

Model of transferability of the CO.R.E. methodology for the definition of CI and lessons learned

WP7 – Deliverable 7.2

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D 7.2	Model of transferability of the CO.R.E. methodology for the definition of CI and lessons learned
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1. D7.2 OBJECTIVES

The scope of this document (D7.2) is to define how the CO.R.E. partners intend to favour the transferability of the project results, tools, methodology, procedures, know how, and lessons learned to other countries, types of emergencies, and stakeholders.

The CO.R.E. model of transferability that is defined in this document complements the “Sustainability and exploitation plan” (D7.1). D7.2 is aimed at enhancing the project impact and to ensure that the results and tools developed with the CO.R.E. project are used by a wide range of stakeholders and can be applied to countries, types of emergencies, and databases beyond those currently included in the project. D7.2 addresses, in particular, Activity 7.5, which is defined in the project description as the “definition of the transferability in MS and in parallel with the European added value perspectives in other policies addressed to fight corruption in Public Procurement”. Moreover, D7.2 is aimed at facilitating the following WP7 outputs: a) Exploring the possibility to enlarge the data collection to other data to enrich the database and b) trying to define a mechanism for the implementation of the online tool also in other Member States.

The CO.R.E. model of transferability is addressed in three main steps. We first provide a definition of transferability that is used in the context of the CO.R.E. project. Second, we focus on the transferability of three key project outputs: the composite indicator (CI), the coresoi R package, and the data visualisation dashboard. Finally, we will review the lessons learned during the implementation of the CO.R.E. project, focusing on the main challenges and opportunities associated with the interdisciplinary nature of the project, and, in the conclusions, we summarise the main points addressed in the report and briefly indicate how the CO.R.E. project can possibly develop.

2. TRANSFERABILITY WITHIN THE CO.R.E. PROJECT

The CO.R.E. project aims at developing and validating a replicable procedure for computing a Composite Indicator (CI) of corruption risk in public procurement that can be applied during emergencies, based on a collection and cross-processing of public procurement data. The CI procedure is intended at enhancing earlier detection of corruption risk and fostering a stronger evidence base for policy reform, by serving primarily anti-corruption authorities and law enforcement agencies, but also journalists and the general public/citizenship for accountability objectives.

The CO.R.E. project addresses its sustainability and transferability dimensions through the deliverables 7.1 and 7.2. While the two dimensions are interlinked and mutually dependent, the sustainability of the project outputs focuses on the temporal dimension, as it ensures that the project benefits and impacts continue to exist after the formal end of the project, while the transferability of the project outputs focuses on their replicability and adaptability, as it ensure that the project outputs can be replicated and/or adapted to other contexts or situations.

Transferability entails, first above all, favouring the use of the project tools by external actors and favouring the transmission of the know-how developed within the project framework so they can make an effective use of these tools and replicate the project methodology in other national contexts or on different datasets.

Moreover, transferability also means that the methodology and the know-how developed are applied in different circumstances and crisis situations. The CO.R.E. indicators have been developed and validated by considering some specific types of emergencies: the 2020 COVID-19 pandemic, the 2016 earthquake emergency in Central Italy, and the 2017 forest fires in Italy. However, the CO.R.E. methodology, indicators, and procedures can also be transferred to other types of emergencies.

Therefore, D7.2 addresses how the CO.R.E. partners aim at ensuring that the methods and know-how they have developed can be transferred to other actors and that the project outputs and tools can be used in other contexts and adapted to different types of emergencies. Both these processes are part of the knowledge management, which means that knowledge produced through the project should be addressed through systematic processes of identification, development, share, and usage.

The transferable project results fall into two categories: know-how and material outputs.

Know-how refers to the transfer of elements other than the material outputs of the project, for example the transfer of theoretical frameworks, procedures, methodologies, lesson learned, and expertise developed during, throughout and thanks to the project. It includes published articles, working papers, and guidelines developed to share the CO.R.E. procedures and guidelines with interested stakeholders.

Material outputs refer to the transferability of the key exploitable results of the CO.R.E. project, in particular the composite indicator and its elementary indicators, the coresoi R package, and the data visualization platform.



Transferring the CO.R.E. results does not only mean sharing the material outputs with external stakeholders. It also means transferring the knowledge and the expertise required to actually use them. While the coresoi R package, for example, can in itself be transferred to a newsroom through a download link, journalists working there would not benefit from this material output without the transfer of the expertise that will allow them to use the R package. Therefore, every material output is strategically transferred together with the essential know-how that allows its exploitation.

The most important project's material outputs were already identified in the CO.R.E. "Transferability and Exploitation Plan" (D 7.1) as Exploitable Results (ERs). The CO.R.E. partners have discussed and identified the most important transferable results in a dedicated session of the project meeting held in Lisbon in June 2023. These are the CO.R.E. composite indicator, the coresoi R package, and the data visualization dashboard. Chapter 3 of this document describes each of them and discusses how their transferability is addressed by the project partners.

Finally, we consider both the external and the internal dimensions of transferability.

External transfers are an essential mechanism to determine the success of the CO.R.E. project and represent the ability of stakeholders outside the consortium to benefit from the project results, both the expected and the incidental ones. This dimension is primarily addressed in chapter 3.

Internal transfer is what occurs among and between the partners of the consortium, both at individual and at organisational level. Most of the internal transfers do not belong to stated goals of the projects, but they happen as a consequence of the interdisciplinary and cross-border collaborative nature of the project. CO.R.E. has the characteristics of a cross-field collaboration, with the involvement of actors with different backgrounds and expertise domains. The CO.R.E. consortium includes three universities, one regional anti-corruption authority, two civil society organisations, and a research centre specialised in management support for EU funded projects. While all the partners involved focus on anti-corruption, their backgrounds differ and complement one each other. The partners' background range from social statistic, administrative and anti-corruption law, journalism studies, anti-corruption activism, data journalism, and project management. In this sense, the project fostered the transfer of knowledge both within the consortium, at individual, project, and organisational levels, as well as a transfer beyond the partner organisations. The lessons learned on how the challenges associated to the cross-field nature of the project partners were addressed are illustrated in chapter 4.

3. THE CO.R.E. MODEL OF TRANSFERABILITY

3.1 The Composite Indicator and the Coresoi R Package

The Composite Indicator (CI) developed within the CO.R.E. project is aimed at mapping corruption risks in public procurement during emergencies, when the normal public procurement rules do not apply. The CI enable the beneficiaries and stakeholders to conduct analysis, investigations, evaluations and research on corruption that go beyond the reliance on perception-based indicators and that can be applied in emergency situations. The new CI will also aid in formulating more efficient approaches to combat corruption in emergency scenarios and will facilitate the work of investigative journalists.

The CI aggregates and summarises a set of elementary indicators, or red flags, into a unified metric. These red flags are developed by focusing on the time discontinuity introduced by a crisis outbreak and the possibility to differentiate between two periods: a pre-crisis and a post-crisis phase. The red flags compare, where feasible, the behaviours of companies and/or contracting authorities after the crisis outbreak to their historical conduct. The associated risk (of corruption) is evaluated through statistical testing. Once formulated, the indicators undergo normalization (i.e., individual indicators are adjusted to the same scale and polarity), weighting (i.e., determining the relative importance of individual fundamental indicators before amalgamating them into a unified CI), and are subjected to multivariate and sensitivity analyses to gauge their robustness.

The CO.R.E. CI, and the red flags it is based on, are highly transferable, as the procedure can be applied to various crisis situations, for example, by aligning the time periods based on the enactment date of the legislative measure recognizing the commencement of the emergency phase or by choosing the appropriate contractual objects, contingent on the markets most impacted by the particular crisis under consideration. Additionally, this method is transferable to multiple national settings where the data necessary to operate the red flag computation is accessible, and it can be adapted to changing market dynamics during crises by adjusting the statistical test hypotheses accordingly (Gnaldi, Del Sarto, 2023).

The CO.R.E. CI is transferred, first above all, through the coresoi R package, which is the primary tool for transferring the computation of the elementary indicators and CI not only to additional stakeholders, but also to new geographies and new future emergencies that were not included in the original project, nor foreseeable at the time of its development. R packages play a crucial role for data analysts and statisticians using the R programming language. These packages comprise organized functions, data, and documentation tailored to address specific challenges in data analysis.

The coresoi R package is available at <https://core-forge.github.io/coresoi/>. The aim of the coresoi R package is to allow researchers and anti-corruption analysts to use the CO.R.E. indicators of corruption risk in public procurement over emergencies for their own purposes. In order to fully enable stakeholders such as journalists, researchers, LEAs and anti-corruption authorities to apply the Composite Indicator and the elementary indicators to their own datasets and to adapt them to their needs, the webpage where the licence arrangements are specified establishes that permission is “granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the “Software”), to deal in the Software without



restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so”¹. The licence arrangements, therefore, are set to favour the transferability of the tool. This is also specified on the coresoi R package itself, where it is stated that the proposed procedure is:

- *extensible* to other crisis contexts to assess the risk of corruption in public procurement by a) setting the two time-spans in accordance with the entry date of the legislative act acknowledging the beginning of the emergency period; b) selecting the relevant contracts objects (i.e., CPV), depending on the pertinent markets most concerned with the specific crisis at hand;
- *replicable* to other national contexts where the data needed for the red flag calculation are available;
- *adjustable* on account of market trends across the crisis, by setting the statistical test hypotheses accordingly².



The screenshot shows the website for the coresoi R package. The header includes navigation links: "coresoi 1.0.0", "Get started", "Reference", "Articles", and "Changelog". The main content area features the "coresoi" logo and a description: "coresoi is a product of the project CO.R.E. - Corruption risk indicators in emergency, financed by the EU Commission, as part of the Internal Police Security Fund (ISF-P) program." Below this is a paragraph about the goal of coresoi: "The goal of coresoi is to provide a sandbox environment for researchers and anti-corruption analysts to interact with the indicators of corruption risk in public procurement over emergencies we've designed. We also offer mock data extracted from dati.anticorruzione to aid in their analysis. Our hope is that this platform will promote greater transparency in government, by helping researchers and anti-corruption analysts to make their efforts in fighting corruption more effective." A section titled "Installation" provides instructions: "You can install the development version of coresoi from GitHub with:" followed by a code block: "# install.packages('devtools')\ndevtools::install_github('CORE-forge/coresoi')". Below this is the "CORE ecosystem" section, which lists various partners and funding sources. On the right side, there is a sidebar with sections: "Links" (Browse source code), "License" (Full license, MIT + file LICENSE), "Community" (Code of conduct), "Citation" (Citing coresoi), "Developers" (Niccolo Salvini, Simone DelSarto, Michela Gnaldi), and "Dev status" (DOI 10.5281/zenodo.3013258, lifecycle experimental, codecov 48%, R-CMD-check passing).

Clearly, the use of the coresoi R package by external beneficiaries requires some level of familiarity with the R coding language. However, in order to facilitate its adoption by external users, the package includes guides, tools and other documents that are meant to facilitate its effective adoption and by transmitting the necessary know-how. The transferability of the indicators is facilitated through the following sections of the coresoi R package:

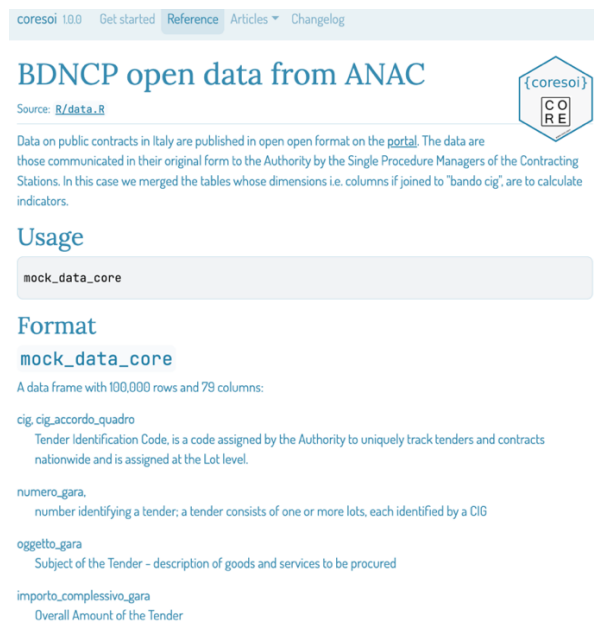
- The “Get started” section

¹ <https://core-forge.github.io/coresoi/LICENSE.html>

² <https://core-forge.github.io/coresoi/articles/ChoiceOfElementaryIndicators.html>

This section of the R package documentation provides new users with an introduction to the package and helps them to start interacting with the package quickly. In particular, it includes:

- Guidelines on how to calculate the indicators using 'coresoi': This section serves as a tutorial for utilizing the package and guides users through the different types of analysis the package can execute.
 - Example codes on how to compute the red flags.
 - Tips for utilization: advice on how to effectively install, load, use the package, and avoid common mistakes are provided.
 - Technical support: Information is supplied on how users can seek help if they encounter problems with the package and the contact details of the developers are provided.
- The “Reference” section of coresoi provides, in addition to the list of all the functions of the package, examples on how to use the functions with sample codes and data at hand.
 - The “Try coresoi with you own data” segment, included in the “Articles” section of the package, explains how to use the package to analyse data owned by external beneficiaries.
 - The sample dataset with which analysts can familiarise with the indicators: coresoi contains a “toy” dataset based on the Italian Anti-Corruption Authority (ANAC) open data – the BDNCP (Banca Dati Nazionale dei Contratti Pubblici) – which researchers can use to calculate the CO.R.E. indicators of corruption risk. This is an important tool, which allows external beneficiaries to test whether the CO.R.E. indicator can effectively serve their purposes before engaging with the necessary procedure to clean the data and make them analysable by the provided R package.



The screenshot shows the documentation page for the 'BDNCP open data from ANAC' dataset. It includes a navigation bar with 'coresoi 1.0.0', 'Get started', 'Reference', 'Articles', and 'Changelog'. The main heading is 'BDNCP open data from ANAC' with a source link to 'R/data.R'. A description states: 'Data on public contracts in Italy are published in open open format on the portal. The data are those communicated in their original form to the Authority by the Single Procedure Managers of the Contracting Stations. In this case we merged the tables whose dimensions i.e. columns if joined to "bando cig", are to calculate indicators.' Below this is a 'Usage' section with a code block: `mock_data_core`. A 'Format' section follows, listing variables: `mock_data_core` (A data frame with 100,000 rows and 79 columns), `cig_accordo_quadro` (Tender Identification Code, is a code assigned by the Authority to uniquely track tenders and contracts nationwide and is assigned at the Lot level), `numero_gara` (number identifying a tender; a tender consists of one or more lots, each identified by a CIG), `oggetto_gara` (Subject of the Tender – description of goods and services to be procured), and `importo_complessivo_gara` (Overall Amount of the Tender).

- The "Changelog" section of coresoi serves as a documentation of alterations made to the package across various versions. This encompasses the introduction of new features, resolution of bugs, and any other modification implemented in the package. This helps users who are upgrading to a new

version of the package understand the alterations made and the additional functionalities that are made accessible. Moreover, it aids developers in comprehending the package's evolution and the rationale behind the changes implemented throughout its development.

The participatory nature of the general approach adopted to develop the indicators is another transferable element that can benefit external beneficiaries interested in replicating and adapting the CO.R.E. methodologies to different national and emergency contexts. Clearly, the indicators have been primarily developed on the basis of the developers' expertise and review of the existing literature on corruption risk indicators. However, a participatory approach has been adopted to involve external stakeholders and to collect input that has been taken into consideration when the indicators and the procedure have been designed.

A first phase of interviews with investigative and data journalists and representatives of the civil society, for example, has been conducted in September and October 2022 to explore how they investigate corruption, how they use indicators and data on public procurement, and, especially, what are the typical patterns of corruption cases related to public procurement in emergency times and what are their suggestions on possible indicators that could facilitate their investigative activities. A second phase of interviews with journalists and anti-corruption activists is scheduled for the concluding months of the project. The aim is to assess the feasibility of integrating the new indicators into journalistic and research practices. Additionally, the goal is to gather valuable feedback that can enhance the newly created indicators.

Similar consultations with anti-corruption authorities have inspired the development of the indicators, and the indicators developed within the CO.R.E. project have been tested by Oficina Antifrau de Catalunya (OAC), the anti-corruption authority directly involved in the CO.R.E. activities.

Additionally, the participatory nature of the approach adopted to develop the CI is also testified by the involvement of internal and external experts, which have been asked to provide evaluations on how each elementary indicator (red flag) should be weighted to contribute to the final CI score. Nine experts with expertise in administrative law, anti-corruption, and data journalism have been consulted in the first part of 2023. They have been asked to evaluate the importance of each red flag in estimating corruption risk on a scale from 0 (no risk) to 10 (high risk). The developers have then calculated the average score of each red flag and used this value to weight their contribution to the final CI score.

The CO.R.E. CI and elementary indicators have been validated by running the coresoi R package on the Italian Anti-Corruption Authority (ANAC) open data, the BDNCP (Banca Dati Nazionale dei Contratti Pubblici), which is a particularly rich and well-structured dataset that includes award details for contracts awarded by the Italian Public Administration. On the ANAC portal, data on public contracts in Italy are published in an open format. The data are those communicated in their original form to the Authority by the person in charge of the Procedure of the contracting authority. To favour the CO.R.E. indicators transferability, in March 2023 the data scientist at Oficina Antifrau de Catalunya (OAC) have also tested the CO.R.E. indicators on the public procurement dataset owned by the Catalan Anti-Corruption Authority. Just a few technical issues have emerged, and these were mainly related to the fact that it was not possible to calculate two out of nine elementary indicators due to the lack of the needed data to compute them in the Catalan dataset. A meeting in June 2023 and several email exchanges with representatives of the Office of Government Procurement

(OGP) in Ireland have taken place to explore the possibility to test the indicators on Irish data too. However, the testing was not possible due to the limited availability of contract awarded data on the eTenders dataset managed by OGP. The CO.R.E. consortium is currently exploring the possibility to test the indicators on other countries' datasets. Contacts have been made for this purpose with Open Contracting Partnership, an independent non-profit public charity working in over 50 countries with the aim of boosting collaboration across governments, businesses, civil society, and technologists.

3.2 Data Visualization Dashboard

The data visualization dashboard (data viz) allows citizens, journalists, activists and other interested actors to navigate the results of the calculation of the CO.R.E. elementary indicators and the Composite Indicator (CI) for a selected list of emergencies (Covid-19, Fires and Earthquakes in Italy, by now). Data visualizations tools are helpful for several purposes, including understanding complex data (representing them in a visual format makes it easier to grasp patterns and relationships within the data), exploration and analysis (by enabling users to zoom in for details and zooming out for a broader perspective), communication (by allowing to convey findings to audiences with different level of technical expertise), decision making (by providing a quick and intuitive understanding that enable informed choices) and storytelling (by making it easier to present a compelling argument based on the visualized data).

Therefore, the front end of CO.R.E. data visualization dashboard is aimed at providing users with the possibility to easily navigate, filter, and interact with the results of the application of the CO.R.E. indicators to existing datasets. Providing infographics and maps on corruption indicators in a simple, accessible, and engaging way can foster the transferability of the CO.R.E. indicators and coreso R package, as it demonstrates the effectiveness of the methodology developed to interested users.

The front end of the data viz is currently available at <https://dashboard.core.dev.dataninja.it/countries>, while a new url will be created when the data visualisation dashboard will be finalised and made public. The data viz exposes all results of previous analyses conducted by the CO.R.E. team and allows users to explore all data dimensions of computed indicators. As illustrated in the "Concept note for the data viz" (D4.4), the users can interact and filter data by selecting the emergency they are interested in, the country, the specific red flags (as an alternative to the CI that summarises them), the geographic entities (specific regions or provinces), and the data visualization mode (table, map, or bar chart). Through an intuitive and easy-to-use navigation system, users have the ability to discover the results of the individual red flags (elementary indicators) and the CI for each individual contracting authority and awarded company. All software components are released with open licenses and accessible also from different repositories (e.g. Github).

To facilitate the replicability of the back end part of the CO.R.E. data viz by stakeholders and the transfer of the know-how developed when designing the dashboard, further technical and theoretical documentation has been produced. These guidelines have been designed to be easily used also in other EU Member States, offering the possibility to expand the analysis beyond the boundaries predetermined by the funded proposal. The developed guidelines include:

- Guidelines for data collection and data analysis (D4.2): they identify and define the characteristics (and location for the countries involved in the project) of the data that must be collected, ingested

in the data viz, and eventually analyzed and processed by the algorithm for the creation of each corruption risk indicator.

- Methodology for the data analysis (D4.3): this document provides details on the methodological choices taken within the CO.R.E. project to validate the statistical procedure to develop the CI. Operational details are provided on how to address the several stages of the necessary process, which are a) the data selection, b) the selection of elementary indicators, c) the normalisation methods, d) the weighting and aggregation schemes, e) the multivariate analysis for the study of the data structure, and c) the sensitivity analysis. These operational details will facilitate the replicability of the procedure. For example, for each elementary indicator, information is provided on the variables needed for its calculation and on its feasibility (i.e. whether the red flag calculation is feasible, feasible but complex, or infeasible due to data unavailability).
- Technical guidelines for the platform (D4.1): they define the characteristics (UX, data formats, front-end, back-end) of the dashboard.

3.3 Additional Initiatives to Favour the Transferability of the CO.R.E. Results and Know-How

A number of initiatives have been undertaken and are planned for the next few months in order to disseminate the CO.R.E. indicators potential and to further favour the use by external beneficiaries of the coresoi R package, its indicators, and the data visualisation dashboard. Key target groups here are academics, researchers, anti-corruption authorities, and journalists.

Academic publications and presentations at academic conferences constitute an effective and important way to transfer know-how that can enable other researchers to use the indicators or to adapt them to other contexts and types of crises. Examples of publications done by CO.R.E. members for this purpose include:

- Gnaldi, M., & Del Sarto, S. (2023). Measuring corruption risk in public procurement over emergency periods. *Zenodo*. <https://doi.org/10.5281/zenodo.10037151>
- Gnaldi, M., Del Sarto, S. Validating Corruption Risk Measures: A Key Step to Monitoring SDG Progress. *Social Indicators Research* (2023). <https://doi.org/10.1007/s11205-023-03238-y> (open access)
- Bonerba, G., Gnaldi, M. & Pioggia, A. (2022). Corruzione e integrità nelle istituzioni: una questione di genere? FrancoAngeli. Available at: <https://series.francoangeli.it/index.php/oa/catalog/view/901/752/5245>

Clearly, many other dissemination activities have been conducted to make potential users aware of the existence, functionalities, and potential of the CO.R.E. indicators. The full list of CO.R.E. publications will be included in the final CO.R.E. dissemination report.

Similarly, the CO.R.E. project and the coresoi R package have been presented to Anti-Corruption Authorities and other relevant institutions that might be interested in using the indicators. This is the case, for example, of the workshop “Countering Corruption. The potential of analysis tools between availability of big-data sources, privacy constraints and interoperability needs”, held at the Sant’Anna Advanced School of Pisa on

the 6th and the 7th of October 2023, co-organised by Sant’Anna Advanced School of Pisa and the CO.R.E project. Several representatives of Italian and international institutions assisted at the CO.R.E. presentation, including Giovanni Tartaglia Polcini (Italian Ministry of Foreign Affairs), Francesca Recanatini (World Bank), and Fabrizio Sbicca (Italian Anti-Corruption Authority, ANAC). Presentations by CO.R.E. members were also involved, including those of Michela Gnaldi, Enrico Carloni, Benedetto Ponti, Simone Del Sarto and Niccolò Salvini.

Moreover, the CO.R.E. results, including the coreso R package, will be presented at the 22nd EPAC/EACN Annual Professional Conference and General Assembly that will take place on the 2nd and 3rd of November 2023 in Dublin. The European Partners against Corruption (EPAC) and European contact-point network against corruption (EACN) are independent forums for practitioners, united in the common goal of preventing and combating corruption. This will be an important occasion to promote the use of the CO.R.E. indicators among anti-corruption authorities. Indeed, EPAC is composed of anti-corruption authorities and police oversight bodies from Council of Europe Member Countries, while EACN brings together anti-corruption authorities from European Union Member States. Members of the Italian Anti-Corruption authorities will also be present at the final CO.R.E. conference, which will take place in Perugia the 29th of February and the 1st of March 2024.

To favour the transferability of the CO.R.E. results and know-how among the investigative and data journalism international community, several initiatives have been and will be undertaken too. In September 2023, DCU presented the CO.R.E. results at the “2023 Global Investigative Journalism Network” (GIJN) Conference, in Gothenburg, Sweden, an annual meeting attended by more than 2,000 journalists and academics (mostly journalists). The presentation was focused on the indicators, the coreso R package, and the data visualization dashboard, and thanks to the interests triggered among attendees, several contacts were made with the aim of having journalists testing the indicators in the last months of the CO.R.E. project.

Moreover, DCU presented the CO.R.E. results at the 2023 EDJNet Consortium Meeting, which took place in October 2023 in Paris. The European Data Journalism Network (EDJNet) is a network of media organisations from across Europe, producing and promoting data-driven coverage of European issues in several languages. The network brings together journalists, data analysts, developers, and designers from 31 partner organisations in 21 different countries. The CO.R.E. project was discussed with the participants, who were also offered further involvement in the testing and feedback of the coreso R package and dashboard. Three media organisations (VoxEurope from Belgium, IMedD from Greece, Civio from Spain) expressed their interest in testing the coreso R package. Moreover, the collaboration between CO.R.E. and EDJNET evolved in a workshop planned for December 2023, when the results will be presented to those interested among the more than 350 journalists registered to the EDJNET training programme. Among them, a smaller number of journalists will be offered further involvement in the testing and feedback of the CO.R.E. R package and dashboard.

4. LESSONS LEARNED: CHALLENGES AND OPPORTUNITIES ASSOCIATED WITH THE CO.R.E. INTERDISCIPLINARY DIMENSION

This section presents the lessons learned that stem from the collaborative, cross-border (Heft 2021), and cross-field (Stonbely and Siemazko 2022) nature of the CO.R.E. research project. Future collaborative initiatives aimed at analysing corruption risk in public procurement can benefit from these lessons learned.

The CO.R.E consortium is strongly based on cross-border and cross-field collaboration among partners from four countries and with diverse backgrounds, ranging from statisticians (in charge of the development of the CI and the elementary indicators/red flags that constitute it), anti-corruption authorities (supporting the CI development and focusing on validating it with their internal data), and NGOs, civil-society organisations, and activists focusing on anti-corruption (supporting the CI development and focusing on disseminating the project results and developing the technological tools that will enable stakeholders, including journalists, to apply the indicators in their own investigations). Table 1 shows the list of the partners involved in the project, their country, their main areas of expertise, and their main contribution to the CO.R.E. project.

Table 1 – The CO.R.E project partners

Partner name	Type of actor	Country	Main area of expertise	Main contribution to the project
Department of Political Sciences, University of Perugia (UNIPG)	University	Italy	Interdisciplinary expertise in the areas of corruption and fraud (specifically social statistic and administrative law).	Coordinator. Developing the indicators
Oficina Antifrau de Catalunya (OAC)	Anti-corruption authority	Spain	Investigating irregularities in public procurement at local and regional level; Designing and implementing actions to prevent fraud and corruption in public procurement and fostering integrity	Contributing to the validation of the indicators; Mapping and evaluating standards and requirements in terms of public data availability, integrity, and privacy constrains
Universitat Oberta de Catalunya (UOC)	University	Spain	Interdisciplinary expertise in the areas of anti-corruption and	Mapping and evaluating standards and requirements in terms of public data availability,



			information and knowledge society	integrity, and privacy constrains
Info.nodes	Civil society organisation, activists	Italy	Anti-corruption activism and campaigning; investigative and data journalism	Developing an online data visualization dashboard to showcase how the indicators work on public procurement data in emergency
Transparency International Portugal (TI Portugal)	NGO	Portugal	Researching and raising awareness on the causes and consequences of corruption and poor governance	Ensuring quality control from an internal (partners) and external (stakeholders) perspective; Maximising the impact of the project results to foster public transparency and accountability
School of Communications, Dublin City University (DCU)	University	Ireland	Journalism studies; track record of strong engagement with journalists and media leaders	Ensuring that journalists' input and feedback is considered; in charge of the sustainability and exploitation of the project results
Fondazione Centro Studi Villa Montesca (FCSVM)	Research body specialised in support for EU funded projects	Italy	Technical support for EU projects; Assuring equality, access and inclusion of vulnerable groups and disadvantaged people	Providing methodological, managerial, and technical support; in charge of dissemination activities

A focus group and a survey conducted with the project partners were the methods used to explore the challenges and the opportunities associated with the cross-border and cross-field nature of the collaboration at the basis of the CO.R.E. project. In particular, we investigated the specific goals and expectations of each partner participating in the project, analysed their level of homogeneity/divergence, and explored how these

have possibility changed during the course the project activities and how they have shaped the functioning of the project.

The first finding that emerged from the survey analysis is a clear discrepancy in the partners' *initial* understanding of each other's specific goals and expectations. All partners believed that their own goals were quite clearly understood by the other partners (see Figure 1). However, the survey results suggest that the partners' initial understanding of the other participants' specific goals and expectations was not fully clear (see Figure 2).

When we further delve with the focus group into the motivations that made each partner join the project consortium, participants listed a set of shared goals (such as tool development, skill empowerment, and network building) that constituted the initial common ground on which the consortium was built, glued together by the shared vision that the partnership was indeed aimed at contributing to the fight against corruption, which was the ultimate declared common interest.

Figure 1 – Partners' perception of how their own specific objectives were understood by the other partners (survey)

Q2 – To what extent do you think that your organisations' specific objectives were clearly understood by the other CO.R.E. partners?
7 risposte

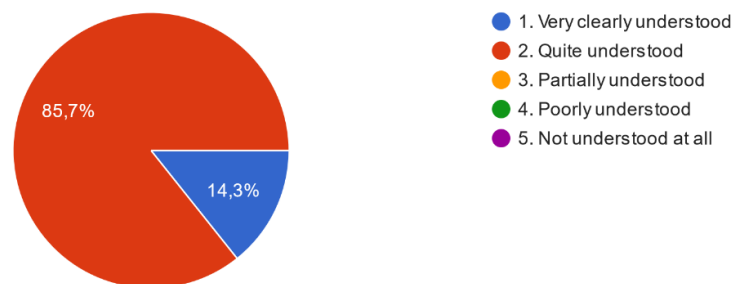
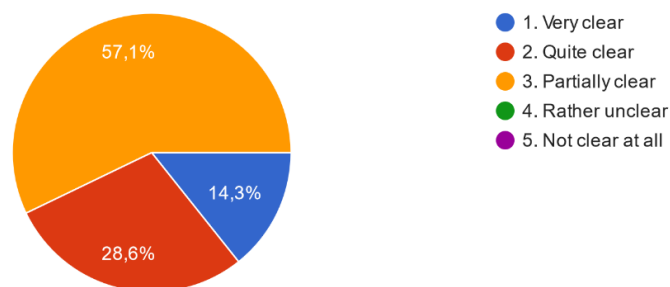


Figure 2 – Partners' understanding of the other partners' specific objectives during the initial phase of the project (survey)

Q3 – To what extent the objectives and expectations of the other partners in relation to the CO.R.E project were clear to you when the project was designed?
7 risposte



This common ground was sided by a second set of goals that were unique for each partner and furtherly divided into two subgroups: individual goals, the ones that the single person wanted to pursue for her or his own sake (e.g. to gain visibility within their own organisation), and organisational goals, the ones that would have benefited the organisation as a whole (e.g. developing organisational contacts with other organisations). A focus group participant, for example, describes one of the key organisational goals that motivated their participation in the project as follows:

Networking [was] also [a] key [goal for us]. We were in touch with other actors working on public procurement, but this was mainly within the Transparency International network. We wanted to create a network outside our own, and in this way, we could the strengthen our position within the movement. [Focus group, June 2023]

These goals, which normally have a more pragmatic and less normative nature, were present since the very beginning of the project, but were somehow concealed, and they did not enter formally in the initial design of the project. Individual goals, that belong to the involved single person, and organisational goals, the ones that belong to each partner organisation, come to the table of negotiation to the project as already negotiated internally beforehand, while the matching process of these goals with the ones that belong specifically to the project as a whole happened in two subsequent phases: during the design of the project proposal and during its execution, particularly during meetings that included self-reflection sections to discuss about what partners' wanted to achieve through the project:

[During the] in-person meeting [held] in April 2022, TI Portugal, which is in charge of the Work Package on Quality Assurance and Evaluation, prompted a collective reflection of all partners on which were each one's objectives and which should be the general objectives of CO.R.E. project. This allowed me to have a quite clear vision about this issue. [Survey, quote from an open-ended question]

Therefore, the development of a better mutual understanding of each other's goals occurred during the execution of the project, particularly during the initial months, when the first series of consortium meetings happened, underlying a crucial role of the initial phase in levelling the goals and expectations, moving from the individual and organisational level to the consortium and project level. In the following quote from the survey, a participant highlights how a better mutual understanding developed, in particular, when in-person meetings were organised after the end of the COVID-19 restrictions:

The more meetings we had, the clearer the objectives of other partners were to me. In-presence meeting were possible only after a few months the project had started. In-presence meeting were key to better know the other partners and better understand their specific objectives. [Survey, quote from an open-ended question]

Some partners pointed out that a certain degree of misperception about the feasibility of certain project results may have arisen from varying levels of technical expertise among the partners, a common occurrence in cross-disciplinary collaborations where partners contribute diverse areas of expertise. In the following quote, a participant with relevant expertise in managing big data on public procurement explain how the initial expectations of other partners needed to be tuned to a more adequate degree of feasibility:

I believe that the partners' expectations were initially higher than what was realistically achievable within the project's timeframe and available resources, especially regarding the provision of data to the public and the ability for users to freely utilize the data collected by the project team. [Survey, quote from an open-ended question]

The fact that initial expectations changed during the course of the project, when a better understanding of the technical possibilities of the data visualization dashboard were progressively clarified, is confirmed by the following quote, from a focus group intervention by the partner in charge of connecting the project with the journalistic community:

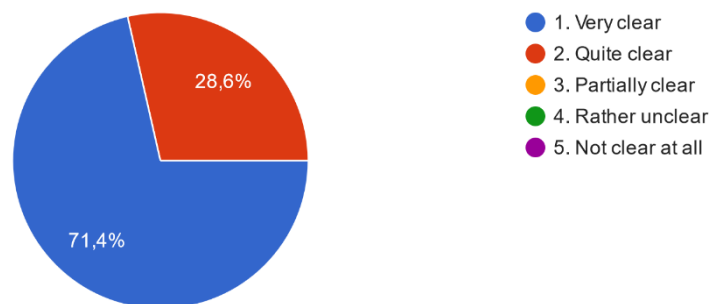
I wasn't familiar with the topic, so I initially expected a tool development, the dashboard, somehow like a child that expects a present for Christmas: an operational tool capable of self-promotion, so I could go to journalists, and they would say "please let me use it". Clearly, it wasn't so easy, and many compromises were necessary. We now work on finding a way to promote the tool among journalists.
[Focus group, June 2023]

During the course of the project, as long as partners developed a better understanding of each other competencies and of the technical possibilities of the project expected outputs, diverging initial objectives and expectations tended to converge, as it is illustrated in Figure 3, which shows how, in the final months of the projects, all partners have finally reached the desirable mutual understanding of each other's objectives (see the differences between Figure 2 and 3).

Figure 3 – Partners' understanding of the other partners' specific objectives during the final phase of the project (survey)

Q4 – To what extent the objectives and expectations of the other partners in relation to the CO.R.E project are clear to you now?

7 risposte



While the partners' mutual understanding and the general understanding of the project potential develop, also unplanned new opportunities start to become evident. In the following quote, the Catalan Anti-Corruption Authority representative explains how they decided to use their internal database to test the newly developed CI and red-flags:

Once we have finished the different tasks in our own work package, we decided to deal with a new unforeseen task: to test on our own public procurement data the risk indicators developed in other work packages. This was the main change in our objectives and expectations, and it is absolutely positive. [Survey, quote from an open-ended question]

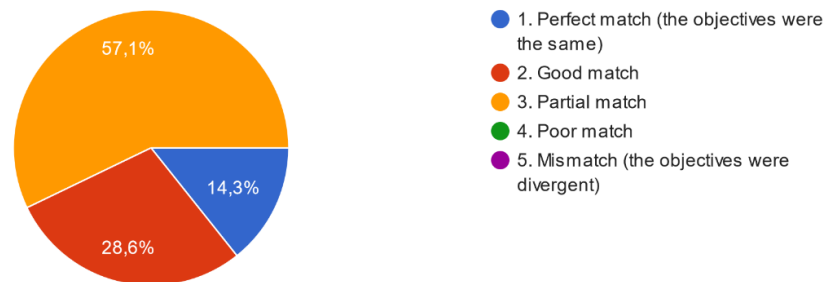
The matching of goals and expectations in a cross-field collaboration project are linked to the nature of the organisation and the tasks that the organisation is given in the work packages distributed during the phase of the design. In the initial stage, each partner brought to the table its aims and strategies as the result of its

own self-elaboration. The first meetings raise the awareness around these discrepancies in the matching of initial individual and organisational aims and the ones of the overall project, as shown in the following chart, where we can appreciate an initial sufficient although imperfect matching.

Figure 4 – Partners’ evaluation on the matching between their own and the other partners’ initial objectives (survey)

Q6 – Overall, how do you evaluate the matching between the initial objectives of your organisation and the objectives the other CO.R.E. partners wanted to pursue through the project?

7 risposte

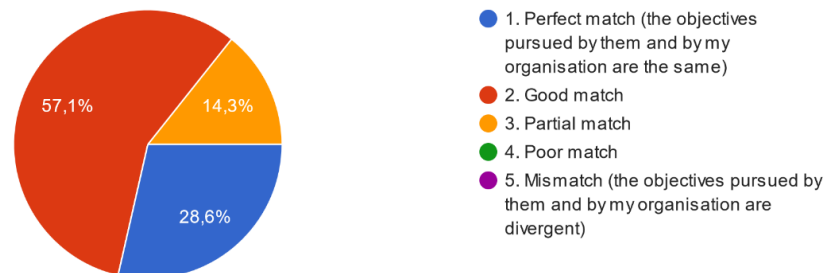


Generally, partners tend to perceive a better match between their own objectives and those of key partners (i.e. partners with high scientific or technical expertise and with roles that are considered as fundamental for the success of the project). Figure 5, for example, shows how partners have evaluated the matching with the objectives of the CO.R.E. coordinator, which is in charge of the scientific development of the indicators. Other key partners obtained similar evaluations. This was the case, for example, of the partner in charge of developing the data visualization dashboard.

Figure 5 – Partners’ evaluation on the matching between their own and the coordinator’s initial objectives (survey)

Q7b – More specifically, how do you evaluate the matching between the objectives of your organisation and the objectives pursued by each of ...wn organisation] Università degli Studi di Perugia

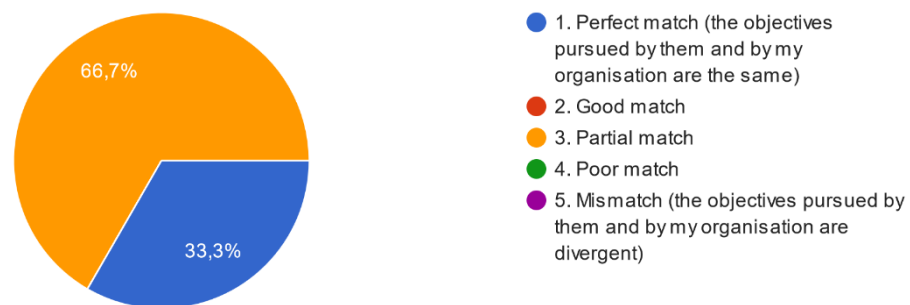
7 risposte



On the other hand, partners who are charged with more administrative tasks enjoyed a lower level of understanding of their role, as these functions are considered as meta-functions, for which the relationship with the production of the main scientific outputs of the project is less direct and evident. The role of DCU as a mediator between the consortium and its results, on the one hand, and the journalistic community (which did not take part directly to the project, but whose perspective is brought in by DCU through its research background and the interviews and testing conducted with journalists), on the other hand, also generated a slightly lower comprehension of the objectives of the organisations, revealing at least a fallacy in the understanding of how journalism was going to be involved (see Figure 6).

Figure 6 – Partners’ evaluation on the matching between their own initial objectives and those of the partner in charge of bringing in journalistic input and feedback (survey)

Q7f – More specifically, how do you evaluate the matching between the objectives of your organisation and the objectives pursued by each of ...ur own organisation] Dublin City University (Dcu)
6 risposte



The fact that how journalism was going to be involved within the project became clearer to most partners during the project implementation is also testified by the following quote:

At the beginning, I just had a clue that it was important to involve also the journalist network. This was just an idea, but I wasn't so sure about the motivations. Only during the project all these aspects became very clear. [Focus group, June 2023]

The difference between some initial expectations and practical possibilities became more apparent as the consortium engaged in more detailed discussions. For example, this included conversations about how the dashboard's navigation would work and how journalists' feedback could be gathered and incorporated into the design of the indicators and the dashboard. While the ideal scenario would have been to provide complete flexibility to journalists in using the dashboard, technical constraints and resource limitations have necessitated the adoption of compromise solutions.

Eventually, a better inclusion of journalism and journalists' voices in the project development came from those partners, DCU, Info.nodes and TI Portugal, who were more familiar with the journalistic professional cultures. The integration of journalists' skills, needs and wishes was achieved through the series of interviews that the DCU partner was tasked with carrying out. Therefore, the role of the mediator between the consortium and external partners, journalism in this case, required specifically designed activities that were included in certain work packages and translated into formal project deliverables.

Another important aspect of a collaboration is represented by political goals and expectations. During the focus group, when participants were asked to list their own goals, politically charged motivations initially went silent and they started to emerge from the ongoing discussion as a critique of the structure of the project based on work packages and of its focus on bureaucratic outputs such as deliverables. In the following quote, a participant explains how focusing too much on which datasets are accessible and can be integrated in the data visualization dashboard conceals another broader but important goal: to leverage the project outputs (and the main limitations it encountered) to make a public call for more accessibility and openness of public procurement data within the European Union.

We focused to much on each work packages. We need to be aware that this is the only project funded on emergency procurement. We need to better understand how to leverage the project to a more political dimension. [Focus group, June 2023]

The political dimension of the project, despite being described in the awarded proposal, was fostered mostly by those organisations that belong to the civil society segment as a response to their role and mission.

On the other hand, tangible project outcomes such as the data visualisation dashboard acted as a catalyst that strengthened the collaboration from the beginning, even when the expectations around it were vague and diverse. The dashboard was mentioned as a key output by the large majority of the partners, even the ones that had no direct role in its development and had no technical skills to understand its complexities. As explained by a partner with a more administrative role:

We tried to put our organisation in the perspective of the common citizen, and we're curious of the final results as a citizen (would be). [Focus group, June 2023]

Differences in the organisational architecture and “DNA” of each partner were perceived as a relevant challenge, as it is shown in Figure 7.

The main challenges were mainly related to the different filed of expertise involved in a cross-field collaborative project. However, in the survey open-ended questions and in the focus group, participants have also stressed how the diversity of the partners’ backgrounds also represented an asset for the project, and the challenges related to the partners’ diversity were mitigated by the creation of periodical online meetings, which fostered mutual understanding and knowledge sharing, and the partners’ availability to search for compromise solutions when technical or other types of limitations where encountered :

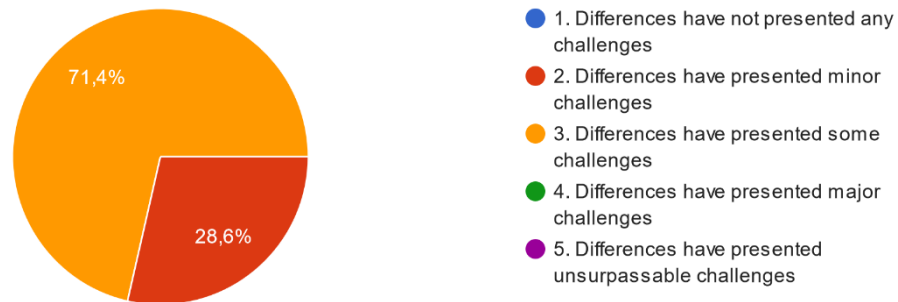
The challenges posed by different backgrounds are mostly communicative challenges. Each of us, in our own area of competence and expertise, is used to a communicative register that is obvious within our own area, but it is not so outside. ... Then we started a communicative phase, which is still ongoing, which required each of us to leave our comfort zone and ordinary communicative register to listen to the others. For instance, the way the platform works in its current very embryonic version is an example of compromise between different interests and constraints. [Survey, quote from an open-ended question]



Figure 7 – Partners’ evaluation on the extent to which the cross-field collaborative nature of the project represented a challenge

Q10 – To what extent the diverse backgrounds of the CO.R.E. partner institutions, their different architecture and internal processes has represented a challenge for the implementation of the project?

7 risposte



The dashboard is probably the project output where this work of diplomacy, mutual learning and compromise search reached its peak and its best results:

An example of compromise is the final version of the dashboard: initially intended to be flexible and open to all users, due to the large amount of data, technical complexities, and limited financial resources, it was oriented towards a data visualization tool rather than a data analysis tool. [Survey, quote from an open-ended question]

Although there are technical limitations that prevent the dashboard to be the flexible tool we wanted, partners have worked hard to take into consideration our suggestions, and some level of flexibility is now included in the dashboard design and implementation. [Survey, quote from an open-ended question]

Finally, another important challenge related to the cross-border nature of the project is related to the different level of access to data on public procurement in the four countries covered by the project. While ANAC, the Italian Anti-Corruption Authority, has published a rich and well-structured dataset of public procurement data, the level of access and the usability of public procurement data in the other countries is much more limited. Personal contacts have been activated and formal requests have been issued, but the level of access to data from Ireland, Portugal and Spain was unsatisfactory.

5. CONCLUSION

In this deliverable, we have illustrated how the CO.R.E. partners intend to favour the transferability of the project results, methodology, know-how, and lesson learned to other actors, countries, and types of emergencies, beyond those currently involved and included in the project.

Ensuring the transferability of the project outputs means favouring their adoption by stakeholders, but it also means transmitting the know-how necessary to enable external actors to make an effective use of the project’s methodologies and tools, so to be able to apply and adapt them to the specificities of the national contexts, emergencies, and datasets they want to analyse.

The CO.R.E. Composite Indicator (CI), and the red flags it is based on, are transferred through the coreso R package, an open tool available to any researcher, public official, activist, journalist or citizen that want to apply the CO.R.E. methodology to the crisis situations, the databases, or the national context they are interested in. To facilitate the application of the indicators to other contexts, the R package is supplemented by guidelines and tools that are meant to also transmit the know-how that this necessary to use it effectively. This supplementary material includes a “get started” section, a sample dataset that helps beneficiaries to familiarise with the indicators and procedures, specific guidelines on how the R codes can be applied to new datasets, and details on how to get technical support from the developers.

Another element that can be transferred is the participatory nature of the general approach adopted to develop the indicators. Interviews have been conducted with investigative and data journalists to better understand their needs when using red flags to investigate corruption in public procurement and to collect their ideas on possible indicators that can facilitate their activities. In the final months of the project, journalists will also be asked to provide feedback on how the CO.R.E. tools can be further improved to favour their external adoption. Experts have also contributed to the development of the indicators, in particular to the weighting of the red flags that constitute the CI.

The data visualization dashboard (data viz) is another tool that can foster the transferability of the CO.R.E. results and methodology. By enabling users to navigate, filter, and interact with the results of the application of the CO.R.E. indicators to the public procurement dataset of the Italian Anti-Corruption Authority (ANAC), the data viz can easily demonstrate the effectiveness of the developed methodology and, therefore, can promote its use by external actors. In this case too, technical and theoretical guidelines and documents have been produced to facilitate the replicability of the data viz in other contexts.

Additional initiatives have been designed to facilitate the transferability of the indicators, the coreso R package, and the data viz. These include academic publications, presentations to Anti-Corruption Authorities and other relevant institutions, and workshops and training initiatives addressed to the international data and investigative journalism community. Examples of specific initiatives are provided in Chapter 3.3.

The lessons learned that stem from the interdisciplinary nature of the CO.R.E. project and from the diverse backgrounds of the project partners have been discussed in Chapter 4. The diversity of the areas of expertise of the academics, anti-corruption authorities, and civil society organisations involved in the project

constitutes one of the main assets of the project, as the different backgrounds complement one each other and contribute to the common goal of developing effective tools to analyse corruption risks in public procurement from an interdisciplinary perspective. The diversity among project partners clearly meant that some of their specific expectations and goals did not perfectly align, especially in the initial stages of the project. However, expectations and goals converged and harmonised during the implementation of the project. This outcome was favoured by the in-person project meetings that started to be held when the Covid-19 pandemic mitigated and, especially, by the setting up of self-reflection initiatives aimed at clarifying and discussing each partner's objectives and expectations. When the partners' mutual understanding and the general understanding of the project potential developed, unanticipated opportunities became evident and the inclusion of the stakeholders' perspectives, such as those of journalists and civil society organisations, became more effective.

One of the main challenges that the CO.R.E. project has encountered is the different level of access to data on public procurement in the four countries covered by the project. While the public procurement data made available by the Italian Anti-Corruption Authority are rich and accessible, the accessibility and usability of public procurement data in the other countries is more limited. This is an important lesson learned, which calls for easier accessibility and openness of public procurement data within the European Union.

As mentioned earlier on, the CO.R.E. consortium is currently exploring the possibility of exporting the CO.R.E. methodology to other crises, countries and datasets. Connections have been established with other consortiums and initiatives, including the Open Contracting Partnership, Transcrime, and the Basel Institute on Governance, among others. International datasets such as OCDS (<https://data.open-contracting.org/en/search/>), TED (<https://ted.europa.eu/TED/main/HomePage.do>), and Opentender (<https://opentender.eu>) are currently under scrutiny for future development of the CO.R.E. project.

Specifically, the potential of the CO.R.E. methodology to assess the risk of corruption in public procurement is currently evaluated with regard to a) other national/sub-national crises and/or to b) simplified (by the law) public procurement systems. Indeed, the CO.R.E. methodology is exportable any time public procurement systems undergo a simplification implying the same characteristics of emergency contracting, such as: 1) expediency is prioritized 2) competition gets restricted 3) subject to more lax terms than relevant standard procedures.

These latest traits apply to: a) national public procurement systems undergoing institutional reforms implying an overall simplification of the public procurement system and the institutionalization of the deregulatory framework introduced under the Covid-19 crisis to ordinary times, and b) sub-national public procurement systems where contracts are funded under the European Union's Recovery and Resilience Facility (RRF). Established to support member states' economic recovery following the Covid-19 pandemic and lasting until 2026, RRF is in fact designed to expedite investments for economic recovery, including public procurement for various projects. As part of this goal, the RRF encourages the use of simplified and accelerated procurement procedures to speed up the implementation of projects and the disbursement of funds.