

Feeding the world without costing the Earth

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With the global population expected to exceed 9 billion by 2050 we face a huge increase in food demand worldwide. How we choose to meet this demand will determine the fate of biodiversity and the wider environment over the next century.

How do we balance food production and nature conservation?



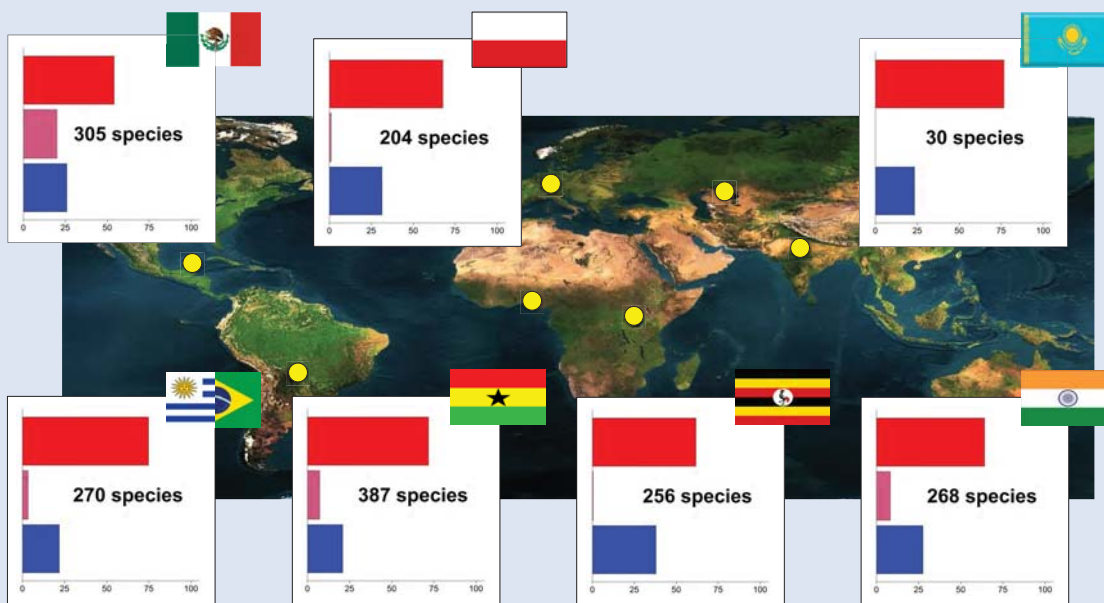
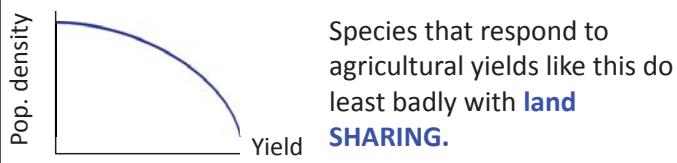
Land SHARING

Spatially integrated; low yields; on-farm conservation



Land SPARING

Spatially segregated; high yields; off-farm habitat protection



Results from across the world

We have investigated how **1720** species in six groups from seven regions respond to agricultural yields.

■ Land sparing least bad
■ Land sharing least bad
■ Intermediate strategy least bad

Land SPARING would be least bad for the vast majority of species

From theory to practice:

How could we couple high yields with land sparing in the real world?

- Land use zoning
- Payments, taxes and subsidies
- Strategic deployment of technology, infrastructure and expertise
- Standards and certification schemes

What now?



Combining rice and fish agriculture increases yields, improves livelihoods and reduces pesticide use

http://english.agri.gov.cn/hottopics/ta/giahs/201307/t20130717_19969.htm

Other trade offs:

How will our choices about food production affect other important issues?

- Greenhouse gas emissions and climate change
- Agricultural pollution
- Water use
- Livelihoods and social equity
- People's access to nature

High yield agriculture:

How can we achieve high, but **environmentally sustainable** yields?

- Precision agriculture
- Integrated pest management
- Technological innovation