# Terms of Reference

## Trainer on Data Analysis with R

The Danish Refugee Council assists refugees and internally displaced persons across the globe: we provide emergency aid, fight for their rights, and strengthen their opportunity for a brighter future. We work in conflict-affected areas, along the displacement routes, and in the countries where refugees settle. In cooperation with local communities, we strive for responsible and sustainable solutions. We work toward successful integration and whenever possible – for the fulfillment of the wish to return home.

The Danish Refugee Council was founded in Denmark in 1956, and has since grown to become an international humanitarian organization with more than 7,000 staff and 8,000 volunteers. Our vision is a dignified life for all displaced. All of our efforts are based on our value compass: humanity, respect, independence and neutrality, participation, and honesty and transparency.

Operating since 2004 in Lebanon, DRC has addressed the needs and rights of vulnerable populations, working initially with Palestinian refugees (since 2004), Iraqi refugees (2007-2010), Lebanese IDPs (during the 2006 conflict), migrant domestic workers (since 2009) and, since 2011, responding to the Syrian refugee crisis.

DRC Lebanon is currently delivering programming in protection, basic assistance, livelihoods, and community development interventions. This myriad programming seeks to address the immediate needs of displaced populations and concurrently support vulnerable host populations. DRC has three offices spread throughout Lebanon in, Beirut, the Bekaa and North (Halba).  For further information about DRC, please refer to our website: https://drc.ngo/

## Objectives:

Some of the Danish Refugee Council's interventions are designed to improve protection and effectiveness of the humanitarian response in Lebanon by enhanced coordination through joint analysis, planning and response. DRC Lebanon has developed a beneficiary centric integrated system for three main sectors Protection, Economic Recovery, and MEAL along with humanitarian common platform to manage referrals between partners in Lebanon. The Referral Information Management System "RIMS" has the capacity to generate two categories of valuable data that can be used to improve humanitarian response: 1) information on the effectiveness and timeliness of referral processes and 2) gaps in service provision across sectors. To that end, DRC will analyze aggregated information from RIMS partners to produce analysis on relevant trends and gaps. In relation to trends, for example, RIMS can support the identification of bottlenecks at each step of the referral process and DRC can present this data at inter-agency meetings to discuss potential ways to address them. Additionally, RIMS can support analysis of gaps, for example, by cross-referencing needed services against those actually received, and incorporating gender, age, nationality, time and sector variables into the analysis, DRC will have the capacity to capture relevant trends and gaps in service provision. In addition, RIMS has the capacity to link to other online platforms through API.

DRC is seeking to appoint a **Trainer on Data Analysis with R** for the following:

The R Data Analysis Trainer will train DRC technical team on analyzing data, linking R to QGIS, linking R to postgreSQL database, linking R to PoweBi and also to train the team on Shiny R.

DRC Lebanon has variaty of tools and systems which are:

- ALPHA and RIMS are developed using ASP.NET core web application hosted on Azure Ubuntu server, and linked to PostgreSQL database.
- DRC has an internal ODK Aggregate server installed on Azure Ubuntu server to collect data offline and linked to a PostgreSQL database. Staff uses ENKETO links or ODK Collect mobile application to collect data.
- Additonally, DRC Lebanon programme teams use online (stored on sharepoing and google drive) and offline excel files to store information

Specifically, DRC technical team have to be  trained during the training on the below:

➢ The different data structures, such as atomic vectors, lists, data frames, and tibbles. How to create and use them.
➢ How to import different types of files into R
➢ How to execute chunks of code following an if-else logic
➢ How to summarize data
➢ How to create powerful easy to read pipelines using dplyr and other packages
➢ Introduction to R plots using ggplot2 and plotly
➢ Introduction to interactive mapping using Leaflet
➢ Building interactive dashboards using R-Markdown
➢ Shiny R
➢ Linking R to QGIS, PostgreSQL, and PowerBi

## Responsibilities:

- Introduction to data analysis using R and RStudio
- Data Quality Management
- Introduction to Data Analysis using Programming Languages
- R Fundamentals (Introduction to R, RStudio overview, Interface Description, Basic R concepts, Vocabularies, Variable Types in R, Operators in R)
- Walkthrough datasets
- Importing and Exporting Data
- Introducing concept of libraries and R essential Libraries (dplyr, ggplot2, and others...)
- Data manipulation in R (Explore, Subset, Restructure, and Combine)
- Executing basic statistical and data analysis commands
- Descriptive Statistics
- Correlation Analysis (Pearson, Pvalues...)
- Plotting in R (Element of graphics, ggplot2, and plotly)
- Introducing to interactive mapping (Leaflet)
- Creating products (R-Markdown, HTML Widgets, and Flex Dashboards)

Annex C

- Project - Interactive Dashboard using Markdown and Flex

- Other duties as agreed with the Information Management Manger in line with objectives above.

## Deliverables:

The consultancy work is expected to start in <u>March 2022</u> for duration 6 days and not to exceed 10 days (8 working hours per day approximately) between 2<sup>nd</sup> March 2022 – 31<sup>st</sup> March 2022.

It is expected to start the consultancy by reviewing DRC's information and data SOPs, and them to assess on regular basis the information management systems that DRC has. Additionally, advise on measers that should be taken to overcome identified security issues.

## Sample workplan design and stages (per project):

| Deliverables | March 2022 | | | | | |
| --- | --- | --- | --- | --- | --- | --- |
| | Wednesday, 2<sup>nd</sup> | Thursday, 3<sup>rd</sup> | Friday, 4<sup>th</sup> | Wednesday, 9<sup>th</sup> | Thursday, 10<sup>th</sup> | Friday, 11<sup>th</sup> |
| Introduction to data analysis using R and RStudio | X | | | | | |
| Data Quality Management | X | | | | | |
| Introduction to Data Analysis using Programming Languages | X | | | | | |
| R Fundamentals (Introduction to R, RStudio overview, Interface Description, Basic R concepts, Vocabularies, Variable Types in R, Operators in R) | X | | | | | |
| Walkthrough datasets | | X | | | | |
| Importing and Exporting Data | | X | | | | |
| Introducing concept of libraries and R essential Libraries (dplyr, ggplot2, and others...) | | X | | | | |
| Data manipulation in R (Explore, Subset, Restructure, and Combine) | | X | | | | |
| Executing basic statistical and data analysis commands | | | X | | | |
| Descriptive Statistics | | | X | | | |
| Correlation Analysis (Pearson, Pvalues...) | | | X | | | |
| Plotting in R (Element of graphics, ggplot2, and plotly) | | | X | | | |
| Introducing to interactive mapping (Leaflet) | | | | X | | |
| Creating products (R-Markdown, HTML Widgets, and Flex Dashboards) | | | | X | | |
| Project - Interactive Dashboard using Markdown and Flex | | | | | X | |
| Shiny R | | | | | | X |

## Documents to be submitted

- A **technical proposal**, reflecting the _timeframes required as per the above phases_ outlined in the consultants own words on the above phases and objectives, tasks and methodology. The proposal should mention consutlant's previous relevant experience on similar assignments and/ or experience in the humanitarian sectors. There is no minimum or maximum length for the technical proposal, but sufficient detail and clarify are required. Bidders may be asked to provide additional information at the proposal assessment stage.
- Updated CV
- One or two projects created on R
- A **financial proposal "Annex F"** showing financial information to the above table, daily rates, design per project stages, supplier can provide additonal information or clarification of prices (breakdown) in the financial form.
- Annex A: Supplier code of conduct signed and stamped
- Annex B: Tender and Contract Award Acknowledge Certificate
- Annex C: ToR signed and stamped
- Annex D: Supplier registration form signed and stamped
- Annex E: General Conditions of Contract, signed and stamped

## Experience and technical competencies:

- 3-4 years of experience in Information Management mainly in data analysis field.

- Extensive experience in R, R Studio and Shiny R

- Experience in relational database management systems, preferably PostgreSQL.

- Extensive experience in PowerBi and linking it to R

- Experience in providing trainings online and in person in both Arabic and English.

- Experience in writing Python, HTML, and JavaScript.

- Experience in QGIS and/or ArcGIS and link it to R

- Experience in online hosting services on the cloud mainly Azure

- Experience in hosting applications on Linux servers and web servers such as Apache2 and Tomcat.

- Experience in humanitarian/development data management needs essential.

**Education**: (include certificates, licenses etc.)

- Bachlor degree (or equivalent experience) in Statistics, computer science, information technology, computer      engineering, or other relevant field.

**Languages:**
Full proficiency in spoken and written English and Arabic.

**Key stakeholders:** (internal and external)

Annex C
- Information Management Team

**Location:**

Based on the above timeframe for outputs and deliverables table, and based on DRC's safety guidelines in regards  the consultant will be executing his/her tasks either at DRC Beirut office, at Hotel in Beirut area or on Microsoft TEAMS. DRC will NOT be responsible for managing the transportation nor accomodation for the trainer.