

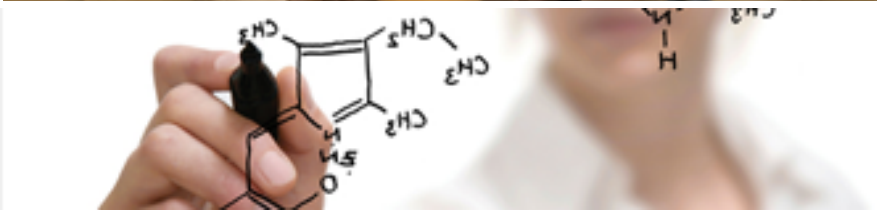
# CARGILL TOUCHES THE WORLD OF BUSINESS



Creating supply chains and shipping products to over 6,000 ports worldwide



Helping farmers optimize yields, store crops and access the best markets



Formulating better-tasting recipes for restaurants and packaged foods



Creating food ingredients that promote health



Managing risk and pricing for farmers and corporate customers

# CARGILL AND STANFORD



- A growing relationship that began 25 years ago
- Cargill builds alliances with designated universities that have the best students, faculties and ideas
- In 2008 Cargill helped fund Stanford's program on Food Security and the Environment
- Our grant helps fund program management, supports teaching and research, and sustains an annual visiting fellows program

FSE  
STANFORD



Olaf Hammelburg



Olaf Hammelburg

# CARGILL AND THE GATES FOUNDATION



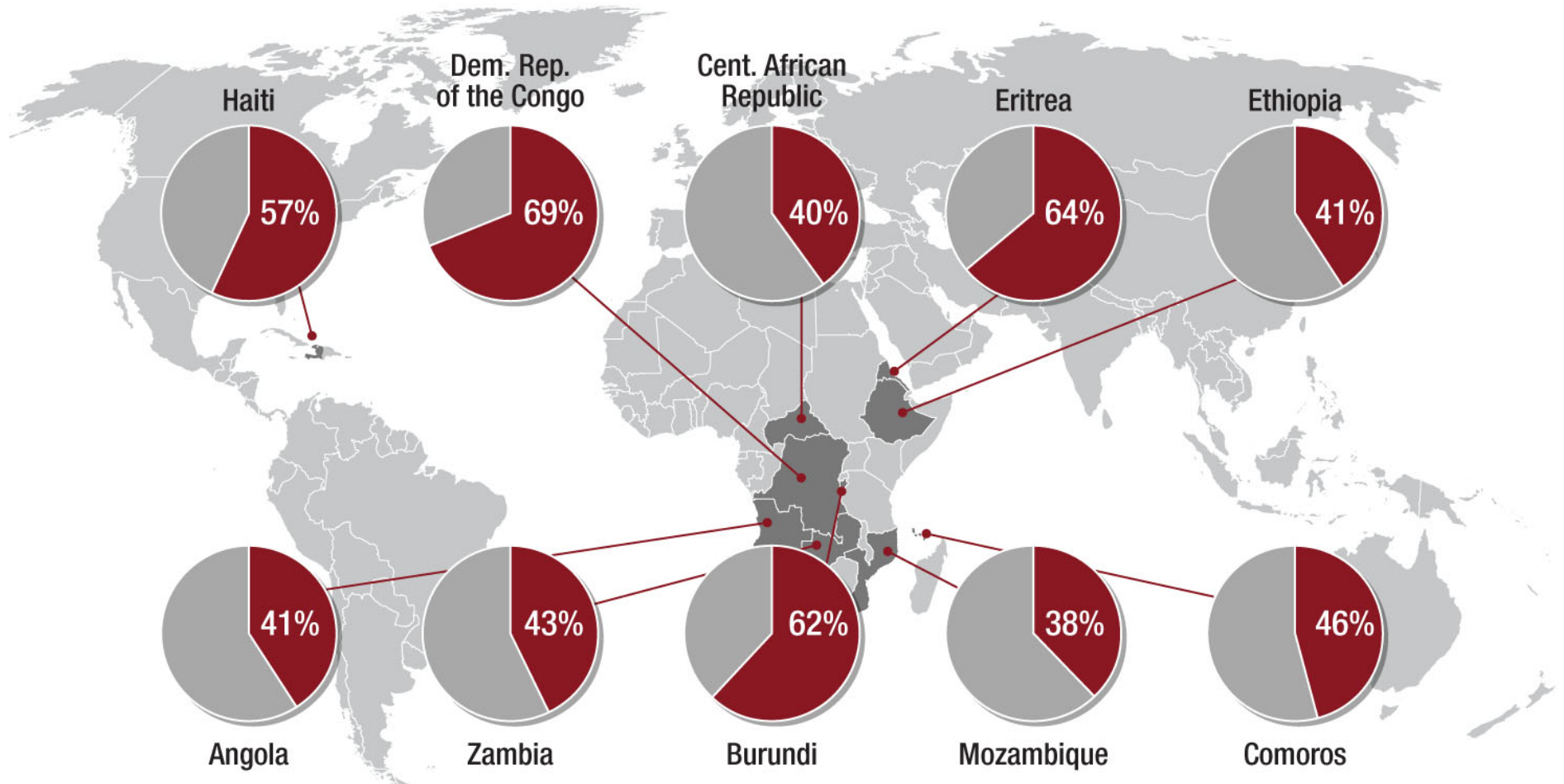


# CARGILL WORKS WITH ALL HOLDERS



# WHERE ARE THE WORLD'S HUNGRY?

## PERCENT OF POPULATION UNDERNOURISHED





## INDIA

**327.7 MILLION  
UNDERNOURISHED**  
**SURPLUS OF CORN,  
SOYA**



## CHINA

**130.4 MILLION  
UNDERNOURISHED**  
**\$2.5 TRILLION  
CASH RESERVE**



CAN WE FEED THE WORLD? **YES.**







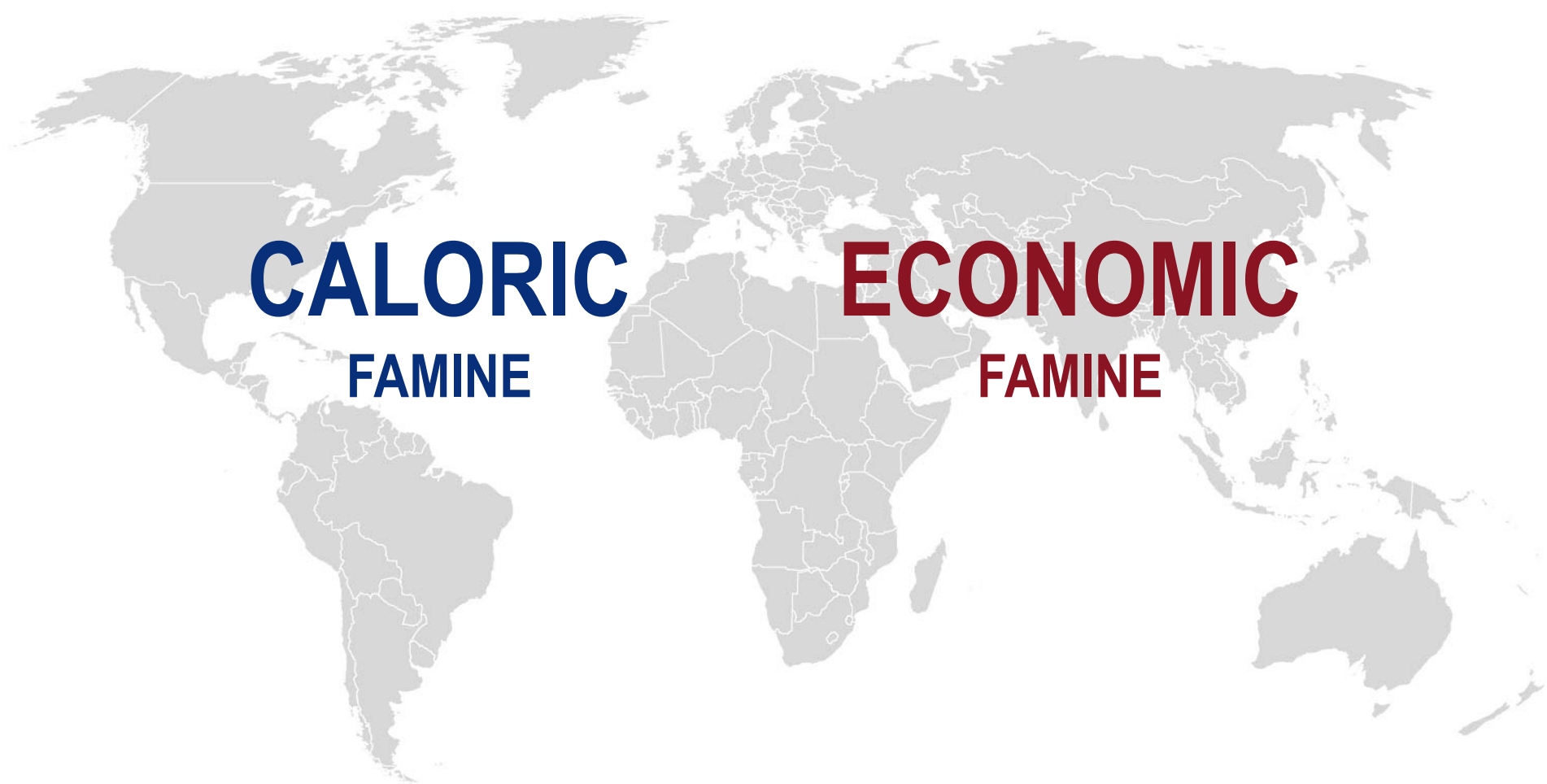
**~1 billion x 200 kcals = 30 Million Tons**

**Malnourished  
people**

**Average daily  
calorie deficit**

**Whole grain**

**1/6 the amount  
of grain we  
convert to fuel**



**CALORIC  
FAMINE**

**ECONOMIC  
FAMINE**





**CALORIC  
SUFFICIENCY**

**SUSTAINABLE  
RURAL  
SOCIOLOGY**

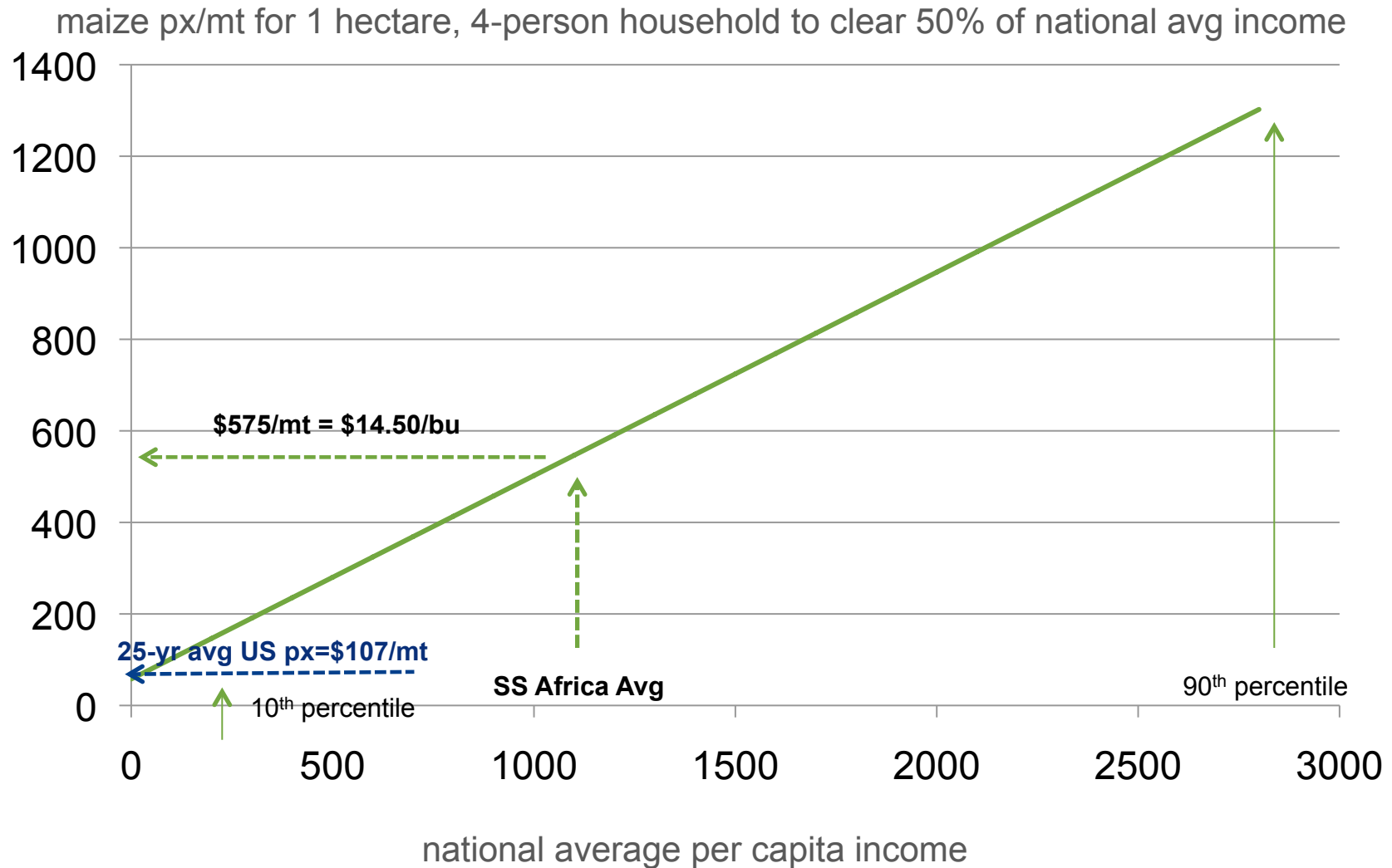
# GHANA BREADBASKET APPROACH



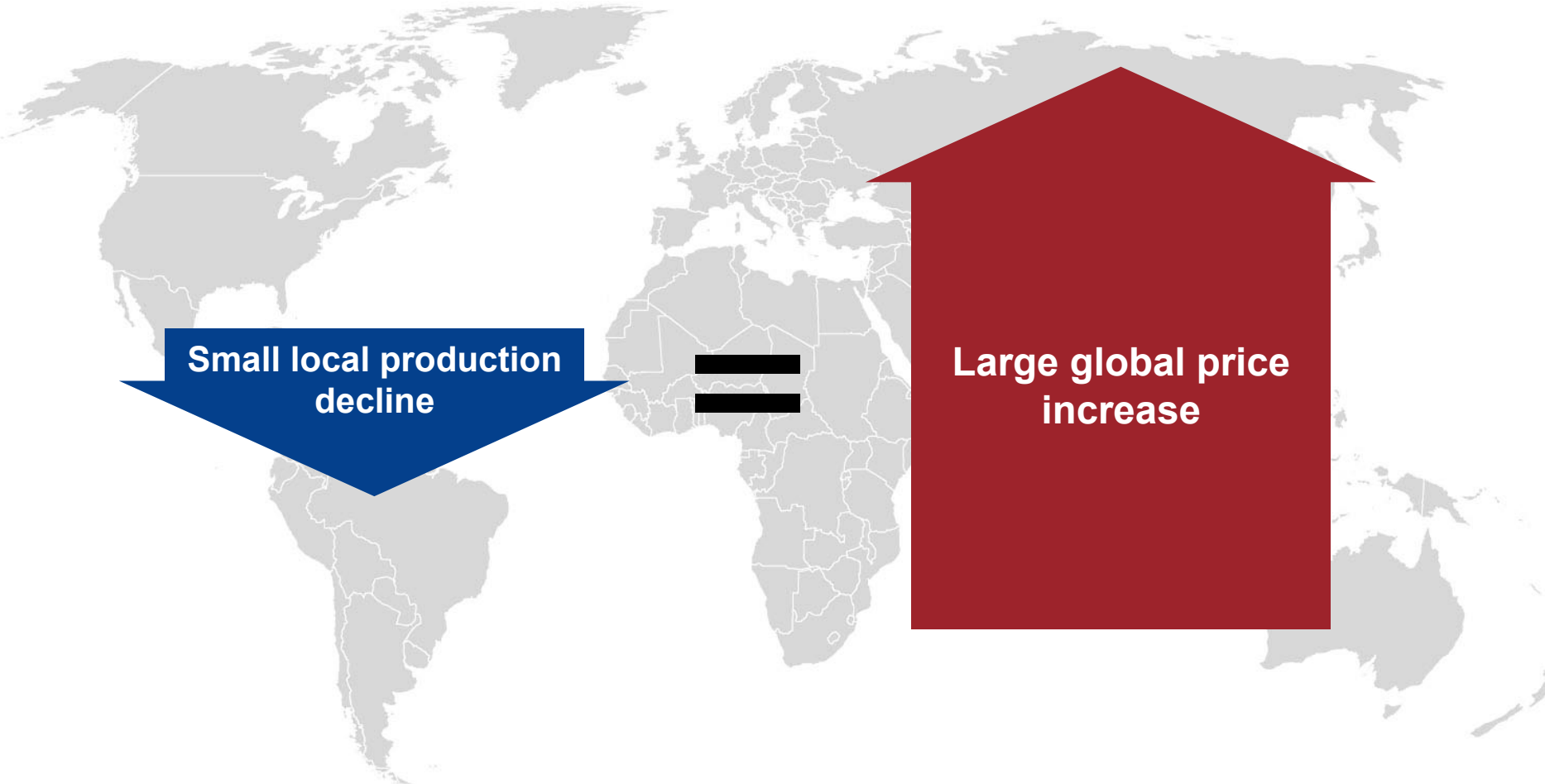
- Concentrate resources in regions with high agricultural promise
- Organize smallholders; aggregate production on large-scale farms
- Double farmer incomes

# MAIZE “SURVIVAL PRICE” FOR SMALLHOLDER

(assumes 25-50% input intensity of US farmer to achieve 4.5 mt/ha yield)

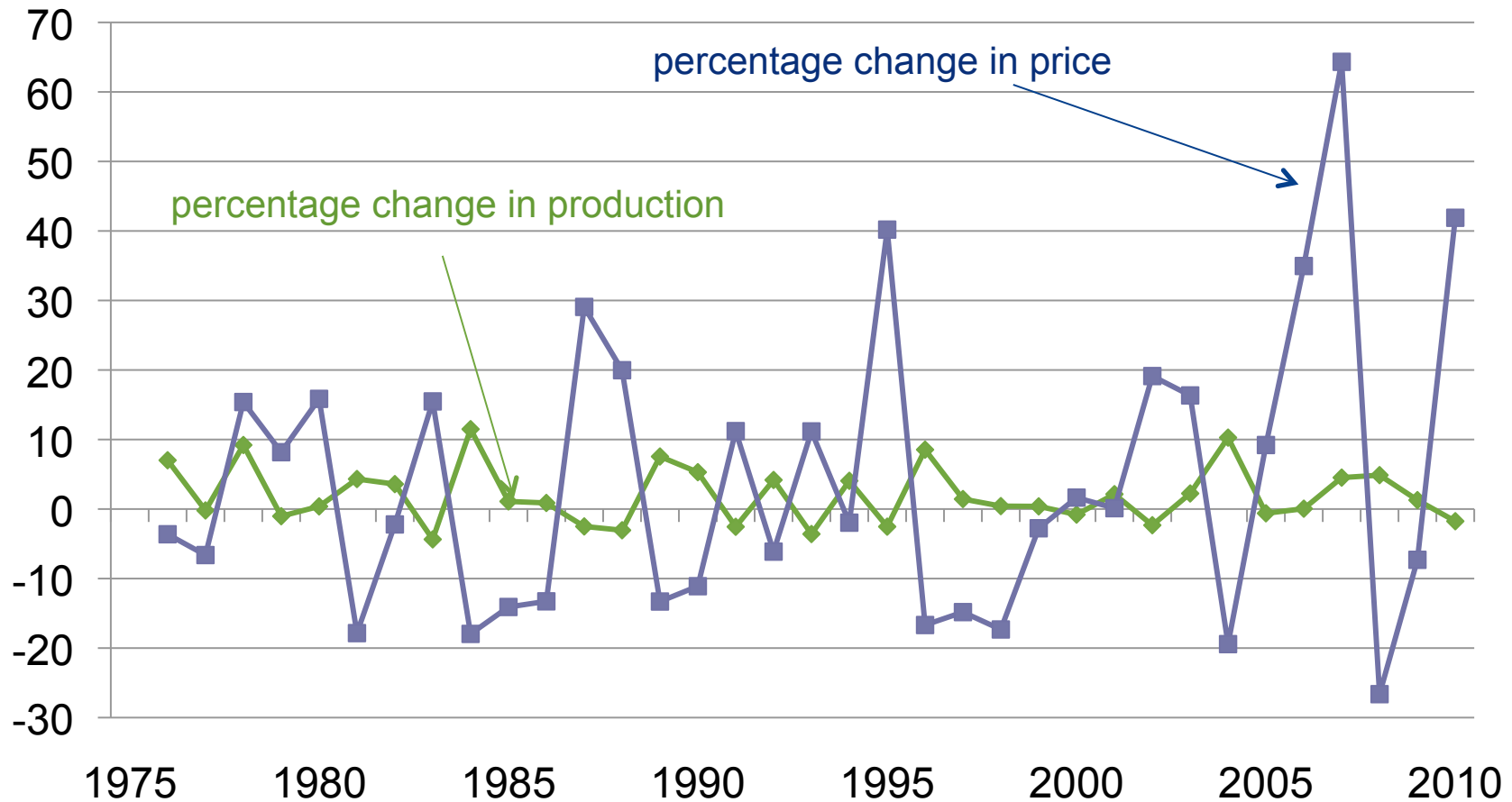


# AGRICULTURE: STATE OF DISEQUILIBRIUM

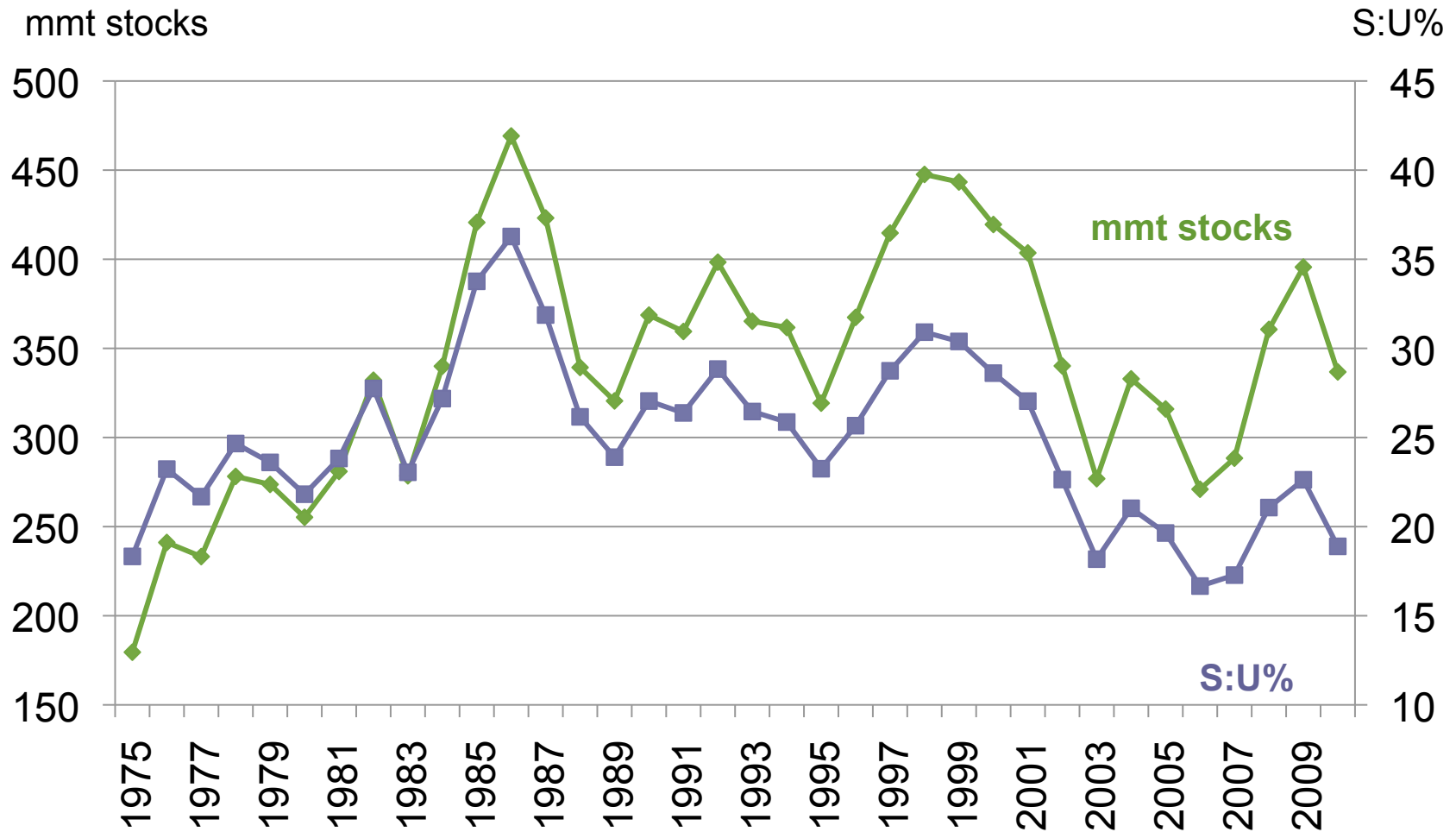


# GLOBAL FOOD PRODUCTION VS. PRICE

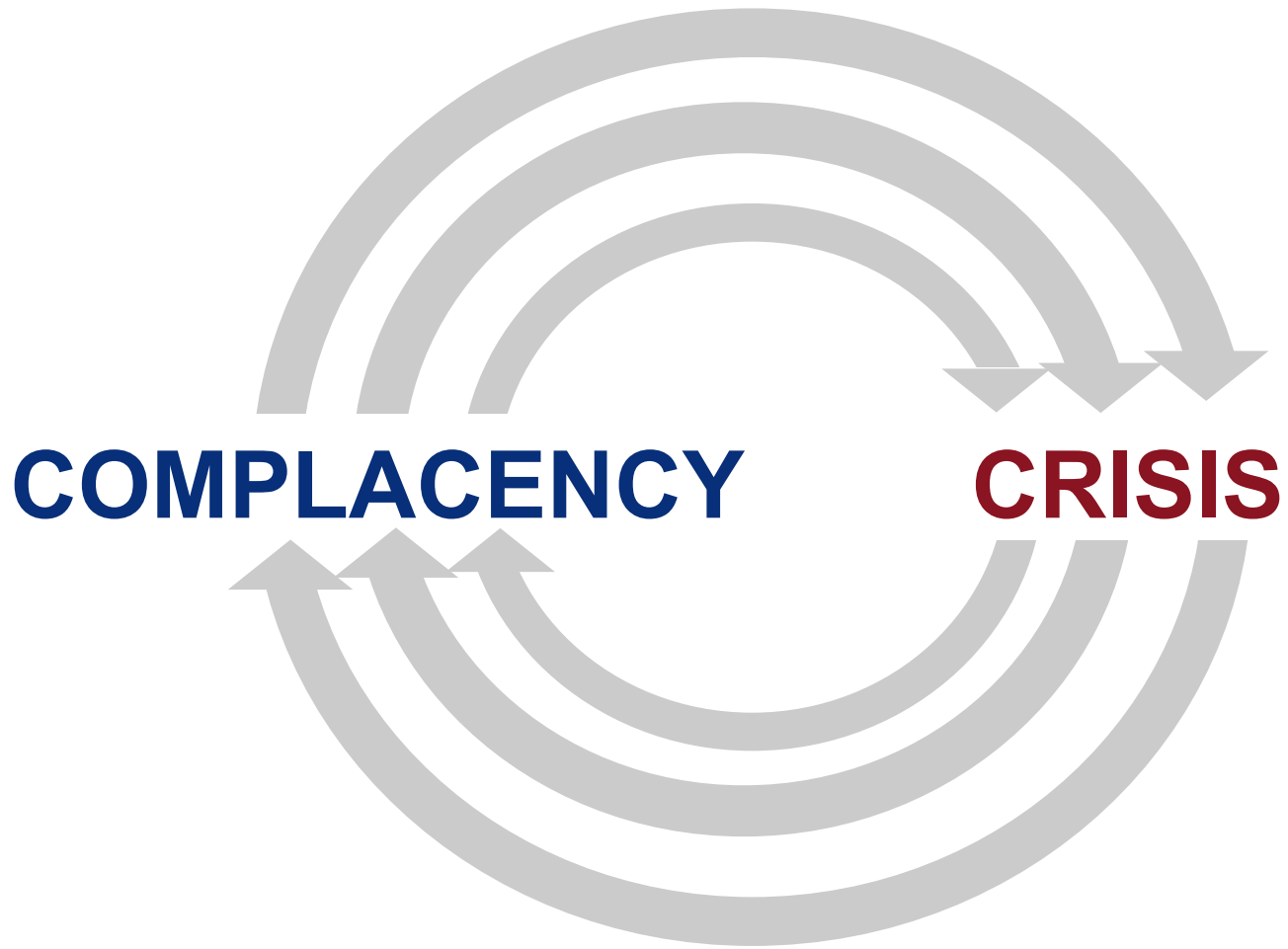
(production of grain, rice, major oilseeds, PO, FSHM vs. corn/soybean/wheat futures price index)



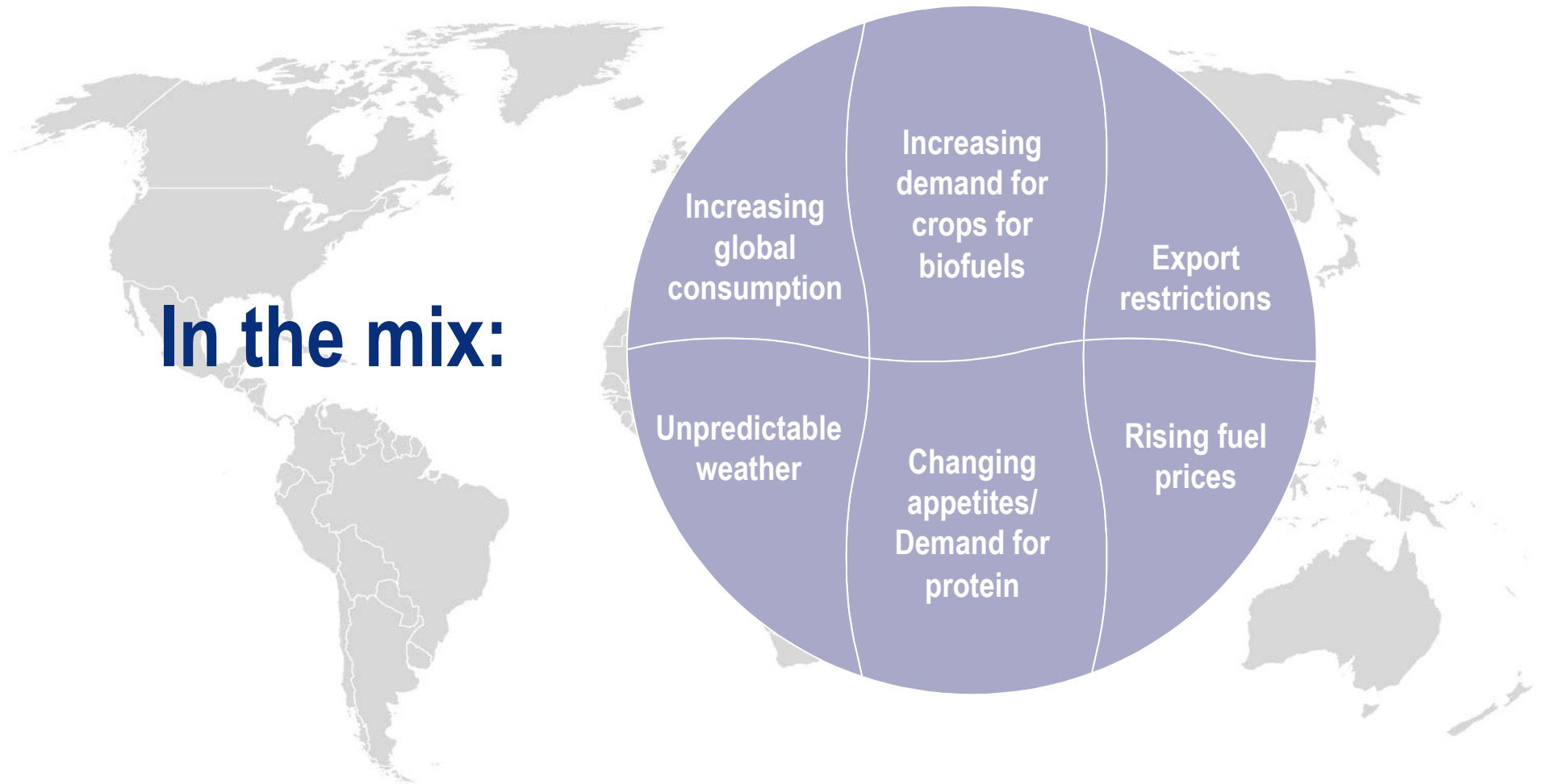
# WORLD GRAIN STOCK AND STOCKS:USE







# COMMODITIES VOLATILITY / FOOD PRICES





# THE POWER OF PRICE



Food Security



# COMPARATIVE ADVANTAGE

The world will always raise the most food the most economically if every farmer plants the right crop for the soil and climate, and then trades with others.



DAVID RICARDO

# RURAL PROPERTY RIGHTS



- Smallholder must have the ability to own the land, have access to it and transfer it to future generations
- Encourages investment in agriculture and provides a more stable system of government
- Property used as collateral

# INCREASED REVENUE CERTAINTY



- Smallholders need a reliable market into which to sell their crop
- Today, they lack the revenue certainty to provide sufficiently and continuously
- Obstacles include: forced to sell at harvest; lack of storage; insufficient capital
- Selling below cost of production discourages further production



# SOLOMONIC PRICE

# OPEN MARKETS



- Open markets create food security
- Governments need to support trade
- Short-term trade restrictions are harmful and increase volatility
- Trade leads to a more nourished world



# THE KEYS TO INCREASING FOOD SECURITY



- Understand the tradeoffs between caloric sufficiency and rural sociology
- Honor comparative advantage
- Clarify property rights
- Provide smallholders in developing countries revenue certainty
- Enable open markets
- Private and public sectors working together



Food Security



