

Session: Environmental Expenditures



John Power
Australian Bureau of Statistics
Centre of Environment Statistics
john.power@abs.gov.au



Australian Government
AusAID

Environmental expenditures



Session structure

- Overview
- Environment Protection Expenditure Account (EPEA)
 - Why? What? How?
- Towards an EPE Account Australia
- Other environment-related transactions
 - Taxes, resource management



Overview

- *SEEA*:
 1. Accounting for the physical economy and its industrial metabolism
 2. Accounting for environmental assets
 3. Accounting for environment related transactions
 4. Valuation of environmental damages and the adjustment of national accounts balancing items



Accounting for environment related transactions (ch. 5-6)

- *What is the purpose?*
- Measuring the financial aspects of economic responses to environmental problems
- Includes the supply & demand of environmental goods and services



Accounts for economic activities related to the environment

- *What are the main features?*
- Environmental protection expenditure accounts
- Environmental activities and products
- Environmental taxes (and subsidies) and other environment related transactions
- Other ??



Introducing EPEA

- As far as the environmental expenditures are concerned, most fully developed satellite account is the Environmental Protection Expenditure Accounts (EPEA).



Environmental protection expenditure accounts

- Environment protection has been defined as "all actions and activities that are aimed at the prevention, reduction and/or elimination of pollution, as well as any other degradation of the environment".



Classifications! Always!

Table 4.2.1 Classification of Environmental Activities - Overview of groups and classes

Group	Classes
I: Environmental Protection (EP)	1 Protection of ambient air and climate
	2 Wastewater management
	3 Waste management
	4 Protection and remediation of soil, groundwater and surface water
	5 Noise and vibration abatement (excluding workplace protection)
	6 Protection of biodiversity and landscapes
	7 Protection against radiation (excluding external safety)
	8 Research and development for environmental protection
	9 Other environmental protection activities
II: Resource Management (RM)	10 Management of mineral and energy resources
	11 Management of timber resources
	12 Management of aquatic resources
	13 Management of other biological resources (excl. timber and aquatic resources)
	14 Management of water resources
	15 Research and development activities for resource management
	16 Other resource management activities

Why produce?

- Main objective of an EPEA is to assess the expenditure for environmental protection made by the total economy, i.e. the economic resources actually used in order to prevent degradation or to restore the environment.
- The EPEA is a satellite account to the national accounts, designed to describe (consistent with the national accounts) the transactions related to environmental protection



Why produce/what used for?

- EPE information can be used to analyse:
 - who is using/ paying for the service,
 - who provides the service.
 - demand and supply of EP services and EP-related products
- How much does environmental protection contribute to employment or GDP?
 - the contribution of environmental protection activities to economic growth, exports and employment



Other uses...

- the response of various sectors to environment protection regulations and policies;
- efficiency of environmental protection policies – by linking expenditure with physical data
- the impact of environmental protection on eco-efficiency (waste minimisation and resource conservation).
- EP Indicators can be compiled to identify the effort made by society to prevent or to reduce pressures on the environment



1. National Expenditure on Environmental Protection

- These tables show:
 - The use of environment protection products or services under the heading of final or intermediate consumption;
 - investments in order to produce environment protection services;
 - make investments in environment protection products; and
 - specific subsidies for environment protection.



2. Financing of National Expenditure on Environmental Protection

- Factors in Government subsidies, grants & transfers
- ⇒ Net cost of environmental protection



SEEA and EPEA

The SEEA proposes four sets of tables as the basis for a full set of EPE Accounts:

- Production of environmental protection specific products by resident producers where aggregates such as gross value added and net operating surplus, **being measured consistently with SNA accounting conventions, can be compared with macro-economic aggregates for the whole economy.**
- Supply and use tables for environmental protection specific services with supply including those goods and services supplied by resident producers and through imports and use encompassing domestic consumption and exports.
- Total national expenditure on environmental protection representing the total outlay by the economy on these activities including capital formation.
- Financing of national expenditure on environmental protection. This seeks to shed light on how the environmental protection expenditure is funded.



ABS and EPEA

- Discussion Paper: Towards and Environmental Expenditure Account, [2014](#)
 - 2014 paper is based on SEEA
- Local Government EPE statistics [2002-03](#)
- Mining and Manufacturing EPE statistics [2000-01](#)
- [1995-96 and 1996-97](#) were compiled in accordance with the SERIEE framework (European System for the collection of Economic Information on the Environment)
- Economy-wide environment protection expenditure statistics [1990-91 to 1996-97](#).

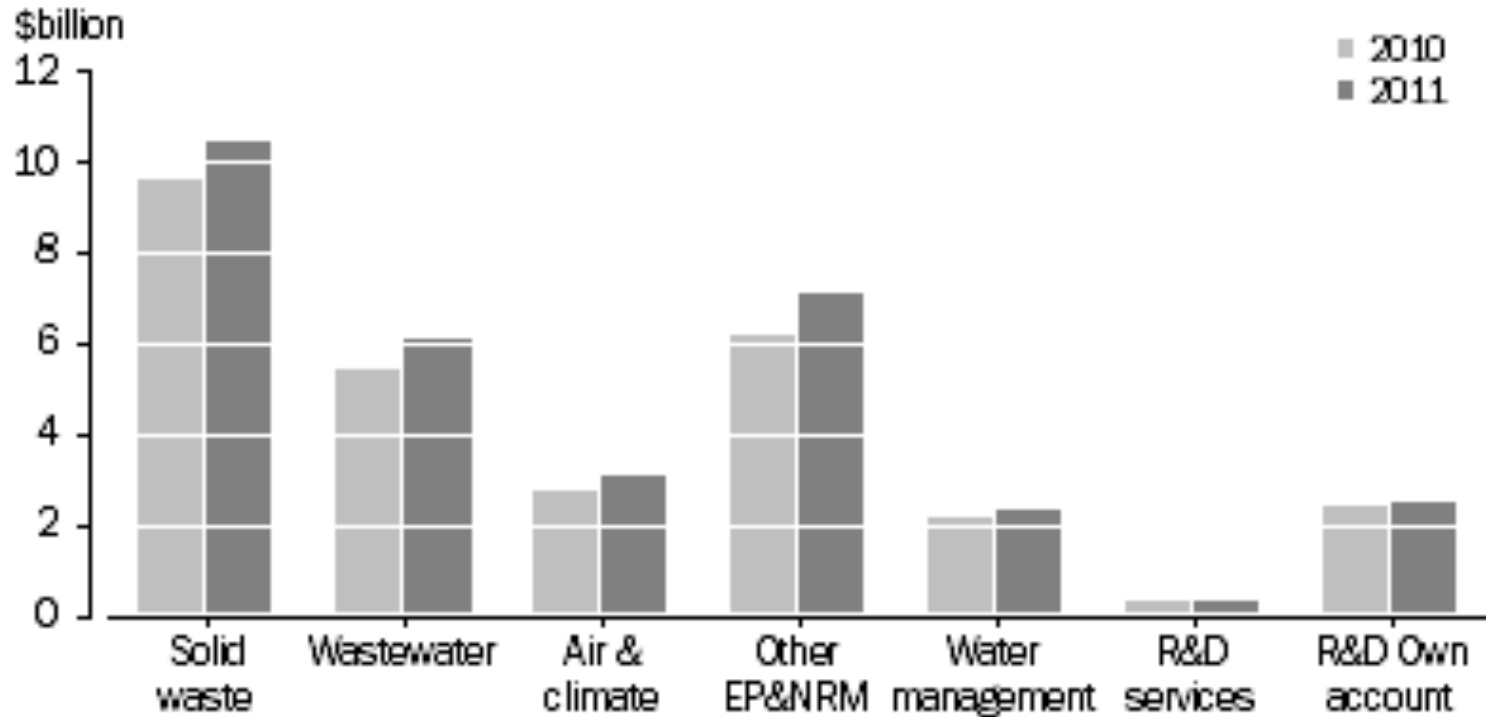


Discussion Paper: Towards and Environmental Expenditure Account, 2014

- Based on SEEA framework for tables
- Uses the SEEA Classification of Environmental Activities (CEA) and ANZSIC industry classifications
- Production of the four SEEA tables using experimental data (estimates and modelling)
- Data is from a wide range of sources including ABS environmental accounts, other ABS data and government financial & budget reports
- Commentary



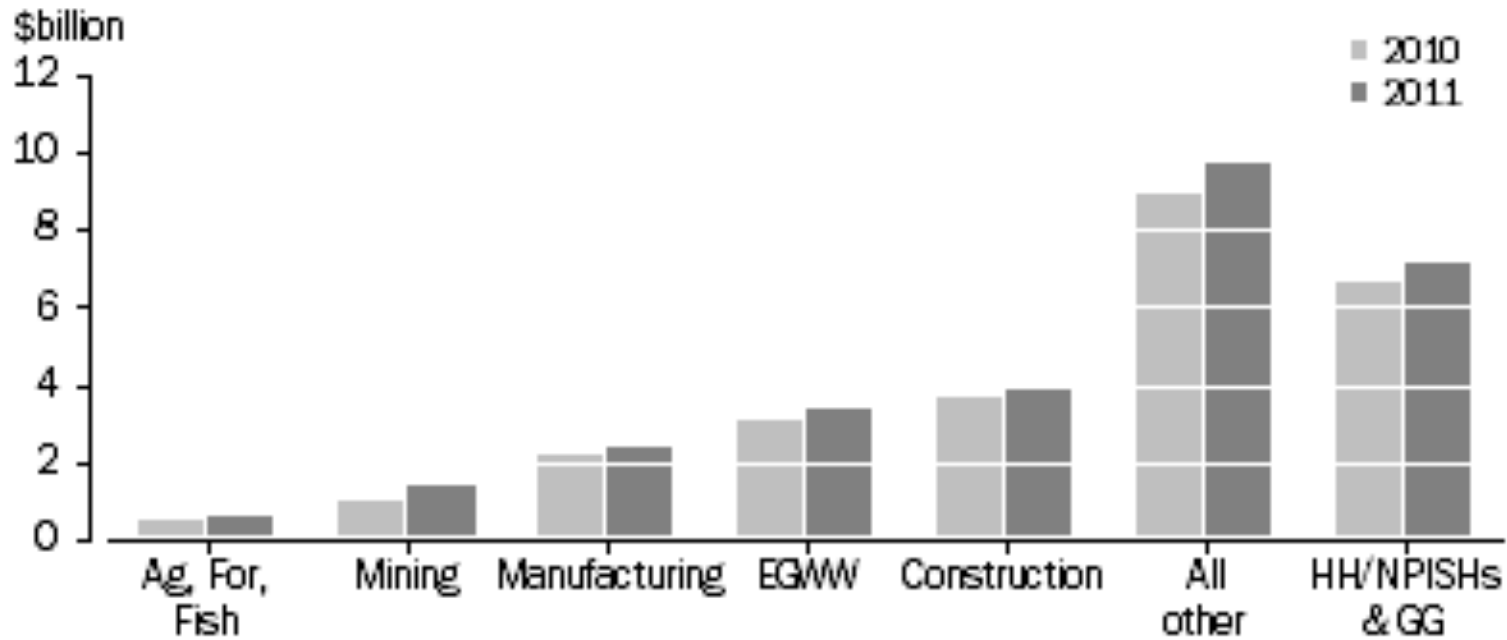
RESULTS I: Total Output of Environmental Services, Australia



Notes: Other EP & NRM – Other Environmental Protection and Natural Resource Management.
R&D – Research and Development.



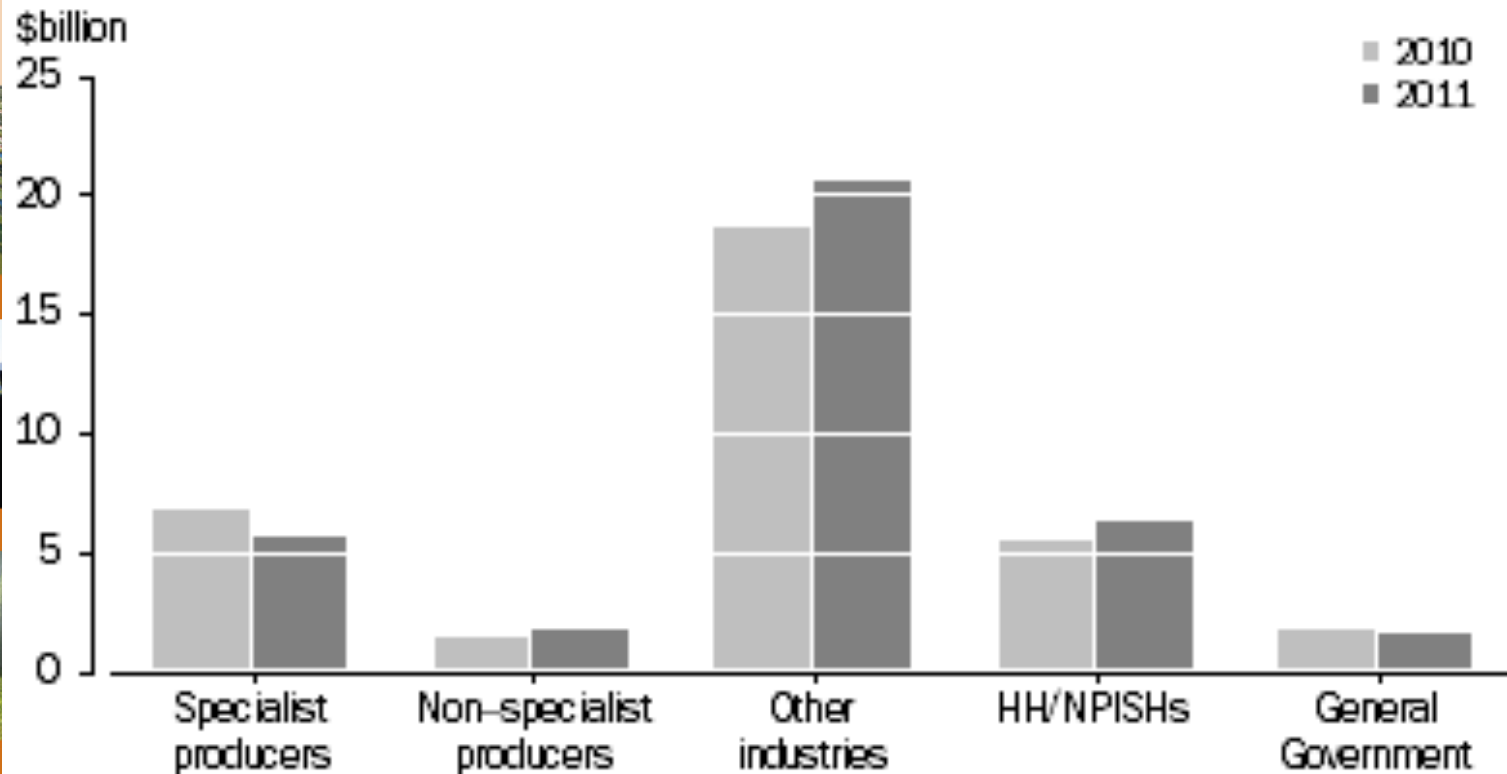
Results II: Consumption Expenditure on Environmental Services, by sector, Australia



Notes: Ag, For, Fish – Agriculture, Forestry and Fishery.
 EGWW – Electricity, Gas, Water Supply, Drainage & Sewerage and Waste.
 HH/NPISHs & GG – Households/ Non Profit Institutions Serving Households and General Government.



RESULTS III: National Expenditure on selected Environmental Services and connected/adapted goods, by user



Note: HH/NPISHs – Households/Non-Profit Institutions Serving Households.

Issues to consider

- Coverage - what information is needed?
- Focus - whole economy or particular industries/sectors?
- Timeframe - how often?
- Presentation - format most likely to be user-friendly & relevant
 - SEEA provides guidance



Sectors

- Public - government (Commonwealth, state and local government)
 - Government Finance Statistics?
 - Budget papers?
 - Specific surveys?
- Private (major industries)
 - Surveys?
- Households
 - Household expenditure survey?
 - Government admin (eg waste management/waste water rates etc)?



Other terms used in EPEA

Classification of units according to their role:

- characteristic producers – specialised, non-specialised,
- ancillary production (internal use)
- Secondary production



Other terms & definitions

- Specialised Producers
 - Those units whose principal activity is one of environment protection and, for the most part, are units primarily engaged in waste water and waste management activities.
 - Specialised producers belonging to the general government sector are distinguished from specialised producers belonging to other sectors.



Terms & definitions

- Non-specialised producers
 1. Secondary producers
 - Principal activity unrelated to EP but undertakes an EP activity for sale to others
 2. Ancillary producers
 - Principal activity unrelated to EP but undertakes an EP activity for internal use



Environmental Goods and Services Sector (EGSS)

- Account considers environmental activities from the supply perspective
- present information on the production of environmental goods and services in as much detail as possible
- Ongoing work in defining the sector
- Lots of interest



Classification again

Table 4.2.1 Classification of Environmental Activities - Overview of groups and classes

Group	Classes
I: Environmental Protection (EP)	1 Protection of ambient air and climate
	2 Wastewater management
	3 Waste management
	4 Protection and remediation of soil, groundwater and surface water
	5 Noise and vibration abatement (excluding workplace protection)
	6 Protection of biodiversity and landscapes
	7 Protection against radiation (excluding external safety)
	8 Research and development for environmental protection
	9 Other environmental protection activities
II: Resource Management (RM)	10 Management of mineral and energy resources
	11 Management of timber resources
	12 Management of aquatic resources
	13 Management of other biological resources (excl. timber and aquatic resources)
	14 Management of water resources
	15 Research and development activities for resource management
	16 Other resource management activities

Environmental Goods and Services Sector (EGSS)

Table 4.3.5 Environmental Goods and Services Sector (currency units)

		Producers			
		Specialist producers		Non-specialist producers	Own-account producers
		Government producers	Other specialist		
Output of environmental goods and services					
Environmental specific services	Env. protection	3 000	6 500	2 400	1 600
	Resource mgt.	3 100	4 500	300	1 600
Sole-purpose products	Env. protection			250	
	Resource mgt.			400	
Adapted goods	Env. protection			1 000	
	Resource mgt.			3 000	
End-of-pipe technologies	Env. protection	100	200	1 200	100
	Resource mgt.	100	300	1 500	
Integrated technologies	Env. protection			800	
	Resource mgt.			700	
<i>Total environmental goods and services produced</i>		6 300	11 500	11 550	3 300
Intermediate consumption		3 800	6 500	6 700	1 450
Gross value added		2 500	5 000	4 850	1 850
Compensation of employees		2 100	4 200	4 300	1 500
Gross fixed capital formation		1 500	1 820	1 500	590
Exports of environmental goods and services			200	2 300	
Employment ('000 people)		120	210	220	80

Other environmental related transactions

- Taxes and subsidies
- Environmental transfers
- Property income (resource rent)
- Property rights (fishing rights, emission permits)
- Terminal costs of mining operations
- Environment industry
- Natural resource management accounts



Environmental transfers

- As for EPE, the principal selection criteria for finding the environmental transfer is the motive or the technical aspect for a transfer.
- Eg transfer to farmers for keeping meadows with production practices that maintain biodiversity; government expenditure for R&D that is allocated for wind power.



Applications...

- Environmental policy:
 - assessing impacts of regulations
 - assessing impacts of policies over time on industry behaviour
 - efficiency of resource use by sector & changes over time
- Economic policy:
 - effects of env taxes on economy
 - effects of other taxes on environment
 - Sustainable development indicators



Questions?

