AFTER AND BEYOND COVID-19: HOW TO REBUILD THE RESILIENCE OF THE SAHELIAN REGION FOR A PROSPEROUS AND STABLE FUTURE

Report

Acknowledgement

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Introduction

Considering the African continent, the pandemic crisis is having and will continue to have significant consequences on political stability, economic growth, and social cohesion (Carbone & Casola, 2020). The Sahelian region, in particular, had an already very fragile social, economic and institutional profile well before the pandemic crisis: as a matter of facts, particularly starting from 2010-11, the Sahel has been experiencing a growing instability linked to the spread of jihadist extremism, inter-ethnic violence and institutional fragility, coupled with climate change's very adverse consequences.

Specifically, in Mali major conflicts started from 2012. Despite the presence of an international peace-keeping contingent and a ceasefire signed with Tuareg militia in 2015, the country has never been fully pacified and the fight against jihadist groups has never stopped. In 2012, 2020 and 2021, three coups led to the overthrow of the government in charge for similar reasons: government's inability to stabilize the country and manage inter-ethnic clashes and the presence of Jihadist militia. Growing violence and declining presence of the state led to the emergence of local militia based on ethnic affiliation: this was directly linked to the outbreak of interethnic tensions. Moreover, the growing control of the Malian Army over the political institutions led to a progressive isolation of the country as the international community continues to express concern about the lack of opposition, of civilian representation in the executive branch, and about the ongoing violations of civil rights: as a result, the country is currently under embargo. This chaotic situation led to a sudden change Mali's strategic partnership with a marked weaking of the relations with France (which withdrew from the country in 2022) and a decisive rapprochement with Russia.

The situation in Burkina Faso is somewhat similar. The country is experiencing social and political instability since 2011, when a wave of protest started against the at-that-time ruling leader Blaise Compaoré, who was leading the country since 1998. Protests in 2011 were particularly widespread; they took place in universities, in the capital' streets and among the army, mainly because of the slow economic progress that characterized the country and for the lack of confidence in the regime. To add to the already unstable Burkinabè panorama, jihadist attacks (by the Islamic State and Al-Qaeda) became more common in the country, after the First Libyan Civil War. Compaoré remained in power until 2014, when, on October 31st, he was forced to resigned after unprecedented levels of violence during the protests. After a brief period of a transitional government, Roch Kaborè, from the center-leftist People's Movement for Progress party, won both the 2015 and the 2020 country's general elections. Growing instability led to the spread of local armed self-defense initiatives, initially promoted by the government through the so called VDP Law approved in January 2020[1]. On January 24th, 2022, President Kaboré was ousted in a military coup led by Lieutenant Colonel P.S. Damiba, who became the ad interim president, a fact that led the African Union (AU) to suspend the membership of Burkina Faso. Anti-French sentiments played a role also in this coup, which was the fourth in two years in West Africa, but conversely to Mali, Burkina Faso was not turning to Russia to fill the security gap caused by the gradual withdrawal of French forces. However, also this trend appears to be changing; after 8 months from the putsch led by Colonel Damiba, on September 30th 2022 the country witnessed another coup, this time led by the 34 years-old Captain Ibrahim Traoré, who, conversely to his predecessor, appears to be more open to "other partners in the fight against terrorism" (ISPI, 2022).

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[1] After several jihadist attacks, in January 2020 the Burkina Faso's Parliament adopted the "Volunteers for the defense of the Fatherhood" (VDP) law, which allows the government to mobilize civilian volunteers in the fight against jihadist forces. The impact of this initiative is at least controversial: the widespread of local militia risks to fuel inter-ethnic violence and to weaken the "rule-of law" at the local level (Tisseron, 2021).

This profound political instability in the region, especially in Burkina Faso and Mali, has caused also the deterioration of the relations within the countries of G5 Sahel, which is the institutional framework for coordinating and monitoring regional cooperation on development and security policies, composed by Mauritania, Mali, Burkina Faso, Niger and Chad. Moreover, Italian government institutions, as emerged clearly in the workshop participants (organized in Rome the 29th of September 2022) and in individual interviews with key informants during the research, have highlighted an increased difficulty for the planning of future foreign policy interventions in the region, given such context of the political instability. In addition, the strong anti-French and, more generally, anti-Western sentiments within public opinions of these Countries plays a role in this regard. A similar sense of discouragement was also expressed by some of the civil society organizations present at the workshop, who nevertheless reiterated their willingness and determination to continue intervening in the Sahel area, despite the changed situation.

Moreover, the above-mentioned political turmoil interacts with contexts heavily hit by the already tangible social and economic consequences of climate change (Hummel, 2012). Indeed, climate change, which is particularly severe in the region, by drying out livelihoods, is worsening living conditions for all those people that highly depend on natural resources (which in Sahel are the majority), increasing the likelihood of violence and conflicts over increasingly scarcer resources (Raleigh, 2010). Mali is a particularly illustrative example of the interplay between climate change and conflicts. The Inner Niger river delta has long been an essential source of livelihood for Malian farmers, breeders, and fishermen; however, in recent years, decrease in rainfalls and water scarcity in general have led to numerous land dispute cases (between farmers, farmers and herders, farmers and fishermen). Moreover, conflicts over water resources are one of the main reasons because many people from the Fulani and the Tuareg ethnic groups have joined the jihadist insurrections in northern Mali (Mbayè and Signè, 2021).

Given this fragile and complicated framework, it is not surprising that many scholars and policy makers, already at the very beginning of the Covid19 pandemic, started to warn the public opinion about the alarming impact that the pandemic could have on the African continent, and in the Saheli region (Carbone and Casola, 2020; Di Benedetto and Putoto, 2020; Pambè et al., 2021).

Our report contributes to the discussion, by looking at the effects that the Covid19 pandemic produced in the Sahelian region, with a specific focus on Burkina Faso and Mali. The aim of our work is to give a comprehensive overview of the situation, by proving evidence of how the two countries looked like before the arrival of the pandemic and how they changed during the months after the outbreak. We consider in the analysis several dimensions, which are crucial for a deep understanding of the geopolitical framework of the region. First, we focus on the spread of the virus and on local governments' and of the civil population's responses. Second, we investigate on the effects produced by the virus on the two countries' labour markets and on their employment dynamics, on food security levels, on the access to basic services (including response to vaccination campaigns), on transfers and remittances and on the impact on migration trajectories, withing and outside the region. When possible, we adopt an intersectional study approach, seeking to measure the heterogeneity of the impact on various population groups and to identify the most affected ones (e.g., looking at the differential impact between female and male workers, or between rural and urban households).

Methodology

For the analysis we adopted a mixed-methods approach, using both qualitative and quantitative methodologies. In the first step, we conducted a quantitative analysis of the data collected through the High Frequency Phone Surveys coordinated by the World Bank. The survey covers the living conditions of households and, in particular, allows to monitor the effects of the pandemic on several dimensions as the employment rates, food security and the access to basic services. Secondly, using qualitative methods, we conducted key informant interviews. Then, we triangulated the quantitative results with interviews with key informants from governmental institutions, international organizations, NGOs, and academic scholars, which are experts on these topics. The interviews have been instrumental to explore and qualify specific processes that emerged from the quantitative analysis and, thus, helped to explain the dynamics that characterize the post-covid scenario. In the third and final step, we discussed the results in a pro-active workshop with key stakeholders and key informants organized in Rome the 29th of September 2022.

2.1 Quantitative data

The data we use for the quantitative analysis come from two different sources. The first one, used as baseline in our study, is the 2018/2019 Enquête harmonisée sur les conditions de vie des ménages (EHCVM) surveys; these surveys, collected both in Mali and in Burkina Faso, are nationally representative household surveys conducted within the Programme d'Harmonisation et de Modernisation des enquêtes sur les Conditions de Vie des Ménages (PHMECVM program), a joint program by the World Bank and the West Africa Economic Monetary Union (WAEMU) Commission. The Burkina Faso EHCVM 2018/19 sample covers all regions, with urban and rural areas surveyed in all regions, and is representative for the three strata of Ouagadougou, other urban areas, and rural areas; its total survey sample size is 7010 households – 3149 from urban areas and 3861 from rural areas. The Mali EHCVM 2018/2019 is nationally representative and covers all ten regions and the Bamako district; its survey sample size is 6602 households – 2752 from urban areas and 3850 from rural areas. Surveys in both countries took place in two waves to consider seasonal oscillations; the first wave was fielded between October 2018 and December 2018, while the second wave occurred between April 2019 and July 2019. These surveys provide information at the household level with sections about the food security, nonagricultural enterprises, housing, assets, transfers, shocks, safety nets, agricultural lands, inputs and crops, livestock, farming equipment, fishing, and relative poverty. The survey also collected individual-level information on sociodemographic characteristics of household members, education, health, employment, individual nonjob-related revenues, savings, and food consumption.

Starting from this rich set of information about the situation in the two West African countries before the Covid19 outbreak, we merge information about the impact of the pandemic from the Covid19 Panel High-Frequency Phone Survey of Household (HFPS); these are surveys collected in Mali and in Burkina Faso respectively by the Mali National Statistical Office, Institut de la Statistique (INSTAT) and by the Institut National de la Statistique et la demographie (INSD) in partnership with the World Bank. The HFPS have been conducted using the cell phone numbers of household members collected during the EHCVM, thereby re-contacting a sub-sample of the households interviewed in the baseline surveys. At each round, the sampled households have been asked a set of core questions on the key channels through which individuals and households are expected to be affected by the Covid19-related restrictions. The core questionnaire is complemented by questions on selected topics that rotate each round. Below, in Table 1, we can see how many

households have been interviewed in each of the five rounds in Mali (from May 2020 to October 2020) and in each of the eleven rounds in Burkina Faso (collected from June 2020 to June 2021).

Table 1: Description of the numerosity of various rounds of the EHCVM and HFPS data

	Mali – Period	Mali – HH interviewed	Burkina Faso – Period	Burkina Faso – HH interviewed
Baseline	Oct 2018 – July 2019	6602	Oct 2018 – July 2019	7010
Round 1	June 2020	1766	June 2020	1968
Round 2	July 2020	1935	July-August 2020	2037
Round 3	August 2020	1899	September-October 2020	2012
Round 4	September 2020	1797	November 2020	2011
Round 5	October 2020	1766	December 2020	1944
Round 6			January 2021	1985
Round 7			February 2021	1979
Round 8			March 2021	1967
Round 9			April 2021	1971
Round 10			May 2021	1946
Round 11			June 2021	1924

Source: Authors' elaboration on HFPS data

Therefore, this kind of data permits a deep analysis of the socio-economic situation of the two West African countries before and after the pandemic outbreak. We structure the investigation by firstly developing an analysis at the general level, and then unpacking some results along the gender and the milieu dimensions, to discover potential asymmetries and heterogeneities between men and women and in the rural-urban divide. Moreover, the panel nature of these dataset allows us to analyse the evolution of the pandemic-induced changes.

> **BOX 1– High Frequency Monitoring Surveys**
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> With the Covid19 pandemic outbreak, the possibility of implementing evidence-based policy measures that are fundamental to save lives and protect livelihoods has become essential, especially in very fragile contexts where the pandemic adds up to a wide set of already-existing weaknesses.
> However, for the very nature of the Covid19 pandemic, the imposition of social distance measures all over the world, that are vital to contrast the diffusion of the virus, severely limited the possibility of collecting data through traditional in-person interviews for population-based surveys. For this reason, the World Bank Group opted for collecting phone surveys data to monitor the effects of the pandemic, very suited for these emergency circumstances, as they do not require face-to-face interactions and are at low cost. Indeed, the **High-frequency phone surveys on Covid19** initiative was thought as a response by the World Bank Group to the sudden need for timely, policy-relevant, population-representative data and information about the evolution of the pandemic's socio-economic impact.
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> Of course, there are some drawbacks associated with the use of phone-collected data (World Bank, 2020): first, there is a severe problem of selection bias, as the HFPS can be collected only from the population sub-group that owns a mobile phone. Secondly, there are non-response biases (that often worsen as the survey rounds increase), thirdly, especially in low-income countries there is a high heterogeneity in mobile phone coverage, and lastly, interviewers have limited possibility for verifying answers' accuracy.

Despite these drawbacks, the initiative has been very successful; for Africa, thanks to the financial and technical support of the Living Standards Measurement Study (LSMS), between April 2020 and June 2021, 61 monthly survey rounds have been conducted, across 7 countries (Burkina Faso, Ethiopia, Malawi, Mali, Nigeria, Uganda, and Tanzania), reaching over 119,000 interviewed (Gourlay et al., 2021).

2.2 Qualitative data

Quantitative results have been complemented and triangulated with interviews with key informants from government institutions, civil society, international organizations, NGOs, and the academia. Six interviewees were selected based on their expertise and on their first-hand knowledge: in some cases, the selection was based on the knowledge of the context while in other cases was more based on the direct knowledge of public health issues. The interviews have been functional to explore and qualify the specific processes underlying the socio-economic changes in the different contexts and, therefore, to explain the dynamics characterizing the post-covid scenario. Experts' privacy has been preserved by avoiding direct linkage between the specific contents included in the report and the experts' names. Here below we provide a list of the key informants we interviewed, together with their affiliation and a short biography (Table 2).

Table 2: Key informants

Key Informant	Organization	Type of organization	Short bio
Edoardo Baldaro (M)	REPI Institute	Academia	He is a FNRS post-doc research fellow at the REPI Institute of the Université Libre de Bruxelles and Gerda Henkel Foundation Research Fellow at the Sant'Anna School of Advanced Studies (Pisa, Italy). He holds a PhD from the Institute of Human and Social Sciences of the Scuola Normale Superiore in Florence, Italy (2017). From 2017 to 2020, he was postdoctoral fellow in Politics and International Relations at the University of Naples 'L'Orientale'. He published in various academic journals, including, Security Dialogue, Small Wars & Insurgencies, Nationalities Papers, and The International Spectator, and his main areas of expertise are critical security studies, peace and conflict studies, and African politics and security.
Claudia Berlendis Kassogué (F)	AICS Mali Programme Officer	Government	She holds a degree in Literature and Philosophy from 'Sapienza' University in Rome, with a degree in Etruscology and Italic Archaeology. She holds a second level master's degree in "Countering international terrorism: radicalization, cyber-jihad, intelligence and strategic communication" and is currently enrolled in a second level master's degree in "Cooperation and Geopolitics".

			Since 1992, she has been active in archaeological research in Italy and abroad until 2009 when she moved to Mali. From 2009 to the present, she has overseen coordinating development and emergency cooperation projects for several Italian civil society organizations in Mali and, since 2019, she has been coordinating the activities of the Italian Agency for Development Cooperation (AICS) in the Dakar office in Bamako.
Lazare Charles Djibode (M)	PLAN International	Civil society organization	He has more than 10 years international experience in addressing development issues in Africa and a strong academic background. He took different leadership roles for more than 20 years, gaining experience in long-term and emergencies/relief programming. He also extensively worked with child centered organizations. He has been Monitoring and Evaluation Advisor for the Ministry of Agriculture of Benin.
Giovanni Putoto (M)	Doctors with Africa CUAMM	Civil society organization	He is a medical doctor with a public health background, trained in Italy and United Kingdom. He has extensive experience with Doctors with Africa Cuamm as Project Coordinator, including six years in Uganda from 1988, followed by three years in Rwanda. Since 2011, he has been Head of planning department of Doctors with Africa Cuamm. Dr. Putoto's main areas of expertise include Maternal, Neo-natal and Child Health (MNCH) and health system strengthening; Rehabilitation of health systems in post-conflict settings; HIV, TB and Malaria control. He is also the Head of Operational Research at Doctors with Africa CUAMM and he has published extensively on various subjects.
Marco Tiberti (M)	World Bank	International organization	He is an economist in the Data Production and Methods Unit of the World Bank's Development Data Group. His primary research interests are in the areas of agricultural and rural development, as well as data collection methods and measurement issues. As a member of the Living Standard Measurement Study (LSMS) team, he coordinates LSMS project activities in West Africa. He is an expert in survey instrument development, field operations, and data quality control and analysis of household and agricultural surveys.

Elena Tognotti (F)	Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ)	Government	She is the technical assistant in GIZ's Green Innovation Centres programme. Graduated in Forestry, with a master's degree in Development of Emerging Countries, since 1989 she has been working in international cooperation, in the management and evaluation of sustainable rural development projects, environmental protection and in projects for income-generating activities. Her field experience is varied: Burkina Faso, Guinea, Mali, Niger, Senegal, Somalia, Jordan, North-East Syria, North Macedonia, Colombia

Moreover, on September 29th, 2022, as already mentioned, we organized a workshop held in hybrid format at the Ministry of Foreign Affairs, where we presented the first results obtained by the quantitative and qualitative analysis mentioned above. The workshop was attended by around 20 academics, members of civil society organizations and representatives from the Ministry of Foreign Affairs, and which aimed both to offer an initial dissemination of the research results and to receive further comments and feedback on the work carried out. In this definitive version of the report, we included also comments and contributions received by the workshop's participants.

Results

3.1 Malian and Burkinabe socio-demographic context before the pandemic

According to the analyzed data (presented in Table 3 below), Burkina Faso and Mali share a similar socio-demographic profile: we are dealing with two countries with a young, mainly rural, population where achievements in the field of education and literacy are still not sufficient. the average age in both countries is extremely low; indeed, the Burkinabe population is on average 24 years old and the Malian population 23 years old; another pattern that the two countries share is that most of the population lives in rural areas (61.20% in Mali and 60.86% in Burkina). In Mali almost the entire population is Muslim (96.80%); in Burkina more than the 60% is Muslim, but the presence of the Christian religion is considerable (27.73%). School attainment in both countries is quite low, since less than half of the population in both Mali and Burkina has attended formal school by 2018. Consequently, literacy rate is quite low: less than one interviewee out of two can read a text in French both in Mali and in Burkina Faso.

Table 3: Socio-demographic characteristics of the dataset

	Burkina Faso	Mali
Male	47.77%	49.24%
Female	52.23%	50.76%
Age	23.45	24.34
Urban	38.80%	39.14%
Rural	61.20%	60.86%
Muslim	63.98%	96.80%
Christian	27.73%	2.02%
Other religion	8.29%	1.18%
Indigenous	99.66%	99.62%
Attended formal school	42.92%	37.51%
Able to read in French	40.62%	32.37%

Source: Authors' elaboration on EHCVM data.

Besides these general socio-economic characteristics extracted from the EHCVM, the overall pre-Covid19 picture of the two countries presents substantial fragilities: in 2019 Burkina Faso and Mali ranked respectively 182nd and 184th out of 189 countries in terms of human development with a Human Development Index of 0.452 and 0.434 (UNDP, 2020)[2]. UNDP elaborated the Multidimensional Poverty Index (MPI) both for Mali and Burkina Faso by building on the procedure proposed by Alkire and Jahan (2018)[3]. Mali (with estimates based on surveys from the 2015-2020 period) shows an index of 0.376 (with an average for developing countries of 0.105); 44.7% of total population living in severe multidimensional poverty conditions (with an average for developing countries for that period of 9.5%) and 50.3% of total population living with less than PPP 1.90$ per day (average of 14.8%). Burkina Faso (with estimates based on surveys from 2009-2014) presents a MPI of 0.523; it also shows 65.3% of total population living in severe multidimensional poverty and 43.8% of total population living with less than PPP 1.90$ per day (UNDP, 2021).

As monetary poverty is concerned, the Malian INSTAT finds that in Mali poverty remains a predominantly rural phenomenon. Indeed, the proportion of households living below the poverty line in this area is 50.5% compared to 18.2% in urban areas (INSTAT, 2020). As we can see from Figure 1 below, the analysis of poverty by region shows that the regions of Sikasso (59.0%), Mopti (57.1%) and Ségou (52.6%) are more affected by poverty than the other regions, followed by Timbuktu (46.8%) and Gao (42.7%).

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[2] The Human Development Index (HDI) is a measure that considers three dimensions which are key for the human development. These three dimensions are: having a long and healthy life, having access to education, and having a decent standard of living. It is a scale from 0 to 1, with 1 being the highest level of development.
[3] The Multidimensional Poverty Index (MPI) is published by the UNDP's Human Development Report Office and tracks poverty along 10 dimensions, by considering both the number of people that are deprived in one dimension and the intensity of their deprivation: child mortality, nutrition, years of schooling, school enrollment, water, sanitation, electricity, cooking fuel, type of floor and assets.

Figure 1: Poverty incidence by region, Mali
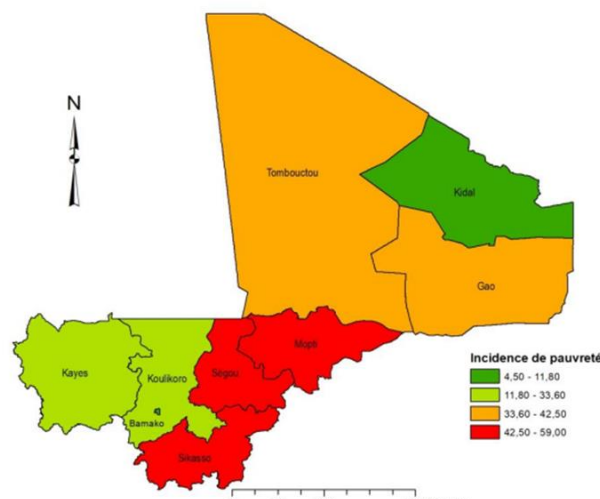
Source: INSTAT (2020)

Similarly, INSD (2019) finds that also in Burkina Faso moderate poverty (i.e., people living with less than PPP 3.20$ per day) is mostly a rural phenomenon (78% vs. 20.5% in urban areas). At the regional level, as we can grasp from Figure 2), the region with the highest degree of monetary poverty is the Nord region (70.9%), followed by the Centre-Nord region (60.8%), Centre-Ouest (53.9%), Centre-Est (53.3%), Boucle du Mouhoun (50.6%), Est (45.1%), Sud-Ouest (45.0%), Sahel (44.2%), Plateau-Central (34.2%), Hauts-Bassins (34.0%), Centre-Sud (26.1%), Cascades (20.6%), Centre (5.3%). To note that five regions out of thirteen display an incidence of poverty of more than 50%, meaning that at least one in two people in these regions is in income poverty.

Figure 2: Poverty incidence by region, Burkina Faso
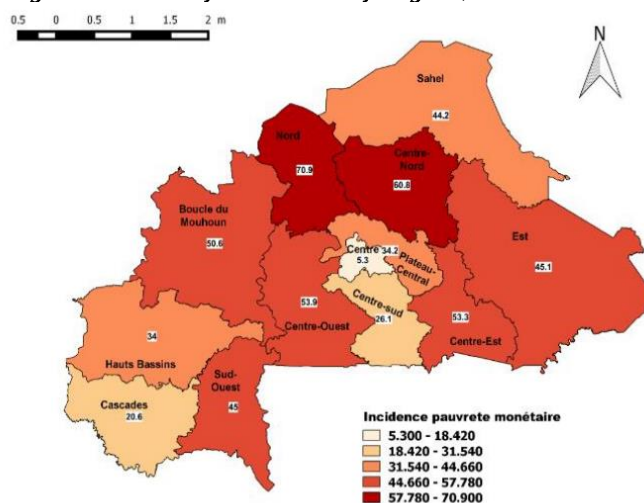
Source: INSD (2019)

3.2 Covid19 general impact and governmental response

On December 31ˢᵗ, 2019, Chinese authorities acknowledged that the first Covid19 infections occurred in Wuhan (Hubei province, China). On March 11ᵗʰ, 2020, the World Health Organization (WHO) officially categorized the Covid19 outbreak as a pandemic with consequences reaching potentially every country in the world. On March 18th, as preventative measures, Mali suspended all flights traveling from affected countries to Mali, closed all

public schools, and banned large public gatherings. On March 25th, the country confirmed its first two positive Covid19 infections. The next day, upon two additional positive Covid19 infections, Mali's then President Ibrahim Boubacar Keita declared a state of emergency and implemented a curfew from 9 p.m. to 5 a.m. hoping to limit the spread of the virus. Just two days later, on March 28th, after 14 additional positive cases, Mali witnessed its first Covid19 related death (Adjognon et al., 2021; WHO, 2020).

In Burkina Faso, the first two cases were registered on March 9th, 2020, and on March 18th the first fatality was confirmed. On March 20th, 40 total cases were confirmed and on the same day, President Kaboré closed air and land borders and imposed a nationwide curfew to curb the spread of the pandemic (Gongo, 2020). Moreover, in the following weeks, the Burkinabe government imposed other Covid19 containing measures, such as the ban on any grouping of more than 50 people, school closure and the closure of many workplaces, eateries, and places of entertainment.

As we can see from Figure 3a, the two countries followed a similar pattern as the total Covid19 cases are regarded, while by looking at Figure 3b Mali suffered greater death losses compared to Burkina Faso, especially after the beginning of 2021. However, if compared to the world average (Figure 3c), the total death tolls for the Covid19 pandemic for the two countries appear to be definitely low. Low mortality rates in these two countries can be due to several dynamics which peculiar to the Sub-Saharan context: first, the median age of the region is 18.7 years, a fact that, as we have learned in these months, helps to contract less severe forms of Covid19; second, climate and climate-related cultural differences (as the habit of spending more time outdoors) can help limiting the spread of the Covid19; also, the limited mobility capacity (especially in rural areas) might have prevented or limited the diffusion of the virus in more remoted areas (Di Benedetto and Putoto, 2020).

However, these data need to be discussed in the light of the huge gaps in both in data availability and in data quality. First, the lack of devices for testing and the low diagnostic capacity, especially during the first waves, massively contributes to the underestimation of Covid19 cases. To give an idea, according to one key informant, in Mali swabs for Covid19 were for a long time only administered in Bamako; according to another informant they were administrated mainly to travelers, or only in cases where Covid19 was really suspected. This feature is not only a peculiarity of Burkina Faso and Mali, but it is shared by other countries in the Sahel region; indeed, according to another key informant "*South Sudan has done about 300,000 tests since the beginning of the pandemic, which in Italy can be done in one day*". Second, the lack of fully affordable master data collection infrastructures prevents from providing an indirect estimate of the excess mortality linked to Covid19. To give you an idea about the magnitude of the problem, according to WHO's analyses of excess mortality[4], mortality data were not available for 85 out of 194 countries: 41 of them were in Africa (WHO, 2021). In other words, even assuming that mortality rates in Africa have been truly lower than in other parts of the world, there was and still is a massive problem of underreporting of deaths. Indeed, according to the WHO estimates about excessive mortality "the gap between estimated excess mortality and reported Covid19 deaths is much larger in sub-Saharan Africa (and also in South-Asia) than in other regions" (WHO, 2021).

In addition to the issue of underreporting, we have to take into account that the Covid19 estimates might also suffer from misreporting bias; indeed, most likely the more accurate data come from urban areas, that are

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[4] Excessive mortality is a very informative indicator in times of crises, like the Covid-10 pandemic, especially for countries with a weak mortality reporting system. It refers to the number of deaths from all causes measured during a crisis, above what could be observed under 'normal' conditions. It is calculated by taking the number of people who died from any cause, in a given period, and comparing it with a historical baseline from previous years in a period which was not affected by the crises. To give an idea of the degree of underestimation of the pandemic impact in the African continent, according to WHO estimated referred by one of the workshop participants, in South Africa, which is the African country with one of the more reliable mortality reporting systems, there were around 100,000 notified deaths for Covid19, which is the highest rate of Covid19 deaths among African countries. However, during the same period, the country experienced also 350,000 excessive deaths.

closer to higher-quality and better-equipped health facilities; moreover, the better-off and educated classes might tend to get more tested, because they have more resources and cultural means to access to this service: therefore, this issue might introduce in the analysis a further distortive bias and not just an underestimation one. Overall, a weak diagnostic and surveillance capacity together with a weak capacity of detecting co-morbidities translates into a lower reliability of the health data of these countries. This factor, coupled with the lack of timeliness in the transmission of data to international bodies, are however a fact in themselves, which is highly informative about the weakness of the health infrastructure and its lack of capillarity.

Figure 3a: Total cases per one million population of Covid-19 in Burkina Faso and Mali.
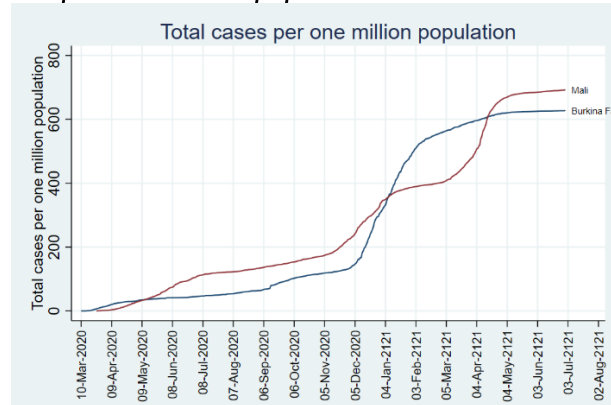
Figure 3b: Total deaths per one million population for Covid-19 in Burkina Faso and Mali.

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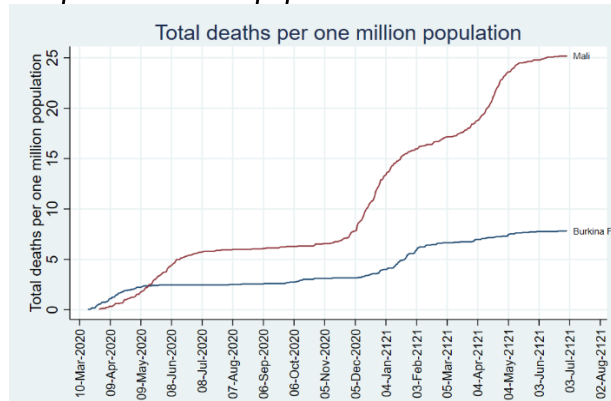
Figure 3c: Total deaths per one million population for Covid-19 in Burkina Faso, Mali and globally.

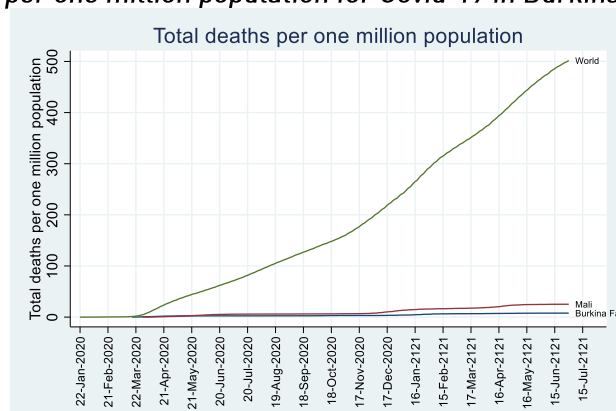Nonetheless, despite the officially reported low mortality rates (especially if we compare them with Europe's rates), various countermeasures have been put in place by Saheli governments to mitigate the spread of the virus. In this regard, we should remember that the region was recently hit by other public health emergencies, like the Ebola outbreak in 2014 that spread in many countries of sub-Saharan Africa, Mali included. During that outbreak, governments already imposed stringency measures as curfew, isolation, and containment measures, which therefore were not new neither to governments nor to the civil population.

In this regard, we must highlight the interconnection that might exist between the restrictive measures put in place by governments to limit the spread of the Covid19 and the political and internal security situation. In fact, some of these measures (in particular the curfews and the ban on gatherings) are of course key in order to limit the circulation of the virus, but also, they are key measures that governments might adopt to impose regimes of control and repression over their population. And this sentiment is at the basis of the civil population's discontent that has grown both in Mali and Burkina Faso, and that we will explore in more detail in section 3.3.

Looking to some facts and figures about the restriction measures, we exploit the information made available by the Oxford Covid19 Government's Response Tracker (Hale et al., 2020), and specifically at the Stringency Index[6], which is a measure that records the strictness of 'lockdown style' policies that primarily limit people's behavior. From Figure 4 we can see how Burkina Faso implemented stricter measures at the beginning of the outbreak (March-April 2020) and then it relaxed them along the year, while Mali was a little softer in March 2020, but it maintained more restrictions all along the year.

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[5] Our World in Data is a project created by Max Roser and the University of Oxford. The project offers opensource data and publishes research and analysis on several themes such as global health, distribution of wealth, violence, rights, conflicts, education, and climate change. For Covid19, the project publishes opensource data on contagion, vaccination, and mortality rates, using mainly as a source the Johns Hopkins University CSSE COVID-19 Database. Data from Our World in Data are used as trustful source of information by WHO, international organization and peer-reviewed journals.
[6] The Stringency Index is a composite measure of nine metrics, calculated by the Oxford Coronavirus Government Response Tracker (OxCGRT), to have a comparable index for all countries about the severity of the measures put in place by governments to limit the spread of the Covid19. The nine metrics used to calculate the Stringency Index are: school closures; workplace closures; cancellation of public events; restrictions on public gatherings; closures of public transport; stay-at-home requirements; public information campaigns; restrictions on internal movements and international travel controls.

Figure 4: Covid-19 Stringency Index for Burkina Faso and Mali
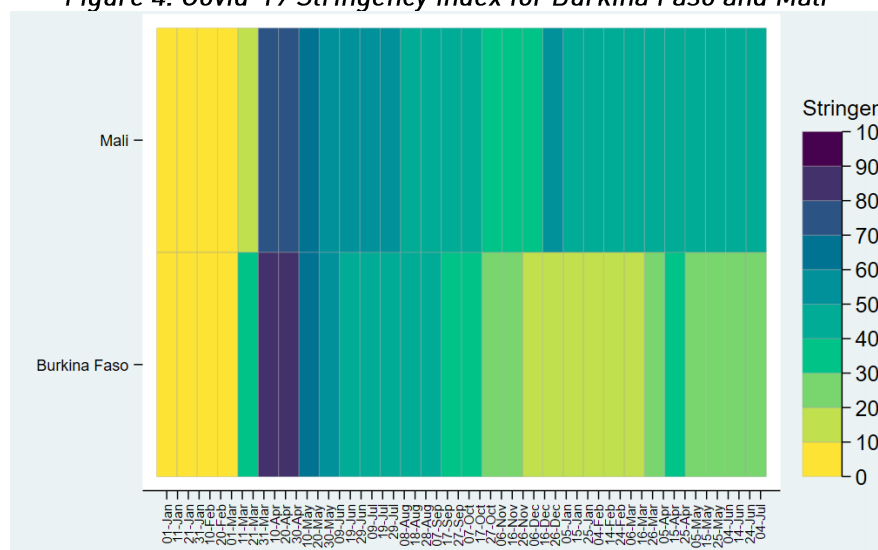
Source: Authors' elaboration on Our World in Data.

Second, we can see how neither Mali nor Burkina have implemented strict workplace closures during the pandemic (Figure 5). From what emerges from the Oxford Covid19 Government Response Tracker, Burkina Faso implemented workplace closure for some workers only in March-April 2020 and then left all open from April 2020 onwards, while Mali implemented some closures for workers both in the first wave (March-April 2020) and from December 2020 onwards, while it left only the recommendation for the period in between. Naturally, all this evidence needs to be read considering the reality of the Malian and Burkinabe contexts: we are dealing with economies where informal enterprises and agricultural households account for a large part the national production of goods and services and employ the largest part of workers[7]. This evidence alone is enough to make it clear that in such contexts the containment measures for Covid19 might have had a very low level of enforceability; if almost the entire workforce of the two countries is employed in the informal sector, governments would unlikely have much room for maneuver in enforcing the measures.

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[7] To give an idea, the share of informal employment over total employment is in Mali 92.7% and in Burkina Faso 94.6% (ILO, 2018).

Figure 5: Index of workplace closures for Burkina Faso and Mali
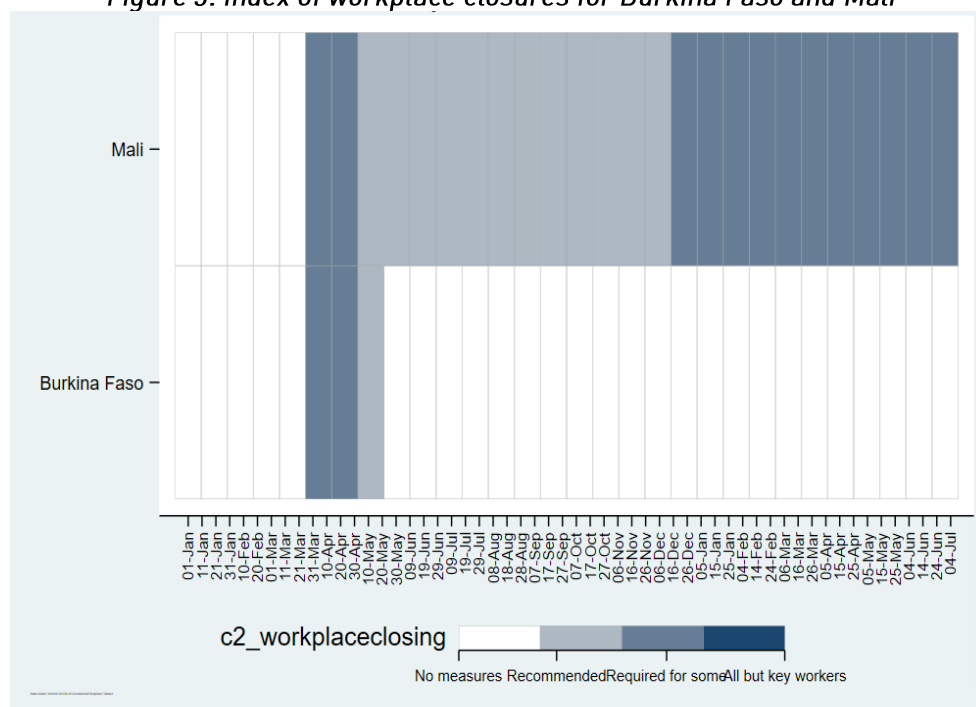
Source: Authors' elaboration on Our World in Data.

3.3 Perception of Covid19

The HFPSs, with a dedicated section, offer the possibility to analyse the perception of the interviewed population about the Covid19 pandemic. As expected, more than 99% of the interviewed in both Mali and Burkina Faso reported of having heard about coronavirus. Generally speaking the level of awareness about virtuous behaviours is high (often above 90%) with a similar scenario both in Mali and Burkina Faso, Interestingly, there is a small but statistically significant difference about the awareness and knowledge about what to do and how to behave during the pandemic between people living in urban areas and people living in rural areas (Table 4), in both Mali and Burkina Faso, with people living in urban area being more aware than their counterparts[8], while do not detect significant differences between male and female respondents.

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[8] Tables 4 and 5 are constructed as follows: in columns 1-4 we report the percentage of respondents that answered affirmatively to each question in urban and rural areas, for both Burkina Faso and Mali: that is, in these columns we report the level of each variable. In columns 5 and 6 we report instead for each variable the urban-rural gap, which is the difference between the percentage estimated in urban areas minus the percentage estimated in rural areas. For each dimension, given their distributions, we also estimate if this difference is statistically significant with a t-test; the stars represent the p-value of each difference, namely * $p<0.1$, ** $p<0.05$, ***$p<0.01$.

Table 4: To your knowledge, what measures should be taken to reduce the risk of contracting Covid19?

Measure	Urban		Rural		Urban Rural Gap	
	BFA	MLI	BFA	MLI	BFA	MLI
Wash your hands	0.97	0.99	0.95	0.97	0.02***	0.02***
Avoid phisical contact	0.93	0.94	0.90	0.88	0.03***	0.06***
Use mask and gloves	0.97	0.97	0.95	0.93	0.02***	0.04***
Avoid travelling	0.82	0.92	0.80	0.84	0.02***	0.08***
Stay-at-home	0.78	0.94	0.78	0.91	0.00	0.03***
Avoid gatherings	0.90	0.94	0.87	0.89	0.03***	0.05***
Keep 1m of distance	0.89	0.88	0.86	0.77	0.03***	0.11***
Do not touch your face	0.78	//	0.74	//	0.04***	//

* $p<0.1$, ** $p<0.05$, *** $p<0.01$
Source: Authors' elaboration on HFPS data.

Notwithstanding the relevance of the awareness about which individual behaviours are likely to reduce the risk of contagion, the real opportunity to put in practice these measures have to be considered in the light of the limits of the context: as rightly underlined by OECD (2020, p.11) *"basic measures such as handwashing are not effective when over one-third of West Africans have no handwashing facility at home, [...] and social distancing is also complex on a continent experiencing the fastest urban growth in the world, where two to three generations often live under the same roof, and where poor sanitary conditions generally prevail"*.

To check for it, we report in Table 5 below the percentage of respondents that answered to have put in practice some of the measures to limit the contagion (i.e., handwashing, avoiding shaking hands, avoid gatherings with more than 10 people and cancelling travels if not strictly necessary). Looking at the figures, measures as handwashing and avoiding shaking hands have been more followed than avoiding gathering and cancelling travels, which means that in general, measures that do not directly impact on one's daily life have been followed more. Furthermore, we can detect a significant urban-rural gap in these dimensions as well, with people living in urban areas that tend to have adopted more antiCovid19 measures.

When we look at the adoption of anti-Covid19 regulations by civil population in Burkina Faso and Mali, we cannot fail to consider the socio-cultural characterization of these countries. Indeed, in both Mali and Burkina Faso, community plays a fundamental role in the lives of individuals and the choices they make. Thus, restrictions such as the inability to gather together, to visit loved ones or other members of the community, or the inability to adopt gestures that are part of the community life's rituals, may have been poorly digested and poorly adopted by many.

Table 5: Do you put in practice antiCovid19 measures?

Measure	Urban		Rural		Urban Rural Gap	
	BFA	MLI	BFA	MLI	BFA	MLI
Wash your hands	0.85	0.93	0.79	0.89	0.06***	0.04***
Avoid shaking hands	0.66	0.86	0.61	0.8	0.05***	0.06***
Avoid gatherings	0.61	0.77	0.58	0.76	0.03***	0
Cancelled travels	//	0.52	//	0.52	//	0

* $p<0.1$, ** $p<0.05$, *** $p<0.01$
Source: Authors' elaboration on HFPS data.

Likewise, we see a similar pattern of this urban-rural gap if we look at the measures put in place by governments to reduce the spread of the virus; especially in Burkina Faso, for all the different measures in Table 6 below, we can see how people living in urban areas are more likely to report that the local authorities have put in place measures to contain the spread of the Covid19 than people living in rural areas[9]. Moreover, we have to note that in general, at least for what concern these self-reported data, restriction measures appear to have been put in place by the Burkinabè governments more than by the Malian authorities.

Table 6: What measures have the government or local authorities taken to reduce the spread of the virus in your locality/region? (self-reported)

Measure	Urban		Rural		Urban Rural Gap	
	BFA	MLI	BFA	MLI	BFA	MLI
Tell people to stay at home	0.24	0.30	0.21	0.22	0.03***	0.08***
Restricting travel within the country	0.31	0.15	0.26	0.15	0.05***	-0.00
Restricting travel abroad	0.29	0.11	0.25	0.11	0.04***	0.00
School and university closure	0.57	0.45	0.52	0.42	0.05***	0.03***
Confinement	0.55	0.66	0.44	0.52	0.11***	0.14***
Closure of all non-essential activities	0.21	0.15	0.16	0.10	0.05***	0.05***
Closure of markets. restaurant and bars	0.68	//	0.58	//	0.10***	//
Closure of places of worship	0.63	0.00	0.56	0.00	0.07***	-0.00
Quarantine of affected cities	0.27	0.05	0.14	0.02	0.13***	0.03***
Airport closure	0.33	0.07	0.22	0.07	0.11***	-0.00
Prohibition of grouping of more than 50	0.63	0.10&	0.60	0.18	0.03***	-0.08***

* $p<0.1$, ** $p<0.05$, ***$p<0.01$
Source: Authors' elaboration on HFPS data.

Interestingly, as pointed out by one key informant, we have to consider how the effective presence of the State in many of the Sahel countries is mainly in urban contexts. In countries like Burkina Faso and Mali, the coercive capacity of governments is effectively limited to urban contexts, while the rest of the territory is controlled indirectly, through the village chiefs, mayors, with evident repercussions both from the point of view of services provided and from the point of view of enforcement capacity. So, this obviously also has repercussions on the restrictions imposed and on the information campaign; there are areas (north of Mali, centre of Mali, north-west of Burkina) where armed militias or jihadist groups are the ones in real charge, therefore the higher or lower severity of lockdowns and containment measures depends very much on their administration.

It is remarkably interesting what emerges from the interviews with locals from Mali, Burkina Faso, and Niger conducted by Lyammouri and El Mquirmi (pag. 5, 2020): "*Awareness campaigns were implemented by national and traditional authorities, mostly through local radio stations every night using local dialects and languages. Despite these efforts, most people refuse to believe in the existence of Covid19. […] Interviewees pointed out that it is difficult to believe in the existence of Covid19 since no family members or friends or neighbors are or have been directly affected by the virus. Interviewees all expressed more concern about security, access to food, water, and health services*". Indeed, we must consider that, in addition to scepticism due to the relatively low Covid19-related mortality in the Sahel region, the imposition of containment measures could have

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[9] To note here that we don't have data on the stringency of containment measures disaggregated at the sub-national level from official reports. Therefore, we rely on self-reported information by respondents about the imposition of measures to control the spread of the virus. This information come from asking to respondents if the government told people to stay at home, if it restricted travel within the country, travel abroad, if it imposed school and university closure, confinement, closure of all non-essential activities, closure of markets, restaurant and bars, closure of places of worship, quarantine of affected cities, airport closure and prohibition of grouping of more than 50.

dramatic socio-economic consequences. This is perfectly in line with what reported by two of the interviewed key informants, who underlined that long-lasting closure of markets and other workplaces were not sustainable for the survival of the population particularly in rural areas. Not surprisingly, many of the measures taken by national government found opposition from the local population. *"In Burkina Faso, the closure of markets on March 25 was strongly opposed by merchants and, following growing tensions, the government decided on April 20 to re-open the markets in Ouagadougou and Bobo-Dioulasso, the largest cities in the country. One week later, many merchants took the streets to demand the reopening of other markets in the country"* Lyammouri and El Mquirmi (pag. 4, 2020). Also, findings from OECD (2020) point to the same direction, in that *"lockdowns and market closures are difficult in a region where preventing people from going to work could jeopardize their survival"* OECD (pag. 11, 2020).

At the same time, as it was also highlighted by one key informant, the presence of conflicts might have been used by local authorities and governments as an excuse to impose oppressive and repressive measures especially in areas with social tensions, which have not very much to do with the pandemic containment. One proof of this sentiment can be found also in the open letter signed by more than 90 African intellectuals to African leaders: the signatories denounce how the adoption of securitarian containment measures like the ones implemented in the Global North had tremendous repercussions especially for those whose survival depends on informal activities. They also reported concerns about violation of human rights related to the enforcement of those measures. To cite their words *"adopting the all-securitarian model of "containment" of northern countries—often without much care to specific contexts—many African countries have imposed a brutal lockdown upon their populations; here and there, violation of curfew measures has been met with police violence. If such containment measures have appeased the middle classes shielded from crowded living conditions with some having the possibility to work from home, they have proved punitive and disruptive for those whose survival depends on informal activities"* (Zevounou, Niang and Sylla, 2020).

Consequently, as a response to this authoritarian drift of the ruling classes, the civil discontent together with mass mobilizations and society polarization increased in many African countries, also because *"this form of social containment has immediately brought back to the memory of the citizens the coups, the terrorist attacks and, more generally, the latent insecurity perpetrated by the cyclical crises – food, climate, migration or terrorist – managed by governments as an instrument of control and repression"* (De Georgio, 2020).

This appears to be especially true for the contexts of Burkina Faso and Mali, as mentioned above, given the persistent security problems that continue to affect the two countries in the last decade; since the change of regime in Libya in 2011 and the consequent uprising in Mali one year later, the situation has increasingly degenerated, especially from 2018 (NRC, 2022). The lack of state control in more remote areas has been key for the proliferation of autonomous armed forces, that today almost substituted to the central state in ruling those zones. We try to investigate the correlation between measures imposed by governments to limit the spread of the virus and conflicts, we exploit information about the intensity of conflicts available from the ACLED database.

BOX 2 – ACLED Database

The Armed Conflict Location & Event Data Project (ACLED) is a data collection, analysis, and crisis mapping project. ACLED collects information about the dates, authors, locations, fatalities, and types of all reported political violence and protest events around the world and makes both data and analysis available for public download.
It was created by Prof. Raleigh, professor of Political Violence and Geography at the University of Sussex as part of her PhD thesis in 2005 and since 2014, ACLED operates as a non-profit, non-governmental organization in the U.S.

Now ACLED collects information covering the entire world and publishes data on conflicts with weekly updates; by the time writing, ACLED has been able to record more than one million events around the world. For Burkina Faso and Mali, ACLED provides data on battles, explosions, remote violence, violence against civilians, protests, and riots, also reporting the number of fatalities; all events are geolocated (with administrative region and geographical coordinates), the author of the attack is reported and for each event the source(s) of the information (newspapers, social media) are specified.

Below we provide two maps at the province level for Burkina Faso and Mali that we created plotting data on fatalities from the ACLED database. In Figures 6 and 7 we plot the total number of fatalities over 100,000 population by province and cercles (which corresponds to the second administrative level respectively in Burkina Faso and Mali) from June 2019 to December 2021. Already from the this first representation, it is evident how fatalities (that can be used as a proxy for conflicts and clashes) tend to be concentrated in certain areas; they mostly took place in the north of Burkina Faso and in the north and center of Mali.
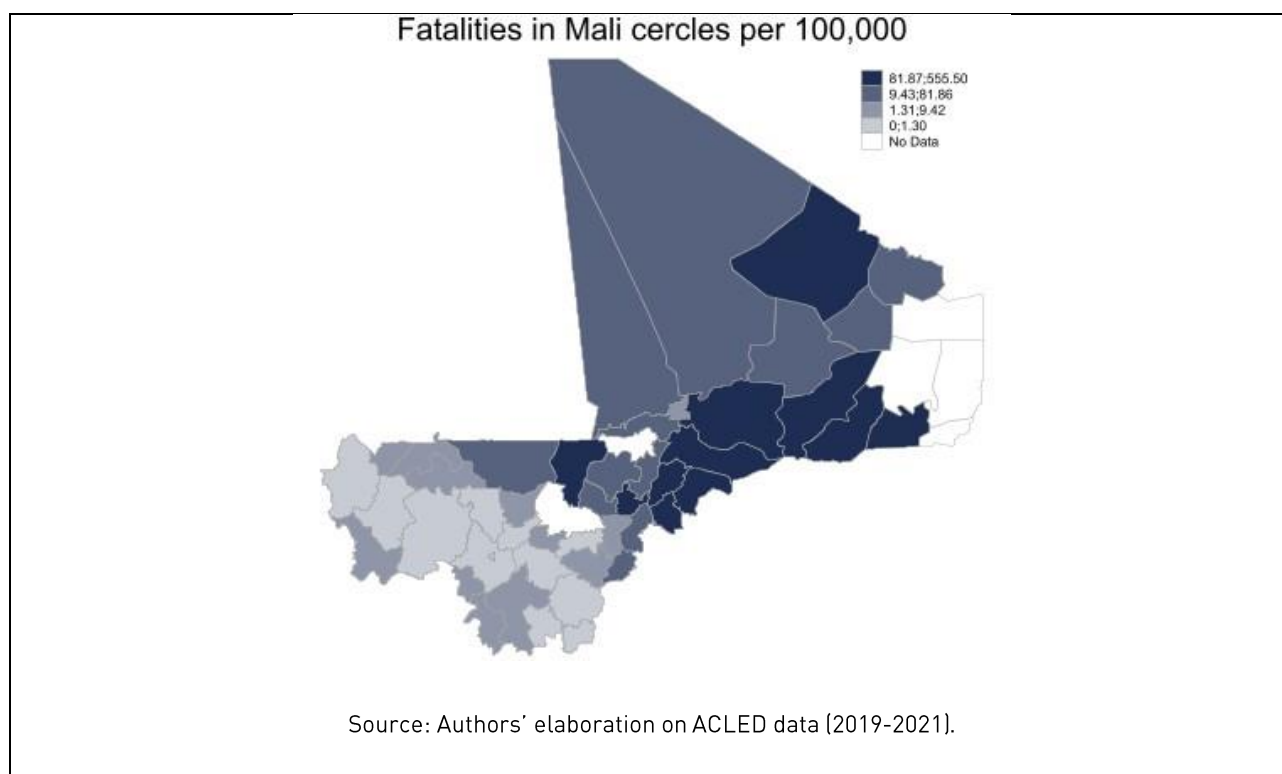
Figure 6: Fatalities in Burkina Faso at 2nd administrative level
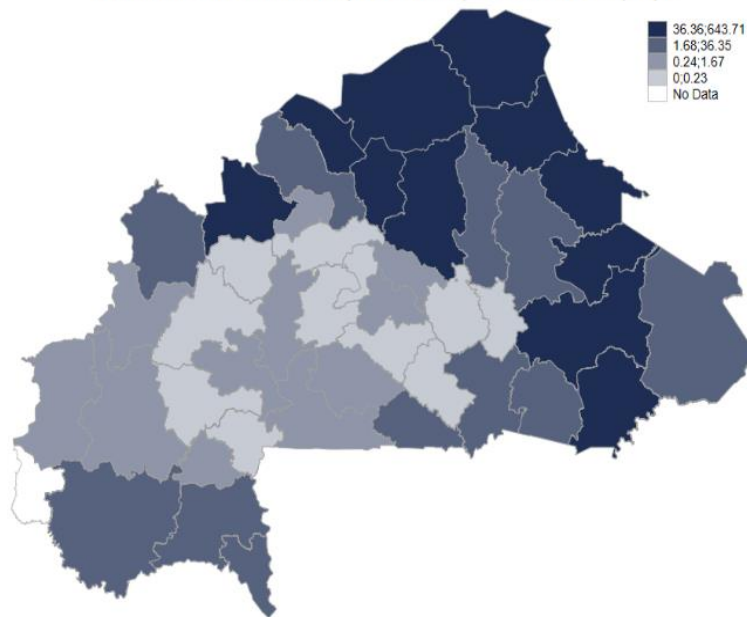
Source: Authors' elaboration on ACLED data (2019-2021).

Figure 7: Fatalities in Mali by 2nd administrative level

Source: Authors' elaboration on ACLED data (2019-2021).

When studying the correlation between conflicts and the degree of stringency of anti-Covid19 containment measures, potentially we can have to opposite effects:

- "Opportunity-to-control" effect: it might be that the state exploits the emergency caused by Covid19 to impose more stringent measures in those areas where the security problems are harder and where its enforcement capacity is particularly weak.
- "Lack-of-control" effect: we have already mentioned that there are zones, (north of Mali, centre of Mali, north-west of Burkina) where armed militias or jihadist groups detain the real power; therefore, the severity of lockdowns and containment measures depends very much on their administration, rather than the one of the central governments.

To test this relationship, without any claim of causality, we investigate the correlation between the number of fatalities and the measures imposed by governments within the same areas[10]. We use the total number of fatalities over 100,000 inhabitants as a proxy of the intensity of conflicts. Figure 8 shows the two scatter plots we obtained. While for Burkina Faso we find a positive and significant correlation (0.46***) between fatalities and the severity of measures imposed by the Burkinabe authorities (meaning that in areas where conflicts are more frequent, Covid19 measures have been less imposed), this does not apply for Mali, where the correlation we estimate is not significant (-0.13). However, we have to note that this difference might be due to the different aggregation level available for the government measures' imposition between the two countries from the

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[10] We constructed the fatality measure by computing the total of all fatalities that took place in each province (or region for Mali) and dividing it for the total population of the administrative zone in 2019 (expressed in 100,000 inhabitants). For the indicator about the measures imposed by governments, since the Stringency index is not available at the sub-national level for Burkina Faso and Mali, we use the information available from the HFPS, that we showed in Table 6 above. They are the self-reported information by respondents about their perception of the imposition of measures to control the spread of the virus. Specifically, the HFPSs ask whether the local authorities: tell people to stay at home, restrict travel within the country, restrict travel abroad, impose school and university closure, confinement, closure of all non-essential activities, closure of markets, restaurant and bars, closure of places of worship, quarantine of affected cities, airport closure, prohibition of grouping of more than 50. The index is an unweighted average of all these dimensions. Population data come from the 2019 National Population Census for Burkina Faso and for Mali from the 2011 National Population Census.

HFPS; indeed, if in Burkina Faso we have information about antiCovid19 measures up to the second administrative level (province), in Mali we have information only up to the first administrative level (region).
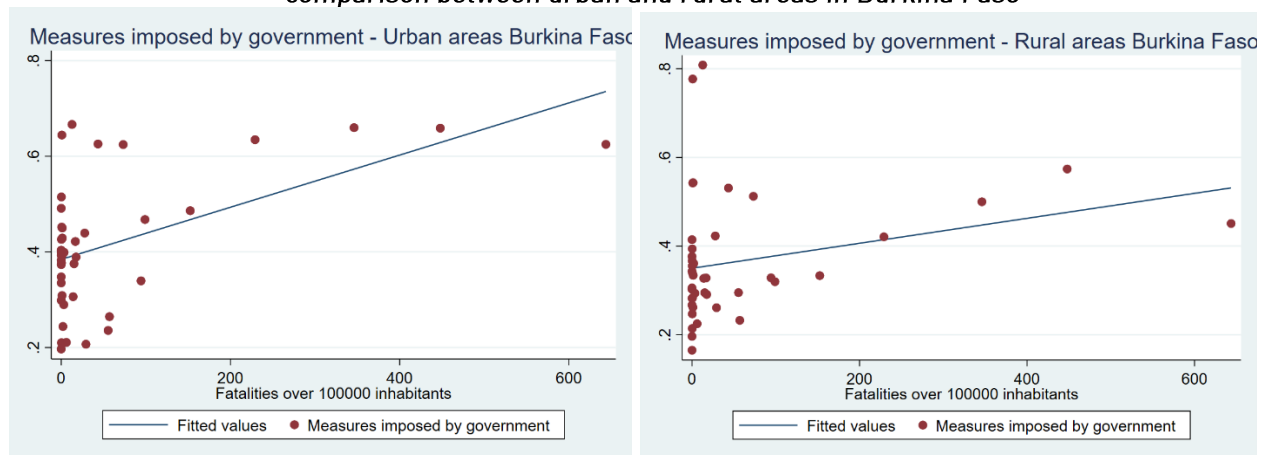
Figure 8: Scatter plot between fatalities and antiCovid19 measures imposed by governments
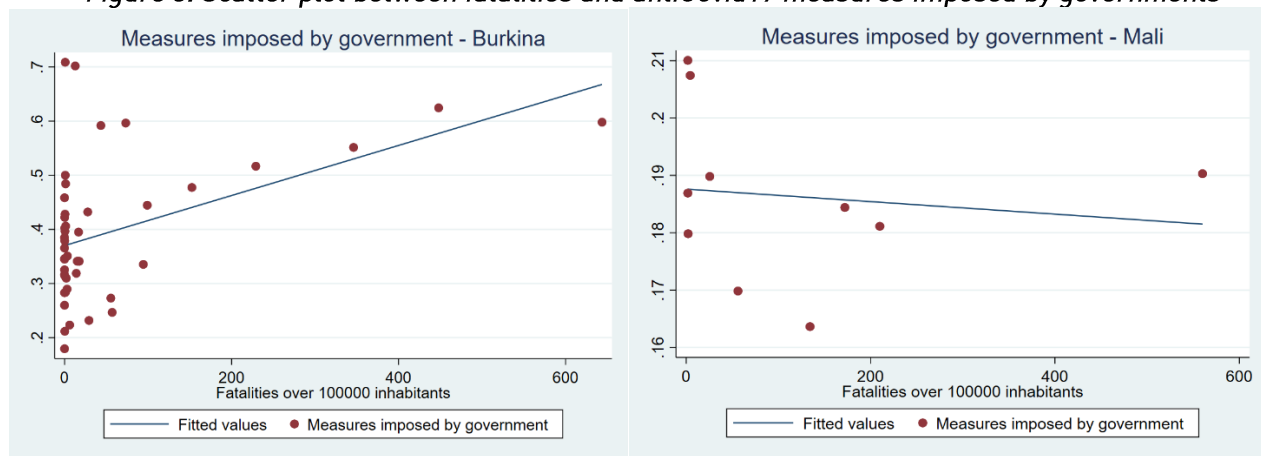
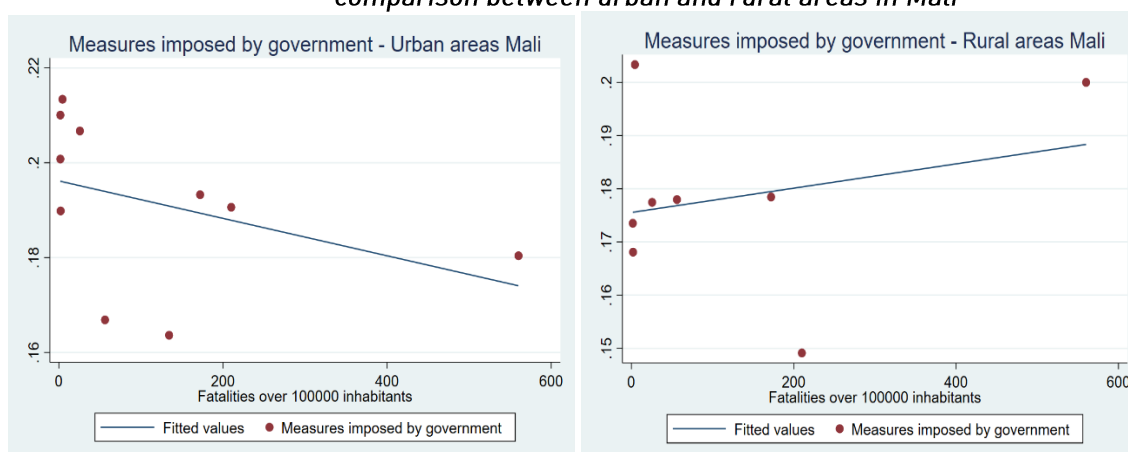Source: Authors' elaboration on ACLED and HFPS data.

We also unpack this relationship to check whether there are differences in urban versus rural areas. In Burkina Faso (Figure 9) this relationship holds in both the two type of zones, with the statistically significant correlation coefficient being exactly twice as high in urban than in rural areas (0.52*** vs. 0.26***). The picture is different for Mali (as we can see in Figure 10 below), where the relationship changes direction in urban areas (where zone with more fatalities have experienced less antiCovid19 measures impositions), while it continues to be positive in rural areas, although not significant in the two sub-groups. All in all, according to the data and to these preliminary analyses, the "opportunity-to-control" effect in Burkina Faso while no significant relation is detected for Mali.

Figure 9: Scatter plot between fatalities and antiCovid19 measures imposed by governments – A comparison between urban and rural areas in Burkina Faso

Source: Authors' elaboration on ACLED and HFPS data.

Figure 10: Scatter plot between fatalities and antiCovid19 measures imposed by governments – A comparison between urban and rural areas in Mali

Source: Authors' elaboration on ACLED and HFPS data.

Given this evidence, we tried to go a step further and study what are the determinants that push civilian populations to adopt or not to adopt containment measures imposed by their governments. This kind of analysis makes sense both to study what happened during the Covid19 pandemic, but also and above all to understand the underlying dynamics of this type of phenomena, to facilitate the identification of the priority areas where to intervene in case of future potential threats to public health systems.

Specifically, we investigate what drives the difference between how much people know about antiCovid19 measures and how much people put these measures into practice, and we put this difference in relation with socio-demographic and economic characteristics of the interviewed, of their households and of the context they live, as represented by the following cross-sectional, individual-level equation:

$$Y = Socioeconomic\ characteristics + Conflicts + Trust\ in\ community + Satisfaction\ to\ authorities + Risk\ perspection + Shock + Measures\ knowledge$$

Where our dependent variable Y is the difference between the degree of knowledge of individuals of all the antiCovid19 measures that should be taken to reduce the risk of contracting the virus (those listed in Table 4 above) minus the degree of adoption of those measures (listed in Table 5). It means the distance between what one knows and what one puts into practice. We regress our dependant variable Y on a set of socio-economic characteristics, such as sex of the respondent, her age, whether the respondent had access to formal education, to electricity and water and whether she lives in urban or rural areas. Plus, we exploited the wide variety of information provided by the HFPS to: 1) create an indicator about respondents' perceptions of the severity of conflicts in the areas where they live (Conflicts), 2) include in the analysis the level of respondents' trust in their communities (Trust in community) (3) analyze the effect of satisfaction towards countries' governmental authorities (Satisfaction governments) 4) estimate the effect on the adoption of prevention measures of the general perceived risk (Risk perception) and 5) the effect of shocks experienced by the household, such as death or disability of an active adult household member or the loss of employment, since the start of the pandemic (Shocks).

We run this regression only for Burkina Faso, given the greater availability of data and we repeat the same regressions with data at Round 2, Round 4 and Round 8, both to check the robustness of our results and to detect potential changes over time. We clustered standard errors at the household level.

VARIABLES	(Round 2) Degree of knowledge and degree of adoption	(Round 4) y	(Round 8) y
Sex	0.03	0.02	-0.02
	(0.03)	(0.03)	(0.03)
Age	0.00	0.00	0.00
	(0.00)	(0.00)	(0.00)
Formal education	0.09*	0.08*	0.11**
	(0.05)	(0.05)	(0.05)
Water	0.08	-0.04	-0.12
	(0.12)	(0.12)	(0.12)
Electricity	0.13	-0.01	0.01
	(0.11)	(0.11)	(0.12)
Urban	-0.22**	0.06	-0.08
	(0.11)	(0.10)	(0.11)
Conflicts	0.03	0.26***	0.21***
	(0.04)	(0.05)	(0.04)
Trust in community	0.16***	0.23***	0.21***
	(0.04)	(0.05)	(0.05)
Satisfaction government	-0.18**	-0.26***	0.00
	(0.09)	(0.09)	(0.10)
Risk perception	-0.07*	-0.19***	-0.14**
	(0.04)	(0.05)	(0.06)
Measures' knowledge	0.91***	0.86***	0.89***
	(0.05)	(0.03)	(0.07)
Shock	0.05	0.11*	-0.11
	(0.04)	(0.06)	(0.07)
Constant	-0.35*	-0.19	0.03
	(0.19)	(0.18)	(0.24)
Observations	3,580	3,615	3,551
R-squared	0.48	0.59	0.32
Cluster SE	HH level	HH level	HH level

* $p<0.1$, ** $p<0.05$, ***$p<0.01$

Source: Authors' elaboration on HFPS data.

Despite the descriptive nature of this first evidence, there are a few interesting associations that emerge from the regressions: first, receiving formal education seems to widen the distance between what people know about Covid19 containment measures and what people put in practice. This first evidence is quite controversial, as one may be prone to think that the more educated are also the ones less reluctant to trust government measures. However, in the Sahel region, the more educated have been found by other studies to be also more hesitant towards Covid19 vaccines: this may be due to the fact that younger and more educated are more exposed to disinformation on social media and tend to have lightly less favorable views towards vaccines (Africa CDC, 2021; Kanyanda et al., 2021). This low level of trust can generate effects also on the decision about whether to adopt or not Covid19 containment measures.

Furthermore, living in urban areas seems to decrease the distance between what one knows and what one puts into practice, but only in Round 2; in rounds 4 and 8 (estimates in columns 2 and 3) the coefficient loses significance. Here a hypothesis, the validity of which we do not test due to lack of data, could be related to the fact that as the months progressed, awareness and information campaigns concerning Covid19 penetrated from urban to rural areas, thus smoothing out the initial difference.

The presence of conflicts, a higher level of satisfaction towards government authorities and a higher general risk perception are associated with a smaller distance between the degree of knowledge and the implementation of containment measures, while experiencing economic shocks increases it. Interestingly, a higher trust in the community is associated with a higher distance between what one knows and what one do: this evidence, although controversial at first, may be connected with what has been described above, regarding the attachment to one's community; a high sense of belonging and high trust in the community may be counterproductive in cases such as this, where containment measures require precisely a temporary withdrawal from community life and from the social rituals it imposes.

3.4 Employment

According to ILO estimates, in 2019, before the pandemic outbreak, 62,34% of total population in working age (15+) was employed in Burkina Faso, with a significant gap between male and female employment (69.79% of male employment rate vs. 55.14% among women). In Mali in 2019 the 63.91% of total population in working age was employed. In Mali, the gender employment gap was even larger, with an employment rate of 74.82% among men and 53.28% among women. From EHCVM data, we know that, regarding the composition of the workforce, the bulk of the total Burkinabe workforce (95.49%) is employed in private enterprises (both formal and informal), the 1.99% is employed in the public administration and the rest is equally distributed between state-owned enterprises and third sector organisations. In Mali the situation is very similar: in 2019 89.90% of the workforce was employed in the private sector, the 3.18% in the public administration and the rest was employed in state owned enterprises and third sector organisations. As for the sectoral distribution, we can see from Figure 11 and 12 that both Mali and Burkina Faso heavily rely on an agriculture-based economy, which employs both male and female workers (in Burkina female workers in agriculture are more than 70% of total employment, while in Mali both male and female employment in agriculture is more than 40%). Other particularly important sectors are livestock, retailing and personal service activities. Retailing in particular is a key sector for both economies and it employs mainly female workers, a fact that is worth highlighting, especially in light of the closure of many markets and shops as containment measure during the pandemic outbreak.
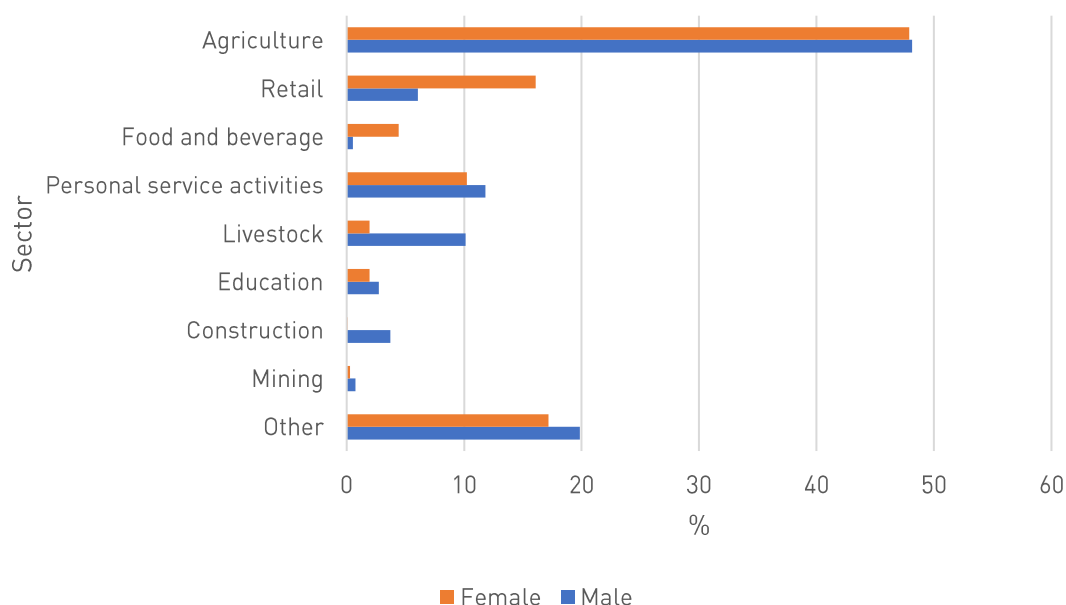
Figure 11: Employment by sector and gender – Burkina Faso
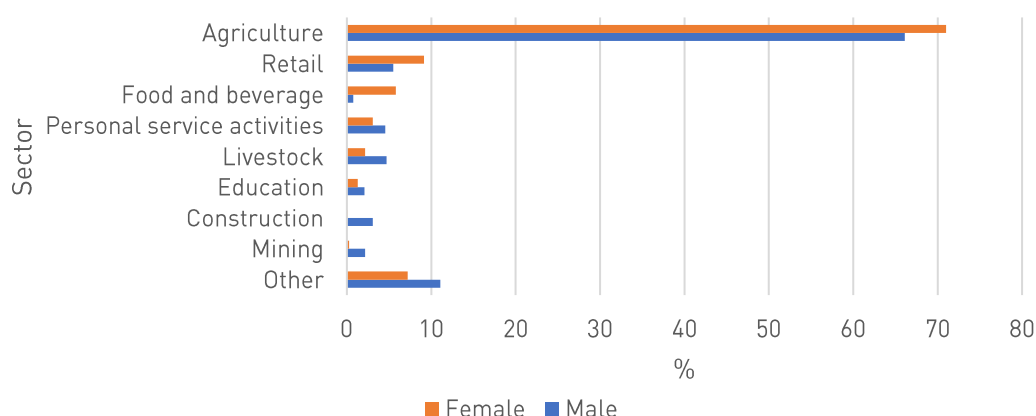
Source: Authors' elaboration on HFPS data.

*Figure 12: Employment by sector and gender – Mali*

Source: Authors' elaboration on HFPS data.

Another important feature of these two economies is the central role played by family businesses. In Mali, during Round 1 41.63% of the interviewed by the HFPS reported to run (or to be employed in) a family business, most of which operates in services (72.04%), while 25.21% operates in the agriculture sector and the 2.74% in manufacturing. The situation looks extremely similar in Burkina Faso, where in Round 1 44.51% of the interviewed reported to work in family businesses, and of the total of all family business, 81.34% works in services, while the 11.42% works in primary sector and the 7.24% in manufacturing.

It is also worth highlighting the seasonal nature of many jobs in Mali and Burkina Faso. In Figure 13 we can see how it is quite usual in the two countries to work only for one part of the year, as many respondents report working 4-6 months per year. Moreover, we can see how this pattern changes consistently between urban and

rural areas; almost 50% of respondents living in urban areas in Burkina and more than 50% in Mali report to have worked the entire year in 2019, while rural population was more likely to be employed 6 lor less months[11].

Figure 13: Number of months worked during last year
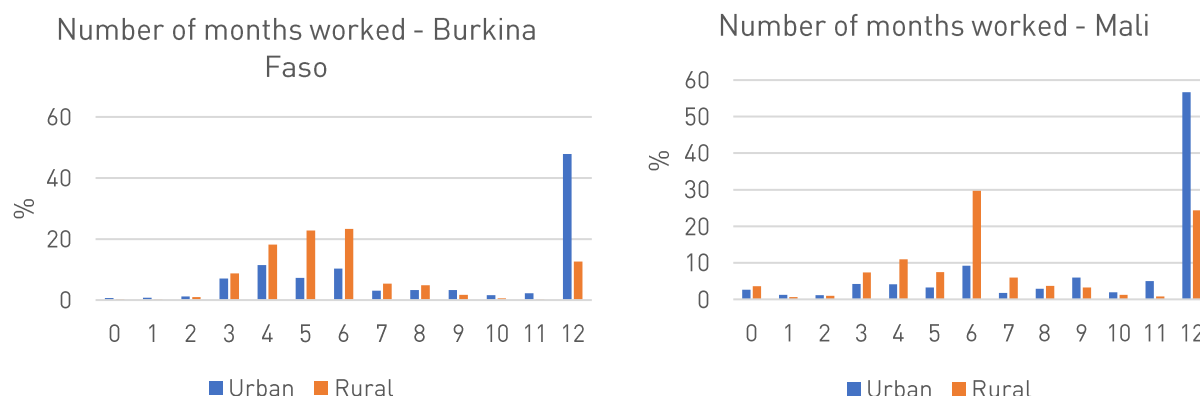
Source: Authors' elaboration on HFPS data.

We then analyse the employment dynamics of the two countries after the pandemic outbreak. If we look at the trend of employment rates[12] over the period of our analysis, we can see how Mali did not experience any sudden drop in its employment level, at least for the three available survey waves: on the contrary, there is a slight improvement during the summer, nor it showed big differences across gender (Figure 14). Interestingly, if we unpack this dimension by sector, it is possible to notice a certain degree of heterogeneity. Indeed, for the three rounds for which we have data, agriculture is the sector that suffered the most, with less than the 50% of workers that have been able to work, while the situation appears to be better for industry and services[13].

Concerning Burkina Faso, we can see that, if we look to the months immediately after the pandemic outbreak the country on average displays higher employment rates than Mali. Furthermore, the greater availability of data (we have 11 waves for Burkina Faso compared to the 5 for Mali) allows us to a get a clearer picture of what was happening in Burkinabè economy after the Covid19 arrival: first, from Figure 15 we can detect a certain degree of seasonality in the employment trajectory, with employment rates that increase until November 2020, then decrease in the following 3-4 months, and then recover and grow back again. This is in line also with what explained by one key informant, about the tendency of many workers to migrate to urban areas in winter because there are fewer opportunities in rural areas and then to come back to their villages during the rainy season when the cultural season starts. Second, from Figure 16 we can grasp how this the seasonal variation in employment levels is mainly due to the weight of the agricultural sector and to the seasonal dynamic that this sector follows. Third, the comparison between the levels from June 2020 and from June 2021 seems to suggest some kind of impact in the spring/summer of the first wave of the pandemic (employments rates in June 2021 were substantially higher than employment rates recorded in June 2020). It is then worth underlying that the data does not identify any particular gender-related asymmetry at this stage.

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[11] Unfortunately, from the EHCVM we cannot extract information about which are months when it is more likely to find a job.
[12] Employment rates are calculated as the number of people that report to have worked at least 1 hour in the last week, over the total number of people interviewed in working age, i.e., that are 15 years old or more.
[13] Note that this last graph only refers to family enterprises, not to all workers, because the data about workers' sectors in the Mali dataset contained too many missing values.

Figure 14: Have you worked during last week? By gender and by sector Mali

Have you worked during last week?

Have you workerd during last week?
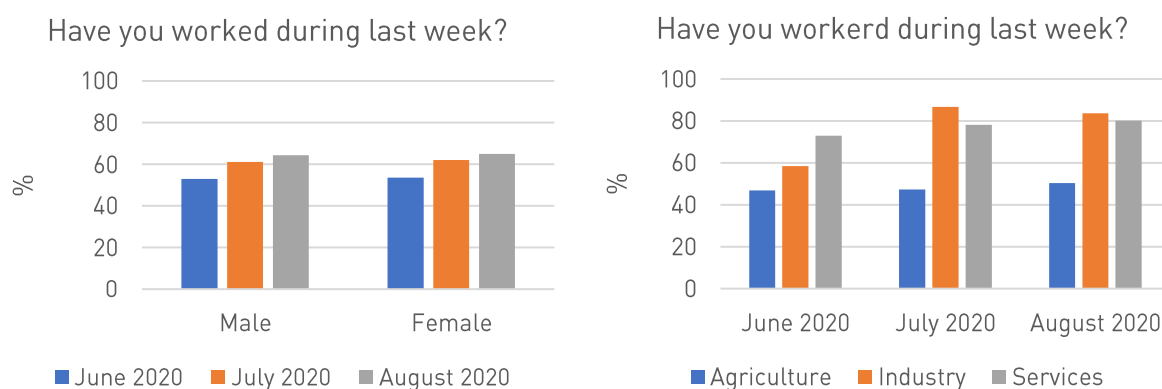
Source: Authors' elaboration on HFPS data.

Figure 15: Have you worked during last week? By gender – Burkina Faso
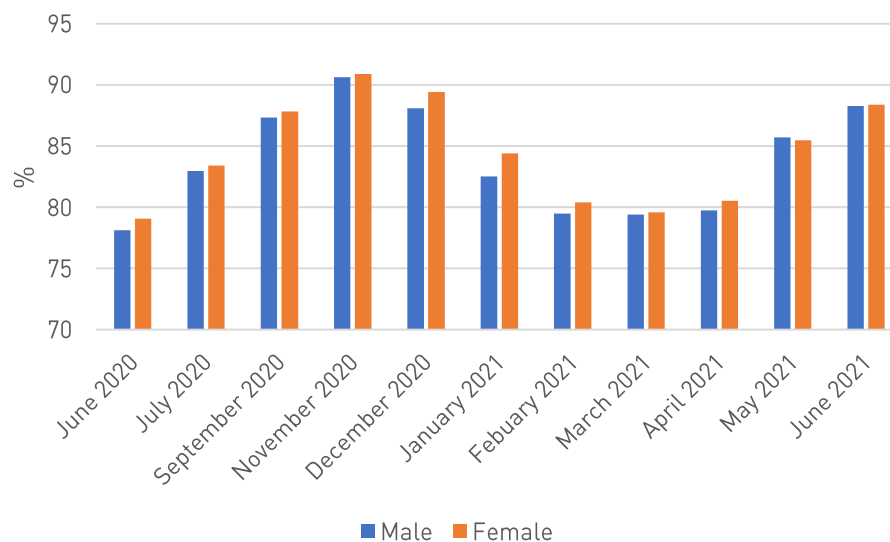
Source: Authors' elaboration on HFPS data.

Figure 16: Have you worked during last week? By sector – Burkina Faso

Source: Authors' elaboration on HFPS data.

In general, in Mali workplace closures seems not have been a major issue. Indeed, in Round 1 only the 10.35% of the total interviewed have reported to haven't been able to go their workplace, a percentage that even decreased in Round 2 (5.04%) and Round 3 (3.93%), figures that are quite consistent to what shown in the previous section about the ineffe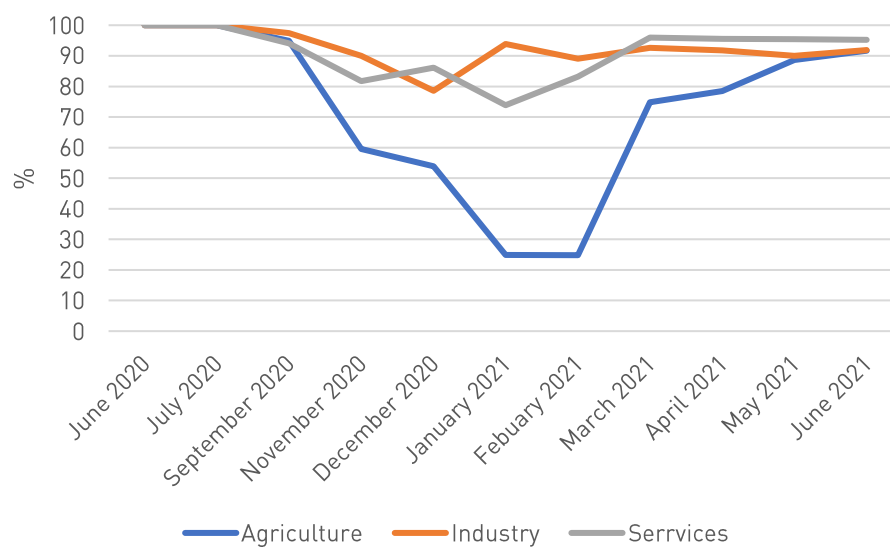ctiveness and short duration of workplace closure as containment measures. Coherently, as we can grasp from Figure 17, for those who weren't able to go to their usual workplace, Covid19 has been indicated as the major cause for not being able to work a bit after the completion of Round 3, while during and after Round 4, the main reason has been for the seasonal nature of most jobs. Importantly, it must be highlighted that, as on one hand the Covid19 restrictions on workplaces have not been very stringent in Mali, on the other, as it emerges from Table 8 below, almost one third of workers that were not able to go to their workplace did not receive any salary or payment at all, highlighting a lack of income compensation measures for emergency situations such as this.

Figure 17: Reason to stop working – Mali
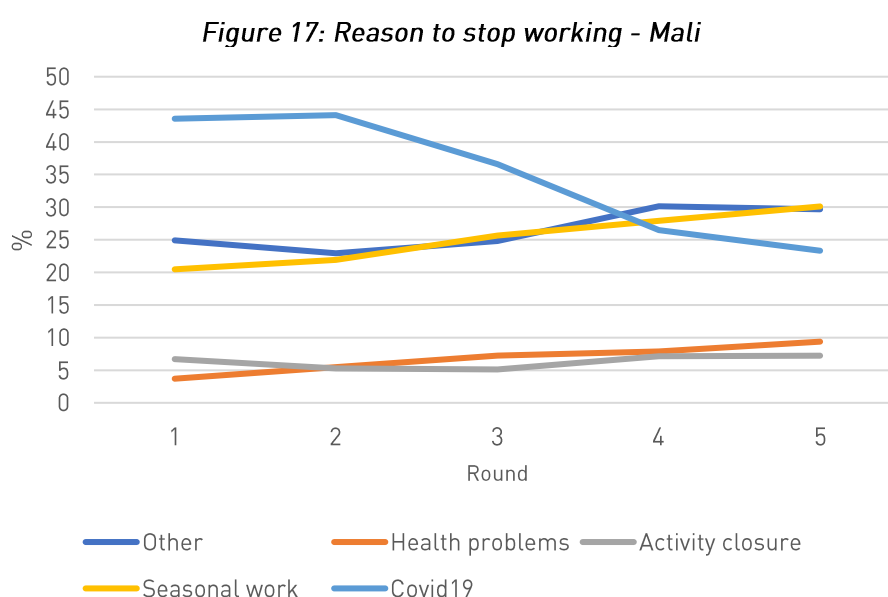
Source: Authors' elaboration on HFPS data.

Table 8: Have you been paid even if you could not go to work? Mali

Have you been paid even if you could not go to work?	June 2020	July 2020	August 2020	Total
Fully paid	58.64%	70.18%	62.77%	62.91%
Partially paid	10.47%	6.14%	0.00%	6.77%
Not paid	30.89%	23.68%	37.23%	30.33%
Total	100.00	100.00	100.00	100.00

Source: Authors' elaboration on HFPS data.

On the employer's side, when we look at which sectors suffer the most during the pandemic, we can see a high degree of heterogeneity: indeed, in Mali, during Round 3, 44.19% of total family business operating in services reported revenues lower than usual, against for instance the 20.06% of the ones operating in agriculture (Table 9). Interestingly (in Figure 18), and linked to what mentioned above, when asked about the

reasons behind this fall in revenues, most of the business owners indicated that was because there were "no clients" (46.80%), and not so much because, for example, "the activity had to be stopped due to Covid19" (12.63%). Therefore, what seems to have created problems in the Malian economy is the slowdown in economic activity, which seems to be subsiding over the months, rather than the closure of workplaces as containment measure. In other words, as also suggested by one key informant, this evidence shows how probably the main impact of the pandemic on the Malian labour market was through a lower affluence of clients, probably connected with the lower purchasing power of the Malian population linked to the increase in international prices and the decrease in international remittances, rather than because of factory and business closures.

Table 9: Changes in revenues by sector – Mali

Changes in family business revenues, compared to February 2020	Sector			
	Agriculture	Industry	Services	Total
More than usual	11.69%	10.34%	10.86%	11.06%
As usual	68.26%	57.76%	44.95%	51.04%
Less than usual	20.06%	31.90%	44.19%	37.90%
Total	100.00%	100.00%	100.00%	100.00%

Source: Authors' elaboration on HFPS data.

Figure 18: Reason for decreased revenues – Mali
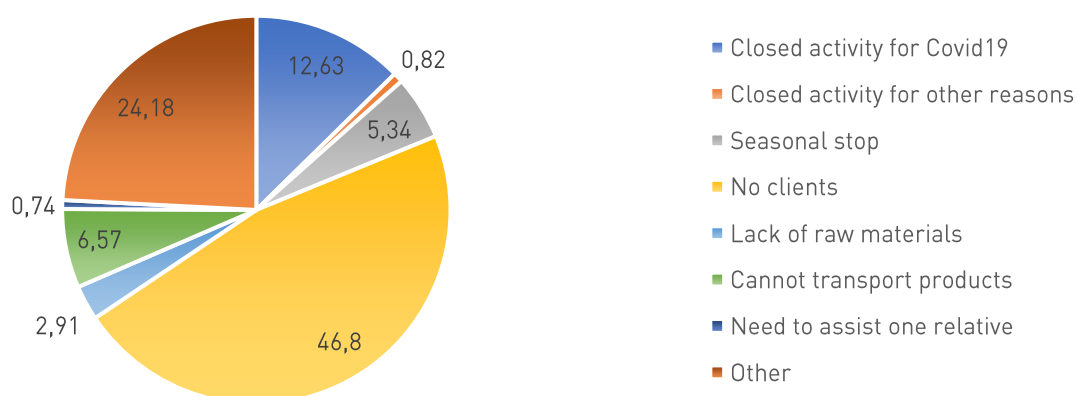
Source: Authors' elaboration on HFPS data.

In Burkina Faso, if we look to the percentage of workers that have not been able to go to their workplace, despite an initial drastic increase in workers reporting this problem (89.56% in Round 1), the situation got better quite immediately, with 9.57% in Round 2 and 13.43% in Round 3 and settles below 5 % for subsequent rounds. The percentage of workers that did not receive their usual salary while it was impossible for them to go to their workplace was extremely high during the first and second Round, but then decreased from Round 3 onwards, but at that point there were few restrictions put in place (Table 10).

Family businesses proved to be quite vulnerable to the consequences of Covid19. Indeed, as shown in Table 11, in Round 1 51.02% of total family businesses in agriculture, 80.72% in manufacturing and 77.29% in services reported revenues lower than usual (confirming also for Burkina Faso, as for Mali, a high degree of fragility of the tertiary sector), plus we have a fraction of interviewed (around 10% in each sector) that reports to have received no entries at all. Conversely to the Malian situation, when asked about the reasons of these bad performances (Figure 19), the majority of Burkinabe respondents indicate as major cause "Business closure due to Covid19 containment measures", while the 29.36%, which is still a substantial portion, indicate "No clients". Here we have to note that the HFPS provide information on the reason behind the decrease in business' revenues only for Round 1 and Round 2, that are, as we have already discussed, the only months during which containment measures were firmly put in place by the Burkinabè government, and were removed shortly afterwards; it is very likely that after these first initial months of very rigid imposition of containment measures, other dynamics came into play, which unfortunately cannot be observed with the available data.

Table 10: Have you been paid even if you could not go to work? Burkina

Have you been paid even if you could not go to work?	Round							
	1	2	3	4	6	7	9	Total
Fully paid	7.54%	31.69%	72.39%	63.85%	55.17%	58.33%	44.62%	18.01
Partially paid	1.66%	24.59%	13.13%	13.85%	35.63%	30.21%	55.38%	6.19
Not paid	90.80%	43.72%	14.48%	22.31%	9.20%	11.46%	0.00%	75.80
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

Source: Authors' elaboration on HFPS data.

Table 11: Changes in revenues by sector – Burkina – Round 1

Changes in family business revenues, compared to before March 2020	Sector			
	Agriculture	Industry	Services	Total
More than usual	3.59%	1.70%	4.72%	4.37%
As usual	35.81%	3.97%	5.81%	9.11%
Less than usual	51.02%	80.72%	77.29%	74.54%
No revenues	9.58%	13.61%	12.18%	11.98%
Total	100.00	100.00	100.00	100.00

Source: Authors' elaboration on HFPS data.
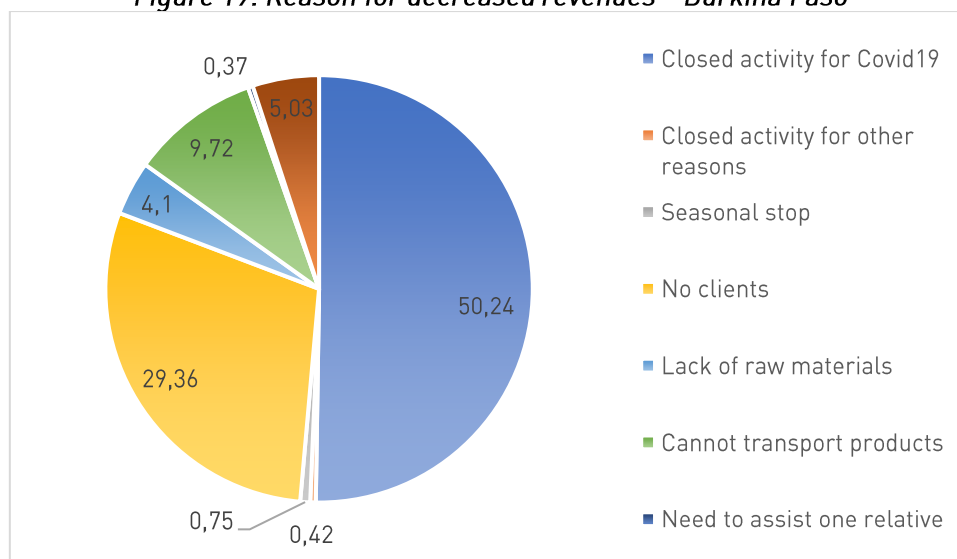
Source: Authors' elaboration on HFPS data.

3.5 Food security

We now proceed analysing the impact of the pandemic outbreak on the food security in the two countries. We chose to analyse this dimension for two main reasons. First, both Mali and Burkina Faso had extremely fragile food systems well before the outbreak of Covid19 pandemic. In 2019 the World Food Programme (WFP) estimated that in Mali there were 648,330 severely food insecure people, on a total population of 19.7 million people (WFP, 2019a), and 688,000 in Burkina Faso, on a total of 20.32 million people (WFP, 2019b). Cumulative effects of droughts and widespread insecurity have contributed to a progressive deterioration of livelihoods. This complex situation led the WFP to classify the Sahel as a region with a level 3 of food emergency (the maximum on the WFP emergency and response scale). Second, when the pandemic arrived, it severely challenged food security in the region, both from the demand side (reducing income, household expenditure and increasing poverty) and from the supply side (disrupting post-farm agricultural supply chains) (Adjognog et al., 2021).

The evolution of food security has been measured using the FAO's Food Insecurity Experience Scale (FIES). The FIES is an experience-based measure of household or individual food security (in our case the household food security) that aims to measure food insecurity based on the direct experiences of people about their food-related behaviors and their experiences in accessing food (Cafiero et al., 2018). Both the EHCVM sample and the HFPSs include all the eight FIES questions, which allows us to construct the same (comparable) measure of food insecurity for both periods.

Box 3 – FAO's Food Insecurity Experience Scale (FIES)

The FIES was developed by FAO within the 2013 Voice of the Hungry (VOH) project, in order to respond to the need of having a new global standard for measuring food security. The FIES is a self-reported, experience-based measure of household or individual food security that aims to measure their access to food, which is based on people's self-reported perception about limitations on their ability to find adequate food. Conversely to traditional food security measures (which often assess food security through indirect indicators about, for instance, food availability or anthropometric data), the FIES is constructed on direct questions about their food-related behaviors and their difficulties in accessing food. This feature should assure to the FIES indicator cross-cultural equivalence and validity in low-, middle- and high-income countries. Specifically, the FIES is built based on respondents' answers to eight questions about their experience in three domains of food insecurity, uncertainty/anxiety, changes in food quality, and changes in food quantity:

• FS1: "Household members have been worried that they will not have enough to eat?"
• FS2: "Household members have been worried that they cannot eat nutritious foods?"
• FS3: "Household members had to eat always the same thing?"
• FS4: "Household members had to skip a meal?"
• FS5: "Household members had to eat less than they should?"
• FS6: "Household members found nothing to eat at home?"
• FS7: "Household members have been hungry but did not eat?"
• FS8: "Household members have not eaten all day?"

Each respondent answer will be scored on a scale of severity according to the question items: the final score will be 'mild food insecurity' if he/she replies 'yes' to one of the first three questions, 'moderate food insecurity' if 'yes' to one from the fourth to the sixth question, and will indicate 'severe food insecurity' if 'yes' to one of the last two questions.

Source: FAO.org

First thing to note is the high level of food insecurity in the two examined countries. In Mali indeed, before the pandemic almost 50% of total population was experiencing either mild or moderate food insecurity, and more than 10% of total population was in severe food insecurity. In Burkina Faso, before the pandemic only the 30% of total population was experiencing no form of food insecurity, while almost 20% were in severe food insecurity. Not surprisingly, if we plot the incidence of food security levels by province, as we do in the two Figure 20 below, we can find a strict correspondence between the regions that were identified by the two national statistical institutes as the most poor (as in Figures 1 and 2 above), and the provinces with the highest food insecurity levels; indeed, Burkinabe provinces with a higher degree of food insecurity are the ones located in the Nord, Centre Nord and Centre-Est regions, while in Mali the regions with the highest food insecurity levels are the ones of Kayes and Mopti.

Figure 20: Food security levels in Burkina Faso and Mali – Round 1
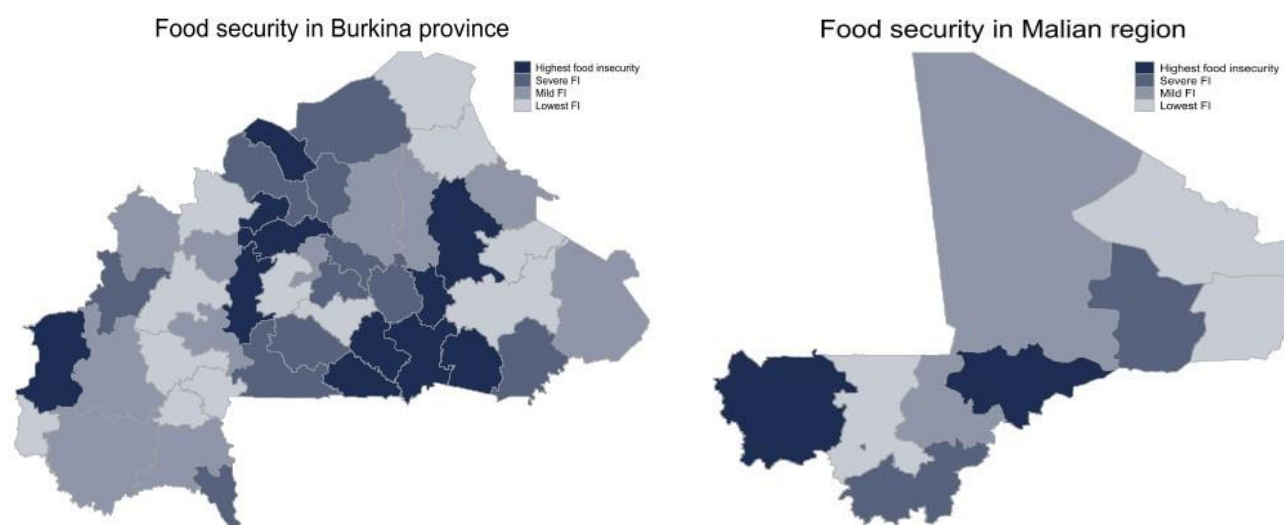
Source: Authors' elaboration on HFPS data.

Second, if we look at the evolution of food insecurity prevalence over time (see Figure 21), we can see that in Mali the prevalence of food secure people is low right after Covid19 outbreak (the first available data are from June 2020) and then increases from wave to wave with a remarkable decrease of two most extreme forms of food insecurity. This may be connected to the recovery of employment level (see section 3.4) and to the seasonal nature of many jobs and of food availability in the country. However, 3 survey waves are not enough to understand to which extent the change is due to seasonality and to which extent it is due to the post-Covid19 recovery.

Figure 21: Food security trend in Mali
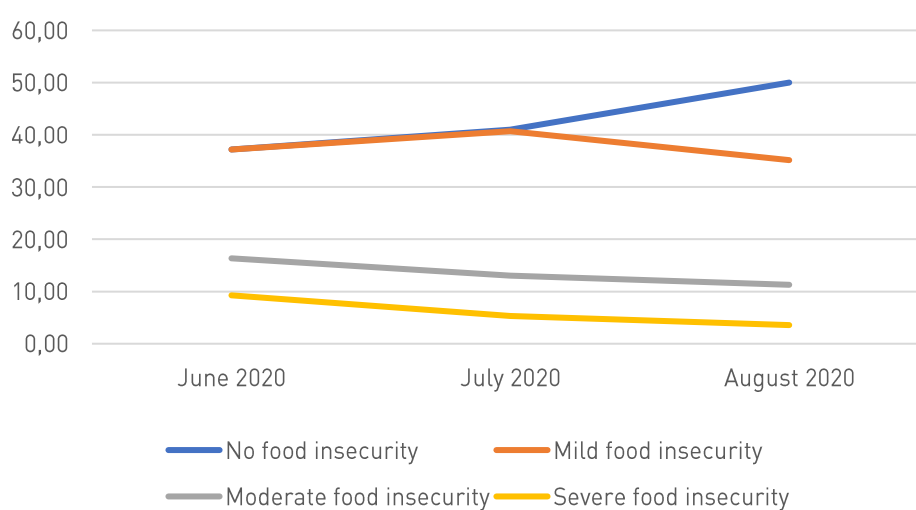
Source: Authors' elaboration on HFPS data.

Focusing on Burkina Faso, the possibility of analysing eleven rounds of HFPS allows us to clearly detect the seasonality of the food insecurity phenomenon throughout the year after the arrival of the pandemic. As we can grasp from Figure 22 below, it seems that in Burkina both the prevalence of people in mild food security and of fully food secure people increased from November 2020 (while the two most extreme form of food insecurity appear to decrease), then they slightly diminished (and the more food insecure increased) and then settled down with a linear trend in the last few rounds. Again, this trend is correlated with the cycle of seasons that heavily affects the Burkinabe economy and the subsequent seasonal trend in employment rates (shown in section 3.4), which follows the same trajectory. In the same fashion, if we compare levels of food (in)security between June 2020 and June 2021, we can identify an improving situation (with lower levels of moderately and severe food insecurity and slightly higher levels of food security by the end of the waves). This could be due to the immediate disruptive impact of COVID (thus recorded in the spring of the first wave), that then was reabsorbed by the Burkinabe economy during the year, and that again closely mirrors employment rate dynamics. This hypothesis seems to be confirmed if we look at the transition matrix of food security that we constructed for Burkina Faso (Table 12)[14]; while a big portion of the interviewed reported to have remained in the same level of food security between June 2020 (Round 1) and June 2021 (Round 11) (as it emerges from cells in the main diagonal), another consistent portion reported to have ameliorate their food security levels, while those that report to have experienced a decrease in their food security levels are relatively less (indeed, figures in the bottom left part of the matrix are relatively higher than figures in the upper right).

Figure 22: Food security trend in Burkina Faso
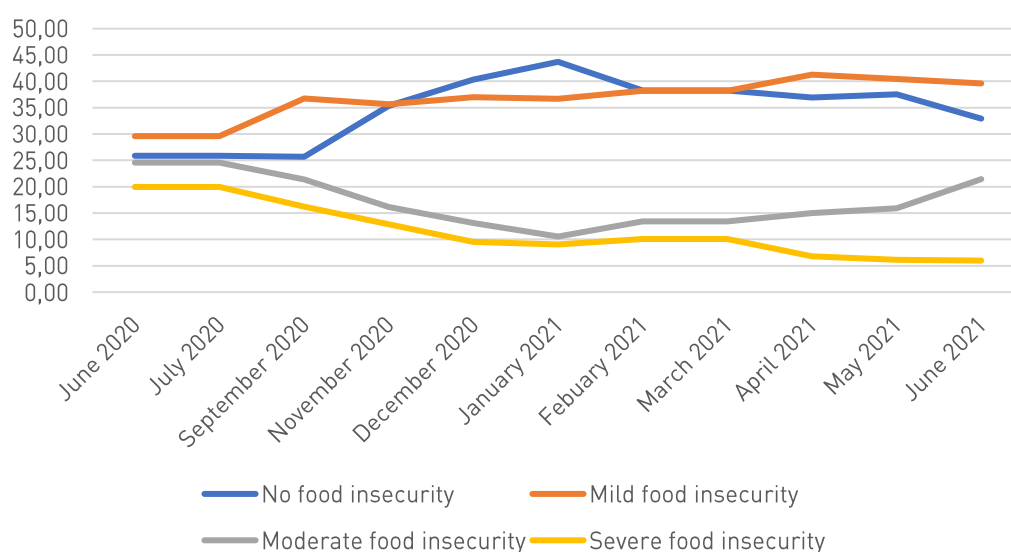
Source: Authors' elaboration on HFPS data.

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[14] The matrix is constructed as follows: each row refers to the level of food insecurity in which each respondent reported to be in Round 1, while each column refers to the level of food insecurity in which each respondent reported to be in Round 11. The sum of all cells is 100%. Therefore, for example, the cell in first row-first column indicates that 9% of all respondents was food secure in Round 1 (June 2020) and remained food secure one year later (Round 11 – June 2021), while for instance the cell third row-second column indicates that 13% of total respondents was moderate food insecure in June 2020 and mild food insecure in June 2021.

Table 12: Transition matrix for food security – Burkina Faso

Round 1 / Round 11	No food insecure	Mild food insecure	Moderate food insecure	Severe food insecure
No food insecure	9%	7%	2%	0%
Mild food insecure	10%	21%	9%	2%
Moderate food insecure	5%	13%	7%	2%
Severe food insecure	2%	6%	4%	1%

Source: Authors' elaboration on HFPS data.

Then we study the urban-rural gap in food security, measured as the percentage of people living in urban areas that report to be food secure (but also with a mild food insecurity, with a moderate food insecurity and with severe food insecurity) minus the percentage of people living in rural areas reporting to belong to the same category. For Mali, also Adjognon et al. (2021) look at the urban-rural gap in food security; they use the same data analyzed in this repot but exploiting information only about the pre-pandemic period and Round 1. What they find is that although rural households are more likely to experience food insecurity prior to the pandemic, food insecurity increased more in urban areas than in rural areas. They observe that just three months after the onset of Covid19 (in Round 1), the rural–urban gap in experienced food insecurity got extremely lower. Coherently, in Figure 23 below, we see that, in the pre-pandemic period, Malian rural areas had 15% less of people that were food secure than urban areas. However, this gap decreased in Round 1 to almost 5% and almost vanished in Round 3-August 2020 (1,70%). Importantly, by looking at raw data, this trend is mostly a consequence of the worsening in the condition of people living in urban areas, rather than due to a betterment in rural people's conditions, which is line with the evidence discussed above, about businesses operating in manufacturing and services being hit more than agriculture by the pandemic. To note that again, the possibility of analyzing a very limited period creates some difficulties in reading the data on Mali's economy in the right perspective.

Figure 23: Urban – Rural gap in food security in Mali
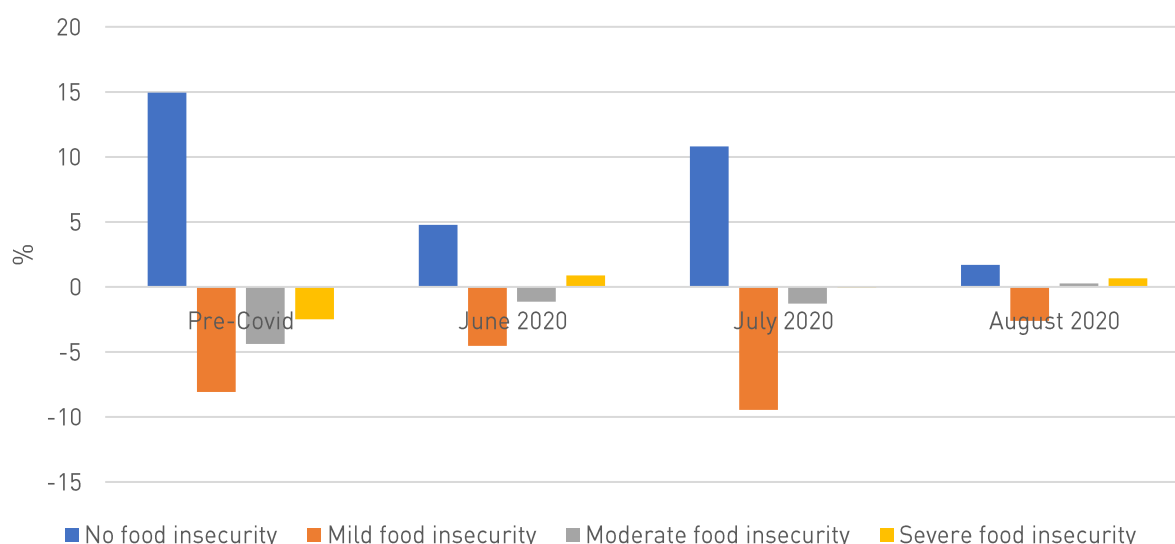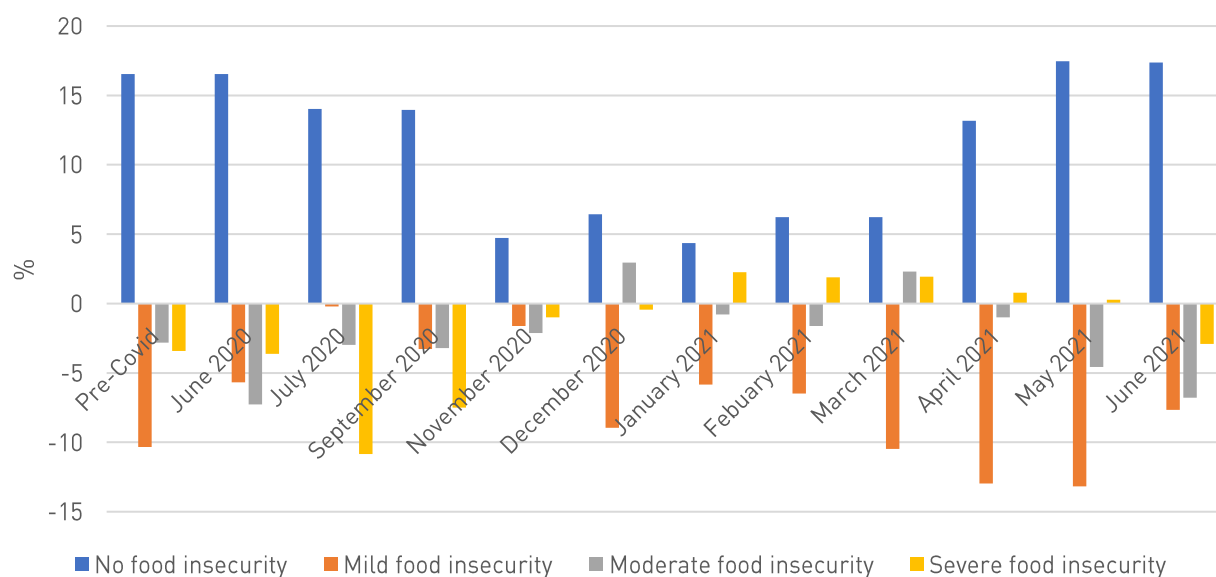

Source: Authors' elaboration on HFPS data.

A partially different story emerges if we look to what happened in Burkina Faso, with data available for the whole following year (Figure 24); indeed, it is true that the urban-rural gap tends to diminish during the first months of the outbreak, compared to what was the situation before the Covid19, but then it increases again

from March 2021 onwards, basically returning to the same level of June 2020 one year after, with urban households being less exposed to food insecurity that their rural counterparts.

Figure 24: Urban – Rural gap in food security in Burkina Faso

Source: Authors' elaboration on HFPS data.

We go further in the analysis of food insecurity by looking at the differences in levels between male- and female-headed households. As we can grasp from Table 13 below, where we show the percentage points of difference between male-headed and female-headed households that report to be food insecure at some level, female-headed households are more likely to show higher food insecurity, for all the three categories of FIES, both in Burkina Faso and in Mali, both in rural and urban areas.

Table 13: Food insecurity differences in female- vs. male-headed households

	Total		Urban		Rural	
	BFA	MLI	BFA	MLI	BFA	MLI
Mild food insecurity	0.06***	0.02	0.08**	0.04**	0.06**	0.04
Moderate food insecurity	0.04***	0.04***	0.05***	0.04***	0.04**	0.04**
Severe food insecurity	0.02***	0.02***	0.02***	0.02***	0.03**	0.03***

* p<0.1, ** p<0.05, ***p<0.01
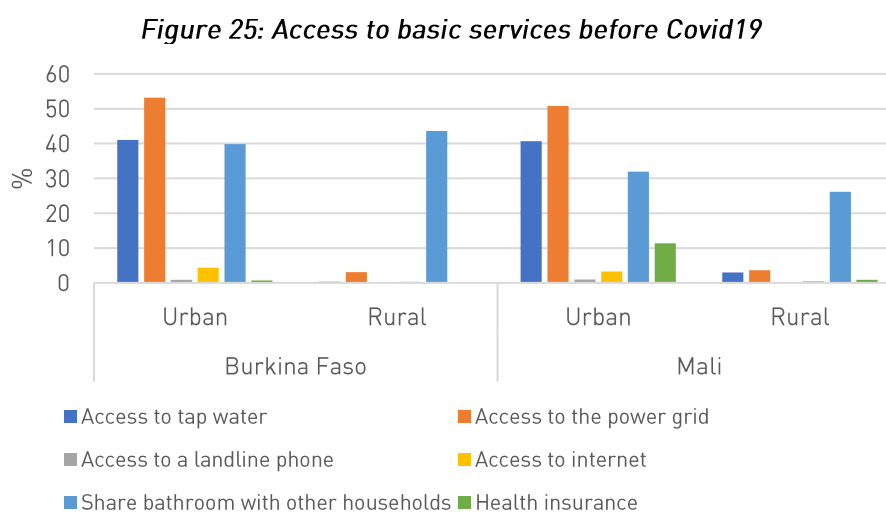Source: Authors' elaboration on HFPS data.

3.6 Access to basic services

As already mentioned, several stratified and multidimensional conflicts had a deep impact on Malian and Burkinabè population wellbeing well before the Covid19 pandemic. In the five years before Covid19, these existing violent conflicts intensified and expanded to new areas. National, regional, and international security

forces have been the preferred targets for al-Qaeda and Islamic State affiliated groups. However, the civilian population has witnessed the greatest number of casualties in the last two years. In addition to the lack of physical protection, civilians are severely affected by the consequences of instability. Armed groups have targeted schools, non-government organizations (NGOs), and health centers, depriving communities of access to these basic services. The United Nations Office for the Coordination of Humanitarian Affairs (OCHA) stated that *"more than 3,600 schools and 241 health centers are closed or non-operational due to insecurity in Burkina Faso, Mali and in the regions of Tahoua and Tillabéri in western Niger"* (pag.6, OECD, 2020).

If we look specifically to the health facilities available in the two countries the situation is not reassuring: in Burkina Faso, by the beginning of 2020 there were 35 hospitals, equipped with 11 ventilators and 0.45 doctors for every 10,000 people. In Mali, there were more physicians than in other West African countries (1.8 doctors for every 10,000 people) but only 0.1 beds per 1,000 people and 0.46 hospitals per 100,000 people. Mali also enjoyed a larger availability of respirators: 56 (15 in private clinics and 41 in public hospitals) beds (Marbot, 2020). Overall, both Mali and Burkina Faso were largely lacking the infrastructural and technical capacity need to meet the challenge of a massive increase of the number of persons with acute Covid19-related respiratory problems; moreover, according to several key experts, both countries completely lacked cold systems for the proper storage of vaccines.

In addition to fragile public infrastructures, on average households in Burkina Faso and Mali must face harsh living conditions. By looking at Figure 25, constructed with EHCVM data, we can see how the access to basic services in both countries is low in general; moreover, we can detect a clear urban-rural gap even in these low levels of access to basic services. For example, only 40% of people living in urban areas had in 2019 access to tap water, but the percentage substantially decreases if we consider only those people living in rural areas (reaching the 0,03% in Burkina Faso e and the 2,93% in Mali). Internet coverage shows similar patterns: in urban areas only the 3-4% of respondents had access to internet, while in rural areas both countries' percentages decrease below 1%. On average, over one third of people declared to have to share their bathrooms with other households. Basically no one has a health insurance (except for a 10% of Malian living in urban zones). Therefore, given this situation before the pandemic, hygienic rules and social distance measures might have been difficult to impose and enforce for governments and local authorities for the reasons outlined in previous sections, and at the same time, they might have been really very difficult to stick to for civilians.

Figure 25: Access to basic services before Covid19

Source: Authors' elaboration on HFPS data.

As for the effect of the pandemic on the access to basic services, in Mali, independently from their zone of residences, households have been particularly hit in their capacity of providing food for themselves (Figure 26); moreover, urban households experienced severe difficulties in paying their rents and paying for water and electricity; rural households appear to have been less affected by Covid19 on their capacity of satisfying these needs, but this difference might be correlated with what shown above (Figure 25), where it is evident how the access to water and electricity is almost absent in rural areas. The same applies in Burkina Faso: the paying capacity for services such as water and electricity has been a major concern especially for urban households, while rural households have experienced large difficulties in paying for services as rent and transport (Figure 27).

Figure 26: Impact of Covid19 on basic needs - Mali
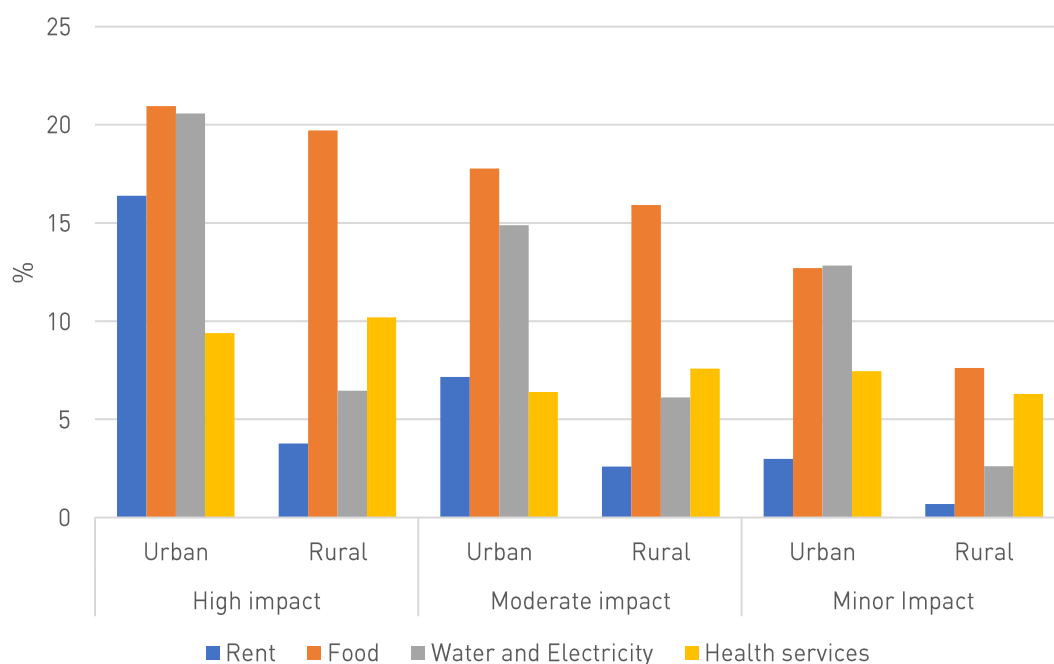
Source: Authors' elaboration on HFPS data.

Figure 27: Impact of Covid19 on basic services access – Burkina Faso

Source: Authors' elaboration on HFPS data.

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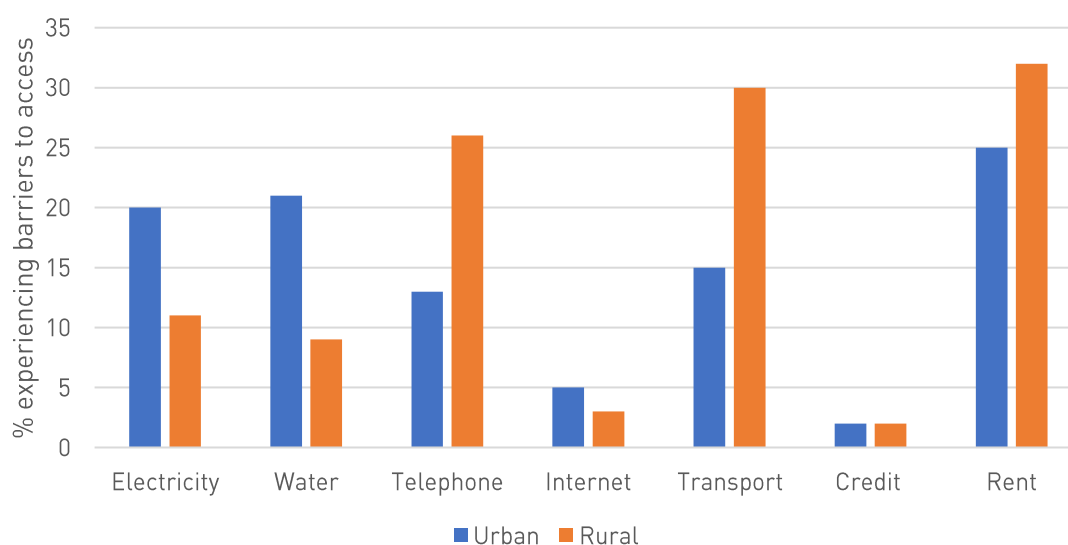
3.7 Vaccines

Focusing on Covid19 vaccines, the whole African context largely lags behind if compared to the world average. In December 2021, when according to the target set by the WHO, every country should have achieved full vaccination rates of 40%, the African continent average was 9%. Burkina Faso and Mali make no exception to this trend, as by the end of 2021 respectively only the 4.15% and 5.52% of their entire population had received at least one dose of Covid19 vaccine.

The main obstacles to the WHO's target achievement come from the supply side, as it is evident if we compare the actual vaccination rates and the willingness to get vaccinated (analyzed in details in the next paragraph): the whole Sahel region experienced a low availability of vaccines and it largely lacks of robust health infrastructures, of funds for training and deploying their medical staff and, especially in rural areas, vaccine storage is a big concern. It is true that initiative such as COVAX, that was aimed at providing 2 billion doses for free to low-income countries, represented a big push for the vaccination coverage, but "*in Africa in general, COVID-19 vaccination is experiencing a prolonged start, and countries in the Sahel, in particular, have mostly only received enough doses to cover their population*" (Savadogo et al., 2022).

On the demand side, vaccine acceptance rates from the high-frequency surveys are high in general, for sure much higher than the actual vaccination rate although with the presence of some hesitancy pockets (in line with what found by Kanyanda et al., 2021). Looking at the rate at which people are willing to get vaccinated (Table 14), we can see that in Mali in Round 5, almost 7 interviewed out of 10 would get a vaccine in urban areas, while the figure in rural areas is a little smaller (62.92%). To note that in Mali there is a non-negligible share (9.11% and 13.84% in urban and rural areas respectively) that is uncertain about their answer. In Burkina Faso, where we can observe the evolution of acceptance rate over time, we can see how attitudes towards vaccines can mutate. Indeed, in Round 5, people living in urban areas reported to be more willing to get vaccinated as compared to rural people (67.41% vs. 63.09) and in both zones there was a high percentage of people that were sure about their willingness of not getting vaccinated (29.79% and 35.93%); the situation positively changes, especially in rural areas, in Round 10 with 81.02% of people in favor of the vaccine against a 60.57% in urban areas, together with a substantial reduction of respondents against the vaccine in rural areas. Furthermore, from the second panel in Table 14, we can see how in both countries, people living in female-headed households are a little less likely to be vaccinated, both in rural and in urban areas.

Looking at the reasons for not to take the vaccines, the low rates of vaccination seem to be more correlated with a mistrust towards the vaccine, rather than to an underestimation of the risk of being vaccinated. In Burkina Faso, among of those not willing to vaccinate themselves, the 47.33% report that they fear the side effects of the vaccines, the 25.83% think that the vaccine is not sure and the 15.62% think that the vaccine will not work; only the 3.60% say that they are not willing to vaccinate because they are not exposed to the risk of being infected. In Mali the situation is not different; the 52.4.% states that the vaccine is not sure, the 14.32% that they fear the side effects of the vaccines, the 6.26% that the vaccine will not work and the 16.28% that they are not exposed to the risk of being infected.

Table 14: Are you willing to get vaccinated? – Burkina Faso

	MLI – Round 5		BFA – Round 5		BFA – Round 10	
	Urban	Rural	Urban	Rural	Urban	Rural
Yes	67.33 %	62.92 %	67.41%	63.09 %	60.57 %	81.02 %
No	23.56 %	23.24%	29.79 %	35.93 %	26.04 %	12.60 %
I don't know	9.11 %	13.84 %	2.80 %	0.98 %	13.39 %	6.38 %
	Female HH	Male HH	Female HH	Male HH	Female HH	Male HH
Yes	64.59 %	66.84 %	62.60 %	65.39 %	60.78 %	63.95 %
No	24.01 %	23.98 %	35.58 %	32.24 %	26.80%	24.80%
I don't know	11.40 %	9.18 %	1.81 %	2.38 %	12.42 %	11.25%

Source: Authors' elaboration on HFPS data.

The not high but still significant hesitancy for vaccines in the region can be due to several factors. One explanation is the low level of trust towards the local institutions and governments. A meaningful example gave by one key expert is the case of Tanzania, where the former president John Magufuli held from the very beginning of the pandemic a denialist position, and in April 2020 he even declared his country virus-free by decree and lifted all containment restrictions. Then, the new president Samia Suluhu changed approach, reinstated precautionary measures, and increased the support for the vaccine campaign. Evidently, this change of political direction might have disoriented the civilian population and lowered the confidence towards the efficacy of the vaccines. In fact, by December 2021, only the 3.38% of the total Tanzanian population had received at least one dose of Covid19 vaccination (Our World in Data, 2022). At the same time, there are cases where a strong government commitment and good communication practices produced encouraging results; for example, Ethiopia has been able to use 80% of the available doses, by adopting a logistic system that transferred vaccine doses from zones where they were underused and redistributing them to zones where they were more demanded, thereby avoiding the expiration of many of them (WHO, 2021b).

3.8 Impact on migration trajectories

The Saheli region has always been characterized by substantial migratory flows. People migrate across the region for several reasons: for diversifying their access to livelihoods (still mainly based on agriculture activities and natural resources), for finding seasonal jobs, for escaping jihadist attacks and ethnic conflicts or climate change-related severe adverse weather shocks, such as droughts and flooding. There are naturally many migration trajectories within the Sahel; what is for sure is that almost 90-95% of all migrants move across countries within the region, very often in circular trajectories towards richer countries as Cote d'Ivoire and Senegal, and only the remaining 10-5% exit the region, in that case mainly going to the EU, North Africa and to the Arabic peninsula (IOM, 2022). Data about migration are very often very incomplete and tend to suffer from underestimation bias, but the UN DESA estimated that 7.6 million international migrants resided in the region of Western Africa as of mid-year 2020[15],

These migration movements have been affected by Covid19, by the related mobility restriction measures (e.g., land and air border closures), and by the temporary closure of informal economic activities (e.g., street

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[15] To note that the HFPS do not provide rich information on the impact of Covid19 on migration trajectories, for this reason for this sub-section we rely mostly on qualitative data and secondary quantitative data.

markets that very often give job to many work migrants). However, the impact has been tragic more in the short-term, during the first months after the outbreak. In this period, many migrants have been able to flee out from cities before the imposition of the lockdown measures, but there have been several episodes of blockades, as for example the 600 migrants that were stranded along the Ivory Coast-Burkina Faso frontier for weeks (Zandonini, 2020); at least 2,300 migrants in the north of the Niger and 1,300 people at Mauritania's northern borders. At the peak of restrictions (April 2020), IOM estimated that 21,000 migrants were stranded in West and Central Africa (IOM, 2020a). According to one of our key informants, borders closures produced heavy effects not so much on the Africa-Europe migration trajectories (which, as mentioned above, regard only a small portion of migration movements from the Saheli region) but rather, it affected the possibility for seasonal workers to migrate from Mali and Burkina Faso to go to the near and richer Senegal or to North Africa, thus depriving them of the opportunity to rely on one of their most important coping strategies. According to IOM estimates, between Week 12 and Week 13 (mid-March), the number of weekly travelers dropped by 69%, in West and Central Africa (IOM, 2020b).

However, this decrease in migration flows did not last so long, already in the following months migrations flows restarted to grow, independently from the formal reopening of borders: early data collection from May 2020 by IOM shows a fast resurgence in internal flows (+153%), while intra-regional movements of people were slower to go back in track, with a +28% over the same period (+28%). Accordingly, the report by REACH (2021) finds that overall, the pandemic was not found to have a major impact on migration decisions, with most migrants stating to continue with their journey when possible. Importantly, REACH also finds that most of migrants expect to migrate to their habitual destination, and those that planned to change trajectory, they planned to migrate to another country within the Saheli region. This small impact of the pandemic in the medium term is found also by Litzkow (2020), which also highlights how, as migration movement between countries have become more difficult, there has been an increased need for smugglers since the start of the crisis, and, with the increase in demand, also an increase in smuggler fees. Moreover, there has been also an increase of internally displaced people (IDP) in the region; but, still according to our key informant, but it is difficult to disentangle the effects of the pandemic outbreak from the effects on the increase in the number of conflicts in the region. Indeed, according to an OCHA study (2020), already before the outbreak of the pandemic IDPs were rising in number across Burkina Faso, Mali, and western Niger, where IDPs reached 1.1 million in February 2020, a four-time increase in one year.

3.9 Transfers and remittances

Transfers and remittances are one of the most important income sources for most of the people living in low-income and middle-income countries as they contribute heavily to the promotion of socio-economic development of these areas, and this holds true also for the Saheli region (Tapsoba, 2022). According to the World Bank Development Indicators, in 2020 received personal remittances account for the 2.9% of national GDP in Burkina Faso and for 5.7% in Mali[16].

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[16] Personal remittances are defined by the World Bank as personal transfers and employee compensation. The former are goods or financial assets sent by migrants to people in their countries of origin, while the latter are the seasonal income of nonresident employees, working in a foreign country.

This is evident also from our data from before the pandemic. As we can see from Figure 28 below, both in Mali and in Burkina, people rely quite a lot on economic support from peers within and outside their families, with more than 30% of respondents in both countries that reported, in urban areas, to have received money from people within their household, and more than 15% from rural areas that reported to have received money from peers outside their families in the last 30 days. To note that the informal social safety nets, both in Burkina Faso and in Mali, appear to be stronger in urban contexts rather than in rural contexts (Figure 28)[17]. Substantial is also the reliance on remittances from abroad, as between the 10% and 20% of respondents report to have received remittances during the last month before the interview.

Figure 28: Transfers before Covid19
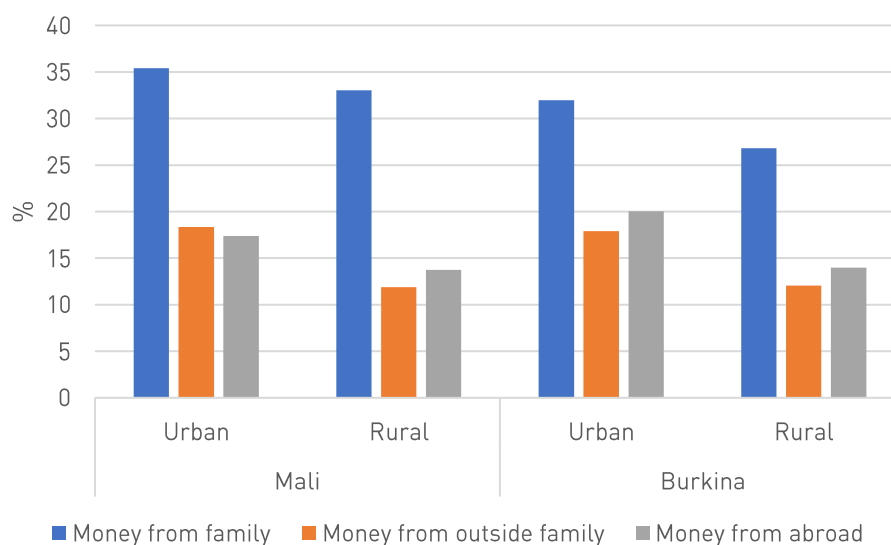
Source: Authors' elaboration on HFPS data.

However, since Covid19 pandemic was not an idiosyncratic shock, but a covariate one (i.e., a shock affecting the overall economy), social safety nets have presented fragilities, as transfers from peers decreased in amount and in frequency. Indeed, in Burkina, in Round 1, 17.83% in urban areas and 27.58% in rural areas responded to have received some sort of help (either money or in nature) by friends and relatives after the pandemic outbreak; however, 50.81% in urban areas (and 43.98% in rural areas) reported that the total amount of this transfer was lower as compared to what they were used to receive habitually, and the 61.83% (58.40% in rural areas) reported also a lower frequency of transfers. Moreover, transfers from the personal social safety nets have been more common than transfers from institutions: indeed, an extremely low percentage of interviewed (2.25% in Round 3 and less than 1% in the following rounds) answered to have received some sort of aid from NGOs, government, and religious associations after the pandemic outbreak; and when they received something, it was mostly in the form of food aid.

In Mali the situation appears slightly better. Indeed, more than 50% of respondents (both in urban and rural areas) reported that the amount of economic support from relatives or peers they received after March 2020 remained stable and did not decrease in frequency. When we look at the percentage of people that received

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[17] This difference in transfers between urban and rural areas might be explained by two facts: the first is that in rural areas within agricultural households often there is full integration of consumption, production, and labor force reproduction decisions, therefore transfers are likely to be internal to this type of mechanism. The second is that transfers in rural areas could be in kind or in the form of labor, so they might be not counted in this type of data. Unfortunately, our data do not allow us to check for these two facts.

some sort of aid from NGOs, government and religious associations, the percentages are a bit higher than in Burkina Faso: in the last round for which we have information about social protection schemes (Round 3) we have that 5.96% in urban areas and 6.72% in rural areas reported to have received some sort of support from organizations and institutions.

As per remittances from abroad, with migrants left either unemployed or blocked, remittances to migrants' families have severely fallen during the pandemic. This was reported by the World Bank, which estimates that the region where remittances fallen the most is exactly Sub-Sahara Africa, with a 12.5% decrease in 2020 compared to 2019[18]. This decrease emerges also from our data (Figure 29 below), where in both Burkina Faso and Mali most respondents affirm that remittances from abroad decreased after the Covid19 crises (and 25% in Mali even report that they have stopped completely). On this fact all the key informants agree: one of them states "*remittances have tragically decreased. There are families for whom remittances were necessary and who have fallen apart due to lack of support from family members abroad*".

Figure 29: Change in remittances (as compared to the same month of previous years)
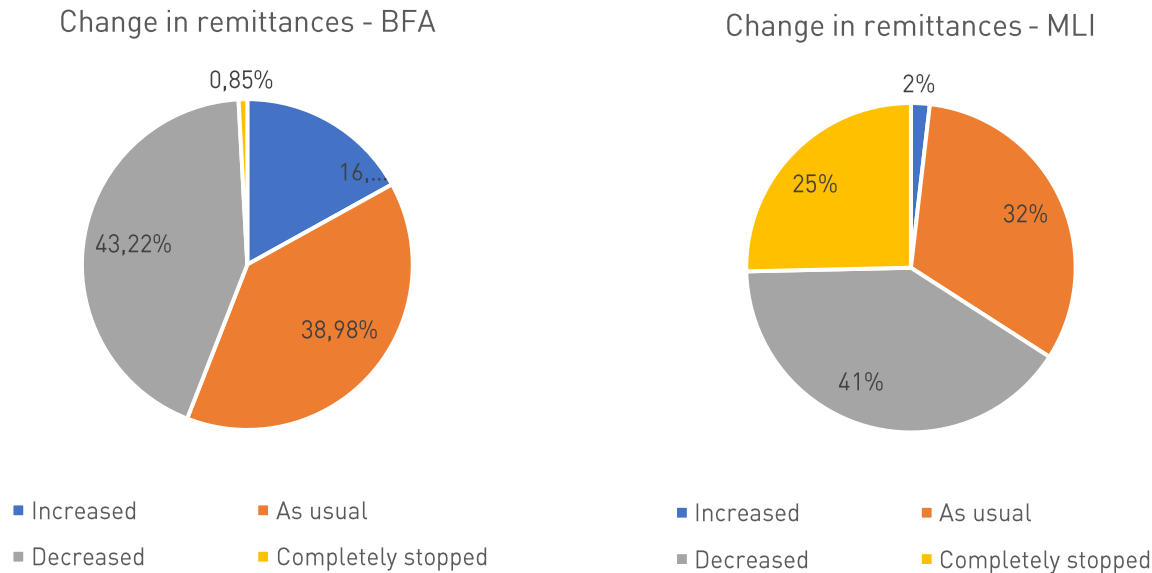
Source: Authors' elaboration on HFPS data.

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[18] However, the decline was almost entirely due to a 27.7 percent decline in remittances to Nigeria, which alone accounted for over 40% of remittance flows to the region. Excluding Nigeria, remittance to Sub-Saharan African increased by 2.3% (World Bank, 2021).

Conclusions

Through the combination of qualitative and quantitative data, the descriptive evidence that emerges from this report provides several interesting insights on both the features of the Burkinabè and Malian contexts before the Covid19, as well as its impact along several dimensions. Both countries still have a lot to do in terms of human development: most of their population lives in rural areas with low access to basic services, has quite low educational attainment and around 50% of total population in both countries live with less than 1.90$ per day, with poverty that is predominantly a rural phenomenon. The economy is very fragile, mostly based on agriculture (which heavily suffers from seasonal fluctuations), manufacturing is almost absent and activities in services are mostly low-skilled and low-paying (as for example retailing activities, which is mostly female-driven); 90% of total employment is in informal sectors in both countries. Moreover, starting from 2010-11, the Sahelian region has been experiencing a growing instability linked to the spread of jihadist extremism, inter-ethnic violence, and institutional fragility, coupled with climate change's very adverse consequences.

Given this fragile framework, many scholars and policy makers already at the very beginning of the Covid19 pandemic were extremely alarmed by the impact that the pandemic could have in the Saheli region, and already in March 2020, both Mali's then President Ibrahim Boubacar Keita and President Kaboré declared the state of emergency and imposed severe restriction measures (curfews, market closure, ban on gatherings etc.). To note that in these countries the effective presence of the State is mainly in urban contexts. Indeed, we detect a significant urban-rural divide for what concerns the antiCovid19 restriction measures: people living in urban areas are more aware about what measures they should put in practice to limit the spread of the virus, they more often put them in practice and also, they report more that the local authorities have put in place measures to contain the spread of the Covid19, compared to people living in rural areas.

However, in both countries most of containment measures were soon lifted (already after the first two months of the pandemic). Given the extremely high share of workers employed in informal activities and the presence of armed militias and jihadist groups (in the north of Mali, centre of Mali and north-west of Burkina), governments had a very low level of enforceability in applying these measures, especially in rural areas. Also, the closure of markets and businesses meant that many workers found themselves without any income, which aggravated their already extremely vulnerable position. Lastly, in both countries there were several clashes with government forces because a large part of civil society perceived the imposition of these measures not so much as a mechanism to prevent the spread of the virus, but more as an excuse to impose further control and repression measures. In this regard, we find that in Burkina Faso, provinces where clashes were stronger, the imposition of containment measures has been harsher.

This adverse feeling of one part of the civilian population can also be partially explained by the low perception of danger that both Malians and Burkinabe associate with Covid19, a fact on which virtually all key informants agree. This is certainly connected with the very fragile social, economic, and institutional contexts, to which Covid19 added up. But also, to the fact that the official contagion and mortality rates due to Covid19 stood well below the global average, which has contributed to lowering society's perception of risk. Naturally, contagion and death rates have to be treated with caution: if on one hand there might have been factors, peculiar to the Saheli context, that have contributed to a lower propagation of the virus (as a very young average age, climate and climate-related cultural differences and a limited mobility capacity), on the other hand, official contagion and mortality rates might suffer heavily from misreporting and underreporting biases.

Analyzing the impact of the pandemic on employment dynamics, we find that overall, Covid19 did not heavily impact the labor market of the two countries. If we look at employment dynamics, Mali did not experience any sudden drop in its employment level, on the contrary, there was a slight improvement during the 2020 summer. Moreover, the main impact of the pandemic on the Malian labor market was through a lower affluence of clients, connected with the lower purchasing power of the Malian population linked to the increase in international prices and the decrease in international remittances, rather than because of factory and business closures. For Burkina Faso, for which we have greater availability of data, we detect the presence of seasonal fluctuations, mainly due to the agricultural sector. Moreover, the comparison between June 2020 and 2021 suggests that the Covid19 impacted during the spring/summer of the first wave, but also, that the economy was able to recover during the year. Importantly, in both countries a high fraction of workers that could not go to their workplace because of containment measures did not receive any salary or payment at all, highlighting a lack of income compensation measures.

Using the FAO's Food Insecurity Experience Scale (FIES) we then investigate on the changes in food security levels. Both in Mali and in Burkina Faso, the impact of the pandemic seems to have been channeled through labour market movements. For Burkina Faso, food security was firstly heavily impacted by the arrival of the Covid, but then the shock was reabsorbed during the year, with food security levels of June 2021 that are higher than those in June 2020. The urban-rural gap in food security level in Mali decreased in the months immediately after the outbreak, mostly due to the worsening conditions in urban areas, highly likely connected with activities closure measures imposed in those months. Also, in Burkina Faso the urban-rural gap decreases, but then it increases again during the spring 2021, basically returning to the same level of June 2020 one year after, with urban households being less exposed to food insecurity that their rural counterparts. Both in Burkina Faso and in Mali, female-headed households suffer higher levels of food insecurity compared to male-headed households. All in all, the parallel trends of food security and employment, confirm the extreme fragility of the analyzed contexts: even a temporary shock affecting employment and income are suddenly translated into a deterioration of food security condition with large part of the households barely able to maintain their food security level.

Public infrastructures and services are very fragile, and the access is challenged by the fact that schools, non-government organizations (NGOs), and health centers are often the target of armed groups. Moreover, the access to basic services is also low (as the access to tap water or to power grid). As for the Covid19 vaccine, both countries faced hard supply bottlenecks: lack of robust health infrastructures, of funds for training and deploying their medical staff and, especially in rural areas, vaccine storage is a big concern. On the demand side, despite a low level of vaccination rate (with 4.15% and 5.52% in Burkina Faso and Mali that have received at least one doses) vaccine acceptance rates from the high-frequency surveys are high in general (6-7 out of 10 that are willing to get vaccinated), although with the presence of some hesitancy pockets.

The Saheli region has always been characterized by substantial migratory flows, especially within the region; however, the imposition of mobility restriction measures (e.g. land and air border closures) and the temporary closure of informal economic activities have consistently affected the possibility to migrate in the first months after the pandemic, with many episodes of blockades close to the borders. However, this decrease in migration flows did not last so long: already in the following months migrations flows restarted to grow and overall, pandemic was not found to have a major impact on migration decisions, nor to have provoked big changes in migration destinations. Importantly, as migration movements have become more difficult, people have been relied more on smugglers, with also a consequent increase in smuggler fees.

Lastly, Covid19 produced a detrimental impact also on transfers and remittances, which are one of the main income sources for the two countries population. Especially in Burkina, our data show that transfers from family members and friends within the country got lower in amount and in frequency. As remittances are regraded, with migrants left either unemployed or blocked, money flows from abroad have severely fallen during the pandemic.

Overall, what emerges from this report is Covid19 has not had as devastating a direct impact on the societies and economies of Burkina Faso and Mali as it has in other contexts, such as Europe. Rather, indirect impacts have been felt the most: through, for example, a decrease in remittances from abroad, through a drop in demand for goods and services, through an augmented difficulty in accessing basic services and a temporary deterioration of food security status. Therefore, what this report has highlighted are the fragility of these contexts (e.g., health infrastructures unprepared to handle a crises like Covid19, a labour market based essentially on the informal sector in which income compensation measures in emergencies are completely absent, a low level of trust in the government and the authorities, a wide urban-rural gap in many dimensions), which are also the priorities from which to start in the fight against the pandemic to maximize the opportunities in the recovery for a more inclusive and sustainable future.

To deal with a public health shock is an extraordinary challenge for human societies as it requires the timely, massive, and coordinated use of large part of the available economic, institutional, technical, and human resources. As long as we consider Covid19 as a stress test for the Sahelian societies, we can say that the test succeeded in identifying the several fragilities that led to an amplified impact of a shock whose direct consequences would have been quite limited. This is largely due to the not sufficient availability of resources to put in place ex-ante and ex-post mitigation mechanisms both at the household, the local and the national level. To strengthen those mechanisms is thus a priority to make those contexts more resilient to future and more consistent shocks. The analyzed data seems to suggest at least 3 priority areas of intervention:

- To strengthen mechanisms aimed at limiting income losses in case of aggregate and\or idiosyncratic shocks
- To (re)build a sustainable relation between citizens and public institution based on trust and co-responsibility
- To strengthen/restore the network of basic services at the local level with particular attention to rural and remote areas.
- All in all, also to (re)build positive relation between Mali's and Burkina's governments and citizens and Italy and other European countries based on trust and co-responsibility.

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