

DeSIRE

Designing Systems for Informed Resilience Engineering

Tatiana Filatova & Stephanie Hessing

DeSIRE Workhop 14 March 2022

Thematic Working Groups & Accomplishments



Program of Today

- 13.00 Lunch
- 14.00 **Start** of the program. welcome & announcements – *Tatiana*
- 14.10 **Working Groups** : discussion and outlook (60 minutes) – *All*
- 15.10 **Workshop I** : Accomplishments. Introduction – *Carissa & Reza*
- 15.20 **Workshop I** : Accomplishments Plotting (40 minutes) – *All*

**** 15.30 *Coffee Served* ****

- 16.00 **Workshop I** : Accomplishments Conclusion – *Carissa & Reza*
- 16.10 **Workshop II** : CrowdHelix. Introduction – *Catalin*
- 16.40 **Workshop II** : CrowdHelix. Making profiles (60 minutes) – *All*
- 17.40 Reception
- 18.30 Dinner
- 20.30 Finish

Where do we stand right now?

- 4** Universities
- 14** Faculties
- 17** Tenure trackers
- 19** Postdocs
- 51** Resilience Fellows (last funding!)
New PhDs

New colleagues:

<u>Role</u>	<u>Name</u>	<u>Remarks</u>	<u>Universiteit</u>
Support Team	Sean Lo	New! Academy Assistant! (ITC)	UTwente
Support Team	Nienke Nijenhuis	New! COM. Colleague	UTwente
Support Team	Catalin Popa	New! Our Call-Support-Advisor!	UTwente
DeSIRE PostDoc	Lara Wöhler	New!! Our Joanne @ ET PD	UTwente
DeSIRE PostDoc	Pim Post	New! With Yue @ ITC PD	UTwente
DeSIRE PhD	Aleid Teeuwen	New! With Yue @ ITC PhD	UTwente
Fellow in NL !!	Maryam Naghibi	New! Our guest with Claudiu	TU Delft
Fellow in NL !!	Arjuna Srinidhi	New! Our guest with Miranda	WUR



Where do we stand right now?

- 4** Universities
- 14** Faculties
- 17** Tenure trackers
- 19** Postdocs
- 51** Resilience Fellows (last funding!)
New PhDs

52 Academic papers in 2021

- Program & Center: SURF UR
- Recognition & rewards
- Stakeholders' meetings (Zwolle, Ams-Rot-DH)
- Webinar series – make use of it!
- \$\$ for proposal writing, for RFs
- 2 last events by DeSIRE: 20.06 & closing



31.12.2022!

4TU.DeSIRE THEMATIC WORKING GROUPS

Where are we? What did we do over the last few years, and what would we aim for, in the coming months and years?

Optional: a contribution to the SESMO Special Issue?

Are the titles reflecting the domains correctly?

Would we need a methodological working group?

What would the WG's need in order to function well?

Domain-oriented WGs:

Urban

Water

Agri-food

Supply Chain / Transport Networks

Energy Cyber

Methodological WGs:

Decision making under uncertainty

Complexity methods for R?

...?

WG Urban

Contact

Dr. C. (Claudiu) Forgaci

Delft University of Technology (TUD)

Dr. J.P. (João Pedro) Cortesão

Wageningen University and Research (WUR)

Group members

- **Athanasios Votsis**
- Camilo Benitez-Avila
- **Carissa Champlin**
- **Claudiu Forgaci**
- **Joanne Vinke-de Kruijf**
- **João Cortesão**
- **Mingshu Wang**
- **Nazli Aydin**
- **Omar Kammouh**
- **Samantha Copeland**
- **Zac Taylor**

What did we do over the last (few) year(s)?

- KNAW Workshop grant
- 1st webinar: need more interactions w audience; invite RFs
- Zac - UD & Res Delta contact
- TT on CAP
- 2 sessions

What do we aim for in the coming months until December 2022? website (end of 2022)

What are the WG plans for 2023 and beyond?

WG Agri-food

Contact

Dr. G.A.K. (George) van Voorn

Biometris, Wageningen UR

george.vanvoorn@wur.nl

Group members

People working on agri-food resilience

- Akke Kok
- Andy Nelson
- Els Weinans
- George van Voorn
- Hubert Fonteijn
- Miranda Meuwissen
- Robbin-Jan van Duijne
- Yue Dou
- Natalie Davis
- Geerten Hengeveld
- Patrick Steinmann
- Pim Post
- Aleid Teeuwen

What did we do over the last (few) year(s)?

- Tri-weekly seminars on agent based models of resilience mechanisms in agri-food systems / supply chains
- Edited Special Issue (2019)
- Papers: Ten Broeke et al. (2019, 2021), Gotts et al. (2019), Van Voorn et al. (2020), Van der Velde et al. (2021), Fonteijn et al. (subm.), Teeuwen et al. (subm) etc, Yang et al. (2022), Dou et al., (2021)

What do we aim for in the coming months until December 2022?

- 1st webinar: April 4th. H. Fonteijn on ABCD framework of resilience mechanisms
- Lorentz workshop proposal agri-food Dig. Twin

What are the WG plans for 2023 and beyond?

- Subm. proposal 4TU HTSF: transforming food system

WG Water

Contact

Dr. Juan Pablo Aguilar-López

Delft University of Technology (TUD)

Group members

- **Bas Jonkman**
- **Elisa Ragno**
- **Florence Metz**
- **Joanne Vinke-de Kruijf**
- **Juan Pablo Aguilar-López**
- **Maria Nogal**
- **Rolands Kromanis**
- **Tatiana Filatova**
- **Wieke Pot**

What did we do over the last (few) year(s)?

- **Projects:**
- Fiber optics thermal crack detection system for peat dikes.
- KIEM project on data knowledge for dike defects based on AI Bayesian inference.
- Rijkswaterstaat/TKI project on stochastic flood modeling through deep learning surrogate modeling based on IJssel actual dike safety standards. .
- We have a **NEW PhD** hired on “Better piping erosion modeling of dike trough machine learning methods”
- **Papers:**
- *Wewer, M., Aguilar-López, J. P., Kok, M., & Bogaard, T. (2021). A transient backward erosion piping model based on laminar flow transport equations. Computers and Geotechnics, 132, 103992.*
- *Schenato, L., Aguilar-Lopez, J. P., Galtarossa, A., Pasuto, A., Bogaard, T., & Palmieri, L. (2021). A rugged FBG-based pressure sensor for water level monitoring in dikes. IEEE Sensors Journal, 21(12), 13263-13271.*

What do we aim for in the coming months until December 2022?

- 1st webinar: March 17th. Resilience examples from water and sanitation for refugees in humanitarian contexts. Dr. Ir. Juliette Cortes - TPM TU Delft.
- Getting funding for the “Dijk-MICS” project. *Listen to your dikes when they are calling for you.* Fiber optics acoustic monitoring of dikes.

What are the WG plans for 2023 and beyond?

- *Develop the dike resilience concept by considering the flood defences as an individual system by itself.*
- *Aim to fund and build the lab setup for piping erosion of dikes at TU Delft Lab.*

WG Supply Chain / Transport Networks

Contact

Dr. A (Ahmadreza) Marandi

Industrial Engineering and Innovation

Group members

People working on supply chain and tra

- **Ahmadreza Marandi**
- **Claudia Fecarotti**
- **Joao Oliveira dos Santos**
- **Laura Genga**
- **Omar Kammouh**

What did we do over the last (few) year(s)?

- 1st webinar?
- Projects?
- Papers?

What do we aim for in the coming months until December 2022?

What are the WG plans for 2023 and beyond?

WG Energy / Cyber

Energy/ Cyber

Contact

Dr. Alexandru Ștefanov

Delft University of Technolo

Group members

Mitrofan Curti

Laura Genga

What did we do over the last (few) year(s)?

- 1st webinar?
- Projects?
- Papers?

Is it functional?

What do we aim for in the coming months until December 2022?

What are the WG plans for 2023 and beyond?

WG Decision making for societal resilience

Contact

Dr. W.D. (Wieke) Pot

Social Sciences Group/Publi

Group members

People working on decision

- **Ahmadreza Marandi**
- **George van Voorn**
- **Hubert Fonteijn**
- **Els Weinans**
- **Samantha Copeland**
- **Florence Metz**
- **Tatiana Filatova**
- **Tina Comes**
- **Wieke Pot**

What did we do over the last (few) year(s)?

- Regular lunch webinars from 2020 onwards: discussing work in process
- Projects: NWO/NGI research proposal 2021, not funded - WUR-TU Delft; NWA-ORC Red&Blue Proposal also relates to it (Tina Comes, Wieke Pot, Zac Taylor)

What do we aim for in the coming months until December 2022?

- Continuing with lunch webinars
- Incorporating/organizing webinars about different type of methods: DMDU, ABM, Network Analysis, Stakeholder/Co-creation, Scenario planning/Forecasting etc.
- Open 4TU-RE webinars with speakers:
 - [Thursday 21 April 1 pm CET](#): Els Weinans/Johanna Hedlund (Stockholm Resilience Center)
 - [Monday 26 September 3pm CET](#): Art Dewulf (WUR) / Jan Kwakkel (TU Delft)

What are the WG plans for 2023 and beyond?

- need to see whether it keeps adding value also in reflection to other communities of practice (e.g. robust and time sensitive governance of Netherlands Institute of Governance)

What else?

Are there topics you are missing?

What do you need most to function well?

What activities are most useful for you as early career scholars?

How can you best benefit from our Ambassadors and other Fellows?

Any questions?

Thanks for your attention!



WG Water

Contact

Dr. Juan Pablo Aguilar-López

Delft University of Technology (TUD)

Group members

- **Bas Jonkman**
- **Elisa Ragno**
- **Florence Metz**
- **Joanne Vinke-de Kruijf**
- **Juan Pablo Aguilar-López**
- **Maria Nogal**
- **Rolands Kromanis**
- **Tatiana Filatova**
- **Wieke Pot**

What did we do over the last (few) year(s)?

- **Projects:**
- Fiber optics thermal crack detection system for peat dikes.
- KIEM project on data knowledge for dike defects based on AI Bayesian inference.
- Rijkswaterstaat/TKI project on stochastic flood modeling through deep learning surrogate modeling based on IJssel actual dike safety standards. .
- We have a **NEW PhD** hired on “Better piping erosion modeling of dike trough machine learning methods”
- **Papers:**
- *Wewer, M., Aguilar-López, J. P., Kok, M., & Bogaard, T. (2021). A transient backward erosion piping model based on laminar flow transport equations. Computers and Geotechnics, 132, 103992.*
- *Schenato, L., Aguilar-Lopez, J. P., Galtarossa, A., Pasuto, A., Bogaard, T., & Palmieri, L. (2021). A rugged FBG-based pressure sensor for water level monitoring in dikes. IEEE Sensors Journal, 21(12), 13263-13271.*

What do we aim for in the coming months until December 2022?

- 1st webinar: March 17th. Resilience examples from water and sanitation for refugees in humanitarian contexts. Dr. Ir. Juliette Cortes - TPM TU Delft.
- Getting funding for the “Dijk-MICS” project. *Listen to your dikes when they are calling for you.* Fiber optics acoustic monitoring of dikes.

What are the WG plans for 2023 and beyond?

- *Develop the dike resilience concept by considering the flood defences as an individual system by itself.*
- *Aim to fund and build the lab setup for piping erosion of dikes at TU Delft Lab.*

DeSIRE

Thank you for your attention

