Biodiversity provides a range of ecosystem services for food and agriculture...

Source: UNEP, 2012
... including maintaining soils
... freshwater provision

Human water security (HWS) threat to river systems

Source: Vörösmarty et al. 2010
... and pollination services

Increasing proportions of crop area/production are pollinator dependent

Source: Aizen et al. 2008
Ecosystem management on and off farm therefore affects services and sustainability.
The Aichi Biodiversity Targets reflect this

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To achieve such targets we need good indicators to track change and inform management and policy.

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Biodiversity Indicators Partnership

‘WORKING TOGETHER TO TRACK GLOBAL BIODIVERSITY TRENDS’
Bringing together indicators of state, pressure and response
Including genetic diversity ...

Aichi Biodiversity Target 13

By 2020, the genetic diversity of cultivated plants and farmed and domesticated animals and of wild relatives, including other socio-economically as well as culturally valuable species, is maintained, and strategies have been developed and implemented for minimizing genetic erosion and safeguarding their genetic diversity.
What about ecosystem service indicators?

Is it enough to focus on the state of the ecosystem?

Source: Haines-Young & Potschin, 2010
Mapping and modeling ecosystem services

Useful tools for some services, if properly validated

Carbon and biodiversity

A demonstration atlas
Mapping and modeling ecosystem services

Useful tools for some services, if properly validated

Source: CSIR
Valuing ecosystem services

Techniques are improving....

Source: UK NEA, 2011
Ecosystem Service Assessments

Often rely on expert opinion ...
Ecosystem Services Often rely on expert judgement
Ecosystem Service Assessments

Often rely on expert judgement

Key messages:
30% of ecosystem services assessed in the UK are declining
Ecosystem service beneficiaries

It isn’t just about supply – beneficiary distributions also vary:

“There is much more to be explored and understood in terms of the ways that different people in different places benefit from ecosystem services.”

UK NEA, 2011.
Summing up – key message/s

• Assessing change and developing good indicators is critical for management

• Building on what exists and drawing from different processes and sectors is valuable

• A suite of linked indicators helps to tell a coherent story

• Looking beyond the biodiversity of crops, livestock and fisheries to understand implications of biodiversity change in wider ecosystems (for ecosystem functioning and services) is important

Further reading on biodiversity and ecosystem service indicators see www.bipindicators.net