The socio-economic impact of COVID-19 in Uganda: Modelling one-off transfers

The outbreak of COVID-19 has had an unprecedented global impact, with almost no country left untouched. The first confirmed case in Uganda was reported on March 21, 2020. While COVID-19 is a health pandemic, the impacts of this pandemic is not limited to the health of a given population, but also has impacts on the economy and society's well-being. This is in part because efforts to limit and contain the spread of COVID-19 has led to a slowdown in economic activity and people's ability to make ends meet. For example, many in Uganda who rely on daily wages are unable to go out and work, and many business owners have seen supply chains disrupted and demand dry up.

Against the context of the ongoing COVID-19 pandemic, the aim of this analysis is to model the impacts of the pandemic on the most vulnerable groups in Uganda. The model estimates the impact of COVID-19 on expenditure, and subsequently poverty. The results from the microsimulation are stark with poverty rates likely to rise even further. However, the depth and length of the impact will be in part determined by the Government and international community's response to COVID-19.

Subsequently, the analysis will not only estimate impact of COVID-19 but it will also identify the most appropriate social protection responses for anticipating and preparing for the economic impacts of COVID-19 in Uganda. Ensuring that these measures reach children and their families, in particular the poor and marginalized during these times, is critical. As a result, the report models five social protection responses below, all of which are one-off targeted cash transfers aimed at shortening the window of economic vulnerability:

1) Child grant transfer for children aged 2 years and below
2) Child grant transfer for children aged 5 years and below
3) Expansion of SAGE grant for individuals 65 years and above
4) Transfer to households composed entirely of informal workers
5) Transfer to households that are considered to be labour constrained

A few caveats, this report was prepared by UNICEF Uganda on 14 April 2020, the assumptions underpinning the model was based on best available data at the time. For example, assumptions for COVID-19 infections, deaths and recoveries was based on a model from Imperial College which

was grounded on epidemiological data from the countries most affected at the time. As the situation and data continues to develop, far more continent and country specific data has emerged, however our model precedes this data.

1. Overview and assumptions

The modelling exercise for Uganda is based on two components:

1. The SIR model, and

2. A microsimulation of the infected population along with the impact of several mitigating strategies.

The first component provides an overview of the projected number of individuals susceptible to, infected with and recovered from the COVID-19 virus. It is modelled based on a number of assumptions of which a part are elaborated on in Annex I. The initial values for the modelling were obtained from the Uganda Ministry of Health website, in which it was stated that 53 individuals were infected and 0 had recovered. As no individual is immune against the virus, a susceptible population of 45,740,947 was assumed. The projections were undertaken for a basic reproductive ratio of 2, 2.5 and 3 – in line with the recommendations made by the WHO.

The second component included a microsimulation utilizing data provided by the Ugandan National Household Survey of 2016. In order to assign the projected infected and recovered of the SIR model to the microdata and to ensure that individuals with preconditions and a higher age were more likely to be severely affected by the virus, a vulnerability index was composed. This index includes indicators in relation to the heath status of an individual, pre-existing conditions, sanitation facilities, gender, multi-dimensional poverty, and a random component that increases with age. In order to identify the individuals that have died and were hospitalized (severely ill), EPRI utilized the assumptions made by a study conducted by the Imperial College of London (see

Table 1). Once these individuals were randomly assigned across age-groups, the impact of these infections on the expenditure of the households and there by the poverty rate of Uganda was investigated at a static point in time – 6 months into the pandemic.

Table 1. *Assumptions used to identify individuals that have died, were severely/mildly ill or were asymptomatic*

Of the individuals that are affected by COVID-19.....	...x% will be mildly ill[1]	...x% will be asymptotic[2]	...x% will be severely ill	...x% will die
Children under 10	84.89%	15.00%	0.1%	0.002%
Individuals aged 10-19	84.69%	15.00%	0.3%	0.006%
Individuals aged 20 - 29	83.77%	15.00%	1.2%	0.030%
Individuals aged 30 - 39	81,72%	15.00%	3.2%	0.080%
Individuals aged 40 - 49	79.95%	15.00%	4.9%	0.150%
Individuals aged 50 - 59	74.20%	15.00%	10.2%	0.600%
Individuals aged 60 - 69	66.20%	15.00%	16.6%	2.200%
Individuals aged 70 - 79	55.60%	15.00%	24.3%	5.100%
Individuals aged 80 and above	48.40%	15.00%	27.3%	9.300%

The impact on household expenditure was largely a result of identifying the industries that were under lockdown and approximating that 64% of micro, small and medium enterprises in these industries would collapse, while a total of 37.5% of employees in these industries would lose their jobs. Of healthy individuals that were not situated in an industry that was under lockdown, household expenditure was assumed to remain the same. Once an individual was infected or had lost his job/business, it was assumed that his/her per capita expenditure would decline. The magnitude of such a decline was dependent on the assumptions made. These can be classified into three different scenarios as outlined in Box 1.

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[1] https://www.usnews.com/news/health-news/articles/2020-03-30/odds-of-hospitalization-death-with-covid-19-rise-steadily-with-age-study - still searching for a more credible source.

[2] https://www.cebm.net/covid-19/covid-19-what-proportion-are-asymptomatic/

Box 1. Assumptions on the impact of loss of employment on expenditure

Scenario 1:

1. Expenditure remains the same for individuals that are working in industries not affected by the lockdown and that have not been sick.
2. Expenditure reduced by **20%** where employee has been fired, an MSME went bankrupt or an individual was unemployed.
3. Expenditure reduced by **5%** for individual that was own account worker or a subsistence farmer and did not get affected by COVID-19.
4. Expenditure reduced by **10%** for individual that was own account worker or a subsistence farmer and got affected by COVID-19.

Scenario 2:

1. Expenditure remains the same for individuals that are working in industries not affected by the lockdown and that have not been sick.
2. Expenditure reduced by **40%** where employee has been fired, an MSME went bankrupt or an individual was unemployed.
3. Expenditure reduced by **10%** for individual that was own account worker or a subsistence farmer and did not get affected by COVID-19.
4. Expenditure reduced by **15%** for individual that was own account worker or a subsistence farmer and got affected by COVID-19.

Scenario 3:

1. Expenditure remains the same for individuals that are working in industries not affected by the lockdown and that have not been sick.
2. Expenditure reduced by **60%** where employee has been fired, an MSME went bankrupt or an individual was unemployed.
3. Expenditure reduced by **15%** for individual that was own account worker or a subsistence farmer and did not get affected by COVID-19.
4. Expenditure reduced by **20%** for individual that was own account worker or a subsistence farmer and got affected by COVID-19.

Universal Child Grant intervention: Children aged 2 and below

Given the impact on expenditure and on poverty, the modelling also included the use of social protection mechanisms to mitigate the negative impact of the COVID-19 pandemic. As such, this note will investigate the potential of a **one-off universal child grant intervention** aimed at offsetting inevitable economic hardship as a result of the global pandemic, especially for poor and vulnerable communities. Every child under the age of three will be provided with a one-off transfer of UGX 60,000. This programme would provide cash transfers to 4,389,900 children under the age of three and cost a total of UGX 263,394,000,000 – equivalent to 0.19 per cent of national GDP. The provision of such a one-off transfer will provide an immediate and targeted response to the pandemic, thereby shortening the window of economic vulnerability that has opened itself as a result of COVID-19.

The results outlined below will provide an overview of the different basic reproduction ratios of the virus and their consequent impact on poverty for an unmitigated scenario (no implementation of the child grant) and a mitigated scenario (implementation of a child grant).

1. Results

1.1. Basic reproduction ratio of 2

The peak number of infections will occur on day 196 after the start of the pandemic. At this point, just over half of the population will have been affected (including both infected and recovered) by COVID-19 in both the rural and urban areas of Uganda. This includes 5,576,913 individuals in the urban areas and 17,913,221 individuals residing in rural areas. With regards to poverty, prior to the COVID-19 outbreak, the poverty rate of Uganda was 21.4 per cent. In urban areas this equated to 12.9 per cent and in rural areas to 24.1 per cent. Considering the unmitigated impact of the virus, six months into the pandemic, the poverty rates will increase – the magnitude of which will depend on the microsimulation scenario considered (see Box 1 for assumptions).
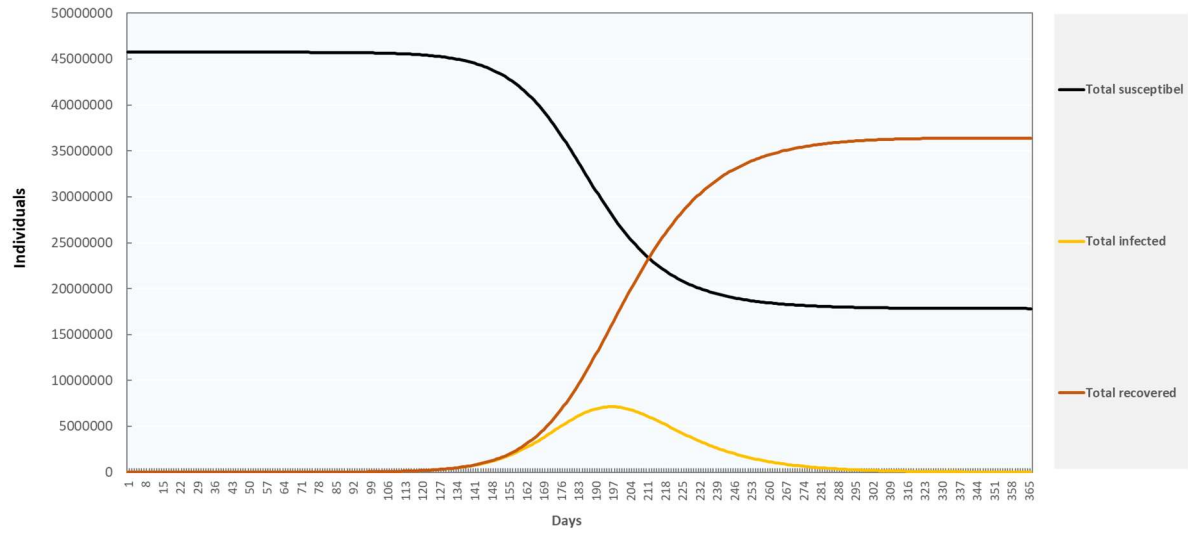
Figure 1. *The results of the SIR model for Uganda given a basic reproduction ratio of 2*

Table 2. *Unmitigated and mitigated poverty impacts[3]*

		Poverty impacts					
Pre COVID-19		**21.4%** (0.06) 8,870,047					
		Scenario 1		Scenario 2		Scenario 3	
Post COVID-19	Unmitigated	*Total*		*Total*		*Total*	
		24.1% (0.07)		27.0% (0.08)		29.8% (0.09)	
		10,003,258		11,194,497		12,369,985	
		Urban	*Rural*	*Urban*	*Rural*	*Urban*	*Rural*
		15.0% (0.04)	27.2% (0.08)	17.3% (0.05)	30.3% (0.09)	20.8% (0.06)	32.9% (0.10)
		1,561,624	8,441,681	1,802,426	9,391,719	2,162,849	10,207,014
	Mitigated with Child Grant 2 years and younger	*Total*		*Total*		*Total*	
		23.4% (0.07)		26.3% (0.08)		29.2% (0.09)	
		9,689,905		10,898,552		12,084,403	
		Urban	*Rural*	*Urban*	*Rural*	*Urban*	*Rural*
		14.7% (0.04)	26.3% (0.08)	16.8% (0.05)	29.5% (0.09)	20.2% (0.06)	32.1% (0.10)
		1,528,442	8,161,637	1,750,937	9,147,690	2,103,974	9,980,681
	Difference between unmitigated and mitigated scenario	0.76pp 313,353		0.71pp 295,945		0.69pp 285,582	
		Urban	*Rural*	*Urban*	*Rural*	*Urban*	*Rural*
		0.32pp 33,182	0.90pp 280,044	0.49pp 51,489	0.79pp 244,029	0.57pp 58,874	0.73pp 226,333

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[3] The average normalized poverty gap can be found in parentheses. It measures the extent to which individuals fall below the poverty line (the poverty gaps) as a proportion of the poverty line.

1.2.   Basic reproduction ratio of 2.5

The peak number of infections will occur on day 138 after the start of the pandemic. At this point, just over 62 per cent of the population will have been affected (including both infected and recovered) by COVID-19 in both the rural and urban areas of Uganda. This includes 6,749,424 individuals in the urban areas and 21,655,046 individuals residing in rural areas.
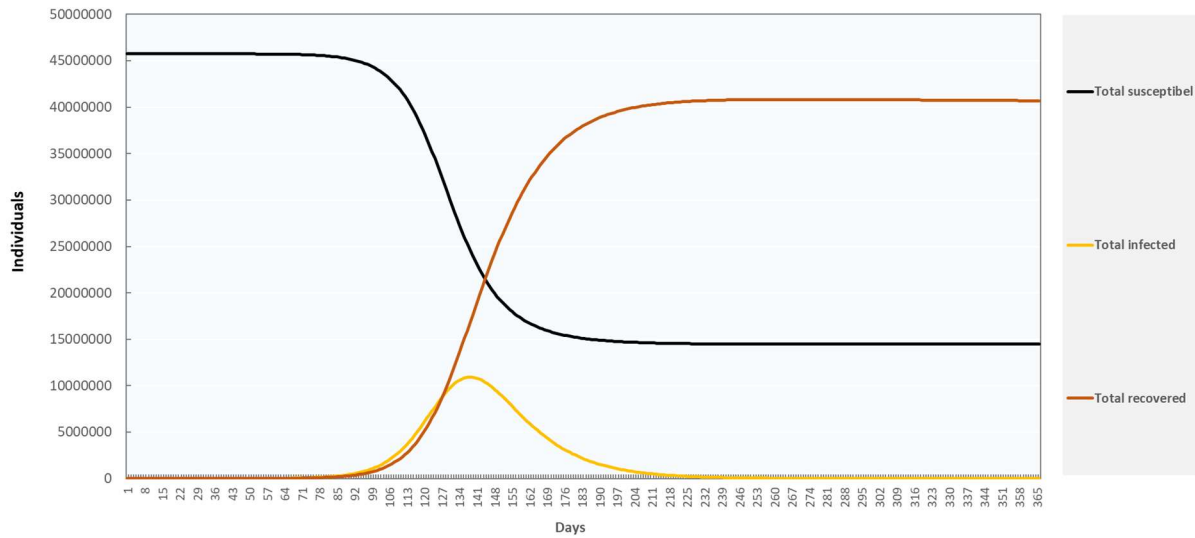

Figure 2. *The results of the SIR model for Uganda given a basic reproduction ratio of 2.5*

Table 3. Unmitigated and mitigated poverty impacts[4]

Poverty impacts							
Pre COVID-19		21.4% (0.06) 8,870,047.05					
		Scenario 1		Scenario 2		Scenario 3	
Post COVID-19	Unmitigated	*Total*		*Total*		*Total*	
		25.3% (0.07)		28.2% (0.08)		31.0% (0.10)	
		10,493,183		11,679,448		12,837,942	
		Urban	*Rural*	*Urban*	*Rural*	*Urban*	*Rural*
		15.6% (0.04)	28.6% (0.09)	18.3% (0.05)	31.5% (0.09)	21.5% (0.06)	34.2% (0.11)
		1,618,938	8,874,166	1,902,283	9,777,013	2,232,853	10,605,036
	Mitigated with Child Grant 2 years and younger	*Total*		*Total*		*Total*	
		24.5% (0.07)		27.3% (0.08)		30.2% (0.09)	
		10,164,494		11,327,133		12,500,964	
		Urban	*Rural*	*Urban*	*Rural*	*Urban*	*Rural*
		15.2% (0.04)	27.6% (0.08)	17.5% (0.05)	30.6% (0.09)	20.9% (0.06)	33.3% (0.10)
		1,583,156	8,581,393	1,815,948	9,511,250	2,175,747	10,325,303
	Difference between unmitigated and mitigated scenario	0.79pp 328,689		0.85pp 352,315		0.81pp 336,979	
		Urban	*Rural*	*Urban*	*Rural*	*Urban*	*Rural*
		0.34pp 35,782	0.94pp 292,773	0.83pp 86,335	0.86pp 265,762	0.55pp 57,106	0.90pp 279,734

1.3. Basic reproduction ratio of 3

The peak number of infections will occur on day 108 after the start of the pandemic. At this point, just below 70 per cent of the population will have been affected (including both infected and recovered) by COVID-19 in both the rural and urban areas of Uganda. This includes 7,615,378 individuals in the urban areas and 24,420,108 individuals residing in rural areas.

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[4] The average normalized poverty gap can be found in parentheses. It measures the extent to which individuals fall below the poverty line (the poverty gaps) as a proportion of the poverty line.
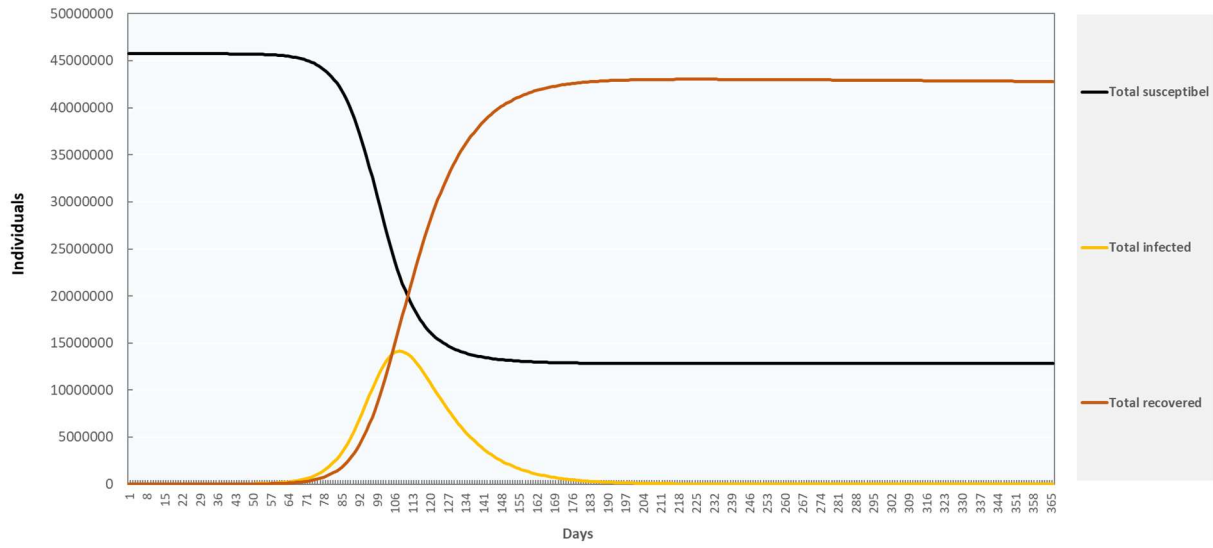
Figure 3.*The results of the SIR model for Uganda given a basic reproduction ratio of 3*

Table 4. Unmitigated and mitigated poverty impacts[5]

		Poverty impacts					
Pre COVID-19		21.4% (0.06) 8,870,047					
		Scenario 1		Scenario 2		Scenario 3	
Post COVID-19	Unmitigated	*Total*		*Total*		*Total*	
		25.4% (0.07)		28.4% (0.08)		31.2% (0.10)	
		10,525,513		11,759,444		12,917,110	
		Urban	*Rural*	*Urban*	*Rural*	*Urban*	*Rural*
		15.7% (0.04)	28.6% (0.09)	18.5% (0.05)	31.7% (0.10)	21.6% (0.06)	34.4% (0.11)
		1,631,316	8,894,346	1,922,567	9,836,933	2,246,687	10,670,546
	Mitigated with Child Grant 2 years and younger	*Total*		*Total*		*Total*	
		24.7% (0.07)		27.5% (0.08)		30.3% (0.09)	
		10,225,009		11,378,115		12,571,841	
		Urban	*Rural*	*Urban*	*Rural*	*Urban*	*Rural*
		15.3% (0.04)	27.8% (0.08)	17.5% (0.05)	30.8% (0.09)	21.0% (0.06)	33.5% (0.10)
		1,594,390	8,630,757	1,823,230	9,554,716	2,186,461	10,385,534
	Difference between unmitigated and mitigated scenario	0.73pp 316,070		0.92pp 377,363		0.83pp 424,476	
		Urban	*Rural*	*Urban*	*Rural*	*Urban*	*Rural*
		0.36pp 36,926	0.85pp 263,589	0.96pp 99,337	0.91pp 282,217	0.58pp 60,226	0.92pp 285,012

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[5] The average normalized poverty gap can be found in parentheses. It measures the extent to which individuals fall below the poverty line (the poverty gaps) as a proportion of the poverty line.

Universal Child Grant intervention: Children aged 5 and below

Given the impact on expenditure and on poverty, the modelling also included the use of social protection mechanisms to mitigate the negative impact of the COVID-19 pandemic. As such, this note will investigate the potential of a **one-off universal child grant intervention** aimed at offsetting inevitable economic hardship as a result of the global pandemic, especially for poor and vulnerable communities. Every child under the age of six will be provided with a one-off transfer of UGX 60,000. This programme would provide cash transfers to 8,449,000 children under the age of six and cost a total of UGX 506,940,000,000 – equivalent to 0.37 per cent of national GDP. The provision of such a one-off transfer will provide an immediate and targeted response to the pandemic, thereby shortening the window of economic vulnerability that has opened itself as a result of COVID-19.

The results outlined below will provide an overview of the different basic reproduction ratios of the virus and their consequent impact on poverty for an unmitigated scenario (no implementation of the child grant) and a mitigated scenario (implementation of a child grant).

Box 2. Assumptions on the impact of loss of employment on expenditure

Scenario 1:

5. Expenditure remains the same for individuals that are working in industries not affected by the lockdown and that have not been sick.
6. Expenditure reduced by **20%** where employee has been fired, an MSME went bankrupt or an individual was unemployed.
7. Expenditure reduced by **5%** for individual that was own account worker or a subsistence farmer and did not get affected by COVID-19.
8. Expenditure reduced by **10%** for individual that was own account worker or a subsistence farmer and got affected by COVID-19.

Scenario 2:

5. Expenditure remains the same for individuals that are working in industries not affected by the lockdown and that have not been sick.
6. Expenditure reduced by **40%** where employee has been fired, an MSME went bankrupt or an individual was unemployed.
7. Expenditure reduced by **10%** for individual that was own account worker or a subsistence farmer and did not get affected by COVID-19.
8. Expenditure reduced by **15%** for individual that was own account worker or a subsistence farmer and got affected by COVID-19.

Scenario 3:

5. Expenditure remains the same for individuals that are working in industries not affected by the lockdown and that have not been sick.
6. Expenditure reduced by **60%** where employee has been fired, an MSME went bankrupt or an individual was unemployed.
7. Expenditure reduced by **15%** for individual that was own account worker or a subsistence farmer and did not get affected by COVID-19.
8. Expenditure reduced by **20%** for individual that was own account worker or a subsistence farmer and got affected by COVID-19.

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1 Results

1.1. Basic reproduction ratio of 2

The peak number of infections will occur on day 196 after the start of the pandemic. At this point, just over half of the population will have been affected (including both infected and recovered) by COVID-19 in both the rural and urban areas of Uganda. This includes 5,576,913 individuals in the urban areas and 17,913,221 individuals residing in rural areas. With regards to poverty, prior to the COVID-19 outbreak, the poverty rate of Uganda was 21.4 per cent. In urban areas this equated to 12.9 per cent and in rural areas to 24.1 per cent. Considering the unmitigated impact of the virus, six months into the pandemic, the poverty rates will increase – the magnitude of which will depend on the microsimulation scenario considered (see Box 1 for assumptions).
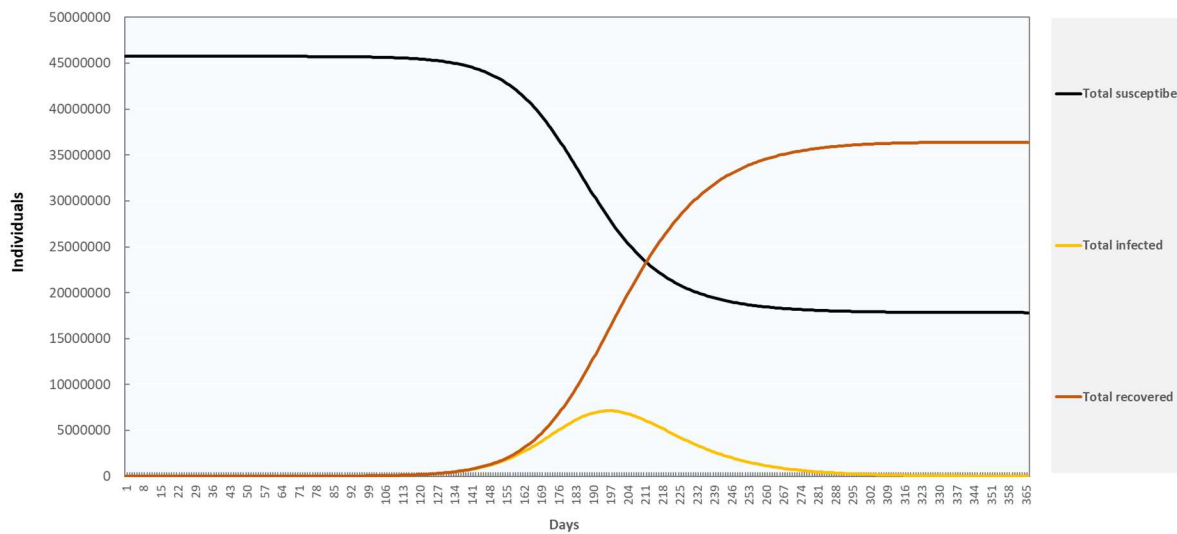

Figure 4. The results of the SIR model for Uganda given a basic reproduction ratio of 2

Table 5. *Unmitigated and mitigated poverty impacts[6]*

Poverty impacts							
Pre COVID-19		21.4% (0.06) 8,870,047					
		Scenario 1		Scenario 2		Scenario 3	
Post COVID-19	Unmitigated	*Total*		*Total*		*Total*	
		24.1% (0.07)		27.0% (0.08)		29.8% (0.09)	
		10,003,258		11,194,497		12,369,985	
		Urban	*Rural*	*Urban*	*Rural*	*Urban*	*Rural*
		15.0% (0.04)	27.2% (0.08)	17.3% (0.05)	30.3% (0.09)	20.8% (0.06)	32.9% (0.10)
		1,561,624	8,441,681	1,802,426	9,391,719	2,162,849	10,207,014
	Mitigated with Child Grant 5 years and younger	*Total*		*Total*		*Total*	
		22.7% (0.06)		25.4% (0.07)		28.4% (0.08)	
		9,412,198		10,515,565		11,757,372	
		Urban	*Rural*	*Urban*	*Rural*	*Urban*	*Rural*
		14.3% (0.04)	25.5% (0.07)	16.4% (0.05)	28.4% (0.08)	19.6% (0.06)	31.3% (0.09)
		1,490,684	7,921,644	1,708,498	8,807,104	2,035,427	9,722,060
	Difference between unmitigated and mitigated scenario	1.4pp 591,060		1.6pp 678,932		1.5pp 612,614	
		Urban	*Rural*	*Urban*	*Rural*	*Urban*	*Rural*
		0.68pp 70,940	1.68pp 520,037	0.90pp 93,928	1.88pp 584,615	1.23pp 127,422	1.56pp 484,954

1.2.   Basic reproduction ratio of 2.5

The peak number of infections will occur on day 138 after the start of the pandemic. At this point, just over 62 per cent of the population will have been affected (including both infected and

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[6] The average normalized poverty gap can be found in parentheses. It measures the extent to which individuals fall below the poverty line (the poverty gaps) as a proportion of the poverty line.

recovered) by COVID-19 in both the rural and urban areas of Uganda. This includes 6,749,424 individuals in the urban areas and 21,655,046 individuals residing in rural areas.
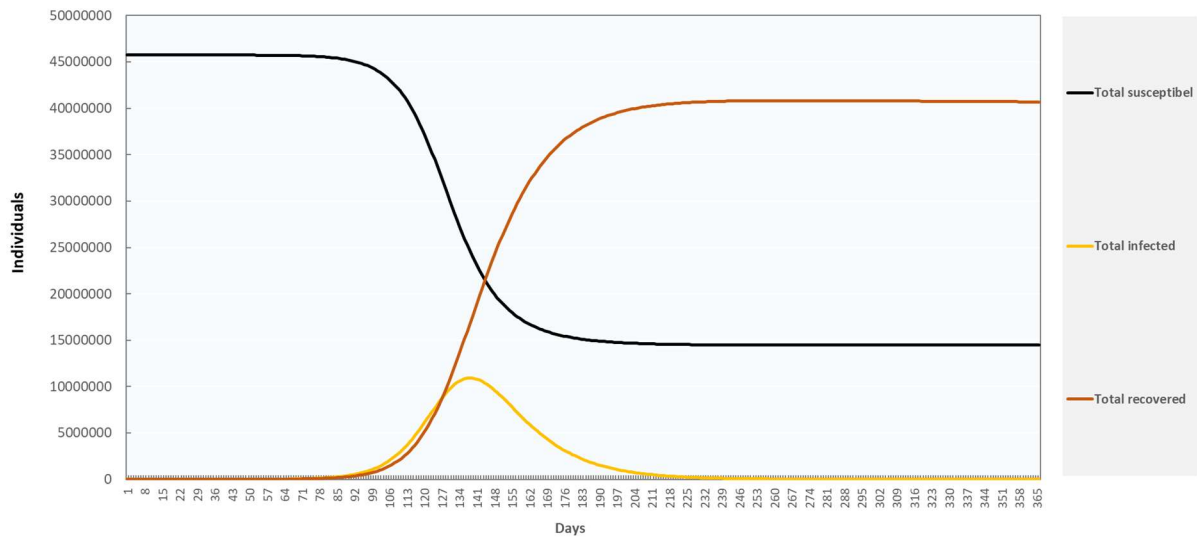

Figure 5. The results of the SIR model for Uganda given a basic reproduction ratio of 2.5

Table 6. Unmitigated and mitigated poverty impacts[7]

		Poverty impacts					
Pre COVID-19		21.4% (0.06) 8,870,047					
		Scenario 1		Scenario 2		Scenario 3	
Post COVID-19	Unmitigated	*Total*		*Total*		*Total*	
		25.3% (0.07)		28.2% (0.08)		31.0% (0.10)	
		10,493,183		11,679,448		12,837,942	
		Urban	*Rural*	*Urban*	*Rural*	*Urban*	*Rural*
		15.6% (0.04)	28.6% (0.09)	18.3% (0.05)	31.5% (0.10)	21.5% (0.06)	34.2% (0.11)
		1,618,938	8,874,166	1,902,283	9,777,013	2,232,853	10,605,036
	Mitigated with Child Grant 5 years and younger	*Total*		*Total*		*Total*	
		23.7% (0.07)		26.5% (0.08)		29.3% (0.09)	
		9,834,561		10,973,989		12,127,095	
		Urban	*Rural*	*Urban*	*Rural*	*Urban*	*Rural*
		14.8% (0.04)	26.7% (0.08)	17.0% (0.05)	29.7% (0.09)	20.3% (0.06)	32.2% (0.10)
		1,539,260	8,295,139	1,764,667	9,209,163	2,116,145	10,010,797
	Difference between unmitigated and mitigated scenario	1.59pp 658,622		1.70pp 705,459		1.72pp 710,847	
		Urban	*Rural*	*Urban*	*Rural*	*Urban*	*Rural*
		0.77pp 79,678	1.87pp 579,027	1.32pp 137,616	1.83pp 567,850	1.12pp 116,708	1.91pp 594,240

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[7] The average normalized poverty gap can be found in parentheses. It measures the extent to which individuals fall below the poverty line (the poverty gaps) as a proportion of the poverty line.

1.3. Basic reproduction ratio of 3

The peak number of infections will occur on day 108 after the start of the pandemic. At this point, just below 70 per cent of the population will have been affected (including both infected and recovered) by COVID-19 in both the rural and urban areas of Uganda. This includes 7,615,378 individuals in the urban areas and 24,420,108 individuals residing in rural areas.
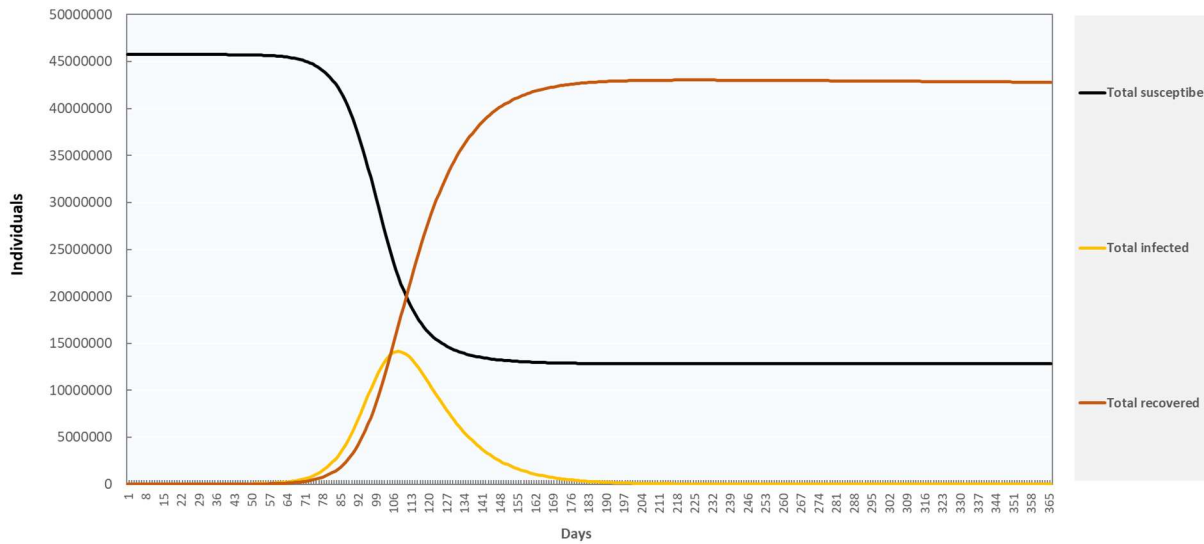

Figure 6*.The results of the SIR model for Uganda given a basic reproduction ratio of 3*

Table 7. *Unmitigated and mitigated poverty impacts[8]*

		Poverty impacts					
Pre COVID-19		21.4% (0.06) 8,870,047					
		Scenario 1		Scenario 1		Scenario 1	
Post COVID-19	Unmitigated	*Total*		*Total*		*Total*	
		25.4% (0.07)		28.4% (0.08)		31.2% (0.10)	
		10,525,513		11,759,444		12,917,110	
		Urban	*Rural*	*Urban*	*Rural*	*Urban*	*Rural*
		15.7% (0.04)	28.6% (0.09)	18.5% (0.05)	31.7% (0.10)	21.6% (0.06)	34.4% (0.11)
		1,631,316	8,894,346	1,922,567	9,836,933	2,246,687	10,670,546
	Mitigated with Child Grant 5 years and younger	*Total*		*Total*		*Total*	
		23.9% (0.07)		26.6% (0.08)		29.5% (0.09)	
		9,895,905		11,027,044		12,217,454	
		Urban	*Rural*	*Urban*	*Rural*	*Urban*	*Rural*
		14.9% (0.04)	26.9% (0.08)	17.0% (0.05)	29.8% (0.09)	20.4% (0.06)	32.5% (0.10)
		1,545,709	8,350,092	1,768,932	9,258,217	2,123,946	10,093,692
	Difference between unmitigated and mitigated scenario	1.52pp 629,608		1.77pp 732,401		1.69pp 699,656	
		Urban	*Rural*	*Urban*	*Rural*	*Urban*	*Rural*
		0.82pp 85,607	1.75pp 544,254	1.48pp 153,635	1.86pp 578,716	1.18pp 122,741	1.86pp 576,853

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[8] The average normalized poverty gap can be found in parentheses. It measures the extent to which individuals fall below the poverty line (the poverty gaps) as a proportion of the poverty line.

One-off expansion of the SAGE grant to a total of individuals aged 65 years and over

Given the impact on expenditure and on poverty, the modelling also included the use of social protection mechanisms to mitigate the negative impact of the COVID-19 pandemic. As such, this note will investigate the potential of a **one-off expansion of the SAGE grant to individuals aged 65 years and over** aimed at offsetting inevitable economic hardship as a result of the global pandemic, especially for poor and vulnerable communities. Every individual over the age of 65 will be provided with a one-off transfer of UGX 150,000. This programme would provide cash transfers to 1,045,300 individuals over the age of 64 and cost a total of UGX 156,795,000,000 – equivalent to 0.12 per cent of national GDP. The provision of such a one-off transfer will provide an immediate and targeted response to the pandemic, thereby shortening the window of economic vulnerability that has opened itself as a result of COVID-19.

The results outlined below will provide an overview of the different basic reproduction ratios of the virus and their consequent impact on poverty for an unmitigated scenario (no implementation of the expanded SAGE grant) and a mitigated scenario (implementation of the expanded SAGE grant).

1. Results

1.1. Basic reproduction ratio of 2

The peak number of infections will occur on day 196 after the start of the pandemic. At this point, just over half of the population will have been affected (including both infected and recovered) by COVID-19 in both the rural and urban areas of Uganda. This includes 5,576,913 individuals in the urban areas and 17,913,221 individuals residing in rural areas. With regards to poverty, prior to the COVID-19 outbreak, the poverty rate of Uganda was 21.4 per cent. In urban areas this equated to 12.9 per cent and in rural areas to 24.1 per cent. Considering the unmitigated impact of the virus, six months into the pandemic, the poverty rates will increase – the magnitude of which will depend on the microsimulation scenario considered (see Box 1 for assumptions).
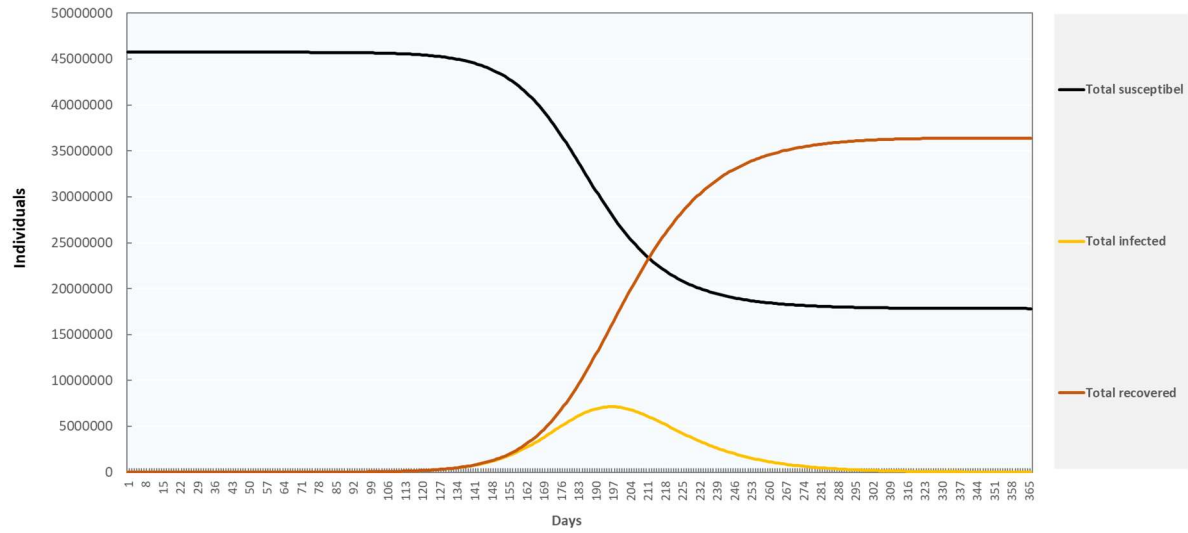
Figure 7. *The results of the SIR model for Uganda given a basic reproduction ratio of 2*

Table 8. *Unmitigated and mitigated poverty impacts[9]*

Poverty impacts							
Pre COVID-19		21.4% (0.06) 8,870,047					
		Scenario 1		Scenario 1		Scenario 1	
Post COVID-19	Unmitigated	*Total*		*Total*		*Total*	
		24.1% (0.07)		27.0% (0.08)		29.8% (0.09)	
		10,003,258		11,194,497		12,369,985	
		Urban	*Rural*	*Urban*	*Rural*	*Urban*	*Rural*
		15.0% (0.04)	27.2% (0.08)	17.3% (0.05)	30.3% (0.09)	20.8% (0.06)	32.9% (0.10)
		1,561,624	8,441,681	1,802,426	9,391,719	2,162,849	10,207,014
	Mitigated with expanded SAGE grant	*Total*		*Total*		*Total*	
		23.9% (0.07)		26.2% (0.08)		29.3% (0.09)	
		9,899,636		11,058,545		12,275,896	
		Urban	*Rural*	*Urban*	*Rural*	*Urban*	*Rural*
		14.8% (0.04)	26.9% (0.08)	17.0% (0.05)	29.9% (0.09)	20.6% (0.06)	32.6% (0.10)
		1,539,780	8,359,717	1,769,140	9,289,264	2,142,253	10,133,743
	Difference between unmitigated and mitigated scenario	0.25pp 103,622		0.33pp 135,952		0.23pp 94,089	
		Urban	*Rural*	*Urban*	*Rural*	*Urban*	*Rural*
		0.21pp 21,844	0.26pp 81,964	0.32pp 33,286	0.33pp 102,455	0.20pp 20,596	0.24pp 73,271

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[9] The average normalized poverty gap can be found in parentheses. It measures the extent to which individuals fall below the poverty line (the poverty gaps) as a proportion of the poverty line.

1.2. Basic reproduction ratio of 2.5

The peak number of infections will occur on day 138 after the start of the pandemic. At this point, just over 62 per cent of the population will have been affected (including both infected and recovered) by COVID-19 in both the rural and urban areas of Uganda. This includes 6,749,424 individuals in the urban areas and 21,655,046 individuals residing in rural areas.
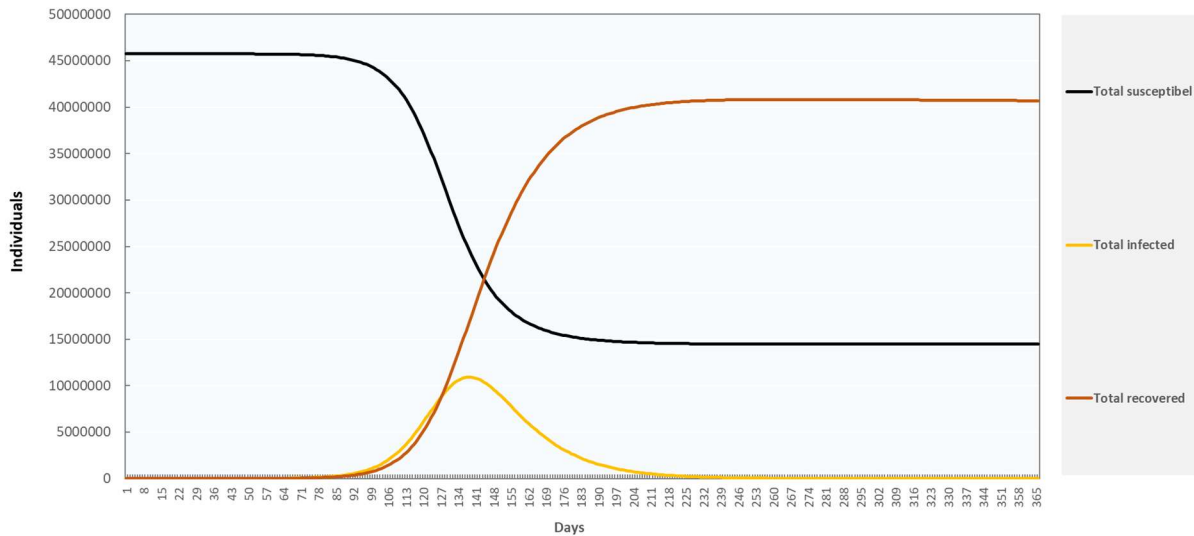

Figure 8. The results of the SIR model for Uganda given a basic reproduction ratio of 2.5

Table 9. Unmitigated and mitigated poverty impacts[10]

		Scenario 1		Scenario 2		Scenario 3	
Poverty impacts							
Pre COVID-19		21.4% (0.06) 8,870,047					
		Scenario 1		Scenario 2		Scenario 3	
Post COVID-19	Unmitigated	Total		Total		Total	
		25.3% (0.07)		28.2% (0.08)		31.0% (0.10)	
		10,493,183		11,679,448		12,837,942	
		Urban		*Rural*		*Urban*	
		15.6% (0.04)	28.6% (0.09)	18.3% (0.05)	31.5% (0.10)	21.5% (0.08)	34.2% (0.10)
		1,618,938	8,874,166	1,902,283	9,777,013	2,232,853	10,605,036
	Mitigated with expanded SAGE grant	*Total*		*Total*		*Total*	
		25.0% (0.07)		27.9% (0.08)		30.7% (0.10)	
		10,374,639		11,582,043		12,731,419	
		Urban	*Rural*	*Urban*	*Rural*	*Urban*	*Rural*
		15.3% (0.04)	28.3% (0.08)	18.1% (0.05)	31.2% (0.09)	21.3% (0.06)	33.9% (0.11)
		1,590,645	8,784,129	1,882,416	9,699,706	2,217,042	10,514,379
	Difference between unmitigated and mitigated scenario	0.29pp 118,544		0.23pp 97,405		0.26pp 106,523	
		Urban	*Rural*	*Urban*	*Rural*	*Urban*	*Rural*
		0.27pp 28,293	0.29pp 90,036	0.19pp 19,867	0.25pp 77,307	0.15pp 15,811	0.29pp 90,657

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[10] The average normalized poverty gap can be found in parentheses. It measures the extent to which individuals fall below the poverty line (the poverty gaps) as a proportion of the poverty line.

1.3. Basic reproduction ratio of 3

The peak number of infections will occur on day 108 after the start of the pandemic. At this point, just below 70 per cent of the population will have been affected (including both infected and recovered) by COVID-19 in both the rural and urban areas of Uganda. This includes 7,615,378 individuals in the urban areas and 24,420,108 individuals residing in rural areas.
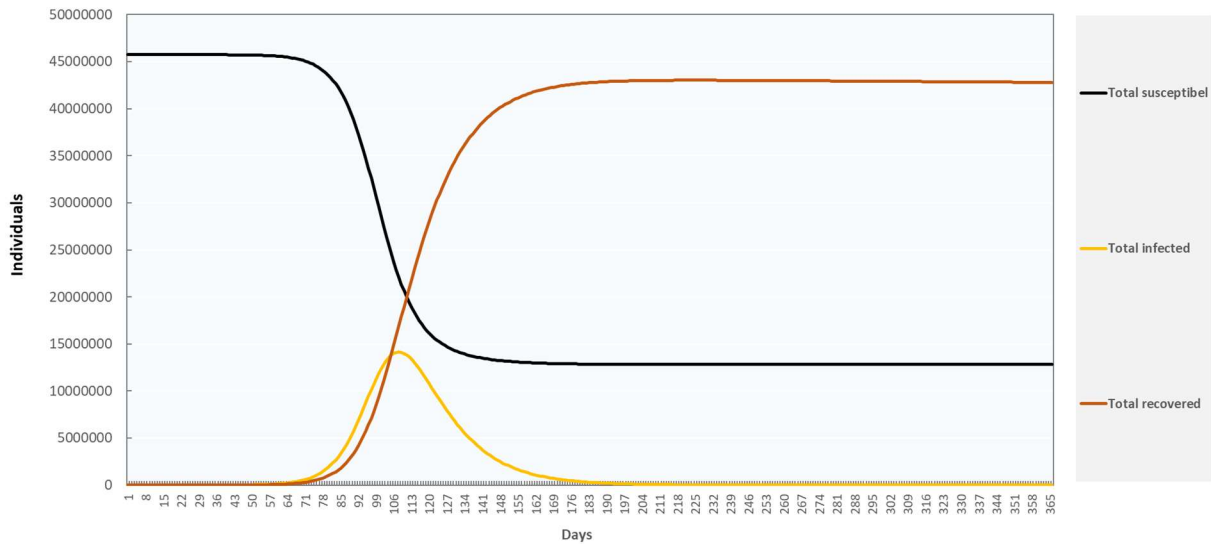

Figure 9.*The results of the SIR model for Uganda given a basic reproduction ratio of 3*

Table 10. *Unmitigated and mitigated poverty impacts[11]*

Poverty impacts							
Pre COVID-19		21.4% (0.06) 8,870,047					
		Scenario 1		Scenario 2		Scenario 3	
Post COVID-19	Unmitigated	*Total*		*Total*		*Total*	
		25.4% (0.07)		28.4% (0.08)		31.2% (0.10)	
		10,525,513		11,759,444		12,917,110	
		Urban	*Rural*	*Urban*	*Rural*	*Urban*	*Rural*
		15.7% (0.04)	28.6% (0.09)	18.5% (0.05)	31.7% (0.10)	21.6% (0.06)	34.4% (0.11)
		1,631,316	8,894,346	1,922,567	9,836,933	2,246,687	10,670,546
	Mitigated with expanded SAGE grant	*Total*		*Total*		*Total*	
		25.1% (0.07)		28.1% (0.08)		30.9% (0.10)	
		10,410,285		11,656,237		12,806,027	
		Urban	*Rural*	*Urban*	*Rural*	*Urban*	*Rural*
		15.4% (0.04)	28.4% (0.08)	18.2% (0.05)	31.4% (0.09)	21.4% (0.06)	34.1% (0.11)
		1,605,936	8,804,620	1,896,146	9,760,247	2,229,836	10,576,163
	Difference between unmitigated and mitigated scenario	0.28pp 115,228		0.25pp 103,208		0.27pp 111,083	
		Urban	*Rural*	*Urban*	*Rural*	*Urban*	*Rural*
		0.24pp 25,380	0.29pp 89,726	0.25pp 26,421	0.25pp 76,686	0.16pp 16,851	0.30pp 94,383

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[11] The average normalized poverty gap can be found in parentheses. It measures the extent to which individuals fall below the poverty line (the poverty gaps) as a proportion of the poverty line.

One-off transfer to households composed entirely of informal workers

Given the impact on expenditure and on poverty, the modelling also included the use of social protection mechanisms to mitigate the negative impact of the COVID-19 pandemic. As such, this note will investigate the potential of a **one-off transfer to households composed entirely of informal workers** aimed at offsetting inevitable economic hardship as a result of the global pandemic, especially for poor and vulnerable communities. In this case, an informal worker is defined as an individual undertaking own account work or being classified as a contributing family member. Every household that falls within this classification will be provided with a one-off transfer of UGX 150,000. This programme would provide cash transfers to 5,640,000 households consisting of informal workers and cost a total of UGX 846,000,000,000– equivalent to 0.62 per cent of national GDP. The provision of such a one-off transfer will provide an immediate and targeted response to the pandemic, thereby shortening the window of economic vulnerability that has opened itself as a result of COVID-19.

The results outlined below will provide an overview of the different basic reproduction ratios of the virus and their consequent impact on poverty for an unmitigated scenario (no implementation of the informal worker programme) and a mitigated scenario (implementation of the informal worker programme).

Box 4. Assumptions on the impact of loss of employment on expenditure

Scenario 1:

13. Expenditure remains the same for individuals that are working in industries not affected by the lockdown and that have not been sick.
14. Expenditure reduced by **20%** where employee has been fired, an MSME went bankrupt or an individual was unemployed.
15. Expenditure reduced by **5%** for individual that was own account worker or a subsistence farmer and did not get affected by COVID-19.
16. Expenditure reduced by **10%** for individual that was own account worker or a subsistence farmer and got affected by COVID-19.

Scenario 2:

13. Expenditure remains the same for individuals that are working in industries not affected by the lockdown and that have not been sick.
14. Expenditure reduced by **40%** where employee has been fired, an MSME went bankrupt or an individual was unemployed.
15. Expenditure reduced by **10%** for individual that was own account worker or a subsistence farmer and did not get affected by COVID-19.
16. Expenditure reduced by **15%** for individual that was own account worker or a subsistence farmer and got affected by COVID-19.

Scenario 3:

13. Expenditure remains the same for individuals that are working in industries not affected by the lockdown and that have not been sick.
14. Expenditure reduced by **60%** where employee has been fired, an MSME went bankrupt or an individual was unemployed.
15. Expenditure reduced by **15%** for individual that was own account worker or a subsistence farmer and did not get affected by COVID-19.
16. Expenditure reduced by **20%** for individual that was own account worker or a subsistence farmer and got affected by COVID-19.

1. Results

1.1. Basic reproduction ratio of 2

The peak number of infections will occur on day 196 after the start of the pandemic. At this point, just over half of the population will have been affected (including both infected and recovered) by COVID-19 in both the rural and urban areas of Uganda. This includes 5,576,913 individuals in the urban areas and 17,913,221 individuals residing in rural areas. With regards to poverty, prior to the COVID-19 outbreak, the poverty rate of Uganda was 21.4 per cent. In urban areas this equated to 12.9 per cent and in rural areas to 24.1 per cent. Considering the unmitigated impact of the virus, six months into the pandemic, the poverty rates will increase – the magnitude of which will depend on the microsimulation scenario considered (see Box 1 for assumptions).
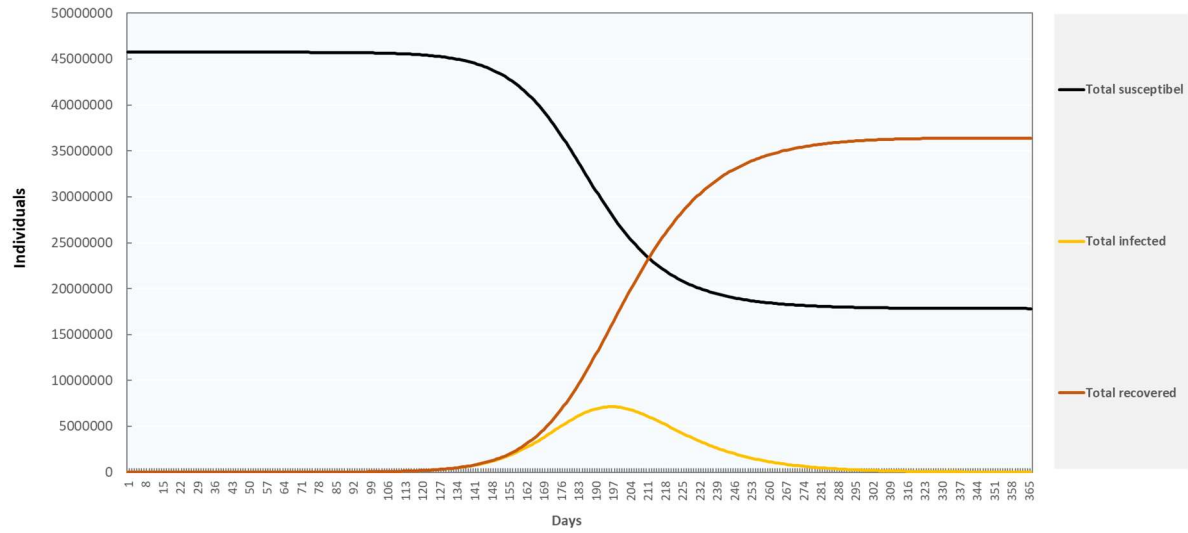
Figure 10. *The results of the SIR model for Uganda given a basic reproduction ratio of 2*

Table 11. *Unmitigated and mitigated poverty impacts[12]*

Poverty impacts							
Pre COVID-19		21.4% (0.06) 8,870,047					
		Scenario 1		Scenario 2		Scenario 3	
Post COVID-19	Unmitigated	*Total*		*Total*		*Total*	
		24.1% (0.07)		27.0% (0.08)		29.8% (0.09)	
		10,003,258		11,194,497		12,369,985	
		Urban	*Rural*	*Urban*	*Rural*	*Urban*	*Rural*
		15.0% (0.04)	27.2% (0.08)	17.3% (0.05)	30.3% (0.09)	20.8% (0.06)	32.9% (0.10)
		1,561,624	8,441,681	1,802,426	9,391,719	2,162,849	10,207,014
	Mitigated with the informal worker programme	*Total*		*Total*		*Total*	
		22.3% (0.06)		25.0% (0.07)		27.8% (0.08)	
		9,248,060		10,346,454		11,509,922	
		Urban	*Rural*	*Urban*	*Rural*	*Urban*	*Rural*
		14.5% (0.04)	24.9% (0.07)	16.6% (0.05)	27.8% (0.08)	19.3% (0.06)	30.6% (0.09)
		1,505,038	7,742,813	1,723,580	8,622,996	2,011,606	9,498,521
	Difference between unmitigated and mitigated scenario	1.82pp 755,197		2.05pp 848,043		2.08pp 860,063	
		Urban	*Rural*	*Urban*	*Rural*	*Urban*	*Rural*
		0.54pp 56,586	2.25pp 698,868	0.76pp 78,846	2.48pp 768,724	1.45pp 151,242	2.28pp 708,493

[12] The average normalized poverty gap can be found in parentheses. It measures the extent to which individuals fall below the poverty line (the poverty gaps) as a proportion of the poverty line.

1.2. Basic reproduction ratio of 2.5

The peak number of infections will occur on day 138 after the start of the pandemic. At this point, just over 62 per cent of the population will have been affected (including both infected and recovered) by COVID-19 in both the rural and urban areas of Uganda. This includes 6,749,424 individuals in the urban areas and 21,655,046 individuals residing in rural areas.
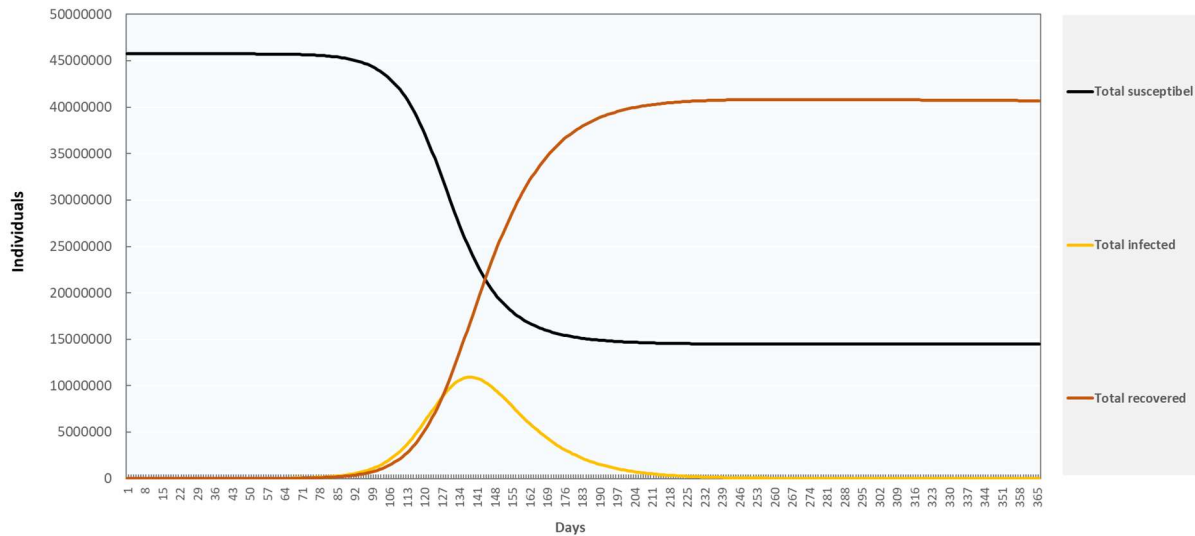

Figure 11. *The results of the SIR model for Uganda given a basic reproduction ratio of 2.5*

Table 12. Unmitigated and mitigated poverty impacts[13]

Poverty impacts							
Pre COVID-19		21.4% (0.06) 8,870,047					
		Scenario 1		**Scenario 2**		**Scenario 3**	
Post COVID-19	**Unmitigated**	*Total*		*Total*		*Total*	
		25.3% (0.07)		28.2% (0.08)		31.0% (0.10)	
		10,493,183		11,679,448		12,837,942	
		Urban	*Rural*	*Urban*	*Urban*	*Rural*	*Urban*
		15.6% (0.04)	28.6% (0.09)	18.3% (0.05)	31.5% (0.10)	21.5% (0.06)	34.2% (0.11)
		1,618,938	8,874,166	1,902,283	9,777,013	2,232,853	10,605,036
	Mitigated with the informal worker programme	*Total*		*Total*		*Total*	
		23.2% (0.06)		26.2% (0.07)		29.0% (0.08)	
		9,633,534		10,847,570		12,001,505	
		Urban	*Rural*	*Urban*	*Rural*	*Urban*	*Rural*
		14.8% (0.04)	26.1% (0.07)	17.3% (0.05)	29.2% (0.08)	20.2% (0.06)	31.9% (0.09)
		1,536,764	8,096,749	1,796,705	9,051,134	2,102,414	9,899,027
	Difference between unmitigated and mitigated scenario	2.07pp 859,648		2.01pp 831,878		2.02pp 836,437	
		Urban	*Rural*	*Urban*	*Rural*	*Urban*	*Rural*
		0.79pp 82,174	2.50pp 777,417	1.02pp 105,578	2.34pp 725,879	1.25pp 130,439	2.27pp 706,009

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[13] The average normalized poverty gap can be found in parentheses. It measures the extent to which individuals fall below the poverty line (the poverty gaps) as a proportion of the poverty line.

1.3.   Basic reproduction ratio of 3

The peak number of infections will occur on day 108 after the start of the pandemic. At this point, just below 70 per cent of the population will have been affected (including both infected and recovered) by COVID-19 in both the rural and urban areas of Uganda. This includes 7,615,378 individuals in the urban areas and 24,420,108 individuals residing in rural areas.
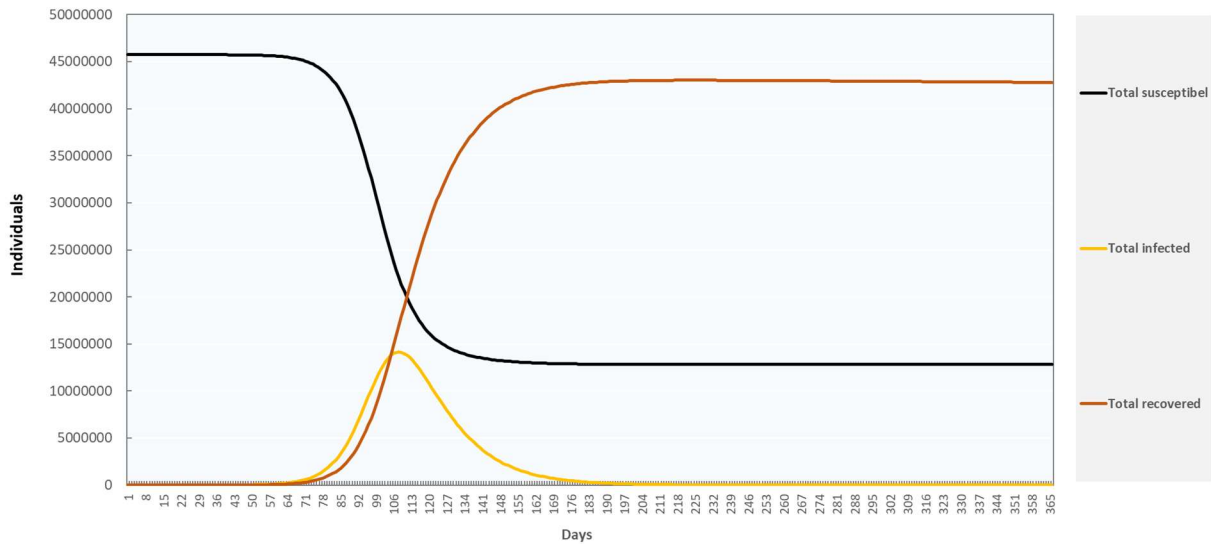

Figure 12.The results of the SIR model for Uganda given a basic reproduction ratio of 3

Table 13. Unmitigated and mitigated poverty impacts[14]

		Poverty impacts					
Pre COVID-19		21.4% (0.06) 8,870,047					
		Scenario 1		Scenario 2		Scenario 3	
Post COVID-19	Unmitigated	*Total*		*Total*		*Total*	
		25.4% (0.07)		28.4% (0.08)		31.2% (0.10)	
		10,525,513		11,759,444		12,917,110	
		Urban	*Rural*	*Urban*	*Rural*	*Urban*	*Rural*
		15.7% (0.04)	28.6% (0.09)	18.5% (0.05)	31.7% (0.10)	21.6% (0.06)	34.4% (0.11)
		1,631,316	8,894,346	1,922,567	9,836,933	2,246,687	10,670,546
	Mitigated with the informal worker programme	*Total*		*Total*		*Total*	
		23.3% (0.06)		26.4% (0.07)		29.1% (0.09)	
		9,665,864		10,924,250		12,050,415	
		Urban	*Rural*	*Urban*	*Rural*	*Urban*	*Rural*
		14.8% (0.04)	26.2% (0.07)	17.5% (0.05)	29.3% (0.08)	20.3% (0.06)	32.0% (0.09)
		1,542,381	8,123,449	1,815,532	9,108,571	2,114,272	9,935,973
	Difference between unmitigated and mitigated scenario	2.07pp 859,648		2.02pp 835,194		2.09pp 866,695	
		Urban	*Rural*	*Urban*	*Rural*	*Urban*	*Rural*
		0.86pp 88,935	2.48pp 770,897	1.03pp 107,035	2.35pp 728,363	1.27pp 132,415	2.37pp 734,572

One-off transfer to households that are considered to be labour constrained

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[14] The average normalized poverty gap can be found in parentheses. It measures the extent to which individuals fall below the poverty line (the poverty gaps) as a proportion of the poverty line.

Given the impact on expenditure and on poverty, the modelling also included the use of social protection mechanisms to mitigate the negative impact of the COVID-19 pandemic. As such, this note will investigate the potential of a **one-off transfer to households that are considered to be labour constrained** aimed at offsetting inevitable economic hardship as a result of the global pandemic, especially for poor and vulnerable communities. A labour constrained household is any household that is characterized as having a dependency ratio of three or higher. Every such household will be provided with a one-off transfer of UGX 150,000. This programme would provide cash transfers to 1,610,585 households and cost a total of UGX 241,587,683,845 – equivalent to 0.19 per cent of national GDP. The provision of such a one-off transfer will provide an immediate and targeted response to the pandemic, thereby shortening the window of economic vulnerability that has opened itself as a result of COVID-19.

The results outlined below will provide an overview of the different basic reproduction ratios of the virus and their consequent impact on poverty for an unmitigated scenario (no implementation of the programme for the labour constrained) and a mitigated scenario (implementation of the programme for the labour constrained).

Box 5. Assumptions on the impact of loss of employment on expenditure

Scenario 1:

17. Expenditure remains the same for individuals that are working in industries not affected by the lockdown and that have not been sick.
18. Expenditure reduced by **20%** where employee has been fired, an MSME went bankrupt or an individual was unemployed.
19. Expenditure reduced by **5%** for individual that was own account worker or a subsistence farmer and did not get affected by COVID-19.
20. Expenditure reduced by **10%** for individual that was own account worker or a subsistence farmer and got affected by COVID-19.

Scenario 2:

17. Expenditure remains the same for individuals that are working in industries not affected by the lockdown and that have not been sick.
18. Expenditure reduced by **40%** where employee has been fired, an MSME went bankrupt or an individual was unemployed.
19. Expenditure reduced by **10%** for individual that was own account worker or a subsistence farmer and did not get affected by COVID-19.
20. Expenditure reduced by **15%** for individual that was own account worker or a subsistence farmer and got affected by COVID-19.

Scenario 3:

17. Expenditure remains the same for individuals that are working in industries not affected by the lockdown and that have not been sick.
18. Expenditure reduced by **60%** where employee has been fired, an MSME went bankrupt or an individual was unemployed.
19. Expenditure reduced by **15%** for individual that was own account worker or a subsistence farmer and did not get affected by COVID-19.
20. Expenditure reduced by **20%** for individual that was own account worker or a subsistence farmer and got affected by COVID-19.

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2. Results

2.1. Basic reproduction ratio of 2

The peak number of infections will occur on day 196 after the start of the pandemic. At this point, just over half of the population will have been affected (including both infected and recovered) by COVID-19 in both the rural and urban areas of Uganda. This includes 5,576,913 individuals in the urban areas and 17,913,221 individuals residing in rural areas. With regards to poverty, prior to the COVID-19 outbreak, the poverty rate of Uganda was 21.4 per cent. In urban areas this equated to 12.9 per cent and in rural areas to 24.1 per cent. Considering the unmitigated impact of the virus, six months into the pandemic, the poverty rates will increase – the magnitude of which will depend on the microsimulation scenario considered (see Box 1 for assumptions).
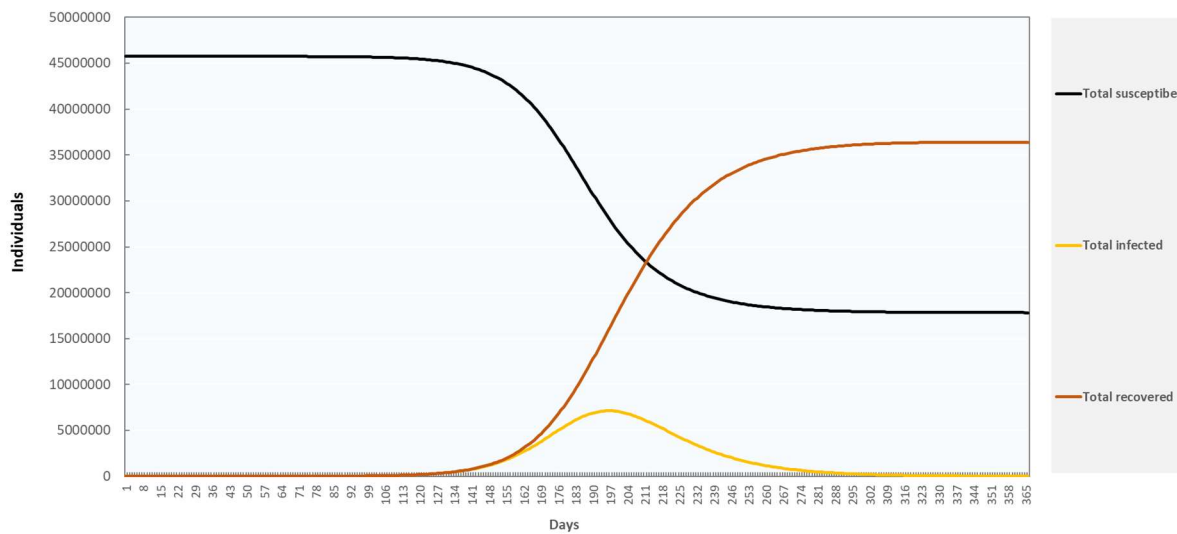

Figure 13. *The results of the SIR model for Uganda given a basic reproduction ratio of 2*

Table 14. Unmitigated and mitigated poverty impacts[15]

		Scenario 1		Scenario 2		Scenario 3	
Poverty impacts							
Pre COVID-19		21.4% (0.06) 8,870,047					
		Scenario 1		**Scenario 2**		**Scenario 3**	
Post COVID-19	Unmitigated	*Total*		*Total*		*Total*	
		24.1% (0.07)		27.0% (0.08)		29.8% (0.09)	
		10,003,258		11,194,497		12,369,985	
		Urban	*Rural*	*Urban*	*Rural*	*Urban*	*Rural*
		15.0% (0.04)	27.2% (0.08)	17.3% (0.05)	30.3% (0.09)	20.8% (0.06)	32.9% (0.10)
		1,561,624	8,441,681	1,802,426	9,391,719	2,162,849	10,207,014
	Mitigated with the programme for the labour constrained	*Total*		*Total*		*Total*	
		23.4% (0.07)		26.2% (0.08)		29.3% (0.09)	
		9,691,977		10,870,781		12,128,339	
		Urban	*Rural*	*Urban*	*Rural*	*Urban*	*Rural*
		14.7% (0.04)	26.3% (0.08)	16.9% (0.05)	29.4% (0.09)	20.4% (0.06)	32.2% (0.10)
		1,527,194	8,164,742	1,757,178	9,113,849	2,122,906	10,005,519
	Difference between unmitigated and mitigated scenario	0.75p 311,281		0.78pp 323,715		0.58pp 241,647	
		Urban	*Rural*	*Urban*	*Rural*	*Urban*	*Rural*
		0.33pp 34,430	0.89pp 276,939	0.43pp 45,248	0.90pp 277,871	0.38pp 39,943	0.68pp 201,495

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[15] The average normalized poverty gap can be found in parentheses. It measures the extent to which individuals fall below the poverty line (the poverty gaps) as a proportion of the poverty line.

2.2. Basic reproduction ratio of 2.5

The peak number of infections will occur on day 138 after the start of the pandemic. At this point, just over 62 per cent of the population will have been affected (including both infected and recovered) by COVID-19 in both the rural and urban areas of Uganda. This includes 6,749,424 individuals in the urban areas and 21,655,046 individuals residing in rural areas.
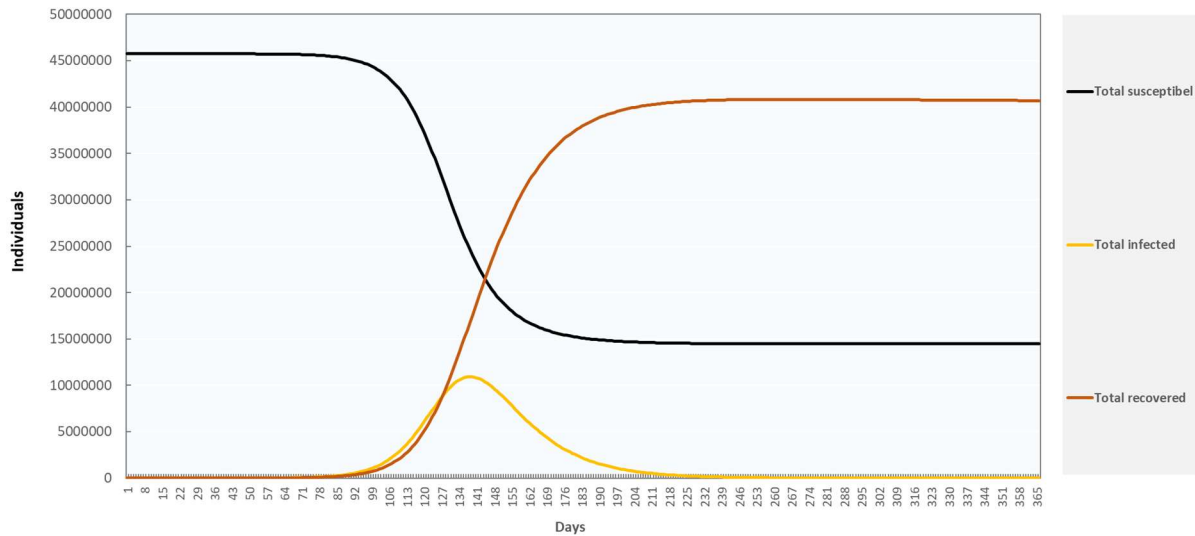

Figure 14. *The results of the SIR model for Uganda given a basic reproduction ratio of 2.5*

Table 15. *Unmitigated and mitigated poverty impacts[16]*

Poverty impacts							
Pre COVID-19		21.4% (0.06) 8,870,047					
		Scenario 1		Scenario 2		Scenario 3	
Post COVID-19	Unmitigated	*Total*		*Total*		*Total*	
		25.3% (0.07)		28.2% (0.08)		31.0% (0.10)	
		10,493,183		11,679,448		12,837,942	
		Urban	*Rural*	*Urban*	*Rural*	*Urban*	*Rural*
		15.6% (0.04)	28.6% (0.09)	18.3% (0.05)	31.5% (0.10)	21.5% (0.06)	34.2% (0.11)
		1,618,938	8,874,166	1,902,283	9,777,013	2,232,853	10,605,036
	Mitigated with the programme for the labour constrained	*Total*		*Total*		*Total*	
		24.5% (0.07)		27.6% (0.08)		30.5% (0.09)	
		10,166,152		11,424,123		12,633,600	
		Urban	*Rural*	*Urban*	*Rural*	*Urban*	*Rural*
		15.2% (0.04)	27.7% (0.08)	18.0% (0.05)	30.8% (0.09)	21.2% (0.06)	33.6% (0.10)
		1,582,012	8,584,497	1,867,749	9,556,579	2,204,664	10,428,689
	Difference between unmitigated and mitigated scenario	0.79pp 327,031		0.62pp 255,325		0.49pp 204,343	
		Urban	*Rural*	*Urban*	*Rural*	*Urban*	*Rural*
		0.36pp 36,926	0.93pp 289,669	0.33pp 34,534	0.71pp 220,434	0.27pp 28,189	0.57pp 176,347

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[16] The average normalized poverty gap can be found in parentheses. It measures the extent to which individuals fall below the poverty line (the poverty gaps) as a proportion of the poverty line.

2.3.   Basic reproduction ratio of 3

The peak number of infections will occur on day 108 after the start of the pandemic. At this point, just below 70 per cent of the population will have been affected (including both infected and recovered) by COVID-19 in both the rural and urban areas of Uganda. This includes 7,615,378 individuals in the urban areas and 24,420,108 individuals residing in rural areas.
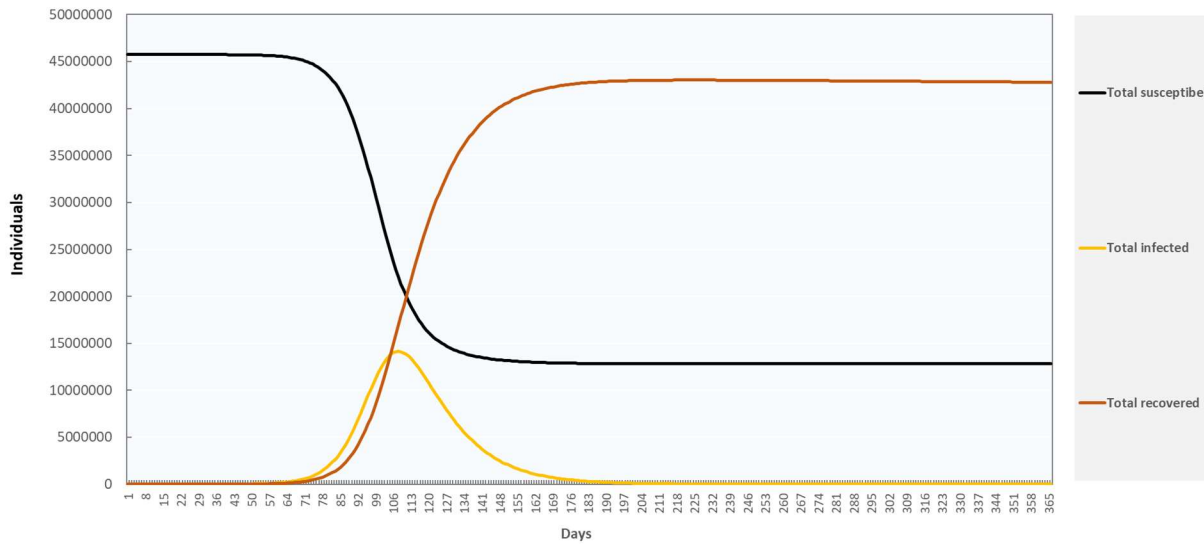

Figure 15. *The results of the SIR model for Uganda given a basic reproduction ratio of 3*

Table 16. Unmitigated and mitigated poverty impacts[17]

Poverty impacts							
Pre COVID-19		21.4% (0.06) 8,870,047					
		Scenario 1		Scenario 2		Scenario 3	
Post COVID-19	Unmitigated	Total		Total		Total	
		25.4% (0.07)		28.4% (0.08)		31.2% (0.10)	
		10,525,513		11,759,444		12,917,110	
		Urban	Rural	Urban	Rural	Urban	Rural
		15.7% (0.04)	28.6% (0.09)	18.5% (0.05)	31.7% (0.10)	21.6% (0.06)	34.4% (0.11)
		1,631,316	8,894,346	1,922,567	9,836,933	2,246,687	10,670,546
	Mitigated with the programme for the labour constrained	Total		Total		Total	
		24.6% (0.07)		27.8% (0.08)		30.6% (0.09)	
		10,204,285		11,509,508		12,687,069	
		Urban	Rural	Urban	Rural	Urban	Rural
		15.3% (0.04)	27.7% (0.08)	18.1% (0.05)	31.0% (0.09)	21.3% (0.06)	33.7% (0.10)
		1,593,141	8,610,887	1,880,336	9,628,919	2,219,851	10,467,188
	Difference between unmitigated and mitigated scenario	0.76pp 321,228		0.60pp 249,936		0.56pp 230,041	
		Urban	Rural	Urban	Rural	Urban	Rural
		0.37pp 38,175	0.91pp 283,459	0.41pp 42,231	0.67pp 208,015	0.26pp 26,837	0.66pp 203,358

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[17] The average normalized poverty gap can be found in parentheses. It measures the extent to which individuals fall below the poverty line (the poverty gaps) as a proportion of the poverty line.

Annex 1. Assumptions of the SIR modelling

	General assumptions	
Birth rate (daily)[18]	0.000043	
Basic reproductive ratio[19]	2.5	
	Children under 1	**Remaining population**
Total population[20]	1,559,208	44,181,792
Death rate (daily)	0.0000562024	0.000042
Recovery rate (daily)	0.07 = 1/14 days[21]	0.07 = 1/14 days
	Children under 5	**Remaining population**
Total population	7,795,039	37,944,961
Death rate (daily)	0.0000150385	0.000048
Recovery rate (daily)	0.07 = 1/14 days	0.07 = 1/14 days
	Elderly 60+	**Remaining population**
Total population	1,476,010	44,264,990
Death rate (daily)	0.0000528851	0.000042
Recovery rate (daily)	0.04 = 1/28 days	0.07=1/14 days
	Elderly 80+	**Remaining population**
Total population	89,687	45,651,313
Death rate (daily)	0.0002228114	0.000042
Recovery rate (daily)	0.04 = 1/28 days	0.07=1/14 days
	Urban population	**Remaining population**
Total population	10,886,358	34,854,642
Death rate (daily)	0.0000072872[22]	0.000054
Recovery rate (daily)	0.07 = 1/14 days	0.07 = 1/14 days
	Refugee population	**Remaining population**
Total population[23]	1,423,377	44,317,623
Death rate (daily)	0.0000004760	0.000044
Recovery rate (daily)	0.07 = 1/14 days	0.07 = 1/14 days

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[18] Based on UNDESA World Population Prospects 2019. This is also the case for all death rates except that of refugees – which is based on https://data2.unhcr.org/en/documents/download/70081

[19] Based on the middle of WHO recommendations, which state that the basic reproductive ratio of COVID-19 is between 2 and 3.

[20] These numbers were retrieved from the UNDESA World Population Prospects 2019.

[21] These refer to the days that it takes an individual to recover from COVID 19 – excluding the incubation period.

[22] This needs to be verified.

[23] The refugee population was obtained from https://data2.unhcr.org/en/country/uga