3rd ANNUAL WORKSHOP ON FARM MANAGEMENT

SUSTAINABILITY THROUGH ADVISORY SERVICES, POLICIES AND MARKET

Adapting farm data collection and analysis for sustainability reporting - the Irish experience

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Policy Rationale

- **Governments** & **researchers need to monitor agriculture**
  - particularly agriculture's interaction with environment
- **Policy creating environmental targets**
  - **climate** change, **air** and **water** quality,
  - **biodiversity**, protection of wildlife and
  - food quality

Use of FADN based approaches

- **Use the** Farm Accountancy Data Network (**FADN) as a foundation**
- **Extend FADN data collection** to produce
  - **agri-environmental** metrics
  - **social metrics** that go beyond the traditional income, age, gender stratifications
- Combine FADN **data with other data sources**
  - Has the farmer supplied data to someone else?
  - e.g. administrative data
- **Then use** FADN to explore other concerns
  - Allows us to then ask farmers new/different questions to get new types of data

Substantial environmental data needs

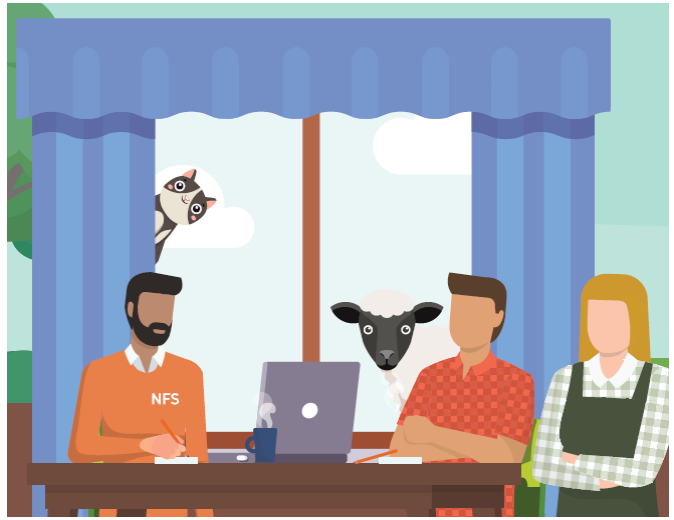
- **Want to measures the changes happening on farms**
- Environmental data is diverse and can be complex
- Environmental indicators may require **several pieces of data**

- **Proxy measures** can <u>sometimes</u> be useful
  - but are proxy measures good enough?
  - can they **capture small incremental changes made by farmers**?
  - a poor proxy cannot identify small annual changes
- In the end, a **high level of data accuracy** will be required

But there are also social data needs

- **Social data** is more **personal** (than economic or environmental data)
- Social data is **sensitive (more private) in nature**
  - e.g. farm succession plans, non-farm incomes, personal health, social isolation (loneliness)
- Sensitive questions can reveal **"hidden" family concerns**
  - family conflict, mental health issues, non-farm financial problems

- **Strong relationship** between **farmer** and **data recorder** is required
- **Personality** of the data recorder is important
  - may require **skills that are difficult to learn**
- **Confidentiality** is even more important with social data



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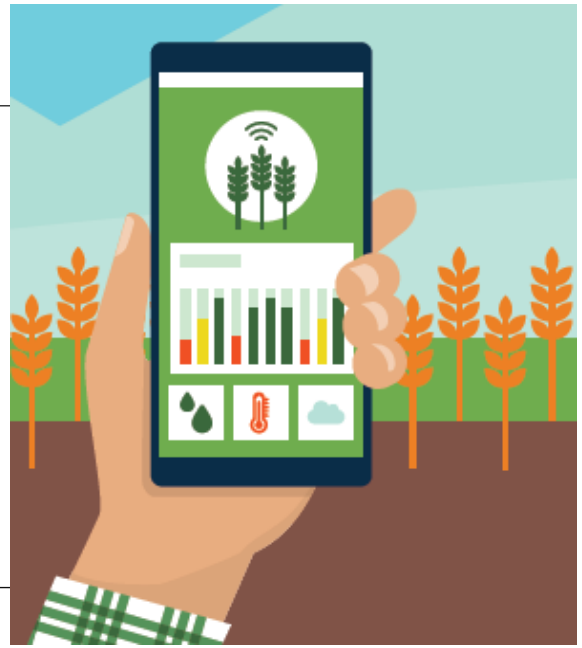
Capturing Synergies and Trade Offs

- Environmental & social data compared alongside economic data
  - **Relationship between** economic, social and environmental performance of farms
- **Critical value** in such data analysis
  - e.g. **designs policies** to reach environmental objectives in a **cost effective way**
- Look at relationship between
  - environment and different farm types (big/smalls, high/low income, young/old farmers
  - farmer training and adoption of technologies
  - income growth and environmental outcomes

Environmental Data

- Agriculture and Climate Mitigation
  - GHGs
  - Carbon Sequestration
- Soils
  - Soil Erosion
  - Soil Organic Matter Loss
  - Soil Biodiversity Loss
  - Soil Compaction
  - Soil Contamination
  - Salinisation
  - Sealed Soils
  - Desertification
  - Soil Practices Addressing Soil Degradation
  - Crop Rotation
  - Soil Cover
  - Tillage Management Against Erosion
  - Precision Farming
- Biodiversity
  - Farmland Bird Index
  - Conservation status of habitats and species of EU interest which are dependent on agriculture
  - Grassland Butterflies Index
  - Key Pressures on Farmland Species (there are many)
  - Farm landscape features and their loss
  - Presence of high-nature-value farming
- Other
  - Ammonia
  - Adoption of biocontrol
  - Renewable energy
  - Genetic diversity of seeds
  - Pollinators



Social Data

- Structural Change and Generational Renewal
  - Evolution of Farm Numbers
  - Evolution of Farm Size
  - Ageing in the Farm Population
  - Farm Diversity
  - Status of Young Farmers
  - Age and Farm Specialisation
  - Age and Farm Income
  - Volume of Land Sales
  - Land Selling Prices
  - Land Rental Prices
  - Access to Finance and Credit
  - Level of Training
- Jobs and Growth in Rural Areas
  - GDP Growth and Poverty Rates
  - Unemployment in Rural Area
  - Broadband Coverage and Speeds
  - Role of Agriculture in total employment
  - Size of the Agricultural Labour Force
  - Off-Farm Income
- Health, Food & Antimicrobial Resistance
  - Sales of veterinary antimicrobial agents
  - Use of veterinary antimicrobials in EU animal husbandry
- Other
  - Distance from services
  - Remoteness
  - Accessibility
  - Connectivity
  - Poverty rate
  - Home consumption
  - Social inclusion

Integrated datasets maximise added value

- Best way to collect economic, social and environmental data?
- Can be collected in one of two ways
  1. **multiple surveys** involving **different samples**
     - or
  2. **one consolidated survey** using **same sample**

- Option 2 (above) is the preferred option
  - **integration** of economic, social & environmental **data**
  - richer resource for research purposes
  - can **unlock the answers** to more complex questions

Advantages of Improving Overall Data Quality

- **Making connection** between **financial data** & **physical data**
  - **monetary (financial) data and quantity (physical) data**
  - provides **big advantages**
  - **better data quality and scope**
- Data quality can be enhanced
  - by **cross-checking** financial and physical data
  - quantity and monetary based measurement

- Systematic recording can be used
  - addresses the error inherent in farmer responses that are based on their recollection of what they do

Collect more data sooner rather than later

- Important to **get the full picture** of **current farm circumstances**
  - **change** is **already happening on farms -** need to measure these changes
- **Acknowledge progress being made by farmers**
- **Generally can't backcast historical data -** Can't turn clock back
- The sooner you start collecting new data series the better
  - the sooner you will have a **useful time series to assess trends**
  - then capable of crediting the changes that farmers are making
  - or identifying areas where progress is absent

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How can the data be used for evaluation?

Are results being achieved in line with CAP and other EU/national policy objectives?

- **Economic Data**
  - Income and CAP support distributions, CAP support as a share of farm income, income volatility
  - Productivity measures
- **Social Data**
  - Rate of progress/regression concerning generational renewal
  - Non monetary life quality issues (work/life balance, access to services)
  - Social inclusion
- **Environmental Data**
  - GHG indicators (per farm, per ha, per kg product)
  - N and P Balances/Surpluses (per farm, per ha)
  - Ammonia indicators (per farm, per ha)
  - Extent of use of emission reduction technologies or environmental farm management practices

…… and further benefits can also be derived

- **Explore relationship** between economic, social & environmental metrics
- Economic cost of environmental sustainability measures can be identified
- Allows us to target specific policies at particular farms
- Determine the anticipated costs and benefits of policies
- Provides content for advisory services

Advisory Example: Signpost Farms Programme

- Multi-annual advisory campaign in Ireland
- Reducing gaseous emissions from Irish agriculture
- and also:
  - improve water quality
  - maintain and in some cases improving bio-diversity
  - reduce costs and create more profitable and sustainable farming enterprises.

- Farms will have their sustainability measured annually as part of the process
- Using the knowledge developed in measuring sustainability described earlier

Conclusions

- Need to **broaden** the type of **data collected**
- **Advantages** of **combining** different types of **data**
  - produce **more informative** analysis
  - answer more **challenging questions**
  - design more effective and **better targeted policies**
  - provide **farmers** with **new data tools** to make better (socially desirable) decisions
- But it **will be challenging**
  - it will take **several years**
  - **start the process sooner** rather than later
  - capacity to **speed up the process if additional resources are provided**

End