

CLIMATE-SMART
Agriculture
20**15**



Global Science Conference

March 16-18, 2015
Le Corum, Montpellier France

Climate-smart food systems

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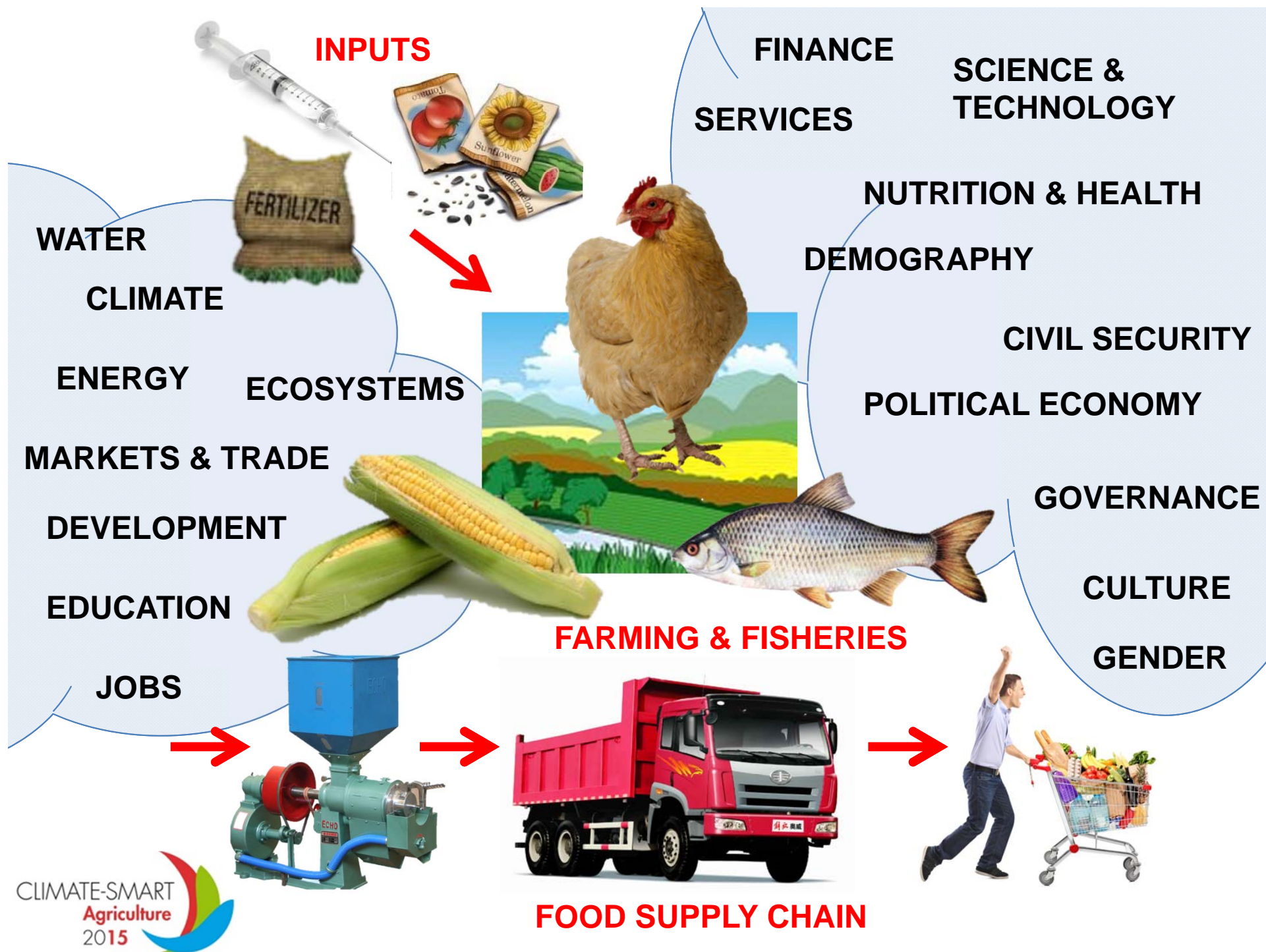


RESEARCH PROGRAM ON
Climate Change,
Agriculture and
Food Security



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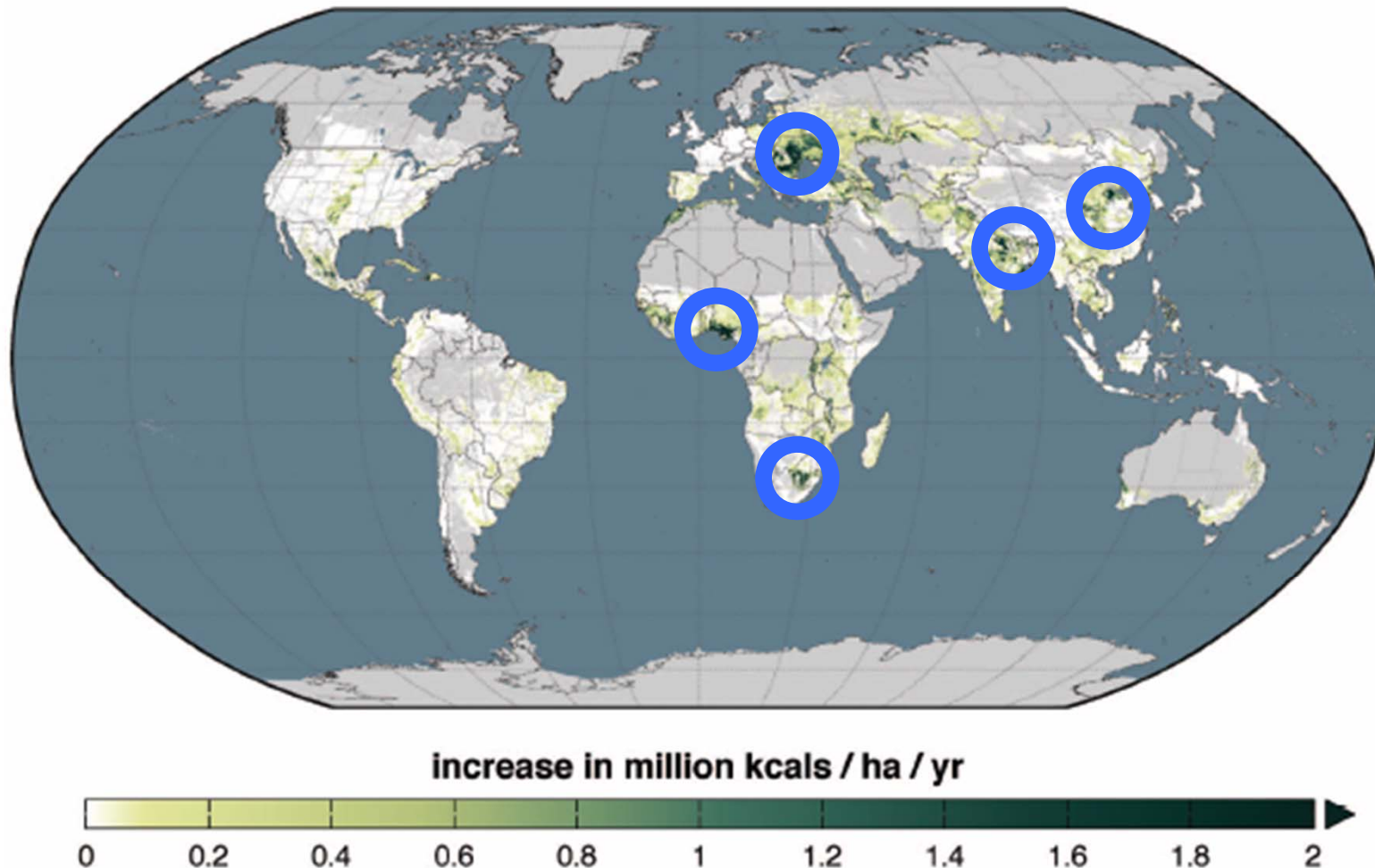




No need for Climate-Smart Food Systems!

Agriculture alone can achieve
all three CSA goals at global level.

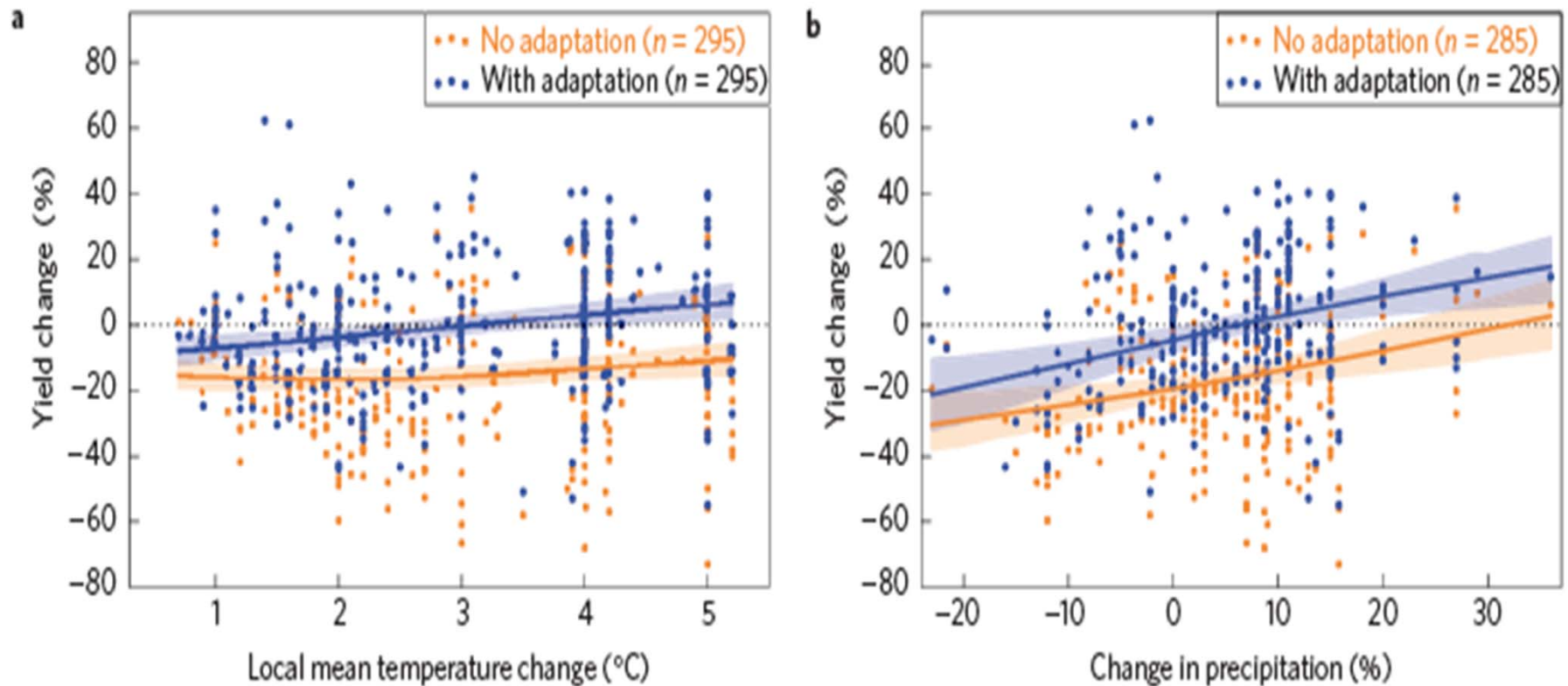
Global productivity & food security



Closing yield gaps by 50% will feed ~850 million people.

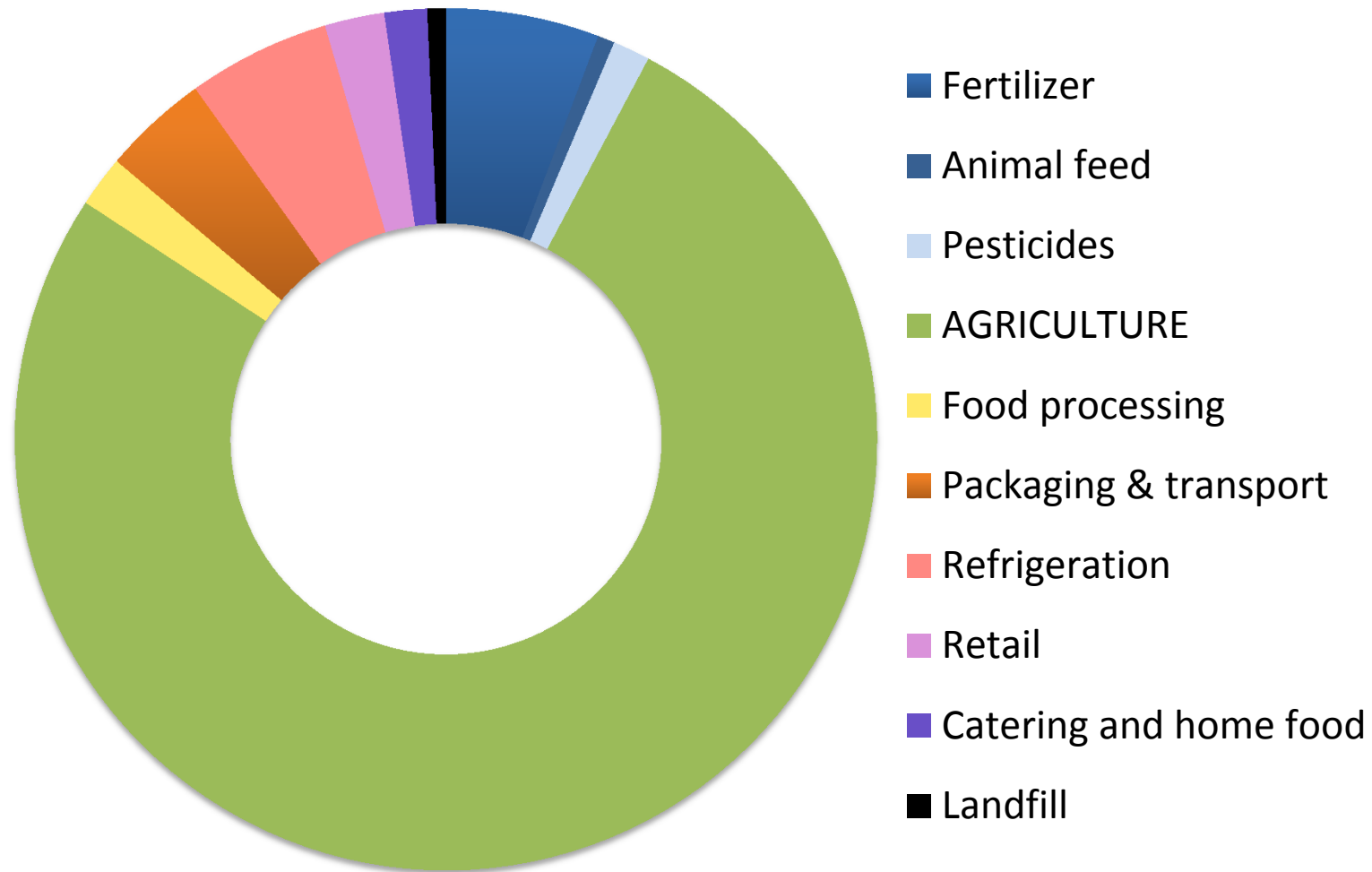
Half of these potential gains are concentrated in 5% of the harvested area.

Global adaptation

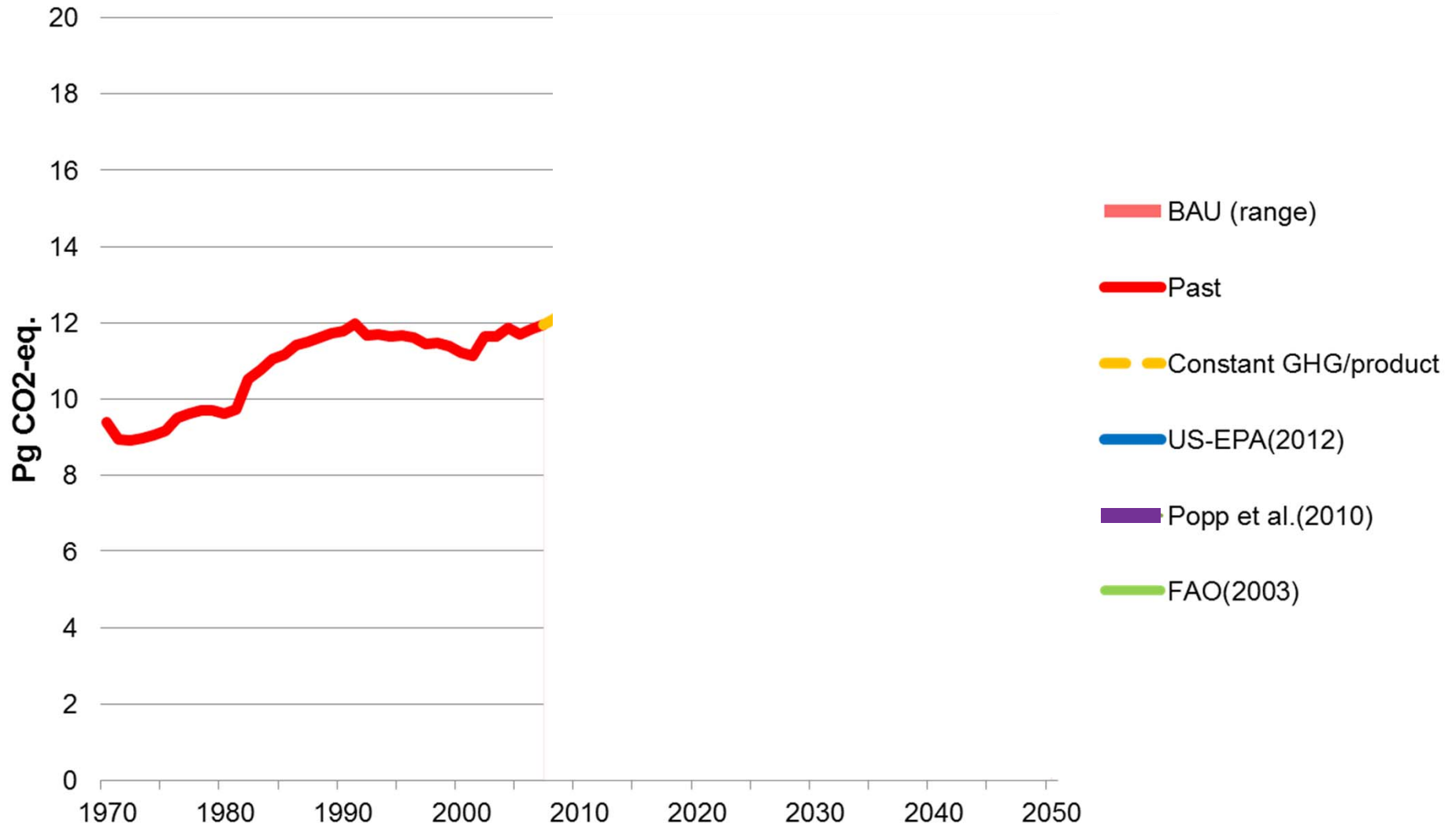


Meta-analysis of model results finds that, globally, adaptations (e.g. different cultivars, agronomy) compensate for crop yield losses due to changes in climatic means.

Global food system emissions

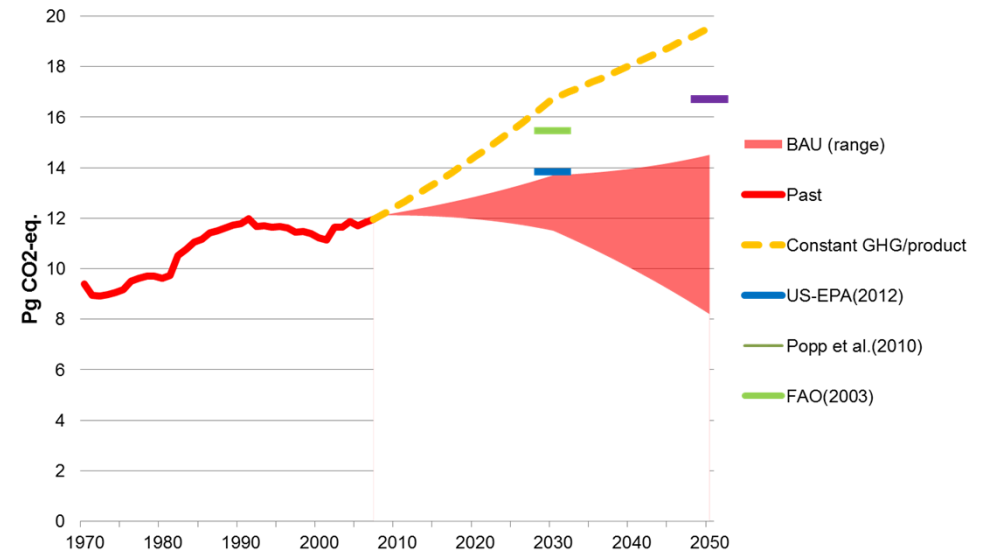
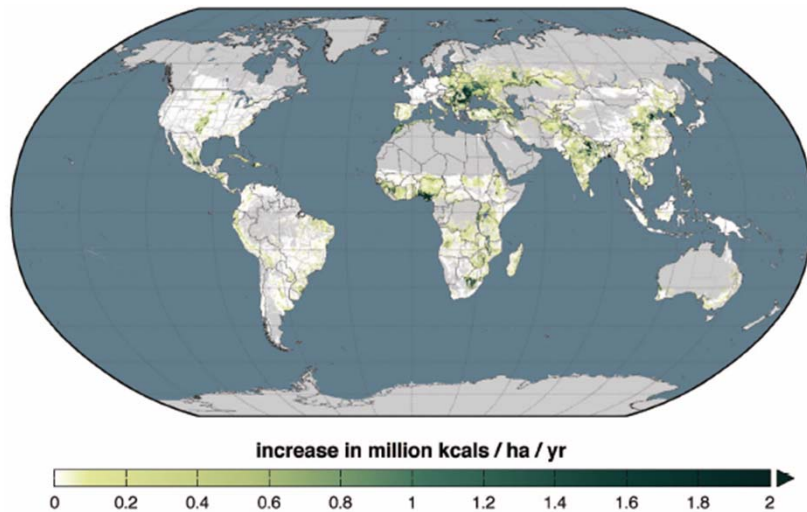


Global trends in ag emissions

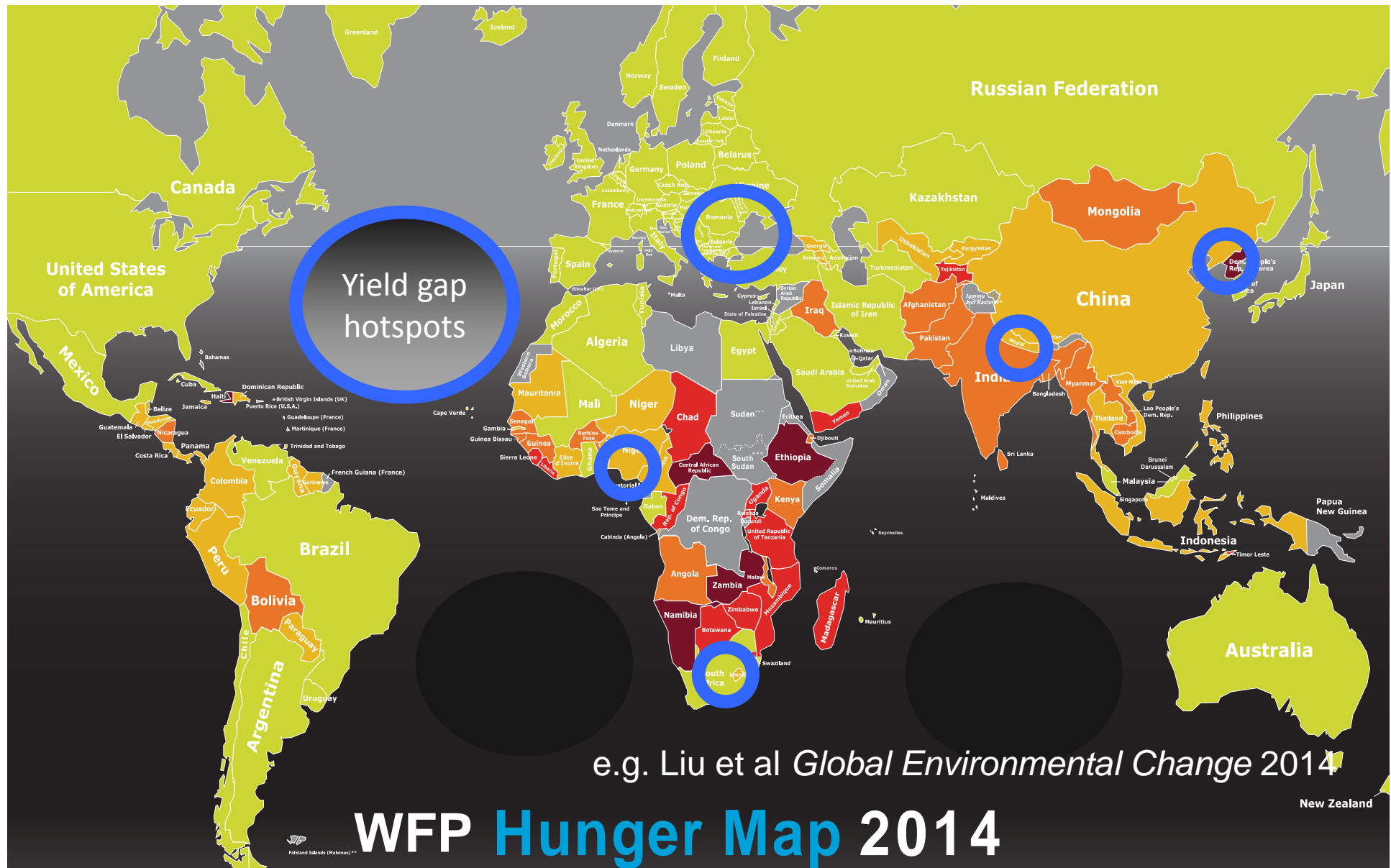




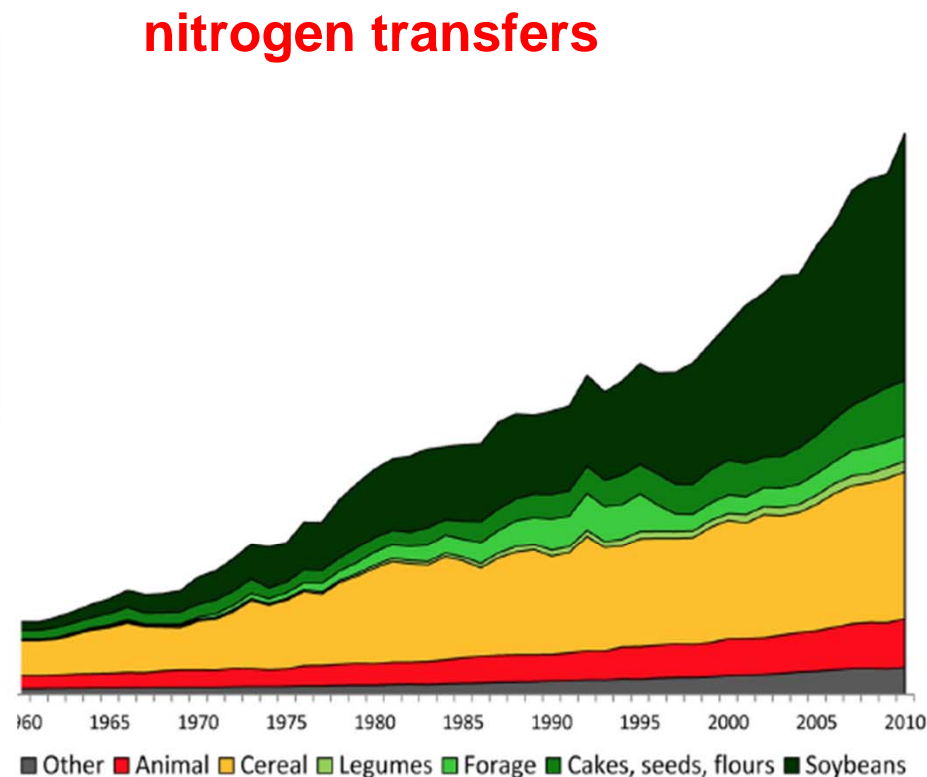
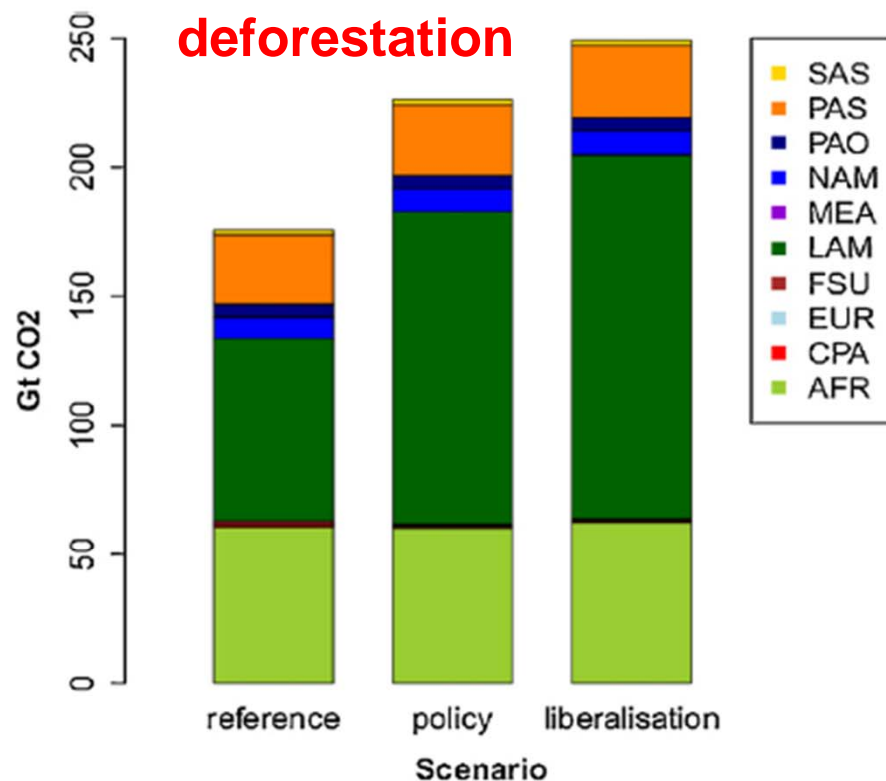
Really so simple?
Or does change in agriculture need
change in food systems?



Trade for food security & adaptation?



Trade-offs: trade versus mitigation & other environmental factors

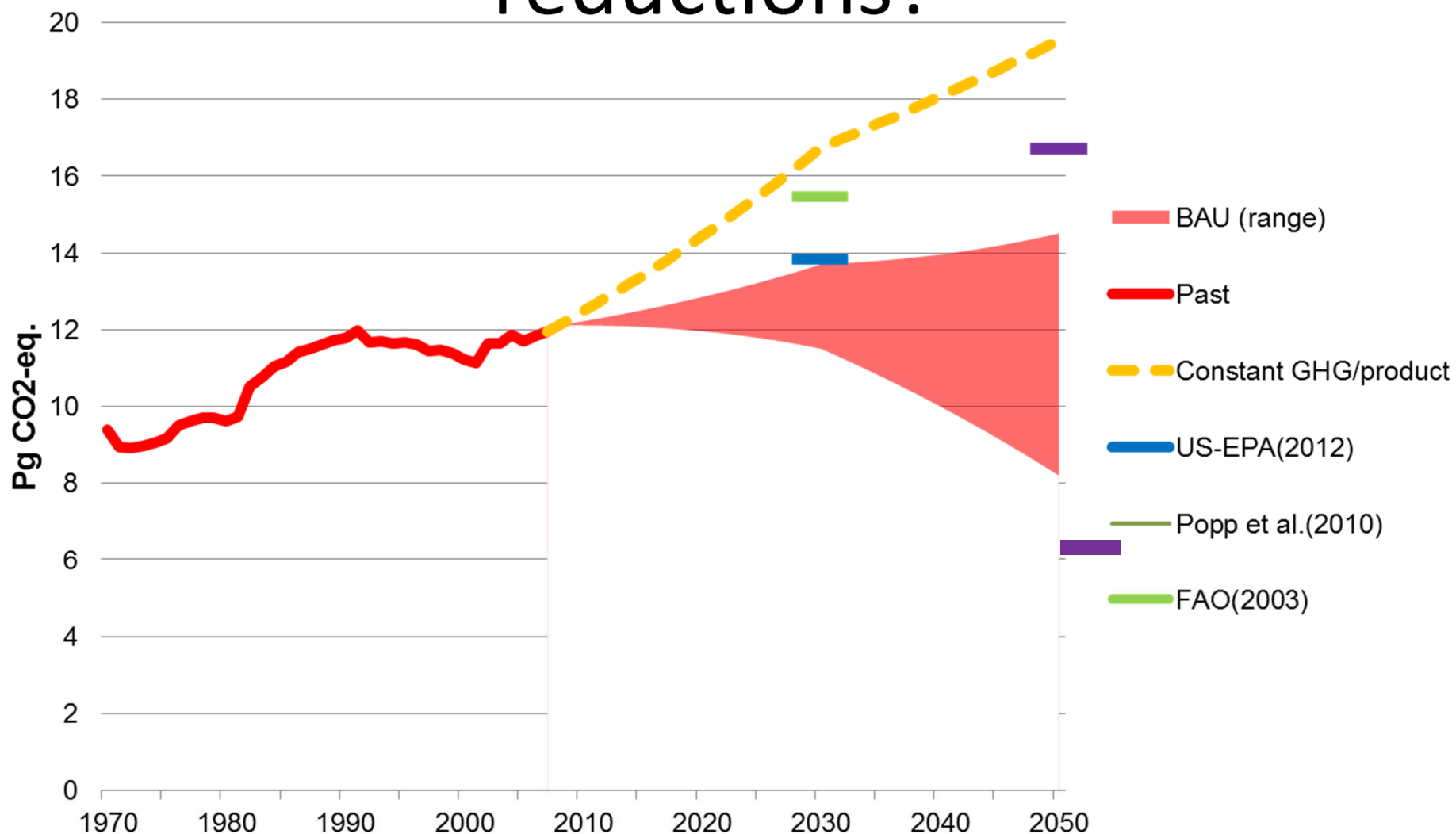


Schmitz et al 2012 *GEC*

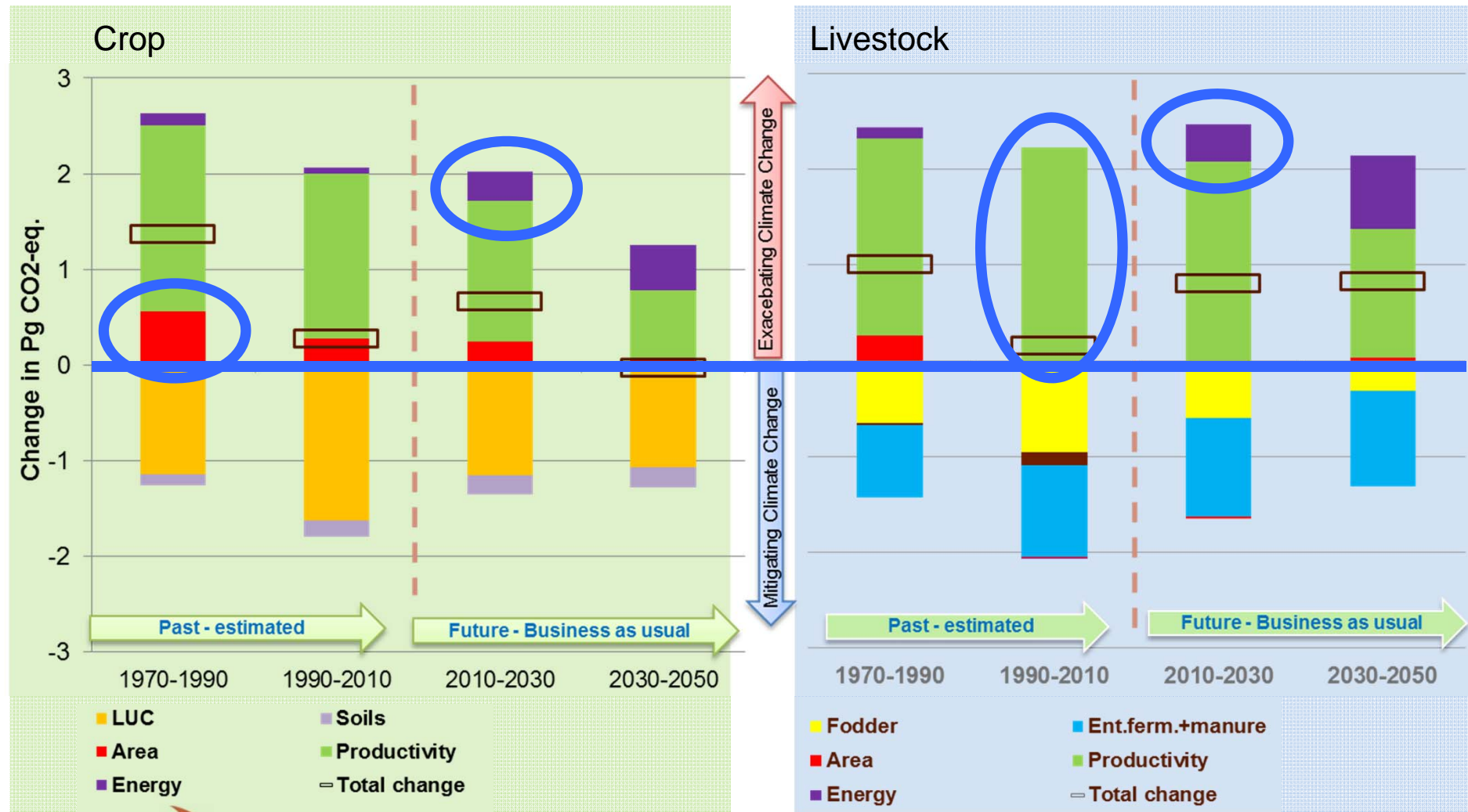
Also see Lambin & Meyfroidt 2011

Lassaletta et al 2014 *Biogeochemistry*

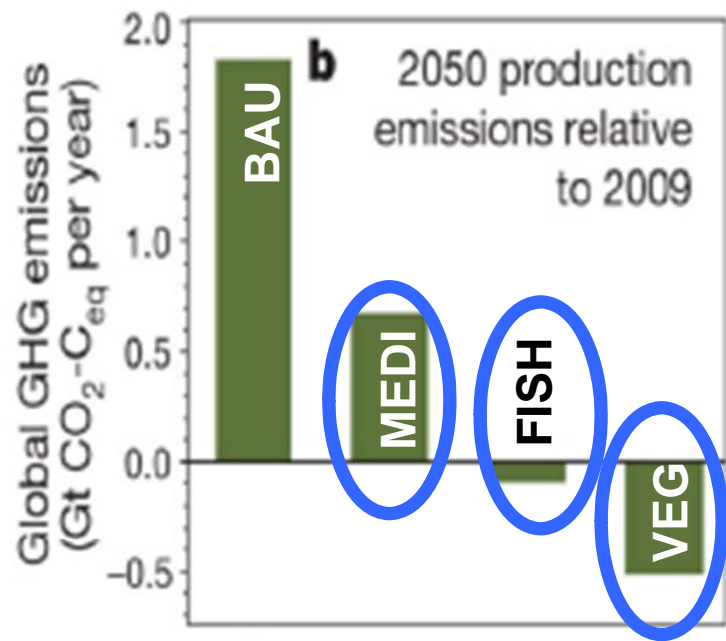
Achieving global emissions reductions?



Trade-offs: intensification versus energy, fertilizer & food demand



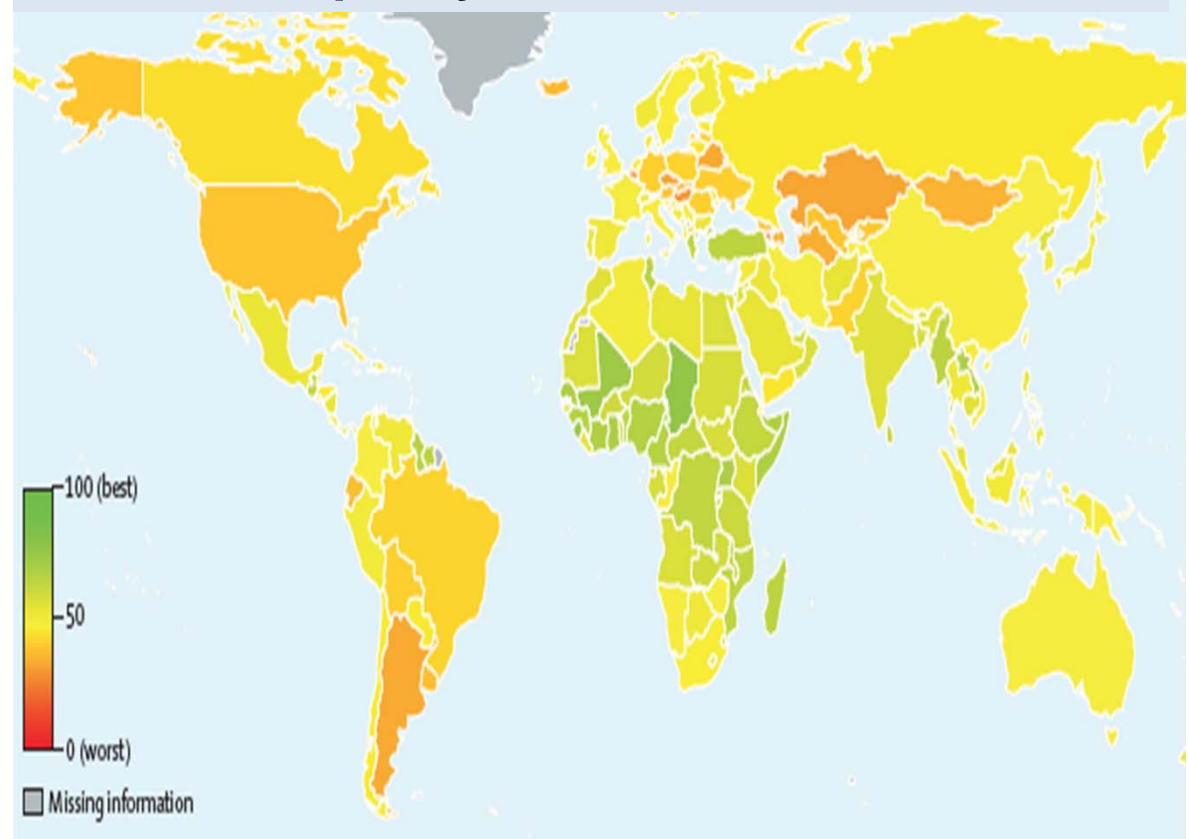
Reductions require demand restraint (over-consumption, diets, waste)



Tilman & Clark 2014 *Nature*

Also see Bajželj et al 2014

Nutritional quality of diets around the world



Imamura et al 2015 *Lancet*

Trade-offs: sustainability versus nutrition & food prices



If prices go up 10%, consumption goes down:

	High income country	Low income country
Cereals	4 %	6 %
Meat	6 %	8 %

In all cases poor households are worst affected.

Green et al 2013 *BMJ*



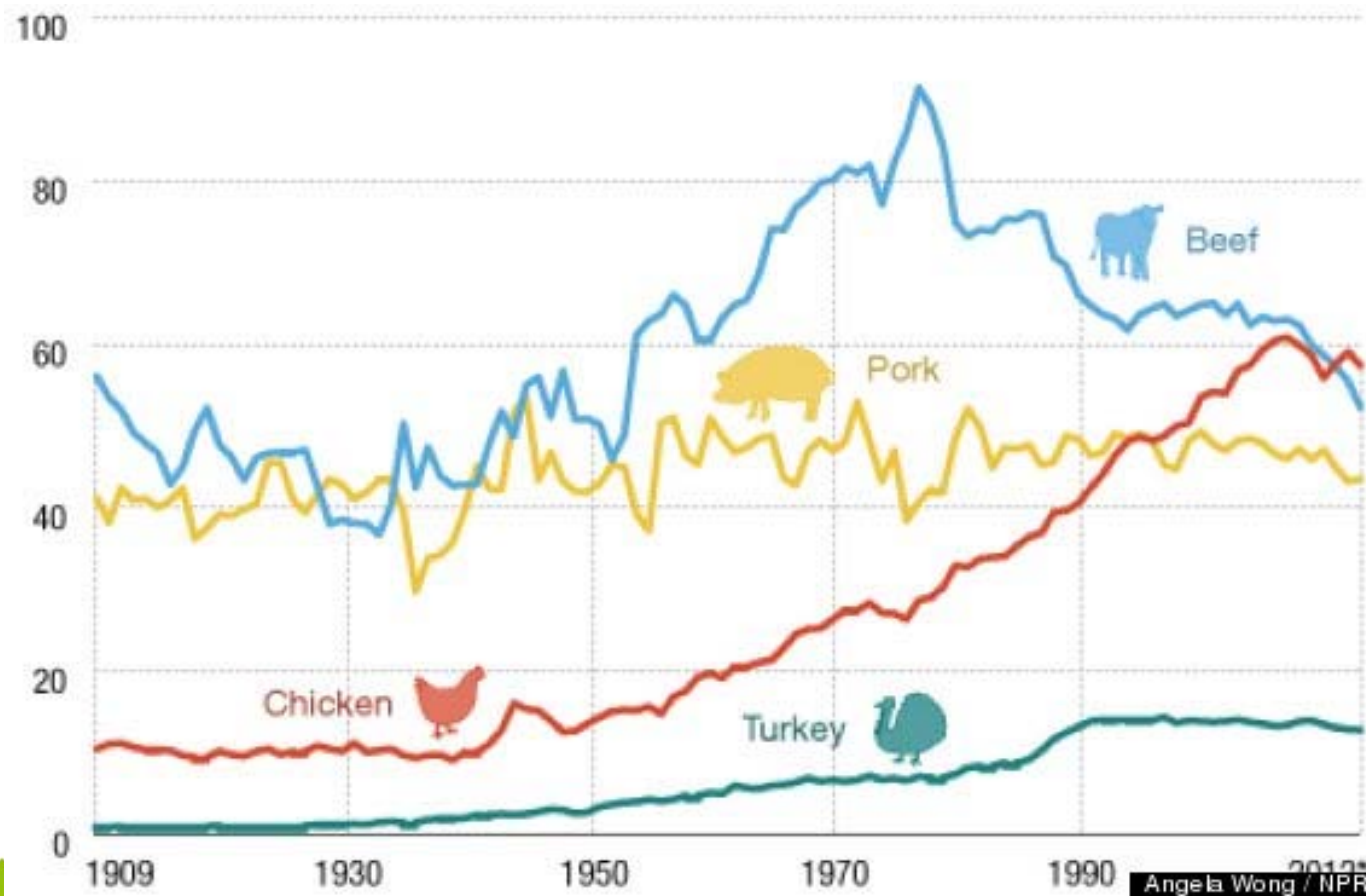
Transformation is possible.

Food systems are changing incredibly fast.

Even ahead of “climate-smart” actions, there are multiple entry points for Climate-Smart Food Systems.

Consumers' food preferences change rapidly – and drive the whole system.

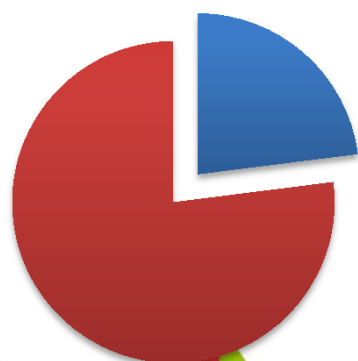
e.g. Trends in meat consumption in USA



Transformation of value chains accelerates waste reduction.



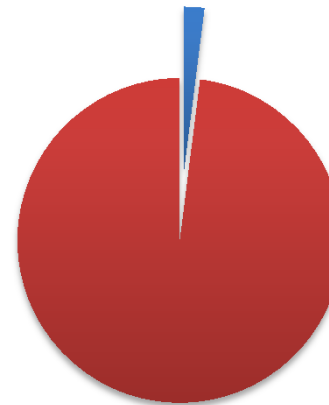
e.g. Post-farmgate, pre-consumer rice waste in China



1997
23%



2002
15%



2012
2%

Public health concerns on obesity provide a policy headstart for a shift to sustainable diets.

Obesity 2



Smart food policies for obesity prevention

Corinna Hawkes, Trenton G Smith, Jo Jewell, Jane Wardle, Ross A Hammond, Sharon Fried, Anne Marie Thow, Juliana Kain

Prevention of obesity requires policies that work. In this Series paper, we propose a new way to understand how food policies could be made to work more effectively for obesity prevention. Our approach draws on evidence from a range of disciplines (psychology, economics, and public health nutrition) to develop a theory of change to understand how food policies work. We focus on one of the key determinants of obesity: diet. The evidence we review suggests that the interaction between human food preferences and the environment in which those preferences are learned, expressed, and reassessed has a central role. We identify four mechanisms through which food policies can affect diet: providing an enabling environment for learning of healthy preferences, overcoming barriers to the expression of healthy preferences, encouraging people to reassess existing unhealthy preferences at

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This is the second in a Series of

six papers about obesity



RESEARCH Review

A Systematic Review of Financial Incentives for Dietary Behavior Change

Jason Q. Pumell, PhD, MPH; Rebecca Gemes; Rick Stein, PhD; Margaret S. Sherraden, PhD; Amy Knoblock-Hahn, PhD, RD

ARTICLE INFORMATION

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Weight loss

ABSTRACT

In light of the obesity epidemic, there is growing interest in the use of financial incentives for dietary behavior change. Previous reviews of the literature have focused on randomized controlled trials and found mixed results. The purpose of this systematic review is to update and expand on previous reviews by considering a broader range of study designs, including randomized controlled trials, quasi-experimental, observational, and simulation studies testing the use of financial incentives to change dietary behavior and to inform both dietetic practice and research. The review was guided by





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