



COVINFORM

CORONAVIRUS VULNERABILITIES AND INFORMATION DYNAMICS RESEARCH AND MODELLING

D6.2 Research design: Community and citizen responses



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Authors	James Edwards, SINUS
Contributors	Marc Calmbach, SINUS Elena Ambrosetti, SAPIENZA Alessandra De Rose, SAPIENZA Dalila Antunes, FS Jil Molenaar, UNANWERPEN
Reviewers	Jil Molenaar, UNANWERPEN

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Executive Summary

Work package 6 of the COVINFORM project focuses on community-level impacts of COVID-19 and multi-level policy responses. This deliverable outlines the empirical research to be conducted on this topic, under the remit of Task 6.2.

The deliverable begins with an overview of the COVINFORM project objectives and WP6 objectives, followed by a summary of the findings of the desk research conducted in T6.1 on COVID-19 impacts and responses in the project's sub-national research sites. While both impacts and policy responses differed greatly between sites, common factors could be identified: namely, the relevance of local socio-ecological system parameters; the participation of numerous actors; and the transnational relevance of key good practices, such as proactive coordination between government, established NGOs, and grassroots initiatives.

Based on the findings of T6.1 and the theoretical work conducted within WP3, 4, and 5, the deliverable goes on to establish a theoretical framework for research on COVID-19 impacts and policy responses within the context of "community". Drawing on public health and socio-ecological systems scholarship, the deliverable establishes a disaggregated definition of "community", synthesises this definition with the socio-ecological systems framework developed in COVINFORM D3.1, and derives a set of research questions from this definition.

Target populations and research methods are then identified, based upon the research questions. Within the WP, the populations to be studied are civil society organisation representatives on the one hand, and residents of the target sub-national research sites on the other. Both populations will be studied using qualitative methods. Specifically, variations on the problem-centred interview (PCI) will be used.

The deliverable concludes with specifications on recruiting and data analysis, as well as annexes outlining details of the research procedure and presenting drafts of the data collection instruments.

Contents

Executive Summary	4
1 Introduction.....	7
1.1 The COVINFORM project.....	7
1.2 Work package 6.....	7
2 Analysis of sub-national research sites – Summary of D6.1	8
2.1 Overview.....	8
2.2 Key findings in selected sub-national research site	8
3 Theoretical framework and research objectives.....	20
3.1 Defining “community”	20
3.2 Definitional elements of “community” and COVID-19.....	23
3.3 “Community” in a socio-ecological systems context	25
3.4 Research objectives.....	27
4 Research questions	28
4.1 Local baseline conditions and COVID-19 impacts in the sub-national research sites.....	28
4.2 Local COVID-19 responses in the sub-national research sites	29
5 Study populations and sampling	30
5.1 Residents of the sub-national research sites	31
5.2 CSOs active in the sub-national research sites.....	31
6 Research methods.....	32
6.1 Residents: the problem-centred interview	32
6.2 CSO representatives: the problem-centred expert interview.....	33
6.3 Ethical considerations	35
7 Recruiting	36
8 Data analysis.....	37
9 Conclusions.....	38
References.....	39
Annex 1: Second-tier SESF variables and elements of community	46
Annex 2: CSO representative interview topic guide	48
Interview preparation	48
1. Introduction, warm-up and data protection.....	48
2. Opening question and account	49
3. Local baseline conditions and COVID-19 impacts	49
4. Local COVID-19 responses.....	52

5. Concluding questions	54
Annex 3: CSO representative findings template	56

Tables

Table 1. Definitional elements of community (adapted from MacQueen et al. 2001, pg. 1931)	22
Table 2. Ling et al.'s (2021) adaptation of the SESF	26
Table 3. Definitional elements of community (adapted from MacQueen et al. 2001, pg. 1931) and first-tier variables in the socio-ecological systems framework (SESF) (McGinnis & Ostrom, 2014)	27
Table 4. Sampling criteria for CSO representatives – best-effort basis	31

Acronyms & Abbreviations

Term	Description
CSO	Civil Society Organisation
D	Deliverable
ICU	Intensive Care Unit
MS	Member State
NUTS	Nomenclature of territorial units for statistics
PCI	Problem-centred interview
SESF	Socio-ecological systems framework
T	Task
WP	Work package

1 Introduction

1.1 The COVINFORM project

The COVINFORM project will: 1) assess COVID-19 responses in a multilevel governance framework, with a focus on impacts on vulnerable groups (including undesired impacts and trade-offs) and intensive consideration of the role of information and communications; and 2) to develop an online portal and toolkit for stakeholders in the governmental, public health, and civil society/community domains integrating data streams, indices and indicators, models, primary research and case study findings, empirically grounded policy guidance, and creative assessment tools.

Indicators of policy efficacy and measures for policy improvement will be developed, and selected measures will be validated, through research at four levels:

1. Analysis of quantitative secondary data for the EU27 MS and the UK,
2. Analysis of 15 target countries and one target sub-national research site per country through desk-based research and secondary data analysis,
3. An in-depth study of 10 sub-national research sites involving primary research, desk-based research and secondary data analysis, and
4. The selection of case studies focusing on specific vulnerable populations.

Based on the research findings, COVINFORM will develop solutions, guidelines and recommendations to ensure that the needs of vulnerable and marginalised groups are appropriately considered in potential further waves of COVID-19 and future pandemics.

1.2 Work package 6

The aims of work package 6 are:

- To review and describe community structures and stakeholder networks, local implementations and impacts of governmental responses, and voluntary and citizen-led responses in selected sub-national research sites in the 15 project target countries;
- To carry out primary empirical research among community-level stakeholders and community members in selected sub-national research sites in 10 target countries;
- To perform an in-depth analysis of key dimensions of impact in the project target countries: Central Europe: Germanspeaking areas (Germany, Austria, Switzerland), English-speaking areas (UK, Ireland), Belgium, France; Southern Europe: Greece, Italy, Spain, Portugal; Northern Europe: Sweden, Norway; Eastern Europe: Romania; and Israel;
- To synthesise research findings on citizen responses and impacts in a complex systems framework and prepare recommendations and other inputs for WP8.

The specific aim of Task 6.2 is to design and carry out primary empirical research on civil society and community responses relevant to the 10 selected sub-national research sites. This deliverable outlines the preliminary desk research findings, theoretical groundwork, research questions, target populations, sampling criteria, and research methods to be utilised. Details may need to be adapted to conditions at the time of research in each site.

2 Analysis of sub-national research sites – Summary of D6.1

2.1 Overview

Desk research conducted in T6.1 focused on local COVID-19 impacts; local articulations of national- and regional-level policy responses; local policy responses; and responses by local actors in the sub-national research sites. In each site, local conditions were found to have mediated the course of the pandemic in complex ways, and a diverse constellation of actors was found to have participated in the response. Promising practices were furthermore identified in many research sites, many of which displayed the following characteristics:

- **Organization:** well-functioning networks with clear communication channels; coordination between governmental authorities, CSOs, grassroots initiatives; consideration of and synergy with informal support structures.
- **Solidarity:** proactive outreach to local residents, especially vulnerable individuals and groups.
- **Cooperation:** e.g., between government, civil society, and the private sector.
- **Technology:** improvement of infrastructure and promotion of ICT channels that enable risk reduction (e.g., work/study from home, contact tracing).
- **Culture and respect for diversity:** sensitivity and adaptation to local cultures via cooperation with local actors, including with regard to the proactive mitigation of barriers.
- **Door-to-door action:** mobile clinics, vaccine vans, etc. to reach vulnerable areas and groups.

These findings form an empirical basis for the research questions identified in Section 5 below. Key findings in selected sub-national research site follow; this is the selection of sites in which empirical research under T6.2 is currently planned.

2.2 Key findings in selected sub-national research site

2.2.1 Austria: city of Vienna

- NUTS3: AT112
- City ID: AT001C1
- Population: 1897000

In Vienna, we could identify three main streams of community response to COVID-19 and government response. The main player was the city government of Vienna, with its manifold support initiatives. A second stream has consisted of social support initiatives launched by CSOs and self-organised groups of citizens, which often focused on relieving the effects of lockdowns and were often sited in particular districts. A third stream has consisted of groups resisting governmental policy and the mainstream consensus, including COVID-19 sceptics and vaccine sceptics, conspiracy theorists, and political extremists.

From the start of the pandemic until the 10th of August 2021 Vienna recorded 144,931 infections and 2,368 COVID-19 related deaths – around comparable with other Austrian states. There is no data available on COVID-19 infections on district levels for Vienna.

Austria's federal political structure has enabled Vienna to implement COVID-19 measures and tactics which have deviated from the national recommendations and strategies to combat the virus, at times extending federally-mandated lockdowns or implementing extra state-level lockdowns. This is

understandable in light of the challenges facing the Vienna health infrastructure: at several points in time, the Viennese ICU bed provision was at nearly maximum capacity. However, social problems have arisen as a consequence of the government's COVID-19 response, including job loss, insecurity, uncertainty, loneliness, and social isolation.

With regard to COVID-19-specific health services, the City of Vienna has offered fairly comprehensive testing services since winter 2020 and universal vaccine access since 25 June 2021. A good practice identified in Vienna is the so-called 'Alles gurgelt' PCR home testing initiative, consisting of free PCR gargle tests provided to residents. The initiative started with limited capacities, allowing registration of enterprises and industries for providing a test offer to their employees. By the end of March 2021, the program was extended and made available to all people living in Vienna.

With regard to social and economic services, a number of measures were taken at the city level. Funding and support instruments were designed for sectors and businesses that had been particularly affected, including the Viennese club and music scene, creative industries, and innovation and technology sectors. The city also provided "hospitality vouchers" worth €50 to residents in order to encourage them to visit restaurants and bars after the lockdown, and "taxi vouchers" to residents over age 65 to assist with mobility.

With regard to risk communication, a comprehensive COVID-19 information website was launched, along with a COVID-19 hotline specifically targeted at alleviating mental health issues.

With regard to community-level and citizen-led responses, several initiatives were launched by CSOs (civil society organisations) and citizens beginning in March 2020, especially to respond to issues related to stay-at-home advice and lockdowns: social isolation and loneliness, difficulty shopping, etc. For instance, under the hashtags/websites #nachbarschaftschallenge (neighbourhood challenge), #gutenachbarschaft (good neighbourhood), and #studentsagainstcovid, people volunteered to run errands for those at risk. Such initiatives were initiated/supported by district-level governments and established CSOs such as Caritas and Diakonie, but also by individuals: for example, a person living in the eighth district of the city of Vienna initiated the project "Achtsamer Achter" ("Mindful Eighth") in December 2020, in order to get persons living in the district in contact with each other, as did a group of residents of the tenth district under the heading "Agenda Favoriten".

Finally, the city has also seen regular activity by groups opposed to the governmental COVID-19 responses and/or mainstream COVID-19 attitudes and behaviours. These groups range from opportunistic political extremists to doctors and other specialists who critique the government's risk management strategies. Many of the activities of this scene took place online, on Telegram and WhatsApp groups, including locally sited groups such as 'CoronaWiderstand Wien' (CoronaResistance Vienna). Rallies were also held, though it is known that many participants are actually residents from other states travelling to Vienna specifically to protest the government.

2.2.2 Belgium: city of Antwerp, district/neighbourhood of Borgerhout

- NUTS3: BE221
- City ID: BE002C1
- Population: 498473

In Antwerp, the well-being of people living in neighbourhoods with high population densities, and especially youth densities, was particularly affected. Borgerhout, for example, became a COVID-19

'hotspot', with the highest infection rates of the city. People in this neighbourhood tend to live in small and crowded households, so they are particularly exposed to the virus and its consequences.

To combat Covid-19, curfews and assembly bans were imposed by the city of Antwerp. In addition to these measures, police presence and surveillance were also increased. Particularly in neighborhoods that are considered more vulnerable, such as Borgerhout, there has been a lot of police surveillance. These political measures had a significant impact on the living situation of people in Antwerp. This impact has been felt in many different ways: besides COVID-19-related illness and mortality, the crisis has impacted people's overall wellbeing; their school, work and financial situation; their access to supportive services; and their exposure to surveillance and policing.

The Antwerp urban organization for integration and civic integration Atlas created audio messages and videos in a range of different languages, as well as in 'easy read' versions, which were disseminated further by individuals and other organizations in their network (Atlas, 2020). In addition, socio-cultural organizations, religious institutions, and key community figures have launched initiatives to promote COVID-19 activities, often by translating and disseminating 'official' information and combating the spread of "fake news".

Bottom-up initiatives in Antwerp also sought to ease the Covid-19 crisis for community members. For example, community solidarity initiatives included food distribution, help with filling in documents (e.g. to apply for government assistance), telephone help lines (e.g. De Borgerhoutse helpline and Antwerp Helpt) and online support meetings. In Borgerhout, the mosques in particular set up a range of solidarity initiatives, including food distributions. The joint website 'community work Antwerp' (buurtwerkantwerpen.be) provided a central information channel for community initiatives and helped people to connect with relevant services.

Many different promising initiatives of the Antwerp community could be identified. One example was the use of "Sensi Ambassadors" to act as trusted advisors in their network, distributing communication materials and disseminating information about Covid-19 to counter the spread of misinformation. In late March 2020, the City of Antwerp launched a platform called 'Antwerp helps' (Antwerpen helpt) to promote the large number of volunteer initiatives that were blossoming across the city. Another initiative set up by the City of Antwerp to address the psychological impact of the crisis is 'Corona chats' (Coronababbels). These projects were set up to provide psychosocial support, strengthen people's social networks, engage in dialogue about these groups' concerns, and provide feedback signals to policymakers. Another good practice example is the program of "The Human Link" organization. The organization received funding from the city of Antwerp to support health care workers and to address the additional pressures, stresses, anxieties, and frustrations experienced by them.

2.2.3 Germany: city-state of Berlin, borough of Neukölln

- NUTS3: DE300
- City ID: DE001C1
- Population: 3645000

As of 07/27/2021, the official website of the Berlin state government records a total of 181,970 Corona-infected persons, corresponding to 4,959 cases per 100,000 inhabitants, and 3,581 deaths. The most-affected districts were Berlin Mitte with 22,812 and Neukölln with 21,147 cases and 6,409 cases per 100,000 inhabitants. Berlin's course is close to the nationwide pandemic rate of 4,510 per 100,000

inhabitants. However, when considering this indicator, Berlin still ranks 4th among the German states and only performs well when considering the examples of Saxony with 7,030 and Thuringia with 6,047 infections per 100,000 inhabitants (Statista, 2021).

Public health measures taken by Berlin authorities have followed the evolution of the different waves of the pandemic. At the beginning of the pandemic (first and second quarter of 2020), attention was focused on lockdown measures. In addition, contact restrictions and the recommendation to wear a mask applied. From May 2020 until fall 2020, the measures were significantly eased, due to the low level of infections recorded during summer months. The fall season of 2020 (fourth quarter) was characterised by increasing restrictions and a second lockdown due to the resurgence of infections. Wearing a mask is now mandatory in public spaces, where the minimum distance cannot usually be maintained, especially in shopping streets and other busy streets and squares. Additional restrictions and the continuation of the lockdown characterised the first quarter of 2021. New regulations on masks were also introduced together with new regulations on quarantine because of the new virus mutations. The vaccination campaign started in socially disadvantaged districts with Johnson & Johnson and Moderna. In addition, the test options were expanded. The second quarter of 2021 can be put into two parts. The first part introduced further restrictions and adaptations to the serious infection situation in Berlin. The second part of the second quarter of 2021 introduces multiple removals of the restrictions due to the decreasing of the number of infections and the advancing of the vaccination campaign.

The state of Berlin used several emergency aid programs to mitigate the economic hardship, companies, in the form of small and medium-size and solo self-employed persons, suffered. The first two emergency aid programs “Soforthilfe I” and “Soforthilfe II” offered subsidies and loans to businesses. “Soforthilfe I” concentrates on enterprises with up to 250 employees and addresses clubs, restaurants, and members of the liberal professions as well (Investitionsbank Berlin, 19th March 2020). The funding could be up to 500.000 €. “Soforthilfe II” focused on even smaller businesses and solo self-employed with up to 10 employees, which could receive a subsidy of up to 9,000 € and 15,000 € (Investitionsbank Berlin, 19th March 2020). In addition, the Berlin Senate organized sleeping facilities in youth hostels for up to 350 homeless persons. The Senate for Integration, Labor and Social Affairs introduced a support plan for inclusive companies. With a 5-point package of measures, several practical aids are granted to the inclusion businesses.

Numerous initiatives have arisen to help counter the difficulties the German society faces during the pandemic. “Bürgeraktiv – das Engagementportal” (Koordinierungsstellen für ehrenamtliche Corona-Hilfe - Berlin.de) is one of the various online-platforms to allow self-organization of any and all kinds of help measures. It focuses on decentralized networking of people with non-medical needs (e.g. in need of help with shopping for groceries, feeling lonely or struggling with depression, etc.) with people who are willing to provide help in these areas. Every district in Berlin has built its own community to coordinate neighborhood assistance between those who need help and those who want to help. Furthermore, “bürgeraktiv - das Engagementportal” also offers numerous phone assistance services. The services offered range from Corona counseling, to telephone help in cases of violence against women, to the establishment of a telephone hotline against loneliness.

Other civil society and citizen-led responses are for example *Nebenan.de* (a private network with options to buy and sell things, offer help concerning Corona and supporting local businesses in times of crisis) or *helfen-shop.berlin* (a non-profit platform that buys vouchers from restaurants, bars, cafés,

clubs and theaters in Berlin to help them through the times of limited opening. These vouchers can then be redeemed when the shops reopen.).

One of the key players in communication during the pandemic is the official website of the governing mayor of Berlin – Senate Chancellery. The website is available in five different languages, as well as in barrier-free formats (e.g. sign language). It maintains information and produces YouTube videos on the entire range of coronavirus-related topics. In addition to information for individuals, the Senate Chancellery has produced information resources for businesses. Links are provided to information on support mechanisms for small businesses, non profit organisations, self-employed persons, and other vulnerable economic actors. The public radio broadcaster for Berlin and Brandenburg, rbb24, has produced information on regulations and risk avoidance and mitigation measures in multiple languages. The District Office of Neukölln has produced multilingual videos that debunk myths and conspiracy theories surrounding the virus, and most recently, vaccines.

2.2.4 Greece: city of Athens

- NUTS3: EL303
- City ID: EL001C1
- Population: 664046

Regarding COVID-19 cases since the beginning of the pandemic in Attica 196,943 confirmed infections were recorded whereas in Thessaloniki 66.135 and in Patras 12,99090. In the three cities, which are also major urban centers, there are established central public hospitals which service populations coming from nearby rural areas and smaller cities. Thus, hospitalizations and deaths from COVID-19 cannot be accurately calculated by district/cities since patients often are hospitalized in areas different than their permanent residence while officials only provide data regarding deaths in total numbers for the entire country. The respective numbers since the beginning of the pandemic in Greece are 477,975 confirmed COVID-19 cases and 12,903 deaths.

Athens adhered to the social restrictions imposed by the Government, which included lockdown measures, curfews and a general “stay at home” situation. Inevitably, the measures took their toll on people’s social lives and overall psychology.

To address the challenges related to COVID-19, the City of Athens has adopted the resolutions derived from the central government. In order to communicate the measures, the information on Covid-19 was regularly updated on the website of the Municipality. In addition, the population was regularly addressed through the media. To offset the economic impact of the pandemic, financial support was provided to businesses that were particularly affected by the pandemic. The tourism sector in particular suffered financial losses.

A good example of a measure that contained the Covid-19 pandemic is the application that granted permission for movement via mobile phone service to citizens during lockdowns. Through this service people could inform the authorities about the reason they want to leave home digitally, without getting involved with paperwork, which causes delays for both police and citizens. In order for citizens to be tested in a straightforward and uncomplicated manner, EODY (National Public Health Organization) provides free rapid testing at an easily accessible location in Athens. Furthermore, the “Help at Home Plus” program is intended for individuals with health related issues as well as the older population, where social workers, medical staff and the program’s assistants, provide counseling around the COVID-19 pandemic and the imposed measures,, medical care, as well as the delivery of

basic goods such as medicines and groceries. From March 2020 the city authorities along with different Associations managed to provide food, water, gloves, masks, antiseptic liquid, and information about COVID-19 to those affected by homelessness, people who inject drugs, sex workers and migrants, creating in parallel temporary housing for homeless and specialised support drug center. Finally, the city of Athens participates actively in the National Home Vaccination against COVID 19 Program.

During this first lockdown the measures were somewhat accepted by the people of Athens, even with some reluctance. Compliance was achieved as the majority of the population understood that a lockdown was necessary to safeguard the National Health System. However, the scenery changed during the second lockdown in November 2020 as the society started to show its exhaustion towards the harsh measures. In the business sector, unions in Athens representing the retail and leisure industries started expressing their complaints towards their suspension of operation. Some leisure facilities hosted events during this time despite the ban. On a citizen level, the Athenians' frustration reached its peak during February and March 2021. During this period protests were taking place at Syntagma square, which quickly turned into riots, and resulted in collisions with the police and use of chemicals.

2.2.5 Italy: city of Rome

- NUTS3: ITI43
- City ID: IT001C1
- Population: 2873000

In July 2021, 250,833 infections were registered in the metropolitan area of Rome. The number of deaths is available only at regional level. This is 8,386 (out of 127,867 at the national level) with a case fatality rate of 2.4% (the fatality rate at the national level is 3%). Due to the early closure of the whole Italian territory in March 2020 (cf. D 4.1 & D 5.1), the number of infections was quite limited in the metropolitan area of Rome during the first wave (March-May 2020). Although it has increased during the second and third waves, the situation was never as critical as in other Italian regions. In November 2020 and April 2021, the number of people hospitalized in ICU was beyond the threshold of 283 beds considered as "critical" by the parameters established by the Ministry of Health at national level, corresponding to more than 30% of ICU beds occupied by COVID-19 patients. The total number of people recovered is available at the regional level and is 337,629 (out of 349,414 total cases). The COVID-19 vaccination campaign started in the Metropolitan Area of Rome at the end of December 2020 as in the rest of the country.

The distribution of infections within the city is far from homogeneous, with the peripheral areas generally more affected than the central ones. The pre-existing socio-economic inequalities, such as differences in the average educational attainment, income or housing conditions play an important role in the spread of the virus.

Measures in response to the COVID-19 in the Italian capital have mainly been targeted at containing the virus outbreaks by limiting social contacts and mass gatherings.

During the pandemic the Latium region implemented several measures to assist the citizens. For instance, the APP LAZIO DOCTOR for Covid (LAZIODrCOVID) was launched to contact and receive remote assistance by the general practitioner (GP) in case of necessity. Testing was also one of the main preoccupations of the regional government. During the second and the third waves of the pandemic, the number of tests performed in the region has substantially increased compared to the

first wave when the capacity of testing was poor. As for the vaccination campaign, the Latium region, as the other Italian regions, has generally followed the recommendations of the central Government. Since the end of June with the aim to approach “hard-to reach” population and to contain the spreading of the “Delta variant”, the Regional Ministry of Health has organized mobile campers that will be present in all the holidays main spots where population 18 and over can get vaccinated without an appointment. Finally, since the beginning of July the Regional Ministry of Health has launched a series of open-days to vaccinate the homeless, jobless and immigrants who are irregular or waiting for a residence permit.

The impact of the pandemic crisis on businesses has been huge and widespread across all sectors. Companies in the trade, hotel and catering sectors have suffered most, as they have been penalized by the restrictive measures introduced to reduce contagions and the sharp drop in tourism. The Municipality of Rome has devoted a large part of the Covid response to recover the tourism sector. Financial support has been provided to tourism and leisure activities through the ‘RomeSafeTourism’ initiative. Within this context, the city has also approved stringent health safety measures aimed at increasing the confidence in the tourist market by promoting the city as a safe and attractive place to visit and discover. Measures finalized at safeguarding the fragile socio-economic households’ situation included economic support to pay the rent, food aids, facilitated access to credit, improved family and child protective services, and temporary shelters for needy persons and street sleepers have been implanted. RomaAiutaRoma – a site accessible from the homepage of the institutional portal of Rome municipality has been created to deal with the emergency linked to the spread of the coronavirus: it is a single access point to all information of public interest, ranging from real-time updates on the services of the local government, solidarity initiatives in favour of people in difficult conditions also reported by the citizens themselves, up to the sections dedicated to wellbeing for families.

Many private sector initiatives, also supported by the public administration in Rome, proved to be good practices to mention. For example, two mobile clinics have traveled around the city, moving around the places frequented or inhabited by disadvantaged people. Each patient received a medical examination and received a health education course offering best practices for prevention of the virus. Médecins Sans Frontières Italy since the beginning of the epidemic, in collaboration with ASL Roma 2 (local health care provider), have implemented a health surveillance system in the occupied buildings and informal settlements, which has allowed, with the direct involvement of the communities, to implement protection measures and manage the reporting of suspected cases, the health monitoring of patients in isolation and the eventual transfer of patients to COVID-19 hotels.

2.2.6 Portugal: city of Évora

- NUTS3: PT187
- City ID: N/A
- Population: 56596

Évora is the main urban hub in the Alentejo region, the Portuguese region with the highest age index (212.6%) and the highest elderly dependency index (41.9%) (PORDATA, 2021). Évora presents an age index of 33.7% and an elderly dependency index of 178.3% (PORDATA, 2021). Partly as a result, since January 2020, Alentejo has been the Portuguese region with the highest lethality rate (currently at 2,55%). In November 2021, Évora was one of the cities with the most high-risk parishes (i.e., between 240 and 4,799 cases per 100 thousand inhabitants in 14 days) (ENSP, 2021). Until the 17th of December 2021, Alentejo recorded a total of 44249 Covid-19 cases of infection and 1077 deaths by Covid-19

(DGS, 2021), and in Évora, until the 12th of December 2021, 4,784 cases and 72 deaths by Covid-19 were reported. During the winter of 2020 and the fall of 2021 in particular, there was a severe increase in the number of deaths.

Several COVID-19 guidelines were developed by the Portuguese government, from input of international organizations (e.g., WHO), DGS, the National School of Public Health (ENSP), independent field experts, et cetera. These were communicated on a national and local level mainly through news channels on press conferences with policy makers. When the state of emergency was declared in 2020, quarantine was established for the entire country, including the Alentejo region and the city of Évora. Most social and economic support measures were also enacted on a national level: the Portuguese government provided financial and social support when possible (e.g., suspension of credit payments for registered Social Solidarity Institutions, NGOs and other social economy organizations; through work engagement of: unemployed people, people with suspended or reduced work contract, temporary workers, and students; Mamede, Pereira & Simões, 2020).

In accordance with national public health measures decreed, city councils also apply their own contingency plans as they see fit regarding their own epidemiologic, social and geographical situation. Thus, Évora's city council contingency plan was last updated on May 2020 (CM-Évora, 2021) and contemplated measures of information and sanitation, municipal activities, human resources quantification in order to ensure minimal services, internal services' action plan, communication strategies and distribution. Overall, procedures and measures that allow the performance of space activities in terms of safety and compliance with the recommendations of the DGS were defined across several domains to guarantee the safety and trust of all visitors, shopkeepers, service providers, and workers of several establishments, such as the shopping center, restaurants, public spaces, historical and touristic sites, etc. Évora's city council also released a set of informative documents to help the population better cope with the public health demands, while complying with the norms implemented, such as: Tips for Dealing with Social Isolation (e.g., shopping; food; telecommuting with children at home; stress, depression, and anxiety management; domestic violence; etc.) (CM-Évora, 2021).

As the gradual reopening of all activities in the tourism sector was detrimental for Évora's city, it had to take place in an environment of maximum security, minimizing the risk of compromising the process of deconfinement. Knowing the great importance that the tourism sector has in the social and economic panorama of Alentejo region, in June 2021, the AHRESP (Association of Hotels, Restaurants, and Similars of Portugal) in Évora proposed to the Regional Health Administration of Alentejo (ARS Alentejo) to carry out free screening tests of Covid-19 to all entrepreneurs, employees of restaurants, cafes, bars, patisseries and all types of accommodation (hotels, local accommodation, tourist villages, tourist apartments, tourist complexes, residential tourism, rural tourism, and tourism outdoor), as well as to their families in this sector (AHRESP, 2021).

On February 2021, Évora started its vaccination process to people aged 80 and over and over 50 with associated diseases, initially covering 1,800 of the 9,000 users identified in the county (SNS, 2021). The place where the vaccination was installed (Arena d'Évora) had four vaccination posts and the capacity to vaccinate 600 people a day. The vaccination process on LTCF per se started on January 2021 (DGS, 2021). Recently, in order to promote vaccination among the population, some vaccination centres in the district of Évora (e.g., Reguengos de Monsaraz) implemented other measures regarding children's vaccination, such as: providing animation, musical entertainment, and a magician for children while waiting to be vaccinated. The aim is to promote positive feelings in children so that they feel good, safe and comfortable in a more welcoming space, instead of associating the process of vaccination to

an unpleasant experience (CM-Évora, 2021). On November 2021, Évora's Hospital Espirito Santo announced the beginning of the third phase of vaccination against covid-19 of its health professionals. Within 5 days, the campaign with Rule No. 002/2021 of 01/30/2021", had already vaccinated 480 professionals. Similar to what happened in the first campaign starting in early 2021, professionals are contacted by message, with the date and time of vaccination, taking place on specific days, in the premises of the future molecular biology laboratory (Silva, 2021).

Besides establishing a contingency plan, in early 2020 and throughout the pandemic, Évora's University (UÉ) has also built a task force in the fight against the Covid-19 pandemic. Moreover, UÉ has also provided a university residence for professionals who are at the frontline of the COVID-19 pandemic, as well as free screening testing to the population in its' campus (UÉ, 2021). A research team from UÉ has also been developing, since January 2020, a new system called "SNS24 Scout", which is expected to have a very significant impact on the service provided to citizens, allowing for a better and faster interaction with SNS Line 24. The expected result is a decrease of at least 5% in the time of each telephone call and an estimated increase of 50,000 telephone calls answered during one year by the SNS24 Line (UÉ, 2021). Another research team from UÉ analysed public information linked to covid-19 in order to build an online tool for the automatic detection of gender stereotypes in health communication, to suggest adjusted alternatives (UÉ, 2021).

Other initiatives were also developed in partnership with civil society, for instance, on the 6th of April 2020 the Government launched the program *Cuida de Todos*, promoted by *Cooperativa António Sérgio para a Economia Social* (CASES), whose aim was to gather volunteers for elderly LTCF (Cabrita-Mendes, 2020). Four days later, Portugal's President informed that over 3,000 volunteers had already registered (Carvalho, 2020; Mamede, Pereira, & Simões, 2020). In the district of Évora, the Youth Volunteer Program "Apoio Maior" started in 2020, in partnership with IPDJ (Portuguese Institute of Sport and Youth) and ANAFRE (National Association of Parishes), and aims to reinforce field responses, especially in supporting the distribution of food and medicine, as well as clarifying community's doubts. Volunteers aged 18 to 30 years old benefit from training, insurance, and a daily support grant to carry out responses in their parish (CASES, 2021). On November 2021, Évora's Santa Casa da Misericórdia launched its' initiative "Solidarity Clothesline" which is clotheslines put together in city gardens with warm clothes, shoes, and accessories for adults and children due to the cold weather for those most in need, to respond to the increase in demand (Lusa, 2021).

There was also a project in Évora which started a new app developed to detect COVID-19 in nursing homes and elderly LTCF. The application created by Create IT and set free to the population between April 2020 and March 2021 and allows for the early detection of situations of respiratory complications, in the context of COVID-19, with an oximeter - which indirectly assesses the oxygen saturation in the blood.

Moreover, regarding elderly LTCF in Alentejo, Brito Fernandes and colleagues (2021) developed a specific survey in Algarve and Alentejo Regions in Portugal. Figure 2 depicts in numbers the preparedness of elderly LTCF in the regions of Alentejo and Algarve in Portugal, using an international scale. Participants sample included 99 licensed nursing homes in Alentejo and 88% of those facilities returned the surveys. The most promising practices identified were: 1) continuous revision of the contingency plan to reflect any updates to the guidelines set forth by the Directorate-General of Health and other relevant competent authorities; 2) emergency protocol with the nearest primary health care centres for a quick response in case of an outbreak; 3) systematically maintaining an inventory of PPE in close collaboration with governmental authorities; and 4) using social media and other platforms to

update families and carers on residents' well-being, and on the public health measures that the nursing home is developing.

2.2.7 Romania: county of Tulcea, town of Babadag, neighbourhood of Bendea

- NUTS3: RO225 (Tulcea)
- City ID: RO017C1 (Tulcea)
- Population: 201462 (Tulcea); 8940 (Babadag)

Between 18.04 and 22.05.2020 the neighbourhood of Bendea was placed under quarantine as per the GO 74.589/17.04.2020.

In Romania, different regions were affected by the pandemic to varying degrees. Regions such as Babadag, which are affected by poverty, lack of education, lack of employment and poor living conditions, were particularly hit and residents have an increased risk of contracting the virus.

Reaction to the lockdown measures has been generally positive in the Bendea neighbourhood. People living in the neighbourhood understood that the lockdown was necessary to flatten the curve and to protect the health of the residents.

To help residents cope with the pandemic, the Red Cross assisted them in covering their needs. For example, by providing clothing, food and medicine.

2.2.8 Spain: city of Madrid

- NUTS3: ES300
- City ID: ES001C1
- Population: 3223000

As of June 2021, 353,023 Covid-19 cases have been confirmed in Madrid. This means that more than 10 percent of the population have been infected with the virus.

By districts, the impact of the Covid-19 has not been equal. Poorer neighbourhoods have suffered more infections than the richest. Puente de Vallecas or Carabanchel for example have around 30,000 confirmed cases, while well-off districts such as Moncloa, Chamartín or Salamanca have around 15,000. Households' composition, socioenvironmental and employment nature are important variables that underlines the difference between higher status areas and the poorer ones; in terms of spreading of the virus and confirmed cases.

The suspension of some economic activities during the pandemic, the limitation of opening hours and the maximum capacity for stores, shops or restaurants, the curfew and the restrictions on individuals' mobility impacted on citizens' economy. Some of them had no access to public support (e.g. the owners of small businesses or individuals working in the informal economy), although the Spanish government created an ambitious program of wage replacement. In addition, the pandemic had a negative impact on education, which shifted to online education and presented new challenges to students and parents, and on the general well-being of the population due to an increase in mental health problems, especially among the younger population.

Of critical importance during the pandemic were at the local level of Madrid:

- Police and inspectors to control the observance of the restrictions: lockdowns, clients' capacities, opening hours, suspension of activities in parks, libraries and other municipal installations.

- Emergency health service to support the regional health system, which was close to collapse during the first wave of the pandemic from March to June 2020.
- Social Services to fight against the situation of poverty because of the suspension of labour activity during the first wave of the pandemic, but also to assist people that lived under poverty conditions before the spreading of the coronavirus.
- All in all, the tasks of the local governments have consisted in assisting other levels of government by helping them in controlling the observance of their disposals, adding resources to protect vulnerable population, offering analysis to generate quality information to deal with the pandemic; and, finally, throughout information campaigns to make citizens aware of the crisis and how to respond to assure self-protection.

At the beginning of July 2020, the political representatives of the city of Madrid, agreed to work together to get through the different consequences of the pandemic in every area of the region. They created a Coordination Table for Agreements which is responsible for managing four different Task Forces which analyse and propose different measures susceptible of being implemented. The four task forces are the following: Social; Economic, Employment and Tourism Task Force; City Strategy Task Force and Culture and Sport Task Force. The Agreements of the Ville contain 352 specific measures to tackle the sanitary and socioeconomic crisis, and which are designed to modernize the city and reduce inequalities.

For Madrid, many different good municipal practices that developed during the pandemic in the areas of "Direct aid to housing, habitability, rent payment, consumption", "Social Services towards vulnerable people", "Elderly care", "Education", "City management" and "Sports and culture" could be identified. One example is the development of models of direct rental aid managed by the EMVS so that certain social groups (young, elderly, large families, single-parent families, people with disabilities, vulnerable groups ...) do not use more than 30% of their income to pay rental fees or the creation of a municipal social card that helps families and individuals having their basic needs covered.

2.2.9 Sweden: city of Gothenburg, boroughs of Östra Bergsjön and Hjällbo

- NUTS3: SE232
- City ID: SE002C1
- Population: 579281

In the VS region, 188,928 infections were confirmed by June 2021, and in Gothenburg, 68,188. The number of cases that died with the virus by then was 2,364 in the VS region and 832 in Gothenburg. Among others, the elderly population was particularly affected. In the VGR region, a total of 13,731 persons 70 years or older were confirmed infected with COVID-19. In Gothenburg municipality/city a total of 4,628 persons aged 70 years or older were infected with COVID-19.

Unlike almost all other countries, it has not been mandatory to wear face masks in Sweden. In spring 2021 the Government issued a recommendation to wear masks in crowded areas, such as on local transportations and in shops and shopping malls. Preschools and elementary schools were never closed in the municipality/city of Gothenburg. During 2020, a larger part of preschool activities was conducted outdoors. Upper secondary schools and to some extent also secondary schools were closed in the fall of 2020, and remote teaching was conducted online. All universities in the city and other higher education also closed and switched to online lectures in spring 2020. Other sectors affected in the city of Gothenburg were the restaurant business, where restrictions were introduced on opening hours, number of guests, and distance between tables. Restrictions were also introduced that limited

the opportunities for crowds, which affected sports and cultural events. In addition, bans on visits to nursing homes were imposed.

A number of challenges became evident during the first wave, in spring 2020, including shortage of medical supplies and equipment, limited testing capacity, and too few intensive care beds. In consequence, a special health care management unit was formed at the regional level and coordinating assignments for materials, medicines, intensive care beds, and inpatient beds were distributed between the regional hospitals.

In terms of crisis communication, the regional chief epidemiologists have been central, using press conferences and interviews with the news media to disseminate information about the pandemic. Other channels, like the regional website, hospitals' and local care centres' websites, have also been used. The service "Vårdguiden 1177" (Care guide 1177), which is a web portal and a phone service for health care advising, is another important channel used to spread information about the virus and the vaccine. Ads (print and videos) on traditional/social media and public billboards have also been used extensively.

There have been a lot of different promising practices in Gothenburg on the national/regional level, the municipality/region level, the health care organization level and also on the community level. At the community level, collaboration with NGOs and local leaders with high credibility (churches and mosques) and the use of local COVID-information ambassadors were particularly useful.

2.2.10 United Kingdom: city of Birmingham

- NUTS3: UKG31
- City ID: UK002C1
- Population: 1149000

The first case of COVID-19 in Birmingham was confirmed on 1st March 2020 and as of 19th March 2021, there have been 98,787 confirmed cases of COVID-19 and 2,873 deaths where COVID-19 was listed on the death certificate. Birmingham is considered a Covid-19 hotspot. Those at particular risk of contracting the virus include minorities, HCWs, and social workers.

The impact of Covid-19 measures, such as lockdowns, was great in Birmingham. In particular, the economy has been hit hard, unemployment rates have increased sharply, and mental health consequences have been documented, especially for young people.

Engagement with Birmingham's diverse communities seems to be at the core of their COVID-19 response. A local COVID Outbreak Engagement Board was created to support public engagement. Members of the public can submit questions to the board via the Birmingham City Council website. In addition, the Birmingham City Council opened a "COVID-19 Impact Questionnaire". The survey is designed to provide information on the impact that COVID-19 and the lockdown measures have had on respondent's health and wellbeing. Different community partners were also commissioned to gain insights on the impact that COVID-19 has had on different groups. Documents created by local authorities in Birmingham also highlight how different methods of communication have been used to engage with the communities and increase the accessibility of information. The Birmingham City Council website also has information and resources available for different vulnerable groups.

The main response at the beginning of the pandemic was collaboration and the formation of response groups. The objective of the collaborative groups was the exchange of information and community

support. BVSC, the centre for voluntary action, worked with Birmingham City Council to establish the “C19 Support Brum partnership”. Together with volunteers they wanted to ensure that there is access to support, help and advice across the city. The Council also launched the BHealthy initiative which includes resources in different languages for community and faith leaders and professionals so that they can support their communities in reducing the risks of serious illness as a result of COVID-19. As part of the BHealthy initiative, the Birmingham Public Health team hosted a series of webinars on topics such as behaviour change, handwashing, visiting friends and family, testing, and self-isolation.

3 Theoretical framework and research objectives

3.1 Defining “community”

The word “community” is richly polyvalent. Oxford Languages, for instance, defines “community” as:

1. A group of people living in the same place or having a particular characteristic in common.
2. The condition of sharing or having certain attitudes and interests in common.
3. (Ecology) A group of interdependent plants or animals growing or living together in natural conditions or occupying a specified habitat.¹

Early in the project, it became clear that some partners tended to think about “community” in spatial terms, while others tended to think about “community” in terms of shared characteristics, attitudes, or interests. It also became clear that partners’ different understandings of “community” were shaped by a wide range of disciplinary norms and individual research interests, as well as by subjective experiences. A lively discussion arose over whether COVINFORM should focus primarily on geographical “communities”, primarily on non-geographical “communities” (such as ethnic groups, professions, etc.), or both. Seeing this discussion through (via both structured workshops and ad hoc email chains and calls) was a necessary precondition to the WP6 research design – especially as “the lack of an accepted definition of community can result in different collaborators forming contradictory or incompatible assumptions about community and can undermine our ability to evaluate the contribution of community collaborations to achieve public health objectives” (MacQueen et al. 2001, pg. 1929; cited in Hacker 2013, pg. 23).

This extended discussion prompted an analysis of various definitions of “community”, which have been the subject of scholarly debate since the late 19th century. In a widely-cited 1955 literature review, Hillery (1982 [1955]) analyses over 90 distinct social scientific definitions of “community”, acknowledging that even this collection “[does] not necessarily embrace all concepts of the community [that are relevant to social science]” (pg. 17). Hillery identifies eight subclasses of definitions based on distinct “essential element of the community”: 1) self-sufficiency; 2) common life; 3) consciousness of kind; 4) common ends, means, or norms; 5) a collection of institutions; 6) a locality group; 7) an individuality (“in the sense of an entity or something more than simply the sum of its parts”); and 8) social interactions, irrespective of locality (pg. 20-21). A majority of these definitions identify “[spatial] area, common ties, and social interaction” as “essential elements”, with area being the single most widely mentioned element (pg. 23). A 1977 review of another 60 definitions yields similar conclusions,

¹ <https://languages.oup.com/google-dictionary-en/>

as do literature reviews from ethnographic and public health perspectives (Willis, 1977; McKeown et al., 1987; Patrick & Wickizer, 1995).

The emphasis on spatial area in Hillery's review is in part an artifact of its pre-internet vintage, as well as of the high number of definitions under review that dealt specifically with rural communities. Brint (2001) offers an analysis of definitions of community updated for the digital age. He identifies two fundamental approaches to the study of community, which have more or less persisted since the birth of the modern social sciences. A "typological" approach, exemplified by Tönnies (2001 [1887]), defines "community" in opposition to other types of human groupings, often drawing on "contrasting associations between communal and associative relationships" (Brint 2001, pg. 2). A "disaggregated" approach, exemplified by Durkheim (2005 [1897]), extracts "precise and narrowly-defined variables from the community concept" (pg. 3). Building on the disaggregated approach, Brint proposes a set of definitional variables that notably excludes location: "(1) dense and demanding social ties, (2) social attachments to and involvements in institutions, (3) ritual occasions, (4) small group size, [...] (5) perceptions of similarity with the physical characteristics, expressive style, way of life, or historical experience of others; and (6) common beliefs in an idea system, a moral order, an institution, or a group" (pg. 3-4). He goes on to put forward a definition of a "community" as a grouping in which at least some of these variables reach certain thresholds – i.e., a grouping "bound together principally by relations of affect, loyalty, common values, and/or personal concern" – from which he deduces four sub-types of geographical communities and four sub-types of non-geographical communities (pg. 10). However, he stresses that it is equally possible to study the disaggregated variables themselves without the end goal of categorising this or that social grouping as a "community", much less as a particular type of community (pg. 9-10).

A shortcoming of both Hillery and Brint is that they draw exclusively on definitions of community produced by scholars, rather than directly exploring the understandings held by community members themselves. MacQueen et al. (2001) address this shortcoming in a public health context through qualitative empirical research, with the intent of "[identifying] core dimensions of community that have external validity across communities, are consistent with measures that have internal validity within diverse communities, and have predictive value for community-level health outcomes" (pg. 1929). Within the framework of a 1995-1998 United States study on participatory HIV vaccine trials involving vulnerable groups (Project LinCS), MacQueen et al. interviewed N=25 African Americans in Durham, North Carolina; N=26 gay men in San Francisco, California; N=25 injection drug users in Philadelphia, Pennsylvania; and N=42 HIV vaccine researchers nationwide. The respondents are thus representative (in a qualitative sense) of a localised community of shared ethnic identity, a localised community of shared sexual identity, and a localised community of shared practices, as well as a non-localised professional community. Respondents were asked the open question, "what does community mean to you?", and responses were double-coded and analysed using a form of cluster analysis. This procedure revealed 17 unique semantic elements comprising four clusters: a "core cluster" consisting of five "definitional" elements, at least one of which was cited by nearly all respondents; a second cluster consisting of "group-based" elements (i.e., relating to inclusion/exclusion and power); and a third and fourth cluster consisting of community-specific stresses experienced by the respondents. The elements in the core and second clusters are given in Table 1, along with the percentage of the sample that mentioned each element.

Table 1. Definitional elements of community (adapted from MacQueen et al. 2001, pg. 1931)

Cluster	Definitional element	Brief definition	% of sample
Cluster 1	Locus	Physical location; place with people	77%
Cluster 1	Sharing	Shared perspective; common interests	58%
Cluster 1	Action	Joint action or activities	50%
Cluster 1	Ties	Social ties, relationships	50%
Cluster 1	Diversity	Differences or diversity (e.g., age, race, income, behaviour)	24%
Cluster 2	Divisiveness	Fragmentation, division into disputing factions	15%
Cluster 2	Leverage	Effectiveness; ability to influence resource availability	15%
Cluster 2	Responsibility	Importance of accepting consequences of individual actions	15%
Cluster 2	Pluralism	Coexistence of two or more distinct cultural traditions	13%

Notably, the elements in MacQueen et al.'s "core cluster" largely overlap the variables proposed by Hillery (1982) and Brint (2001). Like Brint, MacQueen et al. go on to propose "core definition of community as a group of people with diverse characteristics who are linked by social ties, share common perspectives, and engage in joint action in geographical locations or settings" (2001, pg. 1936). However, again like Brint, they leave open the possibility that not all groupings thought of from within as "communities" necessarily exemplify all of these elements. Indeed, some of MacQueen et al.'s respondents appear to think about community in a flexible, "disaggregated" way: for instance, "sharing and locus were discussed by some participants as alternative ways to define community, while others described them as closely interconnected" (2001, pg. 1930). Certain participant groups furthermore appeared to attach weight to particular definitional elements over others: gay men in San Francisco, for instance, tended to emphasise "shared history and perspective", whereas African Americans in Durham and drug users in Philadelphia tended to emphasise locus (pg. 1935).

One strength of disaggregated approaches to "community", then, is that they enable both granular analyses of multiple perspectives within a given society and generalisable hypotheses about human relations in general, across a variety of structural contexts. Another is that they sidestep the subjective and normatively loaded question of which social groupings count as "communities", and which do not. The disaggregated approaches developed by Brint and MacQueen et al. both prioritise certain definitional variables and conclude by proposing definitions; however, they acknowledge that not all of these variables are necessarily found at high levels (or even at all) in every grouping commonly described, from an emic or etic perspective, as a "community" (Brint 2001, pg. 4).

Based on these strengths, COVINFORM will take a disaggregated approach to "community". Following the Description of Action, WP4-7 will focus on specific sub-national research sites (geographical focus), whereas WP3 will focus on specific vulnerable populations (non-geographical focus). Both the geographical and non-geographical research streams will draw upon, or take inspiration from, the definitional elements of community identified by MacQueen et al. (2001). This will enable a validation of MacQueen's analytical strategy within the specific context of the COVID-19 pandemic, as well as a

comparative investigation of the way “communities” extend along both geographical and non-geographical axes.

As indicated in the WP6 description, task 6.2 defines the empirical research to be carried out on articulations of “community” in the target sub-national research sites. Accordingly, this deliverable identifies research questions for residents and civil society organisations in these sites, utilising MacQueen et al.’s definitional elements of community as a framework. Rather than assuming that each sub-national research site constitutes an *a priori* geographical “community”, the task will explore how different dimensions of “community” are experienced and acted upon by residents and organisations in each site. The task will develop research questions based on MacQueen et al.’s emic definitional elements of community: locus, sharing, social ties, diversity, and joint action.

3.2 Definitional elements of “community” and COVID-19

Prior studies have demonstrated the role of MacQueen et al.’s definitional elements in COVID-19 impacts, policy responses, and outcomes. With regard to **locus**, on a sub-municipal level, various COVID-19 indicators (e.g., incidence rates, hospitalisation rates, and/or death rates) have been found to correlate with place-based factors such as local socio-economic status (e.g., area deprivation index) and social demographics (Adhikari et al. 2020; Van Holm et al. 2020; Oluyumi et al. 2021; Zhang et al. 2021); population density (Van Holm et al. 2020; Lak et al. 2021); capacity to socially isolate (Carrión et al. 2020); neighbourhood resource distribution (Lak et al. 2021); and transportation infrastructure (Oluyumi et al. 2021; Zhang et al. 2021). On an individual level, different spatialised social behaviours can impact both exposure to COVID-19 itself and vulnerability to the negative side effects of pandemic response policies, such as lockdown-related social isolation (Chen 2021). Zooming out to the macro scale, “national-level factors shape the role of regional level features, which in turn shape the impacts of very local characteristics. As such, purely national-, regional- or local-level analyses or narratives fail to fully capture the geography of COVID-19, which is genuinely multilevel in nature” (McCann et al. 2021, pg. 17). A concrete example involving the COVINFORM research sites is that the high age index and elderly dependency rate in the Alentejo region and the metropolis of Évora, and the correlated high lethality rate and high number of at-risk parishes, should both be interpreted in the context of the higher median age in Portugal as compared to the EU as a whole (PORDATA, 2021; ENSP, 2021; Eurostat, 2021).

With regard to **sharing** (shared traits, attitudes, interests, behaviours, etc.), on a sub-national level, certain shared pro-social attitudes and behaviours (i.e., “civic capital”) have been found to correlate with lower COVID-19 transmission rates (Durante et al. 2020). On a national level, the cultural tendency to avoid uncertainty and collective experiences of past pandemics may both improve acceptance of social distancing (Huynh 2020; Lee et al. 2021), while shared “moral principles of fairness and care” tend to correlate with higher levels of trust in science (Pagliaro et al. 2021). Similarly, higher levels of interpersonal trust may reduce so-called “pandemic fatigue” and increase willingness to continue engaging in high-cost protective behaviours (such as social distancing) over long periods of time (Petherick et al. 2021). As COVID-19-related media has become more politicised, shared political attitudes have also been found to predict attitudes toward COVID-19 risk, response policies, and information/misinformation (Weil and Wolfe 2021). Accordingly, taking account of shared attitudes and behaviours is a critical step in developing sound risk communication strategies, especially insofar as such shared attitudes and behaviours intersect with health and/or socioeconomic vulnerabilities (Airhihenbuwa 2020; Anson et al. 2021).

With regard to **social ties**, the above-mentioned shared traits, attitudes, interests, and behaviours all certainly correlate to some extent with concrete social connections: for instance, peer-to-peer social media contacts are an important vector for the transmission of (frequently politicised) COVID-19 misinformation (Cuello-Garcia, Pérez-Gaxiola, & van Amelsvoort 2021), leading Young et al. (2021) to propose “network interventions” as a promising tactic for disrupting the formation of misinformation filter bubbles. Aggregated Facebook data furthermore suggests that on a regional level, interconnected social network structures can predict the geographical spread of COVID-19 (Kuchler et al. 2020). This being said, when it comes to countering and coping with the negative effects of the pandemic and response policies, robust social networks can increase resilience, whereas smaller or disrupted social networks can aggravate mental and physical health problems – especially among minorities and other socially disadvantaged groups (Gauthier et al. 2021). Such complexities and trade-offs have led to calls for the inclusion of more sophisticated social network models in COVID-19 epidemic modelling and data-driven policymaking (Manzo 2020; Herrmann and Schwartz 2020) – but also for a recognition of the limits of modelling-based approaches (Pawson 2021).

With regard to **diversity**, ethnic and cultural distributions and/or diversity have been found to predict COVID-19 indicators on a sub-municipal level – albeit at different levels, and presumed through different mediation pathways, in different sites (Adhikari et al. 2020; Van Holm et al. 2020; Oluyumi et al. 2021). On a general level, higher rates of chronic disease have been reported in ethnic minority populations in a number of European countries (Modesti et al., 2016), as have higher rates of severe COVID-19 illness and mortality (Sze et al., 2020; Out et al., 2020). This is in part because ethnic minorities are often overrepresented among frontline ‘essential workers’ – an example of the overlap of communities of shared ethnicity and communities of professional practice, as well as of vectors of COVID-19 risk (Sze et al., 2020). Ethnic and religious minorities have simultaneously been subject to discriminatory aggression and scapegoated as vectors for the spread of COVID-19 (Slaats, 2020; SOS Mitmensch, 2021). Instances have also been reported in which lockdown rules are enforced in a manner discriminatory against ethnic minorities (reflecting patterns of law enforcement in general in many countries) (Amnesty International, 2020; Clementi, 2020). For more detailed information on intra-community difference and COVID-19 as viewed through the lens of intersectionality, see the COVINFORM Bi-Monthly Report on “Using an intersectional lens to understand the unequal impact of the COVID-19 pandemic” (Molenaar 2021).

Finally, with regard to **joint action**, the pandemic offers a real-time ‘stress test’ for different approaches to multi-level governance: for example, centralised vs. decentralised and injunction-based vs. incentive-based (Kuhlmann et al. 2021); “proactive” vs. “reactive” (Anttiroiko 2021), etc. This also applies specifically to different approaches to multi-level risk communication (Hanson et al. 2021). While indicators on the quality of public governance are often included as a factor in COVID-19 risk indexes and models (e.g., Coccia 2022), granular national- and sub-national-level studies of COVID-19 responses make it clear that such indicators do not always capture the divergent perceptions of different segments within a given society (Gensheimer and Edwards 2021). It is therefore crucial to revisit such indicators from a qualitative perspective, especially as current analyses of the multi-level governance of COVID-19 will play a key role in the assessment and design of transnational interventions such as *Next Generation EU* (Crescenzi et al. 2021).

3.3 “Community” in a socio-ecological systems context

As COVINFORM adopts a complex adaptive systems/socio-ecological systems framework, the ecological science definition of “community” as a group bound by interdependencies will also be taken into account. A neighbourhood is a good example of this: especially under pandemic conditions, neighbours are interdependent regardless of whether or not they have a direct social relationship, share attitudes or behaviours, etc. The idea of a “community” as a group bound by interdependencies is compatible with the disaggregated approach, and can bridge this approach with socio-ecological perspectives on the COVID-19 pandemic.

T6.2 will contribute to the socio-ecological systems analysis of community health by synthesising the disaggregated approach to community with Ostrom’s socio-ecological systems framework (SESF) (2007, 2009; McGinnis and Ostrom, 2014), as utilised in COVINFORM D3.1 (2007). Reviews of applications and modifications of the SESF have identified numerous instances in which it had been used to analyse, and in some cases modified to better reflect, localised “community-based systems” such as irrigation systems, fisheries, and forestry projects (Partelow, 2018). For instance, based on workshops with civil society organisations and community leaders in afro-Colombian communities and indigenous Mexican communities, as well as with local natural and social scientists, Delgado-Serrano and Ramos (2015) proposed a number of modifications to the SESF to improve its suitability to the study of localised systems: these include additional second-tier variables within all seven first-tier categories, as well as indicators usable for measuring these variables in the specified contexts. The modified SESF was utilised by the target communities as a basis for the development of natural resource management plans. Similarly, Partelow et al. (2019) transformed the SESF into a “knowledge exchange and deliberation tool” for use with community natural resource management stakeholders, for instance by creating image cards representing co-occurring, locally-relevant examples of the first-tier variables; in a field experiment conducted in Costa Rica, discussion groups of fishers who utilised the SESF tool engaged in conceptually richer conversations than those who did not utilise the tool.

The SESF was designed in the context of natural resource management, and most of its applications to date have been in this context rather than in the management of other types of resources, such as health and social services. Certain SESF variables – specifically in the Resource Systems (RS) and Resource Units (RU) categories – are not intuitively suited to a community health context. However, the SESF has recently been adapted to the analysis of various aspects of the COVID-19 pandemic; this follows a robust tradition of the use of socio-ecological systems theory and models in public health (Kickbusch 1989; Sallis, Owen, & Fisher, 2008; McGibbon & McPherson, 2012). For instance, Raboisson and Lhermie (2020) propose a COVID-19 policymaking framework informed by the SESF, among other socio-ecological systems models; their indicators are public-health specific and not linked one-to-one with specific SESF variables, but their guidelines account for the properties of socio-ecological systems (integrate multiple and heterogenous information to diagnose and act with accuracy; navigate with uncertain information, and communicate it to the population; adjust the strategies dynamically, accounting for non-linear phenomena; manage clusters with a multi-scalar spatialised policy). Ling et al. (2021) utilise a schema based on selected variables from the SESF and the eight design principles of Ostrom’s Institutional Analysis and Development (IAD) framework to code and analyse social, physical/resource, and governance/institutional factors; COVID-19 policy responses; and COVID-19 outcomes in seven Asia-Pacific countries, finding that countries with favourable socio-ecological system conditions and policy responses that aligned with IAD principles tended to show better COVID-

19 outcomes. Ling et al. provide a useful precedent for COVINFORM insofar as they propose concrete indicators for measuring the following (renamed) first-tier variable categories:

Table 2. Ling et al.’s (2021) adaptation of the SESF

SESF first-tier variables	Ling et al. first-tier variables (factors)	Ling et al. indicators (attributes)
Social, economic, and political settings (S)	Social	Low population density
		High social homogeneity
		High level of trust among citizens
		Sufficient local management knowledge and experience
		Effective foreign worker containment
Resource systems (RS) and research units (RU)	Physical/resource	High adequacy of facilities
		High technology availability
		High economic performance
Governance systems (GS)	Governance/institutional	Presence of top-down leadership
		Strict penalty
		Strict lockdown imposition
		Strict standard of procedure in public areas
		Emergency response plan and COVID-19 testing policy
Interactions (I)	Action arena (activities/response effectiveness level for the period between 1 February and 30 June 2020)	Government Stringency Index
		Health and Containment Index
		Economic Support Index
Outcomes (O)	Outcome	COVID-19 abatement success level for the period between 1 February and 30 June 2020

Insofar as the quantitative indicators Ling et al. suggest are mostly available only on a national level rather than a sub-national (let alone sub-municipal) level, their adapted SESF will be taken into consideration primarily in COVINFORM WP2 and WP3 rather than WP6.

To our knowledge, the SESF framework has not been adapted specifically to the analysis of intersecting health and socioeconomic vulnerabilities on a sub-municipal level. However, utilising the above studies as precedent, it is possible to draw on the SESF in such an analysis. Rather than proposing new or modified first- or second-tier variables within the SESF per se, we hypothesise that the definitional elements of community proposed by MacQueen et al. can be understood as *cross-cutting factors* that describe how socio-ecological systems are experienced and interpreted by actors within them:

- **Locus** (“physical location; place with people”) cross-cuts **Ecosystem (ECO)**, **Social, Economic, and Political Setting (S)**, **Resource System (RS)**, **Resource Units (RU)**, and **Governance Systems (GS)**, as well as the second-tier Actors (A) variables **Location (A4)** and **Knowledge of SES / Mental Models (A7)**;
- **Sharing, Social ties**, and **Diversity** describe the attributes and practices of **Actors (A)**;
- **Joint action** overlaps with **Interactions (I)** and **Outcomes (O)**.

This theoretical synthesis is viable because the SESF variables and the definitional elements of community are designed to serve different, and complementary, purposes: the former describe discrete objective properties of systems, whereas the latter describe holistic subjective experiences and interpretations of systems. The SESF variables can be understood from a community studies viewpoint as framework conditions within which the elements of community are experienced. Likewise, the elements of community can be understood from a socio-ecological systems viewpoint as cross-cutting factors – experiences and interpretations of bundles of variables – which have a feedback effect on system dynamics.

One caveat is that settings, resource systems and units, and governance systems relevant to public health challenges like COVID-19 are multi-level rather than purely local (see Section 2); however, T6.2 will focus on local articulations and impacts. Another caveat is that the SESF concept of “interactions” is informed by the concepts of the “action arena” and “action situation” as outlined in Ostrom’s (2005) Institutional Analysis and Development framework, which comprises elements that overlap with other first- and second-tier SESF variables (e.g., participants, positions, actions, information, control, net costs and benefits, and outcomes); these must be delineated and related to one another in accordance with the study context (Whaley and Weatherhead, 2014). Consequent upon the analysis, the concept of definitional elements of community as cross-cutting factors may be reconsidered in favour of simply proposing new variables to the SESF, with guidance from theoretical literature (e.g., Frey & Cox, 2015).

3.4 Research objectives

Task 6.2 will systematically and comparatively examine the impact of COVID-19 and its policy responses on senses of locus, shared identities and practices, social ties, and intra-community diversity; analyse local stakeholders’ responses through the lens of joint action; and map the uneven distribution of positive and negative outcomes. In doing so, the task will seek to supplant a static view of “communities” (and “vulnerable communities” in particular) as objects over which the successive waves of the pandemic have crashed, with a dynamic view of “communities” as modes of experience and social action produced within particular structural contexts through the interaction of human and non-human actants (including SARS-CoV-2 itself).

Task 6.2 will furthermore situate MacQueen et al.’s empirically-based, disaggregated model of community within the socio-ecological systems framework (SESF) (Ostrom 2007, 2009; McGinnis and Ostrom, 2014). The cross-cutting relationship between definitional elements of community and first-tier SESF variables are shown in the below table; second-tier SESF variables are reviewed in Annex 1.

Table 3. Definitional elements of community (adapted from MacQueen et al. 2001, pg. 1931) and first-tier variables in the socio-ecological systems framework (SESF) (McGinnis & Ostrom, 2014)

SESF variables	Elements of community				
	Locus	Sharing	Social ties	Diversity	Joint action
Ecosystem (ECO)					
Social, economic, and political settings (S)					
Resource systems (RS) and research units (RU)					
Governance systems (GS)					
Actors (A)	A4, A7				

Interactions (I)					
Outcomes (O)					

Utilising this mapping, the SESF variables will be qualitatively assessed in the T6.2 analysis. Specifically, matrix coding the task 6.2 interview transcripts will enable a systematic examination of how the structural variables described by Ostrom (2007) are experienced and described *from within* by residents and civil society practitioners in the sub-national research sites, as framework conditions for experiences, interpretations, and practices of “community” as operationalised by MacQueen et al. (2001). A preliminary hypothesis on community in an SES context is that the extent to which localised socio-ecological (sub-)systems are experienced and interpreted as “communities” correlates with their resilience to both negative impacts of COVID-19 and negative trade-offs of COVID-19 policy responses.

4 Research questions

4.1 Local baseline conditions and COVID-19 impacts in the sub-national research sites

One core set of research questions deal with **baseline conditions, vulnerabilities, CSO networks, and COVID-19 impacts** in the sub-national research site. The aim of these questions is to gain emic perspective on experiences and practices of everyday life in the research site, immediately prior to and over the course of the pandemic. These questions especially address MacQueen et al.’s definitional elements of **locus, sharing, social ties, and diversity**, as well as Ostrom’s variables Ecosystem (ECO), Social, Economic, and Political Setting (S), Resource System (RS), Resource Units (RU), Governance Systems (GS), and Actors (A).

- **Locus (ECO, S, RS, RU, GS)**
 - What are the socio-ecological system characteristics of the research sites (e.g., ecological conditions; social, economic, and political setting; health and social service resources; governance systems; actor networks; action situations; health and social outcomes and means of measurement)? *Note that this research question underpinned the work done in T6.1, and will be addressed through the analysis of secondary data as well as the collection of primary data.*
 - How did spatial socio-ecological system conditions and spatialised practices mediate COVID-19 impacts and responses in the sub-national research sites?
 - Did particular spatial socio-ecological system conditions and spatialised practices aggravate or mitigate residents’ vulnerabilities and CSOs’ approaches toward vulnerable groups?
 - How have COVID-19 and responses to COVID-19 affected residents’ sense of place? How has this changed over the course of the pandemic?
- **Sharing (A)**
 - How did shared attitudes, beliefs, and practices mediate COVID-19 impacts in the sub-national research sites?
 - Did particular shared attitudes, beliefs, and practices aggravate or mitigate residents’ vulnerabilities and CSOs’ approaches toward vulnerable groups?

- How have COVID-19 and responses to COVID-19 affected residents' shared attitudes, beliefs, and practices? How has this changed over the course of the pandemic?
- **Social ties (A)**
 - How did social networks mediate COVID-19 impacts in the sub-national research sites?
 - Did particular structural features of local social networks aggravate or mitigate residents' vulnerabilities and CSOs' approaches toward vulnerable groups?
 - How have COVID-19 and responses to COVID-19 affected local social networks? How has this changed over the course of the pandemic?
- **Diversity (A)**
 - How did intra-community patterns of difference mediate COVID-19 impacts in the sub-national research sites?
 - Did particular patterns of difference aggravate or mitigate residents' vulnerability and CSOs' approaches toward vulnerable groups?
 - How have COVID-19 and responses to COVID-19 affected patterns of difference? E.g., did the shared experience of the pandemic drive a sense of solidarity among residents? Conversely, did it cause or aggravate divisions? How has this changed over the course of the pandemic?

4.2 Local COVID-19 responses in the sub-national research sites

A second core set of research questions deal with COVID-19 responses in the sub-national research site: specifically, **health and social services**, **risk communications**, and **vaccination campaigns**. The aim of these questions is to build a comprehensive understanding of how different stakeholders worked together to respond to the pandemic, and to assess their efforts from an emic perspective. These questions especially address MacQueen et al.'s definitional element of **joint action**, as well as the element of sharing in the sense of **distributions** (of resources, positive/negative outcomes, etc.), as well as Ostrom's variables Interactions (I) and Outcomes (O).

- **Joint action (I, O)**
 - What roles have CSOs, grassroots initiatives, and residents themselves played in the provision of health and social services in the sub-national research sites? How has this changed over the course of the pandemic?
 - With regard to COVID-19 responses by local stakeholders, to what extent were the dimensions of successful practice identified in T6.1 addressed? How has this changed over the course of the pandemic? To what extent have they led to positive outcomes? *Note that this research question will be addressed through the analysis of secondary data as well as the collection of primary data.*
 - **Organization:** well-functioning networks with clear communication channels; coordination between governmental authorities, CSOs, grassroots initiatives; consideration of and synergy with informal support structures.
 - **Solidarity:** proactive outreach to local residents, especially vulnerable individuals and groups.
 - **Cooperation:** e.g., between government, civil society, and the private sector.
 - **Technology:** improvement of infrastructure and promotion of ICT channels that enable risk reduction (e.g., work/study from home, contact tracing).

- **Culture and respect for diversity:** sensitivity and adaptation to local cultures via cooperation with local actors, including with regard to the proactive mitigation of barriers.
 - **Door-to-door action:** mobile clinics, vaccine vans, etc. to reach vulnerable areas and groups.
- What roles have CSOs, grassroots initiatives, and residents themselves played in COVID-19 communication in the sub-national research sites? How has this changed over the course of the pandemic?
- From a CSO and resident perspective, have COVID-19 communications in the sub-national research sites been more or less accessible, actionable, relevant, timely, and understandable? How has this changed over the course of the pandemic?
- What roles have CSOs, grassroots initiatives, and residents themselves played in vaccination campaigns in the sub-national research sites? How has this changed over the course of the pandemic?
- **Sharing, in the sense of distributions (O)**
 - How well have local health and social services, COVID-19 communications, and vaccination campaigns addressed the specific needs of the sub-national research sites? How has this changed over the course of the pandemic?
 - How have specific elements of “community” in the sub-national research sites (spatial conditions and spatialised practices; shared attitudes, beliefs, and practices; patterns of difference) mediated the implementation and effectiveness of health and social services, COVID-19 communications, and vaccination campaigns in the sub-national research sites? How has this changed over the course of the pandemic?
 - How have COVID-19 and responses to COVID-19 impacted the distribution of resources among residents (access to health and social services, etc.) and CSOs (access to funding, volunteers, etc.) in the sub-national research sites? How has this changed over the course of the pandemic?

Have conflicts of interest arisen between stakeholders and/or residents during the course of the pandemic? How have they been addressed or resolved?

5 Study populations and sampling

WP6 will gather qualitative data from two groups: residents of the sub-national research sites and representatives of civil society organisations that are active in the sub-national research sites. Qualitative research with residents themselves is critical to the study of intersecting vulnerabilities, which may not be immediately visible from an etic perspective, but still exert profound influence on health and well-being, as well as experiences of community (Abrams et al., 2020). Resident interviews will focus on subjective, socially situated experiences and interpretations of the pandemic and its policy responses as articulated within the research sites. An interview design combining narrative sections with topic-oriented interventions will be used to assist the residents in charting the course of the conversation, while also ensuring that attention is paid to interactions and relationships with other actors and local structures and systems (see Section 6.1); this will help minimise the risk of reproducing “narrow understandings of health differences as solely rooted in individuals or individual behaviour” (Hunting 2014, pg. 6).

As noted in COVINFORM D5.2, qualitative research with additional stakeholders/actors – i.e., not just residents, but also people engaging with residents in a professional capacity – will benefit triangulation by shedding light on the structures and systems that frame residents’ experiences (Abrams et al., 2020). CSO representatives will provide an especially critical perspective insofar as their first-hand experiences of COVID-19 in the research sites are complemented by professional knowledge of structural factors. The T6.1 desk research indicates that CSOs played an important role in bridging the gaps between local needs and policy responses defined at the national or regional levels; interviews with CSO representatives will thus seek to elicit both their first-hand experiences of responding to COVID-19 in the research sites and their professional knowledge of structures, systems, and actor networks. CSO representatives, as individuals whose interpretations and decisions play a significant role in shaping the field of social action, meet Bogner and Menz’s (2009) definition of “experts”, and will be accordingly be interviewed using appropriate methods (see Section 6.2). An additional benefit of interviewing CSO representatives is that doing so can improve the contextual awareness of the researchers in preparation for interviews with residents (Jimenez et al. 2018). Representatives of both established organisations and grassroots initiatives founded in direct response to the pandemic will be interviewed.

5.1 Residents of the sub-national research sites

The minimum sample size residents per sub-municipal research site is **N≥12**. To ensure WP-specific research questions for residents can be addressed in some depth, this sample will be ‘split’, in such a way that $n \geq 6$ residents are interviewed using a joint WP4+5 topic guide, and the other $n \geq 6$ residents are interviewed using a joint WP6+7 topic guide. Criteria used to select residents for participation, and guidelines for recruiting residents, will be developed based on first findings of interviews with governmental and public health actors, as well as on the work ongoing within WP2.

5.2 CSOs active in the sub-national research sites

Each partner will conduct **N≥5** interviews with representatives of civil society organisations (CSOs) that are active in COVID-19 responses or related activities in the target research site. No specific quotas are set for types of organisations; the WP lead will determine recommended organisations appropriate for each site together with each local fieldwork partner. Representatives of both established CSOs and grassroots initiatives established in response to the pandemic should be interviewed if possible, and the following non-mutually-exclusive sociodemographic criteria should also be met on a best-effort basis:

Table 4. Sampling criteria for CSO representatives – best-effort basis

Criteria	
Representative of a CSO established before the COVID-19 pandemic	N≥1
Representative of a CSO or grassroots initiative/action established during the COVID-19 pandemic	N≥1
Self-identifies as female	N≥2
Works directly with vulnerable groups	N≥2
Self-identifies as a member of a vulnerable group	N≥1

6 Research methods

As noted in COVINFORM D3.2, semi-structured interviews will be conducted, with the aim of exploring participants' views and systems of meaning (Berg & Lune, 2017). In line with intersectionality theory, qualitative interviews allow for responses that are not based on uniform answer choices, instead giving participants the opportunity to talk about their lived experiences in relation to several aspects of their identity (Windsong, 2018). Both residents and representatives of civil society organisations will be interviewed using variations on the problem-centred interview method (Witzel 2000; Döringer 2021).

6.1 Residents: the problem-centred interview

As a basis for individual interviews, the consortium will use variations on the problem-centred interview (PCI) format. The PCI format assumes the theoretical proposition that “the plausibility of inferring human actions from a societal framework, societal mechanisms of selection or the socially unequal distribution of resources is diminishing”, and that hypotheses on the structure of human actions should thus be built on the basis of empirical insight into the subjective dimension of human experience (Witzel 2000). The PCI is positioned as “an egalitarian dialogue between the interviewer and interviewee in which the research question or the ‘problem’ is refined jointly” through the discursive interplay of inductive and deductive reasoning (Döringer 2021, pg. 268). On the one hand, the PCI synthesises the inductive approaches of grounded theory (Glaser & Strauss, 1998) and “sociological naturalism” (Hoffmann-Riem 1980), the aim of which is to generate emic constructs based on the understanding and experience of the interviewees themselves (so-called “sensitising concepts” which inform hypothesis development and testing) (Witzel 2000). On the other hand, the PCI differs from the biographic-narrative interview (Rosenthal 1995; Schütze 1983) insofar as the interviewer helps guide the course of the dialogue, interjecting questions and prompts based on their prior, deductive knowledge of structural contexts.

Generally, the interviewer begins the PCI with an open question designed to elicit a short narrative account in which s/he does not intervene, then takes an increasingly active role as the interview progresses. The interviewer can make three basic types of interjection: *specific explorations*, which follow up on topics spontaneously elicited by the interviewee; *general explorations*, which delve into topics that relate to the content of the interviewee's narration, but have not yet been directly elicited; and *ad hoc questions*, which introduce topics outside the scope of the narration that are nevertheless crucial to the research aims (e.g., necessary to ensure comparability across interview subjects). Ideally, “the interviewer's contributions, and especially the follow-up questions, can help to explicate the respondent's implicit knowledge and make it more systematic for later self-reflection”, as well as for analysis by the researchers (Witzel & Reiter 2012, pg. 32). The flexible, discursive structure of the PCI suits it to use in a range of contexts, from ethnography to expert interviews.

The WP6 respondent interviews are conducted utilizing a topic guide that combines research questions from WP6 and WP7. It follows the PCI format, moving from a narrative opening section to a more structured exploration of the research questions identified above in Section 4.

Concept 1: narrative/chronological account of baseline conditions and impacts, followed by topical explorations of WP6 and WP7 topics

- Section 1: introduction, overview of the respondent's rights, and simple overview of the method.

- Narrative section
 - Section 2: opening **narrative account**: “sense of community in times of COVID-19”
 - Section 3: **narrative account** of local baseline conditions and COVID-19 impacts at different milestone points in the pandemic
- Topic-by-topic section
 - Section 4: **topical exploration** on local support networks, responses by CSOs, and citizen-led responses
 - Section 5: **topical exploration** on risk communication
 - Section 6: **evaluative ad hoc questions** on the positive and negative dimensions of COVID-19 responses to date, as well as the ways COVID-19 may have transformed the community as a whole

OR

Concept 2: narrative/chronological account of everything, with WP6 and WP7 topics woven in and addressed per stage of the pandemic

- Section 1: introduction, overview of the respondent’s rights, and simple overview of the method.
- Section 2: opening **narrative account**: “sense of community in times of COVID-19”
- Section 3: **narrative account** of local baseline conditions and COVID-19 impacts at different milestone points in the pandemic, interspersed with **general and specific explorations** focusing on:
 - Local support networks, responses by CSOs, and citizen-led responses at each milestone
 - Risk communication at each milestone
- Section 4: **evaluative ad hoc questions** on the positive and negative dimensions of COVID-19 responses to date, as well as the ways COVID-19 may have transformed the community as a whole

The topic guide provided by the WP6 and WP7 leads may be modified by individual consortium partners to better suit the local context of their research sites. The length of interview should be 60 to 90 minutes.

6.2 CSO representatives: the problem-centred expert interview

CSO representatives can be considered “experts” – i.e., individuals who are “knowledgeable of a particular subject and are identified by virtue of their specific knowledge, their community position, or their status” (Kaiser 2014, cited in Döringer 2021, pg. 265). Expert interviews are traditionally conducted using a semi-structured approach, “concerned with the exclusive knowledge that officials represent owing to their position, thereby neglecting the person ‘behind’ his role” (Witzel & Reiter 2012, pg. 33). However, more recent approaches – such as Bogner and Menz’s (2009) “theory-generating expert interview” – question the artificial separation between ostensibly depersonalised professional knowledge and subjective experiences and interpretations. Indeed, Bogner and Menz regard “expertise” itself as a social phenomenon in which certain actors “have created a situation where it is possible for their interpretations to structure the concrete field of action” (pg. 54). From this perspective, the investigation of experts’ implicit knowledge and interpretative frameworks appears as a prerequisite for understanding their professional knowledge and modes of practice.

Like the problem-centred interview, the theory-generating expert interview aims at inductive theory-building through the elicitation of interviewees' experiences and interpretations, alongside their professional knowledge. It also calls for the interviewer to reflect carefully on their own quasi-expert position and attitudes vis-à-vis those of the interviewees. Noting that Bogner and Menz do not operationalise the theory-generating expert interview concept by linking it to a particular interview design, Döringer (2021) proposes the problem-centred interview as a suitable way of doing so. In a project on "key [economic] agents" in two small Austrian cities, Döringer began her interviews with open-ended questions on the key agents' backgrounds, then continued by asking them to narrate the economic development process in their cities, with attention to the "actor constellations" involved (pg. 272). She followed up with general and specific explorations of episodes in the key agents' narratives, then ad hoc questions on topics that called for between-subjects comparison, such as assessments of future challenges. Using the PCI enabled the collection of meaningful data on "implicit dimensions" of expert knowledge and practice such as "motives, resources and intentions", which contextualise and enrich data collected on explicit dimensions such as institutional structures and formal decision-making procedures (pg. 274).

Like the resident interview topic guide, the WP6 CSO interview topic guide follows the PCI format, moving from a narrative opening account to a more structured exploration of the research questions identified above in Section 4. Whereas the resident topic guide emphasises narrative questions designed to elicit subjective experiences, the CSO topic guide is weighted somewhat more toward questions designed to elicit evaluative descriptions, on the basis of which actionable recommendations can be developed.

- Section 1 of the interview consists of an introduction and overview of the respondent's rights.
- Section 2 opens the data collection with a **narrative account** prompted by the open-ended question: "what does the word 'community' mean to you?" This question is used to open both the resident and CSO interviews. The intention is to elicit an emic "sensitising concept" of community, which can be compared to the hypothesised concept framed by MacQueen et al.'s five definitional elements. If the respondent does not spontaneously introduce the topic of COVID-19 during their account, the interviewer should follow up by asking, "what do you think when you hear the phrase, 'sense of community in times of COVID-19'?" Note that these opening questions must be tailored to each linguistic context (as different translations of "community", "sense of community", etc. have different connotations and use contexts).
- Section 3 builds on the opening question with a **narrative account** of local baseline conditions and COVID-19 impacts at *different milestone points* in the pandemic (before the first lockdowns, after the imposition of the first lockdowns, after vaccines had been introduced and the first lockdowns had been lifted, and the present), interspersed with **general and specific explorations** referring back to topics spontaneously elicited by the respondent in descriptions of prior milestone points.
- Section 4 shifts from narrative to **topical exploration**, focusing on three critical domains of local COVID-19 responses: health and social services, risk communications, and vaccination campaigns.
- Section 5 concludes the interview with **evaluative ad hoc questions** on the positive and negative dimensions of COVID-19 responses to date, as well as the ways COVID-19 may have transformed the community as a whole.

The topic guide template provided by the WP6 lead may be modified by individual consortium partners to better suit the local context of their research sites. A length of interview of 60 to 90 minutes is ideal, though in cases in which scheduling is difficult, the topic guide may have to be shortened to allow a length of 45 minutes. The topic guide template is attached in Annex 2.

6.3 Ethical considerations

6.3.1 Exclusion criteria for research sites

In order to minimise interviewers' and other project participants' exposure to potential harm, as well as the likelihood of uncovering information that would mandate disclosure under the project's incidental findings policy, interviews will not be conducted in the following types of site:

- Detention/detainment facilities, whether outside or inside the EU
- Sites deemed to be unsafe by gatekeeper organisations or other local contact points
- Sites deemed to be unsafe by the researcher scheduled to conduct the interview

As of Summer 2021, no research partners intend to conduct research in detention/detainment facilities or in sites deemed to be unsafe by gatekeeper organisations or other local contact points.

6.3.2 Exclusion criteria for research participants

Data will not be collected from persons that are unable to give informed consent. This includes persons suffering from mental illness or incapacity, persons suffering from clear trauma, etc. If an interviewer suspects that an interviewee may not in fact have been able to give informed consent, the interview will be terminated.

In order to minimise the likelihood of uncovering information that would mandate disclosure under the project's incidental findings policy, qualitative research will not be conducted with persons who are known or suspected to have committed crimes under the laws of the state in which they reside. Likewise, qualitative research will not be conducted with persons who are affiliated with criminal organisations or who are affiliated with groups proscribed or classified as extremist or terrorist organisations by the state in which they reside.

In order to minimise exposure to potential harm, qualitative research will not be conducted with persons who are known or suspected to intend harm toward others or themselves. Likewise, data will not be collected from persons who are at risk of suffering harm as a consequence of participating in the project.

6.3.3 Incidental findings

The European Commission (2018b) defines incidental findings (IFs) as findings outside the scope of the research questions that may require the researcher to take some form of action. Under normal circumstances, a researcher should not disclose data collected under the expectation of confidentiality unless the data subject gives consent to do so. However, some IFs can throw this maxim into question: for instance, cases have occurred in which authorities have subpoenaed confidential findings against the researchers' will (Breen-Smyth 2020; Carroll and Knerr 1975; Lowman and Palys 2000). Accordingly, researchers must conduct due diligence as to the legal situation regarding incidental findings in the sites in which they collect data. A template has been made available on the COVINFORM consortium cloud.

6.3.4 Measures to protect and support research participants

Each partner will prepare a list of local organisations capable of providing support to research participants in need, including local organisations capable of providing:

- Medical support
- Psychosocial support
- Legal support
- Women's and children's services
- Services specific to particular vulnerable groups studied by the partner (e.g. migrants)

If a partner strongly suspects they will encounter research participants in need of support, they are encouraged to make outreach to such organisations ahead of the research. The list should be prepared in a language the participant can understand. A template has been made available on the COVINFORM consortium cloud.

6.3.5 Measures to protect and support researchers

While it is highly unlikely that researchers will face negative consequences as a result of taking part in the research, the Ethics Board has discussed and prepared for the possibility. In addition to screening research sites for potential safety hazards, each partner will identify resources for researchers, including references to organisations capable of providing medical and psychosocial support, women's and children's services, and legal assistance. A template has been made available on the COVINFORM consortium cloud.

7 Recruiting

Throughout the research, the partners will draw upon networks of contacts built over the course of their experience in order to expedite recruitment. These networks will vary partner by partner, but include national and local governments, international organisations, CSOs, universities, fieldwork institutes and recruiting agencies, other public and private research institutions, and private individuals. Sampling may also utilise snowball (expert purposive) sampling, based on the professional networks and contacts. Contact will always be carried out in a GDPR-compliant manner.

In the case of some vulnerable groups, contact will mainly be made through actors who work directly with or have other close relationships within the relevant communities, i.e. "gatekeepers." Gatekeepers will vary per research site, but may include NGO/NPOs, welfare organisations, advocacy organisations, or faith-based communities. Law enforcement agencies or comparable actors will not be relied upon as gatekeepers. Gatekeepers will be provided with copies of the project information sheet and informed consent form in advance. Gatekeepers will not be coerced, manipulated, or unduly induced financially or otherwise to recruit interviewees. Interviewees' personal data nor their research data will ever be transferred to gatekeepers (or any other persons outside the consortium).

A best-effort basis will be made to reach potential participants who face access barriers that might normally prevent their voices from being heard: socioeconomic disadvantages, physical disabilities, etc. If potential participants with children or other dependents express an interest in participating, a best-effort attempt will be made to arrange for childcare or conduct the interview in a location where the child can be cared for. Interviews shall be conducted in sites that are broadly accessible on an

infrastructural level (e.g. close to public transit) as well as a structural level (e.g. availability of wheelchair ramps). Careful consideration will be given as to how to compensate participants for any expenses they incur, and/or for their time and intellectual labour, balancing the potential of “undue inducements” to compromise the voluntariness of consent and the reliability of the data collected (European Commission Directorate-General for Research 2010, p. 38-39) against the fact that economic precarity can “[exclude certain groups] from participation in research” (ibid., p. 121), as well as the privilege of the researchers, who are generally compensated for their own participation in “knowledge co-production” (Fedyuk and Zentai 2018; cf. Fry and Dwyer 2001; Head 2009; Russell et al. 2000; Singer and Kulka 2002).

The WP leaders request each partner to give an update on the recruiting procedures they will use once they begin recruiting.

8 Data analysis

As noted in COVINFORM D7.2, the aim of data analysis in qualitative research is to “assemble or reconstruct the data in a meaningful or comprehensible fashion, in a way that is transparent, rigorous and thorough, while remaining ‘true’ to participants’ accounts” (Noble & Smith, 2014, p.1). Given the project’s grounding in intersectionality theory and complex adaptive systems theory, the data analysis must furthermore seek to situate participants’ accounts within their structural and systemic context (Hunter, 2014). In some cases, quantitative secondary data on socioeconomic and socio-ecological conditions in the research sites will be drawn upon to enrich the analytical context, especially when qualitative findings do not adequately illustrate the “complex issues of power, social structure, inequity, and social justice” (Grace, 2014, pg. 7).

The research findings will first be reported by the partners conducting the interviews using standardised templates. As partners conduct their research in their local languages, the qualitative thematic analysis to prepare these templates will be conducted by the partners that collected the data. Thematic analysis consists of identifying, organizing and analysing the key themes of the data set. It typically involves familiarisation with the transcripts/data, generating initial codes, searching for themes, redefining themes, and developing conclusions. Qualitative data analysis software packages such as NVivo may support such data analysis.

The template for CSO representative findings is attached in Annex 3.

After the initial findings templates are completed, selected transcripts will also be translated into English and iteratively coded by the WP6 and WP7 leads. The selection of transcripts will be determined by the WP6 and WP7 leads’ scientific publication plans. The exact coding procedure will be defined together with the WP7 lead, but will consist of a first cycle with the aim of identifying and categorising significant passages, followed by a second cycle with the aim of “classifying, prioritizing, integrating, synthesizing, abstracting, conceptualizing, and theory building” (Saldaña, 2009, pg. 45).

Comparative analysis of the data collected in the T6.2 research will be conducted in T6.3 and reported in D6.3, which will entail sections addressing the research questions above, along with sections focusing on two key topics that cut across the research questions: 1) Local impacts of governmental responses, including unintended impacts (written by KEMEA); and 2) Voluntary and citizen-led responses (written by AUTRC).

9 Conclusions

WP6 aims to review and describe community structures and stakeholder networks, local implementations and impacts of governmental responses, and voluntary and citizen-led responses in selected sub-national research sites in the 15 project target countries. The research framework outlined in this deliverable will enable the fulfilment of these aims. The data collection instruments presented in this deliverable will be adapted to each research site through consultation with the partners responsible for research, as well as local CSOs and other gatekeeper organisations.

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Annex 1: Second-tier SESF variables and elements of community

SESF first-tier variables	SESF second-tier variables	Elements of community				
		Locus	Sharing	Social ties	Diversity	Joint action
Ecosystem (ECO)	Climate patterns					
	Pollution patterns					
	Flows into and out of SES					
Social, economic, and political settings (S)	Economic development					
	Demographic trends					
	Political stability					
	Other governance systems					
	Markets					
	Media organisations					
	Technology					
Resource systems (RS)	Sector					
	Clarity of system boundaries					
	Size of resource system					
	Human-constructed facilities					
	Productivity of system					
	Equilibrium properties					
	Predictability of system dynamics					
	Storage characteristics					
	Location					
Resource units (RU)	Resource unit mobility					
	Growth or replacement rate					
	Interaction among resource units					
	Economic value					
	Number of units					
	Distinctive characteristics					
	Spatial & temporal distribution					
Governance systems (GS)	Government organisations					
	Non-government organisations					
	Network structure					
	Property-rights systems					

	Operational rules					
	Collective choice rules					
	Constitutional rules					
	Monitoring & sanctioning processes					
Actors (A)	Number of relevant actors					
	Socioeconomic attributes					
	History or past experience					
	Location					
	Leadership/entrepreneurship					
	Norms (trust-reciprocity) / social capital					
	Knowledge of SES / mental models					
	Importance of resources (dependence)					
	Technologies available					
Interactions (I)	Harvesting					
	Information sharing					
	Deliberation processes					
	Conflicts					
	Investment activities					
	Lobbying activities					
	Self-organizing activities					
	Networking activities					
	Monitoring activities					
	Evaluative activities					
Outcomes (O)	Social performance measures					
	Ecological performance measures					
	Externalities to other SESs					

Annex 2: CSO representative interview topic guide

Interview preparation

Background & Objectives

COVINFORM WP6 will:

- Review and describe community structures and stakeholder networks, local implementations and impacts of governmental responses, and voluntary and citizen-led responses in selected sub-national research sites in the 15 project target countries;
- Carry out primary empirical research among community-level stakeholders and community members in selected sub-national research sites in 5-10 target countries;
- Perform an in-depth analysis of key dimensions of impact in the project target countries;
- Synthesise research findings on citizen responses and impacts in a complex systems framework and prepare recommendations and other inputs for WP8.

Task 6.2 will design and carry out primary empirical research on community and citizen responses relevant to 10 sub national research sites.

Checklist

Recording device, batteries, and two memory cards

Project information sheet and informed consent form

Cross-WP fieldwork manual

Topic guide (printout)

Notebook

Stimulus material

Other

Please familiarise yourself with the COVINFORM ethics guidelines prior to starting fieldwork.

1. Introduction, warm-up and data protection

Ca. 2 min.

Introduce yourself and confirm that the respondent has read the project information sheet and given informed consent to be interviewed.

Confirm the respondent's personal information.

For languages with formality registers, ask the respondent their formality preference.

Remind the respondent that s/he:

Can choose which questions s/he wants to answer.

Can stop the interview at any time.

Can ask for his/her data to be deleted at any time.

2. Opening question and account

Ca. 5 min.

What does the word “community” mean to you?

Interviewer: Please wait for the respondent's spontaneous response before continuing with prompts or follow-up questions

[Follow-up questions may vary per country, depending on the connotations of “community”: e.g., in German, we may ask about “Gemeinschaftsgefühl” or “Zusammenhalt”]

What do you think when you hear the phrase, “sense of community [Gemeinschaftsgefühl] and togetherness [Zusammenhalt] in times of COVID-19 [in Neukölln]”?

What words and images come to mind?

3. Local baseline conditions and COVID-19 impacts

Ca. 15-20 min.

3.1 The research site before COVID-19

Think back for a moment to 2019. How would you have described [community] to a friend from out of town?

Interviewer: Please wait for the respondent's spontaneous response before continuing with prompts or follow-up questions

Would you call [**community**] rather tight-knit, or rather loose?

Are people in [**community**] rather similar, or very different (e.g., culture, ethnicity, religion, language, lifestyle, values, etc.)?

What are peoples' everyday lives like?

- How are their living conditions?
- How do people get around?
- What are the main events and places where people meet?
- What is important to them in life?
- In what ways does "community" matter to them?

3.2 Vulnerability in the research site

Moving forward to COVID-19: are some people in [community**] especially vulnerable to the pandemic's various impacts?**

Interviewer: Please wait for the respondent's spontaneous response before continuing with prompts or follow-up questions

What people in [**community**] are most at risk of catching COVID-19 or suffering a bad case?

What people in [**community**] are most vulnerable to social and economic impacts of COVID-19?

- For example, ... [**job loss, loneliness, addiction, abuse, misinformation, missing school, etc.**] ... ?
- Why do you think this is?
- You mentioned [**characteristic / activity / etc.**]. Does this impact people's vulnerability?

Where do people turn to for help?

- For example, with ... [**economic precarity, isolation, etc.**] ... ?
- Governmental authorities?
- Community organisations?

- *Informal support structures, like family or co-religionists?*

3.3 CSOs in the research site

What kinds of community organisations are active in [community]?

This can mean many things: for example, ... [charities, NGOs and NPOs, religious centres, youth clubs, social support services, advocacy organisations representing certain groups like women or migrants, etc.] ... ?

What problems and needs does your organisation work to address?

How about [vulnerability elicited in prior section]?

Does your organisation work with other community organisations?

Does your organisation work with governmental authorities or institutions?

3.4 COVID-19 impact timeline

Introduction: Now we'd like to talk about how the pandemic impacted [community], from its start until now. Here is a timeline showing some major milestones in [city/region].

How did [community] change in [month], when COVID-19 guidelines started being introduced, but before the first lockdown?

Interviewer: Please wait for the respondent's spontaneous response before continuing with prompts or follow-up questions

How did the pandemic initially impact your organisation's work?

You mentioned [vulnerabilities elicited in prior section]. How did the pandemic initially affect people's ways of coping with problems like this?

How did [community] change in [month], when the first lockdown was introduced?

How did lockdowns impact your organisation's work?

You mentioned [vulnerabilities elicited prior section]. Did lockdowns or other restrictions have an impact on people's ways of coping with problems like this?

You mentioned that [event / place / etc. elicited in prior section] is important to some people.
How do you think the loss of that affected them?

How did [community] change in [month], when lockdowns ended?

How did the end of lockdowns impact your organisation's work?

You mentioned [vulnerabilities elicited in prior section]. Did the end of lockdowns make things any better?

4. Local COVID-19 responses

Ca. 20-25 min.

4.1 Health and social services

How well have health services addressed the specific needs of [community] during the pandemic?

For example, ... [hospital, clinic, etc.] ... ?

Are there access barriers specific to [community]?

- For example, ... [low awareness, bad image, economic barriers, mobility barriers, cultural or language barriers, etc.] ... ?

What about COVID-19-specific health services, like testing and vaccinations?

How well have social services addressed the specific needs of [community] during the pandemic?

For example, ... [women's shelters, homeless shelters, crisis centres, etc.] ... ?

Are there access barriers specific to [community]?

- For example, ... [low awareness, bad image, economic barriers, mobility barriers, cultural or language barriers, etc.] ... ?

What about services targeting [vulnerability elicited in prior section]?

What roles did the government, community organisations, and residents play in making health and social services available during the pandemic?

Were there gaps in the health and social services offered by the government?

- *How about specifically with regard to vulnerable groups?*
- *Did your organisation or others work to fill these gaps?*

Did your organisation or other community organisations consult with residents?

- *Did some residents make their voices heard more than others?*
- *Was anyone “left out”? Why might this be?*

Are you aware of any self-organised or grassroots responses to COVID-19 in [community]?

- *For example, [... offers to go shopping for people at home, offers to have chats with people suffering from loneliness, etc.] ... ?*

How do you think health and social services in [community] performed in comparison to other places in [country]?

4.2 Risk communications

Do you think people in [community] had access to accurate information and useful recommendations about COVID-19?

How was COVID-19 information communicated in [community]?

- *For example, ... [billboards, mobile clinics, etc.] ... ?*
- *Can you remember a particularly striking example?*

Did the type or frequency of communications change over the course of the pandemic?

Did your community organisation play a role in communicating COVID-19 information or recommendations in [community]?

Was this done in a coordinated or rather spontaneous way?

- *In coordination with the government?*
- *In coordination with other community organisations?*

In your opinion, were the information and recommendations appropriate to the social and cultural context in [community]?

Did any messages seem especially tailored to [community]?

Do you think community organisations or residents were consulted?

Did some people have difficulty acting on the recommendations or following the rules?

How effective were the information and recommendations, overall?

Did they seem to fit the “facts on the ground” at the time?

Were they consistent?

Were they understandable?

Did they succeed in changing people’s behaviour?

Have levels of trust in government in [community] changed, compared with the pre-COVID-19 situation?

4.3 Vaccination campaigns

How would you evaluate the vaccination drive in [community]?

What did you think about the way the authorities communicated about the vaccination campaign?

5. Concluding questions

Ca. 5 min.

Are there any drawbacks on the way the COVID-19 pandemic was managed in [community]?

Knowing what you know now, what would you suggest to public health policy makers if there were a new pandemic?

Can you think of ways in which access to health and social services in [community] could be improved?

How about ways in which coordination between stakeholders, and stakeholder consultation with residents, could be improved?

Thinking back over the pandemic so far, have there been any positive impacts or instances?

Did your organisation learn from its experience and improve its services? Did the public react differently to your organisation?

Did people come together to support each other?

Did people change their behaviours for the better?

Do you think the pandemic has changed [community] in lasting ways?

Interviewer: Please wait for the respondent's spontaneous response before continuing with prompts or follow-up questions

At the start of the interview, you mentioned that [community] is [characteristic elicited in prior section]. Do you think the pandemic has changed that?

Will the changes last?

Are there things you would like to add to the interview, which I didn't ask about?

Thank you and conclusion

Annex 3: CSO representative findings template

WP6: Findings template for interviews with civil society organisation representatives

Please use this template to structure your findings report for the first round of WP6 empirical research findings, to be submitted by **DATE XX**. All findings and illustrative quotes/verbatimims should be in English (i.e. these should be translated for interviews conducted in another language). For questions, please contact James Edwards (SINUS Markt- und Sozialforschung) at jamesrhys.edwards@sinus-institut.de.

1 Information about participants

Provide a summary of the demographic/background information, based on the questions included in the pre-interview question sheet for participant, using the common spreadsheet linked in the Cross-WP Fieldwork Manual at <https://docs.google.com/document/d/1NHeMEDVgZaLI5B3rWHJBceqiNo6-vdt9/edit>

2 Brief summary of each individual interview

Please provide a brief summary (around 200-300 words) of each interview conducted, describing the main insights this interviewee shared. What were the most important and unique findings in each interview?

CSO interview 1: CSO interview 2: CSO interview 3: CSO interview 4: CSO interview 5:
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3 Local baseline conditions and COVID-19 impact timeline

Please summarize the findings relating to local baseline conditions and impacts, based on the subtopics in the topic guide. Try to include an illustrative quote for each bullet point.

- The research site before COVID-19
- Vulnerability in the research site
- CSOs in the research site
- COVID-19 impact timeline
 - Prior to the first lockdowns
 - When the first lockdowns were introduced
 - When the first lockdowns were lifted

4 Local COVID-19 responses

Please summarize the findings relating to COVID-19 responses in the research sites, based on the subtopics in the topic guide. Try to include an illustrative quote for each bullet point.

- Health and social services

- Overall evaluation and gaps
 - Roles of government, community organisations, and residents
 - Comparison to other neighbourhoods
- Risk communications
 - Overall evaluation and gaps
 - Appropriateness to social and cultural context
- Vaccination campaigns
 - Overall evaluation
 - Communication about campaigns

5 Concluding questions

Please summarize the findings relating to concluding evaluations and assessments . Try to include an illustrative quote for each bullet point.

- Drawbacks
- Positive impacts or instances
- Changes to the community