





# Reimaging Future Food Systems: zero hunger, X2 incomes, < C02

### Reimaging future food systems by 2030

- 1. What are the most effective ways to achieve zero hunger, double incomes of smallholder farmers, AND protect the climate?
- 2. What would it cost?



nature research

and the second s

**Highest scientific standards** 

**CGE** modelling

**Artificial intelligence** 

# Bring together a new generation committed to evidence-based decisions



Dr. Saweda
Liverpool-Tasie
Market links for
farmers



Dr. Isabelle Baltenweck Livestock feed interventions



Dr. Vincent Ricciardi Water scarcity



Supported by 84 researchers from 25 countries & 53 organisations



Jaron Porciello Synthesis and Al



Dr. Maricelis Acevedo Climate resilient crops



Dr. Tanya Stathers Post harvest loss





Dr. Valeria
Piñeiro
Policy incentives
for sustainable
practices



Dr. David Laborde Debucquet Economic modeling



Dr. Livia Bizikova Farmers organizations



Dr. Eugenie Maiga Youth employment





Dr. Leslie Lipper Understanding tradeoffs for SDG2



Carin Smaller
Policy relevancy



### **Guided by** leading food experts



Chicago Council



Morrison, FAO



Joachim von Braun, ZEF



Segenet Kelemu, icipe



Paul Winters, University of Notre Dame



Uma Lele, Independent Scholar



Richard



Leslie Lipper, Florizone, IISD Cornell University



Lindiwe Majela Sibanda, Food Systems Champion



Will Martin, **IFPRI** 



Maximo Torero, FAO



Li Xiaoyun, China Agricultural University



Nicola Randall, Harper **Adams University** 



**Boaz Blackie** Keizire, AGRA



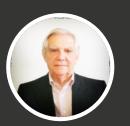
Mario Herrero, **CSIRO** 



Njuguna Ndung'u, AERC



Ruerd Ruben, Wageningen



Martin Piñeiro, **Argentina Council on** Agriculture



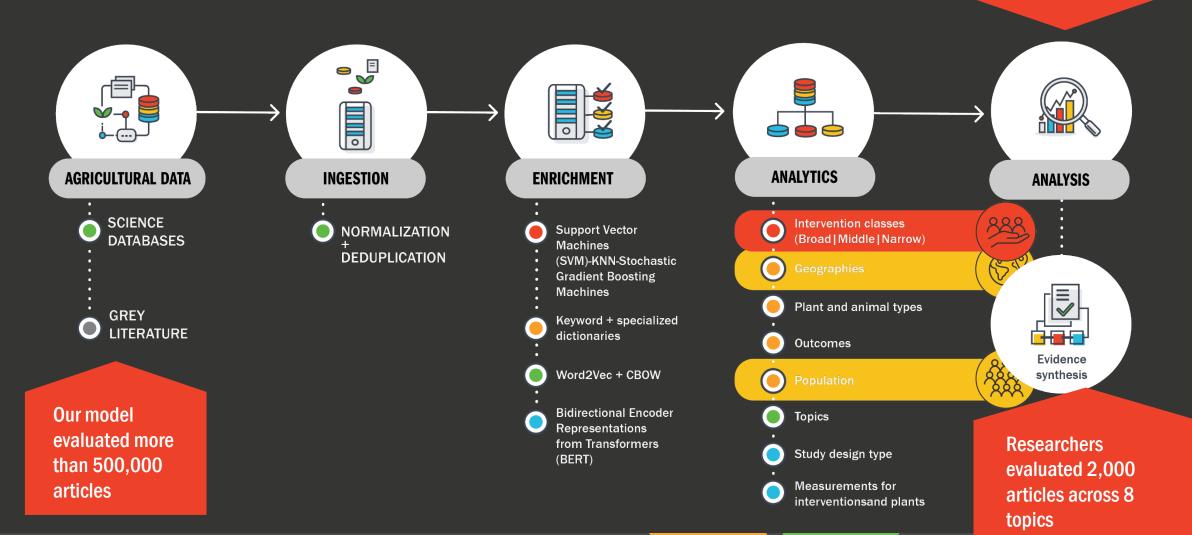
Prabhu Pingali, **Cornell University** 



Ronnie Coffman, **Cornell University** 

### Use AI to scan half a million papers

Researchers evaluated more than 100,000 articles

















SDG 2.1



**SDG** 2.3



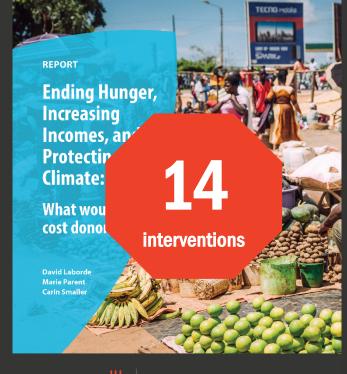
2.4

And a CGE model to estimate the costs

### Publish the collection

### **Sustainable Solutions to End Hunger**



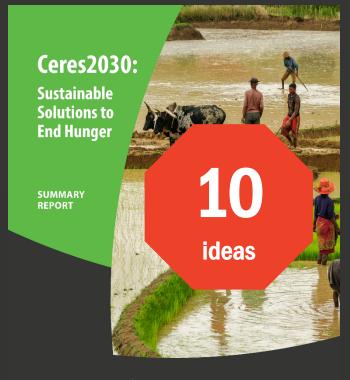




















### We need to do many things, so let's be organized



#### ON THE FARM

Interventions provided directly to farmers, including farm inputs, R&D, improved livestock feed, and irrigation infrastructure.



### **FOOD ON THE MOVE**

Interventions to reduce post-harvest losses, including storage, to improve returns from sales, and to support the mix of services provided by SMEs, such as cooperatives, traders, and processors.



### EMPOWER THE EXCLUDED

Interventions related to social protection, institutions such as farmers' organizations, and education through vocational training.

### 8 papers

ZERO **HUNGER** 



**ON THE FARM** 

**EMPOWER** THE EXCLUDED

**FOOD ON THE MOVE** 









Farmers' organizations



**Rural youth** education and training.



SMEs in value chains



**Postharvest loss** reduction



The collection has been published open access with **Nature Research** 



**Incentives for** sustainable agricultural practices



Adoption of climateresilient crops

**Feed interventions** 

for livestock

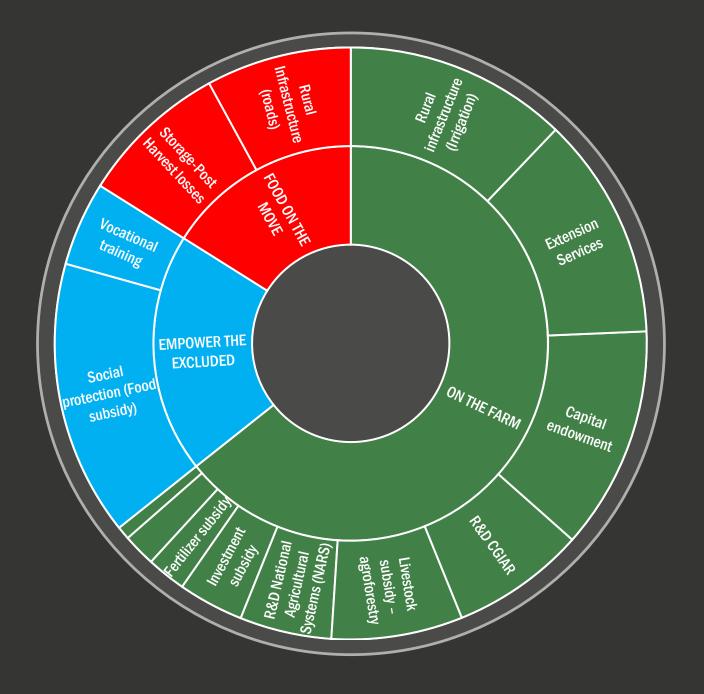
Water scarce

regions



### 14 interventions

Additional spending optimally allocated across 14 interventions.



### 10 ideas

### Here is our roadmap

1. Extension services with R&D, particularly for women.

2. Sustainable practices must be economically viable.

3. Support adoption of climate-resilient crops.

4. Increase research on water-scarce regions.

5. Improve the quantity and quality of livestock feed.

6. Enable participation in farmers' organizations.

7. Offer vocational training in multiple skills.

8. Scale up social protection programs.

9. Expand storage along value chains + more food crops.

10. Support SMEs in the value chain.

# A wake-up call! The role of minimum access to capital



**Human** capital (education & training)





**Knowledge** capital (R&D)



Social capital (networks and farmer's organisations)



Financial capital (finance and credit)





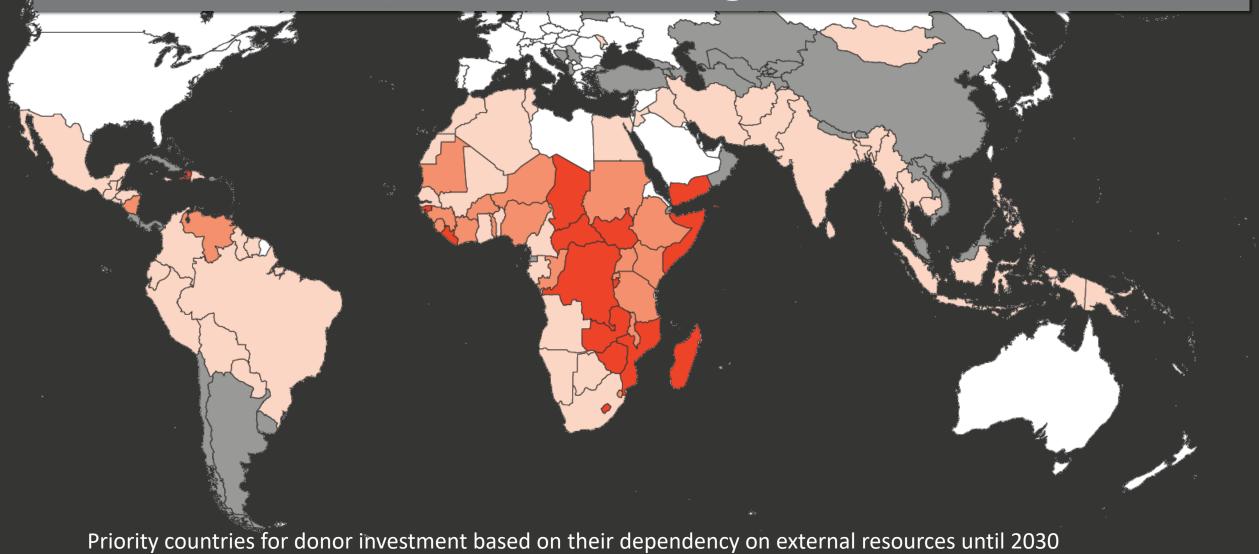
### How much will it cost?

more, per year

Domestic Resources, \$19 billion, 58%

External Resources, \$14 billion, 42%

### Where should we prioritize spending? A Focus on Africa



**High Priority** 





**Low Priority** 



On Target



Not Included in Assessment

### If we mobilize

\$33<sub>B</sub> more, per year

500 million out of Hunger

545
million farmers
income
doubled

Paris
climate
agreement
still respected
for ag



## Thank you

