

**Azad Government of the State of Jammu & Kashmir
Planning and Development Department**

EXPRESSION OF INTEREST (EOI) - HIRING OF CONSULTANCY SERVICES

Planning & Development Department GoAJ&K intends to hire services of consultant/ consultancy firm on short time consultancy basis upto 03 months for carrying out calculation of **District Level Gross Domestic Product (GDP) and economic growth of Azad Jammu and Kashmir (AJ&K) from Nightlight Data** under a development project "Estimating District Level GDP using Nightlights Data in AJ&K". Proposals from renowned and experienced consultant(s)/ consultancy firm(s) are invited under single stage two envelope procedure under section 36(b) AJK-PPRA rules 2017 latest by **November 29, 2021 till 1530 hrs**. Interested consultant(s)/ consultancy firm(s) are requested to download detailed ToRs from official website of P&DD. Expression of Interest (EOI)/Proposals will be opened in the presence of candidates (who wish to attend the meeting) on the above mentioned date **at 1600 hrs** in the office of Planning and Development Department, Azad Govt. of State of Jammu and Kashmir, Block 11, New Civil Secretariat Chatter Domail, Muzaffarabad.

Terms and Conditions:

- Technical and Financial proposals must be properly sealed in separate envelopes and financial proposal must be accompanied with Bid Security amounting to (2%) of total cost in favour of undersigned.
- The EOI/proposals must reach to the office of undersigned latest by November 29, 2021, at 1530 HRS that shall be opened on the same day at 1600 HRS in the presence of bidders or their authorized representatives, who opt to attend.
- Bid Evaluation Report (BER) and Award of Contract (AOC) will also be updated on authority's website.
- Blacklisted firms are not allowed to compete. Consultant(s)/ consultancy firm(s) have to provide an affidavit that they are not blacklisted from any Government organization.
- The taxes will be deducted as per government rates/rules.
- This advertisement is also available on AJK-PPRA website (<https://ajkppra.gov.pk>)
- The Selection Committee may accept or reject any proposal subject to the provisions of AJK Public Procurement regulatory Authority Consultancy Regulations, 2017 and AJK-PPRA Rules, 2017.

Section Officer
Planning & Development Department
Kashmir Plan House, Block No. 11
New Civil Secretariat, Muzaffarabad.
Ph: 05822-921976

Detail Terms of References (ToRs)

A Study to Estimate District-level GDP Using Nightlights Data in AJ&K

December, 2021 – February, 2022

A pre-requisite for effective, evidence-based policymaking is an understanding of the regional and local economy: its size and structure, spatial distribution, and changes over time. Measuring the regional economy and tracking progress over time is critical to understanding the required policy interventions. Moreover, it allows policy makers to assess the progress and evaluate the impact of exogenous shocks and policy interventions, the most recent example of which is the dampening of economic activity brought on by COVID-19 and the subsequent policy measures to ameliorate it and expedite recovery.

However, availability of spatially disaggregated data on economic activity at regional/district level in Pakistan is extremely limited as this is collected and consolidated at the more aggregated national and in some cases at provincial level. Moreover, Pakistan has a large informal sector, which is not captured in the officially collected data.

The AJ&K Bureau of Statistics working under the Planning & Development Department has been attempting to provide statistical data by publishing an annual statistical report. This report provides detailed information on the agriculture sector but has limited data on manufacturing sectors (production of food, chemicals, textiles, machines and equipment). The data coverage for the services sector (service sector consists of the soft parts of the economy such as insurance, government, tourism, banking, retail, education, and social services) is also very limited. Thus, there are substantial gaps in understanding contribution of manufacturing and services sector to the region's economy. Although there is need for an extensive survey-based exercise to bridge this gap, but this would be a time taking activity. An alternate approach could be to utilize a reliable proxy of economic data to come up with regional and local economic estimates for efficient policy design and evaluation.

This study shall be conducted on internationally recognized methodologies to determine the size of economy at spatially disaggregated level by using the intensity of night luminosity (nightlights), as measured by satellite imagery, as a proxy for economic activity. There is a growing body of evidence on the strong correlation of nightlights with economic activity at both the country and province level, even for less developed countries. The easy, inexpensive access to the required satellite imagery, real time and wide coverage, high levels of disaggregation and exogenous nature makes it useful to measure real GDP. Besides, this approach shall provide an inexpensive and easily replicable approach to filling the existing data gaps.

Night lights data has its own set of limitations, for example being a poor proxy for agricultural activity. However, the strength of night lights data is precisely in those areas in which official data is lacking: the informal sector and services. Therefore, estimates based on nightlights act as a useful supplement to official data. Besides nightlights data along with daylight satellite imagery can be used to understand land use changes and urban growth patterns.

Objectives:

The objective of this study is to quantify AJ&K's GDP, its geographical distribution and variation over time, using satellite data on night-time luminosity. In particular, the study will provide an understanding of:

- The volume of economic activity in AJ&K and how it is related to provinces of Pakistan
- Spatial distribution of economic activity across AJ&K at district level
- Regional disparities and economic growth patterns
- Changes in economic activity over time, particular for the main urban centers and determining city / urban area GDP
- Land use and urban growth trends across AJ&K

The study shall be undertaken in collaboration with, and using support from P&DD, AJ&K.

The outputs for this research paper (a policy brief, interactive visualizations, and a research paper) will also be shared on the website of Planning & Development Department.

Deliverables

Deliverable 1: Inception Report

The inception report should provide a detailed academic quality literature review and methodology, covering, at a minimum, the following:

1. Research objectives
2. Which nightlights data will be used? (DMSP or VIIRS?)
3. Discussion of how accurate nightlights are in predicting GDP, particularly for developing countries where there is
 - a. A large agriculture sector
 - b. Energy outages

c. Low intensity of light in small towns

4. How will the study adjust for these (and other) limitations?
5. What limitations will remain?
6. What elasticities of nightlights data with GDP emerge from other studies, particularly in countries with comparable levels of development and economic structure?
7. How will the study relate to the previous studies undertaken in the region, including the scope for benchmarking and validation?
8. Exploring the Urban focus: A more detailed look into the major urban clusters in AJ&K would add to the usefulness of the study in terms of providing important feedback for urban planning and management.

Deliverable 2: Draft Report

The full research report and presentation, as per agreed inception report

Deliverable 3: Final report

The full research report, with changes and comments incorporated

Deliverable 4: Policy brief

This is intended to be a crisp, illustrated brief to disseminate the findings of the research study to a non-academic audience

Deliverable 5: Presentation

A presentation of the results of the study to P&DD/concerned line Departments of GoAJ&K.

Experience and skills

Consultant with a reasonable publication record, and relevant experience of working in Pakistan and with Government departments of Pakistan should have:

- A PhD degree in Economics from an international university
- At least 10 years experiences and a proven publication record in reputable journals
- The expert should have experience of working in Pakistan/ Government departments
- The expert should have produced similar research in the past, i.e., should have used night lights data to calculate GDP.

Tasks

- Literature review of similar studies, contextualising this study, and drawing learning points
- Development of methodology to estimate GDP using the night lights data, supplemented with alternative techniques to improve accuracy (for example to estimate the contribution of agriculture)
- Estimation of regional and district GDPs
- Write-up of academic quality report and incorporation of feedback
- Policy brief
- Presentation

Duration

Three months, December, 2021 – February, 2022

Delivery Schedule

Deliverable 1: Inception report	Dec. 15, 2021
Deliverable 2: Draft Report and Presentation	Jan. 31, 2021
Deliverable 3: Final Report	Feb. 14, 2022
Deliverable 4: Policy brief	Feb. 21, 2022
Deliverable 5: Presentation	Feb. 28, 2022

Payment Schedule

D1	D2	D3	D4	D5
20%	20%	20%	20%	20%