Urban Resilience

SURF OER Updates
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Project Lead

4TU. Resilience Engineering

29 June 2020

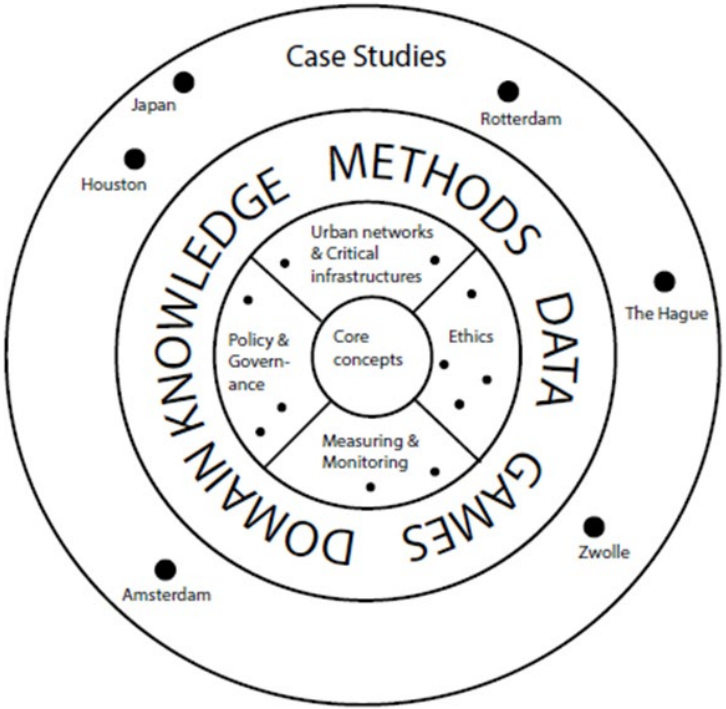
OUTLINE

- Introduction of the 4 SURF OER Pillars

- Updates per pillar
  - What we accomplished during meetings
  - What's been happening since meeting series
  - What's next

- Goals for early 2021

SURF OER **PILLARS**



1. RE CONCEPTS FOR COHERENCY

2. OER PLATFORM FOR REUSE

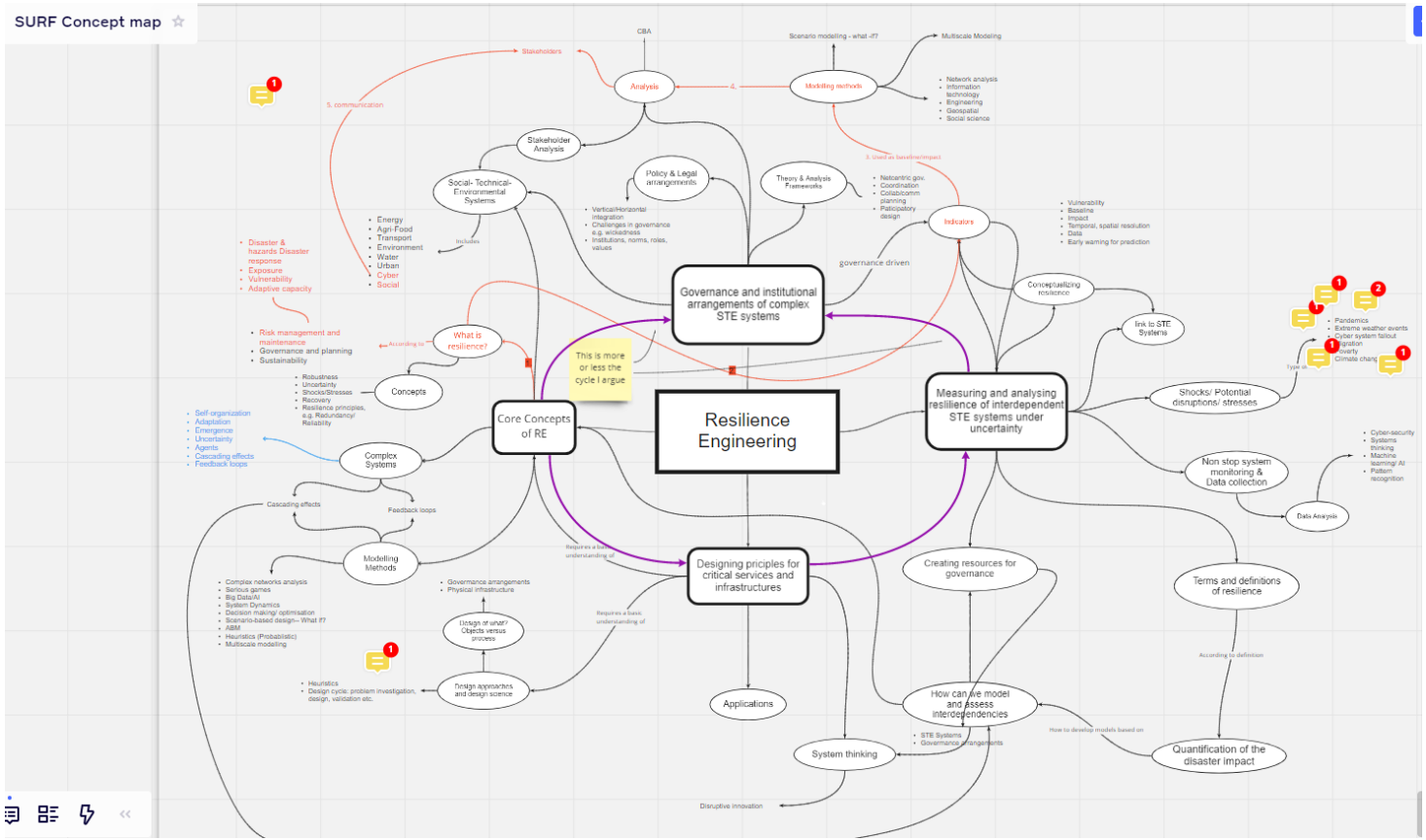
3. PRACTICAL RELEVANCE VIA CASES

4. GAME ENVIRONMENT FOR CASES

PILLAR I
RE Concepts

WHAT **WE DID**

PILLAR I
RE CONCEPTS



Platform survey results

Broad range of support needs

- Licensing (66%)
- Creating OER (50%)
- Uploading OER (50%)

Interest in many types of OER formats

- Datasets (18%), cases (71%), lectures (76%), exercises (81%)

Preferred for teaching- Introductory OER (72%), Methodologies (66%), Cases (56%)

Measuring and Monitoring Learning module 68% selected!!

Easy to integrate into lecture! (62%), peer reviewed (57%)

WHAT'S HAPPENED SINCE?

Set up an OER workflow

- Step 1. learn about what are OER and licensing on SURF website
- Step 2. In-take conversation with Claudiu
- Step 3. Show us your teaching materials
- Step 4. Create your OER(s)!
- …

OER Guidelines & Support Packet

- Metadata sheets
- Templates
- Editing instructions
- Licensing
- Reference information
- SURF support!

WHAT'S **NEXT?**

OER Development

Option A. I have teaching materials I want to publish NOW! – December 2020
Option B. I want to develop new materials and publish by 2021!- ongoing

- I have already spoken to Carissa and know what I want to publish, contact r.kromanis@utwente.nl (c.j.Champlin@tudelft.nl in CC)

- I haven't told SURF what I want to publish, contact c.Forgaci@tudelft.nl (c.j.Champlin@tudelft.nl in CC)

WHAT'S NEXT?

RE Conceptual Framework

- Task team to clean up the concept map- e.g. redundancies, linkages, etc.
- Integrating into OER platform as roadmap/directory
- Integrating into DeSIRE research?

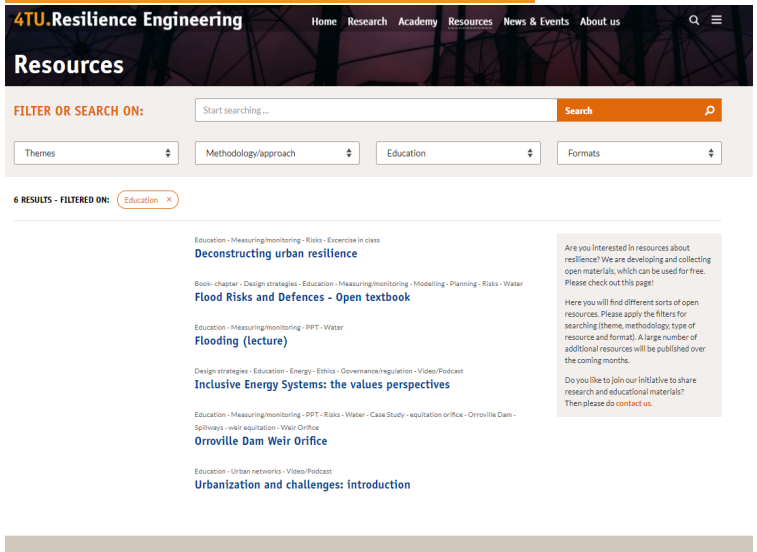
- Contact: c.j.Champlin@tudelft.nl

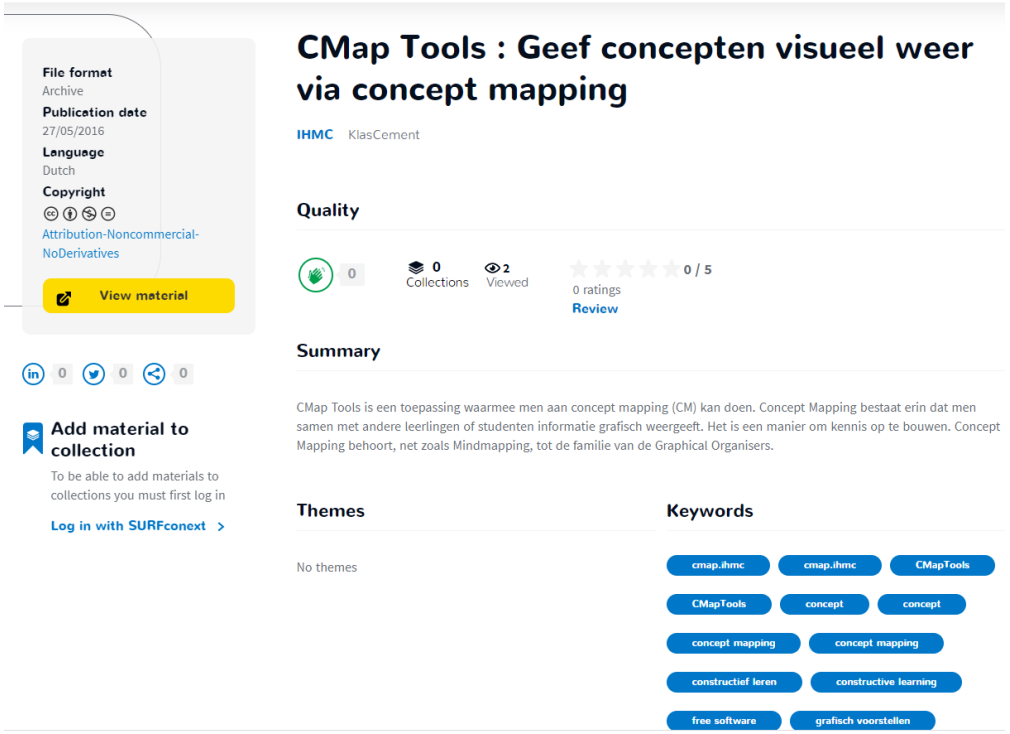
PILLAR II
OER Platform

WHAT **WE DID**

PILLAR II
OER PLATFORM

Where we are





Where we want to be

Platform survey results

Preferred platform search options

- By keyword (84%)
- By Learning module (65%)
- By STE system (45%)

Keywords

- Some additional keywords not on our RE conceptual framework
  - Add to framework vs.
  - Add open field search function

WHAT'S HAPPENED SINCE?

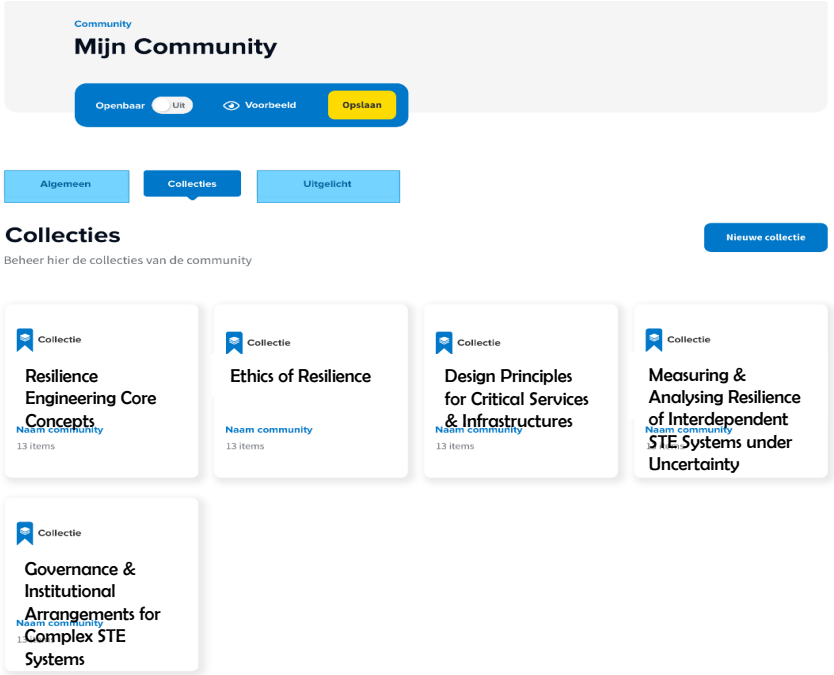
Linked with RE Concepts work (Pillar I)

WHAT'S **NEXT?**

Setting up the SURF Urban Resilience Community page on Zoekportaal

Adding Collections:

- Case studies
- Games
- Guidelines & Support



PILLAR III
NL & Intl. Cases

WHAT **WE DID**

			POSSIBLE SOLUTIONS	POSSIBLE CASE STUDIES (please write your name with a pc
			Alex Stefanov, Joao Cortesao, Ahmadreza Marandi, Claudia Fecarotti, Juan Pablo Aguilar Lopez, Jeremy Bricker, Laura Genga, Mitrofan Curti, Sanda Lenzholzer	
TOPIC	TYPE OF STRESSOR	EXAMPLES	Resilience Resilience Engineering & Transitions	Your Name (add extra row if multiple people have a case study that covers the same topic)	Case Study or Studies (separate with ; add hyperlink if the project has a website)
climate	acute shock	heatwave; extreme wind speed; weather events (hurricane/typhoon); intense rainfall	climate-responsive urban design and landscape architecture; vegetation; green walls; green roofs; permeable paving; depaving; shading devices; water features (fountains and water mists);	Joao/Sanda	Really Cooling Water Bodies in Cities (REALCOOL)
	chronic stress	urban heat island; damage to infrastructure (e.g. bending of railways); mass migration; drought; changing landscapes and ecosystem shifts; shifts in	climate-responsive urban design and landscape architecture; vegetation; green walls; green roofs; permeable paving; depaving; shading devices; water features (fountains and water mists);	Joao/Sanda	
water	acute shock	riverine flood; pluvial flood; overflow of public drainage systems; tsunami; hurricane; typhoon; landslide; dam break; backing/cyber crime of flood defence	Multi-functional flood defences; Early Warning Systems; Forecasting Systems; Evacuation plans; Escape Routes; Structural resiliecne masures (e.g. gates, pumps, elevated houses, Permeable Asphalts, Floodable promenades, Coveyance Channels, Detention Basins), Flood Defence	Jeremy - Japan; Baukje/Jeremy - Houston	
	chronic stress	sea-level rise; drought; subsidence by ground water abstraction; overexploitation of (ground)water; aging infrastructure / rusting pipes; lack of	Lots of money for pipe maintanence, Sewer system asset managment, Maintenance planning, Drought foreacsting systems, Groundwater monitoring systems.		
energy	acute shock	disconnection of generator and transmission lines, cascading events in electric power transmission system, blackout;	Controlled islanding and power system restoration	M. Curti, Alex	BioORC - Electricity generation from Industrial exaust heat
	chronic stress	energy transition;			
cyber & ICT	acute shock	accidents; disasters (earthquakes, pandemics, tsunamis); terror attacs; event based (e.g., concert, festival etc.), power outage; cyber attacks on digital	Security standards for substation automation; redundancy of critical resources; response strategies; decision support systems	Alex-Laura	Ukraine power grid cyber attack; https://en.wikipedia.org/wiki/December_2015_Ukraine_power_grid_cyberattack
	chronic stress	privacy infringement; identity theft; data leackage; phishing; insider threats	anomaly and attack detection systems; semi-automatic attack response strategies; personeel training and regular updates	Alex-Laura	Ukraine power grid cyber attack; https://en.wikipedia.org/wiki/December_2015_Ukraine_power_grid_cyberattack
agri-food	acute shock	pests, plagues, draughts, access to season workers, supply to super markets and restaurants, policy changes , price fluctuations world market			
	chronic stress	eutrophication, (stress to other system; pesticides in drinking water), draughts related to other land uses (prioritzation to drinking water and nature areas)			

Figure 3 Case Study Matrix Showing Possible Resilience Engineering Solutions

WHAT'S HAPPENED SINCE?

Path 1
Environmental engineering MSc course at TU Delft

Path 2
In-depth case studies

(contact: Martine Rutten & Claudia Rot)

WHAT'S **NEXT?**

Path 1

Environmental engineering MSc course at TU Delft (contact: Martine Rutten & Claudia Rot)

- "trend reports" for 6 SURF cases (Houston, Japan, Amsterdam, The Hague, Rotterdam…)
- provide analyses of relevant shocks and stresses and solution strategies
- TTers will be asked to provide expertise input for trend reports and to review the reports

.

WHAT'S **NEXT?**

Path 2

In-depth case studies

- TTers who indicated an interest (A. Stefanov, C. Forgaci, N.Aydin, A. Mirandi, J. Cortesao, S. Copeland, M. Curti, F. Metz, others?)
- TTers will also be asked to develop materials/input for the 6 SURF cases from their domain or discipline for a more integrated view of shocks/stresses and impacts/solutions across STE systems.

PILLAR IV
Game Platform

WHAT **WE DID**

Figure 2 First concept. Adaptable simulation board game

WHAT'S **HAPPENED SINCE?**

Games Path 1. Environmental engineering Msc.

Games Path 2. Developing the SURF resilience framegame

WHAT'S **NEXT?**

Games Path 1. Environmental engineering Msc.

- Students wil customize a selection of open source resilience games as simple models
- Working with shocks, stresses, impacts and testing of solutions described in the trend reports.
- TTers will be interviewed by students working on their topic and asked to give feedback on the developed games.

WHAT'S **NEXT?**

Games Path 2. Developing the SURF resilience framegame

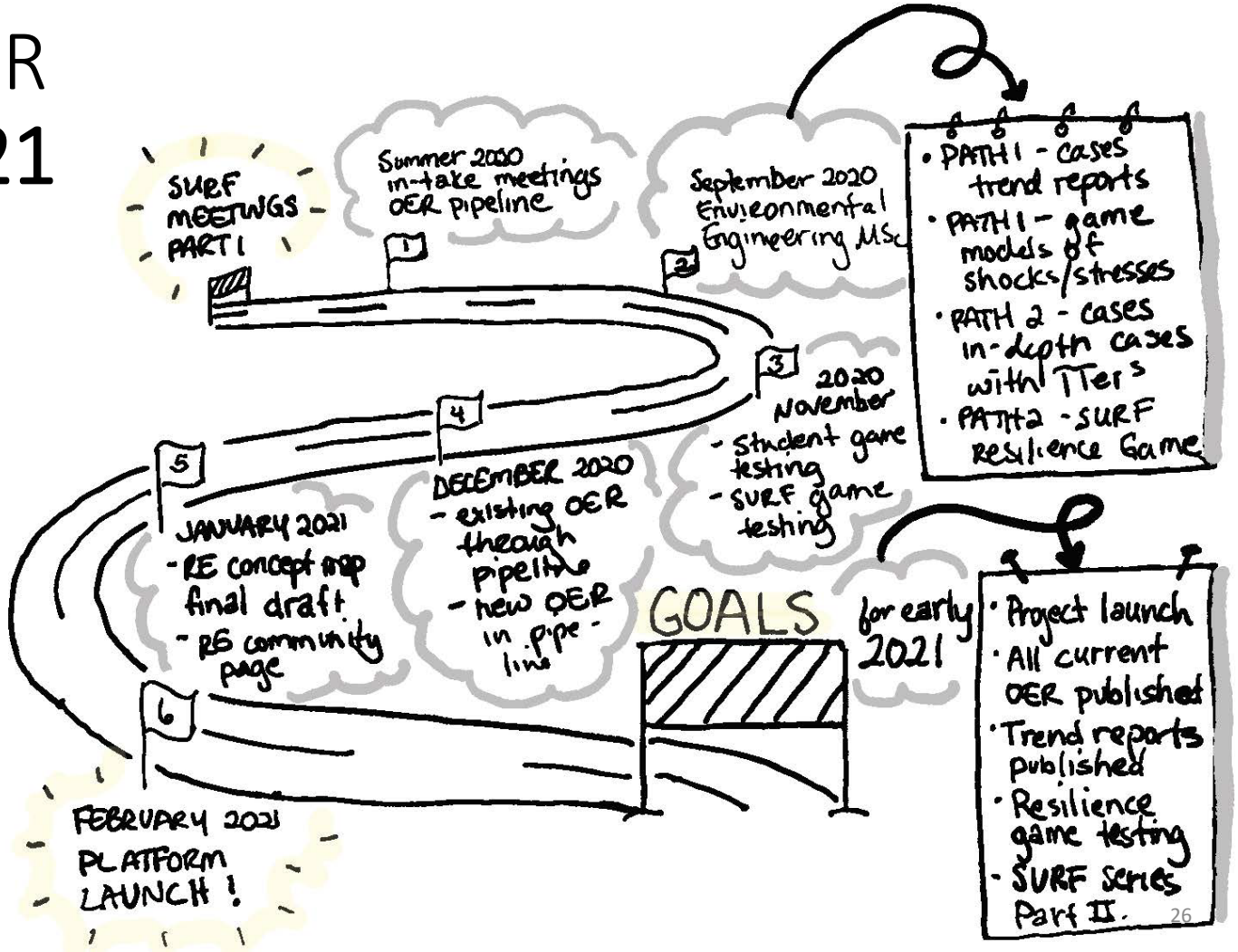
- First for the Hague
- What's needed- DeSIRE community members willing to test game in classroom (November 2020- February 2021).
- *TTers interested in game development (S. Copeland, C. Forgaci, JP Aguilar Lopez, A. Mirandi, M. Curti)*
- November 2020- concept testing of student games (Games path 1 & 2)
    - Joint International Resilience Conference.
    - In classroom!!

GOALS FOR EARLY 2021

Pillar Key	Explanation
Conceptual framework	revising the RE concept map
OER for RE	coverting your teaching materials in OER or creating new OER to fill in Conceptual Framev
NL Case Studies	Developing teaching materials for specific Dutch case & testing in your classroom
Intl case studies	Developing teaching materials for specific International case & testing in your classroom
Game platform	Game development & testing in your classroom

	2019					2020											2021										
Tenure Trackers & Associated Scientist	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	Your comments
Markus Meyer																												
Samantha Copeland																												am approaching someone about testing
Alex Stefanov												10		20	20	20												I can create slides, 1/2 conference papers
Claudiu Forgaci									4	8	8	16	16	4	4	10	10	10	10	10	10							
Nazli Aydin										8	8	8		5	5	5	5	5	5	5	5	5	5	5				I am interested in contributing the case
Juan Pablo Aquilar Lopez										8	8	8	8			16	16					16	16					I'm working at the moment in the flood
Claudia Fecarotti																	10	15	15	15	15	15	15	15				
Ahmadreza Marandi												5	15			15	15	15	15	15		5		5			20	I will have a course on Robust policies in Q2.
Laura Genga										16	16	16		16	16	16	16	8										
Rolands Kromanis			16	16	16	16	16	16	16	15	10	15	10	15	10	10												
Mitrofan Curti												10	10		5				5	5	5	5						
George van Voorn																												The game could be tested in relation to the
Joao Cortesao												11			7	5		20	20	10								
Guus ten Broek											16	16	16															
Florence Metz													10	10	10	10	10	10	10	10	10	10	10	10				I could add to the governance part of the
Wietke Pot?																												
Elise Peronne?																												

GOALS FOR EARLY 2021



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	2020							2021	
Tenure Trackers & Associated Scientist	6	7	8	9	10	11	12	1	2
Markus Meyer									
Samantha Copeland									
Alex Stefanov		10		20	20	20			
Claudiu Forgaci	8	16	16	4	4	10	10	10	10
Nazli Aydin	8	8		5	5	5	5	5	5
Juan Pablo Aquilar Lopez	8	8	8			16	16		
Claudia Fecarotti							10	15	15
Ahmadreza Marandi		5	15			15	15	15	15
Laura Genga	16	16		16	16	16	16	8	
Rolands Kromanis	10	15	10	15	10	10			
Mitrofan Curti		10	10		5				5
George van Voorn									
Joao Cortesao		11			7	5		20	20
Guus ten Broek	16	16	16						
Florence Metz			10	10	10	10	10	10	10
Wietke Pot?									
Elise Peronne?