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## Short-term regeneration dynamics after windstorm: the study case of Vaia storm.

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Mountain forests are complex ecosystems with a delicate equilibrium, providing several important ecosystem services (ES). Natural disturbances are the most important factor influencing mountain forest dynamics, and shaping forest stands. Under the current climate change (CC) scenarios, disturbance regime is changing, and new types of disturbances affect forest ecosystem. Nevertheless, to restore or maintain the provisioning of important ES, it is crucial to find the most effective post-disturbance management strategy in these new conditions. There are three different logging strategies generally applied in windthrown stands: salvage logging (SL), no intervention (NI), or partial salvage logging (PSL). To restore forest cover as soon as possible is the main goal in post-disturbance management. Understanding natural regeneration dynamics and their interaction with the logging interventions is therefore crucial to correctly implement forest restoration activities.

In this study, we analyzed the post-disturbance regeneration dynamics in 25 areas damaged by the biggest windstorm of the last century in the southern Alps, called Vaia, that hit northeast Italian Alps in 2018. We collected data from all over Veneto region, which was heavily damaged by the storm. The aim was to analyze how natural regeneration density and diversity are influenced by different logging systems (cable-based, ground-based, mixed system); how the distance from windthrow edges influence seedling establishment; and how the environmental conditions (e.g. exposure, slope, elevation, etc..) influenced regeneration dynamics. Pre-storm regeneration represents an important starting point to restore forest cover. We analyzed its contribution to regeneration dynamics, in relation to different logging systems and different soil cover within the gaps.

In this contribution, the sampling methodology will be presented and the preliminary results discussed.