INSTITUTE FOR THE DEVELOPMENT OF ENVIRONMENTAL-ECONOMIC ACCOUNTING

Environmental-Economic Accounting for Mainstreaming Biodiversity in Agriculture

Carl Obst: Honorary Fellow, University of Melbourne, FAO Consultant & Director, IDEEA

Presentation to the 8th Trondheim Conference on Biodiversity

Trondheim, Norway 1 June 2016

Competing policy agendas

Biodiversity vs Agriculture

- Natural vs Productive land
- Conservation vs Use
- Protected areas vs Private management

Distinct information requirements

Biodiversity

Species

Habitat

Protected areas

Fragmentation and connectivity

Invasive species

Deforestation

…

Agriculture

Production and income

Herd size and harvest area

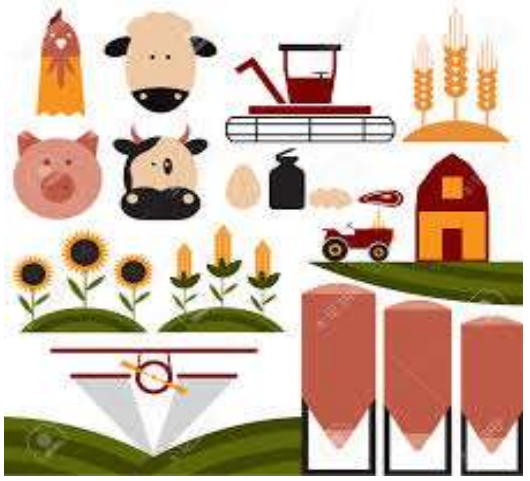
Productivity and efficiency

Technology and machinery

Water use and irrigation

Fertilizer use

…



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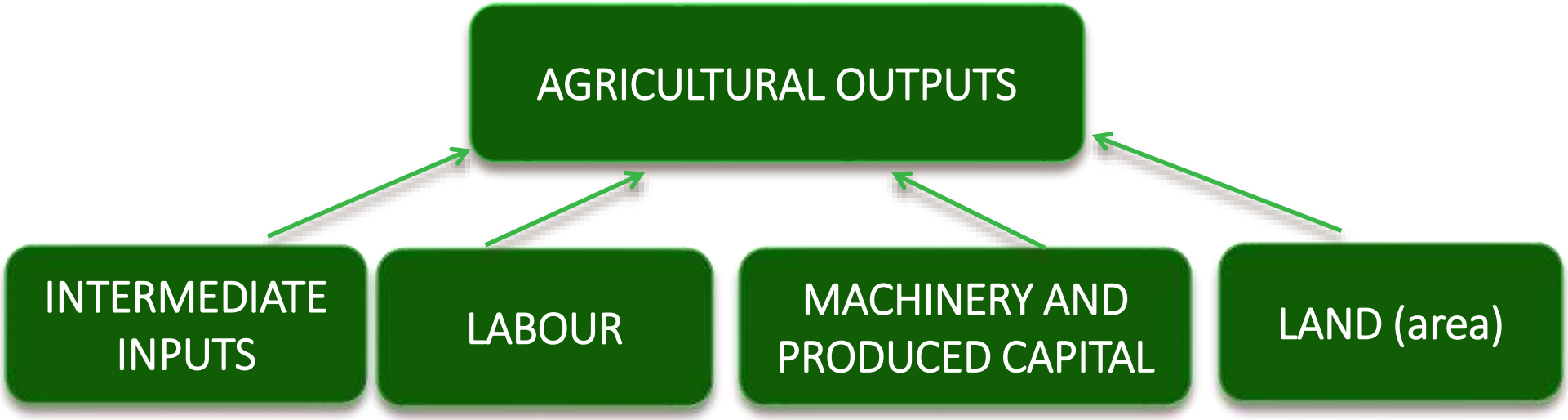
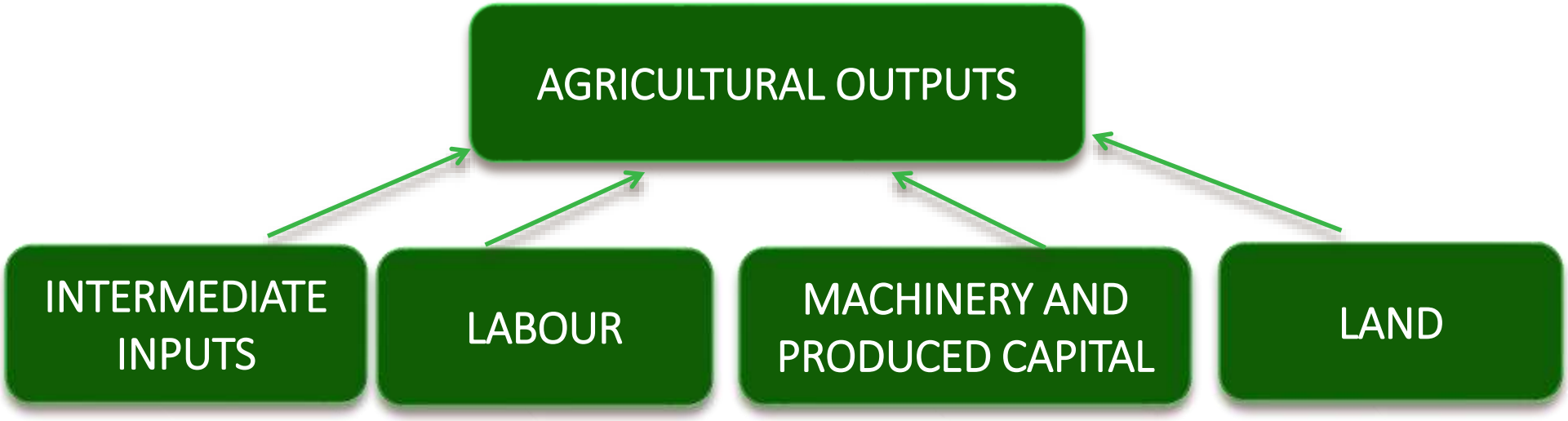
Standard economic accounting for agriculture



Supports analysis of:

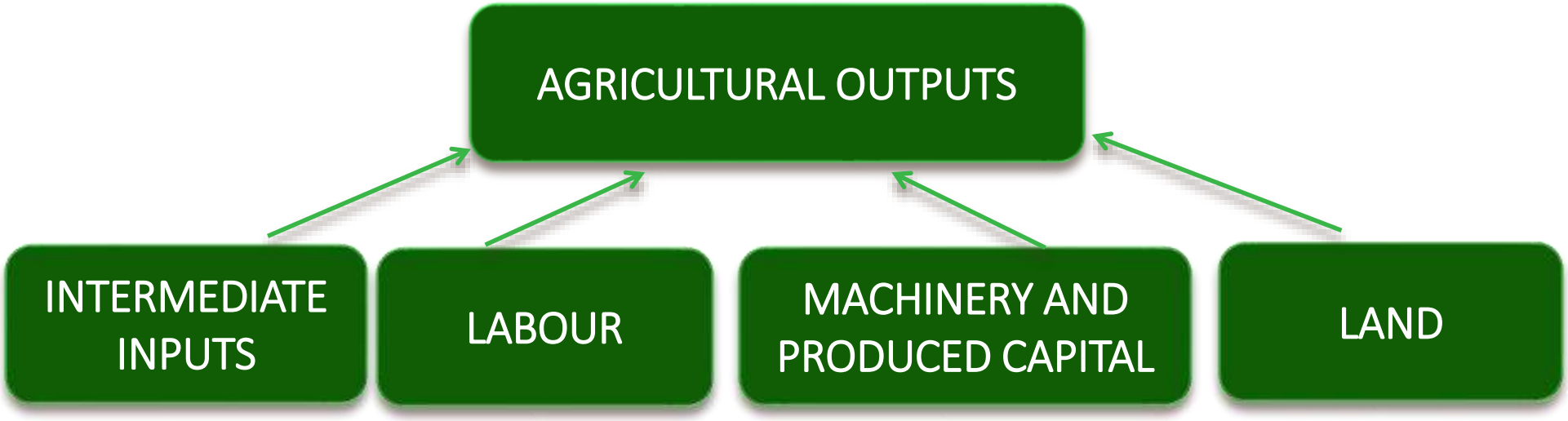
- Productivity, efficiency, profits and incomes
- Trade and supply chains
- Food and fibre consumption

But….



Ignores: soil fertility and nutrient cycling, water, pollination, capital cost of degrading ecosystems and biodiversity

But….



Ignores: soil fertility and nutrient cycling, water, pollination, capital cost of degrading ecosystems and biodiversity

Omits: carbon storage and sequestration, water regulation, and air filtration and the broader cultural benefits

Accounting from a landscape / ecosystem perspective

LANDSCAPE / ECOSYSTEM ASSET EXTENT

Composition of landscape; ecosystem diversity

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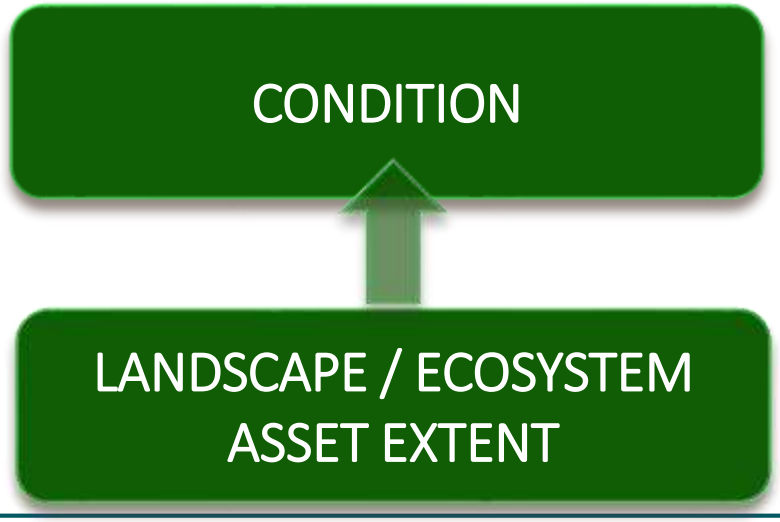
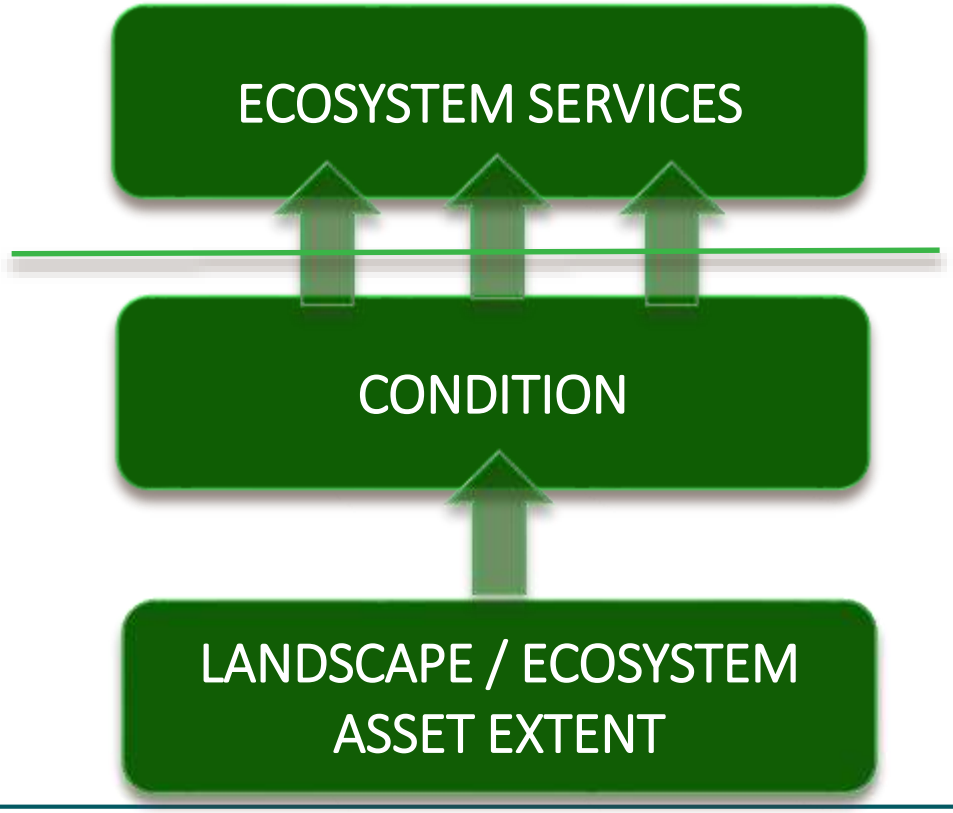
Accounting from a landscape / ecosystem perspective



Species and genetic diversity; soil condition; water quality

Composition of landscape; ecosystem diversity

Accounting from a landscape / ecosystem perspective

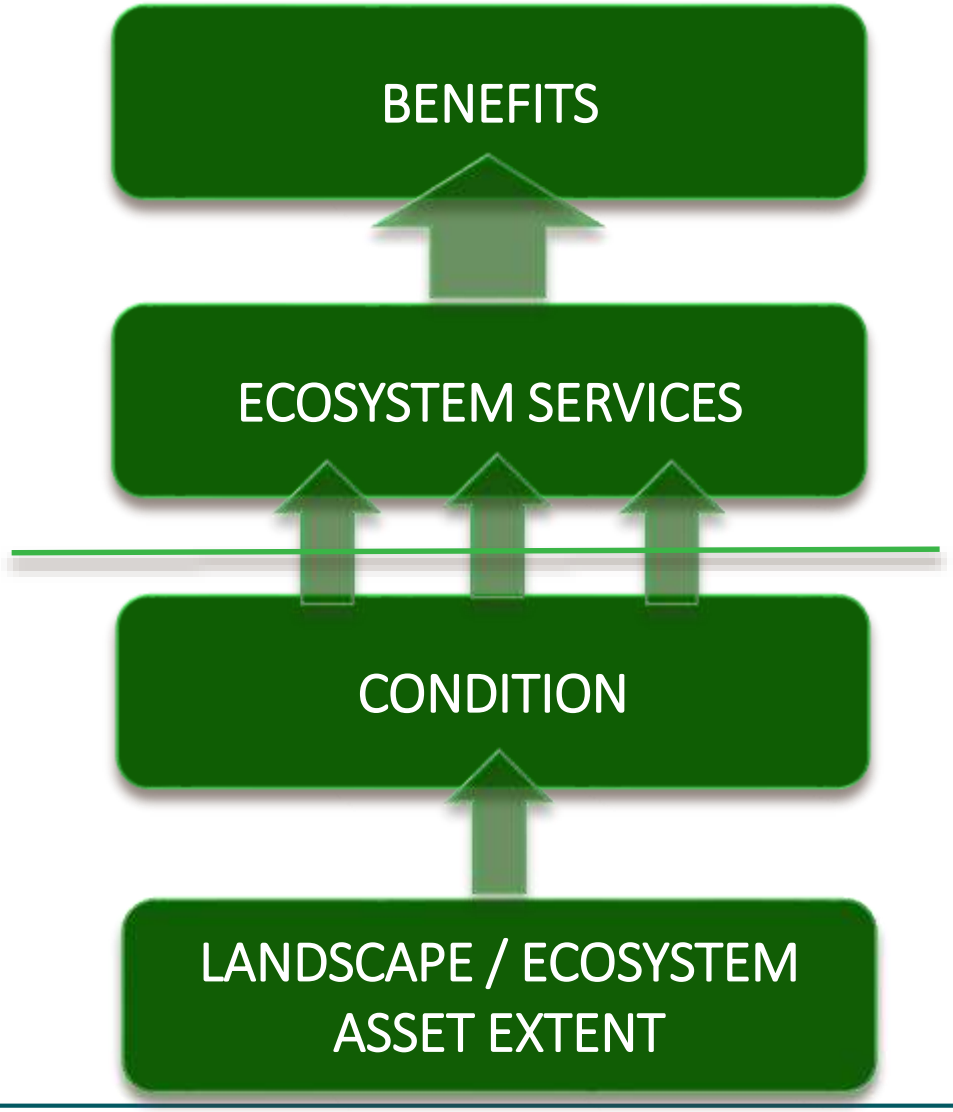


Nutrient cycling; water regulation; pollination, carbon sequestration

Species and genetic diversity; soil condition; water quality

Composition of landscape; ecosystem diversity

Accounting from a landscape / ecosystem perspective



Food; fibre; clean water; flood protection; culture and amenity

Nutrient cycling; water regulation; pollination, carbon sequestration

Species and genetic diversity; soil condition; water quality

Composition of landscape; ecosystem diversity

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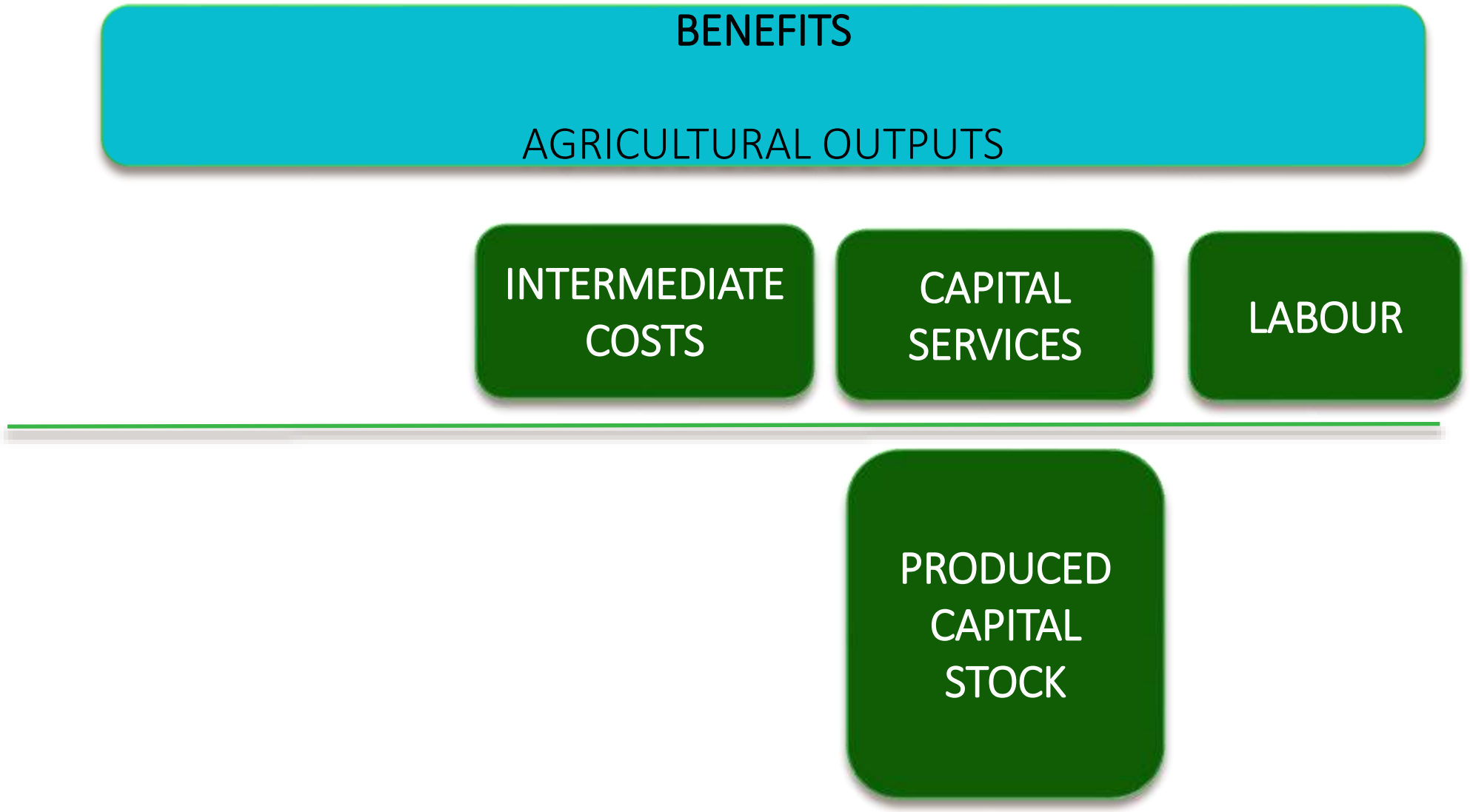
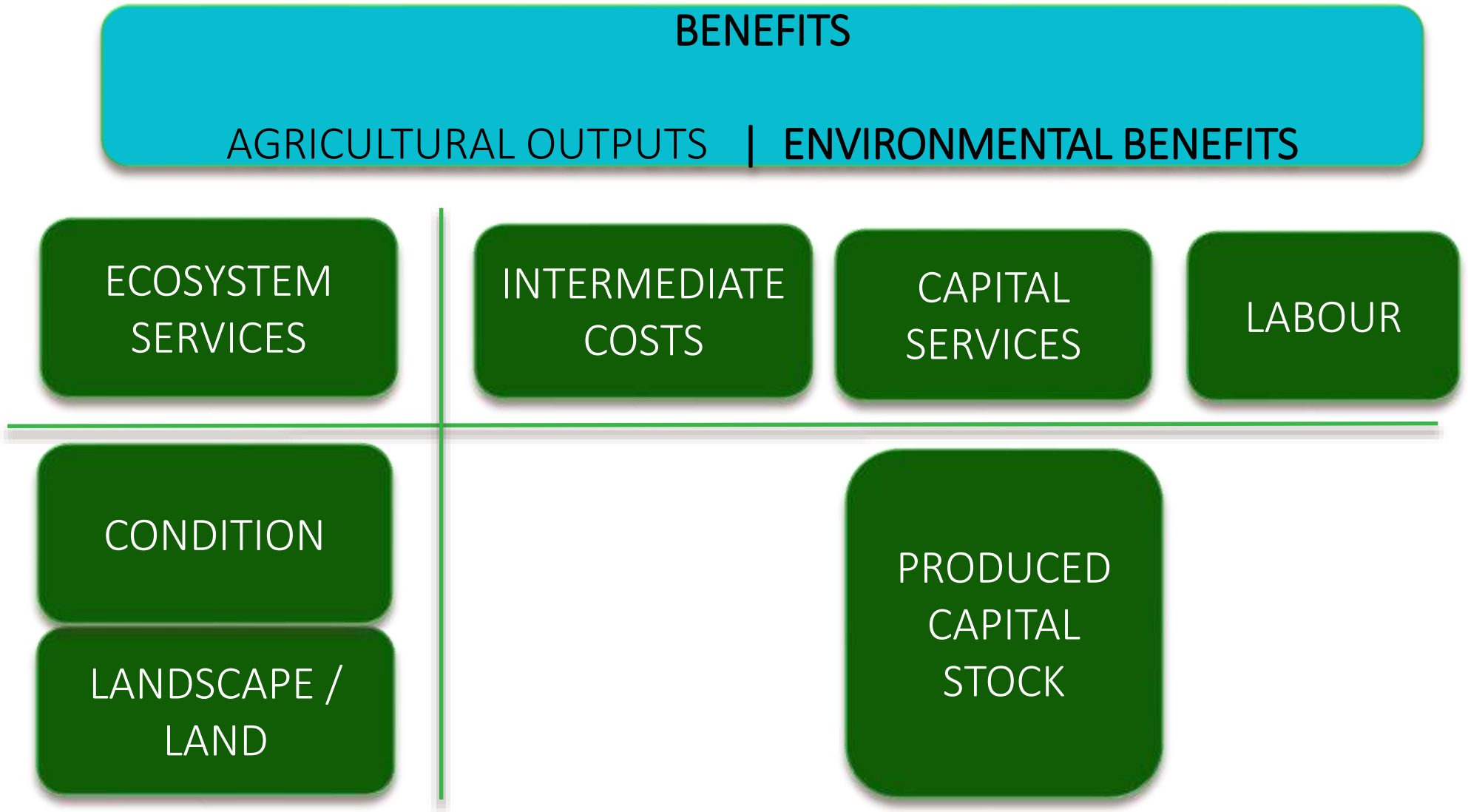
Integrated environmental-economic accounting



Integrated environmental-economic accounting



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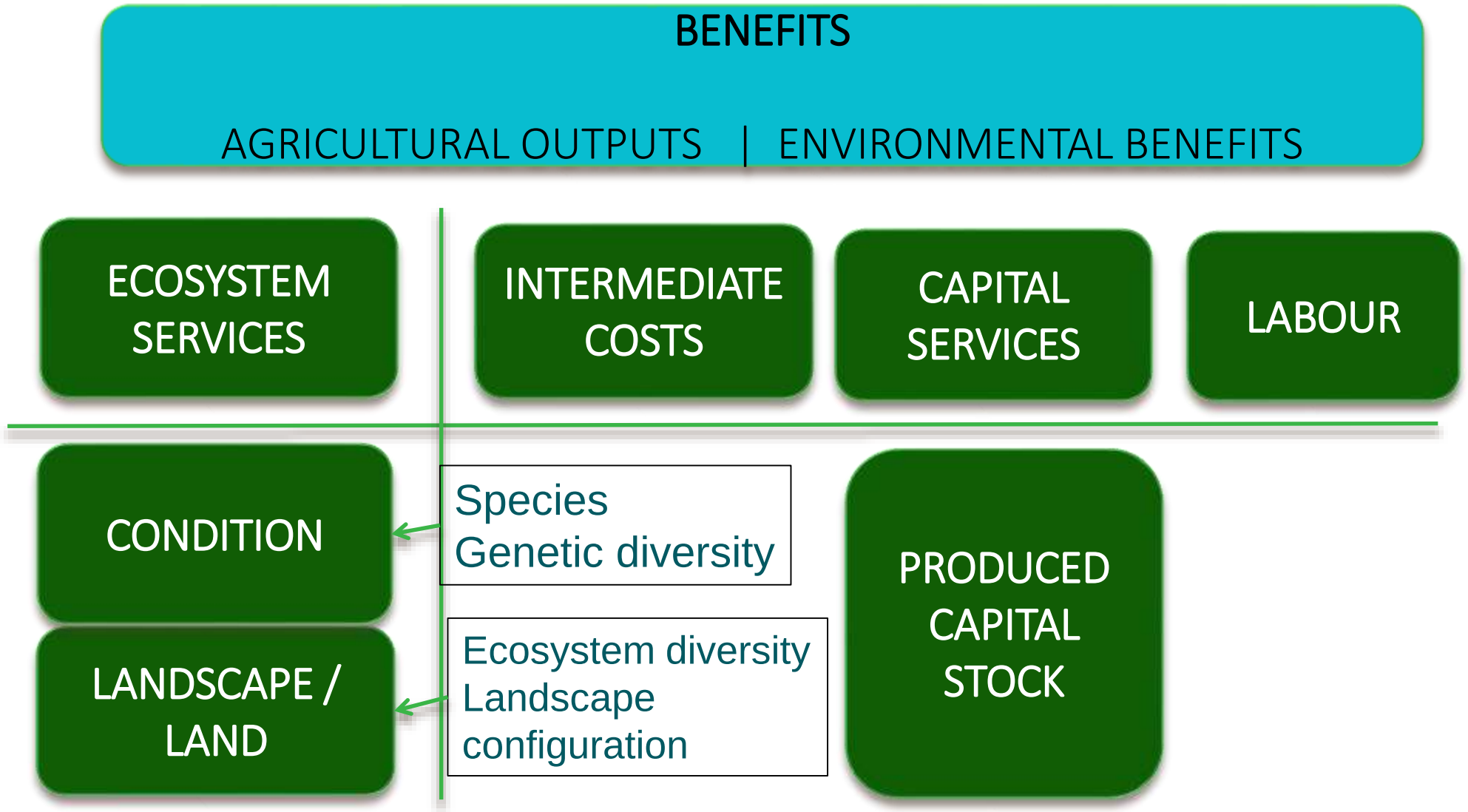
Integrated environmental-economic accounting



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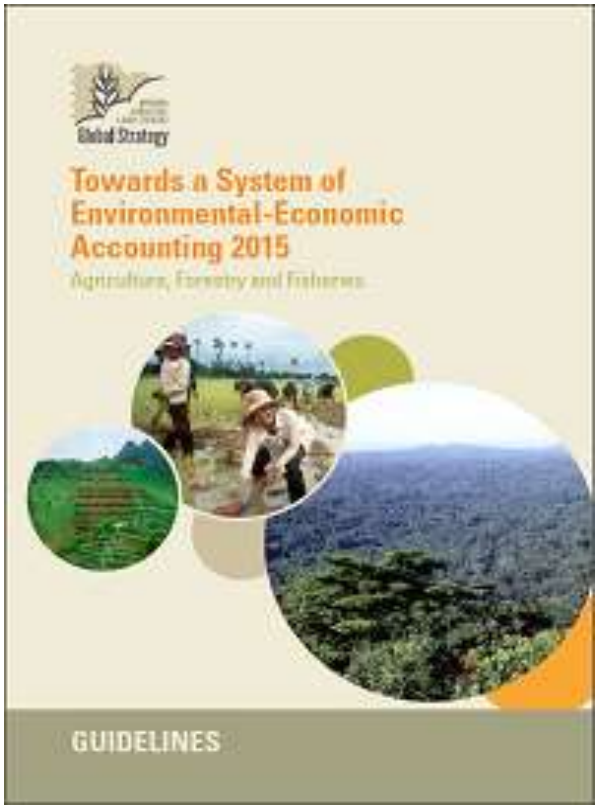
System of Environmental-Economic Accounting - SEEA

SEEA Central Framework

SEEA Experimental Ecosystem Accounting



SEEA Agriculture, Forestry & Fisheries

Selected SEEA based accounting projects

- World Bank WAVES project
  - Botswana, Madagascar, Indonesia, Philippines, Guatemala, Costa Rica, Colombia, Rwanda
- ANCA project – UNSD / UNEP / CBD
  - Chile, Mexico, Indonesia, Vietnam, South Africa, Bhutan, Mauritius
- FAO – SEEA AFF pilots: Australia, Canada, Guatemala, Indonesia, Uruguay
- New EU projects – INCA; Joint EU/UNSD project (Brazil, South Africa, India, China)
- Country initiatives incl. UK, Netherlands, Canada, Malaysia, Norway, Australia and USA
- Conservation International: Peru, Gabaronne Declaration countries
- GEOSS – Earth Observation for Ecosystem Accounting project

Applications of SEEA based accounting

- Integrated international reporting
  - Sustainable development goals
  - UNFCCC / CBD (Aichi targets) / UNCCD
- Economic analysis and valuation
  - TEEB Agriculture and Food
  - Extended Input-Output and CGE modelling
  - Environmentally adjusted measures of Multi-factor Productivity
- Local and regional development
  - Spatial planning and analysis of trade-offs / risk analysis
  - Integrated management of weeds, pests, invasive species
  - Scenario modelling e.g. climate change adaptation, biodiversity loss

Farmer, Biodiversity specialist or Landscape manager?

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Thank You