



BUSINESS & CONFLICT BAROMETER

Progress to date and next opportunities

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At the frontier of big data and conflict analysis, The Business & Conflict Barometer dramatically lowers the barriers for interested parties to explore and gain understanding of the dynamics of the private sector, conflict, and peaceful development in Africa at the granular level of companies, locations, sectors, or contexts: for research; for policy, project, or investment planning; for due diligence; and for monitoring and evaluation.

While the growth of a healthy private sector is required for peaceful development in Africa, the ways in which private sector growth and investment are pursued all too often become caught up in conflict in ways that undermine peacebuilding, development, and state building goals. This can be true even for projects and investments intentionally designed to have peace- and development-positive outcomes.

Despite this conundrum, broad-based data on the private sector, conflict, and development is either lacking, slow and laborious to produce, difficult to compare across contexts, or unwieldy for policy makers, institutions, advocates, and private sector actors themselves to access and apply. This complicates conflict analysis, planning, and monitoring and evaluation, particularly for those who track or manage portfolios of investments.

The *Business & Conflict Barometer* thus fills gaps and complements existing efforts to improve private sector outcomes for Africa. It does so through the use of more broadly accessible data and innovative analytics. At the frontier of big data and conflict analysis, it harmonizes textual and quantitative data sources; facilitates textual analysis for social characteristics and conflict trends; and provides an easily accessible query interface for data exploration and reporting.

In doing so, the *Business & Conflict Barometer* dramatically lowers the barriers – in terms of technological sophistication, technology management, time, and human and financial resources – for interested parties to explore and gain understanding of the dynamics of the private sector, conflict, and peaceful development in Africa, for example:

Trend data: *How high or low are conflict pressures related to private sector activities, and are they rising or falling for a particular project, place, region, or sector?*

Risk characteristics: *What are the characteristics that make for a more or less conflict-prone private sector, under different local or country conditions, and how does an anticipated investment context compare to others?*

Causal dynamics: *For any given context, what actions or initiatives distinguish less conflict-prone private sector development from that which is more so?*

In this way, improved and more easily accessible data and analysis can help community, social, political, governmental, and private sector actors to engage more decisively to mitigate conflict risk before it escalates, and to design interventions for reduced conflict potential; this both at the individual project level and at the level of policies and private sector promotion initiatives. The available insight also facilitates monitoring and evaluation of individual projects and portfolios of investment.

Hosted at the University of Stellenbosch, the *Business and Conflict Barometer* has an African home for African data and analysis that helps to build next-generation African scholarship as it provides a global service. The project has passed a number of proof of concept hurdles and is in its first stage of intense development and testing. There is now opportunity to mobilize more significant resources to accelerate systems development, conduct qualitative studies to triangulate data and assess validity, and design the front end interfaces that will allow for broader access to the tool, its data, and its analytic capabilities.

Private sector development in Africa remains conflict prone

Private sector development in Africa accelerates, driven by organic growth to meet the needs of a growing and in many places more prosperous population, as well as ongoing and in some cases accelerated interest in primary exports in minerals, metals, energy, and agriculture.

Private sector investment and growth is also central to development and aid policy. For example, the EU has made private investments central to achievement of the SDGs and the private sector ‘a critical partner for achieving the objectives’ of the Joint Africa-EU Strategy; countries such as the UK and Switzerland invest heavily in business environment reform to support employment growth; and a \$2.5 billion IDA-IFC-MIGA1 Private Sector Window has been directed – in addition to already substantial investments of international financial institutions – towards IDA-only countries, with a focus on fragile and conflict-affected states (FCS).

Yet none of these policies and initiatives has been able to counter the entrenched dynamics of the private sector acting at the same time as an engine for growth *and* as a vector for socio-political conflict, sometimes violent, and deteriorating governance. This has been documented across the continent at the macroeconomic policy level (e.g., the ways in which the disappearance of the textile sector in Nigeria subsequent to that country’s opening to the WTO contributed to the rise of Boko Haram); at the national political level (e.g., how contestation over private sector oil development in Uganda contributed to the closing of political space for opposition parties and civil society); and the local level (e.g., the confluence of socio-political and socio-economic factors that contributed to the Marikana massacre at the Lonmin platinum mine).

Country after country that has been at some juncture held up as a success story – mostly based on private-sector led economic growth – has been found not to have been able to translate that private sector success into development success (e.g., Sierra Leone, which despite having briefly worn the crown of the fastest growing economy in the world has two thirds of its population living in multi-dimensional poverty) or into stable governance (e.g., Mozambique, where gas development is further driving social division and increasingly violent conflict). Company after

company – in agriculture, mining, energy, infrastructure, and other sectors – is caught up in labour and community strife that weakens rather than supports human rights and human development.

Thus, while a growing and healthy private sector is required for peaceful development in Africa, with some successes, the ways in which private sector growth and investment are pursued all too often weaken rather than support development, peacebuilding and state building goals.

Broad-based data on the private sector and conflict in Africa is lacking

The Africa Centre for Dispute Settlement, together with its partners, has made great strides in the past years understanding the mechanisms of action by which private sector development in Africa is implicated in the dynamics of conflict and peace, and therefore as an agent of either accelerated or stalled development. These dynamics have been mapped at the systems level (Ganson, 2019a), policy level (Luiz, Ganson & Wennmann, 2019), country level (Ganson & M'cleod, 2019), and firm level (Ganson & Wennmann, 2016; Ganson 2013). Private sector actors have been examined both as a catalyst for peaceful development (Miller, Ganson, Cechvala & Miklian, 2019) and as a force for maintaining a conflictual status quo (Ganson, 2019b).

There are currently barriers, however, to the further development practical application of this sense making and theory building work. On the production side, the qualitative research that has so far been required is time consuming and expensive (as it often requires field work in remote places); it requires cultivation of local partnerships with both business actors and peacebuilders to negotiate access to key informants; and it requires heightened conflict sensitivity to keep both the researchers and the communities with which they work safe. On the dissemination side, the work is too easily dismissed as anecdotal by those who take a more ideological stance towards the role of the private sector, positive or negative. It is often enough unwelcome (and thus access to proprietary data or analysis is suppressed) when the results are less than laudatory for a government, company, or financial institution. And the current case-by-case research methodologies are difficult to compare across contexts, as well as unwieldy for policy makers, institutions, advocates, and private sector actors themselves to access and apply.

Thus, despite both the socio-political reality of private sector development that is producing sub-optimal results for Africa, clear indications of negative conflict trends, and growing conceptual understanding, broad-based data and analysis on the private sector, conflict and development is sorely lacking. This undermines conflict analysis; planning for more peace- and development-positive private sector policies, projects, and initiatives; and monitoring and evaluation.

The *Business & Conflict Barometer* provides accessible and actionable insight on the private sector, conflict, and peaceful development

The *Business & Conflict Barometer* already under development is progressively accelerating access to data and insight related to the private sector and conflict in Africa. It does so building from the following foundations:

A **relational database** that aggregates diverse quantitative data sources salient to private sector development and conflict, including geospatial data (e.g., locations of ports and mines, indigenous land claims...); event data (e.g., new investments, strikes or protests...); and socio-political and socio-economic data (e.g., public sentiment data, multi-dimensional poverty data...);

A **structured library** that aggregates diverse textual corpuses (e.g., World Bank and other IFI project documents, Business & Human Rights database reports...) that can be geolocated and time stamped to support qualitative assessments of a particular place or actor at the desired level of granularity;

A **text processing engine** that (a) facilitates and accelerates identification of the location, sector, and timeframe to which a particular document refers; and (b) performs textual queries (and suggest improvements for users) that allow conflict sentiment to be assessed for documents in a given corpus against standard conflict measures (e.g., the Goldstein Scale) or custom queries.

Dynamic query capabilities that allow up-to-date information to be ingested from dynamic data sources (e.g., GDELT Global Knowledge Graph, Factiva...) in ways that can be combined with static quantitative and textual data layers for analysis;

Interfaces that allows users to see and select data layers of interest to them; add textual and non-textual data for combined queries; perform textual analysis on the selected corpus, including scoring of conflict sentiment; and perform queries across the scored textual and non-textual data layers; receive results; and perform sub-queries on those results.

In doing so, the *Business & Conflict Barometer* will dramatically lower the barriers – in terms of technological sophistication, technology management, time, and human and financial resources – for interested parties to explore and gain understanding of the dynamics of the private sector, conflict, and peaceful development in Africa. The following are examples of how the Business & Conflict Barometer can be used to identify trends, risks and opportunities:

Trend data: *How high or low are conflict pressures related to private sector activities, and are they rising or falling over a given time period?*

The *Business & Conflict Barometer* can help to answer this question for a particular geocoordinate (e.g., for a highly granular perspective on a particular investment); within or across countries (e.g., for a time-series snapshot of the private sector and conflict in general); within or across sectors (e.g., to assess whether particular types of investments are more or less conflict-prone); or for a particular portfolio of interest (e.g., all EDB projects, all mines operated by a particular company...).

Risk characteristics: *What are the characteristics that make for a more or less conflict-prone private sector, under different local or country conditions?*

The *Business & Conflict Barometer* can help to more easily and effectively formulate hypotheses, test data, and draw conclusions to answer this question. These may be related to local conditions (e.g., correlations between conflict, plantation agriculture, and locally

high food insecurity); to the nature of the private sector actor (e.g., comparing OECD and non-OECD parent companies); or to the political economy (e.g., investments in limited access economic orders or societies with high horizontal inequalities).

Causal dynamics: *For any given context, what actions or initiatives distinguish less conflict-prone private sector development from that which is more so?*

The *Business & Conflict Barometer* can help to more easily and effectively formulate hypotheses, compare like cases, and draw conclusions to answer this question. These may relate to company actions (e.g., companies which invest in more intensive stakeholder engagement versus those which do not); sectoral policies (e.g., places with higher versus lower investment in complementary SME and informal sector opportunities); or regulation (e.g., companies required to conduct human rights due diligence versus those that are not).

These illustrative uses underline that the *Business & Conflict Barometer* is conceptualized and designed as a tool for broad use and application. In addition to its importance for advancing research and scholarship, it is intended to have direct practical impact. The overarching theory of change is that as more actors are able to identify trends, risks and opportunities related to the private sector, conflict, and peaceful development, more actors will be able to take more deliberate action within their own spheres, for example, a company improving collaborative practices, an international agency helping to formulate less conflict-prone BER or private sector development policy, a government seeking a wise regulatory balance between growth and social protection, or a social investment fund shaping and managing its portfolio. In this way, improved and more easily accessible data and analysis may help communities, their advocates, as well as other social, political, governmental, and private sector actors to engage more decisively to mitigate conflict risk before it escalates, and to design interventions for reduced conflict potential; this both at the individual project level and at the level of policies and private sector promotion initiatives.

Significant development of the *Business & Conflict Barometer* is underway

ACDS as part of a project together with its partners at the Wharton School, University of Pennsylvania, in 2017 experimented with a “conflict barometer” to estimate the level of socio-political conflict in a geographically defined area using automated analysis of publicly available textual data, and further, to develop time series data to estimate whether conflict levels were rising or falling.

22 project finance investments in the portfolio of an international financial institution were identified. Within a corpus of qualitative data compiled by the team from third party media sources, the incidence of words or phrases associated with conflict risk, moderators associated with conflict intensity, and conflict events were tracked. These simple lexigraphic measures were supplemented with more sophisticated third-party analysis of media reports within 50km of the project provided by the Global Database on Environment, Language and Tone (GDELT). From this database, the team extracted information on the average reported degree of overall, verbal and material conflict or cooperation using the Goldstein scale, the dominant scale used to quantify conflict and cooperation in event data allowing for time series analysis of a continuous measure of events derived from large quantities of media content.

To test and validate the data from this automated analysis, the team developed qualitative project narratives for the 22 study projects. These narratives drew information from the financial institution's qualitative reports as well as the media corpus for each project in a structured format. Each provided a brief overview of the project and its stakeholders, internal project characteristics, the external contextual environment in which the project is embedded including a description of conflict associated with or impacting the project.

This proof of concept experiment proved highly successful, with the automated analysis matching the case study findings in terms of project-related conflict and its general levels in all cases. Additionally, the time series data on conflict levels could be linked to other time series data (in the experiment, credit risk data), allowed for correlations to be readily identified and causal connections to be more easily conceptualized and tested.

These and related successes by associated researchers resulted in a more deliberate development effort beginning in 2020. ACDS convened a working group including colleagues from the Wharton School, the Global Information Engagement Program (GIEP) of the University of Michigan School of Information, and the University of Stellenbosch School for Data Science and Computational Thinking. ACDS engaged a post-doctoral fellow dedicated to this project, enabling the advancement of multiple project components carried out by supervised teams of post-graduate students.

These efforts are already bearing fruit. On the technical side, notable progress has been made and learning for further development digested on the overall systems design; the structuring and incorporation of textual corpuses; and on textual analysis. Textual corpuses and quantitative datasets are acquired and incorporated into the relational database as time and resources allow. On the research side, an agenda has been developed to explore conflict trends and risk characteristics for private sector development in Africa within the limitations of the current state of systems development, with first publishable outputs anticipated this year.

The *Business & Conflict Barometer* is ready for scaling up

Development of the *Business & Conflict Barometer* continues, with new post-graduate cohorts from the University of Michigan and University of Stellenbosch coming on board. There is now opportunity, however, to mobilize more significant and targeted resources to accelerate development. Dedicated resources can achieve progress on three fronts: systems integration and improvement; qualitative studies to triangulate data and validate systems outputs; and front end interface design that will allow for broader access to the tool, its data, and its analytic capabilities.

Systems integration and improvement includes anticipated work across a number of inter-related dimensions:

Systems Architecture. Optimizing systems design for usability (e.g., for end users, data ingestion, data harmonization...) scalability, ease of modification and future developments as an experimental tool, host university requirements, and cost, and integrating the disparate pieces into a more seamless whole.

Data Ingestion. Improving systems and processes such that user-provided textual and non-textual data sets can be reliably incorporated with other data layers for analysis, and such that they can be segregated and/or purged if necessary for confidentiality purposes. At the more tactical level, there are a virtually unlimited number of textual and quantitative data sources to be acquired, cleaned, and added to the database, as well as systems to be developed for more automated updating.

Dynamic Data Queries. Improving systems and processes such that the results from real-time queries to extent databases (e.g., GDELT) can be reliably incorporated with other data layers for analysis.

Textual Analysis. Extending the extent capabilities of the text processing engine in English to French, Portuguese, Arabic, Swahili, and other widely-used languages for press and reporting in Africa.

Qualitative studies are anticipated in order to test and calibrate outputs of the *Business & Conflict Barometer* related to trend data, risk characteristics, and causal dynamics:

Sierra Leone. A more recently post-conflict country with entrenched dynamics of fragility, qualitative studies will help to test and refine the *Business & Conflict Barometer* for a smaller country with more limited press and reporting, greater data challenges, and known regional, ethnic, and center-periphery tensions.

The platinum belt of South Africa. Here, qualitative studies will help to test and refine the *Business & Conflict Barometer* for a larger country at the sub-national level. Here the challenge may be less lack of data than the extraction from within rich data sets of insight by sector and actor.

Choices of targets for qualitative research are preliminary. They are meant to put the *Business & Conflict Barometer* to the test across a range of contexts and data challenges, triangulating outputs against primary and secondary research conducted around the same questions in the same places. They are chosen in part because of the strong secondary research base available with respect to the private sector, conflict, and peaceful development, and because of the strong research and practice networks to which ACDS has access because of its prior work in these countries.

Front end interface development will allow for broader access to the tool, its data, and its analytic capabilities, building from the draft UX map already developed in an earlier workstream:

A public portal that will allow for more intuitive access to freely-available data. analyses drawing from a pre-populated library of logical queries, and simplified data presentation and visualization. It is intended primarily for non-technical users.

A research portal that will allow for ingestion of user data for integration within the relational database; more complex custom queries and analyses; greater flexibility of inputs and outputs; and access to . It is intended for seasoned researchers.

The goal is a system that allows a broad range of users to focus on their own data and analytic needs, relieved of the need for technical expertise in data management or analytics.

Sustainability can be achieved

The intent is for the *Business & Conflict Barometer* to forever remain a free and publicly available tool to support research, policy, advocacy, and practice that helps community, social, political, governmental, and private sector actors to engage more decisively to mitigate conflict risk before it escalates, and to advance the promise of the private sector as an engine for peaceful development.

All the same, after the initial development period, it is anticipated that the *Business & Conflict Barometer* can become self-sustaining. One resource stream is anticipated to come from contract research and analytics: companies, governments, and international agencies may not wish to develop internal expertise with the tool, for example, but prefer a fee-for-service model whereby they are provided with customized reporting on a particular place, monitoring of a portfolio of investments, or answers to particular research queries. Another resource stream is anticipated to be generated from South African higher education system subsidies for academic publications by affiliated doctoral, post-doctoral, and faculty researchers.

An incubation budget can accelerate development

To achieve the development goals outlined above within an accelerated timeframe, a budget (above and beyond inputs by current academic partners) is required in the estimated amount of US \$125000 per year for two years.

Roughly half is professional services costs for systems development; a quarter for research staffing; and a quarter for research expenses. A more granular budget is available upon request.

A funding round is underway with the goal of raising the entire amount from one or more sources. At the same time, the project plan ensures that discrete funding tranches – for example, for systems development, triangulation field studies, or interface development – will result in clear project outcomes and enhanced capabilities.

The ACDS provides an appropriate and effective institutional home

The Africa Centre for Dispute Settlement (ACDS) at the University of Stellenbosch Business School (USB) is a hub for research and reflection at the nexus of the private sector, conflict, and peaceful development. The USB is home to leading programmes on the continent in business management, leadership, and development finance.

The Centre's work puts it at the forefront of the study of the private sector in conflict-prone environments, in Africa and globally. Furthermore, it has demonstrated capacity to work successfully in partnership with a variety of academic and practice partners the world, including

those at the University of Michigan and the Wharton School, University of Pennsylvania, who remain integral to this project.

ACDS works with human rights advocates, community representatives, development agencies, governments, international financial institutions, and private sector enterprises – often in multi-stakeholder settings – to assess conflict risk and barriers to conflict resolution, and to develop paths towards greater collaboration for peaceful development. As an academic institution with expertise in conflict resolution and collaboration, it can act as a trusted steward of data and analytic tools available to all.

Hosted at the University of Stellenbosch in a partnership between ACDS and the School for Data Science and Computational Thinking, the *Business and Conflict Barometer* has an African home for African data and analysis that helps to build next generation African scholarship as it provides a global service.

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