

## DRC

### Terms of Reference (TOR)

for

## *a webscraping solution to capture data on tensions in Central Sahel*

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### 1. Who is the Danish Refugee Council?

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Founded in 1956, the Danish Refugee Council (DRC) is a leading international NGO and one of the few with a specific expertise in forced displacement. Active in 40 countries with 9,000 employees and supported by 7,500 volunteers, DRC protects, advocates, and builds sustainable futures for refugees and other displacement affected people and communities. DRC works during displacement at all stages: In the acute crisis, in displacement, when settling and integrating in a new place, or upon return. DRC provides protection and life-saving humanitarian assistance; supports displaced persons in becoming self-reliant and included into hosting societies; and works with civil society and responsible authorities to promote protection of rights and peaceful coexistence.

### 2. Purpose of the consultancy

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The Danish Refugee Council based in WANALA is seeking proposals from consultants for a ***solution aimed at extracting data on tensions/conflicts/violence in the Sahel from social network monitoring then processing and transmitting them to enhance accuracy and precision of WACAFI's predictive model.***

### 3. Background

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***Under DG ECHO funding, DRC Wanala is expanding its WACAFI (West Africa Context Analysis and Foresight Initiative) predictive model, which forecasts every 3 months the expected number of people displaced in several regions of the Liptako-Gourma area. The WACAFI model is a machine learning model that uses historical data on the main drivers of displacement in the central Sahel (mainly violence, food insecurity, climatic conditions, etc.).***

***In Central Sahel, ongoing crises have a significant impact on civilians, who are exposed to increasing daily violence perpetrated by various armed actors. To date, nearly 2.8 million internally displaced people have been recorded in Burkina Faso, Mali and Niger. ¾ of these displaced population can be attributed to attacks by armed groups or the fear of such attacks.***

OC Consultance 01 Termes de référence

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*Modern mobile technologies, internet and social media open up a variety of potential options to gather real-time information directly from websites, Twitter or Facebook, on community members under threat of violence or in situations of displacement. In this way, access to massive amounts of information can provide early warning of specific risks. Given the dynamics underlying conflict and violence in the Sahel, information shared on social networks can be very useful in anticipating tensions and the risk of violent outbursts. Web scraping" is an effective way of quickly capturing data from the Internet, and DRC is looking to test how information from a variety of sources can be harnessed to improve the performance and accuracy of WACAFI's machine learning model.*

## 4. Objective of the consultancy

*The purpose of this consultancy is to collaborate with the organization to acquire high-quality structured or semi-structured data from social networks on existing tensions and violence in the central Sahel, to transfer this data in an appropriate format for effective re-use in predictive modelling and context analysis.*

The consultant will be required to:

- **Build on behalf of DRC a tailored system to monitor referenced sites or web platforms (such as Twitter, Facebook, Google search, Public media sites, any other publicly accessible website) to gather information reporting on tensions resulting from violence that may lead to displacement in Liptako-Gourma countries.**
- **Automate data extraction from the Internet and structure it in a format suitable for integration into the WACAFI model (to be defined with the project team, as well as the frequency of data transmission).**
- **Provide a script that can be modified to integrate new parameters (period, country, sources, criteria, etc.).**
- **Provide support/guidance on the process of cleaning extracted data.**
- **Identify biases associated with the data collected and propose a procedure to verify the quality of data.**
- **Provide regular demos at key stages of the development process (the consultant will propose a schedule for demo's at the time of submission).**
- **Ensure after-sales service for the solution with bug fixes (as well as major updates) one month after delivery.**

## 5. Scope of work and Methodology

The Consultant will be required to prepare a detailed methodology and work plan indicating how the objectives of the project will be achieved, and the support required from DRC.

As an example, and for information only, the following list is provided to help the Consultant to identify the sources and nature of the information that is shared on the Internet. It will then be his responsibility to expand it further:

<ul style="list-style-type: none"> <li>- @Danoumis_Traore : Burkina Faso</li> <li>- <a href="https://www.facebook.com/danoumaismael.traore/?locale=fr_FR">https://www.facebook.com/danoumaismael.traore/?locale=fr_FR</a></li> </ul>	<ul style="list-style-type: none"> <li>- @Dsiribie :</li> </ul>	<ul style="list-style-type: none"> <li>- @ocisse691 : Larmes des pauvres</li> <li>- <a href="https://www.facebook.com/p/Larmes-des-pauvres-100067700170607/">https://www.facebook.com/p/Larmes-des-pauvres-100067700170607/</a></li> </ul>
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- @miirya2 : Niger - <a href="https://www.facebook.com/radiomiirya/">https://www.facebook.com/radiomiirya/</a>	- @Vision_LibreS :	- @AgRhissa2
- @DelphineSankara : Mali	- @ISSAfricaFR - <a href="https://www.facebook.com/issafricaf">https://www.facebook.com/issafricaf</a> - <a href="https://issafrica.org/fr/">https://issafrica.org/fr/</a>	- @SahelLeaks - <a href="https://www.facebook.com/SahelLeaks/">https://www.facebook.com/SahelLeaks/</a>
- @CLaoundiki : Burkina Faso - <a href="https://www.facebook.com/laoundiki.cryspin/">https://www.facebook.com/laoundiki.cryspin/</a>	- @Ibrahimamaigaa - <a href="https://ms-my.facebook.com/ibrahimamaigabf">https://ms-my.facebook.com/ibrahimamaigabf</a>	- <a href="https://www.facebook.com/HousseayneAgIssa?locale2=hi_IN">https://www.facebook.com/HousseayneAgIssa?locale2=hi_IN</a>
- @Amachagh10 :	- @AlerteTemoin : Wendpouire Charles Sawadog - <a href="https://www.facebook.com/libra.penseur.3?rdc=1&amp;rd">https://www.facebook.com/libra.penseur.3?rdc=1&amp;rd</a>	- @StratStability - <a href="https://www.linkedin.com/company/stabilization-advisors/?viewAsMember=true">https://www.linkedin.com/company/stabilization-advisors/?viewAsMember=true</a>
- @Sahel_Security :	- @Wamaps_news - <a href="https://westafricamaps.com/">https://westafricamaps.com/</a>	Hastag : #lwili
Etc.		

## 6. Deliverables

The Consultant will submit the following deliverables as mentioned below:

- ***An inception report (maximum 5 pages) based on the needs assessment (consultations) and interviews with the DRC team, to be provided on the third day after contract start date. The consultant must indicate in this report the adjusted methodology and detailed work schedule, in accordance with the terms of the contract, as well as any difficulties encountered and/or anticipated.***
- ***A package that includes the code, architecture and guidelines (design, administration and script execution manuals) of the solution, to ensure regular updates if necessary.***
- ***The consultant will transmit the acquired solution and the above-mentioned products by email, USB key, etc. to the customer.***

The Consultant will provide the documentation **>by mail, email, USB key / Word, Excel, PowerPoint, PDF, etc.<**

## 7. Duration, timeline, and payment

The total expected duration to complete the assignment will be no more than **21 working days**.

The consultant shall be prepared to complete the assignment no later than **November 8<sup>st</sup> 2023**.

## 8. Eligibility, qualification, and experience required

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### Essential:

- The consultant should be a data scientist/web developer with big data expertise/senior data analyst or a combination of programming skills and an in-depth understanding of statistical techniques.
- The consultant will have expertise in programming languages such as Python, R, Node.js, C++, JAVA or Git, as well as strong skills in developing web scraping scripts to extract data from various sources.
- The consultant will demonstrate good skills in managing large volumes of information, data and information structuring and treatment (DB management, data warehouse construction, open-source projects).
- The consultant is expected to have a sound knowledge of algorithms and artificial intelligence or machine learning techniques.
- The consultant will demonstrate strong expertise in Web scraping and provide evidence of similar assignments in this field (certificates of completion/performance, etc.).

### Desirable:

- The consultant must have a good understanding of the prevailing security crisis in the central Sahel.
- The consultant must be client-oriented and open to regular and constructive exchanges.
- The consultant must demonstrate expertise in the development of complex, scalable, web-based solutions.

- **Eligibility:**

- The consultant has the authorisation to work in any *location*.

- **Qualification:**

- At least Degree in Statistics/Advanced Mathematics/Big data/Web developer.

- **Experience:**

- A minimum of **four (4)** years of proven experience in Data Management/Data Analysis/Data Science/Big Data/Web developer.

- **Skills and knowledge:**

- Candidates shortlisted will be invited to provide example of similar tasks.
- A sound understanding of the context in the tri-border zone between Burkina Faso, Mali and Niger.

- **Language requirements:**

- Fluency in written and spoken French and English.
- Working knowledge of the local language(s) of Burkina Faso, Mali and Niger is an advantage.

## 9. Technical supervision

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The selected consultant will work under the supervision of:

- Bo Schwartz-Madsen, **Global Data Scientist**, [bo.schwartz.madsen@drc.ngo](mailto:bo.schwartz.madsen@drc.ngo)
- Papa Ibrahima Diagne, **Wacafi Coordinator**, [papa.diagne@drc.ngo](mailto:papa.diagne@drc.ngo)

## 10. Submission process

Interested candidates who meet the required profile are invited to submit an offer including the following elements in French or English:

1. A CV demonstrating expertise and experience relevant to the achievement of the contract objectives and expected results.
2. A cover letter clearly stating suitability for the role and understanding of the objectives and service required
3. 3. Tender form completed and signed with financial offer. Detailed costs must be listed in a separate document. Supplier profile registration form duly completed and signed. Tender documents (including signed Code of Conduct and General Conditions of Contract) must be submitted in PDF format to [tender.ro03@drc.ngo](mailto:tender.ro03@drc.ngo) by the date indicated in paragraph 5.B of the Letter of Invitation. Tenders sent to any other e-mail address will be rejected.

## 11. Evaluation of bids

Only those shortlisted will be contacted for an interview with the panel to ensure their understanding of the consultancy services.

Technical criteria #	Technical criteria	Weighting in technical evaluation
1.	General capacity of the consultant  <b><i>A higher diploma or qualification in data science, statistics, Big Data, machine learning, web developer, etc.</i></b>	25%
2.	Perfect understanding of the mission  <b><i>Describe how the solution will be implemented to collect historical and real-time data</i></b>	10%
3.	Content of the proposal suitable for the requirements with a clear description of the methodology chosen to build the solution  <b><i>Share previously produced publications and/or digital platform solutions</i></b>	35%
4.	Relevant sector experience doing similar work on social media monitoring or “listening”  <b><i>The planned methodology covers the key aspects outlined in the ToR and the expected deliverables match the targeted outputs.</i></b>	20%

5.	<p>Demonstrated technical capability to complete the consultancy services</p> <p><b><i>At least 3 years' experience in the relevant domain and/or have resources available that ensure successful completion of the assignment.</i></b></p>	10%
Total		100%