An Phríomh-Oifig Staidrimh
Central Statistics Office

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Snapshots in the Development of Environmental-Social Statistics

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Overview of Presentation

- Environmental-Social
- Energy Efficiency of Dwellings
- Electric Vehicles
- Fossil Fuel Subsidies
- Household Surveys
- Censuses
- Conclusions

Environmental-Social

- Climate change can be analysed from various perspectives e.g.
- - who are the polluters;
- - which communities are most impacted;
- - affordability of households to change behaviours
- UN System of Environmental-Economic Accounting has been the main driving force in relation to environmental accounts.
- UN SEEA has measured many important issues in relation to the state of the environment but it has not focused on the affordability of households to change behaviours nor on social issues. All households are classified as a single category e.g. no distinction is made according to the socio-economic situation of the household.
- Climate change concerns are shifting the policy focus to include the financial supports needed by poorer households to rapidly move towards a low-carbon economy.
- Environmental-Social statistics can examine the socio-demographic and socio-economic situation of households in the context of identifying *Just Transition* pathways.

Energy Efficiency of Dwellings

- Energy poverty mainly focuses on whether households can afford to keep their households adequately warm in Winter and cool in Summer. It uses indicators such as the proportion of household disposable income spent on fuel.
- Energy efficiency is focused more on bringing households up to a standard that enables them to reduce their consumption of fossil fuels through measures such as insulation and ventilation.
- In Ireland, older detached houses are the least energy efficient and they have a higher reliance on solid fuel heating.
- Ill health can be caused through not being able to maintain a comfortable temperature at home and it may result in short-term hospital stays from respiratory problems.
- Stricter building regulations have resulted in huge improvements in the energy efficiency of more recently built dwellings.
- Houses with F or G energy ratings in Ireland comprise 19% of dwellings that were built before year 2000 and that have had an energy audit conducted.

Period of Construction and Energy Efficiency

Rating	1850-1999	2000-2009	2010-2014	2015-2021
	% of column			
A	1%	1%	35%	98%
B	6%	23%	56%	2%
C	30%	56%	7%	0%
D	29%	15%	1%	0%
E	16%	4%	0%	0%
F	**8%**	1%	0%	0%
G	**11%**	0%	0%	0%
Dwellings	537,000	315,852	11,590	66,590

Who Lives in pre-2000 F and G rated Dwellings?

- The dwelling energy audit procedure does not record any data on the occupants.
- Matching the energy ratings with another data source such as the Census of Population enables socio-economic information on persons living in the lowest energy efficiency dwellings to be identified.
- Statistical offices may have a legal remit to be given access to confidential microdata that allow extra added value to be achieved through data matching for statistical purposes.
- Detailed socio-economic analyses could provide the basis for policy-makers setting priorities in relation to providing financial assistance for major building energy efficiency retrofits.
- The statistics office in Ireland has published such an analysis.
- Older persons living alone in older detached houses are among the more vulnerable
- https://www.cso.ie/en/releasesandpublications/ep/p-dbersp/domesticbuildingenergyratingsfromasocialperspective2016/

Building Energy Rating (BER)

is an indicator of the energy performance of a dwelling

Top categories in Ireland living in **B rated** dwellings

17% of households owned with a mortgage

15% of household reference persons in very good health

16% of households comprising a couple with children

Persons living in Dublin 18

Top categories in Ireland living in **G rated** dwellings

10% of reference persons aged 75 or over

8% of reference persons with a mobility difficulty

11% of household reference persons who were farmers

Persons living in Dublin 3, 6, 7, 8

Electric Vehicles

- Moving to a low-carbon economy involves changing to electric and to hybrid vehicles and generating electricity from renewables.
- Policies such as restricting access to cities for diesel and petrol cars may reduce car traffic if public transport options are available.
- Rural dwellers and families that combine travelling to work with dropping off children at school etc. may not be able to avail of more flexible transport options.
- Financial support towards purchasing electric vehicles combined with the roll-out of an adequate public and domestic charge point network may be needed.
- Combining vehicle owner administrative data with other socio-economic microdata could identify those most in need e.g. owners of older diesel and petrol vehicles in rural areas with high annual kilometres travelled
- Carbon and excise taxes are typically fuel based and using them to incentivise the transition may not be effective for households that are unable to afford to switch to hybrid or electric vehicles and may even cause an increase in energy poverty.

Statistical Data relevant to Electric Vehicles

There are a broad range of administrative data sources that could describe the pace of change from petrol and diesel to hybrid and electric vehicles - the CSO has started the process of collecting these data.

- Vehicle and vehicle owner registers (fuel type, age of vehicle, location of owner, sex of owner)
- Vehicle test data (kilometres travelled by the vehicle)
- New vehicle registrations (fuel type, engine size, location)
- Financial subsidies towards purchase of electric vehicles and installation of home charging points
- Public charge point network (locations, charging speed, time series)
- Electricity consumption used to charge vehicles
- Input fuels used to generate electricity

Fossil Fuel Subsidies

- Fossil fuel subsidies can encourage higher levels of consumption of fossil fuels through lower tax rates, VAT refunds, direct subsidies, etc.
- The change to a low-carbon economy will involve reducing the level of fossil fuel subsidies.
- Some beneficiaries may be less able to afford to change their behaviours e.g. elderly home owners using solid fuel for heating and rural dwellers.
- Compiling statistics on fossil fuel subsidies is an essential starting point for government to make informed decisions on their phasing out.
- The OECD has been very active in this area and fossil fuel subsidies are an SDG indicator – UNEP and OECD are examining ways of launching a data collection.
- Eurostat is planning a voluntary data collection.
- The CSO has published statistics on effective carbon rates and on absolute levels of direct and indirect subsidies, see https://www.cso.ie/en/statistics/environmentaccounts/fossilfuelsubsidies/

Effective carbon rate on Petrol

€259
per tonne of CO_2 emitted
Highest effective carbon rate

Effective carbon rate on Autodiesel

€183
per tonne of CO_2 emitted
Due to a lower excise tax rate than petrol

Effective carbon rate on Jet kerosene

Less than €1
per tonne of CO_2 emitted
Commercial flights exempt from excise and carbon taxes

Effective carbon rate on Marked gas oil
used in agriculture and fishing

€35
per tonne of CO_2 emitted
Due to a lower excise tax rate than petrol

Total fossil fuel subsidies:

€2.4 billion in 2019

1% higher than 2018
69% higher than 2000

Energy taxes:
€3.0 billion

Environmental Subsidies on energy and emissions:
€0.4 billion

Using Excise on Petrol as a benchmark, **revenue foregone on Autodiesel was €400 million**

The Excise exemption for **Jet kerosene resulted in revenue foregone of €634 million**

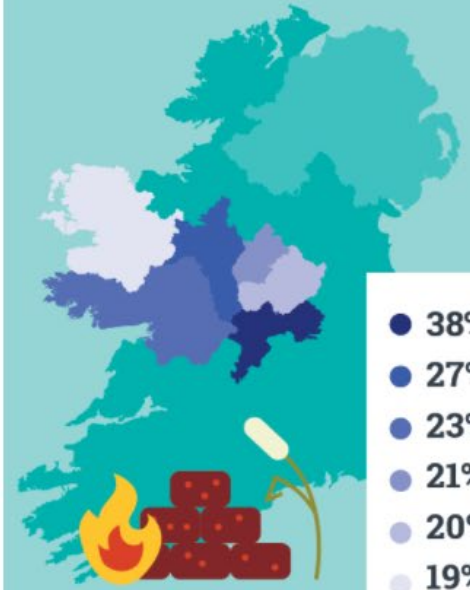
Household Surveys

- Developing environmental-social statistics requires access to household data
- This can be done through a stand-alone environmental household survey or through matching environment-relevant administrative microdata with socio-economic household data
- Special environmental modules could be attached to large household surveys such as the Labour Force Survey – this approach means the environment module does not need to include socio-demographic questions as they will be in the main survey
- The CSO used this approach in 2014, see https://www.cso.ie/en/releasesandpublications/er/q-env/qnhsenvironmentmoduleq22014/
- A new environment module was undertaken in Autumn 2021using a letter post-out which provided access details for an internet survey. This new approach has the disadvantage of not being directly linked to a general purpose household survey. It has the advantage of putting less of a data collection burden on the statistical office as no survey interviewers were required and a household can complete the internet survey at a time that suits them. A very high response rate was achieved for the 2014 LFS module whereas for the postout / internet module the response rate may be only around 25%.

Censuses of Population and Agriculture

- The Census of Population can be used to collect environment-relevant data such type of building, main space heating system, period of construction, vehicle ownership, installation of renewable energy such as solar panels and heat pumps.
- This approach has relevance for a Census of Agriculture also e.g. farming management practices.
- If the environment questions are used in two Censuses then a longitudinal analysis could be undertaken if the data can be matched at household level.
- The CSO matched the 2011 and 2016 Censuses of Population to examine the characteristics of households using solid fuels. The main finding was that a change of occupants in 2016 was more likely to result in a change from using solid fuels, see https://www.cso.ie/en/statistics/environmentstatistics/censusofpopulationfromanenvironmentperspective/

Counties with the highest proportions of households using peat central heating in 2016



- **38%** Offaly
- **27%** Roscommon
- **23%** Galway county
- **21%** Longford
- **20%** Westmeath
- **19%** Mayo

30% of occupied private households with no central heating in 2011 had no central heating in 2016

9% of households with reference person in poor health used coal central heating in 2016

Used Peat as central heating fuel in 2016

of Detached Houses

of Semi-Detached Houses

Used electricity as main source of heating in 2016

21% of rented households

4% of owned households with mortgage

Conclusions

- Policy-makers need environmental-social statistics as an input into the transition to a low-carbon economy.
- Environment divisions within statistical offices could contribute useful data using a combination of surveys, modules, and administrative microdata.
- Microdata matching can add considerable value to existing standalone datasets e.g. utility data on electricity, gas, and water consumption and household energy audits.
- Some coordination at international level would be beneficial – Eurostat working groups often have a specific focus rather than the cross-sectoral approach which may be needed to achieve added value by linking social, economic, and environmental data at household level.
- SDG indicators and climate change-related statistics are important steps that are already well underway as are new holistic policy initiatives such as the Green Deal.

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