ALLEGATO III - Elenco delle pubblicazioni presentate (e dottorato) datato e firmato (n = 9);

Consapevole delle responsabilità penali previste dagli artt. 75 e 76 del D.P.R. n.445/2000 per le ipotesi di falsità in atti e dichiarazioni mendaci DICHIARA:

1	che la copia della seguente pubblicazione: Panagos, P., **Matthews, F.,** Patault, E., de Michele, C., Quaranta, E., Bezak, N., Kaffas, K., Patro, E. R., Auel, C., Schleiss, A. J., Fendrich, A., Liakos, L., van Eynde, E., Vieira, D., & Borrelli, P. (2024). Understanding the cost of soil erosion: An assessment of the sediment removal costs from the reservoirs of the European Union. Journal of Cleaner Production, 434, 140183. https://doi.org/10.1016/J.JCLEPRO.2023.140183 conforme all'originale.
2	che la copia della seguente pubblicazione: Borrelli, P., Alewell, C., Yang, J. E., Bezak, N., Chen, Y., Fenta, A. A., Fendrich, A. N., Gupta, S., **Matthews, F.,** Modugno, S., Haregeweyn, N., Robinson, D. A., Tan, F., Vanmaercke, M., Verstraeten, G., Vieira, D. C. S., & Panagos, P. (2023). Towards a better understanding of pathways of multiple co-occurring erosion processes on global cropland. International Soil and Water Conservation Research. https://doi.org/10.1016/J.ISWCR.2023.07.008 conforme all'originale.
3	che la copia della seguente pubblicazione: **Matthews, F.,** Verstraeten, G., Borrelli, P., Vanmaercke, M., Poesen, J., Steegen, A., Degré, A., Rodríguez, B. C., Bielders, C., Franke, C., Alary, C., Zumr, D., Patault, E., Nadal-Romero, E., Smolska, E., Licciardello, F., Swerts, G., Thodsen, H., Casalí, J., … Panagos, P. (2023). EUSEDcollab: a network of data from European catchments to monitor net soil erosion by water. Scientific Data 2023 10:1, 10(1), 1–13. https://doi.org/10.1038/s41597-023-02393-8 conforme all'originale.
4	che la copia della seguente pubblicazione: Fendrich, A. N., **Matthews, F.,** van Eynde, E., Carozzi, M., Li, Z., d'Andrimont, R., Lugato, E., Martin, P., Ciais, P., & Panagos, P. (2023). From regional to parcel scale: A high-resolution map of cover crops across Europe combining satellite data with statistical surveys. Science of The Total Environment, 873, 162300. https://doi.org/10.1016/J.SCITOTENV.2023.162300 conforme all'originale.
5	che la copia della seguente pubblicazione: **Matthews, F.,** Verstraeten, G., Borrelli, P., & Panagos, P. (2023). A field parcel-oriented approach to evaluate the crop cover-management factor and time-distributed erosion risk in Europe. International Soil and Water Conservation Research. https://doi.org/10.1016/J.ISWCR.2022.09.005 conforme all'originale.
6	che la copia della seguente pubblicazione: Panagos, P., Borrelli, P., **Matthews, F.,** Liakos, L., Bezak, N., Diodato, N., & Ballabio, C. (2022). Global rainfall erosivity projections for 2050 and 2070. Journal of Hydrology, 610, 127865. https://doi.org/10.1016/J.JHYDROL.2022.127865 conforme all'originale.
7	che la copia della seguente pubblicazione: **Matthews, F.,** Panagos, P., & Verstraeten, G. (2022). Simulating event-scale rainfall erosivity across European climatic regions. CATENA, 213, 106157. https://doi.org/10.1016/J.CATENA.2022.106157 conforme all'originale.
8	che la copia della seguente pubblicazione: Panagos, P., Ballabio, C., Himics, M., Scarpa, S., **Matthews, F.,** Bogonos, M., Poesen, J., & Borrelli, P. (2021). Projections of soil loss by water erosion in Europe by 2050. Environmental Science & Policy, 124, 380–392. https://doi.org/10.1016/J.ENVSCI.2021.07.012 conforme all'originale.
9	che la copia della seguente pubblicazione: Borrelli, P., Alewell, C., Alvarez, P., Anache, J. A. A., Baartman, J., Ballabio, C., Bezak, N., Biddoccu, M., Cerdà, A., Chalise, D., Chen, S., Chen, W., de Girolamo, A. M., Gessesse, G. D., Deumlich, D., Diodato, N., Efthimiou, N., Erpul, G., Fiener, P., … Panagos, P. (2021). Soil erosion modelling: A global review and statistical analysis. Science of The Total Environment, 780, 146494. https://doi.org/10.1016/j.scitotenv.2021.146494 conforme all'originale.

Education

Doctor of Science (PhD: Geography) - Dynamic modelling of soil erosion and sediment delivery in Europe
Achieved: February 2024
KU Leuven, Leuven, Belgium

Master of Science with International Year - MESci Earth and Environmental Science with 1st Class Honours
Achieved: June 2019
Cardiff University, Cardiff, UK

Final Degree Grade- 82%
Third Year (Stockholm University)- Swedish grade A

A-levels- Geography (A), Biology (B), Welsh Baccalaureate (A).

GCSE's- 6A's, 3B's, 1 C including English language, English literature, mathematics and double science.

Ph.D. in Dynamic Soil Erosion Modelling in Europe (01/10/2019 - 01/02/2024)

Collaborative doctoral partnership between KU Leuven and the Joint Research Centre of the European Commission, Ispra - Supervised by Prof. Gert Verstraeten and Dr. Panos Panagos:

Project title: 'Dynamic soil erosion and sediment delivery modelling in Europe', applying the WaTEM-SEDEM model to simulate soil erosion and landscape-scale sediment transport across European catchments. Providing policy-relevant science for the sustainable mitigation of the on and off-site impacts of soil loss. The project included 2-years in both the department of Earth and Environmental Sciences, KU Leuven, and the Joint Research of the European Commission, Ispra.

Relevant teaching experience: Teaching assistant on the Masters courses Environmental Change and River Geomorphology. Supervisor of Master thesis topics in Geography and Earth Science.

Relevant research experience: Publication of 3 first author and 6 non-first author manuscripts in international journals (see attached list) and presentation in numerous international conferences. Contributing member of the European Union Soil Observatory (EUSO) soil erosion working group. Co-author on numerous project deliverables to the European Commission.

Relevant undergraduate research work in Earth Sciences

Master's thesis in Arctic permafrost erosion (Cardiff University) Supervised by Dr T.C. Hales: Large-scale geospatial analysis using ArcGIS combined with sediment and hydrological analysis, supplemented with numerical modelling in Matlab. Self-designed project to better understand erosion, sediment budgets, and carbon dynamics in Arctic catchments.
Bachelors thesis in Organic Geochemistry (Stockholm University) supervised by Dr Rienk Smittenberg: Lab experience with Gas Chromatography Mass Spectrometry (GC/MS) and Scanning Electron Microscopy for analysis of n-alkane lipids and carbonate sediments. Analysing natural variability in monsoon cycles using biomarker proxies.
Hydrology: Applied hydrological pollution study in Stockholm with extensive use of ArcGIS and groundwater borehole data.
Fieldwork: Experience in environmental sampling, interpretation, data processing and analysis.

Geoscience Fieldwork

Locations and disciplines

- Throughout Belgium as a teaching assistant on a Masters course of Environmental Change at KU Leuven.
- Samos, Greece: Analysing the affects of geology on stream flow characteristics and sediment transport in steep island ephemeral catchments. Self-designed and implemented project at Masters level.
- Stockholm, Sweden: Sediment coring and further geochemical analysis of TOC, heavy metals and lipid contents.
- The Netherlands: Analysing engineered and natural flood defences and assessing science-policy relationship in practice.

- Throughout Wales, Including: Measuring and mapping glacial and fluvial geomorphic landforms in South Wales and Snowdonia, mapping landforms and analysing ecological complexities in the Severn Estuary, water quality sampling in polluted waters of Swansea and Cardiff, and analysing the geo-ecological and geological composition and structure of South Wales.

Skills

Technical and language

- Extensive programming knowledge in Python (https://github.com/matfran).
- Research experience using QGIS and ArcGIS.
- Experience in environmental sampling of water, soil and sediment using numerous apparatus.
- Experience with remote sensing and big data analysis in Python and Google Earth Engine.
- Numerical modelling and data analysis using Matlab and R.
- Competent in SPSS, Grapher, Surfer, Microsoft office and LaTeX.
- Laboratory experience with GC-MS, SEM, XRF analysis and prior environmental sampling and sample preparation.
- Italian language level B2.
- Intermediate speaker of French language (A2-level).
- Speaker of beginner level Swedish language (A1-level)
- Green impact sustainability auditing having completed training and university-wide auditing of sustainability in the workplace.

Activities and Interests

- Varsity competitor for Cardiff University in kickboxing winning the Varsity shield in 2016.
- Competed at Welsh Premier League academy level in football.
- Competed in 3 half-marathon events.
- Achieved musical grade 6 in Euphonium.

Awards

- Evan Llewelyn Davies prize for best graduating performance in the Master degree scheme.
- Cardiff University scholarship award for best departmental grade in year 2.
- Highly commended award for contributions to university life through student mentoring.
- A-level Geography prize for best student.
- Awarded an International Association of Geomorphologists (IAG) travel grant to attend the BSG Windsor Workshop 2019.

Referees

For academic references please contact:

- Dr Panos Panagos (panos.panagos@ec.europa.eu): PhD supervisor JRC.
- Prof Gert Verstraeten (gert.verstraeten@kuleuven.be): PhD supervisor KU Leuven.

Signed ..... Date.....