

The Risk Monitor: March 2021

Africa-wide forecasts from the Violence Early Warning System (ViEWS)

*Forecasts as of 1 January 2021, based on data up until and including November 2020**

By: The ViEWS Team

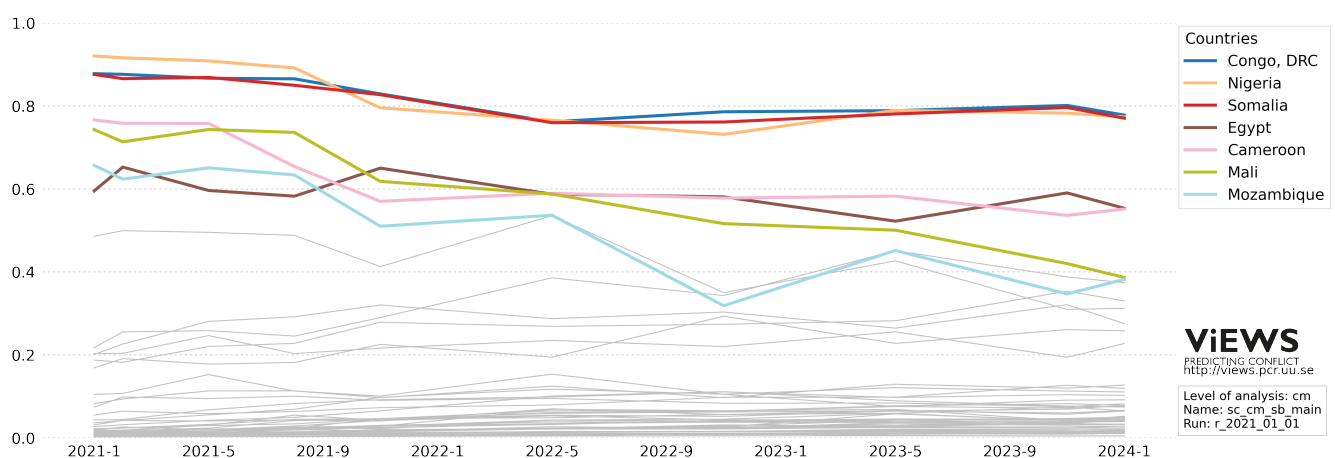


Figure 1. Country-level forecasts for the risk of at least 25 fatalities from intentional, politically motivated and organised state-based violence in January 2021–Dec 2023. Graphs are colored for countries facing a short-term risk of 50% (0.5) or higher. The corresponding plots for non-state and one-sided violence are shown in Figure 4.

EXECUTIVE SUMMARY

As of January 2021, ViEWS continues to generate high-risk alerts for countries with a recent history of fatal political violence.

In March 2021, 25 or more fatalities from either type of violence (see page 10) that ViEWS predicts is almost certain in DRC and Nigeria, and highly likely in Somalia, Mali, Cameroon, Burkina Faso, and Mozambique (> 70% risk, see Figure 2b).

DRC and Nigeria consequently continue to face the greatest risks of political violence on the continent—not only in the near future but throughout the three-year forecasting window and for all three types of violence. These trends are illustrated by the long-term forecasts in

Figure 1 and 4.

In terms of state-based violence—conflicts involving at least one government of a state—both DRC and Nigeria are expected to exceed the 25-fatality threshold nine to twelve months per year throughout January 2021–Dec 2023 (Figure 1).^[1] The corresponding estimates for non-state violence are 6–10 months per year, and 5–9 months with regards to one-sided violence.^[2]

Changes to the overall risk projections as compared to last month are found in Figure 2d, divided by each type of violence in Figures 3a–3c.

Seen from the latter is that changes vary between types of violence. For state-based violence, the greatest risk elevations are found in Tanzania and Egypt, with a significant risk reduction for Burkina Faso. For non-state violence, the most notable escalations are detected in DRC

*The full suite of data sources and descriptions of the ViEWS methodology can be found at <http://views.pcr.uu.se>, further detailed in Hegre et al. (2019) and Hegre et al. (2020a). The full list of models are carefully detailed in the corresponding online appendices to the 2020 update article on ViEWS in *Journal of Peace Research*, available at <http://files.webb.uu.se/uploader/1576/AppendixB.pdf> and <http://files.webb.uu.se/uploader/1576/AppendixC.pdf>. Brief definitions, notations and other useful information can in turn be found on page 10 of this report.

Table 1. Short-term watchlists^a

Top 5 high-risk locations in March 2021		Most notable risk elevations since last month	
Nationally	Locally	Nationally	Locally
Nigeria	Borno state (NGA)	Tanzania*	Borno state (NGA)
Somalia	The Ituri and Kivu provinces (COD)	Egypt	Katsina state (NGA)
DRC	Anglophone Cameroon	Côte d'Ivoire*	Ituri and the Kivu provinces (COD)
Mali*	Central Mali/NE Burkina Faso	Guinea*	Sahel region (BF) *
Cameroon	Cabo Delgado (MOZ)	Mali*	Anglophone Cameroon

^aBased on Figure 2. New entries this month are marked by an asterisk (*).

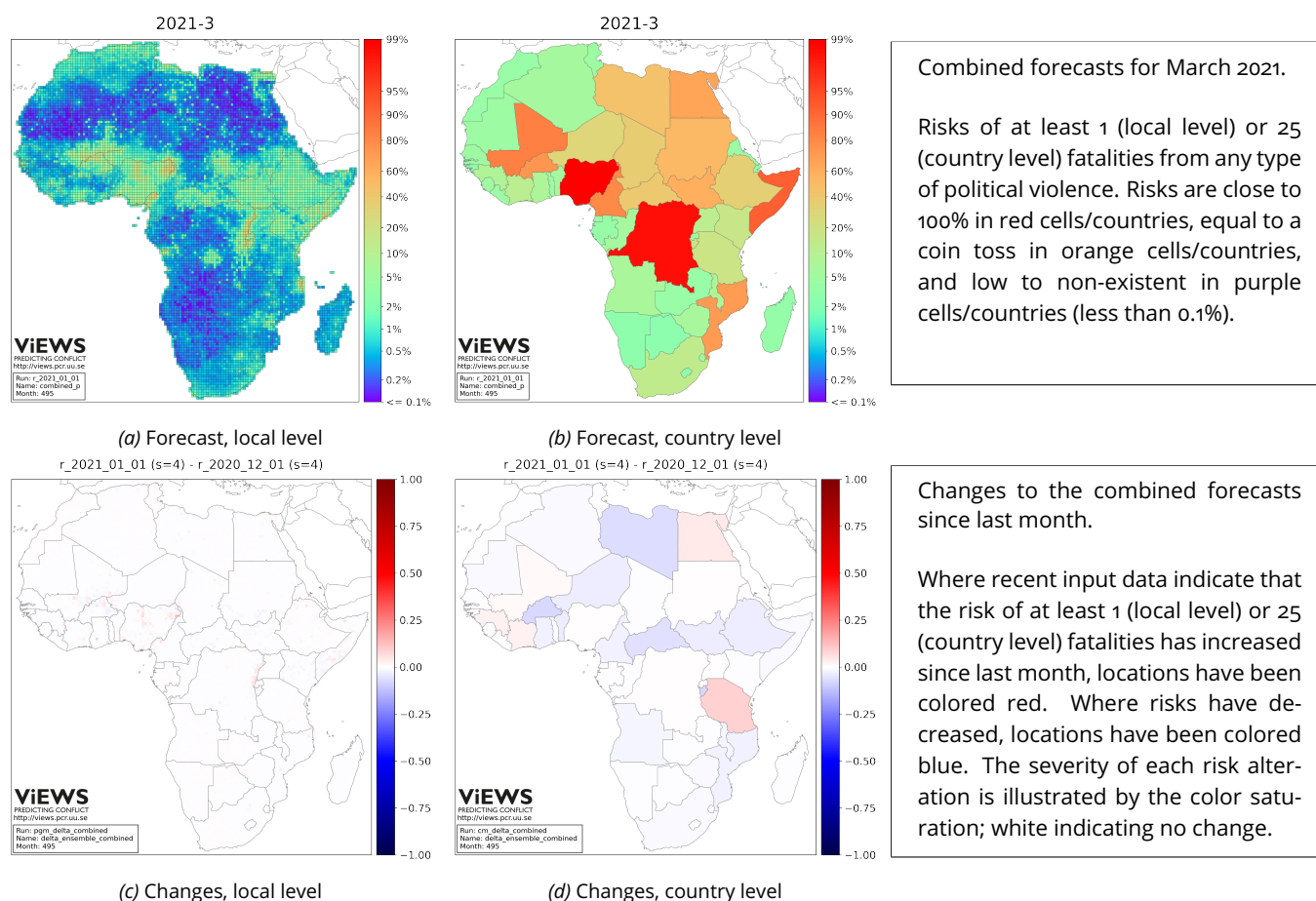


Figure 2. Combined forecasts for March 2021, and changes to the combined forecasts as compared to last month.

and Mali, whereas three significant escalations stand out in the forecasts for one-sided violence in March 2021: Mali, Nigeria, and DRC.^[3]

At the local level, the overall high-risk clusters span Borno and Katsina state in Nigeria, the Ituri and Kivu provinces of DRC, the broader area of central Mali and northern/north-eastern Burkina Faso (mainly the Sahel region), Anglophone Cameroon, and the Cabo Delgado province of Mozambique, as seen from the combined forecasts in Figure 2a. The risk of at least one fatality from any UCDP type of political violence in March 2021—and per approximately 55x55 km location—reaches or exceeds about 60% in large parts of these regions.

Changes to the local projections are illustrated by Figure 2c, mostly aligning with the high-risk clusters, and de-

picted for each type of violence in Figure 6.

COUNTRY-LEVEL FORECASTS

Figures 3a–3c display the ViEWS forecasts for March 2021. The plots take the form of a risk assessment of the likelihood (0–100%) that at least 25 lives are lost to organised violence that is fuelled by political motivations in each country. They capture the risks from each of three different types of political violence, as defined and recorded by the Uppsala Conflict Data Program (UCDP), namely state-based, non-state, and one-sided violence (see definitions on page 10). Where risks are high and up towards 100% certain, the applicable countries are filled with a bright red

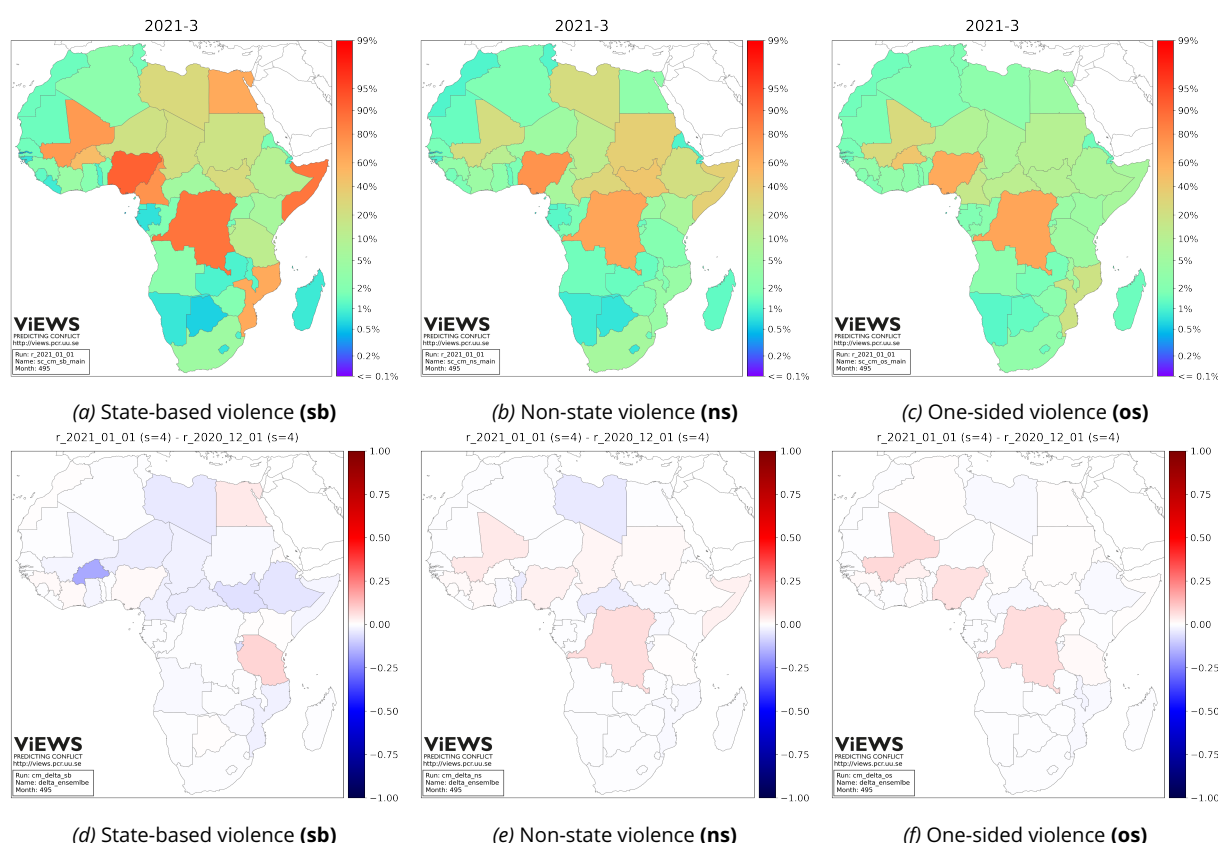


Figure 3. Country-level forecasts for the risk of at least 25 fatalities from intentional, politically motivated and organised political violence in March 2021 (top row^a), and changes to the risk assessments since last month (bottom row^b).

^aRed color indicates a risk close to 100%, orange color a risk equal to a coin toss, and purple color a low to non-existent risk (less than 0.1%)

^bWhere recent input data indicate that the risk of at least 25 fatalities from any of the three respective forms of violence has increased as compared to last month, countries have been colored red. Where risks appear to be decreasing, countries have been colored blue. The severity of each risk alteration is illustrated by the color saturation; white cells indicating no change.

color. Orange colors represent risks equal to a coin toss, whereas the lowest risks are illustrated by blue (< 1%) or purple (< 0.1%) shades.

Figures 3d–3f, in turn, illustrate how these forecasts have changed since last month. Since there have not been any recent modifications to the modeling system itself, visible changes are rather indicative of effects from new input data, most commonly by publicly available conflict and protest data from UCDP (<http://ucdp.uu.se>)¹ and the Armed Conflict Location and Event Dataset (ACLED, <http://acleddata.com>)². Where the forecasting system considers the risk of at least 25 fatalities to have increased since last month, a red fill color can consequently be observed in Figures 3d–3f. Where risks have decreased, countries have been colored blue. The severity of the risk alterations are illustrated by the color saturation of the

figures; white indicating no change.

State-based conflict (sb)

The ViEWS system continues to generate alerts for conflict involving at least one government of a state in countries with a recent history of fatal political violence and/or mass protests. In DRC, Nigeria, Somalia, Cameroon, Mali, Mozambique and Egypt, the risk of 25 or more fatalities per month exceeds 50% not only in March 2021 but up until late spring 2022 (see Figure 1).

Risks are particularly high in DRC, Nigeria and Somalia, where the monthly probabilities of 25+ deaths range between approximately 75–95% throughout the January 2021–Dec 2023 forecasting window. We consequently expect the 25-fatality threshold to be crossed nine to twelve

¹Therése Pettersson, Stina Högladh, and Magnus Öberg (2019). "Organized violence, 1989–2018 and peace agreements". In: *Journal of Peace Research* 56.4, pp. 589–603. doi: 10.1177/0022343319856046. url: <https://doi.org/10.1177/0022343319856046>; Ralph Sundberg and Erik Melander (2013). "Introducing the UCDP Georeferenced Event Dataset". In: *Journal of Peace Research* 50.4, pp. 523–532. doi: 10.1177/0022343313484347; Håvard Hegre et al. (2020b). "Introducing the UCDP Candidate Events Dataset". In: *Research & Politics* 7.3, p. 2053168020935257. doi: 10.1177/2053168020935257. url: <https://doi.org/10.1177/2053168020935257>, <http://ucdp.uu.se>

²Clionadh Raleigh et al. (2010). "Introducing ACLED: An Armed Conflict Location and Event Dataset". In: *Journal of Peace Research* 47.5, pp. 651–660. url: <https://doi.org/10.1177/0022343310378914>, <http://acleddata.com>

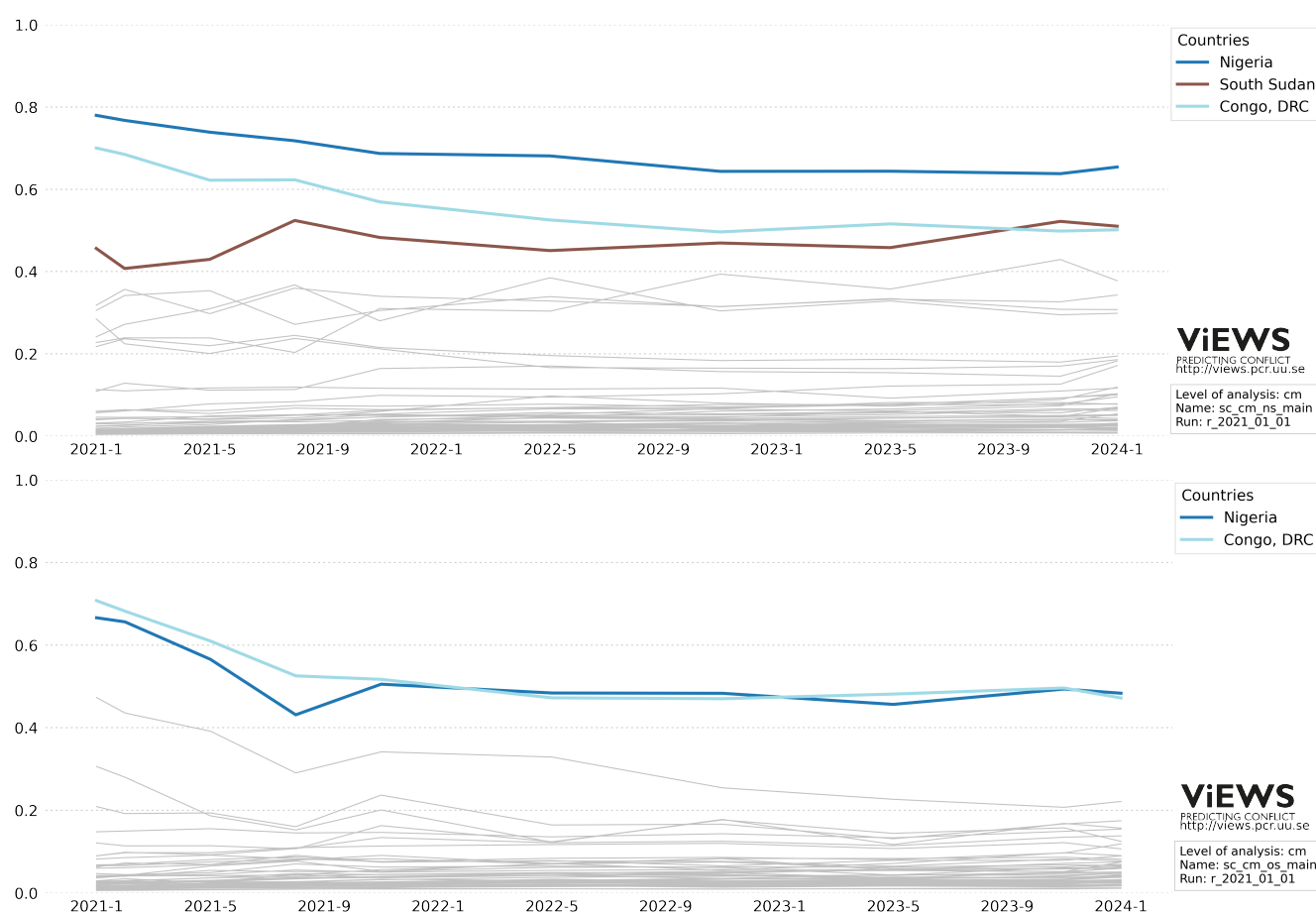


Figure 4. Country-level forecasts for the risk of at least 25 fatalities from intentional, politically motivated and organised non-state (top) or one-sided (bottom) violence in March 2021. Graphs are colored for countries that face a short-term risk of 50% (0.5) or higher. The corresponding plot for state-based violence is shown in figure 1.

months per year during this period.

While the forecasts for state-based violence mostly have remained stable or declined across the continent since last month (seen from the mostly white or blue shades in Figure 3d), two pronounced exceptions should be noted. The first is Tanzania, for which the risk projection has increased by nearly ten percentage points since last month, albeit the risk of 25 or more fatalities in March 2021 remains below 20%. The sudden escalation follows the national elections on 28 October 2020, which were marred by extensive repression, serious abuses at the hands of the government, and censorship of phone and media communication (HRW, 2020; Amnesty, 2020). Election reports from the Human Rights Watch HRW (2020), e.g., point to arbitrary arrests and detentions of scores of opposition leaders and supporters in relation to the elections, including police firing live ammunition into crowds of people on Zanzibar on the night before the elections, killing at least three and injuring many others.^[4] Our protest and conflict history models, informed by UCDP and ACLED, have consequently alerted

to the sudden heightening of tensions and the multiple incidents of electoral violence in the country.^[5] Also the *REIGN* model, derived from the *Rulers, Election, and Irregular Governance* dataset (<https://oefresearch.org/datasets/reign>), has contributed to this alert.

The second exception to the otherwise stable or declining risk assessment is Egypt, where weeks-long parliamentary elections concluded early December with the pro-Sisi party *Nation's Future* securing 55% of the seats. Slightly heightened tensions have also been recorded in the North Sinai governorate following the death of another three civilians from explosive devices planted in Bir al-Abd by the IS-affiliated militants that occupied parts of the town during the late summer/early fall of 2020. Two soldiers were furthermore shot and killed by suspected jihadists in the Rafah area mid-November, according to reports in the UCDP Candidate Events Dataset.

Most notable in the forecasts for state-based violence in March 2021 is however the risk reduction for Burkina Faso—a country that since August 2018 has suffered numerous fatalities from IS and JNIM activity every month.

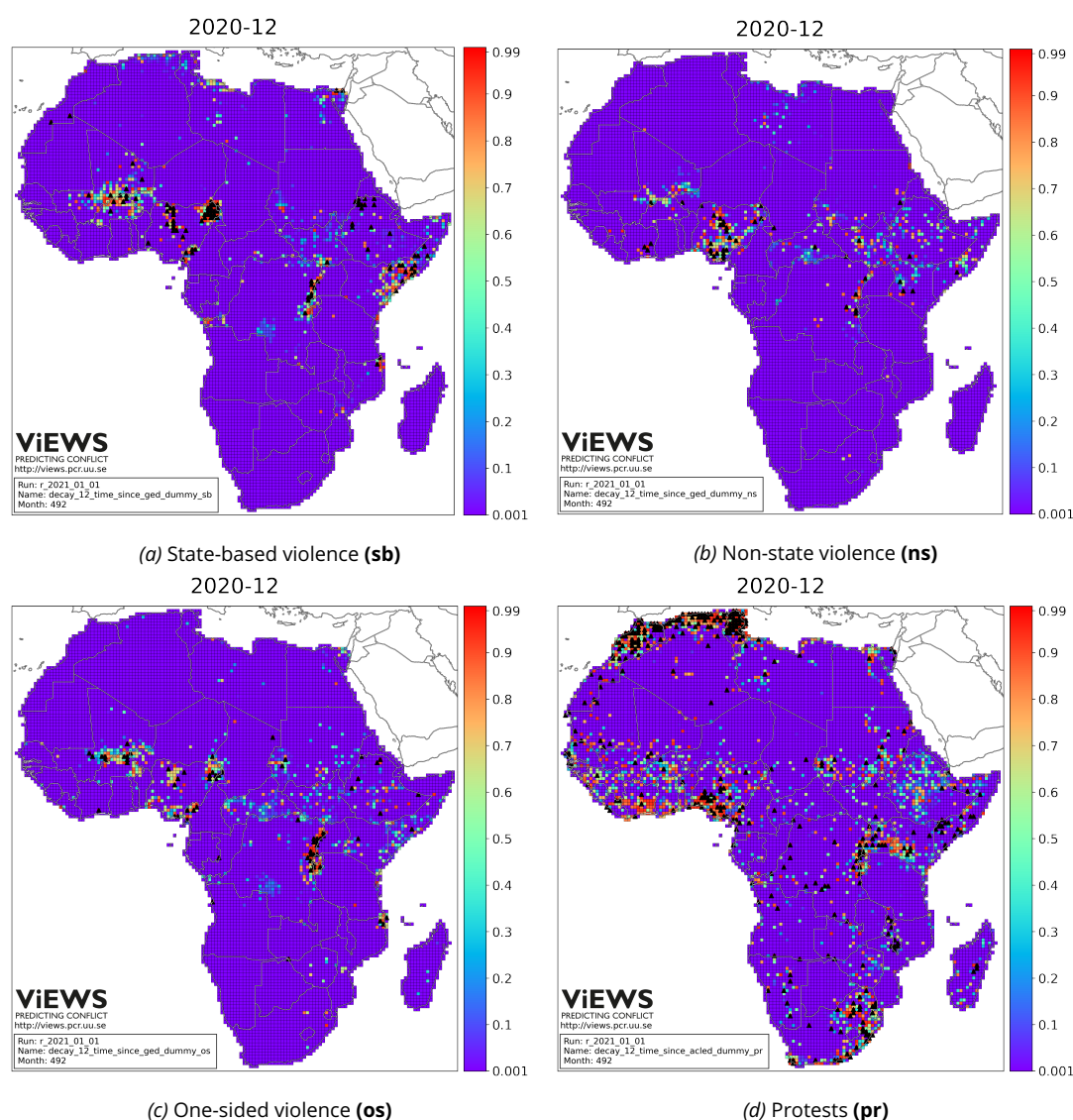


Figure 5. Illustrations of the recent history of fatal political violence as well as protests (violent and non-violent), as recorded by the UCDP (<http://ucdp.uu.se>) and ACLED (<http://acleddata.com>), respectively. Red cells observed qualifying incidents in November 2020 (distinguished by a black marker) or October 2020. Purple cells have not experienced such incidents for many years.

Despite over 30 recorded deaths in November 2020 (the last month of UCDP conflict data informing this month's forecasts), the forecasting system reduced its risk projection for the country by nearly 15 percentage points this month. Numerous forecasting models informing the monthly ViEWS forecasts contributed to this revision. Most prominent was the contribution from the long-term conflict history model, which picked up the historically baffling lack of fatalities in October 2020. Two models informed by ACLED data on recent protest and conflict events (both of which captured a slight decline in the number of events in November 2020, despite the more inclusive conflict definitions used by ACLED as compared to the UCDP) however also played a role in this revision. As did a suite of models informed by the Varieties of Democracy Index (V-Dem, <https://www.v-dem.net/>

en/), the aforementioned *Rulers, Election, and Irregular Governance (REIGN)* dataset (<https://oefresearch.org/datasets/reign>), and the World Development Indicators (WDI, <https://databank.worldbank.org/source/world-development-indicators>). For most of the latter models, the risk reduction merely came as a result of time lapsed since one or more of its conflict predictors signalled a risk-inducing change in the country.

More information about the models used in ViEWS can be found in the *Definitions and modeling set-up* section on page 10.

Non-state conflict (ns)

For the strong majority of the continent, the risks of 25+ fatalities from non-state violence in March 2021 either re-

mains stable at less than 10% or decreased since last month, as seen from the forecast map in Figure 3b and the mostly white or blue shades in the change map in Figure 3e. Two countries however stand out both in the long- and short-term forecasts: Nigeria and DRC. For March 2021, the predicted probability of at least 25 fatalities is as high as 76% in the former and 66% in the latter (Figure 3b), illustrating well the communal conflict dynamics in the two countries. Over the course of the three-year forecasting window, the monthly risks however slowly drop to about 65% in Nigeria by Dec 2023, and about 50% in DRC by the same time (Figure 4).

The greatest changes to the risk assessment for non-state violence this month are found in DRC and Mali (Figure 3e)—both of which observe a somewhat heightened risk as of this month. While the number of fatalities from non-state conflict decreased in both countries between October and November 2020, the more inclusive ACLED dataset picked up some variations from its own variables. It was also ACLED data that served as the key informant behind the risk elevations in these two cases. For Mali, the ACLED component was coupled with a significant contribution from the long-term conflict history model (informed by UCDP data), whereas the second-most important driver for DRC was the risk of spill-over effects from conflicts in neighbouring countries.

One-sided violence (os)

With the exception of a handful of countries, the risks of 25 or more fatalities from one-sided violence in March 2021 remain very low—less than 10%—on the strong majority of the continent. Only three countries face a risk higher than 40% in March 2021: DRC (66%), Nigeria (63%), and Burkina Faso (42%). The former two are not only—once more—the locations of the most significant risk elevations since last month (Figure 3f, further discussed in the local forecasts), but continue to be the countries at greatest risk of one-sided violence throughout the next three years (Figure 4).

LOCAL FORECASTS

In Figure 6, we shift our focus to the local level once more, in the top row assessing the likelihood of at least one fatality in March 2021 in square areas measuring approximately 55x55km.^[6] The bottom row, in turn, displays the changes to the forecasts since last month, in the same

manner as in Figure 3. Here, the changes however refer to revised risks of at least one fatality in each given locality, in line with the lowered threshold for risk alerts.

Figure 5, at last, displays the recent conflict and protest history across the continent, delimiting each locality by means of the grid structure above. The maps in the figure are informed by UCDP and ACLED data up until and including November 2020. Figures 5a–5c show the time since the last fatal conflict event, whereas Figure 5d show the time since the last protest event (violent or non-violent). Red cells observed such incidents in November 2020 (distinguished by a black marker) or October 2020. Purple cells have not experienced such incidents for many years.

State-based conflict (sb)

At the local level, the high-risk clusters for March 2021 are found in north-eastern Nigeria, the Anglophone region of Cameroon, the Ituri and Kivu provinces of DRC, southern Somalia, Sinai in Egypt, the Cabo Delgado province of Mozambique, around Tripoli in Libya, in the Cabinda enclave of Angola, and in the extended border areas between central Mali, northern/north-eastern Burkina Faso, and south-western Niger (Figure 6a). In each of these locations, the risk of at least one fatality from state-based violence in March 2021 reaches or exceeds about 40–50%. A broader clusters at lower risk also spans the Horn of Africa and the protest prone regions of Morocco, Algeria, and Tunisia.

Changes to the risk assessment since last month mostly align with the high-risk clusters (Figure 6d). Most pronounced are the risk elevations across Nigeria, which continues to grapple not only with IS and Boko Haram activity in Borno state but also with banditry in Katsina, Kaduna, and Zamfara states. Also DRC stands out, where three incidents in the North Kivu province have yielded particularly pronounced risk elevations this month: two ADF attacks, and an attack by the Nyatura FDP (under the CMC alliance) on the FARDC in Rutshuru territory.

While the country-level forecasts declined this month, local risk elevations are also detected in the Sahel and Nord regions of Burkina Faso due to continued IS and JNIM activity, whereas the Somali risk elevations are results of the continued conflict between the Government of Somalia and Al-Shabaab.

Last, but certainly not least, over 500 fatalities has as of 1 January 2021 been recorded in the UCDP-Candidate Event Dataset for Ethiopia—for November 2020 alone.

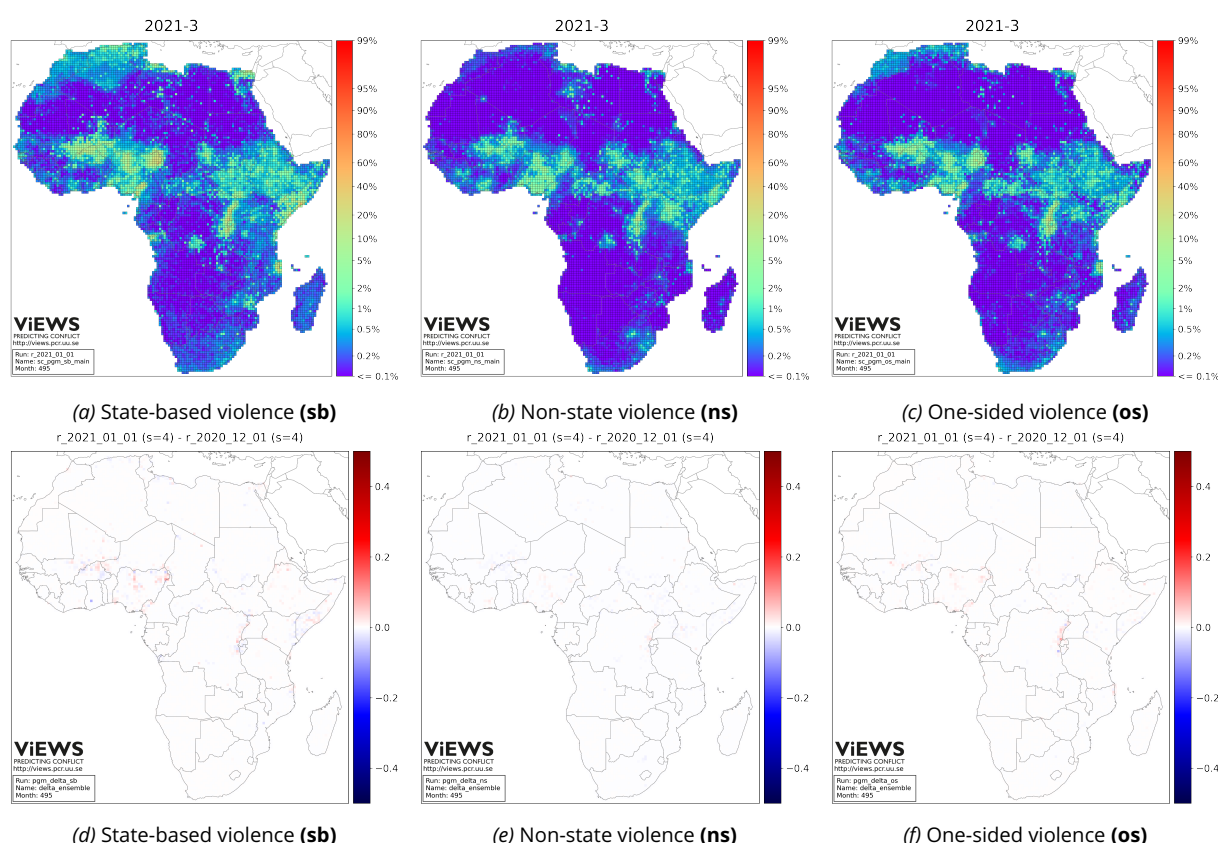


Figure 6. Sub-national forecasts for the risk of at least one fatality from intentional, politically motivated and organised political violence in March 2021 (top row^a), and changes to the risk assessments since last month (bottom row^b).

^aThe risk is close to 100% in red cells, equal to a coin toss in orange cells, and low to non-existent in purple cells (less than 0.1%)

^bWhere recent input data indicate that the risk of at least one fatality from any of the three respective forms of violence is increasing as compared to last month, cells have been colored red. Where risks appear to be decreasing, cells are blue. The severity of the risk alterations is illustrated by the color saturation; white cells indicating no change.

370 of the casualties were people believed to have been affiliated with the Oromo Liberation Army (OLA), who stands accused of a number of recent massacres in the country. They were killed during a month-long 'security sweep' in Oromia by order of the Ethiopian government. Twenty of the November casualties were gunmen in Benishangul-Gumuz state, accused of the murder of 34 civilians early November. All other casualties were the gruesome result of the conflict that erupted in the Tigray region early November between the federal government and the TPLF, leaving hundreds of thousands in dire need of aid before concluding with federal troops capturing regional capital of Mekelle several weeks later.

Non-state conflict (ns)

Compared to the other violence categories, the risk projections for non-state violence in March 2021 are quite optimistic. We find a broad risk cluster forming a belt over the Horn of Africa, CAR, Chad, Nigeria, Niger, Mali, Burkina Faso, and the Kivu provinces of DRC, but even in

these at-risk areas, the predicted probability of at least one fatality in March 2021 does not exceed 30–40% in any given 55x55km location. In most locations, risks do not even exceed 20%, as seen from the color coding in Figure 6b. While low in relation to the other types of violence, it should however be noted that a monthly risk of 20% nevertheless accumulates to an annual probability of more than 90%.

From Figure 6e, in turn, we also find that the risk assessment for non-state violence has remained quite stable since last month—the white or very faint colors on the map indicate that changes are moderate to none. The most pronounced escalations—while faint—are found in DRC, Nigeria, and Côte d'Ivoire, in areas that experienced fatal non-state violence in November 2020 (see Figure 6e and 5b).

In DRC's Ituri province, the slight escalation follows five fatalities from a clash between two community-based militias on 7 November. In Walikale territory, North Kivu, it stems from the two lives lost from a Nyatura FDP (under the CMC alliance) attack on the NDC-R Bwira wing,

and another three from an NDC-R Guidon Wing ambush on the Mai-Mai group FPP Kabido the same month. In South Kivu, two people were killed in an attack by Raia Mutomboki Kabazimia on Raia Mutomboki Kazimoto in Shabunda territory, and another eight from three different clashes involving the Forces of Mekanika: one against the Ngumino, and two against CNPSC.

In Nigeria, fatal incidences of non-state violence were spread across a number of states in November 2020, as seen from Figure 5b. Causes varied from incidents of cultist violence, banditry, clashes between confraternities and between farmers and herders, as well as attacks by Islamist militants on local non-state groups.

Also in Côte d'Ivoire, the heightened tensions derives from the aftermath of a recent election: the presidential elections that on 31 October resulted in the victory of incumbent Alassane Ouattara, now set to start a disputed third term in office. Violence erupted in a number towns in the lead-up to the elections and have continued in the aftermath thereof, resulting in at least 44 fatalities from election day until 10 November—the locations of which are seen in Figure 5b.

One-sided violence (os)

In the one-sided violence category, the Ituri and Kivu provinces of DRC, Borno state in Nigeria, the Anglophone region of Cameroon, central Mali, northern/north-eastern Burkina Faso, and the Cabo Delgado province of Mozambique, continue to be the regions at highest risk of at least one fatality also in March 2021. This is also where the majority of the fatalities categorised as one-sided violence occurred in November 2020 (Figure 5c) and where elevations of the risk projections as compared to last month are most pronounced (Figure 6f).

In DRC, 29 fatal conflict events categorised as one-sided violence were recorded by the UCDP in November 2020, the two most deadly of which are alleged mass killings at the hands of ADF and NDC-R in North Kivu (in Beni and Walikale, respectively).

In Nigeria, the local risk elevations are once more informed by a series of attacks on civilians by Islamist extremist groups, cults, bandits, unidentified gunmen, members of the Nigerian police and military. In Anglophone Cameroon, reports relate to attacks on civilians by alleged separatists as well as fatal raids by soldiers, while incidents in the Far North are a result of continued Boko Haram activity. In Burkina Faso, risk elevations stem from continued attacks by both jihadist militants and members

of the Burkinabe security forces on civilians, and in Mali from JNIM activity coupled with Dozo attacks on Fulanis. In Mozambique's Cabo Delgado, at last, the violence is attributed to continued jihadist activity.

NOTES

[1]The predicted probability of 25+ deaths per month over this period varies between approximately 75–95%. We thus expect the threshold to be crossed in 75–95% of the months during January 2021–Dec 2023.

[2]The predicted probability of 25+ fatalities per month, for both countries, range from about 50–80% in the non-state violence category, and from about 45–70% in the one-sided violence category, seen from Figure 4.

[3]In combining the input from all three types of violence, it should be noted that Guinea placed fifth on the list over the greatest overall risk increases since last month, which is somewhat misleading. The type-specific forecasts indicate only moderately heightened risks in the country, which furthermore lacks any records of fatal political violence in the UCDP-Candidate Events Dataset. These elevations thus appear greater than they are when resulting in a qualification for the watchlist and should be interpreted accordingly.

[4]The three fatalities are recorded and confirmed in the UCDP-Candidate Events Dataset as incidents of one-sided violence against civilians, in addition to the fatal shooting of a 25-year old man by police on October 26, also on Pemba island in Zanzibar. The incidents are illustrated by the red cells in Zanzibar archipelago on the conflict history map for one-sided violence in Figure 5c. Since the forecasting system allows models specialized for each of the three different types of violence to inform each other, this event is relevant also for the forecasts of state-based violence.

[5]It should be noted that death tolls beyond the cases above are inconclusive at this point in time, and likely to be updated in the near future. Lawyers for the opposition political parties have for example alleged

that a total of 22 people were killed during the period of 28 October–11 November, of which only four have been verified by Amnesty International (Amnesty, 2020) while appearing confident about another two.

[6]The systematic grid structure formed is known as the PRIO-GRID. It is the most spatially granulated level that the ViEWS system currently produces forecasts for. See page 10 for the full definition.

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DATA SOURCES

Conflict and protest data

Uppsala Conflict Data Program (UCDP)

<http://ucdp.uu.se>

Armed Conflict Location and Event Data (ACLED)

<https://acleddata.com>

Other input data

Varieties of Democracy (V-Dem)

<https://v-dem.net>

World Bank World Development Indicators (WDI)

<https://datacatalog.worldbank.org/dataset/world-development-indicators>

International Crisis Group's Crisis Watch (ICGCW)

<https://www.crisisgroup.org/crisiswatch>

PRIO-GRID dataset

<https://grid.prio.org/#/>

REIGN Rulers, Elections, and Irregular Governance

dataset (REIGN), <https://oefdatascience.github.io/REIGN.github.io/>

SPEI Global Drought Monitor (SPEI)

<https://spei.csic.es/index.html>

Shared Socioeconomic Pathways dataset (SSP)

<https://tntcat.iiasa.ac.at/SspDb/dsd?Action=htmlpage&page=welcome>

Ethnic Power Relations dataset (EPR)
<https://icr.ethz.ch/data/epr/>

DEFINITIONS AND MODELING SET-UP

Types of violence

The ViEWS forecasts take the form of monthly probabilistic assessments of the risk and likely severity of three forms of organized political violence occurring in a given month, as defined by the Uppsala Conflict Data Program (UCDP):

- **State-based (sb) violence:** the use of armed violence over either government or territory between armed actors, in which at least one is a government of a state;
- **Non-state (ns) violence:** the use of armed force between two organized armed groups, neither of which is a government of a state, and;
- **One-sided (os) violence:** the deliberate use of armed force by the government of a state, or by a formally organized group, against civilians.

Levels of analysis

The results are presented at three levels of analysis using the calendar month as the temporal unit of analysis:

- The country-month (*cm*) level, which follows the country outline determined by CShapes (Weidmann, Kuse, and Gleditsch, 2010), and;
- The PRIO-GRID-month (*pgm*) level, which is outlined by fine-grained geographical locations known as PRIO-GRID-cells, a global quadratic grid structure with cells measuring 0.5 x 0.5 degrees in longitude and latitude, spanning approximately 55 km^2 along the equator (Tollefsen, 2012, <https://grid.prio.org/#/>).

Model descriptions

The forecasting system consists of a suite of forecasting models, each of which has been trained to capture the effects of a particular theme of conflict-inducing factors.

At the national level, the system gives particular weight to structural, slow-moving features and patterns that often characterize countries over a longer period of time, such as the stability of political institutions, democracy indices, and socio-economic factors. It also relies heavily on a number of conflict and protest history models that capture not only the long-term trends in each country and region, but also the most recent developments in each country. Changes to the ViEWS projections are nevertheless most often informed by the latter, more specifically by data updates from the Uppsala Conflict Data Program (UCDP, <http://ucdp.uu.se>) and the Armed Conflict Location and Event Dataset (ACLED, <http://acleddata.com>).

While the national level forecasts do inform the local forecasts—and vice versa—the forecasting models employed at the two levels of analysis differ from each other. While models informing the national level forecasts, for instance, bring valuable structural and historical factors to the table, models tailored to the sub-national level excel in accentuating effects from local compound risks. This includes—but is not limited to—heightened risks related to local demography, terrain, proximity to natural resources, local precipitation levels, droughts, and conflict history in neighbouring areas. The two sets of forecasts should therefore be seen as separate assessments, which nevertheless are best interpreted in conjunction with each other.

The full suite of forecasting models are described in detail in Appendix B and C to our forthcoming article in *Journal of Peace Research*, available at <https://pcr.uu.se/research/views/publications/>

Steps s ahead

In some figures, you may see a reference to a particular step s . This refers to the internal ViEWS notation for what number of months ahead (1-36) a given forecast is produced. In any given run of the forecasting system, $s = 1$ refers to the first calendar month following the last month of available data. In this report, the last month of available data was November 2020). Forecasts for $s = 1$ would thus effectively have referred to forecasts for last month, $s = 2$ to the 'nowcast' for the month of writing, and $s = 3$ to the forecasts for the following calendar month. The *Risk Monitor* presents the ViEWS forecasts for $s = 4$.

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**COLLABORATIONS**

ViEWS has an active interaction with other projects, including CLIMSEC, CAVE and CROP at PRIO (<https://prio.org/>), the MISTRA Geopolitics project, and most importantly the Uppsala Conflict Data Program (<https://ucdp.uu.se/>) at Uppsala University.

CODEBASE & PUBLICATIONS

ViEWS' codebase is available at:



[https://github.com/
UppsalaConflictDataProgram/
OpenViEWS2](https://github.com/UppsalaConflictDataProgram/OpenViEWS2)

The full list of publications are accessible at:



[https://pcr.uu.se/research/
views/publications/](https://pcr.uu.se/research/views/publications/)