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ABOUT THE CCAPS PROGRAM

The Climate Change and African Political Stability (CCAPS) program conducts research in three core areas, seeking to investigate where and how climate change poses threats to stability in Africa, identify strategies to support accountable and effective governance in Africa, and evaluate the effectiveness of international aid to help African societies adapt to climate change. The CCAPS program is a collaborative research program among the University of Texas at Austin, the College of William and Mary, Trinity College Dublin, and the University of North Texas.

The CCAPS program is funded by the U.S. Department of Defense’s Minerva Initiative, a university-based, social science research program focused on areas of strategic importance to national security policy. Through quantitative analysis, GIS mapping, case studies, and field interviews, the program seeks to produce research that provides practical guidance for policy makers and enriches the body of scholarly literature in this field. The CCAPS team seeks to engage policy communities in the United States, Africa, and elsewhere as a critical part of its research.

For more information, visit www.strausscenter.org/ccaps.
INTRODUCTION

The Climate Change and African Political Stability (CCAPS) program analyzes how climate change, conflict, governance, and aid intersect to impact African and international security.

CCAPS released its dynamic mapping tool in February 2012. The online data portal enables researchers and policymakers to visualize data on climate change vulnerability, conflict, and aid, and to analyze how these issues intersect in Africa. The mapping tool, which was developed in partnership with AidData and uses Esri’s ArcGIS platform, allows users to select and layer any combination of CCAPS data onto one map to assess how myriad climate change impacts and responses intersect.

For example, mapping conflict data over climate vulnerability data can assess how local conflict patterns could exacerbate climate-induced insecurity in a region. It also shows how conflict dynamics are changing over time and space.

Examining CCAPS conflict and climate vulnerability data together shows that conflict events involving the Lord’s Resistance Army (represented in red) have gradually diffused from Uganda into areas with less stability and more climate security vulnerability like South Sudan and northern DRC. Such conflict patterns compound climate security challenges that countries face.

Source: CCAPS Vulnerability Model and ACLED data on the CCAPS mapping tool.
To assess the interaction of climate vulnerability and international aid, users can locate aid projects funded by over 30 donors tracked in Malawi’s Aid Management Platform, layered on top of climate change vulnerability data. Mapping such aid flows provides a new way to discern if adaptation aid is effectively targeting the regions where climate change poses the most significant risk to the sustainable development and political stability of a country.

By integrating the various lines of CCAPS research, as well as other existing datasets, the CCAPS mapping tool aims to provide the most comprehensive view yet of climate security in Africa. The mapping tool utilizes the program’s climate vulnerability model, the Social Conflict in Africa Database (SCAD), the Armed Conflict Location and Event Dataset (ACLED), and the Malawi geocoded and climate aid dataset. In addition to the program’s data, the mapping tool utilizes data from the World Bank and the African Development Bank on aid projects continent-wide.

Through a partnership with the Government of Malawi, CCAPS and AidData have mapped all active development aid projects in Malawi. The CCAPS mapping tool allows users to assess how these aid projects relate to areas of climate security vulnerability.

Source: CCAPS Vulnerability Model and CCAPS AidData aid project data on the CCAPS mapping tool.
GETTING STARTED

The mapping tool is available at www.strausscenter.org/ccaps/mappingtool.

USING FILTERS

Country: The default setting is “all selected.” Use the country filter to select specific countries. The country list includes:

<table>
<thead>
<tr>
<th>Country</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Algeria</td>
<td>Gambia</td>
<td>Rwanda</td>
<td>Sao Tome and Principe</td>
</tr>
<tr>
<td>Angola</td>
<td>Ghana</td>
<td>Senegal</td>
<td>Seychelles</td>
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<tr>
<td>Benin</td>
<td>Guinea</td>
<td>South Africa</td>
<td>Somalia</td>
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<tr>
<td>Botswana</td>
<td>Guinea-Bissau</td>
<td>South Sudan</td>
<td>Sudan</td>
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<td>Burkina Faso</td>
<td>Kenya</td>
<td>Sudan-South Sudan Disputed</td>
<td>Swaziland</td>
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<td>Burundi</td>
<td>Lesotho</td>
<td>Tanzania</td>
<td>Togo</td>
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<td>Cameroon</td>
<td>Liberia</td>
<td>Uganda</td>
<td>Tunisia</td>
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<tr>
<td>Cape Verde</td>
<td>Madagascar</td>
<td>Western Sahara</td>
<td>Zambia</td>
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<tr>
<td>Central African Republic</td>
<td>Malawi</td>
<td>Zimbabwe</td>
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<td>Chad</td>
<td>Mali</td>
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<td>Comoros</td>
<td>Mauritania</td>
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<tr>
<td>Cote d’Ivoire</td>
<td>Mauritius</td>
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<td>Democratic Republic of the Congo</td>
<td>Morocco</td>
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<tr>
<td>Djibouti</td>
<td>Mozambique</td>
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<td>Egypt</td>
<td>Namibia</td>
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<tr>
<td>Equatorial Guinea</td>
<td>Niger</td>
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<td>Eritrea</td>
<td>Nigeria</td>
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<tr>
<td>Ethiopia</td>
<td>Republic of the Congo</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

![Map with Country Filter Highlighted](image-url)
**Layers:** Users can layer different datasets onto the map simultaneously. Data layers available include climate vulnerability, social conflicts, armed conflicts, and aid projects. Note that social conflict data and armed conflict data cannot be layered at the same time.

**VIEWING FEATURES**

**Legend:** The legend is located on the bottom left corner of the mapping tool. Click on the “+” sign to expand the legend. The legend adjusts to what is filtered for display on the map.
**Basemaps**: The default basemap is “oceans.” Users can select a variety of underlying basemaps.
**Timeline:** Use the scroll bar at the bottom of the mapping tool to select dates of interest for analysis.

**Context Panes:** On the right side of the screen, context panes are available on aid, governance, conflict, and climate. An overview of the data is provided with links for further information.
USING ADVANCED FILTERS

SCAD CONFLICTS

Select this tab to filter data in the Social Conflict in Africa Database (SCAD). Note that when SCAD data are displayed on the map, no data from the Armed Conflict Location and Event Dataset will be displayed simultaneously since some events are recorded in both datasets. For your SCAD filter selections to appear on the map, you must select “SCAD Conflict Events” on the Layers drop-down menu above the map.

**Start date:** To search for events that began on a certain date, select a date from the drop down calendar. The earliest entry in SCAD is January 1, 1990.

**End Date:** To search for events that concluded by a certain date, select a date from the drop down calendar. The most current entry in SCAD is December 31, 2011.

**Country:** Select the countries of interest for analysis. SCAD includes the following countries with a population over one million: Algeria, Angola, Benin, Botswana, Burkina Faso, Burundi, Cameroon, Central African Republic, Chad, Cote d’Ivoire, Democratic Republic of the Congo, Egypt, Eritrea, Ethiopia, Gabon, Gambia, Ghana, Guinea, Guinea-Bissau, Kenya, Lesotho, Liberia, Libya, Madagascar, Malawi, Mali, Mauritania, Mauritius, Morocco, Mozambique, Namibia, Niger, Nigeria, Republic of the Congo, Rwanda, Senegal, Sierra Leone, Somalia, South Africa, South Sudan, Sudan, Swaziland, Tanzania, Togo, Tunisia, Uganda, Zambia, and Zimbabwe.

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**Event type:** Select the type of social conflict event of interest.

- **Organized Demonstration:** Distinct, continuous, and largely peaceful action directed toward members of a distinct “other” group or government authorities. In this event, clear leadership or organization(s) can be identified.

- **Spontaneous Demonstration:** Distinct, continuous, and largely peaceful action directed toward members of a distinct “other” group or government authorities. In this event, clear leadership or organization cannot be identified.

- **Organized Violent Riot:** Distinct, continuous and violent action directed toward members of a distinct “other” group or government authorities. The participants intend to cause physical injury and/or property damage. In this event, clear leadership or organization(s) can be identified.

- **Spontaneous Violent Riot:** Distinct, continuous and violent action directed toward members of a distinct “other” group or government authorities. The participants intend to cause physical injury and/or property damage. In this event, clear leadership or organization(s) cannot be identified.

- **General Strike:** Members of an organization or union engage in a total abandonment of workplaces and public facilities.

- **Limited Strike:** Members of an organization or union engage in the abandonment of workplaces in limited sectors or industries.

- **Pro-Government Violence (Repression):** Distinct violent event waged primarily by government authorities, or by groups acting in explicit support of government authority, targeting individual, or “collective individual,” members of an alleged opposition group or movement. Note that this event is initiated by the government or pro-government actors.

- **Anti-Government Violence:** Distinct violent event waged primarily by a non-state group against government authorities or symbols of government authorities (e.g., transportation or other infrastructures). As distinguished from riots, the anti-government actor must have a semi-permanent or permanent militant wing or organization.

- **Extra-government Violence:** Distinct violent event waged primarily by a non-state group targeting individual, or “collective individual,” members of an alleged oppositional group or movement. As distinguished from riots, at least one actor must have a semi-permanent or permanent militant wing or organization. Government authorities are not listed as actors or targets.

- **Intra-government Violence:** Distinct violent event between two armed factions associated with different elements within the government. These include violence between two legally constituted armed units (e.g. clashes between police and military) or between unofficial militias associated with particular governmental leaders. This code includes events such as military coups.

**Actor Name:** An actor is the social, political, or identity group directly involved in the event. Names of actors are listed in alphabetical order. If interested in data on a specific actor, scroll through the list and select that actor. There are over 8,000 actor names listed in SCAD. Any number of actors can be selected at the same time.

**Issues:** A user can select multiple issues (i.e. sources of unrest). Issues in SCAD include: domestic war, violence terrorism; economic resources/assets; economy, jobs; education; elections; environmental degradation; ethnic discrimination, ethnic issues; food, water, subsistence; foreign affairs/relations; human rights, democracy; other; pro-government; religious discrimination, religious issues; and unknown, not-specified.

**Central Gov Target:** Select “Yes” for events where the central government was the target of the event. Select “No” for events where the central government was not the target of the event.
**Regional Gov Target:** Select “Yes” if a regional, provincial, or local government was the target of the event. Select “No” if a regional, provincial, or local government was not the target of the event.

**Government response:** Select “Lethal repression used” to view events where the government used repression or violence against participants and deaths were reported. Select “Non-lethal repression used” for events where the government used tear gas, arrests, or other repression tactics and no deaths were reported. Otherwise, select “No repression used.”

**Event Escalation:** Select “No” to view events where the nature of the event did not change during its duration. Select “Yes” to view events where the nature of the event changed during its duration.

**Fatalities:** Use the slider to filter data by the number of deaths reported. Note that the number of fatalities includes all locations associated with each event.

**ACLED CONFLICTS**

Select items below to filter data in the Armed Conflict Location and Event Dataset (ACLED). Note that when ACLED data are displayed on the map, no data from the Social Conflict in Africa Database will be displayed simultaneously since some events are recorded in both datasets.

For your ACLED filter selections to appear on the map, you must select “ACLED Conflict Events” on the Layers drop-down menu above the map.

**Start date:** To search for events that began on a certain date, select a date from the drop down calendar. The earliest entry in ACLED is January 1, 1997.

**End date:** To search for events that concluded by a certain date, select a date from the drop down calendar. ACLED data is updated on a monthly basis.

**Country:** Users can select from the following countries: Algeria, Angola, Benin, Botswana, Burkina Faso, Burundi, Cameroon, Central African Republic, Chad, Cote d’Ivoire, Democratic Republic of the Congo, Egypt, Equatorial Guinea, Eritrea, Ethiopia, Gabon, Gambia, Ghana, Guinea, Guinea-Bissau, Kenya, Lesotho, Liberia, Libya, Madagascar, Malawi, Mali, Mauritania, Mauritius, Morocco, Mozambique, Namibia, Niger, Nigeria, Republic of the Congo, Rwanda, Senegal, Sierra Leone, Somalia, South Africa, South Sudan, Sudan, Suden-South Sudan disputed, Swaziland, Tanzania, Togo, Tunisia, Uganda, Western Sahara, Zambia, and Zimbabwe.

**Event type:** Select the type of conflict event of interest.

- **Battle - no change of territory:** A battle between two violent armed groups where control of the contested location does not change (e.g. if the government controls an area, fights with rebels, and wins; if rebels control a location and maintain control after fighting with government forces; or, if two militia groups are fighting). Battles are the most common activity and take place across a range of actors, including rebels, militias, government forces, and communal groups.

- **Battle - rebels overtake territory:** A battle where rebels win control of location (e.g. if, after fighting with another force, a rebel group acquires control; or, if two rebel groups fight and the group that did not begin with control acquires it). There are few if any cases where opposition groups other than rebels acquire territory.

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• **Battle - government regains control:** A Battle in which the government regains control of a location. This event type is used solely for government re-acquisition of control.

• **Headquarters or base established:** A rebel group establishes a base or headquarters. This event can be non-violent.

• **Non-violent activity by a conflict actor:** This event records activity by rebel groups/militia/governments that does not involve active fighting but is within the context of the war/dispute (e.g. recruitment drives, incursions, or rallies).

• **Riots/protests:** Protest describes a group involved in a public meeting against a government institution. These actions are not violent on the part of the civilian protestors. Rioting is a violent, unorganized form of protest.

• **Violence against civilians:** Violence against civilians occurs when any armed/violent group attacks unarmed civilians. Rebels, governments, militias, rioters can all commit violence against civilians. This is the only event that involves civilians.

• **Non-violent transfer of territory:** This event describes situations in which rebels or governments acquire control of a location without engaging in a violent act.

**Actor type 1:** Select from the following eight types of conflict actors: civilians; communal militia; government, military, or police; other (e.g. UN); political militia; protesters; rebel group; and rioters.

**Actor type 2:** Selecting an Actor type 2 will limit the results to only those events involving Actor types selected in Actor type 1 and Actor type 2 fields. Select from the following conflict actors: civilians; communal militia; government, military, or police; other (e.g. UN); political militia; protesters; rebel group; and rioters.

**Actor Name:** An actor includes rebels, militias, and organized political groups who interact over issues of political authority. ACLED recognizes a range of actors including governments, rebels, militias, ethnic groups, active political organizations, and civilians. Names of actors are listed in alphabetical order. If interested in data on a specific actor, scroll through the list and select that actor. Any number of actors can be selected at the same time.

**Location (ADM1):** Select the first order administrative division (province, state, etc).

**Location (ADM2):** Select the second order division (district, municipality, etc).

**Fatalities:** Use the slider to filter data by the number of deaths reported. Note that the number of fatalities includes all locations associated with each event.

**AID PROJECTS**

Select items below to filter data on aid projects in Africa. Note that complete data on all donors in a country from the Aid Management Platform, climate-coded and geocoded by CCAPS and AidData, is only available for Malawi at this time. World Bank and AfDB geocoded project data are available continent-wide.

**Start date:** To search for projects with agreements signed on a certain date, select a date from the drop down calendar. The earliest entry in the Malawi database is January 7, 2001.

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End date: To search for projects with planned completion by a certain date, select a date from the drop down calendar.

Status: Users can search for “closed,” “ongoing,” or “planned” projects.

Type of assistance: Users can search for projects funded by a “grant,” “loan,” or “technical assistance.”

Recipient: Users can select from the following countries with aid projects: Algeria, Angola, Benin, Botswana, Burkina Faso, Burundi, Cameroon, Cape Verde, Central African Republic, Chad, Comoros, Cote d’Ivoire, Democratic Republic of the Congo, Djibouti, Egypt, Equatorial Guinea, Eritrea, Ethiopia, Gabon, Gambia, Ghana, Guinea, Guinea-Bissau, Kenya, Lesotho, Liberia, Libya, Madagascar, Malawi, Mali, Mauritania, Mauritius, Morocco, Mozambique, Namibia, Niger, Nigeria, Republic of the Congo, Rwanda, Senegal, Seychelles, Sierra Leone, South Africa, South Sudan, Sudan, Swaziland, Tanzania, Togo, Tunisia, Uganda, Zambia, and Zimbabwe.

Implementing agency: Agencies include donor-based NGO, donor government, international NGO, recipient government, and unknown.


Sector: Users can select from the following sectors: Agriculture, democratic governance, disaster vulnerability, economic governance, education, energy and mining, environment, finance, gender youth development and sports, health, industry and trade, information technology, integrated rural development, multi-sector, other, public administration, roads public works and transport, tourism wildlife and culture, and water sanitation and irrigation.

Climate Relevance: Select aid activities that have been coded for climate relevance at the activity-level.

- Climate oriented development: Activities that are most clearly designed to explicitly address climate issues.
- Capacity development: Activities that enhance resilience to climate change but are not explicitly carried out with that purpose in mind.
- General development: Activities that enhance human and environmental well-being but are not explicitly driven by or obviously directly relevant to address climate change threats.
- Ambiguous development: Activities with the least or ambiguous benefit to adaptation, including maladaptation.
- Unknown: Activities that have not been coded for climate relevance.

Aid Dataset: Select the dataset of interest for analysis.

- All ODA in Malawi (CCAPS/AidData): Climate-coded aid data for Malawi geocoded by CCAPS in partnership with AidData.
- Continent-wide AfDB (AfDB/AidData): African Development Bank projects continent-wide geocoded by AidData.
- Continent-wide World Bank (WB/AidData): World Bank projects continent-wide geocoded through the World Bank-AidData Mapping for Results Initiative.
DOWNLOADING DATA

Data displayed on the CCAPS mapping tool are available for download. Click on the “download data” button to access the following CCAPS datasets shown on the mapping tool: the CCAPS Climate Vulnerability Model, the Social Conflict in Africa Database (SCAD), the Armed Conflict Location and Event Dataset (ACLED), and the Malawi Geocoded and Climate Aid Dataset. The “download data” button also provides links to download data directly from CCAPS partners whose data are displayed on the CCAPS mapping tool.

SHARING MAPS

To share maps, click on the orange “+” button. Users may share their maps via email, facebook, twitter, and many other social media tools.

To embed the link of a map into a website, click the green button to the right of the share button. Copy and paste the code to share the map.
DATA SOURCES ON THE MAPPING TOOL

The CCAPS mapping tool brings together data on climate change vulnerability, conflict, and aid, allowing users to assess how myriad climate change impacts and responses intersect. By integrating the various lines of CCAPS research as well as other existing datasets, the CCAPS mapping tool aims to provide the most comprehensive view yet of climate change and security in Africa. Data shown on the mapping tool are available for download on the mapping tool or by following the links below:

**Climate Vulnerability Data**

The CCAPS climate security vulnerability model combines data on physical, socio-economic, demographic, and political insecurities to develop a holistic model of vulnerability, using Geographic Information Systems to locate the confluence of these various sources of vulnerability.

Raster data and codebook for download:
www.strausscenter.org/form/7-climate-vulnerability-model.html?tmpl=component

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**Social Conflict in Africa Database (SCAD)**

SCAD includes georeferenced data on protests, riots, strikes, coups, communal violence, and other types of social unrest in Africa from 1990 to 2011. SCAD includes all countries in Africa with a population of over one million. Each record includes start and end dates, type of event, actors and targets involved, number of participants, number of fatalities, use of government repression, event locations, and issues of contention.

Dataset for download (Excel), searchable database, and codebook:
www.strausscenter.org/scad.html

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**Armed Conflict Location and Event Dataset (ACLED)**

ACLED provides near real-time conflict tracking, with georeferenced data disaggregated by type of violence - including battles between armed actors, violence against civilians, and rioting - and by a wide variety of actors - including government forces, rebel groups, militias, and civilians. The dataset includes events from 1997 to 2013, updated monthly.

Dataset for download (Excel), searchable database, and codebook:
www.strausscenter.org/acled.html

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**Malawi Geocoded and Climate Aid Dataset**

CCAPS and AidData published a first-of-its-kind geocoded and climate-coded dataset from the Government of Malawi’s Aid Management Platform. The dataset includes all types of aid for the 30 donors in Malawi’s Aid Management Platform, geocoded and climate-coded to provide a more complete picture of how adaptation fits into development efforts within the country.

Dataset for download (Excel), searchable database, and codebook:
http://strausscenter.org/aid.html
Partner datasets shown on the CCAPS mapping tool include:

World Bank Aid Projects Continent-Wide
This World Bank dataset includes all World Bank aid projects in all sectors from 1990-2011. The data were georeferenced by AidData and the World Bank Institute in the Mapping for Results initiative.

Methodology:
http://maps.worldbank.org/content/about/methodology

Data:
www.aiddata.org/content/index/AidData-Raw/geocoded-data

African Development Bank Aid Projects Continent-Wide
This AfDB dataset includes all African Development Bank projects in all sectors approved in 2009-2010. The data were georeferenced by AidData in partnership with the AfDB’s Quality Assurance and Results Department.

Methodology:
http://aiddata.org/weceem_uploads/_ROOT/File/geocoding/UCDP_AidData_Codebook_Published.pdf

Data:
www.aiddata.org/content/index/AidData-Raw/geocoded-data
This material is based upon work supported by, or in part by, the U.S. Army Research Office grant number W911NF-09-1-0077 under the Minerva Initiative of the U.S. Department of Defense.