

**TERMS OF REFERENCE**

**Title:** National Consultant to act as Data Scientist under the Intelligence Unit for Policy Development

**Project:** Building country resilience to shocks and increasing Government capacity to anticipate crises and recover better in a more inclusive way

**Reporting to:** Project Manager

**Duty Station:** Chisinau, Moldova

**Contract Type:** Individual Contract (IC)

**Duration:** 140 working days, in the period of October 2023 – May 2024

**01. BACKGROUND**

Governments face increasing pressure to develop and implement policies that effectively cater to the diverse needs of people, groups, and even individuals. Moreover, policies must address the growing complexity of economic and social relations. In today's world, policies need to encompass a broader spectrum of needs. To ensure their efficacy and efficiency, policies require granular data and information that meaningfully and accurately reflect the realities of the subjects involved. This necessitates access to more extensive data with a greater variety of attributes beyond the traditional data sources regularly collected by the government and its agencies. Continuous generation of data from human and system activities means that data is generally available. However, utilizing this data to enhance the quality and outcomes of policies requires the utilization of tools, instruments, and, most importantly, the capability and collaborative effort to harness its creative potential. Once these capabilities are established, they can prove invaluable in times of crisis, such as the recent Covid-19 pandemic, enabling real-time evidence-based decision-making.

To address highly complex development challenges in Moldova, with support of UNDP Moldova, the Government and the Office of the Prime Minister is planning to establish an Intelligence Unit for Policy Development. The Unit will make use of available data and evidence to support tactical decision or policy formulation in complex areas.

The following objectives will be pursued by the Unit:

* Develop a culture and capabilities of anticipatory and evidence-based decision making throughout the government.
* Provide a framework for creative data collection and use for policy making. Create organizational and technical conditions for incorporating external data (social media, forums, and other discussion boards, etc.) into policy development and decision making.
* Encourage data collaboratives among private and public sectors, and academia (from Moldova and international).
* Adopt, develop and experiment with tools and instruments that will be used by various institutions and entities to incorporate data in their policy development work-flows.
* Deploy specific use-cases, based on the priorities set forth by the Government.

**02. SCOPE OF WORK & EXPECTED OUTPUTS**

The Data scientist utilize its analytical, statistical, and programming skills to collect, analyze, and interpret large data sets. The Data scientist validates the input data, identifies appropriate tools to analyze the data and to visualize the results. The Data scientist applies different methods and models for the data analysis and choose the best one(s). He/she selects the best tool(s) to graphically represent the outcome. The data scientist identifies/ develops models to test the effectiveness of the taken actions.

**03. GENERAL RESPONSIBILITIES**

* Carry out the assignment as defined in the Terms of Reference;
* Complete deliverables in a timely manner as defined below;
* Conduct all business in a manner that respects local culture;
* Maintain high ethical standards, avoid any actual or perceived conflicts of interest and abide by all local laws and all UNDP directives and requirements.

**04. SPECIFIC RESPONSIBILITIES**

The main responsibility of the Data scientist is to identify eventual correlation between data, trends, anomalies at an early stage, to make possible the quick decision-making. It is a full-time position, although, to boost the effectiveness and efficiency of the activities, the project-based and agile approach will be used. The data scientist will communicate with the Policy Specialist in developing solutions and selecting models, and with the Unit’s manager. It could happen to communicate with the interested parties: government institutions, donors, academia, NGOs etc. The position does not suppose decision-taking activities and has no subordinates.

The main responsibilities of the Data scientists are:

* mining the data from the available sources,
* validation of the input data,
* checking the consistency and accuracy of the data, with the support of the Policy specialist,
* data pre-processing,
* data analysis, including the selection of the best model,
* data visualization.

**05. DELIVERABLES**

The consultant is expected to produce the deliverables within set timeframe of the assignment validity taking into consideration conditions mentioned below in art.7

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| **item no.** | **DELIVERABLES** | **Estimate Workdays** | **Tentative timeframe** |
| 1. | Develop guidelines to promote evidence-based decision-making throughout the government. These guidelines should provide practical steps for collecting, analyzing, and utilizing data in policy development, including external data sources and fostering data collaboratives.  Activity report submitted and accepted by the Project | Up to 30 working days | By 18 May 2024 |
| 2. | Create a strategy to integrate diverse data sources into policy development. Identify potential external data sources, outline organizational and technical requirements, and propose methods for ensuring data quality, privacy, and security.  Activity report submitted and accepted by the Project | Up to 30 working days | By 18 May 2024 |
| 3. | Identify and evaluate tools for data analysis, visualization, and assessing policy effectiveness. Develop custom tools and guidelines for implementing and adopting data analysis across government institutions.  Activity report submitted and accepted by the Project | Up to 40 working days | By 18 May 2024 |
| 4. | Implement data-driven approaches in selected priority areas. Document the process, methodologies, and outcomes of each use-case. Highlight insights, lessons learned, and recommendations for scaling up successful data-driven policy practices.  Activity report submitted and accepted by the Project. | Up to 40 working days | By 18 May 2024 |

**06. LEVEL OF EFFORT**

The level of effort (LOE) for this assignment is counting a total of 140 working days.

**07. PLACE OF PERFORMANCE**

The Consultant will perform his/her duties under mix arrangements, as agreed with the UNDP Project Manager and the office of the Prime Minister. Office space will be provided.

**08. PERIOD OF PERFORMANCE**

The assignment will begin on/about October 30th 2023, and end on/about May 18th 2024.

**09. REPORTING INSTRUCTIONS & INSTITUTIONAL ARRANGEMENTS**

The Consultant will report to the UNDP Project Manager, or his designee, who will be responsible for supervising consultant’s performance and to the delegated person from the office of the Prime Minister. Provided deliverables shall be accepted by the office of the PM.

Working languages: English, Romanian and Russian. All produced information shall be in English and/or Romanian.

**10. FINANCIAL ARRANGEMENTS**

The financial proposal shall specify a total lump sum amount, and payment terms around specific and measurable (qualitative and quantitative) deliverables (i.e. whether payments fall in installments or upon completion of the entire contract). Payments are based upon output, i.e. upon delivery of the services specified in the TOR. In order to assist the requesting unit in the comparison of financial proposals, the financial proposal will include a breakdown of this lump sum amount (including the daily fee, taxes, and number of anticipated working days).

**Travel**

No travel envisaged during the assignment. In the case of unforeseeable travel, payment of travel costs including tickets, lodging and terminal expenses should be agreed upon, between the respective business unit and Individual Consultant, prior to travel and will be reimbursed.

**11. REQUIRED SKILLS AND EXPERIENCE**

**Education:**

* University degree in economics, informatics, mathematics, or similar areas of study.

**Experience:**

* At least 7 years of proven experience in analytical, statistical, and programming skills to collect, analyze, and interpret large data sets. Internships, undergraduate work experience, and graduate assistantships are not accepted as levels of experience.
* Experience using statistical computer languages (R or Python, SLQ, etc.) to manipulate data and draw insights from large data sets.
* Experience using visualization software, like Power BI, Tableau, ggplot or similar.
* Advanced knowledge of the data analysis tools, advanced statistical methods (regression, properties of distributions, statistical tests and proper usage, etc.) and machine learning tools (clustering, decision tree learning, artificial neural networks, etc.), including their application.
* Knowledge of the web services, like Redshift, Spark or Digital Ocean would be an advantage.
* Strong problem-solving skills and capacity to test multiple solutions.

**Language Requirements:**

* Fluency in oral and written English, Romanian and Russian.

**Competencies:**

* Demonstrates integrity by modelling the UN’s values and ethical standards;
* Promotes the vision, mission, and strategic goals of UNDP;
* Displays cultural, gender, religion, race, nationality and age sensitivity and adaptability;
* Treats all people fairly without favoritisms;
* Fulfils all obligations to gender sensitivity and zero tolerance for sexual harassment;
* Strong interpersonal skills, communication and diplomatic skills, teamwork ability;
* Ability to work under pressure and stressful situations;
* Strong analytical, reporting and writing abilities;
* Good time management, meeting deadlines.

**Personal qualities:**

* Resourcefulness and creativity;
* Strong communication and interpersonal skills.

The UNDP Moldova is committed to workforce diversity. Women, persons with disabilities, Roma and other ethnic or religious minorities, persons living with HIV, as well as refugees and other noncitizens legally entitled to work in the Republic of Moldova, are particularly encouraged to apply. ***Please specify in CV, in case you belong to the group(s) under-represented in the UN Moldova and/or the area of assignment.***

**12. DOCUMENTS TO BE INCLUDED WHEN SUBMITTING THE PROPOSALS**

Interested individual consultants must submit the following documents/ information to demonstrate their qualifications:

* CV, including information about past experience in similar assignments and contact details for at least 3 referees;
* Offeror's Letter confirming Interest and Availability with financial proposal (in USD, specifying the total lump sum amount). Financial proposal template prepared in compliance with the template in Annex 2.

**Important notice:** The applicants who have the statute of Government Official / Public Servant prior to appointment will be asked to submit the following documentation:

* a no-objection letter in respect of the applicant received from the Government, and;
* the applicant is certified in writing by the Government to be on official leave without pay for the entire duration of the Individual Contract.

**13. EVALUATION**

Initially, individual consultants will be **short-listed** based on the following minimum qualification criteria:

* University degree in economics, informatics, mathematics, or similar areas of study;
* At least 7 years of proven experience in analytical, statistical, and programming skills to collect, analyze, and interpret large data sets. Internships, undergraduate work experience, and graduate assistantships are not accepted as levels of experience.

The short-listed individual consultants will be further evaluated based on the following methodology:

**Cumulative analysis**

The award of the contract shall be made to the individual consultant whose offer has been evaluated and determined as:

1. responsive/ compliant/ acceptable, and
2. having received the highest score out of a pre-determined set of weighted technical and financial criteria specific to the solicitation.

\* Technical Criteria weight – 60% (300 pts);

\* Financial Criteria weight – 40% (200 pts).

Only candidates obtaining a minimum of 210 points would be considered for the Financial Evaluation.

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| **Criteria** | **Scoring** | **Maximum Points Obtainable** |
| **Technical evaluation** | | |
| University degree in economics, informatics, mathematics, or similar areas of study | *Bachelor’s degree – 5 pts*  *Master’s degree – 10 pts.*  *Ph. D degree – 15 pts.* | 15 |
| At least 7 years of proven experience in analytical, statistical, and programming skills to collect, analyze, and interpret large data sets. Internships, undergraduate work experience, and graduate assistantships are not accepted as levels of experience | 7 years *– 30 pts.,* each additional year of experience *– 5 pts.,* up to a maximum of *50 pts.* | 50 |
| Experience using statistical computer languages (R or Python, SLQ, etc.) to manipulate data and draw insights from large data sets | Yes – *30 pts*.  No experience – *0 pts.* | 30 |
| Experience of cooperation with UN agencies and/or international organizations, and/or development programs will be an asset | Yes – *25 pts.*  No experience – *0 pts.* | 25 |
| ***Subtotal desk review Scoring*** | | ***120*** |
| **Interview: Please note that only the top 5 ranked (that accumulated the highest technical score) applicants shall be invited for the interview)** | | |
| Advanced knowledge of the data analysis tools, advanced statistical methods (regression, properties of distributions, statistical tests and proper usage, etc.) and machine learning tools (clustering, decision tree learning, artificial neural networks, etc.), including their application | *extensive – 40 pts., satisfactory – 30 pts., limited – 20 pts., no experience – 0 pts;* | 40 |
| Knowledge of the web services, like Redshift, Spark or Digital Ocean would be an advantage. | *extensive – 40 pts., satisfactory – 30 pts., limited – 20 pts., no experience – 0 pts;* | 40 |
| Experience using visualization software, like Power BI, Tableau, ggplot or similar | *extensive – 30 pts., satisfactory – 20 pts., limited – 0 pts;* | 30 |
| Strong analytical, reporting and writing abilities | *extensive – 30 pts., satisfactory – 20 pts., limited – 10 pts., no abilities – 0 pts;* | 30 |
| Strong leadership and team management skills | *excellent – 20 pts., satisfactory – 10 pts., limited – 0 pts;* | 20 |
| Knowledge of English, Romanian and Russian | *5 pts each. (15 pts total)* | 15 |
| Belonging to the group(s) under-represented in the UN Moldova and/or the area of assignment[[1]](#footnote-2) | *No –0 pts., to one group – 1,5 pts., to two or more groups – 5 pts.* | 5 |
| ***Subtotal Interview Scoring*** | | ***180*** |
| **Maximum Total Technical Scoring** | | **300** |
| **Financial** | | |
| Evaluation of submitted financial offers will be done based on the following formula:  **S = Fmin / F \* 200**  **S –** score received on financial evaluation;  **Fmin –** the lowest financial offer out of all the submitted offers qualified over the technical evaluation round;  **F –** financial offer under consideration. | | **200** |

Winning candidate

The winning candidate will be the candidate, who has accumulated the highest aggregated score (technical scoring + financial scoring).

1. Under-represented group in the area of assignment are (men/women). Under-represented groups in UN Moldova are persons with disabilities, LGBTI, ethnic and linguistic minorities, especially ethnic Gagauzians, Bulgarians, Roma, Jews, people of African descent, people living with HIV, religious minorities, especially Muslim women, refugees and other non-citizens. [↑](#footnote-ref-2)