



Towards the measurement of green jobs in the Mexican TSA

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Background

- 2012. INEGI developed a **methodological paper** for the definition and measurement of Green Jobs, http://www.ilo.org/wcmsp5/groups/public/---dgreports/---stat/documents/presentation/wcms_202402.pdf
- 2013. The **company Green Jobs** presented a pilot study on **Mexico**. INEGI joined to the **Interagency Green Jobs Committee**.
- 2014-2016. We worked jointly with ILO-Mexico and the country's environmental sector to work on a **methodology based on the SNA**.
- 2017. A **first exercise** was carried out with the information from the Economic Census of 2008 year.
- Currently, a **new exercise** is being carried out, taking in consideration of the **information from the Economic Censuses 2014 Environmental Module**.



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Framework

We takes advantage about the **existence** of the **Central Framework of Environmental Accounting**, which uses national accounting such a tool in order to **measure** aspects related to **green production**.

Chapter IV. Accounts of environmental activities and related flows

Environmental Goods and Services Sector (EGSS)

- Classification of Environmental Activities (CEA)
- Purpose criteria



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Framework

From the SEEA it is feasible to delimit the **Environmental Goods and Services Sector**, and the **Full-time Equivalent Employment Positions** linked to this sector.

Examples:



Production of bags and containers for garbage



Waste Collection



Environmental Education



Manufacture of electric or hybrid cars



Production of saving lights



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Framework

Green Jobs definition:

“Green jobs are **decent jobs** that contribute to preserve or restore the environment, be they in traditional sectors such as **manufacturing and construction**, or in new, emerging green sectors such as **renewable energy and energy efficiency**”



<https://libguides.ilo.org/green-jobs-en>



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Production and green jobs

Key issues:

- Employment contract
- Social security
- Decent income
- Working day

Total employment

Production of environmental goods and services:

- Generation of electricity from renewable sources
- Sewage treatment

Environmental activities, without decent work:

- Scavenge
- Waste collection at homes

"Environmentally friendly" production processes:

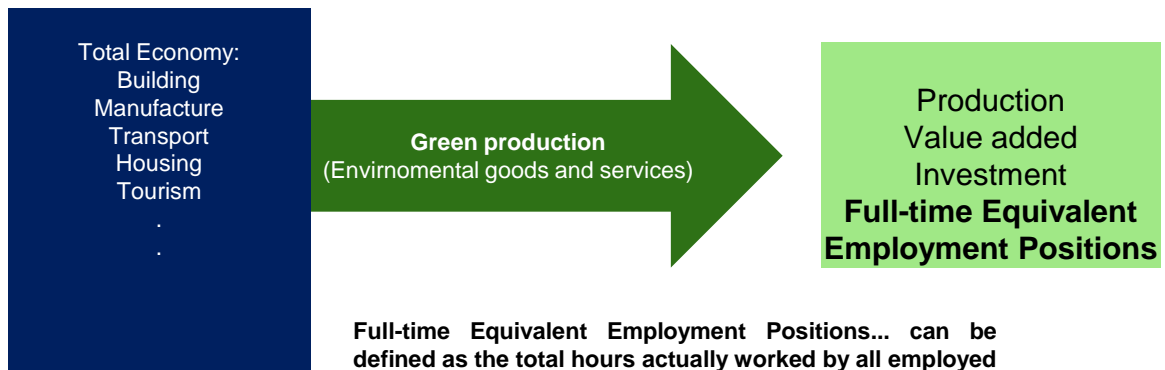
- Separation of waste in shoe production
- Collection of burned oil in restaurant



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Production and green jobs

It is possible to identify the **green production** and consequently the **Full-time Equivalent Employment Positions**, associated to that production



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Production and green jobs

The experience of Mexico

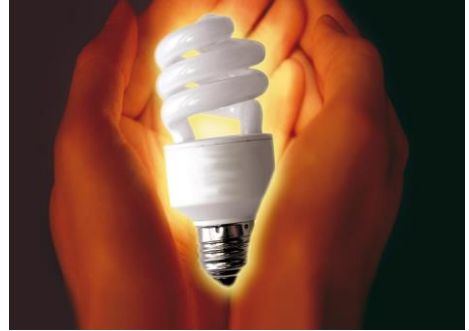
Environmental Goods and Services Sector

Identify **Environmental Goods and Services** in the economy

You get a **green factor (f)**:
 $(f = \text{environmental production} / \text{Total production})$

The Economic Census provide information about more than 20 thousand products, from which the environmental ones are selected.

The green factor for intermediate consumption simulates the same process such as production value, i.e. it helps to approximate to the Value Added of environmental goods and services.



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Data base

Apply the same procedure for the employment indicators.

Economic activity	Production	Investment	Expenditures	Occupied jobs	Depending on the company
Manufacture of shoes					
Botanical gardens and zoos					
Hotels with other integrated services					
Hotels without other integrated services					
Cabins, villas and similar					
Camps and recreational hostels					



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Why Full-time Equivalent Employment Positions?

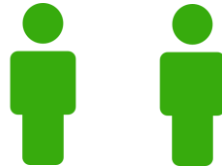
- Equivalent of employment
- Help measure the productivity of green jobs



2 hours of work per person

=

1 Full-time Equivalent Employment Positions of 8 hours



12 hours of work per person

=

3 Full-time Equivalent Employment Positions of 8 hours



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Example (simulated data)

Hotels with other integrated services

Economic activity Census data base

Economic activity	Production	Intermediate consumption	Full-time Equivalent Employment Positions	Full-time Equivalent Employment Positions Dependents
Hotels with other integrated services	(Millions of mexican pesos)		(Units)	
	94,152	64,448	271,085	136,089

Value of production of environmental services: 2,589 Millones de pesos

Value of environmental production (a)	Production value of the total activity (b)	Green factor (f) $f = (a)/(b)$
(Millions of mexican pesos)		
2,589	94,152	0.0275



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Calculation of intermediate consumption environmental

intermediate consumption (c)	Green factor (f)	Environmental intermediate consumption (d) = (c) * (f)
(Millions of mexican pesos)		
64,448	0.0275	1,772

Production account of environmental goods and services

Value of environmental production (a)	environmental intermediate consumption (d)	Gross environmental added value (e) = (a) – (d)
(Millions of mexican pesos)		
2,589	1,772	817



The exercise is replicated for the employment variables.

Calculating environmental jobs

Full-time Equivalent Employment Positions (g)	Green factor f	Environmental jobs (EA)=(g)*f
271,085	0.0275	7,455

Calculating green jobs

Full-time Equivalent Employment Positions Dependents (h)	Green factor f	Green Jobs (EV)=(h)*f
136,089	0.0275	3,742

The TSA reports **144,366** paid Full-time Equivalent Employment Positions Dependents, while **7,455** are environmental and of those, **3,742** are green.



What's next?

- To define environmental factors for all economic activities of tourism linked to the green production
- Generate indicators
- For group discussion: *Should the methodology consider the number of people to obtain green jobs?*



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