ISPRA
Istituto Superiore per la Protezione e la Ricerca Ambientale

Sistema Nazionale per la Protezione dell'Ambiente

SCENARIO PLANNING: ISPRA'S FIRST EXPERIENCE WITH CIRCULAR ECONOMY

2021 EU conference on modelling for policy support
22 – 26 November 2021, online event
Area 3: Scenarios and data

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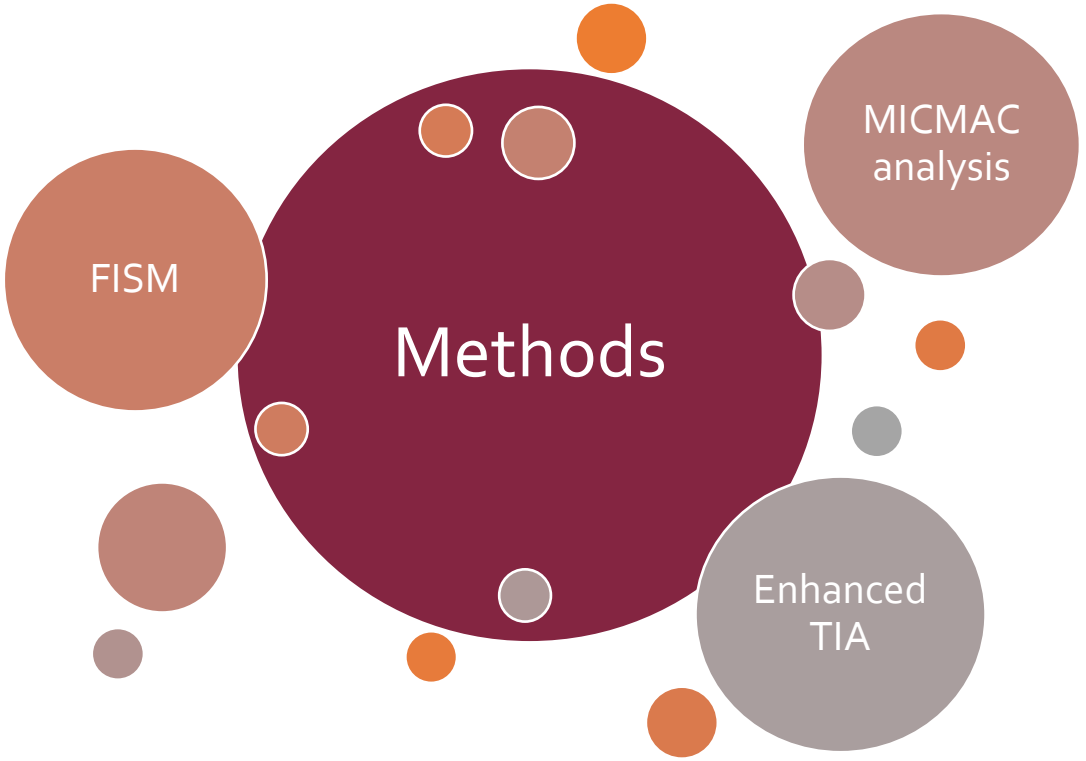
WHAT WE ARE TALKING ABOUT

1. Purpose
2. Workflow
3. System analysis and simplification
4. Scenario generation
5. Next steps

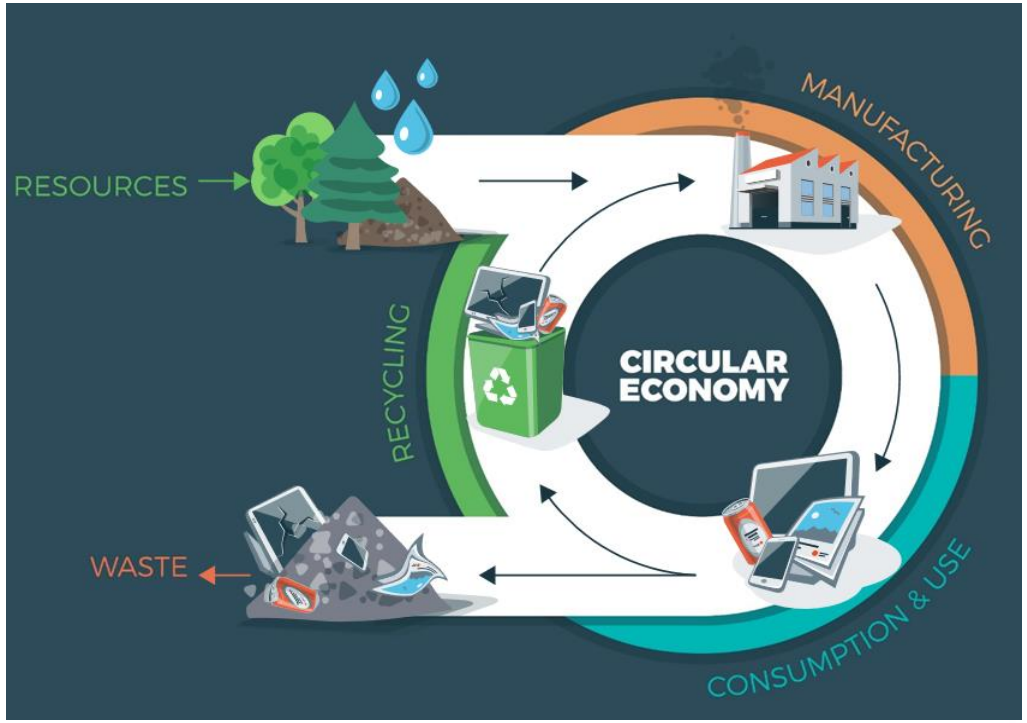


PURPOSE

Create environmental scenarios to try to forecast changes in enviromental realms.

CHALLENGES:

- Lack of data
- Complex topics
- No fixed methodology



European Environment Agency
EPA Network
ISPRA
THE BELLAGIO PROCESS

WORKFLOW

System analysis and simplification

- Scenario field identification
- Search for key factors
- Key factors analysis
- Data collection

Scenario generation

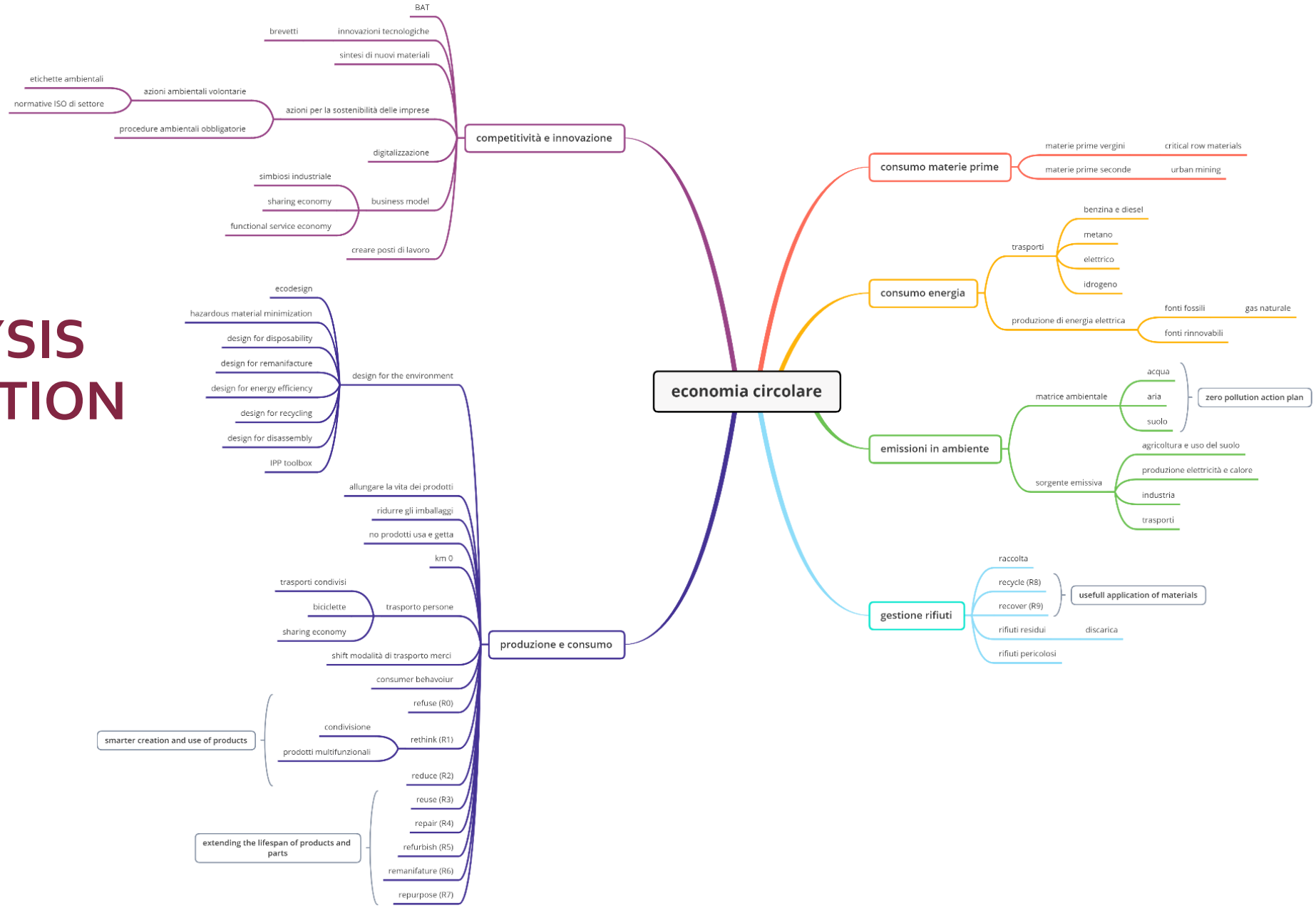
- Scanning of the field of possible
- Sets of probable assumptions
- Generation of forecasts by scenarios

Interpretation, communication and completion

- Scenario perfection
- Definitions of strategies

SYSTEM ANALYSIS AND SIMPLIFICATION

The starting point

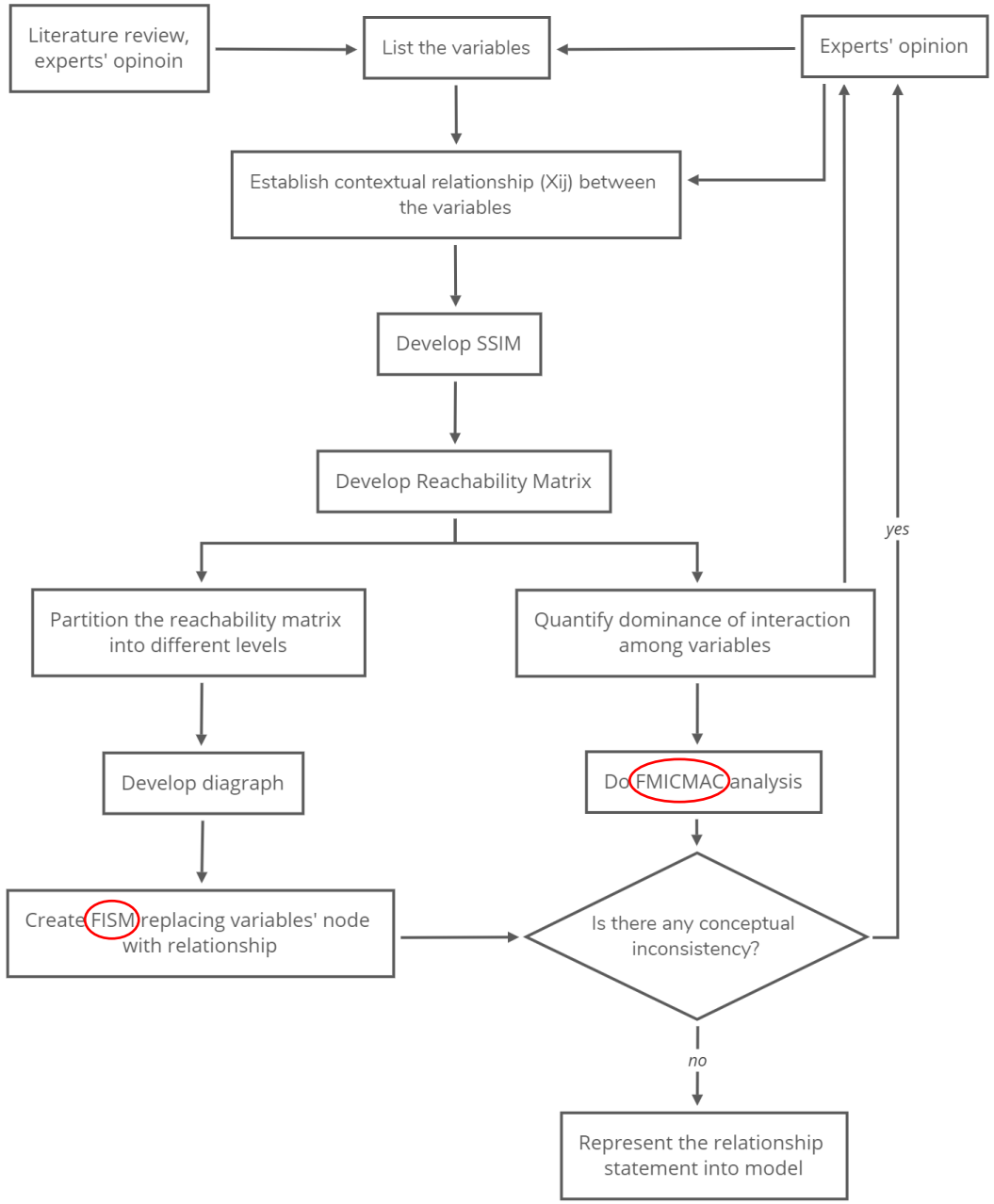


SYSTEM ANALYSIS AND SIMPLIFICATION

Structural analysis flow diagram

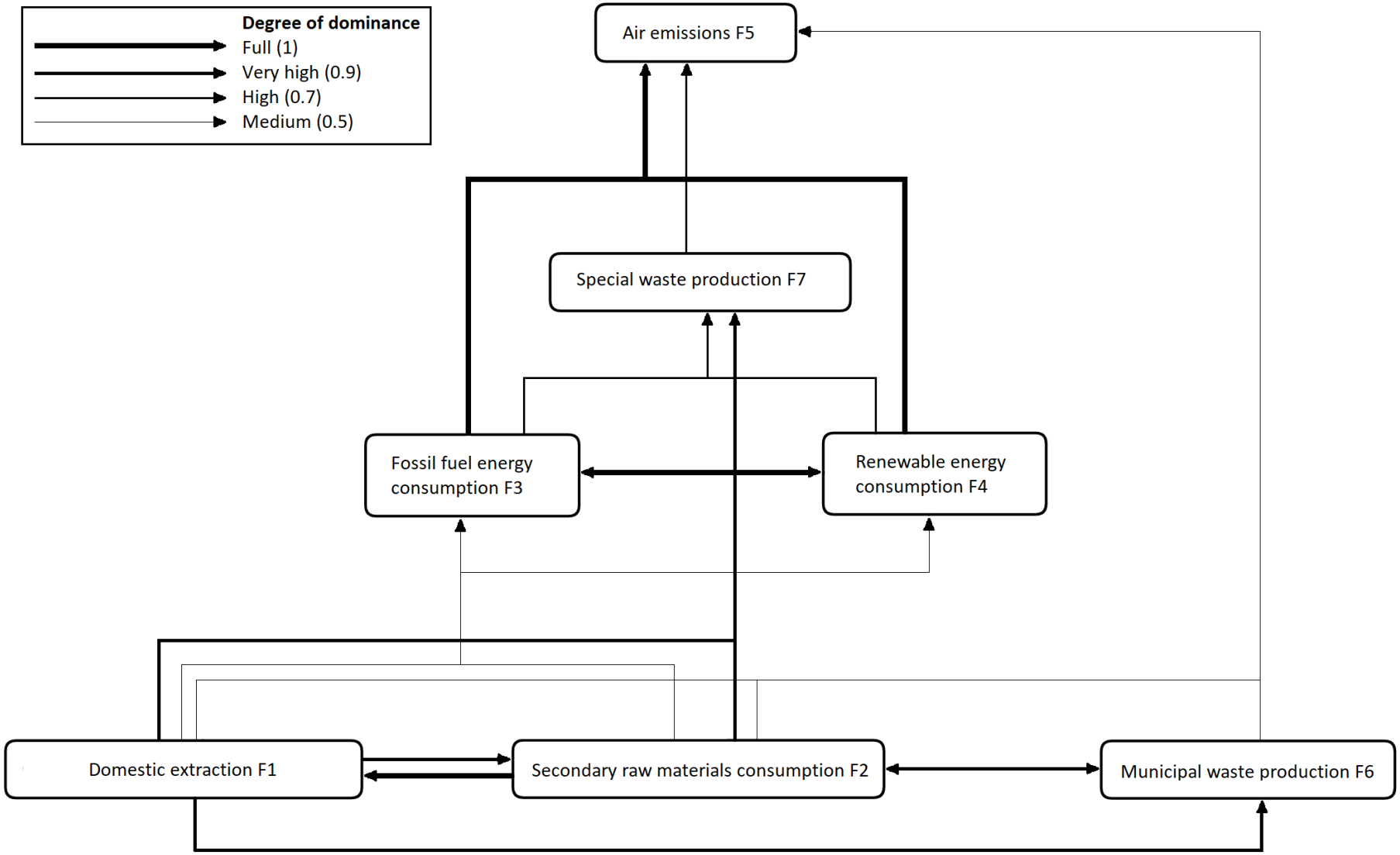
FISM: Fuzzy Interpretive structural modeling

FMICMAC: Fuzzy-MICMAC (Matrice d'impacts croisés multiplication appliquée á un classment)



STRUCTURAL ANALYSIS RESULTS

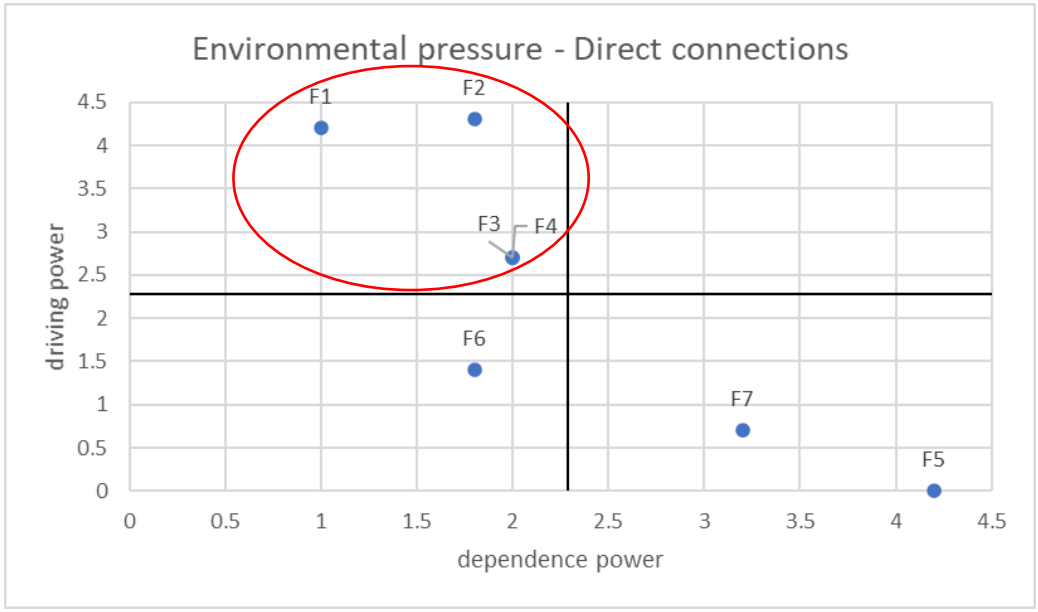
Environmental pressure FISM

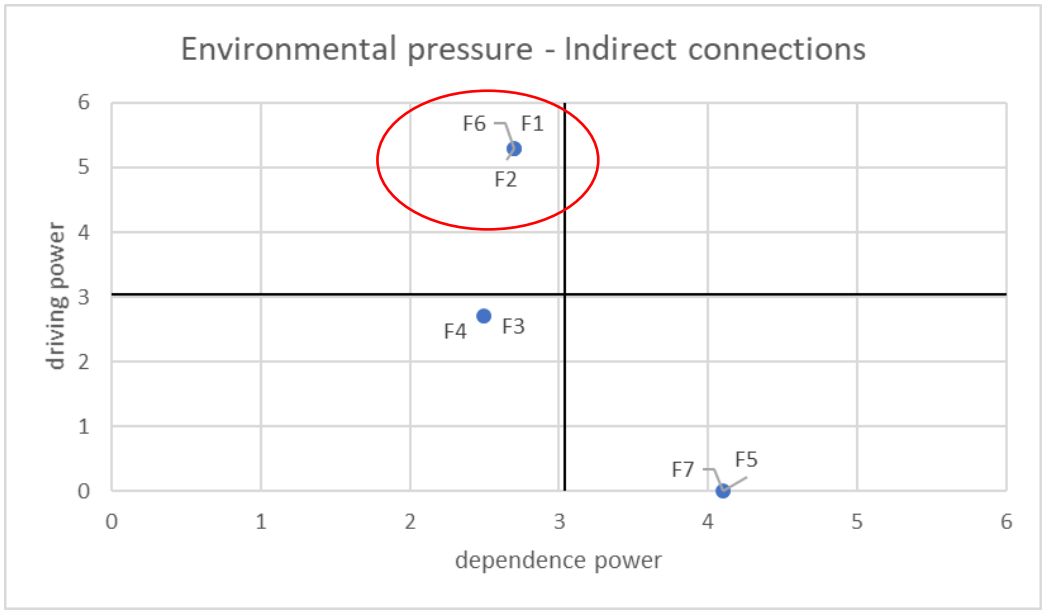


STRUCTURAL ANALYSIS RESULTS

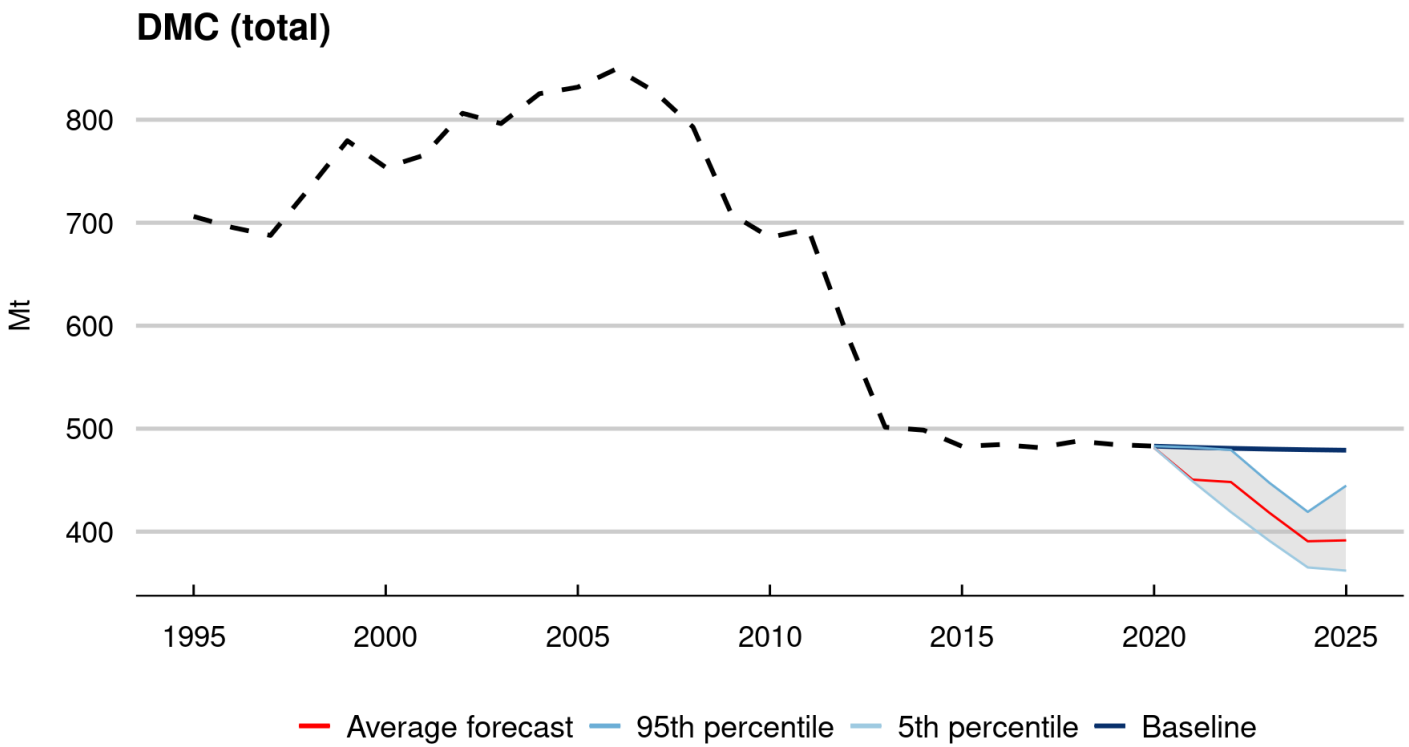
Environmental pressure factors classification (FMICMAC)

II quarter
Influential variables





ENHANCED TREND IMPACT ANALYSIS



Hybrid method in which a surprise-free forecast is modified to take into account experts' perceptions about how future events may change the surprise-free forecast.

- Input:
  - Time series of interest
  - Set of key (unprecedented) future events, their probabilities and their impacts
- Baseline extrapolation with Damped Holt's method

NEXT STEPS

- Carry out an economical analysis
- Improve indicators database and dataset
- Promote sectoral studies to collect impact factors
- Collect experts' opinions and perfect the results

Thank you for your attention