

Government of Rajasthan  
**Finance (EAD) Department**  
**Strengthening of Public Financial Management Project**  
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No. F8(45)/FD/SPFM-PMU/Big Data/2017

Jaipur, May 4<sup>th</sup>, 2017

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**REQUEST FOR EXPRESSIONS OF INTEREST**  
**(Consulting Services – Firms Selection)**

**Country:** Rajasthan, India  
**Name of Project:** Strengthening Public Financial Management in Rajasthan Project  
**Assignment Title:** Consultancy for Data for Policy Action in Government of Rajasthan, India.

The Government of Rajasthan has applied for financing from the World Bank toward the cost of the **Strengthening Public Financial Management in Rajasthan Project (P156869)** and intends to apply part of the proceeds for a Consultancy for Data for Policy Action in Government of Rajasthan, India.

The objective of this assignment is to harness the power of data analytics for effective decentralized planning, efficient resources allocation and systematic monitoring of outcomes, with the ultimate goal of improving the lives of people in Rajasthan. For this, GoR intends to leverage its capabilities in collecting and curating huge quantities of administrative, transactional and unstructured ‘big’ data. The goal is to rely less on primary data collection, and more secondary/transactional data that is routinely generated in the administration of the state of Rajasthan or via the transactions of the citizens of Rajasthan with the GoR or other third parties. In doing so, GoR will be pioneer in the use of non- survey based data in the form of administration records and big data analytics for policy action and monitoring welfare. This activity will initially focus on developing indicators or indices for key sectors of the economy such as health, education and infrastructure to facilitate planning, budgeting, allocation, monitoring & evaluation at fairly disaggregated levels i.e. district, block, village etc. The exercise will subsequently be extended to more sectors, and the sector- specific indicators/indices will then be synthesized into a composite index to measure and track welfare at the household and regional level. The draft Terms of Reference (ToR) for this assignment can be found at Finance Department website : <http://finance.rajasthan.gov.in/>.

The Joint Secretary, Finance (EAD) Department and Project Director, SPFM Project, Government of Rajasthan now invites eligible consulting firms (“Consultants”) to indicate their interest in providing the Services. Interested Consultants should provide information demonstrating that they have the required qualifications and relevant experience to perform the Services. *The short-listing criteria are available in Annexure-1.*

The attention of interested Consultants is drawn to paragraph 1.9 of the World Bank’s Guidelines: Selection and Employment of Consultants under IBRD Loans and IDA Credits & Grant] by World Bank Borrowers, January 2011 – revised 2014 (“Consultant Guidelines”), setting forth the World Bank’s policy on conflict of interest.

Consultants may associate with other firms in the form of a joint venture or a sub-consultancy to enhance their qualifications. The nature of association whether JV or Sub-Consultant, should be mentioned in the EOI. A Consultant will be selected in accordance with the QCBS method set out in the Consultant Guidelines. Further information can be obtained at the address below during office hours. Expressions of Interest (EOI) must be submitted online (through e-mail: [jsfead@rajasthan.gov.in](mailto:jsfead@rajasthan.gov.in).) by May 22, 2017.

Project Director,  
Strengthening Public Financial Management Project  
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**Shortlisting Criteria**

<b>S. No.</b>	<b>Basic Requirement</b>	<b>Specific Requirements</b>	<b>Documents Required</b>
1)	Entity	The Consultant should be in existence for at least for 03years	Copy of the Incorporation document
2)	Turnover	Positive net worth and an Average Annual Turnover from consulting Services of at least INR 3 cr. during the last three financial years (2013-14, 2014-15 and 2015-16 or 2014-15, 2015-16 and 2016-17).	Certified copy of the audited financial statements and/or certificate from a Chartered Accountant
3)	Overall experience	Should demonstrate at least 01years' experience of working in government sector in the area of data analytics.	Self-certification of details of the experience
4)	Technical Capability	Should have proven track record of having successfully implemented or implementing at least oneassignment, similar nature.	Work orders and work completion certificates from client

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### **Terms of Reference Consulting Services for Data for Policy Action**

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#### **A. BACKGROUND**

The Government of Rajasthan (GoR) is committed to good Governance and Public Financial Management (PFM) reforms as reflected in creating greater transparency, building staff capacity in key areas, strengthening accountability and introducing electronic systems to support better service delivery that cuts across various domains. There has been a paradigm shift in the PFM environment with the implementation of an online computerized treasury system - the Integrated Financial Management System (IFMS) – which is a web based system for capturing government's financial transactions including budget planning, preparation, allocation and distribution, fund management, treasury operations, pension payments, electronic payments and receipts and accounts. This system is also integrated with major revenue departments. Another key development has been the passing of the Rajasthan Transparency in Public Procurement Act, 2012 that provided the framework for further strengthening procurement regulations.

To further strengthen its PFM and governance environment, GoR is taking up the Rajasthan Public Financial Management Strengthening Project (PFM Project) with financing from the World Bank. The overall objective of the project is to contribute to enhancing efficiency, effectiveness, and transparency in public financial management in Rajasthan through strengthening PFM framework, systems, and institutions of GoR to enhance governance and accountability.

A component of this project is to leverage the capabilities of the Planning and Information Technology and Communication departments of GoR in collecting and curating huge quantities of data for better planning, resource allocation, monitoring and evaluation of outcomes. This component will be designed in full conjunction and coordination with another component under the project that is supporting designing and implementing decentralized participative planning in the Government of Rajasthan.

These Terms of Reference (TOR) are for a firm that will support designing, iterating and implementing the captioned systems to meet the above mentioned objectives of the Planning and IT departments of GoR.

#### **B. OBJECTIVE OF THE ASSIGNMENT**

The objective of this component is to harness the power of data analytics for effective decentralized planning, efficient resource allocation and systematic monitoring of outcomes, with the ultimate goal of improving the lives of people in Rajasthan. For this, GoR intends to leverage its capabilities in collecting and curating huge quantities of administrative, transactional and unstructured 'Big' data. The goal is to rely less on primary data collection, and more on secondary/transactional data that is routinely generated in the administration of the state of Rajasthan or via the transactions of the citizens of Rajasthan with the GoR or other third parties. In doing so, GoR will be a pioneer in the use of non-survey based data in the form of administrative records and big data analytics for policy action and monitoring welfare. This activity will initially focus on developing indicators or indices for key sectors of the economy

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such as health, education and infrastructure to facilitate planning, budgeting, allocation, monitoring & evaluation at fairly disaggregated levels i.e. district, block, village etc. This exercise will subsequently be extended to more sectors, and the sector-specific indicators/indices will then be synthesized into a composite index to measure and track welfare at the household and regional level.

### **C. DETAILED SCOPE OF WORK**

GoR has already embarked upon the journey of “big data analytics” and has procured and installed big data IT infrastructure with an overall capacity of 1 Petabytes at its State Data Center (SDC). The task of the Consultant would be to curate, vet, organize and synthesize the data emerging from different sources and to distill from them a few simple, measurable, trackable and actionable indicators or indices which reflect the development in the sector, at a spatially granular (ideally, village or ward) and household level. This would include providing assistance with data curation, organization, linkage, cleaning and storage. Given the complex and innovative nature of this task, its direction, implementation and outcomes are expected to iterate on the basis of learnings and finally evolve in to the indices as will be required at sector/regional level. The outputs under this assignment will follow rapid results framework approach with each deep dive into sectors resulting in a framework/indicators that could be shared with stakeholders for usage/deliberation at that time; and further refinement will take place as the methodology and approach matures to finally result into indices that could be used at various levels (regional, village, ward or possibly at household level)

The Consulting firm would, therefore, be expected to balance good public sector knowledge with strong data/analytical skills with flexibility, creativity and adaptability. Given that the sectors to which this work will expand will evolve, this contract is time based with some of the intermediate objectives noted in the detailed list that follows.

The detailed list of tasks and responsibilities are below:

#### **(a). Data quality vetting, harmonization and improvement**

- Verify and vet the quality of data used for analysis, using data quality assessment tools and in select cases, ground-truth administrative data through small scale surveys.
- Provide inputs to line departments for improving data collection procedures in each sector, as needed, to include information that is needed to facilitate analysis at the sector-level, and to provide links across databases from other sectors.

#### **(b). Links between data and its use for policy**

- Coordinate and liaison with different government departments and agencies, and from time to time, conduct workshops with key stakeholders for prioritization of objectives and selection of indicators
- Generate simple, measurable, trackable and actionable indices and insights by analyzing existing administrative/transactional data, using methods including, but not limited to, time series forecasting, predictive forecasting, predictive modeling, cluster analysis, machine learning, and social network analysis.
- Construct indicators and indices initially for key sectors, ranging from health, education to infrastructure, and ultimately construct an index to measure welfare of households and places

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- Design and implement a system of reporting indicators and/or /indices for easy interpretation and use. The use of a dashboard or other visualization and analytical tools will be explored for this.
  - Design and implement a mechanism to validate and evaluate the indicators/ indices and suggest improvement as may be necessary
- (c). **Institutional Strategy around data**
- Formulate policies with regard to data access, usage and privacy within the GOR rules and regulations

### **D. DELIVERABLE, TIMELINES AND PAYMENT TERMS**

The contract period of the Consultant is intended for 36 months, extendable by 12 months. However, continuity of the resource beyond the initial six months (6 months) will depend upon the Consultant's performance. The Consultant will interact and report to the Principal Secretary, Planning Department, the nodal officers assigned for this activity or anyone else nominated by the Principal Secretary.

Every month/quarter the consultant will provide short report on actions carried out, challenges faced and support required and proposed resolution/way forward. The consultant will provide presentations as and when desired by the Principal Secretary, Planning Department in coordination and consultation (as and when required) with the Principal Secretary, Information Technology & Communication Department (DOIT&C), at least once in a quarter.

The resource requirement (staffing, skills and deployment onsite/off site) for each time period of 6 months will be determined in advance in consultation with the Principal Secretary, Planning Department in coordination and consultation (as and when required) with the Principal Secretary, Information Technology & Communication Department (DOIT&C) and his team and the consulting firm will need to adhere to the agreement reached.

The Client shall pay to the Consultant (i) remuneration that shall be determined on the basis of time actually spent by each Expert in the performance of the Services after the date of commencement of Services or such other date as the Parties shall agree in writing; and (ii) reimbursable expenses that are actually and reasonably incurred by the Consultant (evidenced by third party invoices) in the performance of the Services up to a cap as will agreed in the contract.

The monthly/quarterly payment shall be made after the acceptance of the said monthly/quarterly report (content and design to be agreed mutually) on work done as against the agreed work, work in progress, outputs produced and shared with stakeholders/departments, the proposed way forward, the actual deployment of person days (onsite and offsite) and approved time sheet(s) by Principal Secretary, Planning.

### **E. LIST OF KEY EXPERTS (Whose CVs and Experience Would Be Evaluated)**

The consulting firm expressing interest in the assignment should demonstrate that they have successfully carried out similar or related work at the sub-national level in India and have sufficient qualified key staff to undertake the proposed assignment, as below. Ability to understand and speak Hindi for members of the team would be given preference and given additional weightage. All the deployed resources should have the ability to synthesize complex

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concepts and to communicate them effectively. Total expected time input of seven key experts for 36 months is 252 person months. The following seven key experts will be evaluated:

TEAM of KEY EXPERTS	
Position	Qualifications/Experience
Team Leader (to be based part time in Jaipur)	<ul style="list-style-type: none"> <li>• Masters in Economics/Statistics</li> <li>• Must have Econometrics as an elective paper during post-graduation</li> <li>• Experience in Regression/ Extrapolation/Interpolation and other statistical methodologies</li> <li>• Experience in ICT tools and technologies</li> <li>• Understanding of analytical tools and technologies</li> <li>• Must have 8 years of experience in any of the following: economic research/monitoring and evaluation/supporting national or sub-national governments in evidence based policy making/use of data analytics for decision making</li> <li>• Having worked on multiple sectors and having worked with multiple national/sub-national governments would be of added advantage</li> <li>• Additional relevant qualification(s)/experience/assignments would be of advantage and would be given added weightage.</li> </ul>
Program Manager I (to be based full time in Jaipur)	<ul style="list-style-type: none"> <li>• Masters in Economics/Public Administration/Public Policy</li> <li>• Must have 5 years of experience in working on government data sets or transactional MIS/monitoring and evaluation/supporting national or sub-national governments in evidence based policy making.</li> <li>• Must have knowledge and experience of analytical tools and methods as demonstrated by at least 2 years of professional application.</li> <li>• Having worked on multiple sectors and having worked with multiple national or sub-national governments would be of added advantage</li> <li>• Additional relevant qualification(s)/experience/assignments would be of advantage and would be given added weightage.</li> </ul>
Program Manager II (to be based full time in Jaipur)	<ul style="list-style-type: none"> <li>• Masters in Economics/Statistics/Mathematics</li> <li>• Must have 5 years of experience in working on government data sets or transactional MIS/monitoring and evaluation/supporting national or sub-national governments in evidence based policy making.</li> <li>• Experience in Regression/ Extrapolation/Interpolation and other statistical methodologies</li> <li>• Must have knowledge and experience of analytical tools and methods as demonstrated by at least 2 years of professional application.</li> <li>• Having worked on multiple sectors and having worked with multiple national or sub-national governments would be of added advantage</li> <li>• Additional relevant qualification(s)/experience/assignments would be of advantage and would be given added weightage.</li> </ul>
Data Scientist (to be based full time in Jaipur)	<ul style="list-style-type: none"> <li>• Must have B.Tech/B.E./Bachelors in Mathematics/Statistics/MCA</li> <li>• Must have an overall experience of at least 8 years</li> <li>• Must have worked on transactional MIS data for at least 5 years</li> <li>• Must have worked on administrative data generated in government for at least 2 years</li> <li>• Must have good understanding of research and data tools demonstrated by application of one or more these tools (R, MATLAB, SPSS, SAS, STATA, Python) for at least 3 years</li> </ul>

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	<ul style="list-style-type: none"> <li>• Must have expertise in some of the following: time series forecasting, predictive forecasting, predictive modeling, cluster analysis, machine learning, social network analysis, big data and other analytical techniques over structured as well as unstructured datasets</li> <li>• Experience in data visualization and development of dashboards would be of added advantage</li> <li>• Additional relevant qualification(s)/experience/assignments would be of advantage and would be given added weightage.</li> </ul>
Data Analyst (to be based full time in Jaipur)	<ul style="list-style-type: none"> <li>• Must have B.Tech/B.E./Bachelors in Mathematics/Statistics/MCA</li> <li>• Must have an overall experience of at least 4 years</li> <li>• Must have worked on transactional MIS data, or administrative data generated in government for at least 2 years</li> <li>• Must have good understanding of research and data tools demonstrated by application of one or more these tools (R, MATLAB, SPSS, SAS, STATA, Python) for at least 2 years</li> <li>• Experience in data visualization and development of dashboards would be of added advantage</li> <li>• Experience in Hadoop and relevant languages would be of added advantage</li> <li>• Additional relevant qualification(s)/experience/assignments would be of advantage and would be given added weightage.</li> </ul>
Analyst I (to be based full time in Jaipur)	<ul style="list-style-type: none"> <li>• Must have Bachelors in Mathematics/Statistics/Economics</li> <li>• Must have an overall experience of at least 2 years</li> <li>• Experience in ICT tools and technologies. Having worked on administrative data generated in government, transactional MIS data, or big data would be of added advantage</li> <li>• Knowledge and experience of analytical tools and methods as demonstrated by at least 1 year of professional or academic application.</li> <li>• Additional relevant qualification(s)/experience/assignments would be of advantage and would be given added weightage.</li> </ul>
Analyst II (to be based full time in Jaipur)	<ul style="list-style-type: none"> <li>• Must have Bachelors in Mathematics/Statistics/Economics</li> <li>• Must have an overall experience of at least 2 years</li> <li>• Experience in ICT tools and technologies</li> <li>• Having worked on administrative data generated in government, transactional MIS data, or big data would be of added advantage</li> <li>• Knowledge and experience of analytical tools and methods as demonstrated by at least 1 year of professional or academic application.</li> <li>• Additional relevant qualification(s)/experience/assignments would be of advantage and would be given added weightage.</li> </ul>

### F. SERVICES & SUPPORT TO BE PROVIDED BY GOR

- The assignment will be administratively and functionally coordinated by the Project Director SPFM Project. The consultant will interact and report on a daily basis to the Department of Planning. The modal officers assigned for this activity will be nominated by the Planning Department and appointed by the Finance Department.
- The PMU in coordination with the Planning Department and Information Technology & Communication Department (DOIT&C), will coordinate with departments for the

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pilots/initial cohorts and to designate staff for training, and facilitate meetings with the stakeholders.

- The TA&DA to attend training to the Government employees shall be paid by the Government only. For organizing trainings /workshops /conferences / proof of concept trainings etc., the government venues would be utilized with appropriate approvals. The Planning Department, Information Technology & Communication Department (DOIT&C), and Finance Department will support the consultant in such arrangements. However, the consultant will be responsible for obtaining permissions from respective authority for venue etc. In case a venue is not available at any particular location at specific time then the consultant will have to make arrangements on its own.
- Authorization and support to access data available with various departments, as required in the course of discharging Consultant's tasks.
- Necessary IT infrastructure (hardware and software) and technological support with respect to access to data and use of specialized software tools already acquired by GoR (SAS, Tableau etc.)