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NATUREFIRST

Assessing Market Dynamics and Financial Constraints in Relation to Data-Driven Biodiversity Monitoring: Insights from the Horizon Europe Nature FIRST Project

by Janka Faller

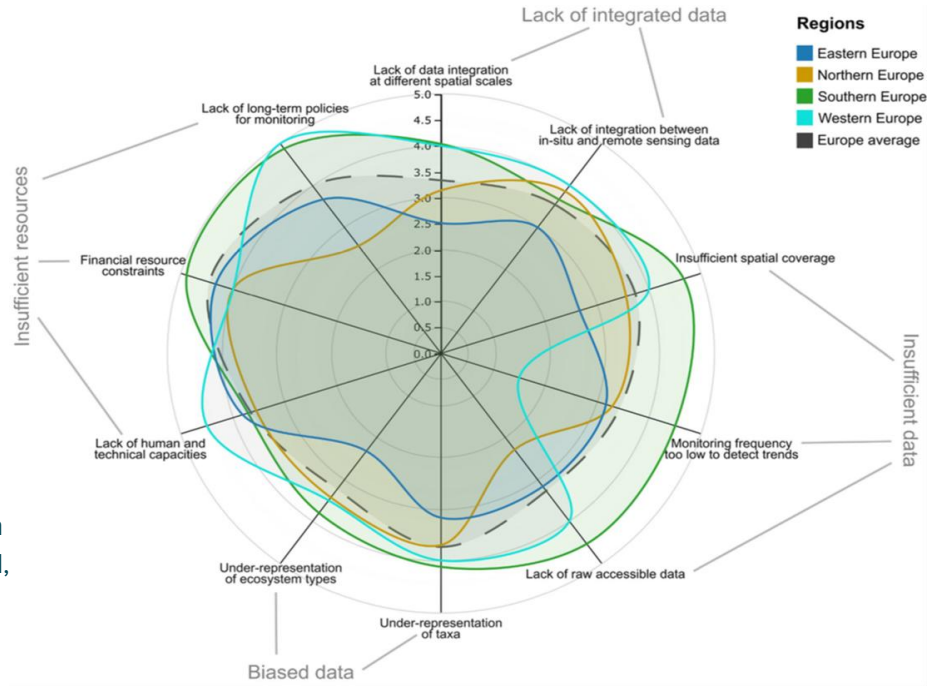
OUTLINE

1. Financial Constraints in Biodiversity Monitoring
2. Causes of Europe-Wide Financial Challenges
3. Consequences of Underfunding
4. Leveraging Technology

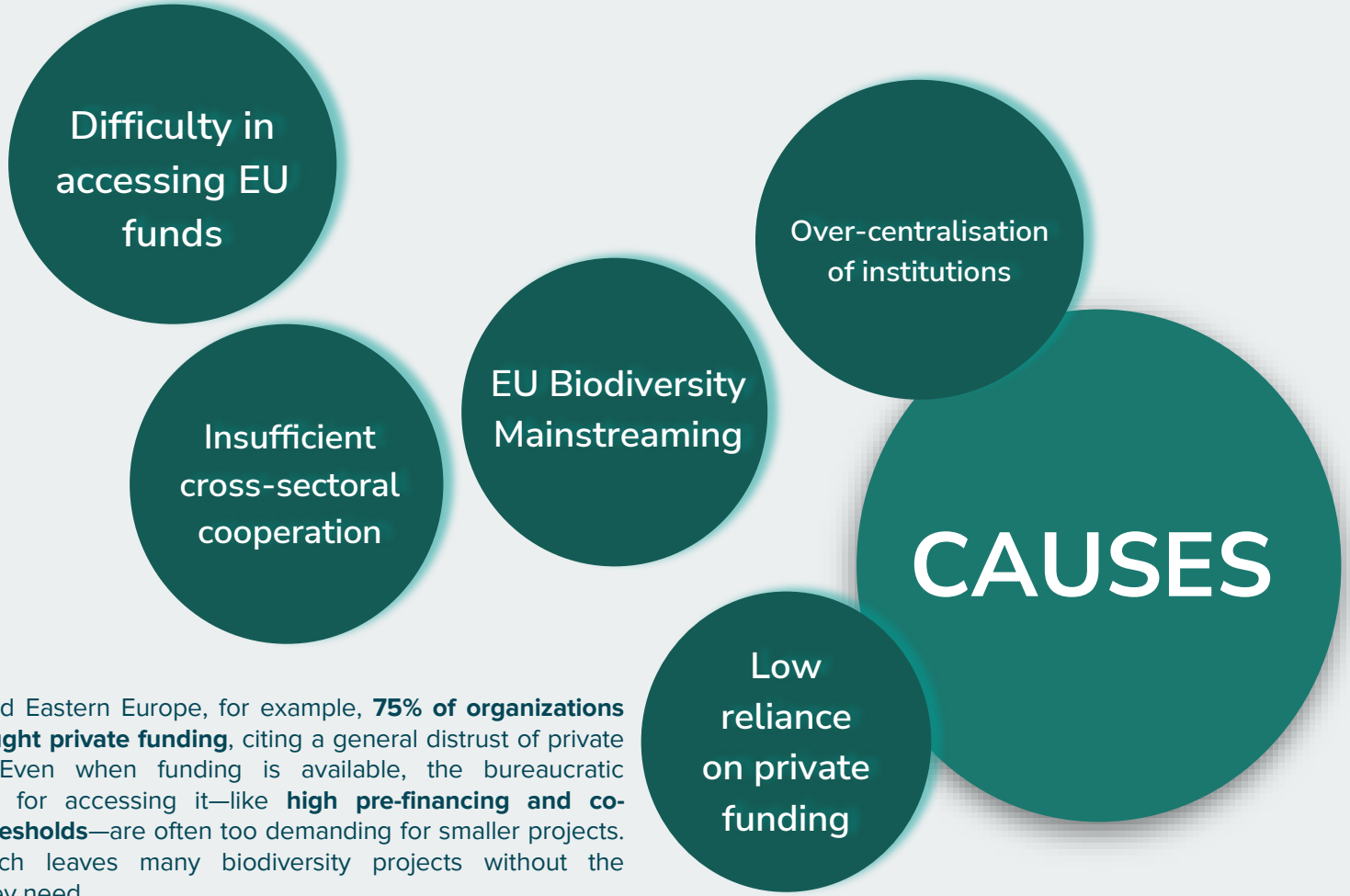
FINANCIAL CONSTRAINTS IN BIODIVERSITY MONITORING

- One of the most significant challenges facing biodiversity monitoring in Europe is the **chronic lack of predictable, long-term funding**
- The **Natura 2000 network**, which is crucial for European conservation, illustrates the problem. The annual financial need for biodiversity monitoring from 2021 to 2030 is estimated at €48.15 billion, yet the available budget falls far short of this figure. This **funding gap** prevents national agencies from carrying out the long-term, extensive fieldwork necessary to monitor biodiversity effectively.
- Moreover, even when short-term funding is available, it is often **unpredictable and tied to short-term cycles**, which hampers scaling up efforts. The inconsistent financial landscape means that long-term biodiversity goals are often pushed aside for immediate, politically-driven priorities. As a result, critical programs like Natura 2000 are underfunded, limiting their ability to respond to emerging biodiversity threats and monitor the effectiveness of management efforts.

EuropaBON: Lack of financial resources ranked as the most important cross-cutting challenge by respondents across Europe



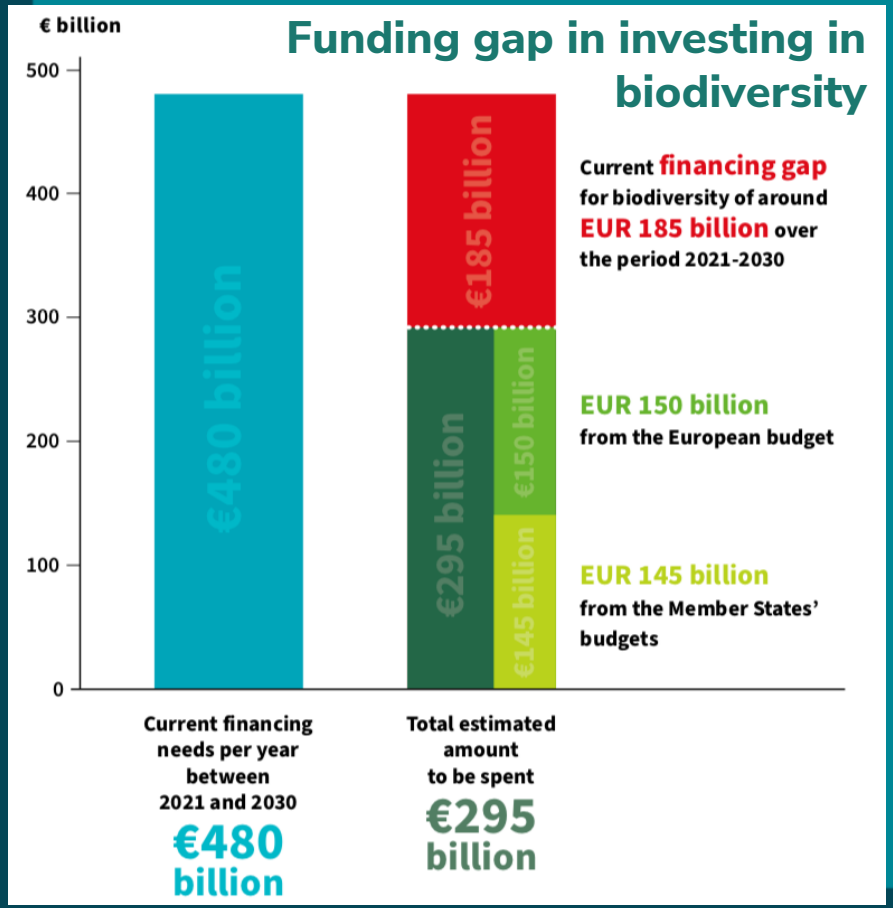
Source: Moersberger et al., 2024



In Central and Eastern Europe, for example, **75% of organizations have not sought private funding**, citing a general distrust of private investment. Even when funding is available, the bureaucratic requirements for accessing it—like **high pre-financing and co-financing thresholds**—are often too demanding for smaller projects. This mismatch leaves many biodiversity projects without the resources they need.

EU FUNDING

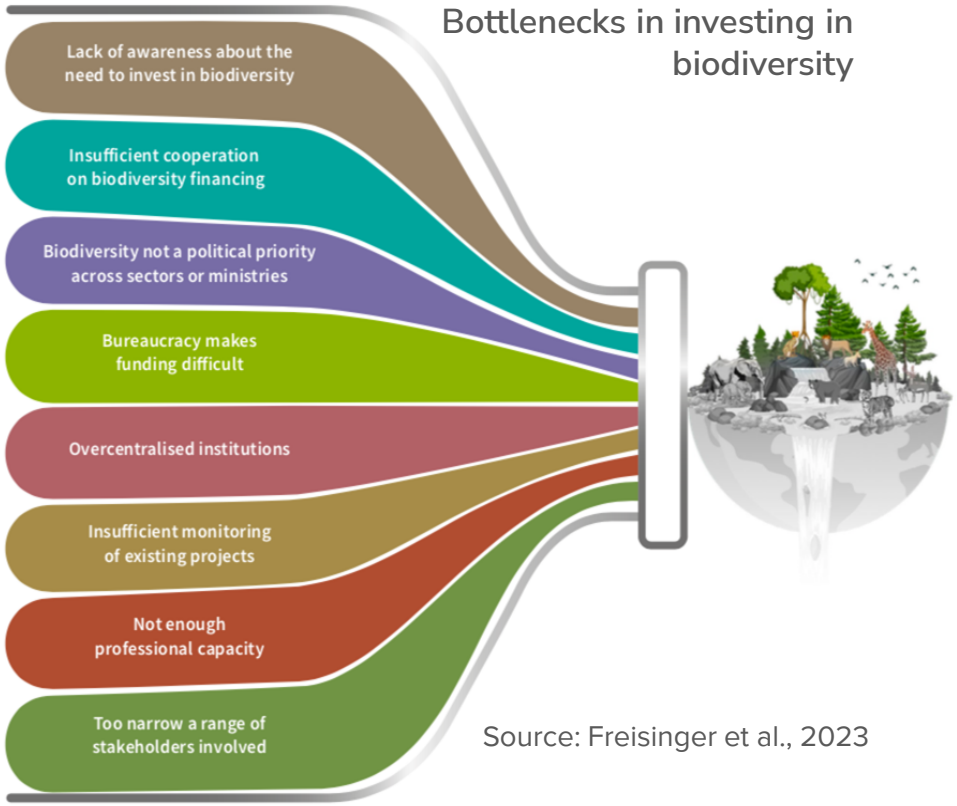
- EU mainstreaming: **declining absorption rate** of Cohesion Policy funds for biodiversity compared to the 2007–2013 and 2014–2020 periods
    - gap between project implementers' needs and European institutions
- **stringent, inflexible application requirements** on pre- and co-financing- create barriers that prevent smaller, on-the-ground projects from accessing EU funds
- very **low absorption rates** for biodiversity projects outside of the LIFE fund



Source: Freisinger et al., 2023

CENTRAL AND EASTERN EUROPEAN REGION

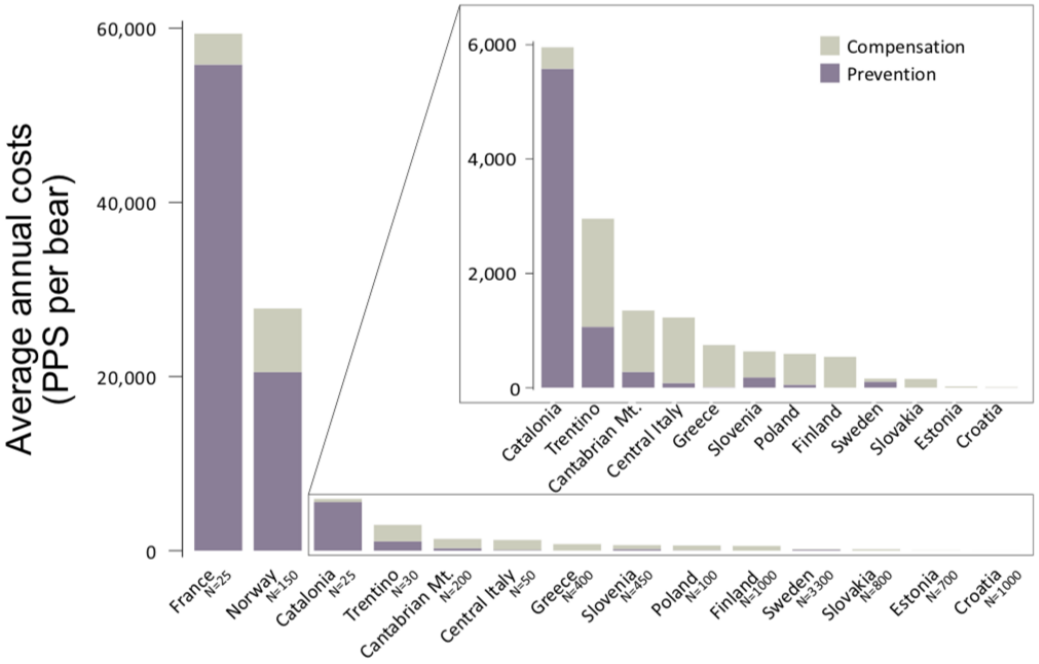
- The challenges in Central and Eastern Europe are even more pronounced. These countries face a dual challenge: on one hand**, limited national budgets,** and on the other, high **administrative barriers** when trying to access EU biodiversity funding. Despite being home to key populations of large carnivores, like brown bears and wolves, their capacity for monitoring is severely constrained by **competing policy priorities** that limit funding for biodiversity.
- Furthermore, accessing EU funds is particularly difficult in this region. The **high administrative burden and strict co-financing requirements prevent** many projects from even applying for the funds they need. This creates a situation where valuable biodiversity projects cannot get off the ground.
- Another issue is the **lack of cross-sectoral cooperation**. In these regions, biodiversity is not seen holistically across sectors. Ministries responsible for biodiversity often lack the political backing and resources to integrate their goals with agriculture, energy, and infrastructure sectors. This results **in fragmented efforts** that do not fully address the complex challenges of biodiversity conservation.



CONSEQUENCES
OF FINANCIAL BOTTLENECK

- constraining capacity to monitor responses of biodiversity to changing threats and the effectiveness of management efforts
- harder to retain skilled experts:
  - Many biodiversity monitoring programs rely on a **specialized workforce**, but financial instability makes it difficult to retain staff, leading to disruptions in data collection and loss of expertise.
- inability to maintain the extensive fieldwork needed for real-time monitoring –» gaps in data coverage
- lack of comprehensive data: difficult to **accurately assess wildlife populations** and **predict conflict hotspots**

REACTIVE INSTEAD OF PROACTIVE MANAGEMENT



Source: Bautista et al., 2019

- poor data quality **limits effective conflict prevention efforts**
  - With incomplete or outdated data, authorities are often forced to take reactive measures, such as compensating for wildlife damage rather than implementing proactive prevention strategies
- national administrations routinely **compensate** for brown bear damage in most of Europe, only half of the countries systematically subsidize **preventive** measures
- prioritizing compensation over prevention can be costlier in the long run (Bautista et al., 2019)
- annual compensation for large carnivore damage in Europe comprises approximately € 28.5 million: average cost per year and individual carnivore during 2005–2012 was € 1800 for **bears**

LEVERAGING NOVEL TECHNOLOGY increases cost-effectiveness by

- reduction of manual labour: freeing experts to focus on more high-priority tasks, such as analysing and acting on the collected data
- EuropaBON cost-effectiveness report:
  - means to reduce field data collection costs;
  - help with data entry, management and validation;
  - apps: a desirable way to engage with volunteers, both for data collection and training purposes
- IUCN framework for monitoring biodiversity in protected areas and other effective area-based conservation measures, 2024:
  - remote data collection: simplified workflow whilst allowing rapid collection of greater amounts of data than traditional observer-based approaches;
  - automated data collection may allow improved data comparability across protected area network sites;
  - reduce the human impact of monitoring by minimising the required number of site visits, allowing documentation of timid or elusive wildlife species without the presence of field workers

> **“[...]the most promising sources of new monitoring data lie in remote sensing and other automated or semi-automated data collection methods”**
>
> Vihervaara et al., 2017

CALL TO ACTION

- Financial bottlenecks affecting biodiversity monitoring in Europe are substantial. However, by **embracing novel technologies** and fostering private investments, we can overcome these challenges. There is a need for more **focus on long-term financial planning**, reduction of bureaucratic barriers for accessing funds, and a proactive approach to conflict prevention to ensure more effective monitoring programs.
- Consider "bear-smart, business-smart" strategies that combine modern tools with **sound financial planning.** This approach can help create sustainable, efficient, and effective conservation programs that benefit both wildlife and human communities.

THANK YOU

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