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Welcome to another In-Depth Exploration of the BIOTRAILS Project!

Our last edition provided an overview of the primary tools utilised in the BIOTRAILS initiative. This issue delves deeper into the strategic objectives and methodologies underpinning Work Package 3. It is pivotal in assessing the impact of indirect drivers and implementing the Nexus framework, a critical component for achieving sustainable transformation across four distinct value chains:

- cocoa production in Peru
- fisheries and aquaculture products in Greece
- gold mined in Ghana
- forest-based cultural products created by Indigenous communities in the Brazilian Amazon.

This edition offers comprehensive insights from the recently published WP3 midterm report, developed in close collaboration with the task leaders. The report highlights significant progress to date and thoroughly assesses how indirect drivers affect biodiversity and socio-economic dynamics.

In an exclusive interview, WP3 leader Alessandro Pagano shares his perspectives on the findings and future directions of WP3. His insights shed light on the challenges and opportunities of integrating sustainable practices into the case study value chains.

For more information on the project, please visit www.biotrailsproject.eu

Yours sincerely,
Raffaele Giordano, Project Coordinator

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01 WP3 Highlights Mid-term activites

OBJECTIVE #1 Create a data repository within the case studies and existing various sources, following a data collection and integration protocol to enable seamless access to the required datasets.

OUTPUT #1 A questionnaire assessed data needs for models, methods, tools, and case studies. Protocols for data collection, storage and integration were established, guided by bilateral partner meetings and active involvement of case study leaders.

OBJECTIVE #2 Provide an integrated approach towards sustainable transformation, listing the factors that lead producers, suppliers and consumers to adopt a sustainable behaviour in different value chain case studies.

OUTPUT #2 A framework was developed to examine human behaviour and social norms influencing attitudes towards biodiversity. Stakeholder interviews and surveys, combined with Structural Equation Models, identified key variables influencing behaviour across supply chains, aided data collection, and guided case studies.

OBJECTIVE #3 Enhance versions of state-of-the-art EEMRIO and LCA databases for key sectors of interest for climate change and biodiversity impacts to improve supply chain information for process-based assessments.

OUTPUT #3 The environmental impacts of the value chain were analysed using the EEMRIO and LCA databases, which improved the understanding of the four case studies. Additionally, these databases also supported data processing aimed at achieving the output #4.

OBJECTIVE #4 Provide insight into the future climate conditions that are expected to affect the production of raw materials and other stages of the value chain for each case study.

OUTPUT #4 Future climate projections were made for different variables, time periods (2031-2050) and socio-economic pathways (SSPs). The validation compared model outputs with ERA5 data (1995-2014) and identified the best performing models. Outputs included maps and time series plots for 11 variables across 3 SSPs in 4 regions (2015-2100).

OBJECTIVE #5 Development of a Participatory System Dynamic Modelling (PSDM) framework to map and analyse the interactions between the socio-economic and ecological elements affecting the sustainable management of the nexus and the impacts on biodiversity (Nexus structure).

OUTPUT #5 A literature review of the evolution of the 'nexus' concept was carried out, emphasising biodiversity, climate change and societal interactions. A Participatory System Dynamics Modelling (PSDM) in a qualitative way (Causal Loop Diagrams) has been built for each case study.

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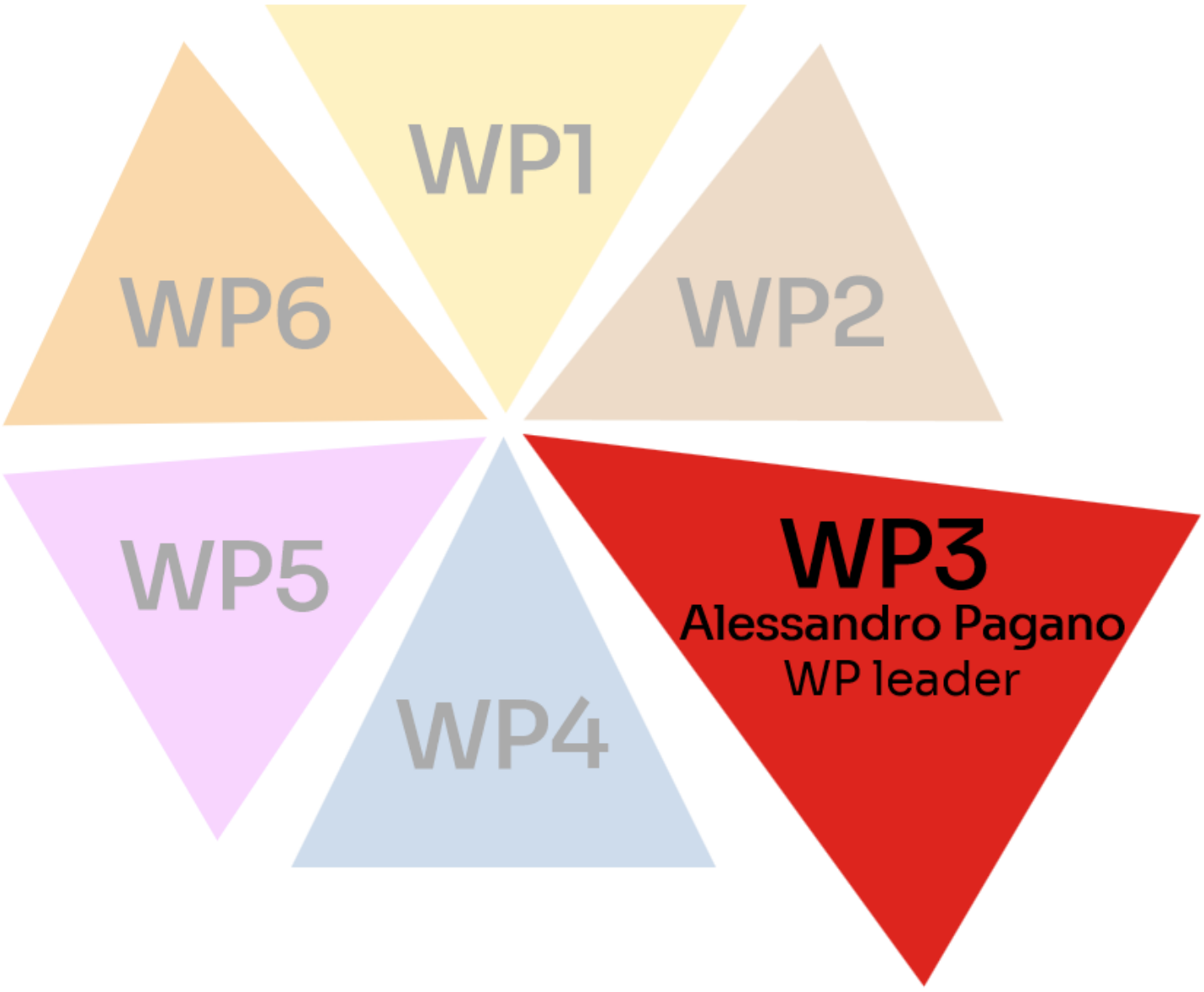
02 WP3 Leader Interview

In future editions of this newsletter, we will conduct personal interviews with the leaders of various Work Packages.

This issue spotlights Alessandro Pagano, the leader of WP3.

Click here to watch the interview and subscribe to our You Tube channel!



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03 Case Studies activities

BIOTRAILS is currently in its 20th month...
...let the activities within the case studies begin!

In each case study, stakeholders will evaluate the performance and benefits of BIOTRAILS solutions across different value chains to determine their added value. They will be encouraged to adopt a systems perspective and Nexus thinking approach. This phase will integrate tools and guidelines developed across various project work packages.

Simultaneously, activities will be conducted to analyse the impact of BIOTRAILS case studies and develop guidelines for their replication. The primary focus is on addressing the root causes of unsustainable production, trade, and consumption patterns to promote biodiversity and sustainability (or inspire transformative change).

Recommendations will encompass:
- Organisational issues such as vertical and horizontal integration
- Policy interventions, including hard and soft policies
-Initiatives supporting biodiversity-friendly public procurement

Additionally, efforts will be made to foster cross-sector partnerships involving the public, private, and civil sectors, promoting collaborative action towards sustainability.

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04 Key Events and Conferences

MSEAS 2024: Marine Socio-Ecological Systems Symposium

On Co-production of knowledge and participatory approaches

Between June 3rd and 7th, Charis Chalkiadakis (HUA) attended the event, focusing on sustainable management of marine and coastal systems. It addressed the challenges and solutions for promoting the blue economy while ensuring social, economic, and environmental sustainability. This symposium provided valuable insights for BIOTRAILS on integrating models for marine space management.

Read more here

33rd European Conference on Operational Research

On Operational Research Innovations in Policy Making

Raffaele Giordano, BIOTRAILS Coordinator and leader of the activities related to Participatory System Dynamic Modelling (PSDM) for the Biodiversity-Climate-Society (BCS) nexus, recently participated in the 33rd European Conference on Operational Research (EURO 2024). Held in Copenhagen from June 30th to July 3rd, this prestigious conference provided a platform to showcase BIOTRAILS' innovative work.

Read more here

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