

# **Biodiversity Observation Networks are People Networks**

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Convention on  
Biological Diversity












We want to understand & change  
the complex interactions of  
people and biodiversity





Europe must lead the transition to a **healthy planet**  
and a **new digital world**.  
But it can only do so by **bringing people together**.

(EU Green Deal)







# What are the ingredients?

- Awareness



- Trust



- Support



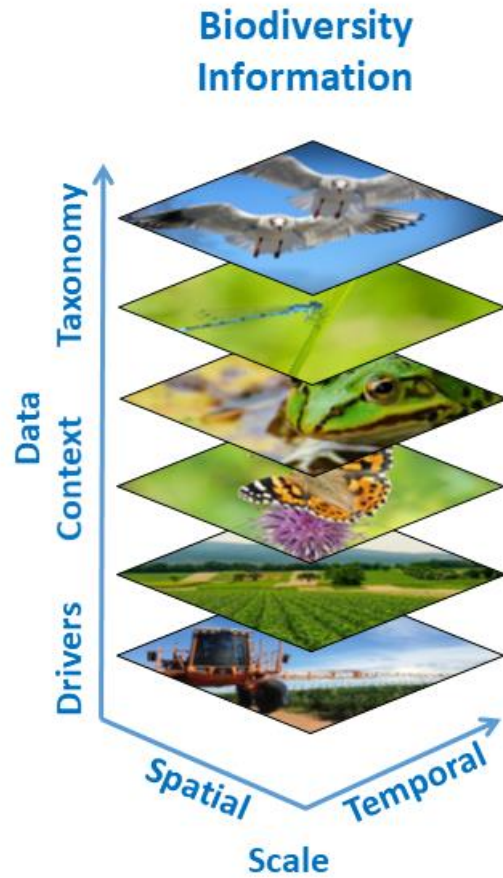
- Added-value services



EUROPABON

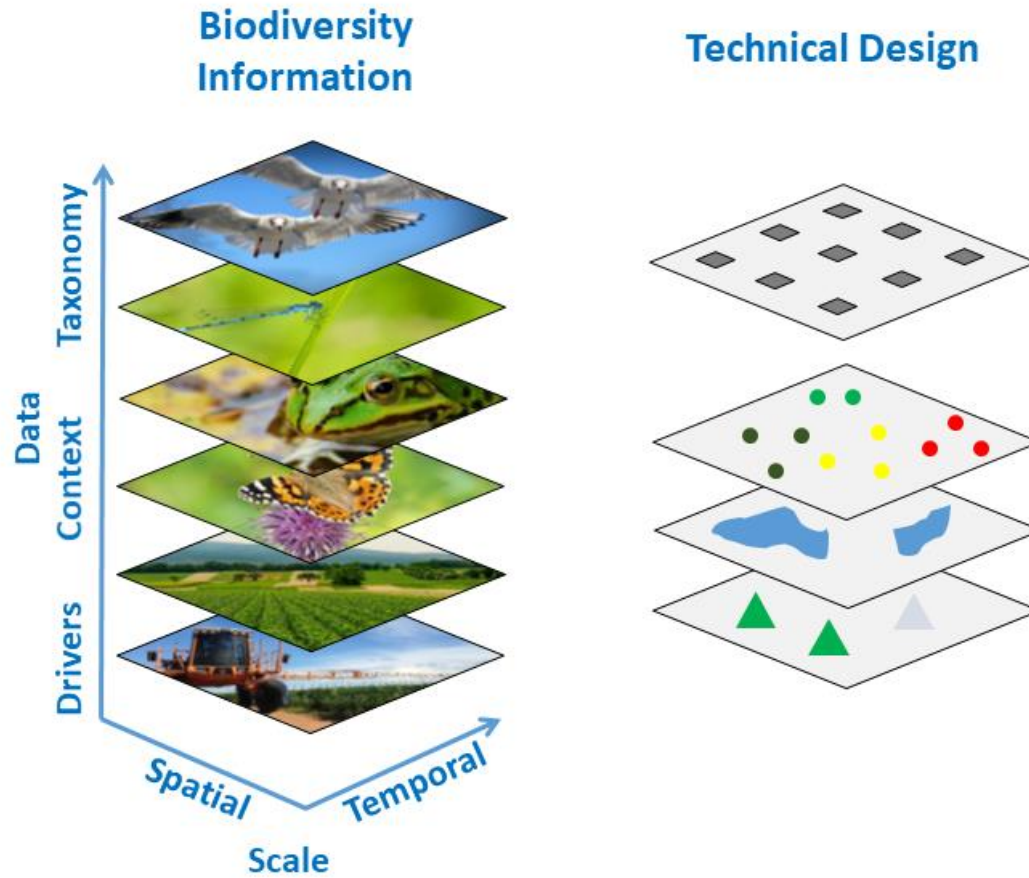


# Biodiversity Observation Networks – what do we have?



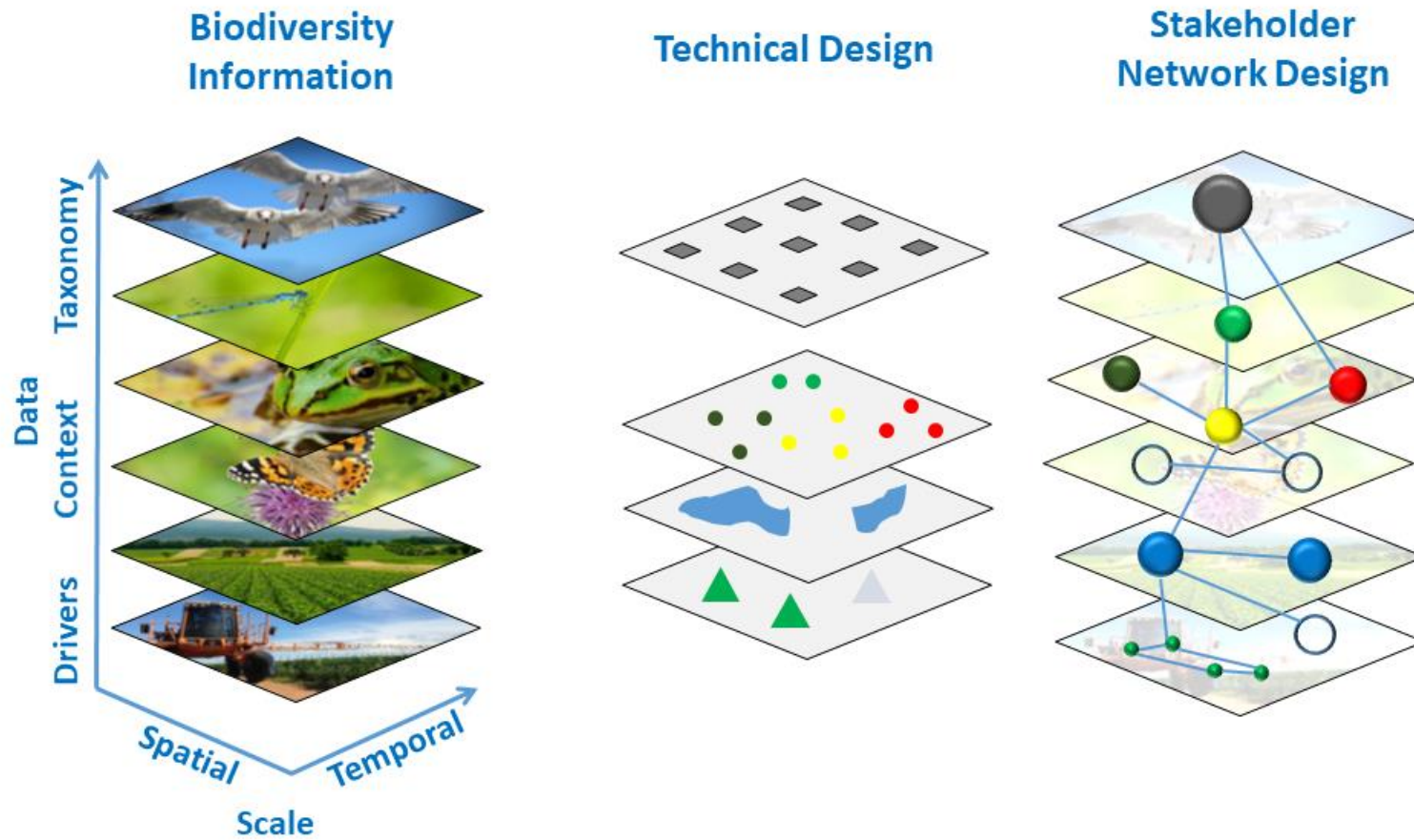


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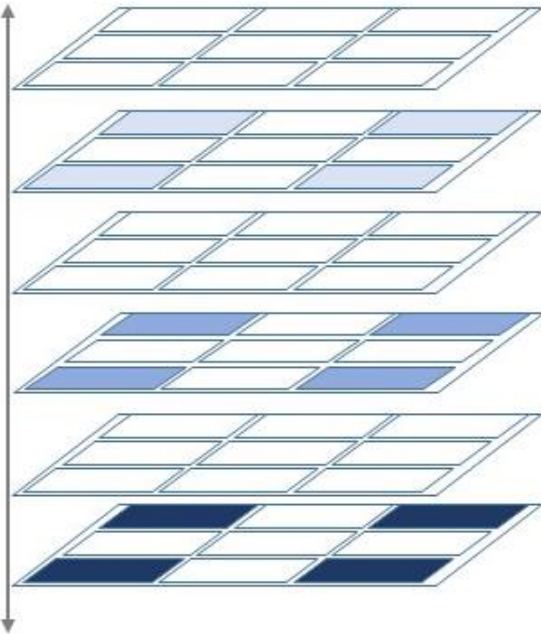




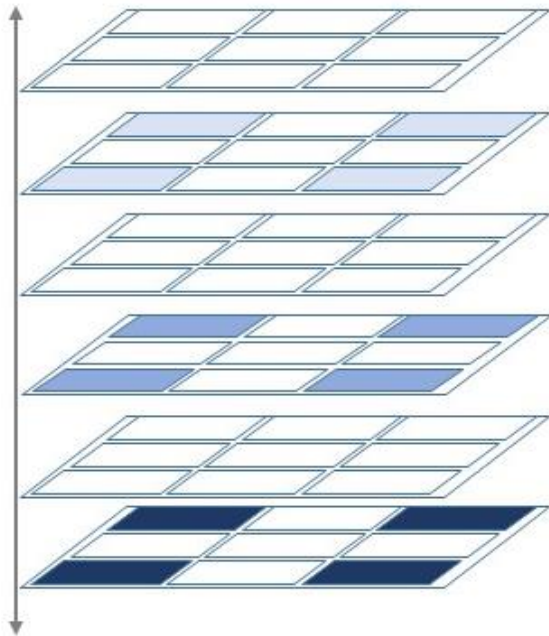
# Biodiversity Observation Networks (BONs) – what do we have?

## Top Down Design

- Standardisation of sampling sites & methods
- Definition of strict standards for data collection protocols, data mobilization and quality
- Highly controlled & structured design



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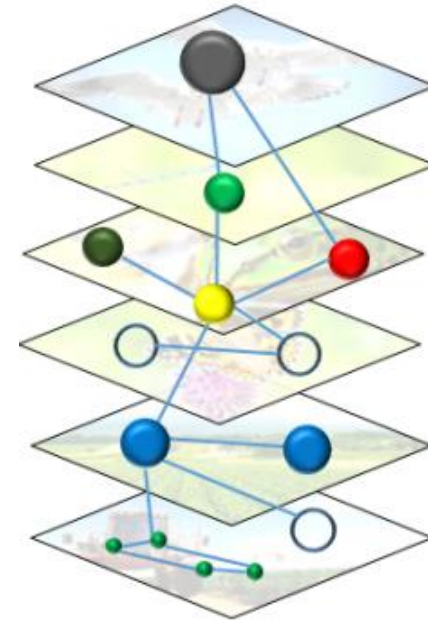


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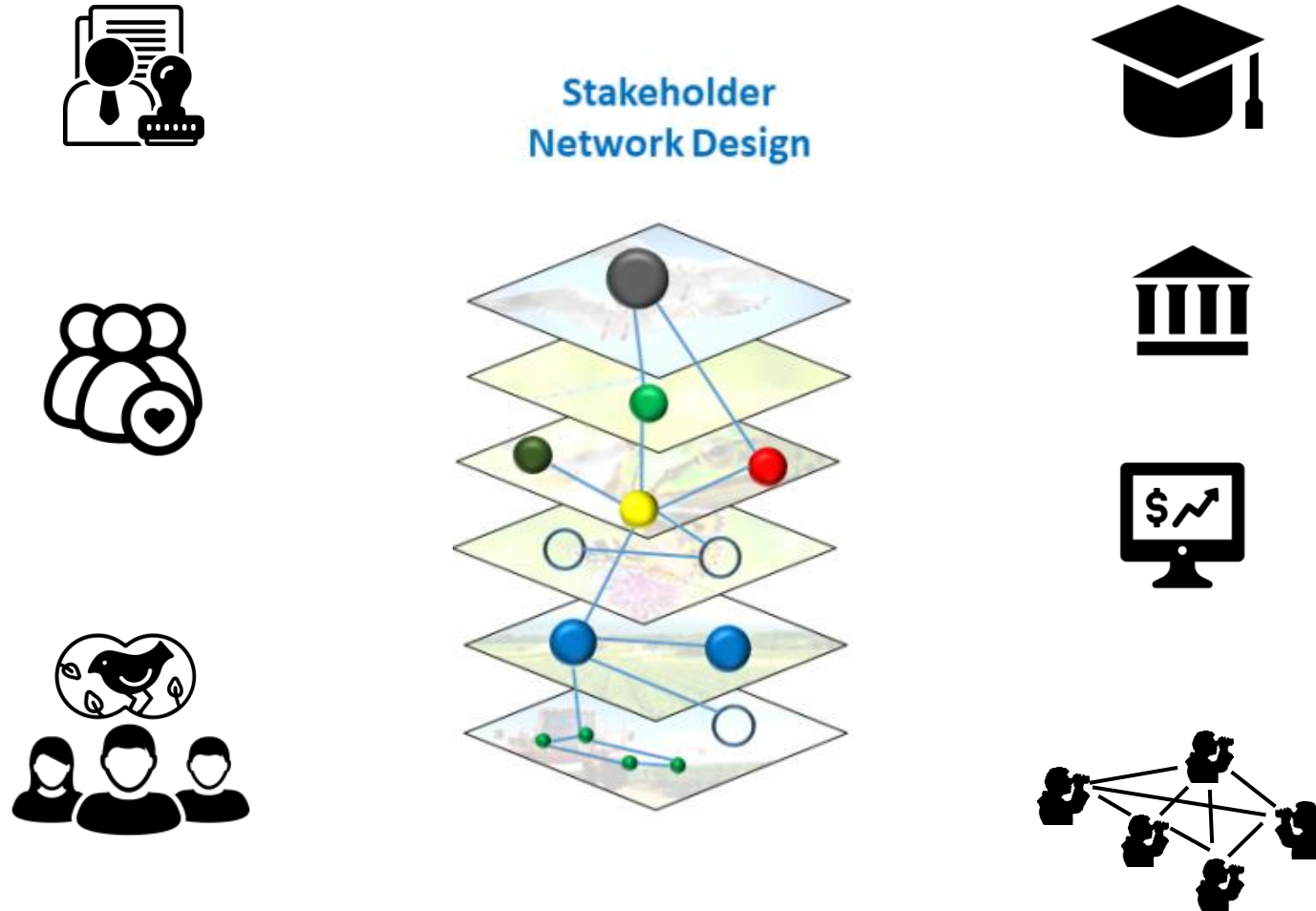
## Stakeholder Network Design



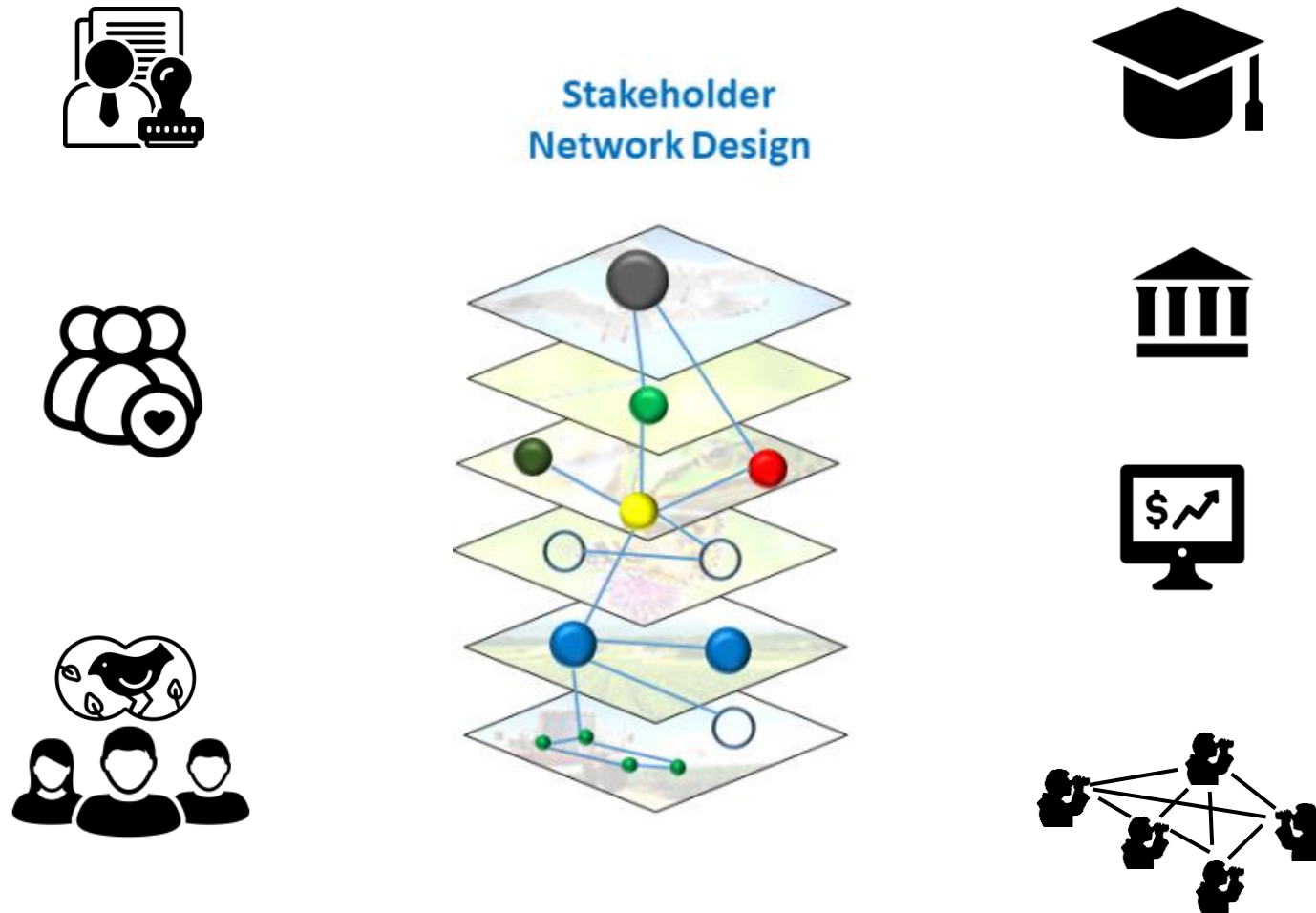
**Development of Stakeholder network  
and capacity-building of partners**



# BONs – who is involved?

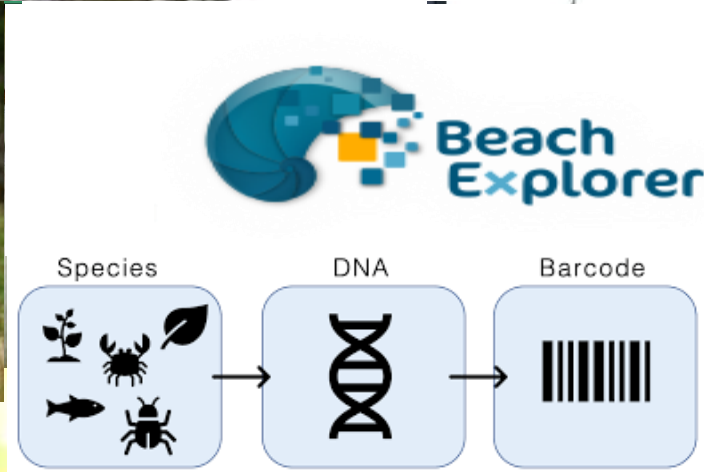
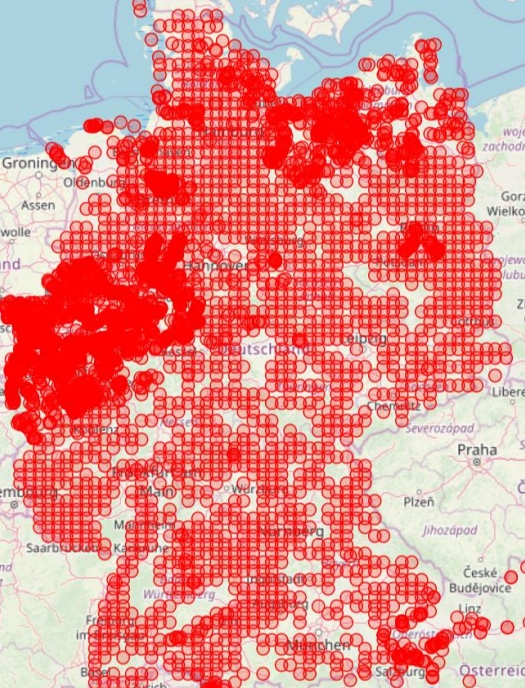
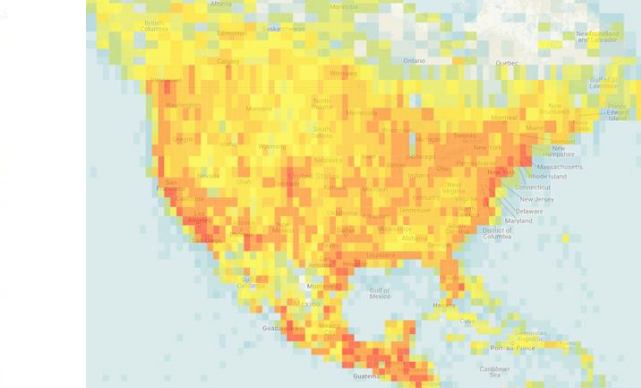


# BONs – who is involved?





vegetweb  
das Vegetationsportal für Deutschland





# No innovation without participation

## Enormous potential & interest

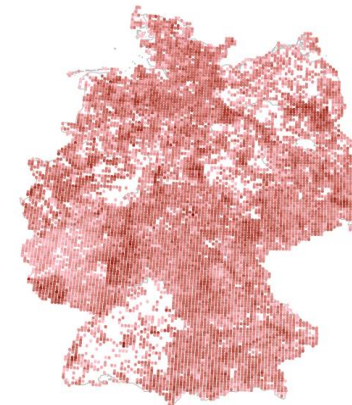
>30% of the general public are keen to get involved in science  
70-90% of all species records by volunteers

## Species experts 'silently going extinct'

- valuing & securing expert knowledge
- providing visibility & active participation
- professionalising data management in NGOs and agencies
- Inter-generational contract & learning

## Broad ownership & social licence

NGOs / societies / museums / agencies / academia  
active collaboration & innovation



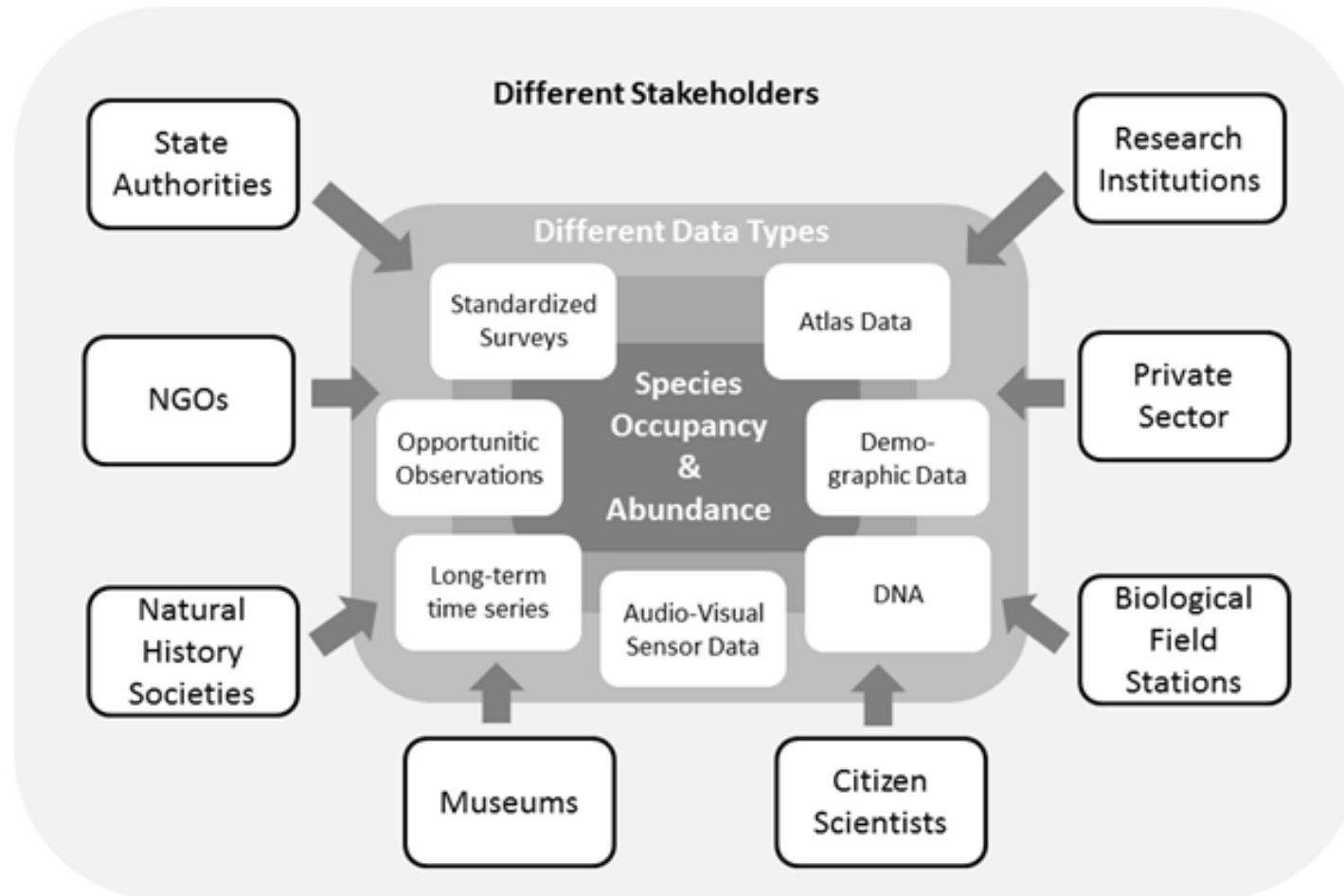
log10(Recs)

7.5  
5.0  
2.5  
0.0





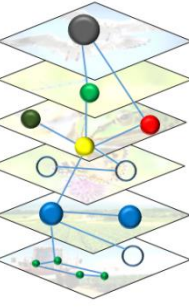
# Networked Modular Approach






**Collaborative leadership - sense of shared ownership, resilience in the system and innovation potential**

(Kühl, Bowler, et al OneEarth 2020)

# What are the Benefits - Examples?



| Stakeholder   | Motivation  | Benefits  | Impediments  | Incentives  |
|---|---|---|--|---|
| <b>State authorities</b><br>           | <b>Legal obligation and reporting duties</b>                          | <ul style="list-style-type: none"> <li>Access to info on state and trends of biodiversity otherwise not available</li> </ul>                | <ul style="list-style-type: none"> <li><b>Understaffed</b></li> <li>limited communication</li> <li>concern losing <b>sovereignty?</b></li> </ul> | <ul style="list-style-type: none"> <li>Increased efficiency</li> <li><b>added value through buy-in by stakeholders</b></li> <li>Transparency</li> </ul> |
| <b>NGOs</b><br>                        | <b>Member integration,</b> influencing planning, intrinsic motivation | <ul style="list-style-type: none"> <li>Access to <b>reliable, quantitative information</b> for highlighting threats</li> </ul>              | <ul style="list-style-type: none"> <li>Perceived loss of <b>own visibility</b></li> </ul>  | <ul style="list-style-type: none"> <li><b>Increased evidence base</b> for influencing policy and legislation</li> <li><b>Self-efficacy</b></li> </ul>   |
| <b>Natural history societies</b><br> | Intrinsic motivation, <b>Enthusiasm for biodiversity</b>              | <ul style="list-style-type: none"> <li>Exchange with like-minded people</li> <li><b>Interoperability with environmental data</b></li> </ul> | <ul style="list-style-type: none"> <li><b>Funding / capacities</b></li> </ul>  | <ul style="list-style-type: none"> <li>Access to analytical and <b>statistical expertise</b></li> <li>Increased <b>recognition of work</b></li> </ul>   |



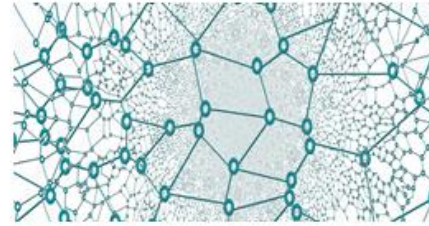
# Achieving Integration

*Identifying stakeholders*



Welcoming and embracing  
diversity

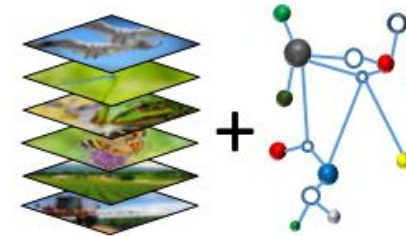
*Turning stakeholders into  
network nodes*



*Linking the nodes  
(stakeholders)*



*Aligning the social network and  
technical design*



*Unifying stakeholders around core  
standardised monitoring programme*



# sMon – Network Germany





# sMon - Bridging Science-Society-Policy

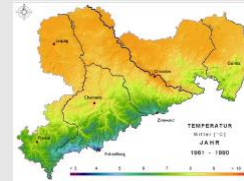
Ökologische Baubegleitung    Biosphärenreservate  
Eingriffs-Erfolgskontrollen Verbreitungsatlanen  
Zufallsfunde BUND/NABU Kartierungen  
Apps Ehrenamt Sammlungen  
FFH-Kartierungen Gutachten  
ELER Fachbegleitende Maßnahmen  
Fachgruppen Graue Literatur  
Qualifizierungsarbeiten Präsenzmonitoring  
Amphibienzäune Private Meldungen



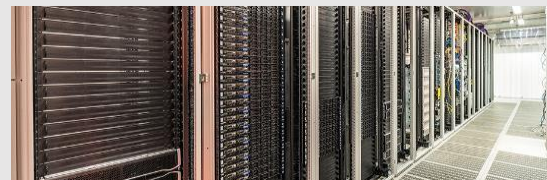
## Novel statistical methods for heterogeneous data



## Spatial data for environment and site characteristics



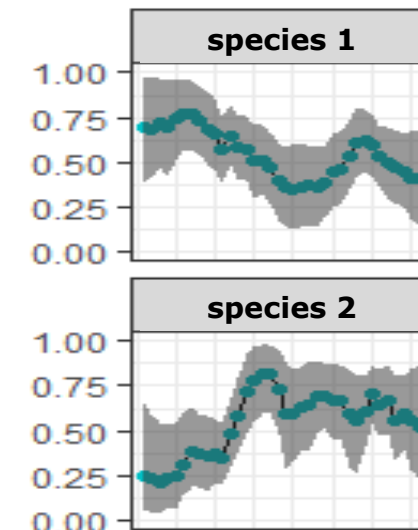
## Infrastructure



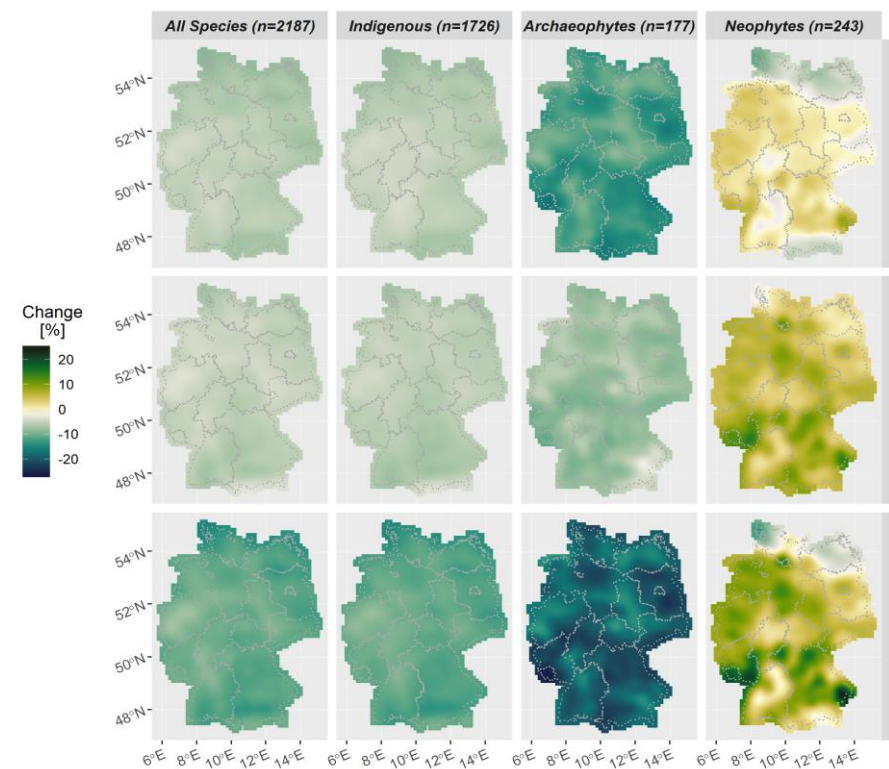
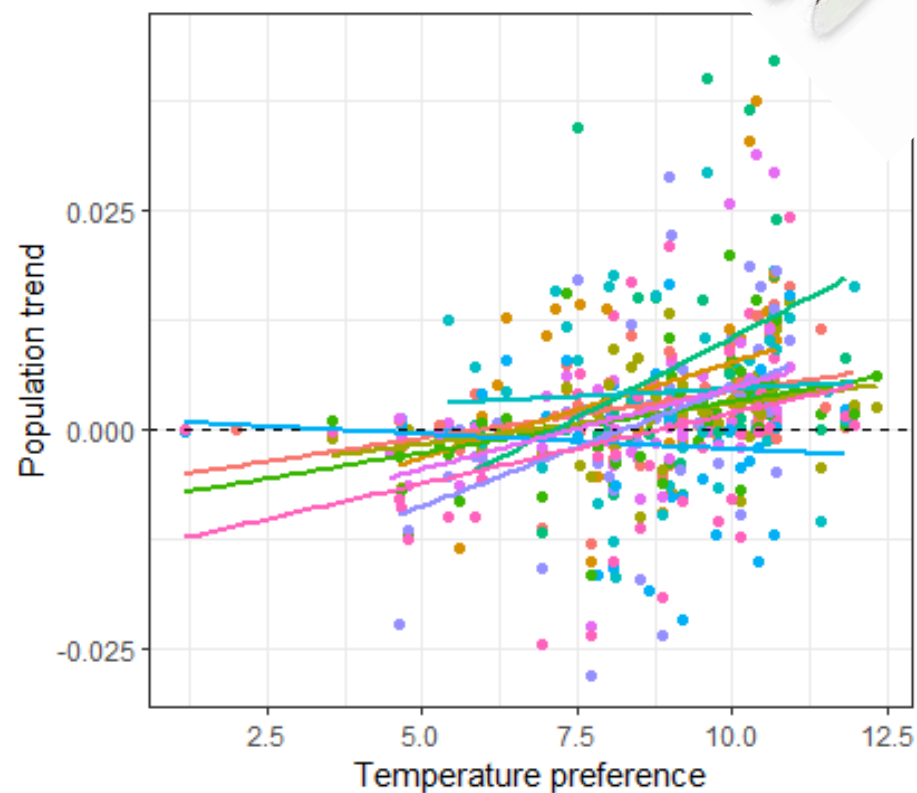
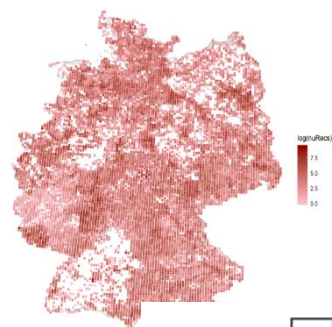
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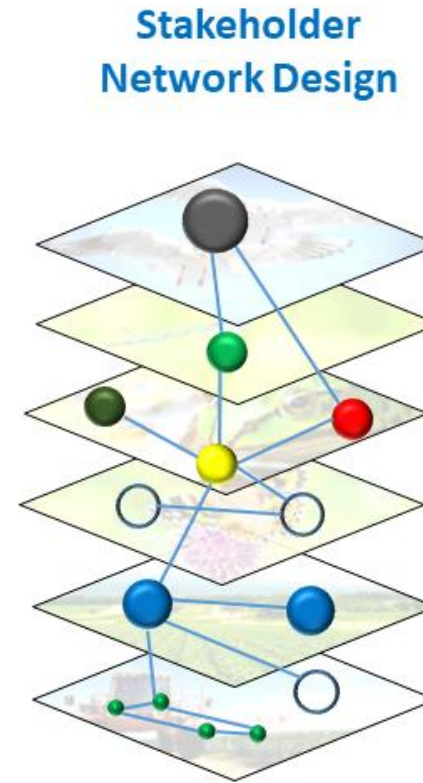
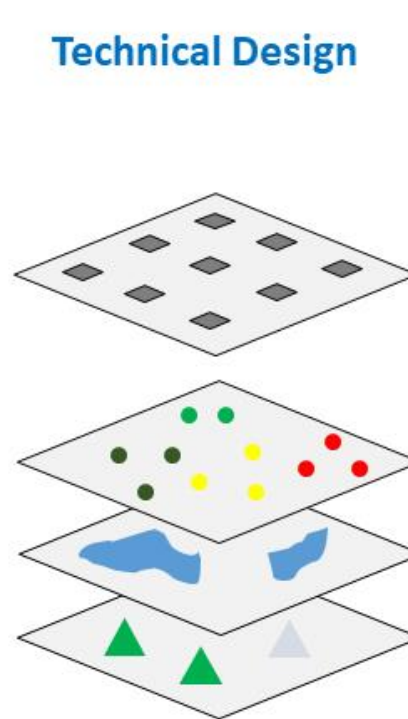
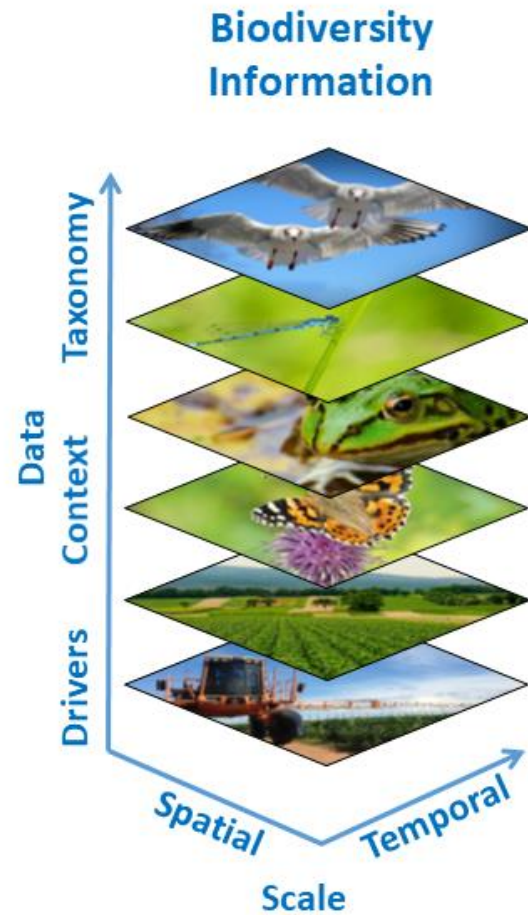


# Biodiversity Change





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Hjalmar Kühl



Diana Bowler





# Thank You

