SNA map of the main players involved in Anti-corruption reform in Zaporizhzhia, Kyiv, Lutsk and Rivne

We built the network map based on the survey data (the methodology is given in the Appendix). The nodes of the graph represent the key actors/players involved in anti-corruption reform, the edges – links between the actors. We distinguish 8 groups of actors (figure 1). The links between the actors were estimated based on respondents' answers to the survey questions about their partners and associates.

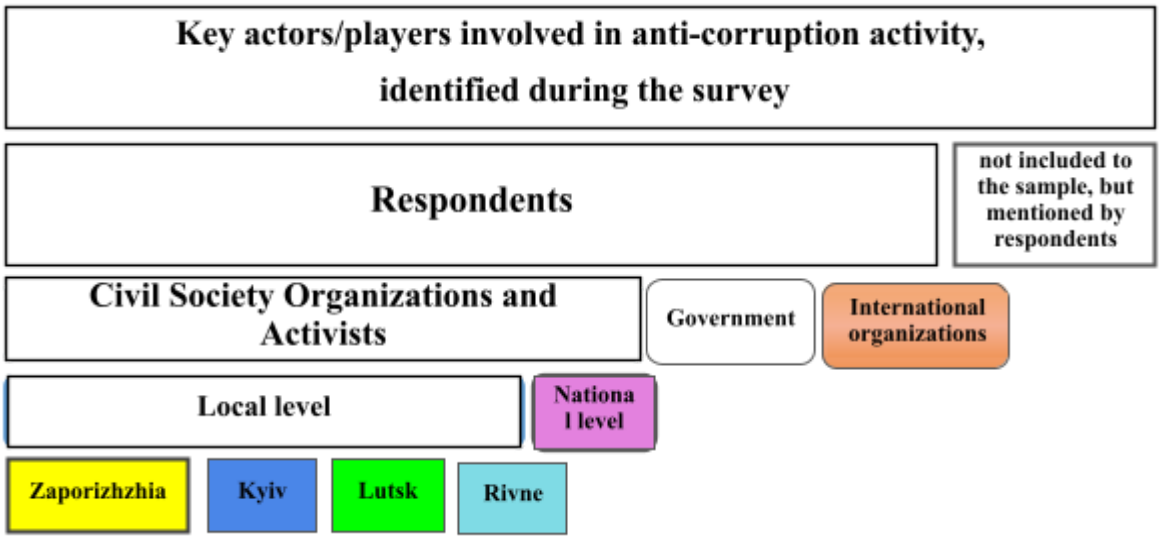

Figure 1. Main players involved in anti-corruption activities identified during the survey

Impact Factor Methodology

We built the network map based on the survey data. The nodes of the graph represent the key AC actors - CSO and government institutions (GOV), the edges – relationships between the actors. The relationships between the actors was estimated based on their answers to the survey questions.

The **weights for the edges** $CSO \rightarrow CSO$ and $CSO \rightarrow GOV$ are estimated based on the CSO representatives' answers to the questions:

(1) Who are the key actors involved in AC policy implementation in your region?
(2) Which anti-corruption actors do you cooperate with?
(3) Which actors do you consider the key proponents the anticorruption efforts, with whom you have not cooperated yet?
(4) Who do you recommend that we speak with about anti-corruption issues?

If a CSO representative mentions an actor in the answer to the questions (1), (3) or (4), we add +1 to the weight of the link between them, a mention in the questions (2) adds +2 points.

The weights for the links $GOV \rightarrow CSO$ and $GOV \rightarrow GOV$ are estimated based on the government representatives' answers to the questions:

(1) Which CSO are involved in anti-corruption activities in your region?
(2) Who are the key actors involved in AC policy implementation in your region?
(3) Who do you recommend that we speak with about anti-corruption issues?

If a government representative mentions an actor in the answer to the questions (1) and (3) we add +1 to the weight of the link between them, a mention in the answer to the question (2) adds +2 points.

We measure the **impact factor for an actor** as the weighted in-degree statistic for the node, which is associated with the actor.

In terms of the graph theory, given the edge weight a_{ij} for each edge from node *i* to node *j*, a graph can be represented by an adjacency or connectivity matrix $A = [a_{ij}]$, and weighted in-degree of node *i* is $\Sigma_i a_{ij}$. Graphically, the larger is the node, the more times an AC actor was mentioned by other actors - hence, the higher is its impact factor.

CSOs mention more players involved in the anti-corruption activities than government representatives

The network map in the figure 2 demonstrates that CSOs tend to mention more players involved in the anti-corruption activities than government representatives. On average, the government representatives mentioned 5 actors answering the questions about the main anti-corruption players, and CSO representatives mentioned 10 players.

The CSOs who act on the local and national levels on average mentioned similar numbers of partners and associates. Among the government representatives, the biggest number of associates was mentioned by the new institutions - National Anti-Corruption Bureau of Ukraine (NABU) and National Agency for Corruption Prevention (NACP).

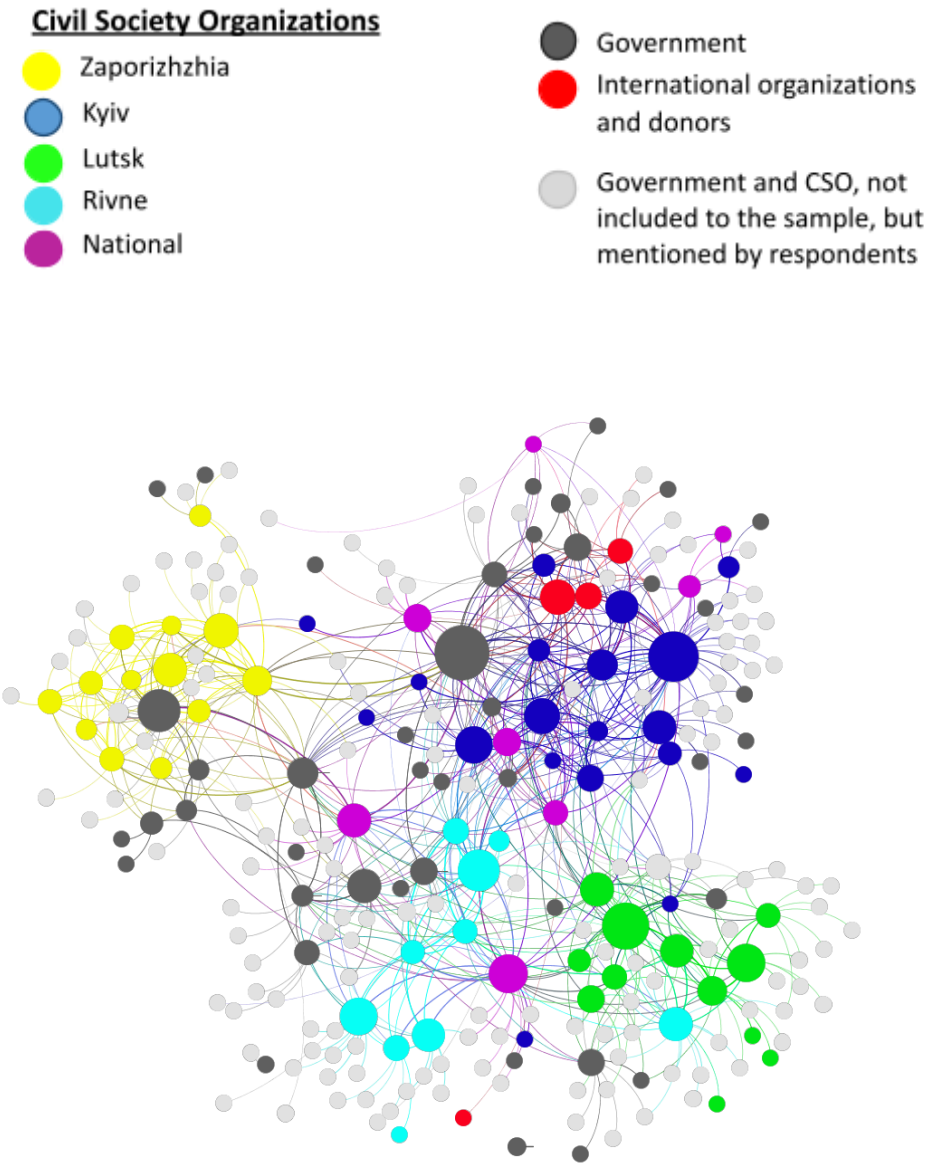

Figure 2. Key anti-corruption actors: the size of a node is proportional to the number of associates and partners, who were referred by the actor (weighted out-degree).
Each node is associated with a particular actor (CSO or government) and its size is proportional to the number of actors she/he mentioned as their partners or associates. In case we had interviewed several representatives from one government body, we weighted the size of the nodes as a sum of all actors that each representative mentioned.

The role of CSO in anti-corruption efforts is more significant than the role of the government

The network map in the figure 3 demonstrates that CSOs play more significant role in the anti-corruption reform than the national government institutions. Answering the questions about the partners and associates, the respondents mentioned their colleagues from the CSOs more frequently, than from government bodies.

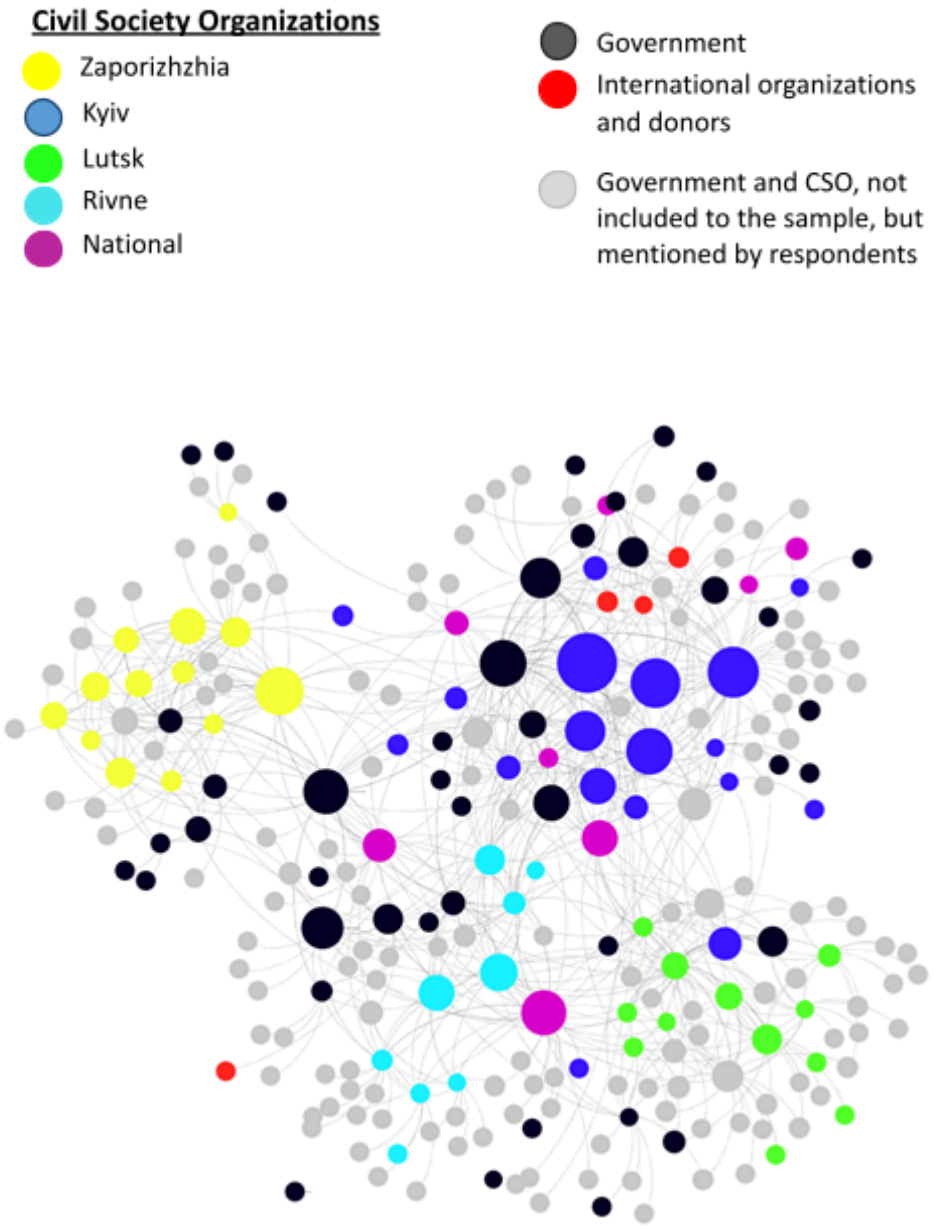

Figure 3. Key anti-corruption actors: the size of a node is proportional to the impact factor of the actor (weighted in-degree).

The horizontal links between the anti-corruption actors have to be developed

The role of cooperation and professional networks was emphasized by the majority of the respondents. However, the actors rarely mentioned their colleagues from other regions answering the questions about their partners and associates, except the partners from Kyiv (figure 4). As a rule, the respondents mentioned their partners from their region, Kyiv and government institutions. There was only one organization with high impact on anti-corruption reform in both in Rivne and Lutsk (an interregional network).

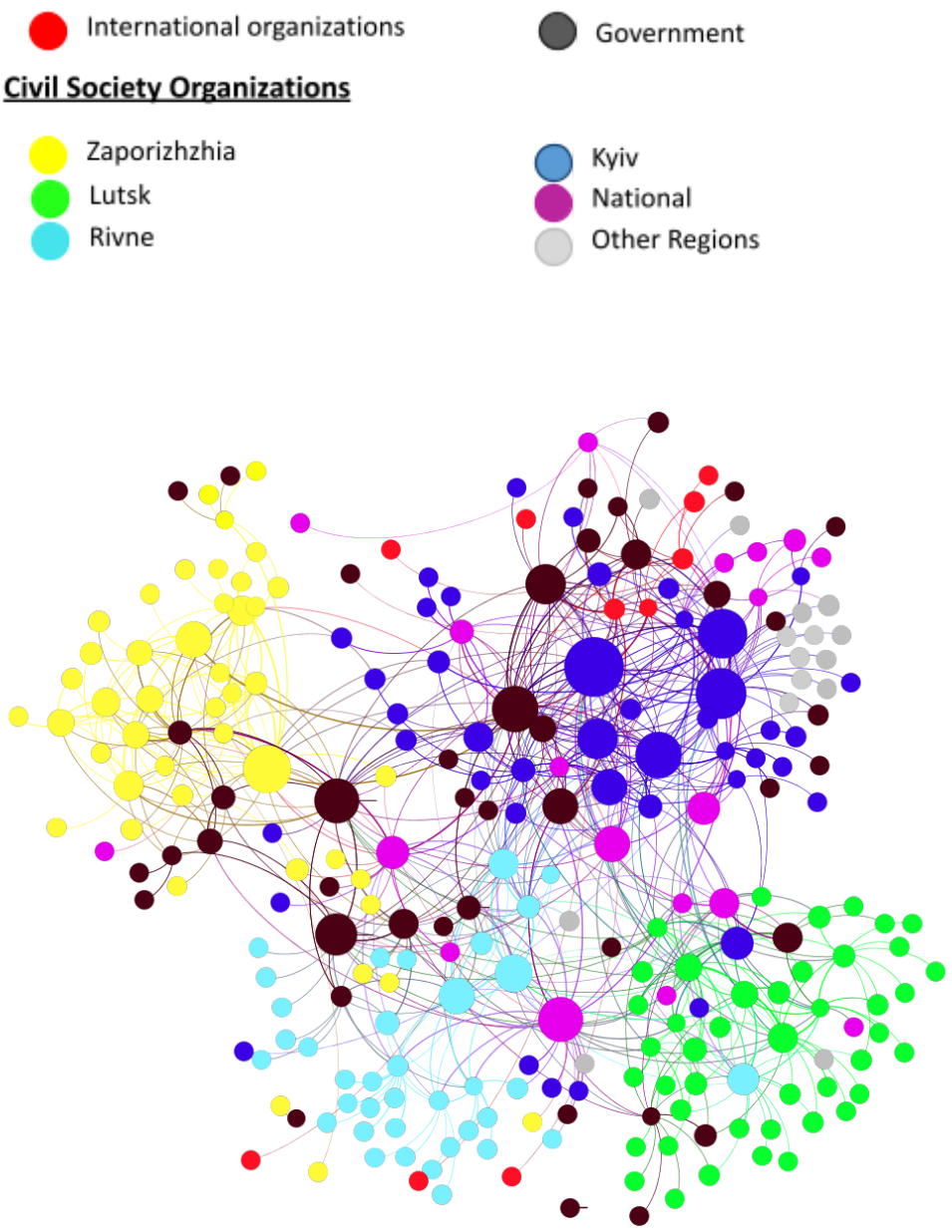

Figure 4. Key anti-corruption actors: the size of a node is proportional to the impact factors

CSO types

We identified 3 types of CSOs: media-activists, civil associations and business associations (figure 5). Media-activists provide anti-corruption investigations and make them available to civil society through local and national media. Civil associations provide advocacy, monitoring, information campaigns and consultations on various anti-corruption issues. Business associations specialize on business-specific anti-corruption issues.

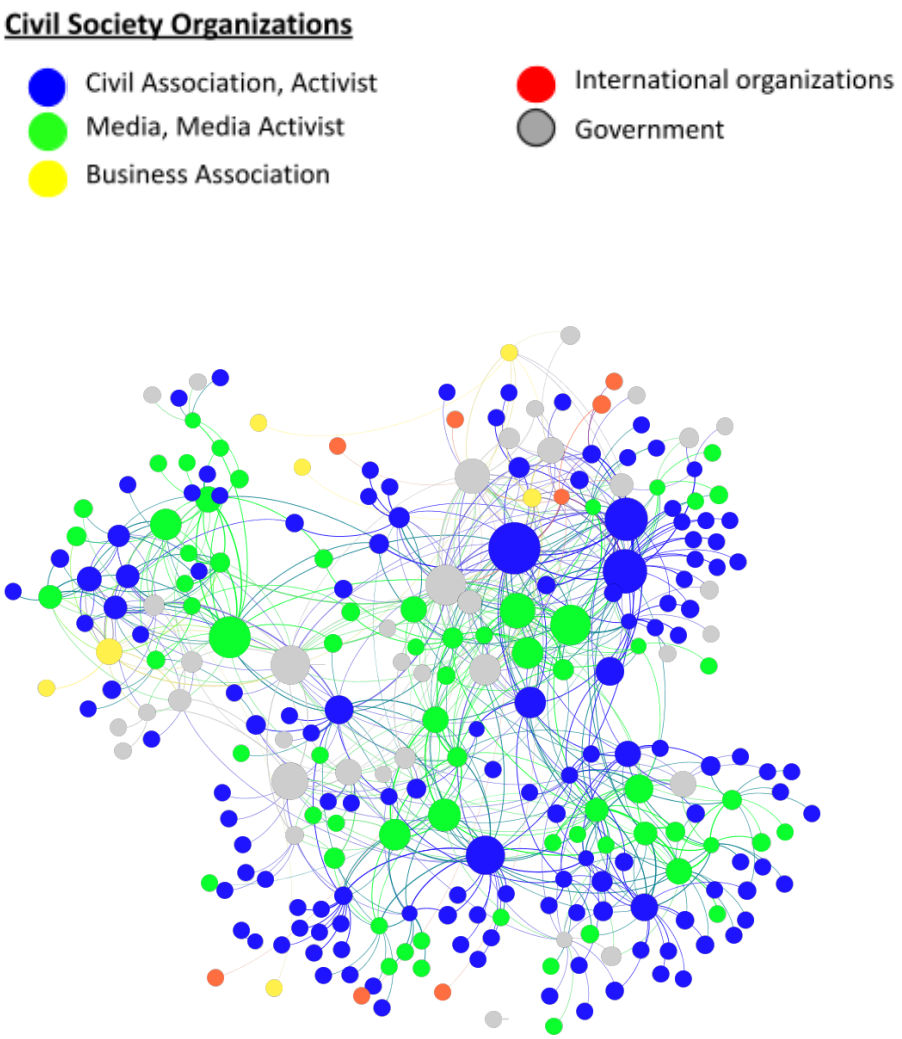

Figure 5. Key anti-corruption actors: types of CSOs