**Network Analysis Methodology**

**For full details, see R scripts.**

To determine the potential benefit from the establishment of Technical Support Centres, we merged the 51 Party-NBSAP networks to obtain a single NBSAPs network by creating edges between the CBD Secretariat and government-related actor of each Party, as government-related actors are responsible for NBSAP development (Table 2). We called the network linking all Parties together under the supervision of the CBD Secretariat the “NBSAPs network”. Nodes representing the corresponding TSCs were added to the NBSAPs network by linking these nodes to each affiliated government node to obtain an “NBSAP-TSC network”. TSCs are linked with each other to provide the African CBD technical and scientific co-operation context.It is important to note that these TSC are coded as “Biodiversity institutions” in the NBSAP analysis. This duplication of the institutions considered as Biodiversity institution and TSC reflects the division of their mission at national and regional scales.

We compared the NBSAP and NBSAP-TSC networks to evaluate the impact of integrating TSCs into the network. Specifically, our objective was to measure how adding a new actor (TSC) affects the entire network. This influence could result either from the unique interactions that this actor has with other participants or simply from structural changes due to its presence as an additional node.

We aimed to clearly distinguish between two types of effects:

* Relational effects: These arise specifically from the unique relationships formed by TSCs.
* Structural effects: These result solely from adding extra actors to the network.

To differentiate between these effects, we used a simulation approach known as "bootstrapping," creating 10,000 randomised versions of both the NBSAP and NBSAP-TSC networks. During these simulations interactions between actors were randomised, removing any specific relational patterns. The number of relationships for each actor (degree centrality and thus edge density) was maintained, ensuring that structural features remained consistent.

As a result, from each original network (NBSAP and NBSAP-TSC), we generated 10,000 randomised networks. For each of these networks, we calculated centrality metrics to assess network structure (global and local clustering coefficient, betweenness, closeness and eigen centrality). It is important to note that except for the global clustering coefficient, all network metrics are average of actors metrics. This lead to small differences at the network level that can be important locally.

We performed paired Student t-test with and without the inclusion of TSCs and checked for the normality of data. If we observed a significant difference between the two sets of randomised networks, this would indicate a structural effect due to the addition of TSCs. If the direction of this difference matched that seen in our actual complete networks (NBSAP and NBSAP-TSC), it would imply that the observed changes could be attributed either to structural effects, relational effects, or a combination of both. Conversely, if the direction of the difference in our actual networks differed from that seen in the randomised simulations, it would clearly demonstrate a relational effect beyond mere structural change. We added the Cohen D value of each comparison to assess the importance of the addition of an extra actor on the whole network.

This method enables us to accurately identify whether the integration of TSCs primarily impacts the network through their unique interactions or simply through their structural presence.