

How well connected are *you* within the Hub?

Social Network Analysis (SNA) as an evaluation tool in One Health partnership networks



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Take home message

In multistakeholder partnership networks, an **understanding of the dynamic relationships between individual collaborators is essential** to shape activities plus engagement and impact strategies. **SNA enabled us to evaluate these relationships**, and showed how they are impacted by external events such as the Covid-19 pandemic. SNA is a tool to provide **insights into the dynamic nature of the Hub partnership**. It is continuing to inform its Monitoring, Evaluation and Learning (MEL) strategy.

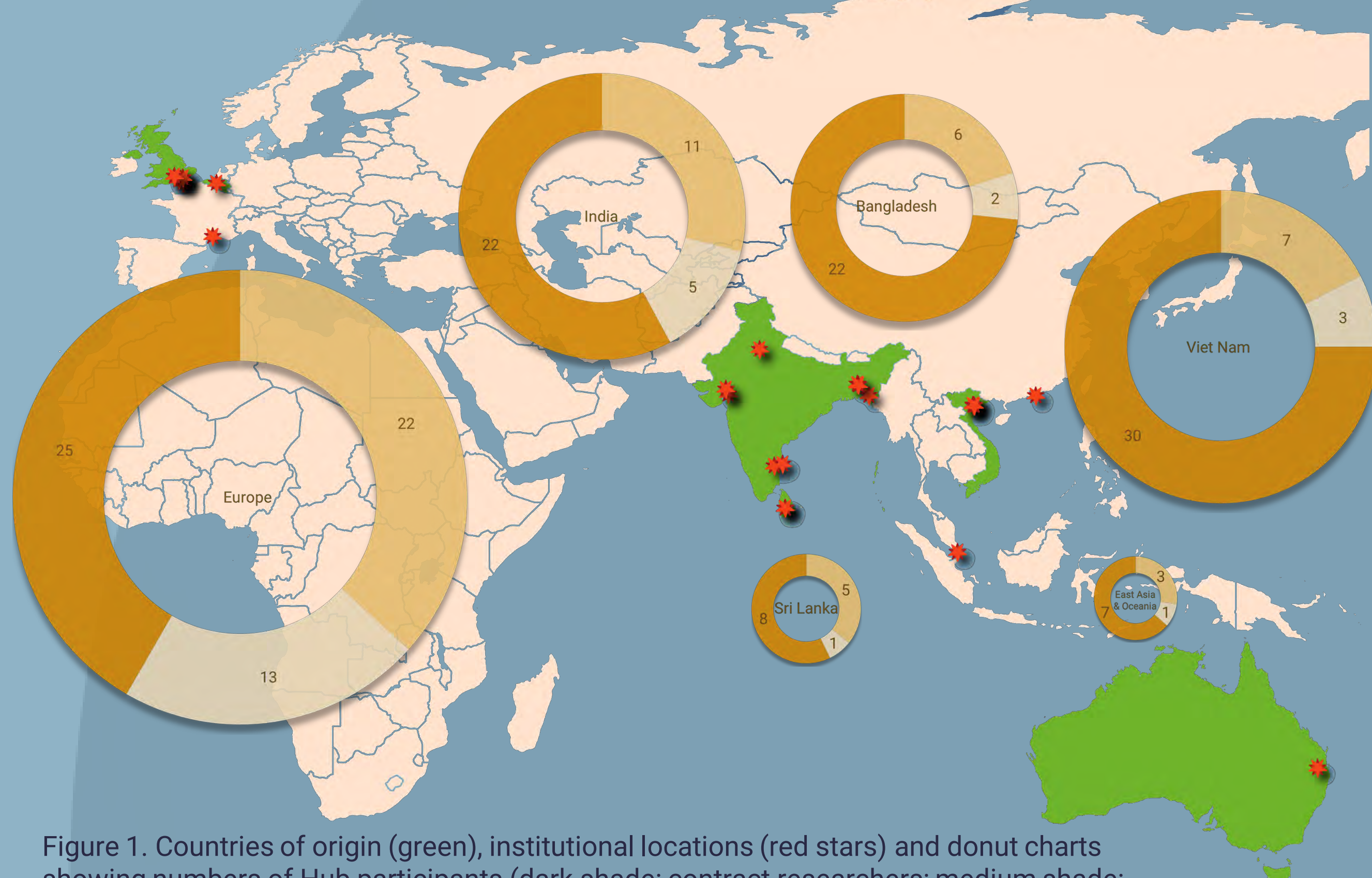


The Hub is a multistakeholder partnership

The UKRI GCRF One Health Poultry Hub ("the Hub") is an international partnership network of approximately 190 participants from 27 institutions in 10 countries, with a geographic focus on **Bangladesh, India, Sri Lanka and Vietnam**.

Multistakeholder partnerships (MSPs) can be organisationally complex. In the One Health context, partners represent different sectors, and interdisciplinary working is needed for effective collaboration. Cultural factors also play a role. **Building partnerships requires active inputs from all partners**.

It follows that MSPs are dynamic, evolving over time. To a large extent, such change is driven by the **development of personal connections**.



Why perform this SNA?

It is difficult to meaningfully measure changes in the structural dimensions of the Hub network over its 5-year lifetime. However, we are able to investigate the dynamic developments in interpersonal collaborations between Hub participants over this period, across countries and research areas. Our hypothesis is that this represents a proxy for the whole network.

Specific objectives are:

1. To assess the **way in which collaborations are being shaped** among Hub members.
2. To characterise the extent to which the **emerging network is dynamically changing** across countries and research areas.
3. To investigate **characteristics** in this development associated with such as career stage, discipline (biological science vs. social science), gender, etc.



Figure 2. Easier days: the first all-Hub conference in Gujarat, India in February 2020, directly before onset of the Covid-19 pandemic.

Findings

For all periods, networks showed a **high small-world index**. Network connectedness **increased during P1**, in a distributed manner. However, during **P2** (i.e. after onset of the Covid-19 pandemic), connectedness **decreased**, and the network became **more centralised**; although connections between the UK and study countries increased, **connections between study countries declined**.

Connectedness was significantly higher for social scientists, mid and late career stage, and male partners.

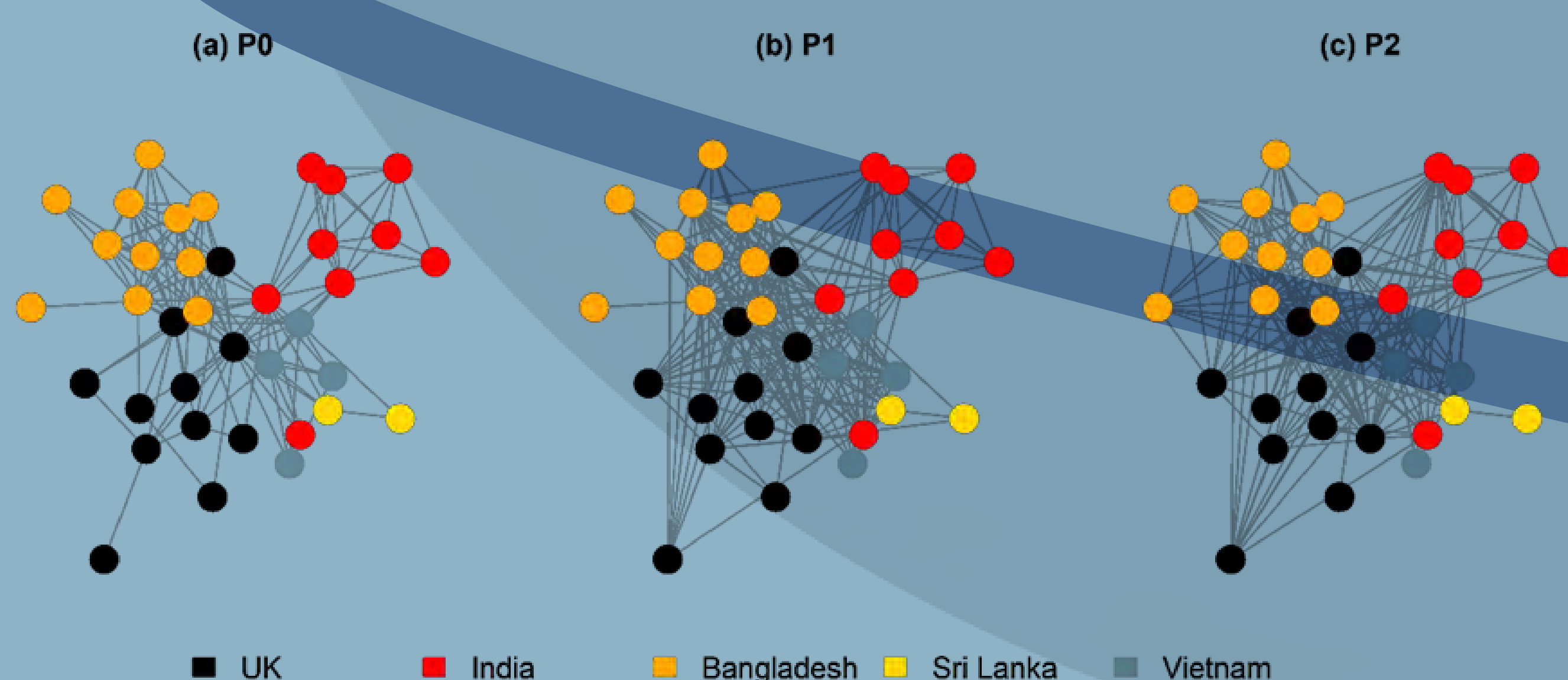


Figure 3. Network diagrams showing cohort networks. Nodes are coloured according to the country in which they were based.

Surveys and analysis

Two online surveys were conducted a year apart. All Hub participants were invited to respond. The surveys covered three periods: **P0** (before March 2019), **P1** (March 2019 – February 2020) and **P2** (March 2020 – February 2021).

In each survey, respondents were asked to consider their collaborations and activities with all other Hub members. In addition, they were asked to indicate their primary scientific discipline or area of expertise, their primary role in the Hub, gender, and age category.

We applied Social Network Analysis (SNA) methods using these data to investigate the evolution of the Hub network over these three periods.

What do these findings show?

During **P1**, face-to-face meetings enabled partners from all disciplines and countries to interact directly. This facilitated an increase in network connectedness and reduction in centralisation.

P2 corresponded with onset of the Covid-19 pandemic. All communication activities were migrated to online platforms. Factors affecting participation included internet access and bandwidth; language challenges; and inhibitions due to perceived status or hierarchy (e.g. early career researchers).

This evaluation is ongoing and periodic (as opposed to a pre- and post-evaluation): the third survey will be launched soon!



Scan ME!

The GCRF One Health Poultry Hub is funded by United Kingdom Research and Innovation (UKRI) under the Global Challenges Research Fund.



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GCRF Global Challenges Research Fund