The Risk Monitor: August 2021

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

Forecasts for October 2021, based on data up to and including June 2021.[*]
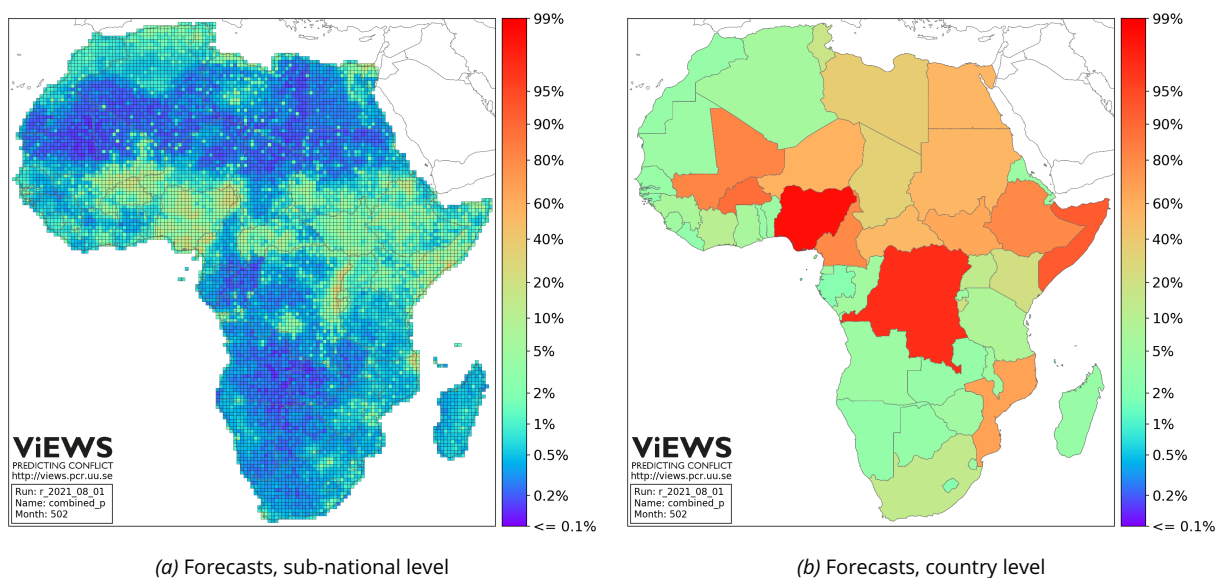
By: The ViEWS Team

(a) Forecasts, sub-national level

(b) Forecasts, country level

Figure 1. Combined forecasts for fatal political violence in October 2021. Predicted risk (0-100%) that at least one fatality occurs per sub-national location (left), or at least 25 fatalities per country (right)—from either state-based, non-state, or one-sided violence.

EXECUTIVE SUMMARY

ViEWS generates high-risk alerts for countries with a recent history of fatal political violence. By October 2021, 25 or more fatalities per month from at least one of the three types of violence that ViEWS predicts (see page 8) are almost certain in DRC and Nigeria, and highly likely in Somalia, Mali, Ethiopia, Cameroon, and Burkina Faso ($> 75\%$ risk; Figure 1b). More specifically, the forecasting system detects particular risks of fatal political violence over the near future in Borno, Katsina, Kaduna, Zamfara, and the southern states in Nigeria; the Far North and Anglophone region of Cameroon; the Ituri and Kivu provinces of DRC;

and in the tripartite border region between Mali, Burkina Faso and Niger. Other high-risk locations include the Tigray region and scattered locations across Oromia in Ethiopia; Mogadishu and other select locations in both southern and central Somalia, and in the Central African Republic; the coast of the Sinai peninsula in Egypt; Tripoli and Sirte in Libya; the Saloum mountain in Tunisia; and the Cabo Delgado province of Mozambique. This is illustrated by Figure 1a, displaying forecasts for at least one fatality per appoximately 55x55km location and month. Diffuse risks furthermore form a belt across the Sahel region, its southern neighbours, and the Horn of Africa.

Sub-national changes to the forecasts as compared

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[*]Descriptions of the ViEWS methodology, including the data informing the forecasts, can be found in Hegre et al. (2019) and Hegre et al. (2021). For a brief overview of key models and definitions, please see page 8 of this report.

Table I. Short-term watchlists[a]

Top 5 high-risk locations in October 2021		Most notable risk elevations since last month	
Nationally	*Locally*	*Nationally*	*Locally*
Nigeria	Borno state (NGA)	Tunisia∗	Sahel region (BFA)∗
Somalia	Mogadishu (SOM)	Burundi∗	South-South, South-West, North-West (NGA)∗
DRC	Ituri and Kivu provinces (COD)	South Africa∗	North Kivu (COD)∗
Cameroon∗	Anglophone Cameroon	Ethiopia∗	Southern Somalia∗
Burkina Faso	Cabo Delgado (MOZ)	Burkina Faso	Ouham-Pendé, Nana-Mambéré (CAR)∗

[a]Based on Figure 1–2, in no particular order. New entries this month are marked by an asterisk (∗).

(a) Changes, sub-national level　　　　　　　　　　　(b) Changes, country level
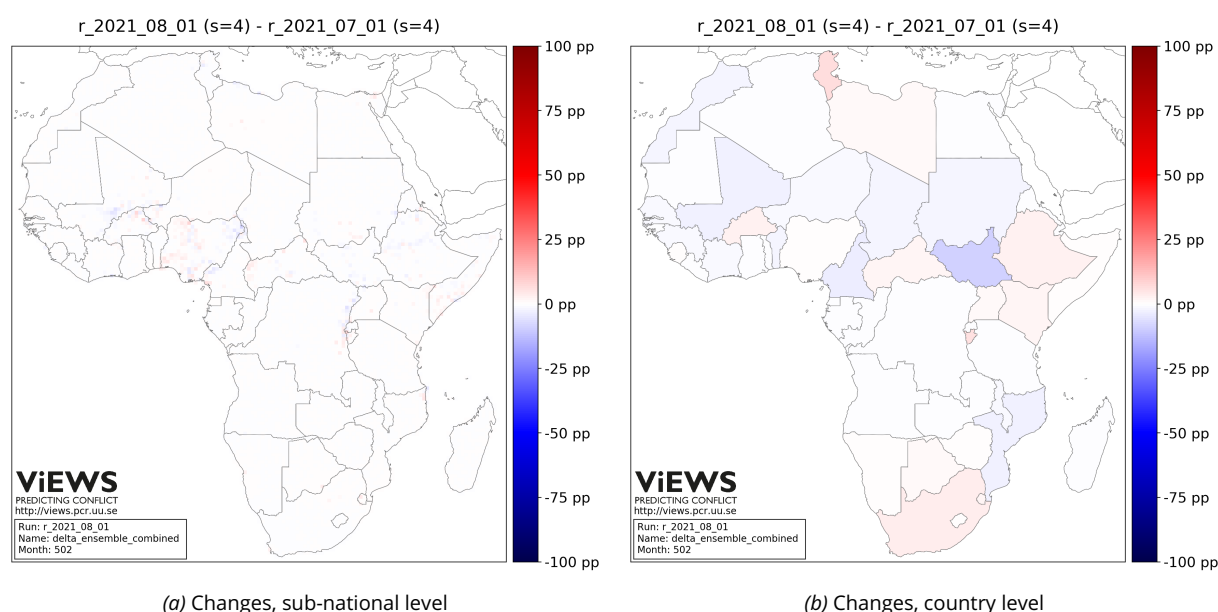
Figure 2. Changes to the combined forecasts since last month by percentage points (pp). Sub-national level (left) and country level (right).

to last month are predominantly confined to the regions above (Figure 2a). Of particular note are the elevated risks for the Sahel region of Burkina Faso, north-eastern Central African Republic, the Kivu provinces of DRC, Cabo Delago in Mozambique, southern and central Somalia, and north-western and southern Nigeria (reducing risks being the most prominent in the north-east).

At the country level, the combined risk of 25 or more fatalities per month from either of the three types of violence has increased for a number of countries, most notably for Tunisia, South Africa, Burundi, Burkina Faso, Ethiopia, and Kenya (Figure 2b).

Over the following pages, the forecasts are presented separately for each category of violence.

STATE-BASED CONFLICT (SB)

The ViEWS system generates alerts for conflict involving a government of a state in countries with a recent history of fatal political violence and/or mass protests. In Nigeria, DRC, Somalia, Cameroon, Mali, Mozambique, Burkina

Faso, Egypt, and Ethiopia, the risk of 25 or more fatalities per month by October 2021 remain high and above 50%, as seen from the red and bright orange fill colors in Figure 3a (red colors indicating a near-certain risk, light orange a risk equal to a coin toss, and purple $< 0.1\%$ risk.)

At the sub-national level, mapping the risk of fatal state-based violence per approximately 55x55km (0.5x0.5 decimal degree location, or PRIO-GRID cell)[1] and month, the most pronounced risks (orange colors in Figure 3c) are observed for Borno state, the North-West, South-West, South-South, and South-East in Nigeria; the Far North and Anglophone region of Cameroon; the Ituri and Kivu provinces of DRC; the tripartite border region between Mali, Burkina Faso and Niger; the Tigray region in Ethiopia along with a number of locations across Oromia; Mogadishu and other select locations in southern and central Somalia; the north-eastern coast of Egypt, the north-western coast of Libya; the Saloum mountain in Tunisia, as well as for the central and western regions of Central African Republic (CAR).

The forecasting system alerts to several changes to the risk assessments since last month.[2] Figure 3b maps these

(a) Forecasts, country level, **sb** violence

(b) Changes, country level, **sb** violence

(c) Forecasts, sub-national level, **sb** violence

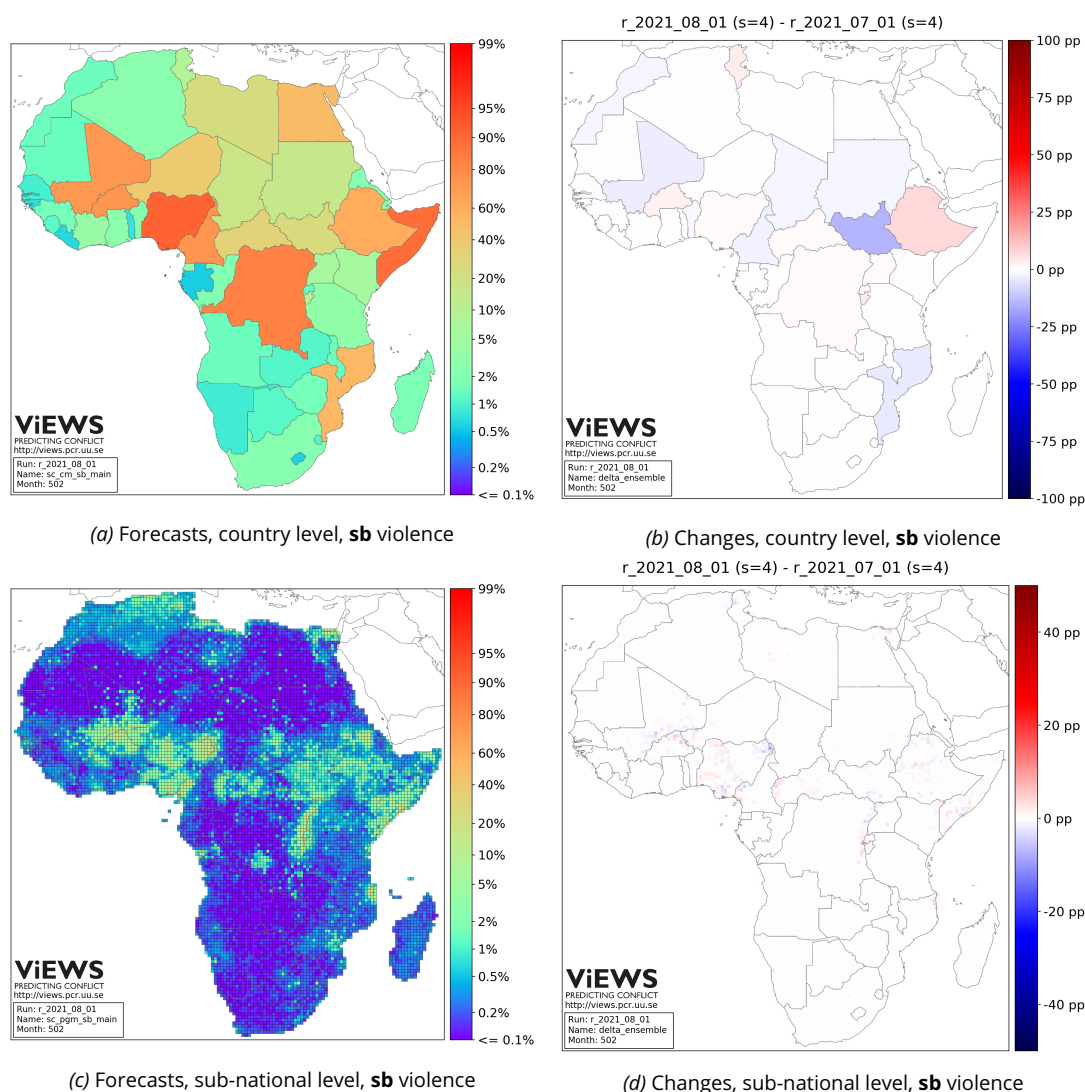*(d)* Changes, sub-national level, **sb** violence

Figure 3. Forecasts for the risk of at least 25 fatalities (country level, top left) and 1 fatality (sub-national level, bottom left) from state-based (**sb**) violence in October 2021, and changes to the respective forecasts since last month by percentage points (right-hand column).

changes to the country-level forecasts, while Figure 3d shows the same for the sub-national forecasts. Red colors in the two figures point to heightened risks, whereas blue colors indicate that risks are reducing. The severity of each risk alteration (by percentage points, *pp*) is illustrated by the color saturation; white indicating no change.

At the country level (Figure 3b), heightened tensions are detected for Ethiopa, Burkina Faso, Burundi, and Tunisia, in all but the last of which fatal violence was recorded in June 2021, by the the Uppsala Conflict Data Program (UCDP, `https://ucdp.uu.se`).[3] Amongst those incidences, more than 170 fatalities were recorded in the volatile Tigray region in Ethiopia, another 29 in Oromia from continued fighting between government forces and the OLA, and about 50 in the Sahel, Nord, and Centre-Nord regions in Burkina Faso from persistent jihadist activity and counter-terrorism operations thereof. The Bu-

rundian case, in turn, concerns reports of a clash between Burundian soldiers and an armed group that killed eight people in Kbira national Park early June. The conflict history map in Figure 4a shows the location of these events, marked with black triangles superimposed on red grid cells.[4]

A comparison of Figure 4a with the figure mapping changes to the sub-national forecasts (Figure 3d) further illustrates the influence that the recent history of violence has on future conflict risks—risks are generally heightened where violent episodes have been recorded in the recent past. This is well illustrated by Figure 3d for the cases of northern Mali, south-western Niger, northern-most Cameroon, north-eastern Nigeria, Libya, Egypt, Somalia, and Mozambique (respective governments vs. militant Islamist groups); Anglophone Cameroon (the Ambazonia insurgency); Ethiopia's Tigray and Oromia re-
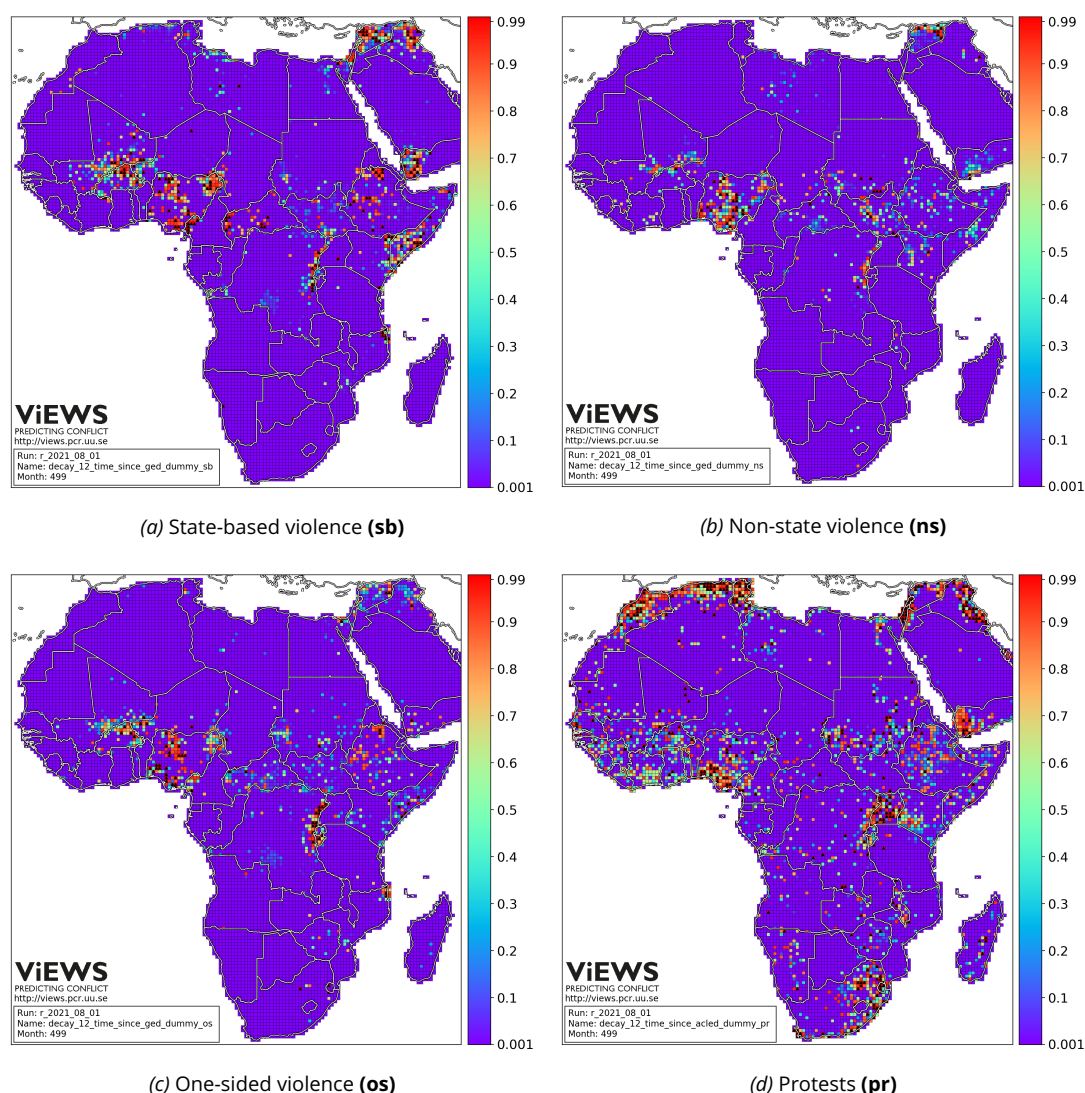
(a) State-based violence **(sb)**

(b) Non-state violence **(ns)**

(c) One-sided violence **(os)**

(d) Protests **(pr)**

Figure 4. 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 June 2021 (distinguished by a black marker) or May 2021. Purple cells have not experienced such incidents for many years.

gion (government vs. TPLF and OLA, respectively); the Ituri and Kivu provinces of DRC (government vs. various armed groups); CAR (government vs. CDC and UPC rebels); north-western and southern Nigeria (rising IPOB presence, banditry and attacks by gunmen); Uganda (attack against a government minister); and Namibia (the killing of a police officer).

NON-STATE CONFLICT (NS)

Seen from the mostly blue, green, or light orange shades in Figure 5a, the short-term risks of 25 or more fatalities per month from conflict between two or more armed non-state groups (non-state conflict) are relatively low for the strong majority of the African countries, most often less

than 10 or even 5%. DRC and Nigeria are the only two countries to exceed a monthly risk of 50% over the next few months.

At the sub-national level, geographic locations at risk of at least one fatality per month over the near future form a belt spanning the Horn of Africa, the southern parts of Sudan, South Sudan, CAR, south-eastern and south-western Chad, northern-most and Anglophone Cameroon, Nigeria, and the tripartite border area between Mali, Burkina Faso and Niger (Figure 5c). A more intense risk cluster is also found in the Ituri and Kivu provinces in DRC, coupled with scattered at-risk locations across Libya, lands along the Nile delta, southern Côte d'Ivoire and Guinea, West Kasai in DRC, and the largest cities in South Africa.
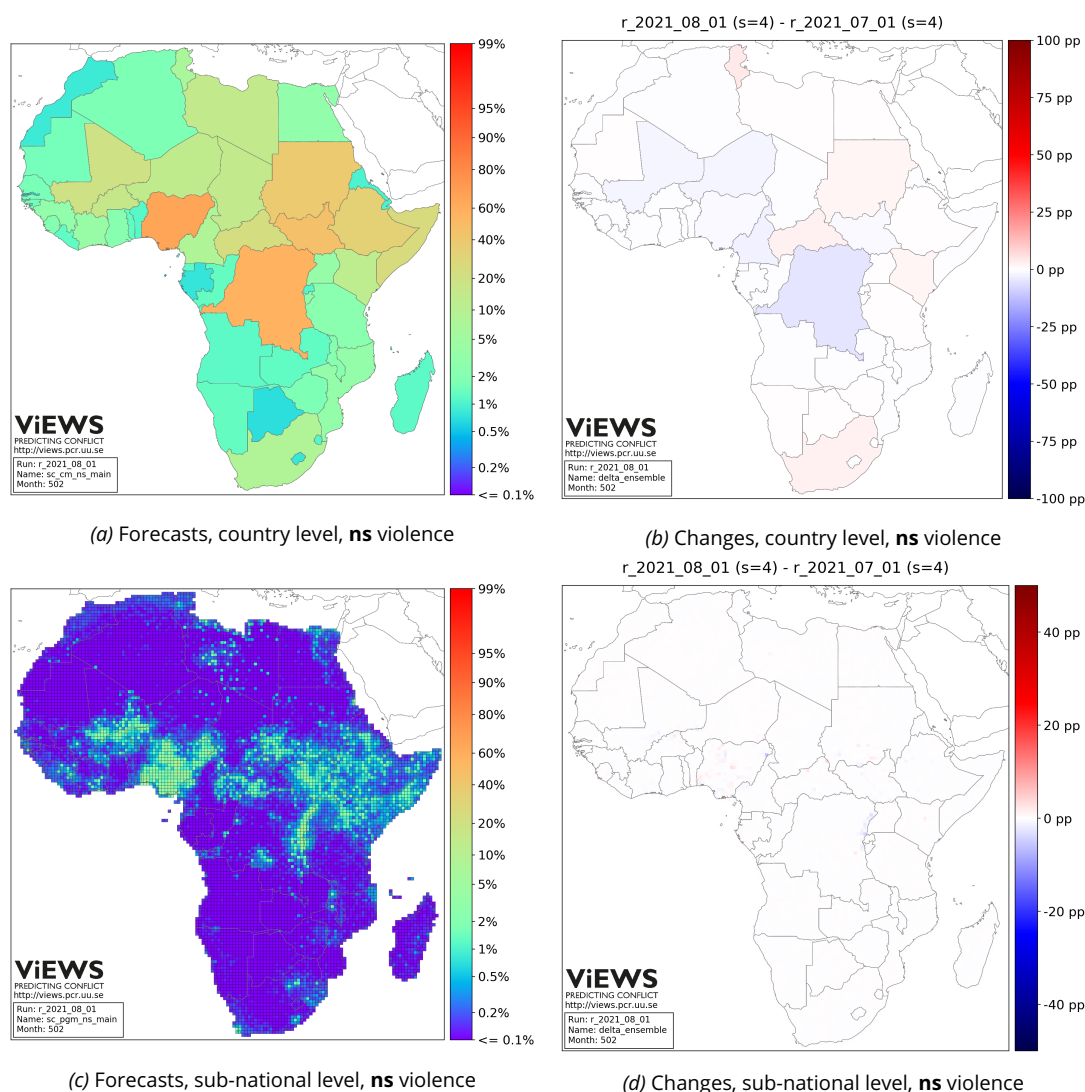
Changes to the country-level forecasts for 25 or more

(a) Forecasts, country level, **ns** violence

(b) Changes, country level, **ns** violence

(c) Forecasts, sub-national level, **ns** violence

(d) Changes, sub-national level, **ns** violence

Figure 5. Forecasts for the risk (0-100%) of at least 25 fatalities (country level, top left) and 1 fatality (sub-national level, bottom left) from non-state (**ns**) violence in October 2021, and changes to the respective forecasts since last month by percentage points (right-hand column).

fatalities per month from non-state violence, as compared to the July production of the ViEWS forecasts, predominantly point to reducing risks. Moderate risk escalations are however observed for Tunisia, South Africa, Kenya, CAR, and Sudan (Figure 5b), all but the first of which observed fatal non-state violence in June 2021.[5]

At the sub-national level, changes to the forecasts remain relatively few and moderate, seen from the mostly white or faint color saturation in Figure 5d. Somewhat heightened risks are nevertheless found for the aforementioned countries at the geographic locations directly affected by the June violence (see the conflict history map in Figure 4b). This includes Gugulethu township in South Africa's Cape Town following the death of eight in a shooting late June, part of Kenya's Isiolo county after a fatal raid on Merti village, an area close to Tiri in northern

CAR where 14 people were killed in revenge attack by alledged Chadian herders (who had recently lost one of their own in a dispute with a local farmer), and a number of locations in Sudan's South Darfur and the two Kordofan states (in which tensions have been on the rise amidst recent tribal clashes). Moderately increased risks are also detected in the Burkinabé Sahel region amidst fighting between IS and JNIM, in the Maniema province of DRC following a clash between two milita factions, and in scattered locations in Nigeria's North-West, South-West, South-South and South-East—all grappling with banditry, sporadic attacks by gunmen, cultist-, farmer-herder-, and communal violence.

Last, nearly all of the countries discussed above also observe local risk reductions this month (blue shades in Figure 5d).
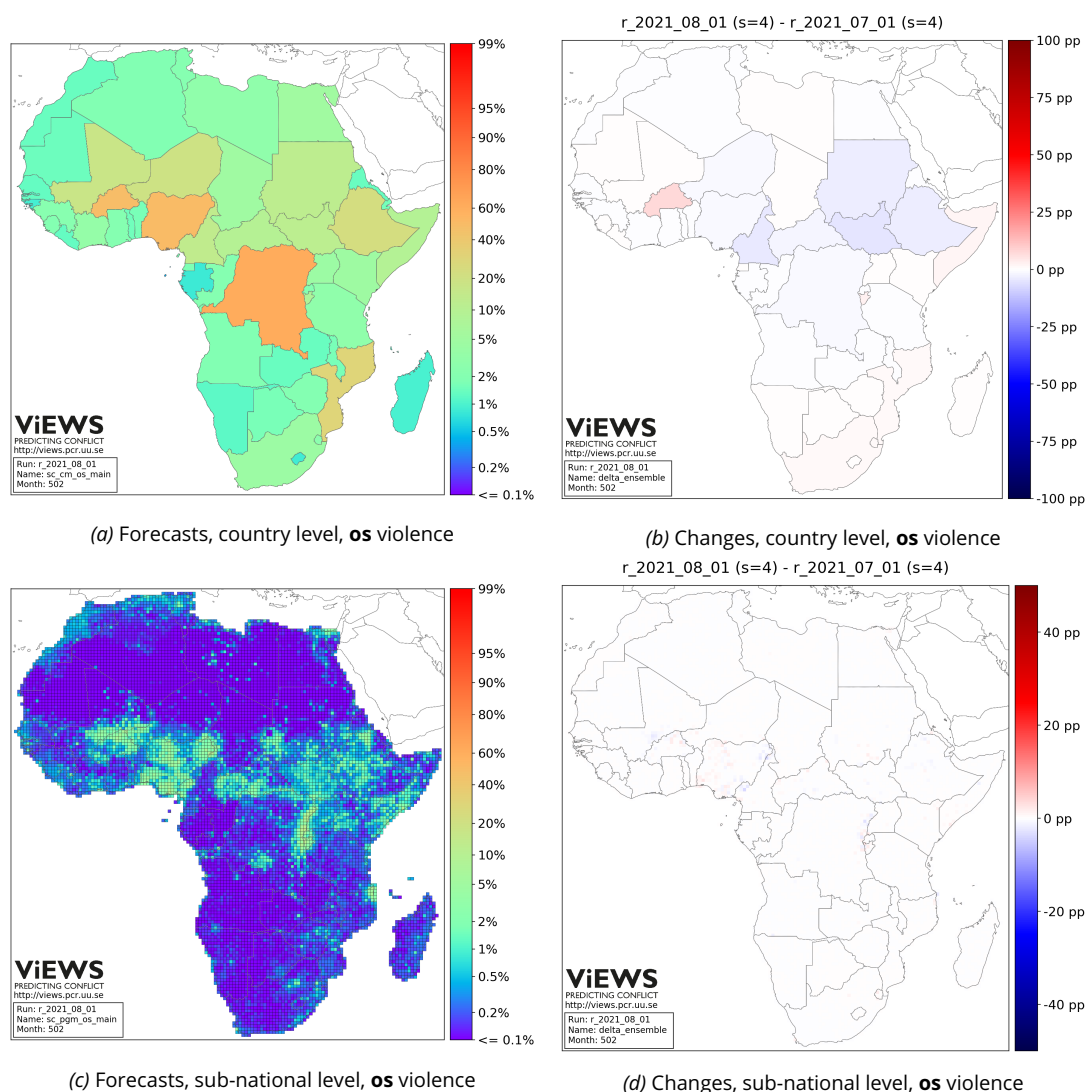
(a) Forecasts, country level, **os** violence

(b) Changes, country level, **os** violence

(c) Forecasts, sub-national level, **os** violence

(d) Changes, sub-national level, **os** violence

Figure 6. Forecasts for the risk (0-100%) of at least 25 fatalities (country level, top left) and 1 fatality (sub-national level, bottom left) from one-sided (**os**) violence in October 2021, and changes to the respective forecasts since last month by percentage points (right-hand column).

ONE-SIDED VIOLENCE (OS)

With a handful exceptions, the risk of 25 or more fatalities per month are relatively low (less than 5–10%) also with regards to one-sided violence—violence exerted by an armed actor against unarmed civilians—for the majority of African countries. Most pronounced are the risk profiles for DRC, Nigeria, and Burkina Faso (bright orange colors in Figure 6a). Also Mali, Niger, Cameroon, CAR, Sudan, South Sudan, Ethiopia, Somalia, and Mozambique nevertheless stand out in the conflict forecasts for October 2021.

At the sub-national level—assessing the risk of at least one fatality per approximately 55x55km location—results are more refined (Figure 6c). We find the Ituri and Kivu provinces of DRC to be particular hot-spots for one-sided violence, persistently plagued by police brutal-

ity, Islamist militants, and various armed groups. A less severe risk cluster is also found over DRC's Kasai/Kasai-Central. In Nigeria, in turn, particular high-risk locations include Borno state (grappling with Boko Haram and IS-affiliated groups), Katsina, Kaduna, and Zamfara states (with a history of banditry), the southern regions. Other 'hot-spots' include Cabo Delgado in Mozambique, central and western CAR, Darfur in Sudan, and the broader tripartite risk cluster spanning central Mali, northern/northeastern Burkina Faso, and south-western Niger (all of which are prone also to state-based violence due militant Islamist operations in the area). Last, a more diffuse risk cluster is found over the Horn of Africa.

Changes to the risk projections as compared to last month can be observed for a number of countries and sub-national locations, most prominently on the coun-

try level of analysis where reducing risks are accentuated. Only one pronounced risk elevation is seen from the country-level change map in Figure 6d): Burkina Faso. The Burkinabé case is nevertheless somber following the loss of 160 civilians in the Yagha province on 5 June in what has become reported as one of the deadliest assaults by armed assailants that the country has seen in many years. Fatal incidences of lesser magnitude were furthermore reported in the Oudalan and Soum provinces of the Sahel region, as well as in the Centre Nord and Est regions.

Effects from the Burkinabé incidences can also be seen in the sub-national risk assessment (see the conflict history map in Figure 4c in relation to the sub-national change map in Figure 6d). Other locations at heightened risks of fatal violence over the next few months include Nigeria's North- and South-West, and DRC's Kivu provinces with adjacent areas. Reducing risks, in turn, are detected across Nigeria's Borno state, northern-most and Anglophone Cameroon, central mali, and DRC's Ituri province.

NOTES

1. 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 8 for the full definition.

2. Changes to the risk assessments as compared to last month are indicative of effects from new input data, most commonly by publicly available conflict and protest data from the Uppsala Conflict Data Program (UCDP, `http://ucdp.uu.se`) (Pettersson, Högbladh, and Öberg, 2019; Sundberg and Melander, 2013; Hegre et al., 2020) and the Armed Conflict Location and Event Dataset (ACLED, `http://acleddata.com`) (Raleigh et al., 2010).

3. Unless otherwise stated, all fatality counts and details on conflict events noted in this report are derived from the latest relase of the UCDP Candidate Events Dataset (Pettersson, Högbladh, and Öberg, 2019; Sundberg and Melander, 2013; Hegre et al., 2020), here the July 2021 release covering the month of June 2021. The fatality counts listed correspond to the 'best estimate' records.

4. While the UCDP had not recorded any Tunisian fatalities fulfilling the criteria to be placed into their state-based category this June 2021, the more inclusive Armed Conflict Location & Event Data Project (ACLED, `http://acleddata.com`) (Raleigh et al., 2010)) had picked up on conflict incidencies that helped informed this month's ViEWS forecasts. Also the Rulers, Elections, and Irregular Governance (REIGN, `https://oefdatascience.github.io/REIGN.github.io/`) dataset's drougth data contributed to the updated Tunisian forecasts.

5. Similar to the forecasts for state-based violence, the Tunisian case is instead informed by violent incidencies recorded by ACLED, coupled with drought data from REIGN.

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Weidmann, Nils B, Doreen Kuse, and Kristian Skrede Gleditsch (2010). "The geography of the international system: The CShapes dataset". In: *International Interactions* 36.1, pp. 86–106.

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 two 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 the local forecasts—and vice versa—the forecasting models employed at the two levels of analysis differ from each other. Models informing the national level forecasts bring, for instance, valuable structural and historical factors to the table, whereas 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 Special Data Feature in *Journal of Peace Research* (Hegre et al., 2021), 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 June 2021). Forecasts for $s = 1$ would thus effectively have referred to forecasts for last month, $s = 2$ to the 'nowcast' for the month of writing, $s = 3$ to the forecasts for the following calendar month, and so forth.