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# Spatial data

- Impacts: GHGs, poverty, water quality, ...
- Policies: production, development, conservation...
- Need to move beyond national statistics

## Resources:

- Climate
- Population
- Land (soil)
- Water
- Cultivars
- Livestock
- Energy
- Other Assets

## Economic and institutional factors:

- Land tenure
- Market Access
- Credit Availability

## Environmental and socio-economic outcomes:

- Poverty
- Greenhouse gas fluxes
- Biodiversity
- Water quality
- Soil degradation



Agriculture and  
Forestry sectors



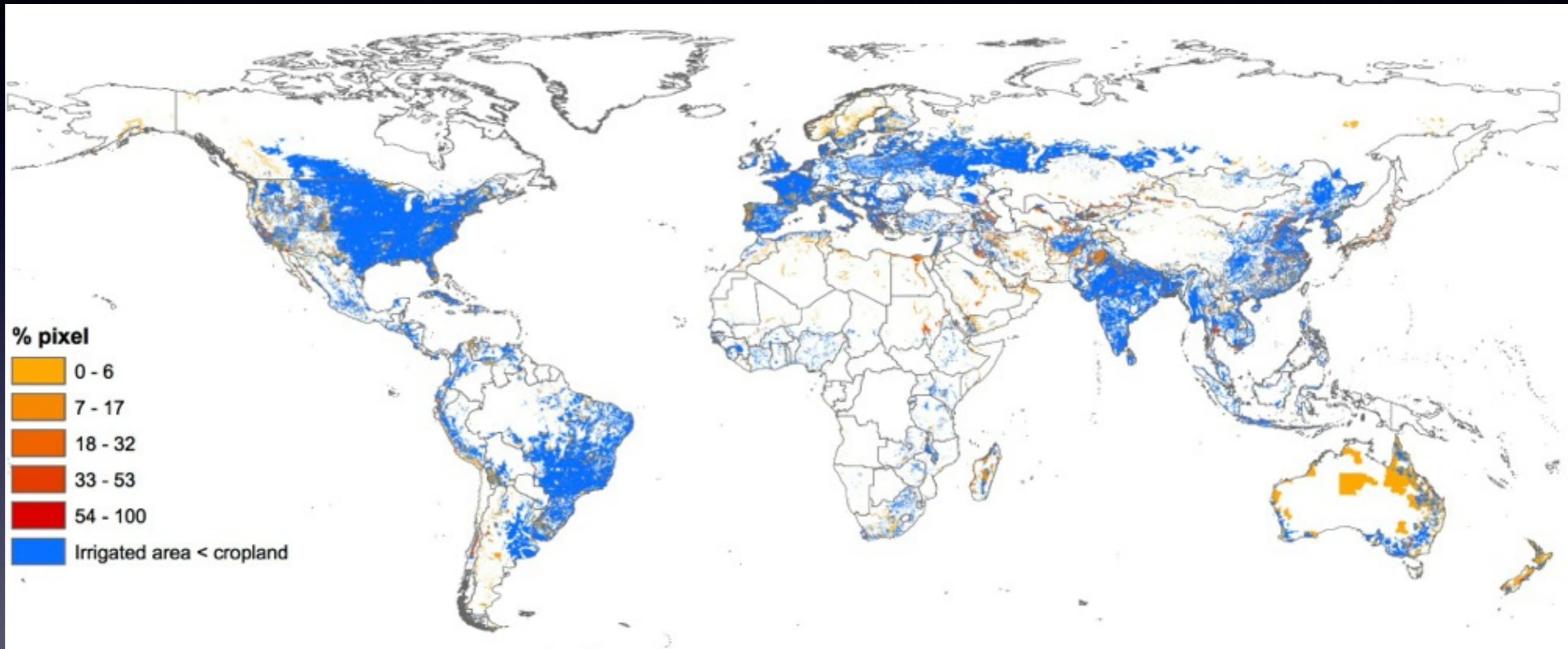
## Management:

- Planting/harvest dates/cropping intensity
- Irrigation
- Fertilization
- Plant protection
- Labor
- Other management practices

## Marketed products:

- Food
- Fiber
- Fuel
- Timber
- Carbon credits

# Comparison of global cropland to irrigation

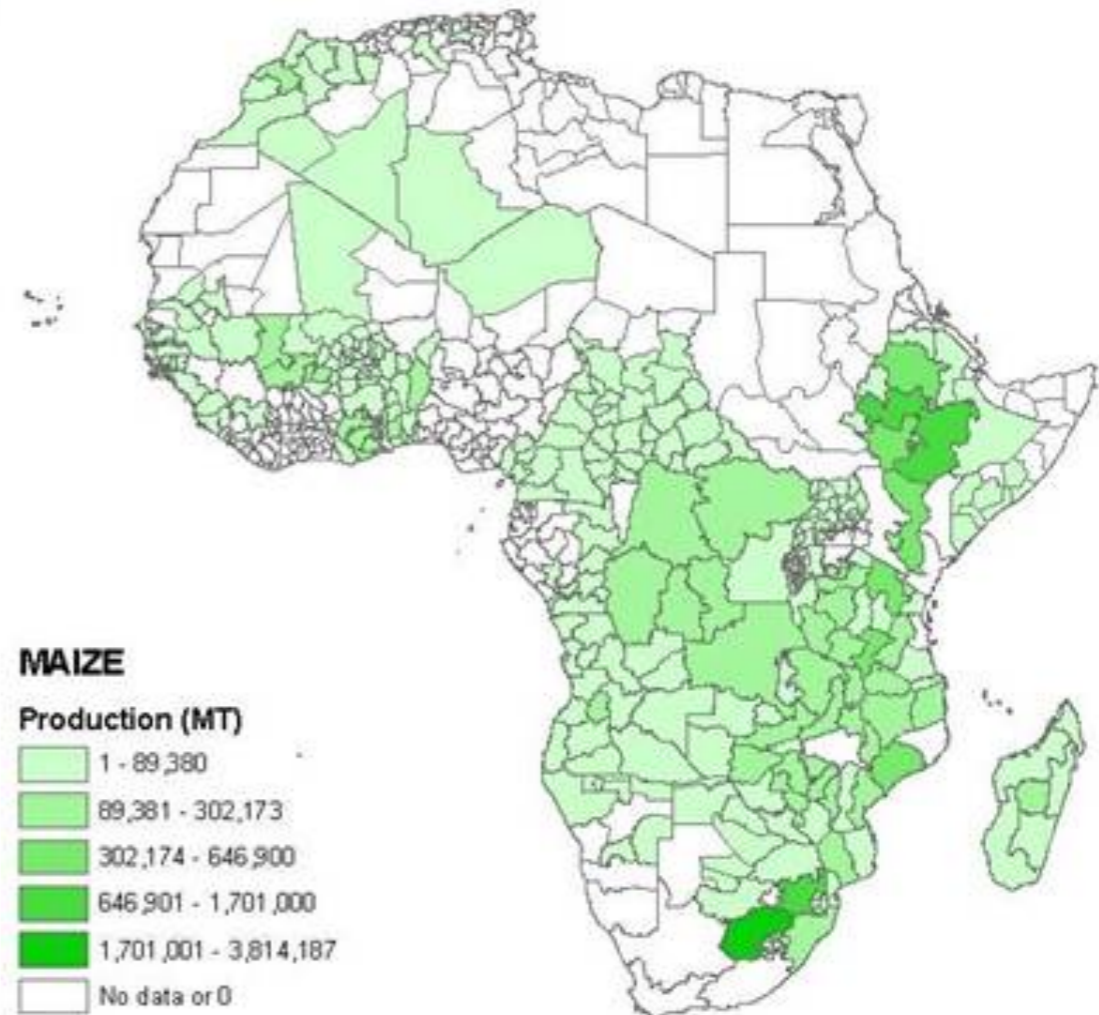
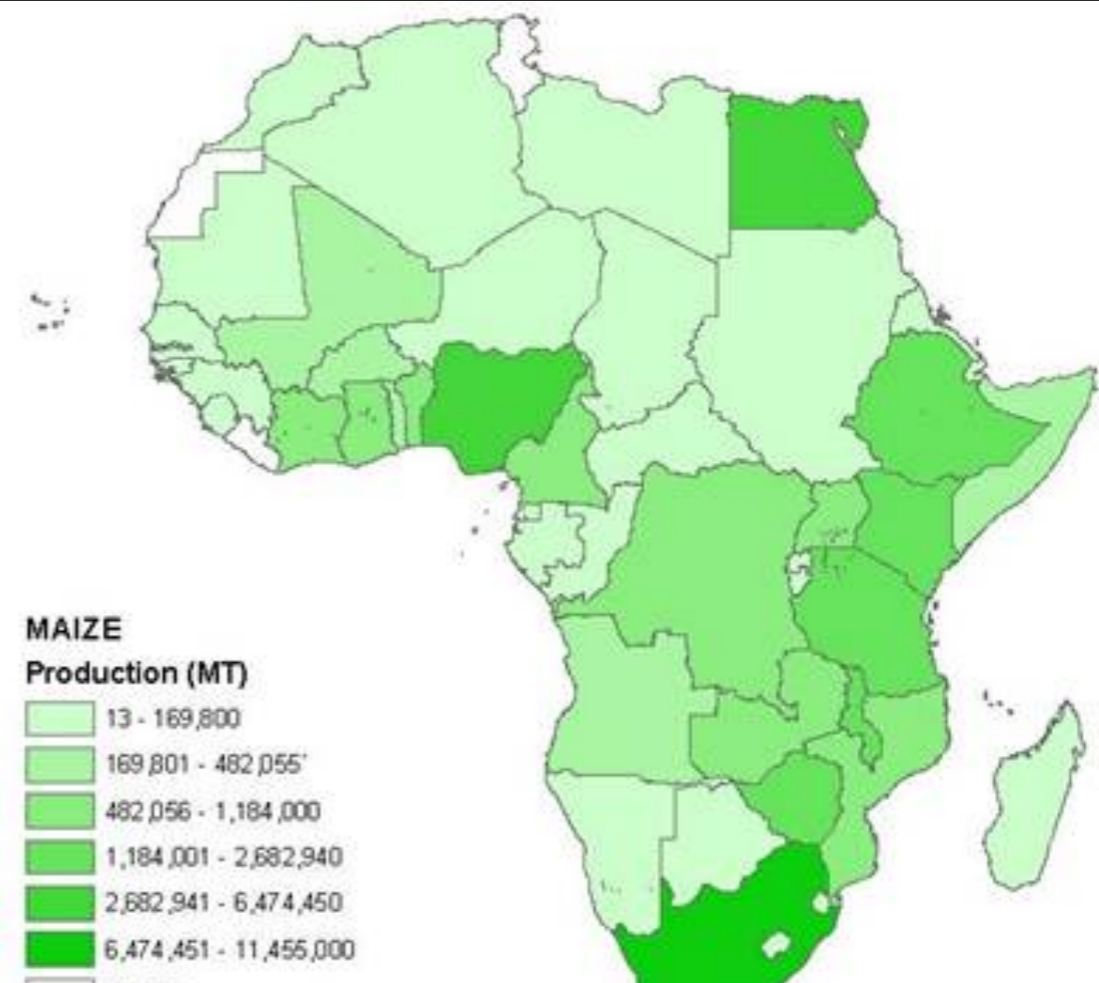


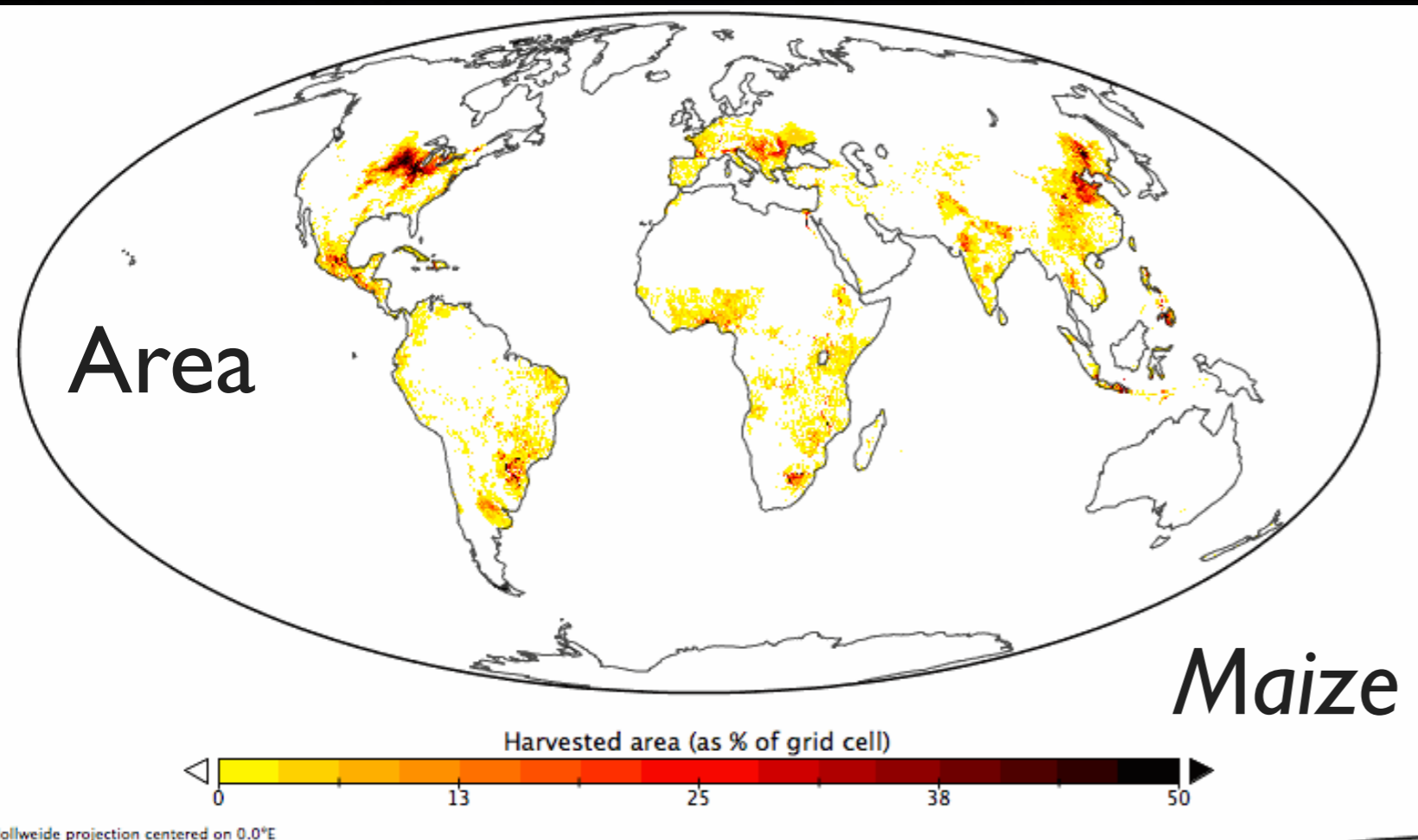
# AgroMAPS

**A global database of sub-national agricultural production statistics**



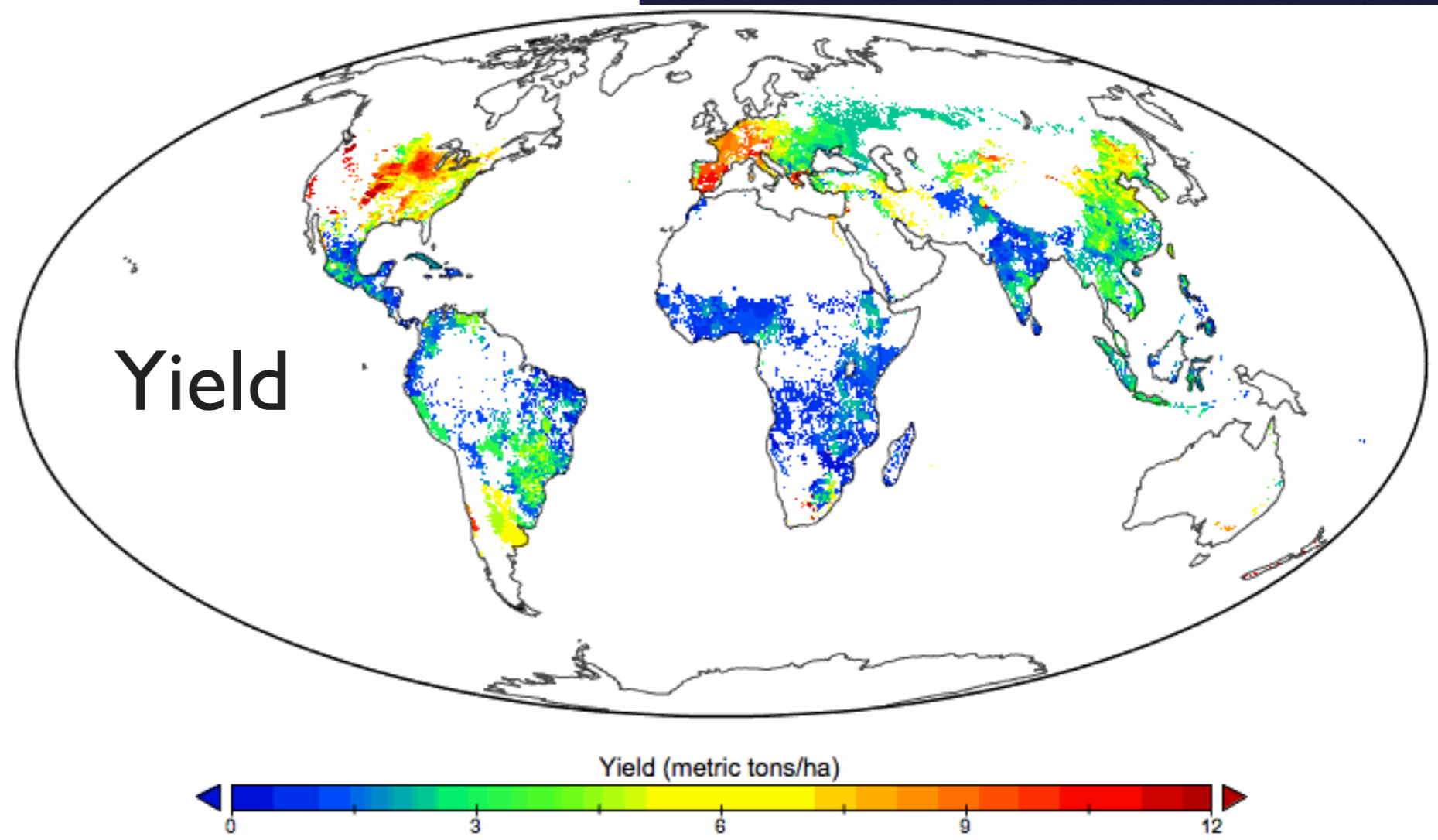
**Millennium Ecosystem Assessment**



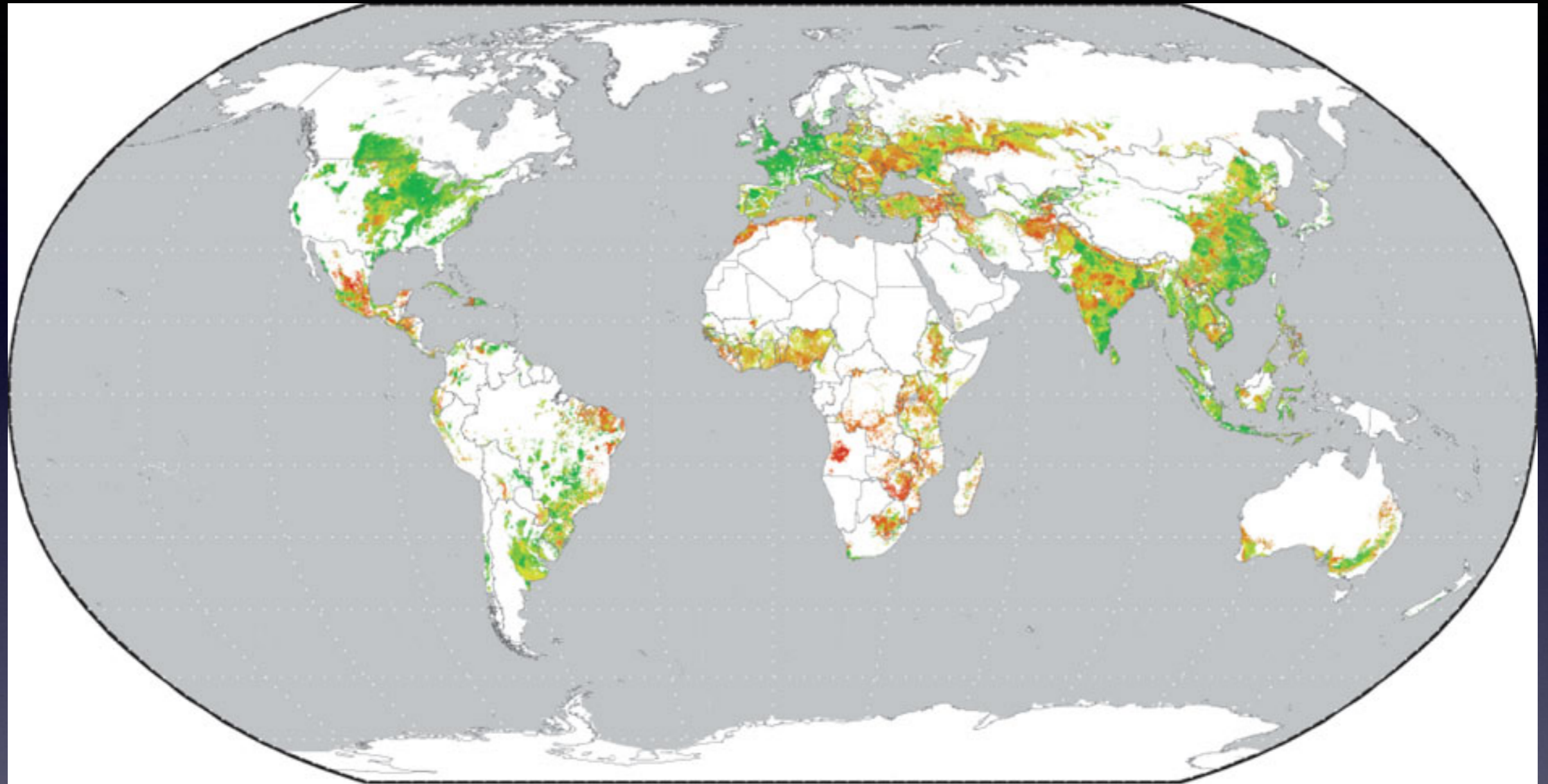


# Area & Yield of 175 crops

*Monfreda et al., 2008*

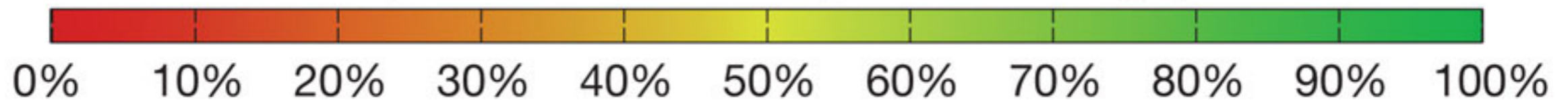


# Close yield gaps

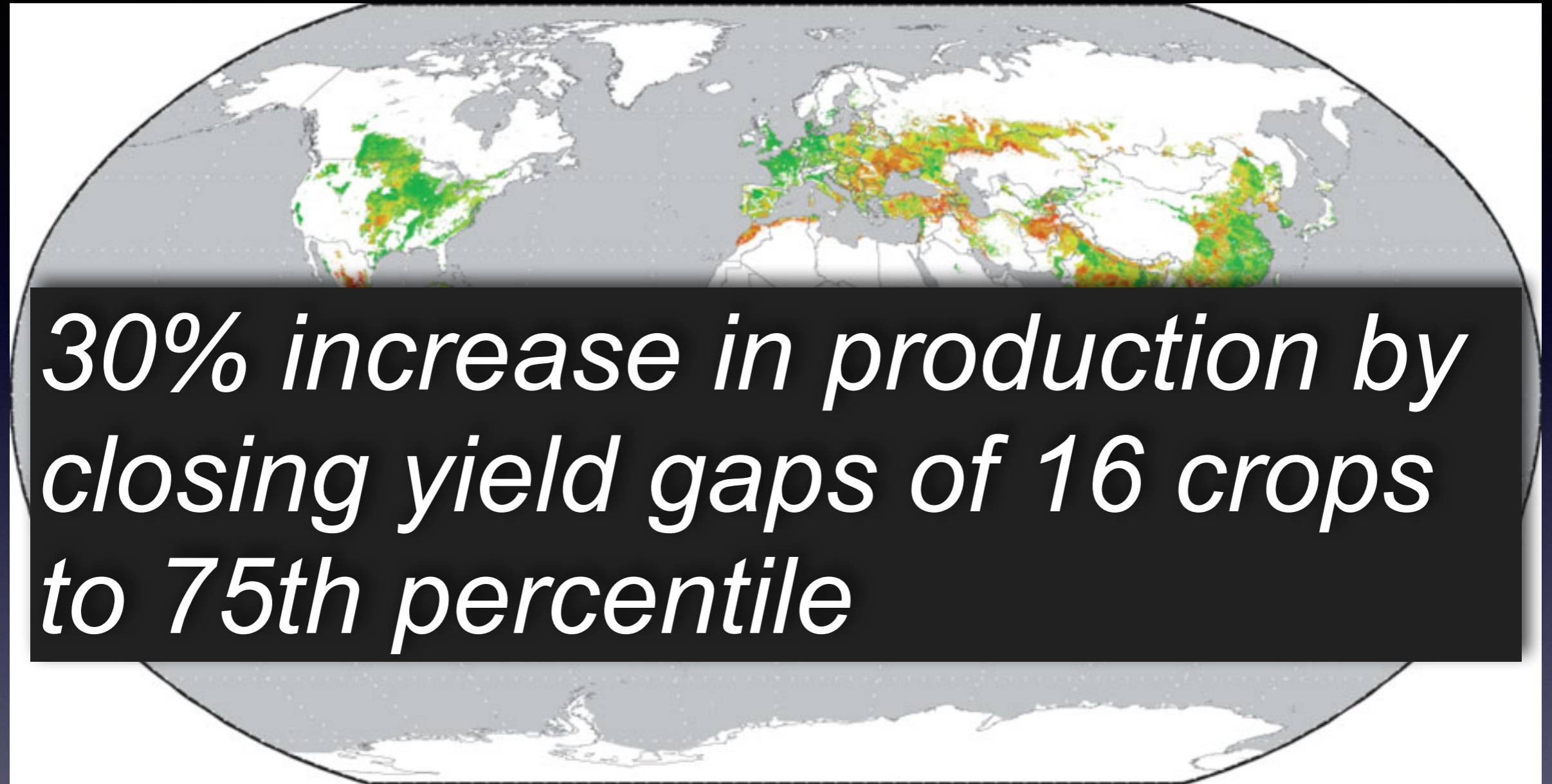


Foley, Ramankutty,  
et al. (2011)

Major cereals: attainable yield achieved (%)



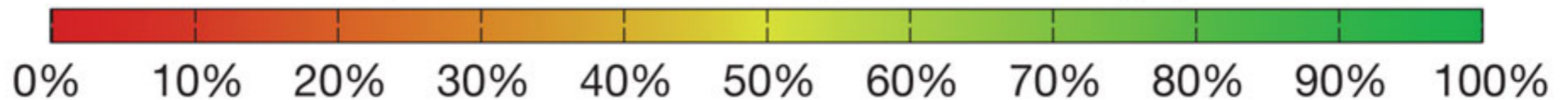
# Close yield gaps



*30% increase in production by closing yield gaps of 16 crops to 75th percentile*

Foley, Ramankutty,  
et al. (2011)

Major cereals: attainable yield achieved (%)



0%

10%

20%

30%

40%

50%

60%

70%

80%

90%

100%



**Primary Citations**

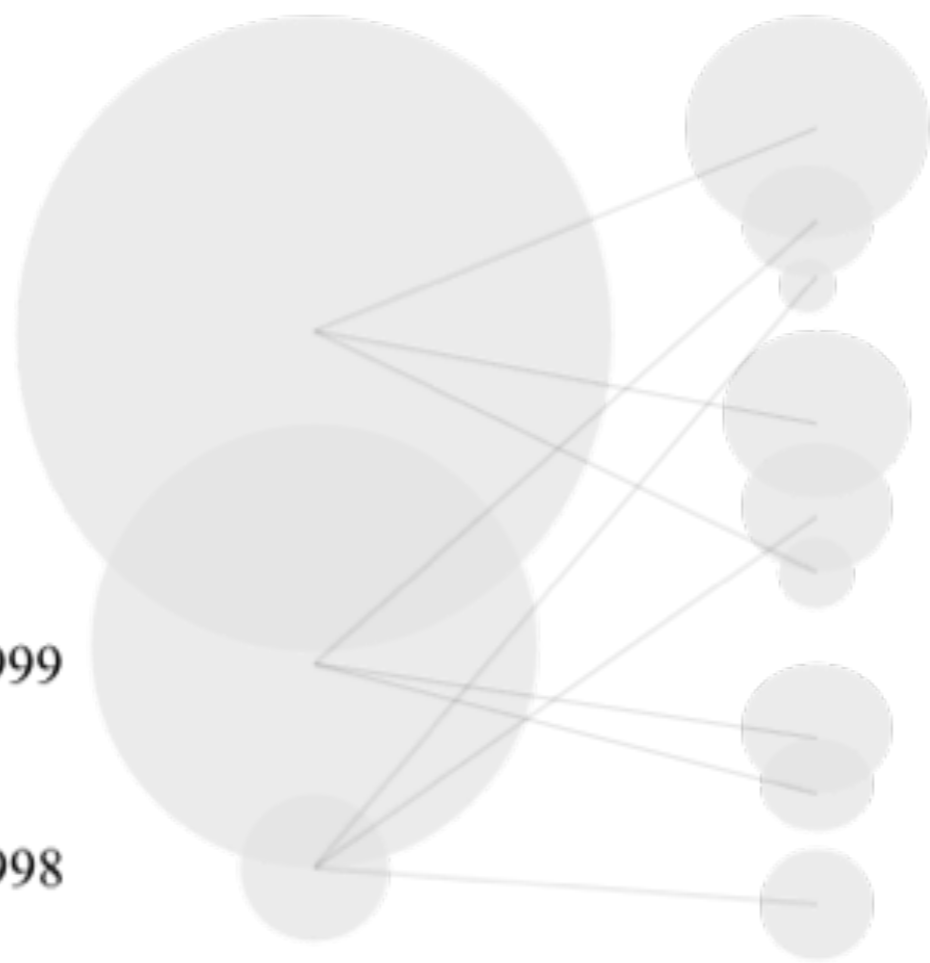
**Secondary Citations**

**Conservation Ripple Effect**

Foley *et al.* 2005

Ramankutty & Foley 1999

Ramankutty & Foley 1998



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- Key institutional partners (DFID, DEFRA, USDA, ILSI)