

Digital soil function mapping

**subgroup Soil function models
of the ESN Group
Digital Soil Mapping Implementation**

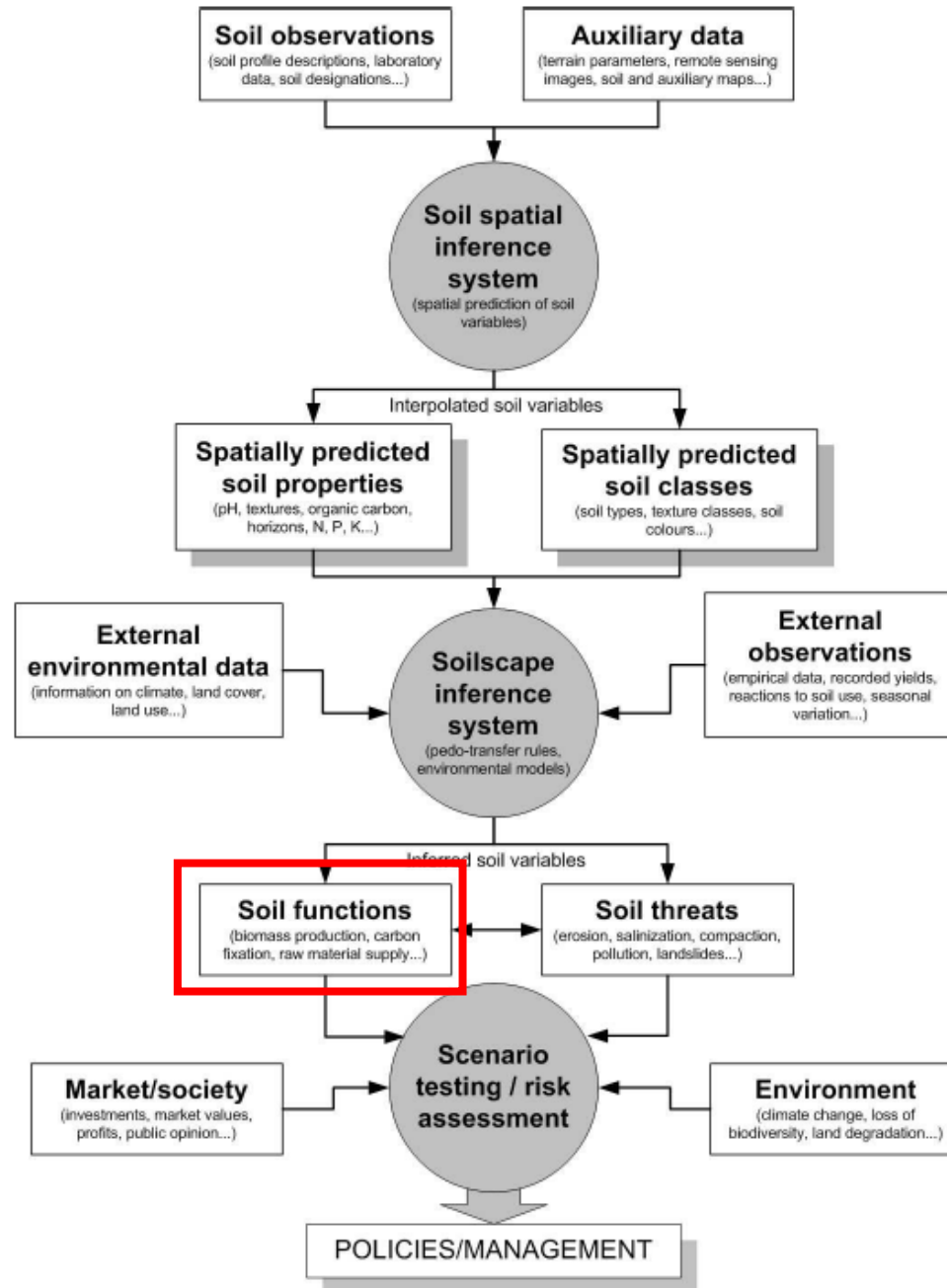
Franz Daffner



Soil function models WG

- **Group members**
 - **Florence Carre, JRC**
 - **Thomas Mayr, Cranfield University, UK**
 - **Sigbert Huber, ETC terrestrial, UBA, A**
 - **Jaume Fons-Esteve, ETC terrestrial, UAB**
 - **Timo Tarvainen, ETC terrestrial, FI**
 - **Franz Daffner, EEA**
- **Supported by: Helen Cook, Cranfield University**





Soil function models – work 2006

- Two physical meetings
 - 6.7 – 7.7 Copenhagen
 - 23.10 – 25.10 Munich
- Template developed
- Tested with examples from UK, FI and JRC
- Perspective for further work
- Draft summary report



Soil function models

- No overview available
- Transferability ?
- European models ?
- Models often integrated in broader projects, effort to separate soil issues
- Validation, calibration, model documentation



Soil function models - template

Name		
Institute		
Author(s)		
Literature		
Output	<i>Variable</i>	
	<i>Type</i>	Numerical, Categorical
	<i>Scale</i>	
	<i>Coverage</i>	Catchment, Regional, National, EU
Methodology		Capability, Critical load, Risk assessment Suitability, Vulnerability
Inputs	<i>Variable</i>	
	<i>Scale</i>	
Calibration and validation	<i>Calibration</i>	Y/N
	<i>Validation</i>	Y/N
Practicability	<i>Model complexity</i>	Classification, Mechanistic model, Dynamic model
	<i>Portability</i>	Restrictions through software portability, software hardware or licences
Transferability		
Functions		Biomass, Environmental Interactions, Biodiversity, Raw material, Physical medium, Cultural heritage
Sub-function		e.g. arable, grassland, energy or forestry



Soil function models – possible next steps

- Complete listing of existing soil function models for Europe
- Embedding in ESDAC structure
- Continue sub group approach
- Step by step, possible work packages
- 1 year tasks for action
- Steering the action



Soil function models – WP

- **Work package 1: *Complete listing of Soil Functional Models for Europe***
- tasks can be handled by a small expert group (5-8 members, with sufficient resources for support)
 - 1. Improving questionnaire
 - 2. Profile for analysis / scale / model type
 - 3. Sending out (S)
 - 4. Help provided to fill (S)
 - 5. Formal compilation of list (S)
 - 6. Analysis of results
 - 7. Analysis report / state of the art
 - 8. Communication to JRC, ESBN, EIONET



Soil function model – add. WP's

- **Work package 2: *Research for models***
 - check potential of soil observatory for modelling, calibration issues, validation issues, quality check of new model, create new models where gaps are detected or improvement is required
- **Work package 3: *Multifunctionality***
 - academic definition of interactions, Technique for expression of multifunctional, Collection of user requirements from policy/decision level, comparability of results from different models, chaining of models
- **Work package 4: *Threat – function interaction***
 - academic definition of interactions, communication to broader community, check models for applicability, scenarios, sensitivity analysis, time dimension, spatial dimension

