

**TESAF** Dipartimento Territorio  
e Sistemi Agro-Forestali  
Università di Padova


Webinar, 2021.2.19

## Vaia-FRONT Update meeting – WP4

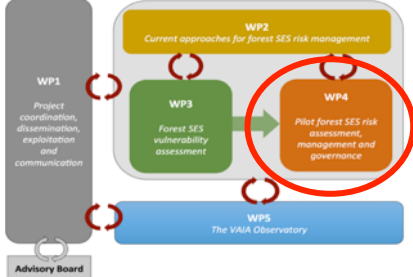
Laura Secco and Giacomo Pagot

with Mauro Masiero, Davide Pettenella, Federica Romagnoli,  
Daniel Vecchiato, Tiziano Tempesta, Francesca Donà

Advisory Board mid-term evaluation




### WP4: overview – research objectives



- to provide a possible general **preliminary integrated strategy for wind-related risks management** in the North-East of Italy
  - to support **resistance and resilience capacities** of forest socio-ecological systems (SES) at local and regional level
- to enhance the understanding of the **role of governance models** in effective risk management
- to enhance the **knowledge of forest-related practitioners on how to prevent and react** to these types of events

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## WP4: overview - tasks

T4.1: Understanding the **governance structures** in relation to forest SES risk management

T4.2: Preliminary test of **key ecosystem services**

- Identify the decision-making process and outputs in 3 phases of intervention: prevention, emergency, recovery after Vaia

T4.3: Formulating test of **resilience of forest SES**

- Identify the main stakeholders and actors (task 1.1)
- Identify main differences between administrative units

T4.4: Proposing a **preliminary approach for integrated and systemic management of forest SES risk** in the target region.

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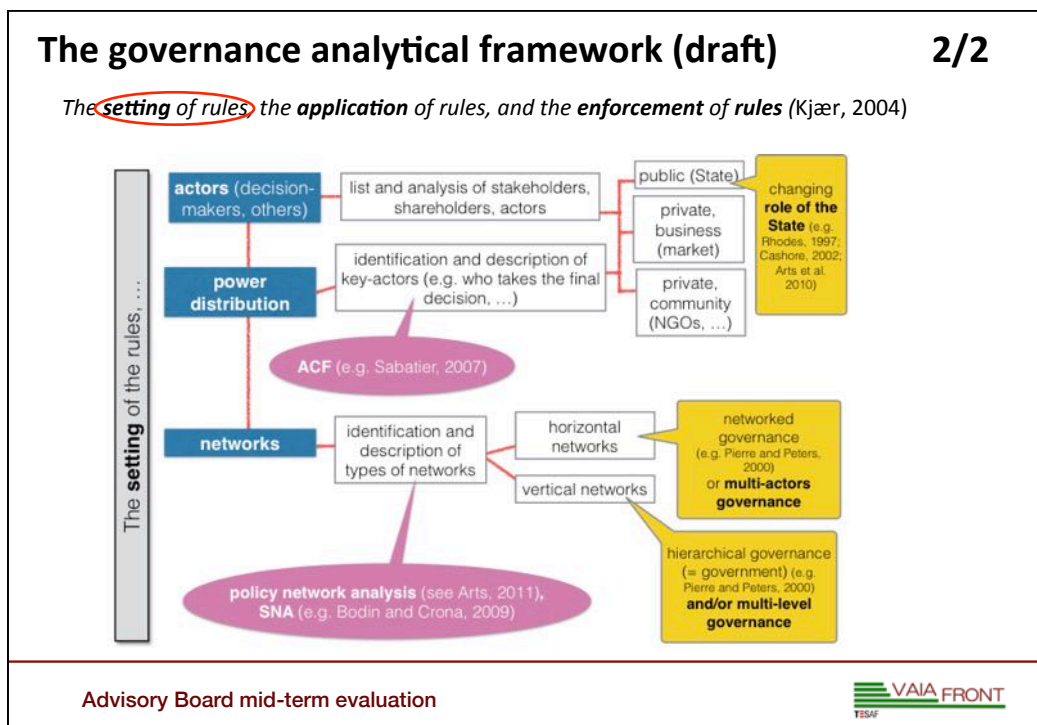
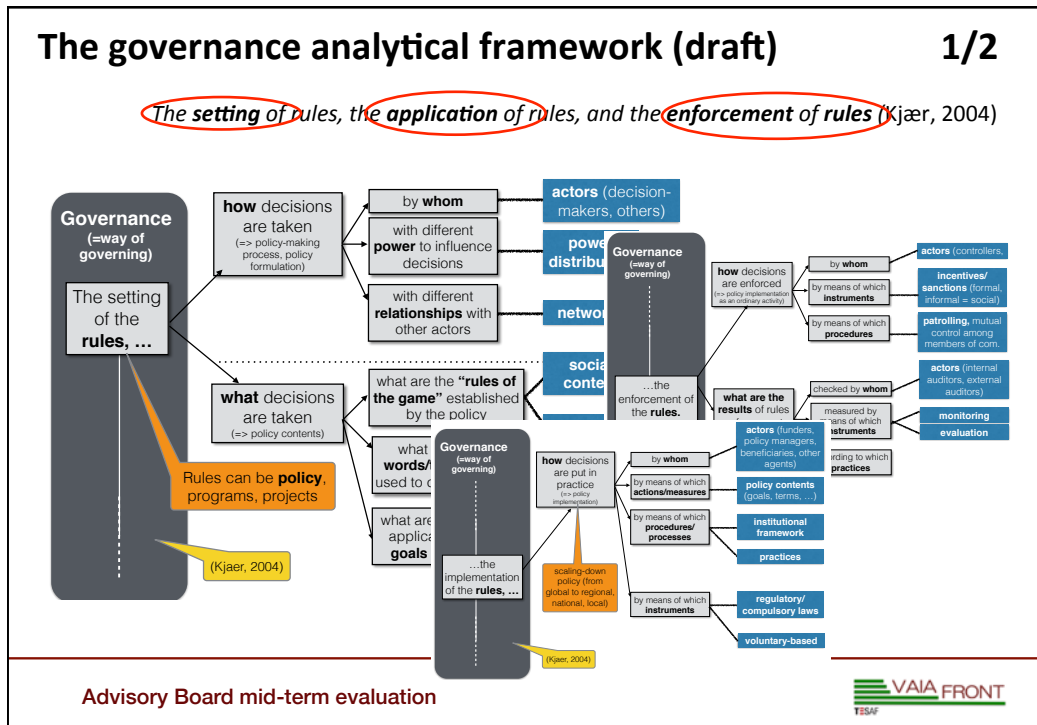


### Task 4.1 - Understanding the **governance structures** in relation to forest SES risk management - **Methodology**

- **Study area/unit of analysis: 4 administrative units** (regions/Autonomous Provinces - not yet Lombardy)
- **Development of an ad hoc analytical framework** to describe the current governance model in each unit (region/province) ← **literature analysis**
- Identification of **data sources** (institutional websites) ← **web surfing**
- Identification and **review of policy/governance documents** (e.g. special decrees, decrees, resolutions) ← **content analysis**
- Review of **newspaper articles** ← **discourse analysis**
- Define an appropriate time frame for analysis of prevention measures: **2016-2019**

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## Governance analysis: General Matrix, raw data collection

	Veneto	Trentino	Alto Adige	Friuli – Venezia Giulia
<b>Phase 1 - Prevention</b>				
Plans for prevention				
Stakeholders				
...				
<b>Phase 2 - Emergency</b>				
First aid				
Policy measures				
...				
<b>Phase 3 - Recovery</b>				
Funds for recovery				
Management of the funds				
...				

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## Examples of raw data sources

**Official website of Veneto Region about hydrogeological instability**

**Official website of Veneto Region – section on the emergency management**

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## Task 4.1 – Preliminary observations/results (examples)

- Quality and quantity of information/documents available/accessibility are different in the different analysis.

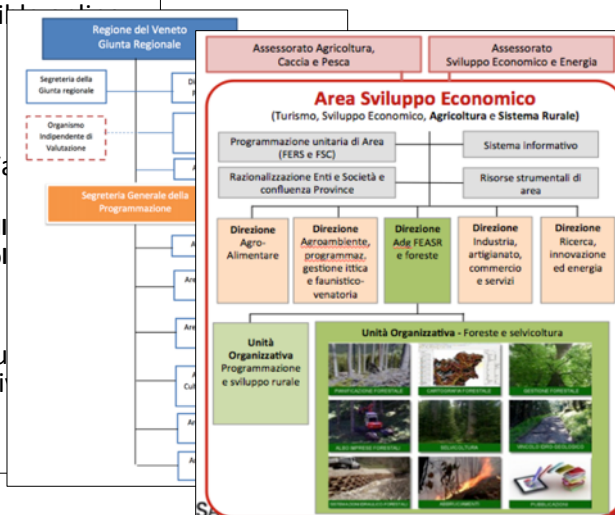
For example:

### 1) Special decrees about Vaia management:

- Veneto => **complete list of all**
- Friuli-Venezia Giulia => **complete**
- Trento => **only a few**
- Alto-Adige => **only a few**

### 2) Special decrees about future economic activities and private owners:

- Alto-Adige => **not available**



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## Task 4.1 - Pending issues/next steps

- Lombardy** has been hit by Vaia, but not analysed yet => relatively low damages → *to complete in the coming months, same methodology*
- Flow charts about governance of extreme events (Vaia) found in the administrative units and the 3 phases** → *to complete in the coming weeks*
- Stakeholders' identification and analysis** for each of the 3 Phases + selection of key informants + interviews → *validation of the data available online + collection of missing data*  
e.g. **Tracking private funds and regional funds** might be impossible to complete with online available data → *interviews to officials of the deputy commissioner for the emergency*

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## Advancements in other WP4 tasks

T4.2: Preliminary test of forest risk assessment in relation to **key ecosystem services** in the pilot area

- **Matrix for economic evaluation of Ecosystem Services** → *under development (in collaboration with WP3)*
- **Trekking trails and viewpoints** → *to be identified* → *pictures (Spring)*
- **Questionnaires to trekkers** → *draft (depends on data collection tool)*

T4.3: Formulating **technical guidelines** for resistance and resilience of forest SES in the target area

T4.4: Proposing a **preliminary approach for integrated and systemic management of forest SES risk** in the target region.

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## Matrix for economic evaluation of Ecosystem Services (draft)

ES category	Ecosystem Services	Ecosystem/land use/resource	Possible indicators	Evaluation methods/tools
1. <b>Supporting</b>	<b>Biodiversity conservation</b>	<ul style="list-style-type: none"> <li>• Forests</li> <li>• Pastures</li> <li>• Meadows</li> <li>• Farmland</li> <li>• Water bodies</li> </ul>	1.1 Protected areas 1.2 Habitats 1.3 N. of flora species 1.4 N. of fauna species 1.5 Indicator species 1.6 Dead wood (...) 1.10 Natural regeneration	Benefit transfer
2. <b>Provisioning</b>	<b>Wood production</b> (Timber, firewood and chip wood)	Forests	2.1 Production forest area 2.2 Mean annual increment 2.3 Removals 2.4 Timber/fuelwood/chip wood prices	value
3. <b>Regulating</b>	<b>Protection against gravitational hazards</b> (avalanches, landslides, rockfalls,...)	Forests	3.1 Protection forests (total/damaged) 3.2 Infrastructures (e.g., roads) and buildings at risk 3.3 Avalanche protection facilities (ongoing/planned) 3.4 Gravitational hazards protection facilities (ongoing/planned) 3.5 Costs for 3.4 and 3.4	Replacement cost
4. <b>Cultural</b>	<b>Tourism and recreation</b>	<ul style="list-style-type: none"> <li>• Trails</li> <li>• Roads</li> <li>• Forests</li> <li>• Urban green areas</li> <li>• Street trees</li> </ul>	4.1 Forest area (accessible for recreation) 4.2 N. of mushroom picking permits 4.3 Viewpoints 4.4 N. of tourism arrivals 4.5 N. of tourism staying 4.6 Km of accessible trails 4.7 Km of accessible forest roads 4.8 N. of harvesting sites 4.9 Location of harvesting sites (...) 4.19 Harvesting program (in the next 5-10 years)?	Benefit transfer Use of social-media and devices (e.g., Strava) Demand curve methods

Inputs from WP3

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## WP4 Outputs

1. Governance analytical/theoretical framework (preliminary)
2. Matrices for 4 out of 5 units of analysis (Veneto, FVG, TN, BZ) (almost completed)
3. Flow chart of the governance internal structure of Veneto region (preliminary)
4. Matrix for ES economic evaluation (selection of indicators to be evaluated, preliminary)
5. Oral presentations:
  - 5.1 Romagnoli, F., Secco, L., Masiero, M., Gatto, P., Pettenella, D., Udali, A. Socio-economic and institutional effects of windstorms damaging forests: preliminary observations from European cases and Vaia windstorm. 9th AIEAA Conference "Mediterranean agriculture facing climate change: Challenges and policies", online 10-12/06/2020
  - 5.2 Pettenella, Secco, Masiero, Romagnoli - *Aspetti socio-economici nel settore forestale a seguito di Vaia*, Fiera&Festival delle Foreste, Longarone, BL – 12/09/2020
  - 5.3 Romagnoli, Secco, Masiero, Gatto, Pettenella - *The short and long terms socio-economic and institutional effects of wind storms which damaged forests in Europe*. Aree fragili Rovigo 2020 conference, Rovigo - 24/10/2020
  - 5.4 Vecchiato, Tempesta - *Gli effetti della tempesta Vaia sul turismo escursionistico in montagna: primi dati e riflessioni*. Aree fragili Rovigo 2020 conference, Rovigo - 24/10/2020
6. Organized session: Secco and Pettenella - *Forest-wood and air-climate interactions in fragile rural areas: which problems and perspectives?* Aree fragili Rovigo 2020 conference, Rovigo - 24/10/2020
7. One scientific paper on the socio-economic effects of wind storms (Romagnoli): under development (April 2021)
8. MSc thesis in Local Development: economic trends: companies before/after Vaia in the 5 units of analysis (under completion, to be discussed in March 2021)

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## WP4 Other outputs

9. Pra, A., D.Pettenella, 2020. La lezione di Vaia. *Montagne360* (7), 14-17
10. Pettenella, 2020. I cambiamenti nella comunicazione sulle foreste: contenuti informativi e ruoli dei mass media. In: V.Ferrario e M.Marzo, *La montagna che produce / Productive mountains*, a cura di Mimesis Edizioni, Sesto San Giovanni (MI) , p.53-68. ISBN: 9788857573564.  
  
Angelini, A., D.Cason, D. Pettenella. 2020. Una gestione attiva e consapevole dopo Vaia? *Ecoscienza 2000* (4), p. 50-51 [https://www.arpae.it/dettaglio\\_documento.asp?id=8031&idlivello=1177](https://www.arpae.it/dettaglio_documento.asp?id=8031&idlivello=1177)
11. Pettenella, D. M.Marchetti, R.Motta, G.Vacchiano, 2021. Neanche Vaia resiste all'insostenibile leggerezza delle statistiche forestali. *Forest@ - Rivista di Selvicoltura ed Ecologia Forestale*, 2021, Volume 18, p.1 <https://doi.org/10.3832/efor3733-017>
12. University of Padova, 2020. *An eye on the Vaia storm: investigating windstorm impacts*. *EFI News*, September 28, 2020. [https://medforest.net/2020/09/28/an-eye-on-the-vaia-storm-investigating-windstorm-impacts/?utm\\_campaign=campaign\\_code&utm\\_content=category&utm\\_medium=email&utm\\_source=efi\\_newsletter](https://medforest.net/2020/09/28/an-eye-on-the-vaia-storm-investigating-windstorm-impacts/?utm_campaign=campaign_code&utm_content=category&utm_medium=email&utm_source=efi_newsletter)

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## WP4: mobilized resources

- **3 members permanent staff (direct involvement): L. Secco, M. Masiero, D. Vecchiato**
- 2 members permanent staff (support): T. Tempesta, D. Pettenella
- **1 PhD LERH candidate (Young Scientists for Vaia, from March 2020): F. Romagnoli**
- **1 Junior Researcher (01/12/2020-31/11/2021) (32% co-funded): G. Pagot**
- 1 MSc Local Development student: F. Donà