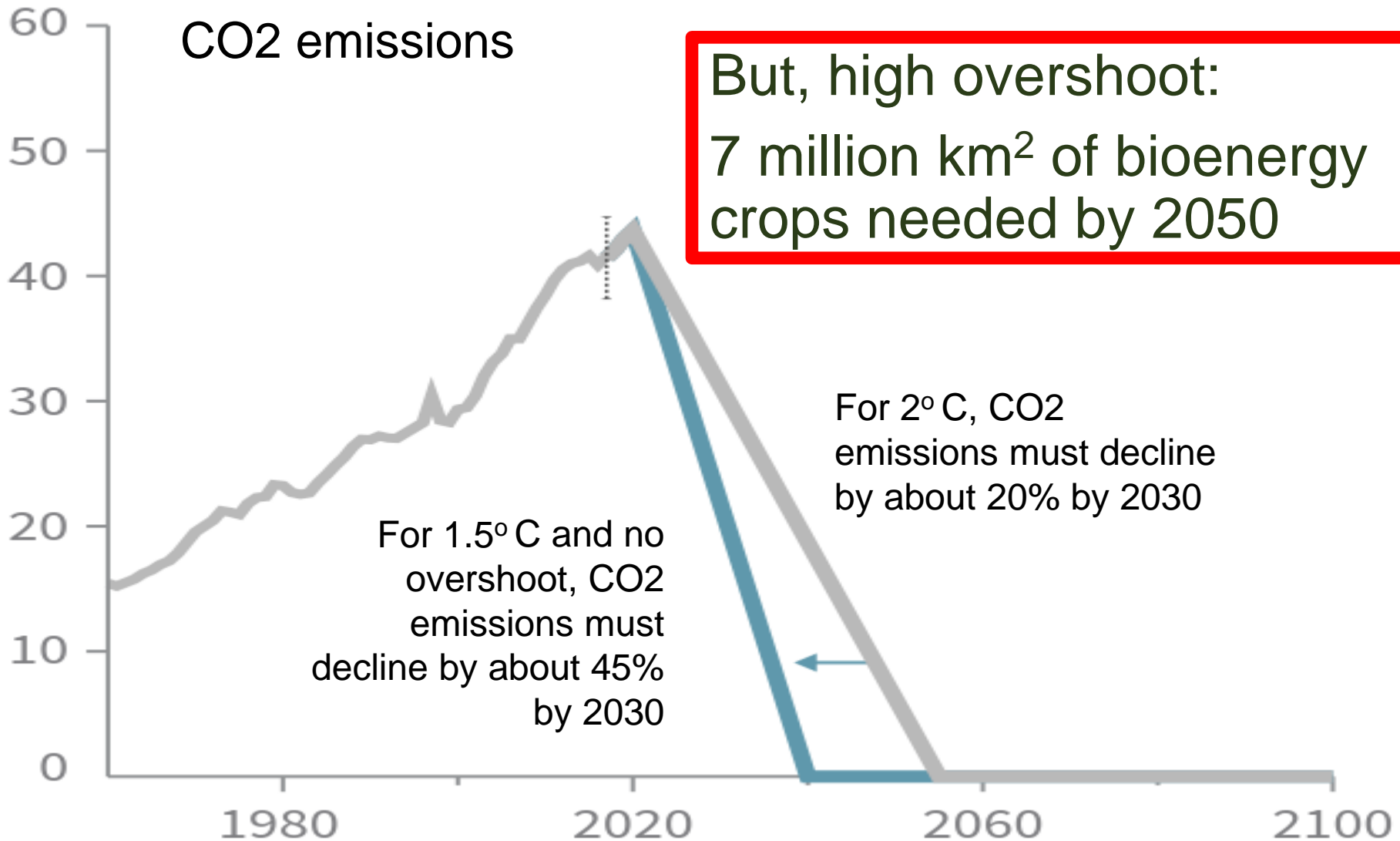
1. Climate change is mega-serious
2. Let's move beyond the controversies
3. We need nothing short of a transformation in agriculture and food systems
4. Diverse actions are needed to adapt
5. Successes show us that we can move forward fast



The mega mitigation challenge



But can we do this?



1. Climate change is mega-serious



RESEARCH PROGRAM ON
Climate Change,
Agriculture and
Food Security



**Need massive attention in
all sectors to reduce GHGs,
including in ag and food
sector**

**Be ready for a mega
adaptation challenge**



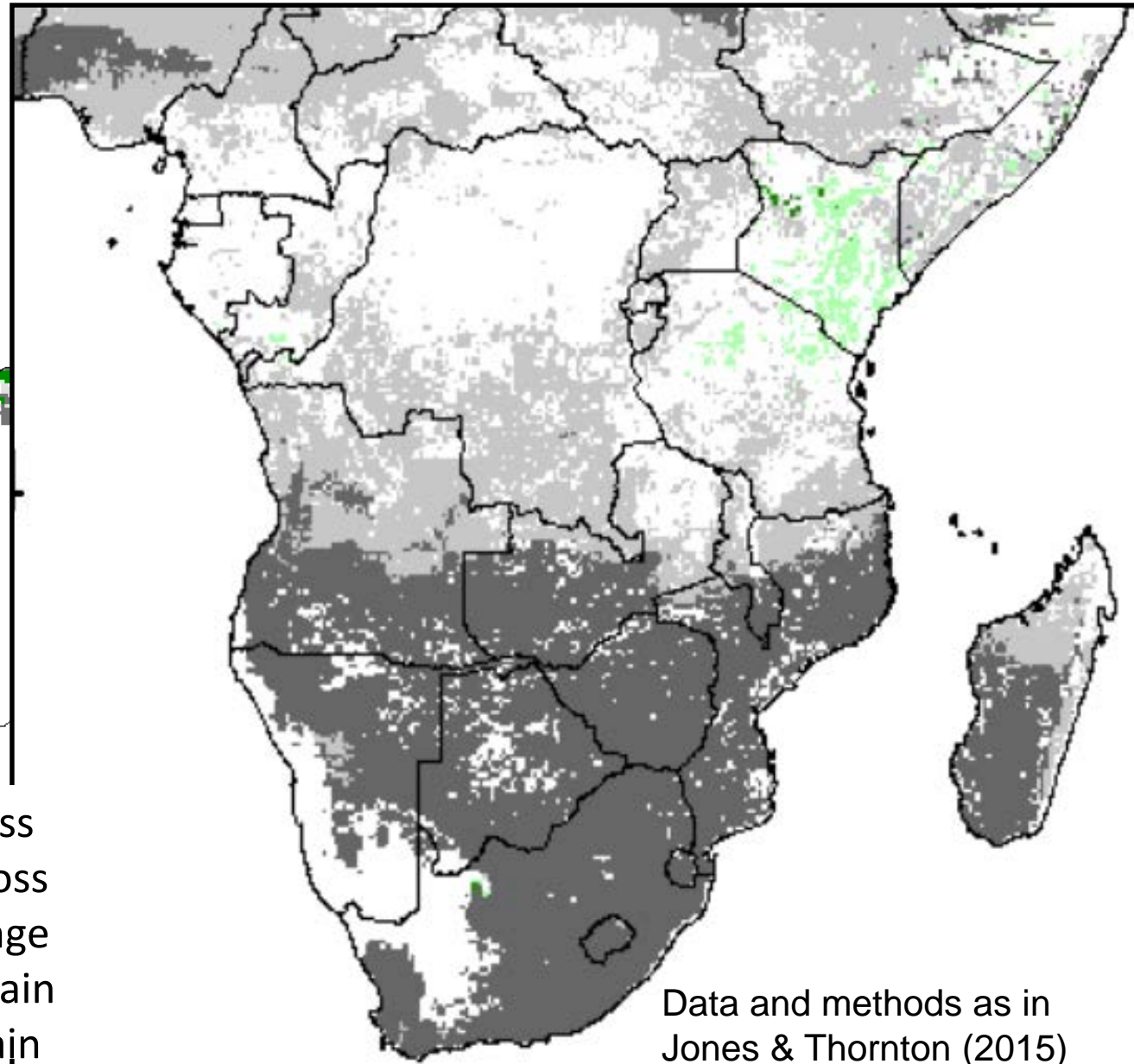
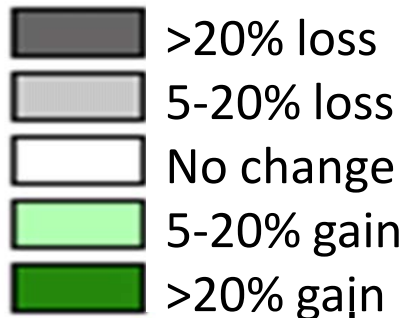
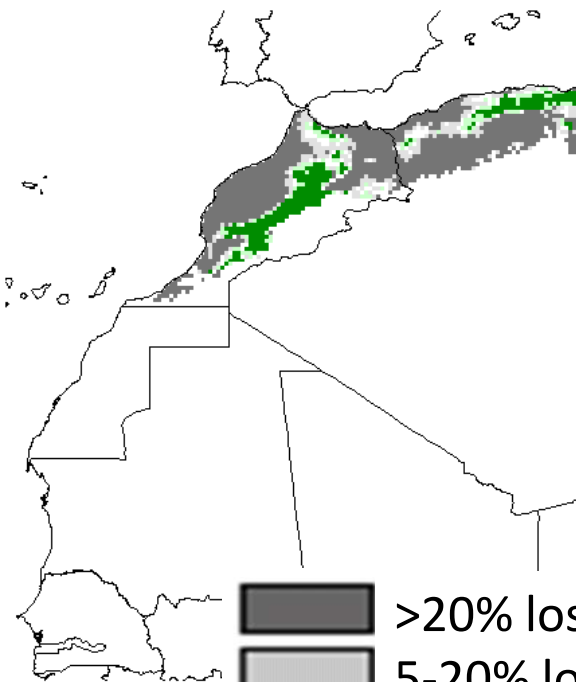
The mega adaptation challenge



RESEARCH PROGRAM ON
Climate Change,
Agriculture and
Food Security

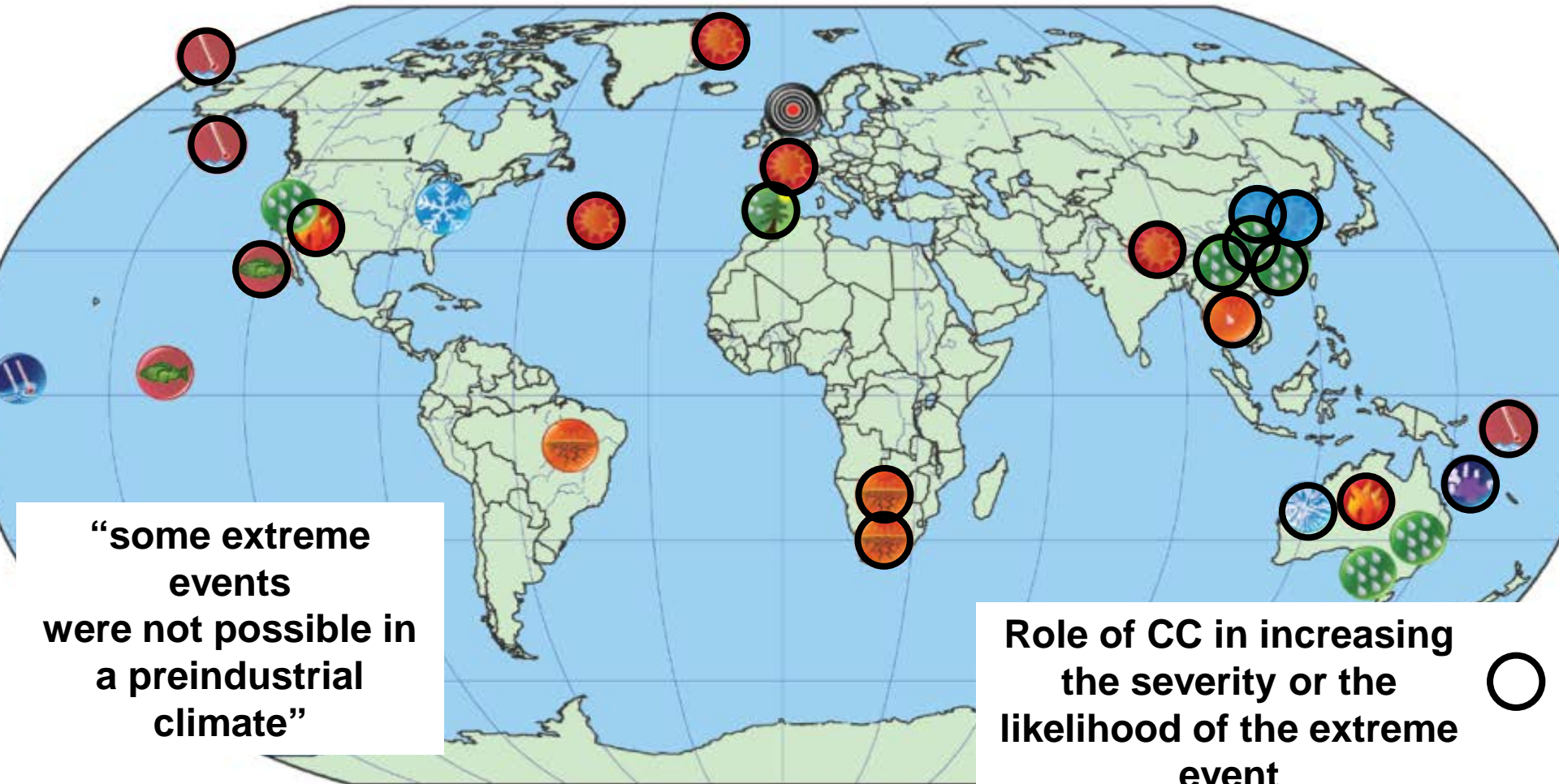


Change in length of growing period in a +4 °C world



Data and methods as in
Jones & Thornton (2015)

2016 extreme events



-  Drought
-  Heat
-  Fire
-  Dry
-  Marine Heat
-  Marine Life
-  Cold
-  Frost
-  Snow
-  Precipitation
-  Air Quality
-  Ecosystem/Vegetation Function
-  El Niño
-  Coral Bleaching

2. Let's move beyond the controversies: "Climate-Smart Agriculture"



RESEARCH PROGRAM ON
Climate Change,
Agriculture and
Food Security



Journal of Peasant Studies >
Volume 45, 2018 - Issue 1

Forum on: Climate Smart Agriculture

Climate-smart agricul

Marcus Taylor ✉

Pages 89-107 | Published online: 25 May 2017



Opinion Paper

The way forward: An agroecological per Climate-Smart Agriculture

Stéphane Saj ^a ✉, Emmanuel Torquebiau ^b, Etienne Hainzelin ^c, Jac

RURAL 21

The International Journal for Rural Development

News | Scientific World | From our partners | A closer look

Rural 21 » News » Climate-smart agriculture – what is it?



A farmer at work in a maize field in I
Photo: Michelle DeFreese/CIMMYT

08.12.2017

Climate change

Climate-smart agriculture – what is it?

CSA – today, any programme addressing the future of
acronym for “Climate-Smart Agriculture”

Agriculture and food systems that account for climate

- Food and nutritional security
- Productivity – not at expense of environment
- Higher incomes

Food security/
productivity

Highly
context
specific

Adaptation

Reduced
emissions/
mitigation

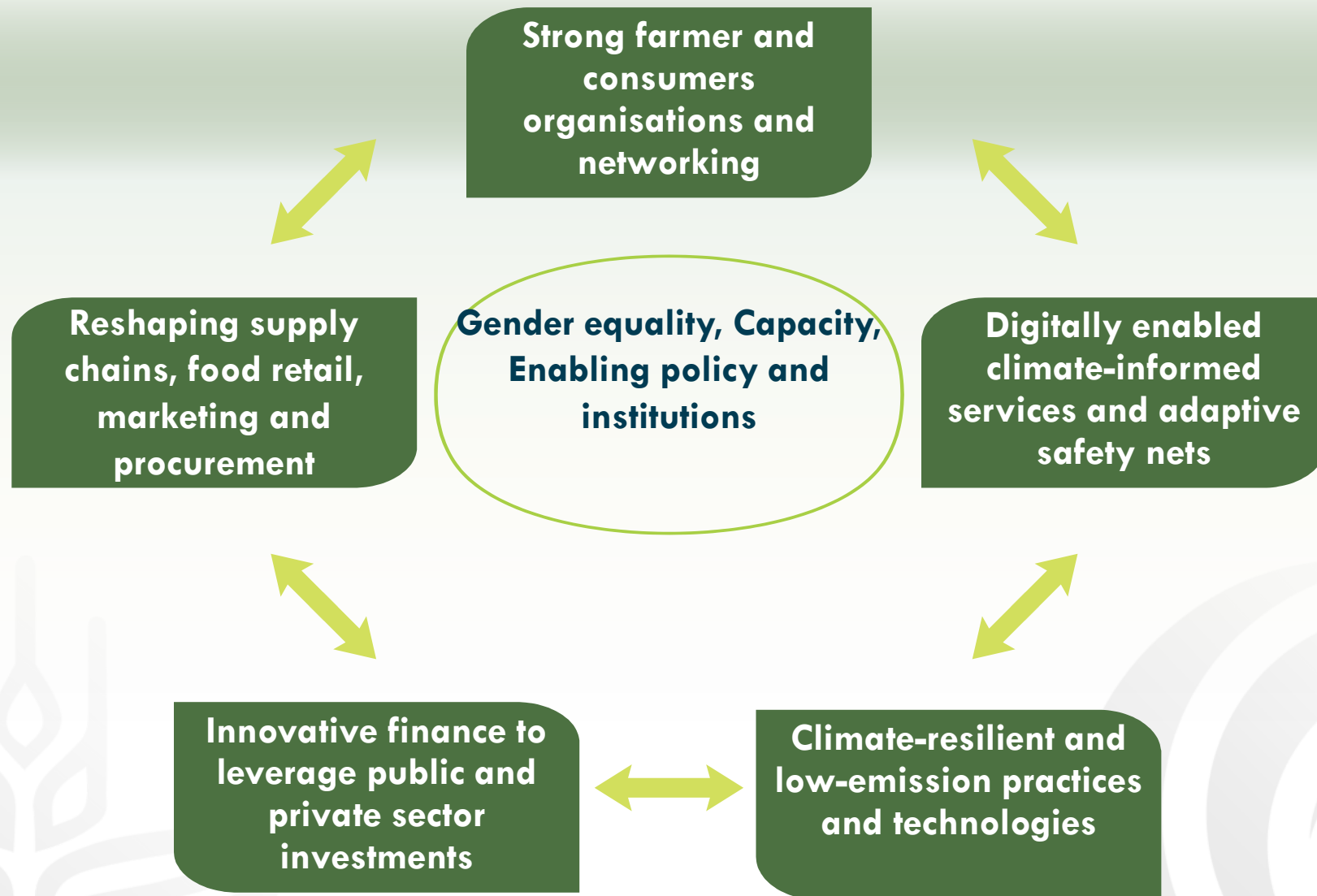
- Reduced exposure to short-term risks
- Enhanced capacity for longer-term stresses
- Healthy ecosystems

- Lower emissions for each calorie
- Avoid deforestation from agriculture
- Take carbon out of the atmosphere

3. We need nothing short of a transformation



RESEARCH PROGRAM ON
Climate Change,
Agriculture and
Food Security



Blue sky innovations

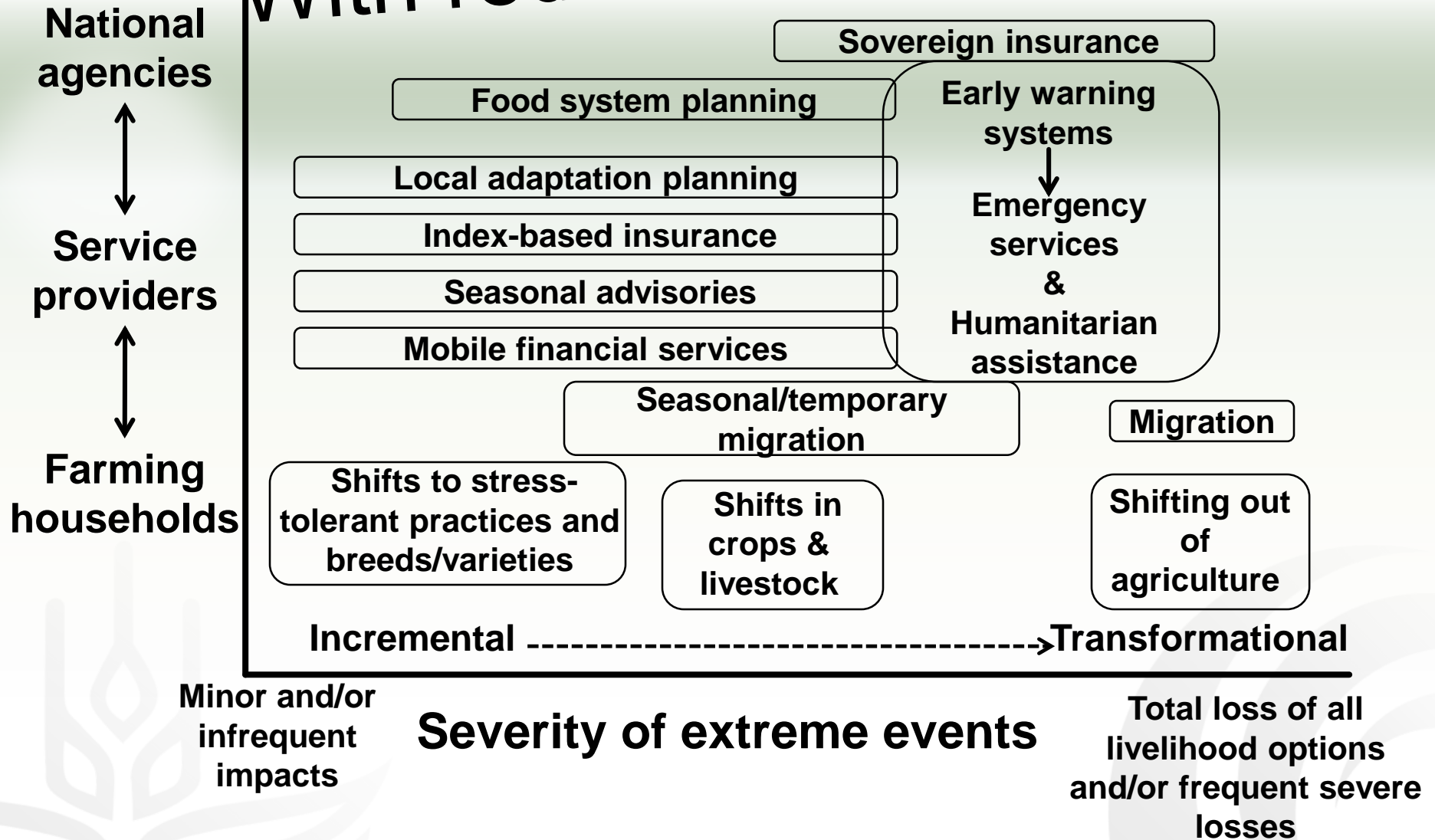
4. We need diverse actions to adapt



RESEARCH PROGRAM ON
Climate Change,
Agriculture and
Food Security



With reduced emissions



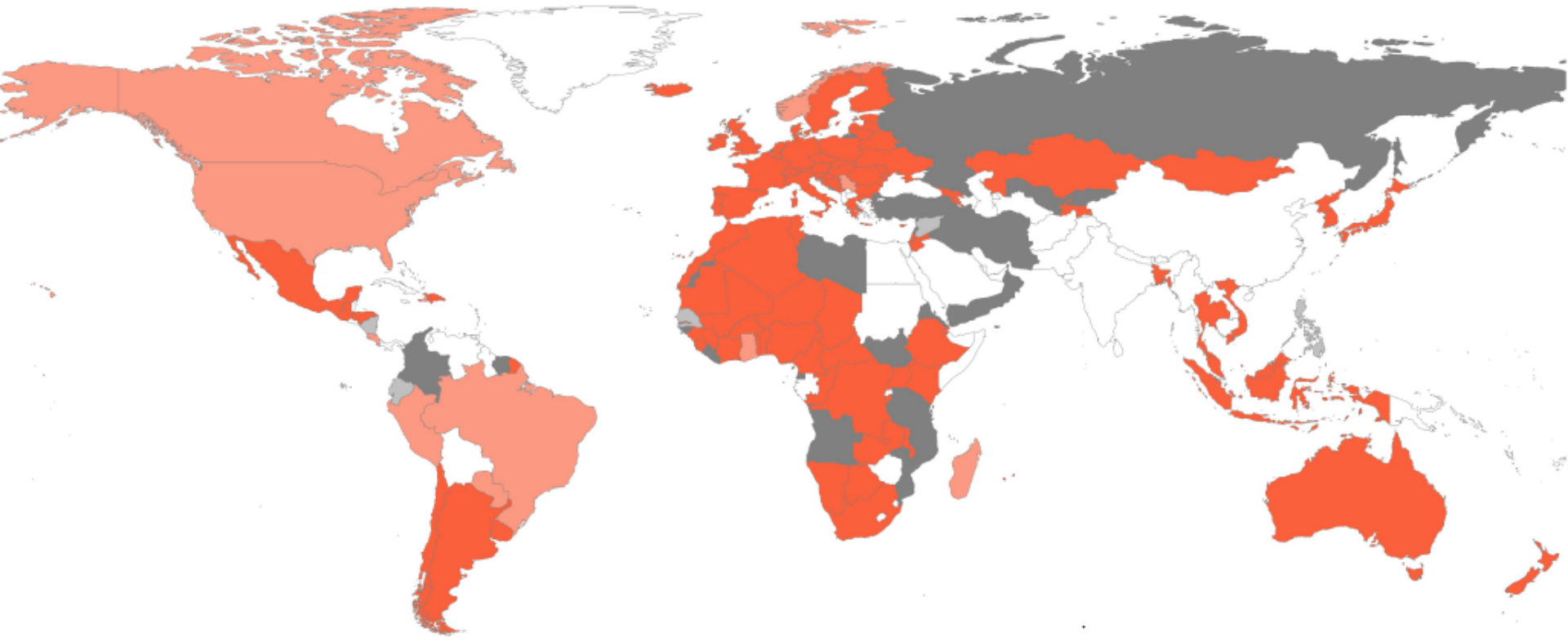
5. Successes show we can do it!



RESEARCH PROGRAM ON
Climate Change,
Agriculture and
Food Security



Agriculture in NDC mitigation priorities



- 98 countries ■ GHG reduction target specifically includes agriculture
- 13 countries ■ Economy-wide GHG reduction target
- No GHG reduction target, or excludes agriculture
- Joined/ratified but no NDC
- Not joined/ratified



RESEARCH PROGRAM ON
Climate Change,
Agriculture and
Food Security



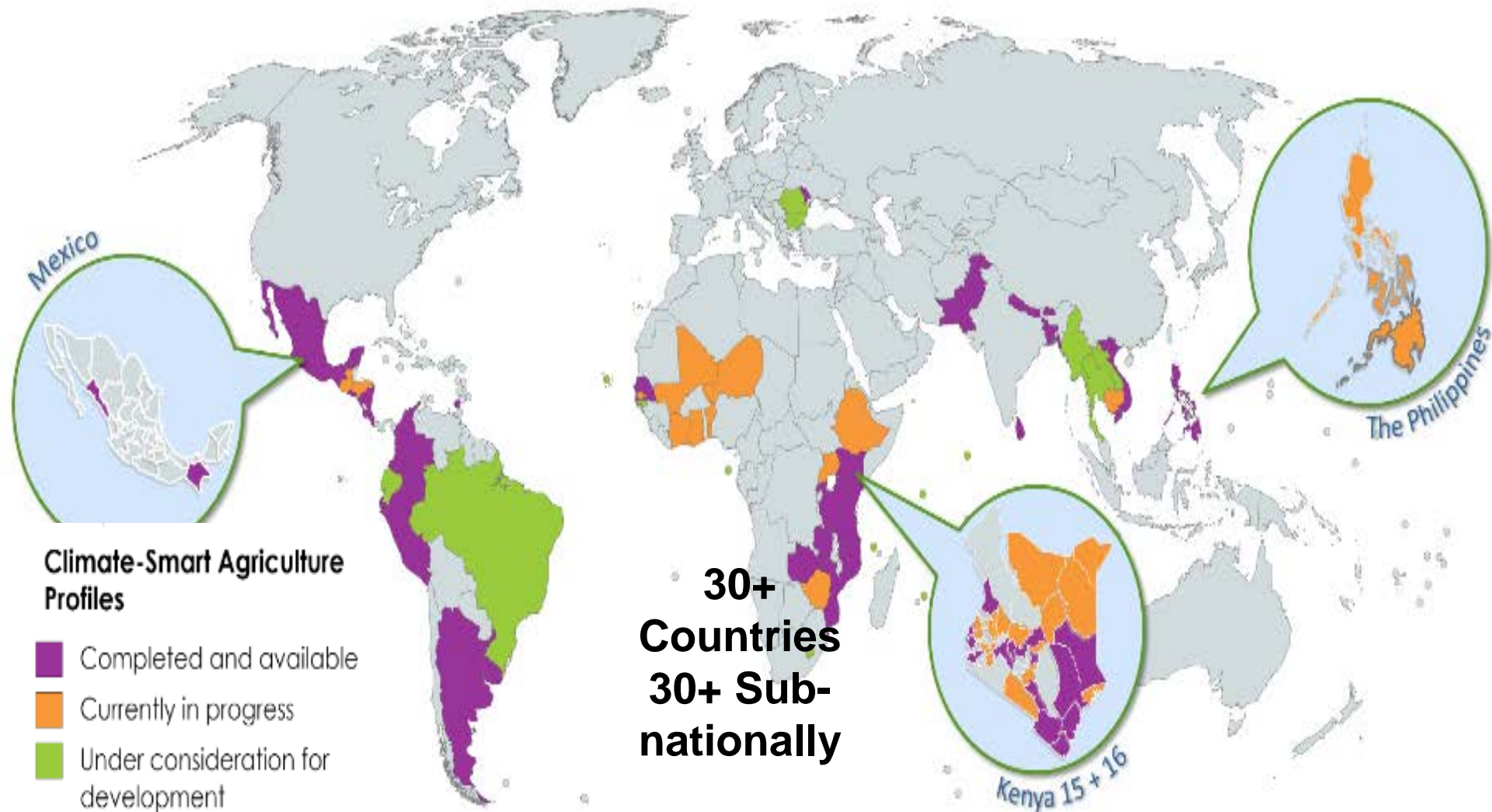
March 6 2018

Helping set priorities

Climate Smart Agriculture Profiles



RESEARCH PROGRAM ON
Climate Change,
Agriculture and
Food Security



Getting action on the ground (e.g. Niger)



RESEARCH PROGRAM ON
Climate Change,
Agriculture and
Food Security



Crop varieties (millet, sorghum, cowpea, vegetables)



*Water
harvesting*



**Climate-smart
village**

*Carbon
Sequestration,
soil fertility,
agroforestry*



*Climate Information
Services*

Capacity building

Climate Information Services scaling in Senegal

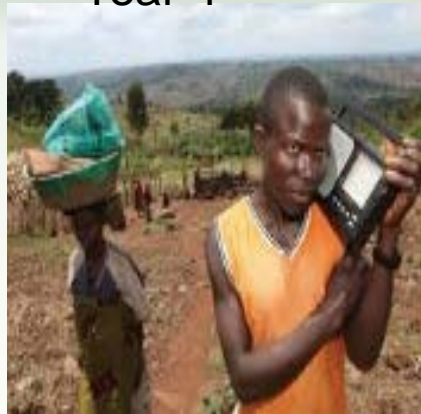
Year 2



ANACIM-Community Radio



Year 4

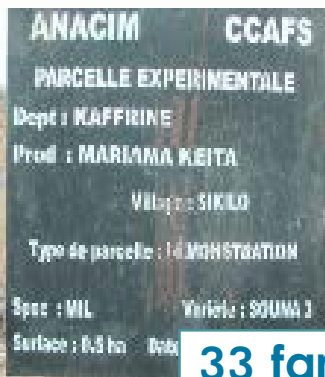


- **3.9 Million**
- Services integrated into National Adaptation Plan

Year 1



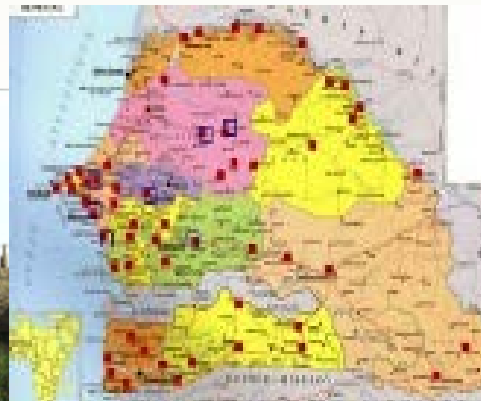
CCAFS-ANACIM



33 farmers
6 villages



Year 5



- **7.4 Million**
- Service suggesting planting times and varietal performance

650,000 insured in sub-Saharan Africa



Now need to get to
100s of millions



WELCOME

to

CLIMATE-SMART AGRICULTURE 101

<https://csa.guide/>

Thank you

www.ccafs.cgiar.org



RESEARCH PROGRAM ON
**Climate Change,
Agriculture and
Food Security**



CCAFS is supported by:



Fund



Australian Government
Australian Centre for
International Agricultural Research



Irish Aid
Government of Ireland
Ireland's commitment
to a world
without poverty
and hunger



Ministry of Foreign Affairs of the
Netherlands



NEW ZEALAND MINISTRY OF
FOREIGN AFFAIRS & TRADE
MANATŪ AORERE



Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra

Swiss Agency for Development
and Cooperation SDC



UKaid
from the British people

USAID
FROM THE AMERICAN PEOPLE

