PREMISS
PRioritisation of EMerging chemical compounds In SoilS

Kick-off web-meeting, 17/11/2020

PREMISS Consortium

- Project leader:

Géosciences pour une Terre durable
brgm

- Project members:

ISSeP
Institut scientifique
de service public

Deltares

National Institute for Public Health
and the Environment
Ministry of Health, Welfare and Sport

ARCADIS | Design & Consultancy
for natural and
built assets

Witteveen + Bos

Funded by

SOILveR
Soil and land
research funding
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TRANSITION
ÉCOLOGIQUE

Wallonie

Ministry of Infrastructure
and Water Management

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TOMORROW
BEAUTIFUL
OVAM

Aims of PREMISS

To offset the lack of attention or data for CECs in soil

The overall aim of PREMISS is to build **a robust and flexible approach (incl. prototype) in order to prioritize CECs in soil and sub-surface**, enabling update and improvement such as substance and data addition
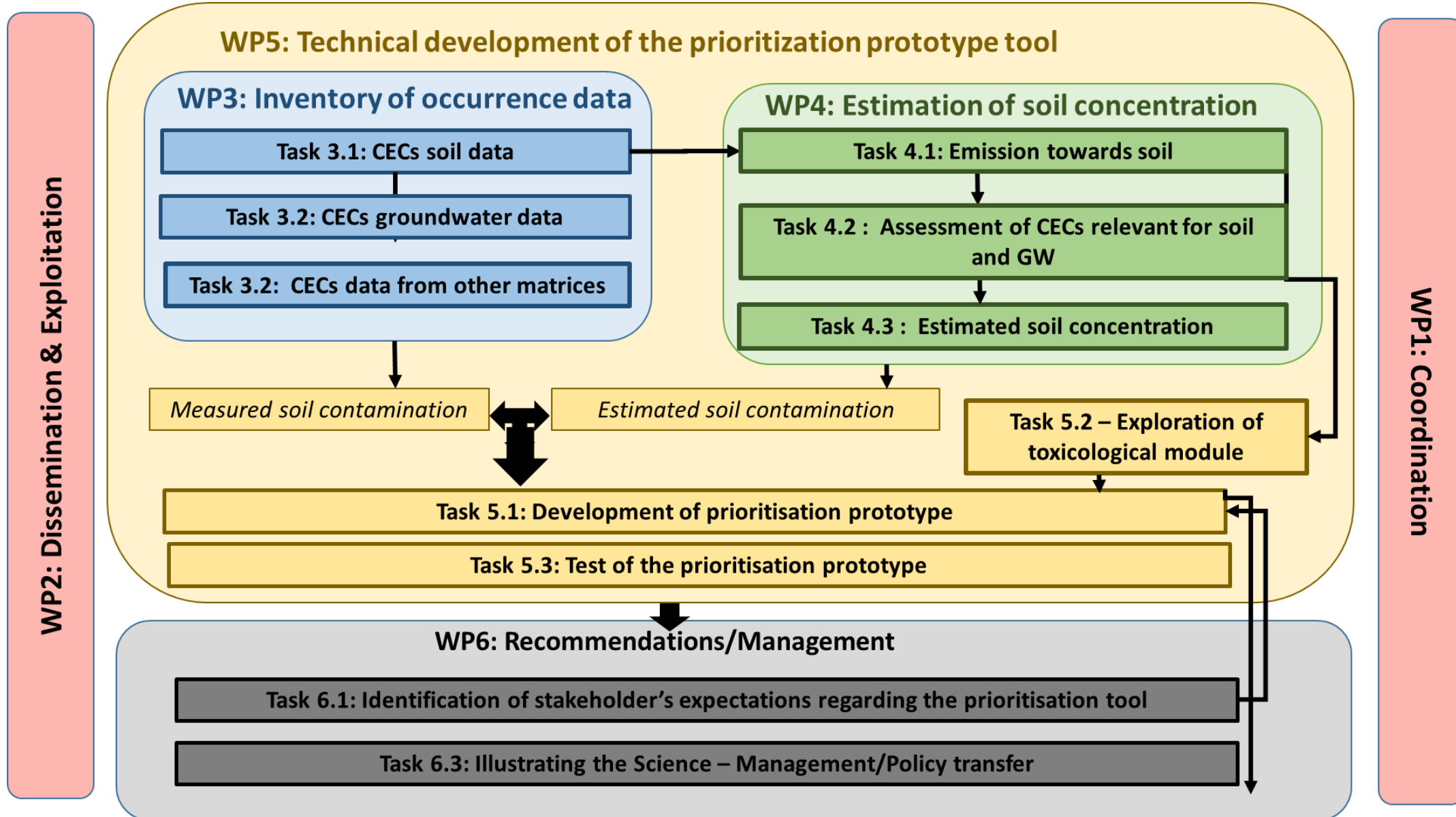
PREMISS goals include:

1) Assessing which CECs is likely be present in soils and subsoils,

2) Evaluating which of these CECs may pose higher human health and/or environmental risks,

3) Based on the prioritisation approach and its results, proposing opportunities for CECs management and policies (if possible) and recommendations for future R&D work.
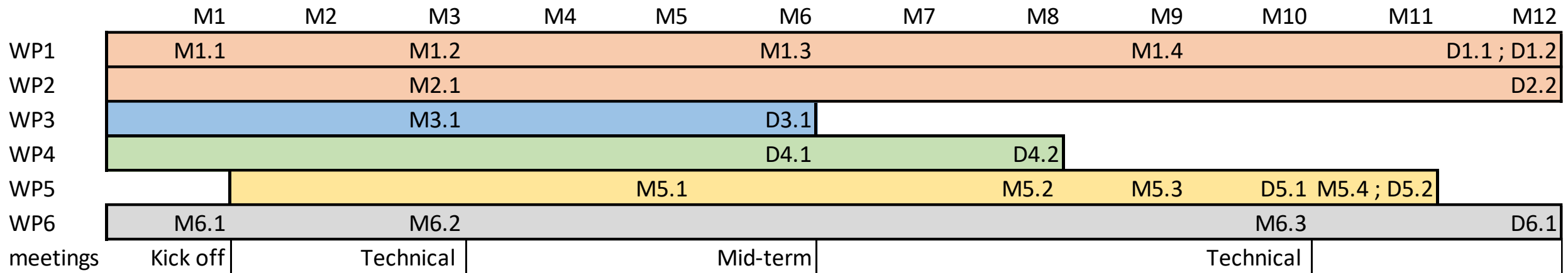
PREMISS specific objectives

1) Connecting and compiling existing CECs scientific data and information – Occurrence and Prototype

2) Developing a soil concentration estimation tool based on source and characterisation aspects - Prototype

3) Proposing a generic scheme for risk assessment of CECs, including measured and estimated data and taking into account associated uncertainties - Prototype

4) Proposing opportunities for CECs in R&D, management and policies – Exploitation of prototype results into recommendations

PREMISS programme

WP5: Technical development of the prioritization prototype tool

WP2: Dissemination & Exploitation

WP1: Coordination

WP3: Inventory of occurrence data

- Task 3.1: CECs soil data
- Task 3.2: CECs groundwater data
- Task 3.2: CECs data from other matrices

WP4: Estimation of soil concentration

- Task 4.1: Emission towards soil
- Task 4.2 : Assessment of CECs relevant for soil and GW
- Task 4.3 : Estimated soil concentration

Measured soil contamination

Estimated soil contamination

Task 5.2 – Exploration of toxicological module

Task 5.1: Development of prioritisation prototype

Task 5.3: Test of the prioritisation prototype

WP6: Recommendations/Management

Task 6.1: Identification of stakeholder's expectations regarding the prioritisation tool

Task 6.3: Illustrating the Science – Management/Policy transfer

SOILveR

Soil and land research funding platform for Europe

PREMISS schedule

	M1	M2	M3	M4	M5	M6	M7	M8	M9	M10	M11	M12
WP1	M1.1	M1.2		M1.3				M1.4				D1.1 ; D1.2
WP2	M2.1											D2.2
WP3	M3.1					D3.1						
WP4				D4.1			D4.2					
WP5	M5.1							M5.2	M5.3	D5.1	M5.4 ; D5.2	
WP6	M6.1	M6.2								M6.3		D6.1
meetings	Kick off	Technical				Mid-term				Technical		

M1 – Novembre 2020

Duration of the project: November 2020 – October 2021

PREMISS Challenges

- How to deal with very large number of substances with wide range of properties?

=> Selection of substances / families of substances to develop and test the prototype: substances which cover contrasted characteristics and properties

- How to deal with lack of data (Occurence, F& T, toxicological)?

⇒ Estimation of data when it is possible

⇒ Soil load calculation: Not absolute value, but way to compare substances between each others

- How to deal with heterogeneous set of data (measured data – known; estimated data – known; unknown data)?

⇒ Selection of substances / families of substances to develop and test the prototype: Substances having contrasted data availability (measured/estimated/unknown)

⇒ Classification of data according to measured / estimated / unknown status enabling assessment of robustness of set of data available for each substance

⇒ Combine estimated and measured data for calculation

PREMISS Challenges

- How to deal with uncertainties associated with data or calculation?

$\Rightarrow$ Include uncertainties associated with the types of dataset: measured / estimated

$\Rightarrow$ Do not necessary use absolute value, but values to compare substances between each others

- How to ensure the robustness of the approach?

$\Rightarrow$ Soil priorisation prototype will be built on existing water priorisation tools and approaches

$\Rightarrow$ Using the "proven" Source-Pathway-Receptor conceptual scheme for risk assessment

$\Rightarrow$ Limiting the development and the testing of the prototype on a selection of substances (test sensitivity of cut-off values; demonstrate capacity of the prototype)

- How to develop a tool which is useful for users and end-users:

$\Rightarrow$ Involving stakeholders to define their needs

- How to deal with data confidentiality?

$\Rightarrow$ Public database will be used in the first place by the project partners.

PREMISS internal meeting on substances: 13/11/2020

Remaining questions

- How to feed the tool with all CECs data available?

- How to make a "ready to use tool" for a wide range of stakeholders?

Points of particular attention

- Very short duration of the project

- Impact of COVID-19 :
  - How to manage stakeholders involvement and communication (WP2, WP6) - only through virtual meetings??
  - Project team co-work, communication and exchange through regular web-meetings

Project results

- PREMISS report content:
  - Chapter 1: Inventory of existing data on CECs in soils, groundwater and sources to soils (air, dust, sludge, manure)
  - Chapter 2: Soil specific sources (e.g. manure, aerial deposition) and (potential) CEC's in these sources
  - Chapter 3: Relevance of CECs for soil and groundwater and estimated soil concentration contributing to the prioritisation tool regarding sources, fate and transport
  - Chapter 4: Possibilities for toxicological module
  - Chapter 5: Prioritization prototype tool and Notice for Use
  - Chapter 6: Recommendations from PREMISS outcomes

- Demo version of the prototype for a limited set of substances.

  * The delivering modalities of the prototype will depend on the project results.

- Publications: one paper for Rank A journal and a communication paper to one conference

Stakeholder / end-user involvement

Two stakeholders meetings planned in WP6:

- Invite French, Dutch, Wallonia and Flemish stakeholders (including for each of them R&D actor, R&D funder, private and public tool end-users, private and public problem owners, policy maker).

- Built on existing information such as the OVAM white paper "EmConSoil - Challenges for Emerging Soil Contaminant governance & policy – Creating a multi-stakeholder network"

- Meeting structure may be adapted to sanitary requirements: Web-meeting; Small groups/ Several meetings to enhance discussion?

- 1st SKH meeting (M3): Identification of stakeholder's expectations

- 2nd SKH meeting (M10): Presentation and discussion of the recommendations

Use EU networks (NORMAN, NICOLE, EmConSoil, etc) to disseminate results

PREMISS internal meeting on stakeholders: 13/11/2020

How will the results be put to use ?

- PREMISS output will be of two kinds:
  - Methodological development (approach and prototype) - will be demonstrated in order to communicate on method capabilities and limitations
  - For substances used for methodological development purposes, set of specific actions and / or recommendations (R&D, management and policy) will be proposed

Follow up of PREMISS

- From the prototype to a ready to use tool.
- Depending on PREMISS methodological results and remaining questions, next steps could be.
  - Need for further testing / development
  - Complete the tool with a wider range of substances
  - Development of a web-interface – make the user friendly tool

- Maintenance for long-lasting tool life: governance, technical update, financial resources, longevity

Overview of National or international projects in this research area

- Tools
  - FP7-project SOLUTIONS; https://www.solutions-project.eu/
  - Simplebox - https://www.rivm.nl/en/soil-and-water/simplebox
  - CHESAR tool, hosted by the European Chemicals Agency [ECHA, 2018. Guidance on information requirements and chemical safety assessment: Chapter R.16 Environmental Exposure Estimation]

- Network / WG
  - NORMAN network: https://www.norman-network.net/
  - NICOLE network , https://nicole.org/
  - EmConSoil network, https://www.ovamenglish.be/emconsoil
  - EU CIS-GWWG

- Other references:
  - GEOERA-HOVER project; http://geoera.eu/projects/hover8/
  - Sjerps et al., 2017: Grondwaterkwaliteit Nederland 2015-2016 Chemie grondwatermeetnetten en nulmeting nieuwe stoffen. KWR report 2017.024
  - Kruijne R., A.M.A. van der Linden, J.A. te Roller and D. van Kraalingen, 2017. Groundwater Atlas for pesticides in The Netherlands - User Manual. Wageningen Environmental Research/WEnR (Alterra), Report 2786. June 2017).
  - RECORD, Substances émergentes, polluants émergents dans les déchets : analyse et prospective, 2012, 182 p, n°10-0143/1A
  - Silva V, Mol HGJ, Zomer P, Tienstra M, Ritsema CJ, Geissen V. Pesticide residues in European agricultural soils – A hidden reality unfolded. Science of The Total Environment 2019; 653: 1532-1545.

Thank you your attention

a.togola@brgm.fr

c.merly@brgm.fr