

ENVIEVAL



**Data issues:
Application of EU databases
& review of data gaps
*Experiences from ENVIEVAL case studies***

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Stakeholders' top challenge: Data issues

- Limitations of data suitability:
 - existing environmental monitoring data not compatible with RDP uptake
- Limitations of data availability: lack of ...
 - environmental monitoring data
 - strategic sampling
 - data for non-participants

This presentation is on experiences with data issues in the ENVIEVAL case studies to answer these questions:

- Are existing EU databases useful for impact assessment?
- How the project team dealt with data gaps?
- What are the institutional issues that help combating data constraints?
 - Access to data
 - Strengthening the policy loop
 - Evaluation/Sampling design, other factors to refine interpretation of results

Are existing EU databases useful for the assessment of impacts?

Case studies	Corine Land Cover (CLC)	FADN	IACS/ LPIS	Farm structure survey (FSS)	Pan-European Common Bird Monitoring Scheme (PECBMS)
BW HU: FBI and NBS	X		X		X
BW LT: Corncrake and White Stork	X		X		
CC FI: DREMFA		X	X	X	
CC IT: GHG @farm level		X	X	X	
HNV IT		X	X		
HNV LT			X		
L GR: Land cover change			X		
L GR: Visual amenity			X		
L SCO: Natura2000 and Visibility			X		
L SCO: Landscape metrics	X		X		
SQ HU: USLE and SENSOR	X		X		
SQ SCO: Soil carbon and soil erosion	X		X		
WQ DE: Nmin and GNB			X		
WQ FI		X	X		
WQ GR: GNB and water use			X		
AW DE			X		

Legend: DE: Germany FI: Finland GR:Greece HU: Hungary IT: Italy SCO: Scotland
 BW: biodiversity wildlife CC: climate stability L:landscape SQ: soil quality WQ: water quality AW: animal welfare

Are existing EU databases useful for the assessment of impacts?

Envieval case studies' experiences:

- Substantial gaps in environmental monitoring data currently constrain the design of robust comparison groups for participants and non-participants
- Existing databases and the spatial & temporal resolution of data applied in the evaluations **did not fit** the unit of analysis or the temporal scale of the evaluation period

Message:

- EU databases are useful at EU level but for lower scale evaluations they need to be complemented (data resolution)
- **national and regional databases and environmental monitoring programmes play a crucial role in providing the required data**

Examples of HOW the project team dealt with data gaps

Corine

- HNV IT: **resolution insufficiency** of CORINE data → Instead: **Land Cover Map** created by the technical service of Regione Veneto was used
- LQ GR: CORINE data unable to distinguish vineyards pruned by traditional techniques to be distinguished from linear vineyards → Instead: **Google Earth images** were digitized to create the specific land-cover maps that enabled setting such specific classification

PECBMS

- BW LT: **insufficiency of the number/ spatial distribution of survey spots** of the Common Farmland Bird Monitoring to use FBI indicator at micro level → alternative solution: **Single species** included in the Farmland Bird Monitoring Scheme were used for which detailed regional & local monitoring data were available

HOW the project team dealt with data gaps?

Ensuring consistency of evaluation results across different levels

- representativeness of existing databases: e.g. FADN has a major impact
- consistency between micro and macro-level results would be improved with representative FADN samples at territorial level

Example:HNV IT

- better statistical representativeness allows more robust extrapolation from FADN sample to regional estimations
 - a larger number of observations for sufficient statistical significance of the estimated parameters → increases costs of analysis
- Alternative solution: better integration / linking of FADN, FSS & IACS-LPIS databases → more appropriate geo-referencing & spatial representativeness of farm samples.



DATA ACCESS!!!


What are the institutional issues that help combating data constraints?

Access to data

- Major obstacle for a better use of existing databases from statistics institutes, monitoring agencies & administrative bodies
- Potentially key constraint for the application of advanced evaluation approaches
- Negotiating access to data is time-consuming & strict interpretation of data protection laws:
 - affect the timetables of evaluations, and
 - impacts the design of the tested evaluation approaches
- While in most cases access to IACS data can be assumed as a given for evaluators, **access to aggregated IACS is not sufficient** to apply elaborate statistics-based methods to quantify net effects of RD measures and RDPs

Case study example: finding alternative solutions to data access

- WQ DE explored the combination / integration of different data sources: incl. monitoring data, farm accounting data or control data of the fertilizer ordinance → to create a sufficient number of samples for sound statistical analysis of comparison groups.

 As nutrient balances from different data sources are calculated by different organizations / stakeholders, particular care must be taken in ensuring the **comparability & reliability** of different data sets.

What are the institutional issues that help combating data constraints? **Strengthening the policy loop**

- Strengthening the policy loop: especially between
programme planning – monitoring – impact evaluation
- Setting **data pre-requisites** by the beginning of each programming period → enables sound statistical analyses for the evaluation
- Planning of impact evaluations at the **stage of scheme design**
- **Adjustments** to sampling and monitoring methods targeted at RDP
- Embedding additional data collections into a **multi-purpose** monitoring system (better data integration, cost sharing)

Case study examples of strengthening the policy loop:

- WQ DE: Good coordination and **long-term cooperation** (time-series data!) between monitoring and evaluation can increase the quality and efficiency of evaluations
- BW HU:
 - important **role of volunteers** : their data collection efforts enabled the evaluation to assess the net effects.
 - **long-term cooperation** between monitoring organizations and managing authorities is required to ensure strategic sampling with sufficient survey squares for the FBI for ‘participating’ and ‘non-participating’ farms / parcels to enable sound statistical analysis.
- BW LT: explore options for mutual and multipurpose monitoring and use of databases across the agricultural and nature conservation sectors → can reduce transaction costs

Fighting with data gaps: improving sampling design

- sufficiently large samples of participants and non-participants in environmental monitoring programmes enable the application of advanced statistics-based methods

Case study example: WQ DE: Despite an overall large sample size not all sub-measures could be analysed due to small sample sizes for some sub-measures → Improved strategic sampling can increase the coverage of sub-measures with poor area coverage + utilise the potential to reduce the sample size for some measures with very large sample sizes and secure effects. → reduced monitoring cost.

Refining impact evaluation results: understanding farmer's attitudes

- Understanding **farmers' attitudes** (e.g. economic rational behaviour, land management strategies, inherited farming traditions) **can help further refining the interpretation of impact evaluation results** and deadweight effects (e.g. less productive areas are enrolled into agri-environment schemes where environmental status is OK, management prescriptions of the policy measure are easily implemented/ or would have also been implemented without the policy measure)
→ implies further research for social sciences

Case study example: SQ HU – low fertility areas are under AE(?)

ENVIEVAL solutions and messages to data issues

- national and specific regional and local monitoring programmes from different organisations plays key role in providing the data necessary for impact evaluation
- alternatives for CORINE: freely-available spatial data (Google Earth) and remote-sensing data (Copernicus Programme)
- combination of different data sources to enable bigger/representative samples, but comparability and reliability of different data sets can become a critical issue
- data access negotiations are time consuming: start it early
- access to unaggregated data support advanced evaluation methods
- long-term cooperation (time-series data!) between monitoring and evaluation can increase the quality and efficiency of evaluations
- monitoring organizations and managing authorities is required to ensure strategic sampling
- mutual and multipurpose monitoring and use of databases → can reduce transaction costs