

Terms of Reference for the Procurement of Consultancy Services

Data Exchange and Integration Expert for a short-term assignment funded by GIZ to help advance the groundbreaking work of the Digital Integration of Agricultural Supply Chains Alliance (DIASCA) on digital public infrastructure (DPI); specifically, to align data requirements and ensure the interoperability of data models. The overall DIASCA goals support access to digital solutions for farmers that drive innovation and inclusion at scale. This work is being led by the Committee on Sustainability Assessment, COSA.

COSA is a nonprofit organization that works at the forefront of sustainability. We are a neutral consortium dedicated to helping people and organizations understand the sustainability of our food and agriculture systems and the people who make them possible. We design and implement innovative monitoring and evaluation systems that measure the performance of sustainable agriculture programs in practical ways.

Our Vision: Working together to foster secure and resilient farm communities, feed a hungry planet, and sustain the environment.

Our Mission: We accelerate sustainability by advancing smart performance metrics and innovative technologies, enabling users to take better decisions that make a tangible difference for people and planet.

1. **Project name.** Towards Digital Public Infrastructure

2. **Context and Key objectives of the role**

With funding from the German Corporation for International Cooperation (GIZ) over the past two years, COSA has co-convened hundreds of supply chain actors, scientists, governments, as well as IT service providers under the Digital Integration of Agricultural Supply Chains Alliance (DIASCA), with the aim to collaboratively foster the development and the roll-out of Digital Public Infrastructures (DPI). DPI can considerably help facilitate the access to digital solutions for farmers and drive innovation and inclusion at scale towards a more vibrant and efficient digital ecosystem at large, e.g. by allowing for easier compliance with due diligence legislations.

New funding from GIZ will now allow COSA to consolidate DIASCA's groundbreaking work on income standardization, forest monitoring, and traceability, and pivot the community into a broader collaboration around digital public infrastructure (DPI).

Specific goals of this consultancy are to refine the draft data models developed by the three workgroups in the last phase. This will include the incorporation of lessons learned from available pilots which may be identified from within the DIASCA, ICO (International Coffee Organization), COSA or Early Action Initiative (related to the European Deforestation Regulation, EUDR) community. In addition, the refined model must be validated with the expert review of select contributors.

The DIASCA community is comprised of leading actors in food and agriculture across a rich variety of sectors, from palm to coffee and cocoa to soy. We leverage those actors' influence by increasing their commitments to, and use of, common standards, frameworks, and interoperable systems and tools. DIASCA's three workgroups have developed pragmatic tools to help make

food and agricultural systems more inclusive and responsive to farmer needs. We will advance this work by organizing a communications workgroup to engage communications professionals within the community (private and public sectors and civil society). Using the talents and expertise of this group, we will develop a DIASCA and DPI messaging and engagement campaign, materials, and champions.

3. Objectives for this Consultancy

Objectives for this role/ person:

1. To develop a refined, functional Data Model that incorporates pilot learnings and is compatible with other established schemas
2. To lead the design and refinement of data exchange standards and models for forest monitoring and sustainability initiatives.
3. To collaborate across multiple stakeholders groups, including certification bodies, remote sensing platforms, and trades, to create a unified and efficient approach for data integration.
4. To build tools, models and templates that support seamless data flow and uphold the principles of sustainability and traceability throughout the value chain.

4. Responsibilities, Tasks, and Deliverables

1. Collaborate with COSA team members, DIASCA partners, and other stakeholders (roughly half a dozen major certification bodies, remote sensing/data platforms, traders), to align on data requirements and ensure the interoperability of data models.
2. Refine and validate data models and tools from the previous phase, incorporating expert feedback and lessons learned from DIASCA, ICO, COSA, or Early Action Initiative pilots to ensure alignment with project goals.
3. Develop and standardize a data exchange template that includes information beyond plot geolocation, such as remote sensing detection (deforestation, encroachment on protected or indigenous lands), and details about the timing and finding of the most recent field audit.
4. Develop a Python library for validating geospatial data, ensuring polygons are not self-intersecting and that attributes meet specified data validation rules.
5. Create a GeoJSON template to facilitate standard and consistent geospatial data sharing.
6. Ensure that data models, APIs, and templates are compatible with existing industry standards (e.g., GS1) and can be smoothly integrated into the broader tech ecosystem of forest monitoring and traceability.

Deliverables:

1. Refined Functional Data Model: A data model that incorporates pilot learnings and is compatible with other established schemas (e.g., those established by GS1)
2. Data Exchange Specifications Document: Documentation that includes parameter names, data types, and validation rules for roughly 10 core parameters to ensure consistency and reliability in data exchange.

3. **GeoJSON Template:** A GeoJSON template incorporating the specified data parameters, facilitating easy and consistent geospatial data integration across partners.
4. **Python Library:** A library with functions to validate geospatial polygons (e.g., ensuring they are not self-intersecting) and functions to ensure that the attribute values conform to defined rules (e.g., proper data types like text, numbers, dates, and correct formats).

4. Background experience and requirements:

1. **Technical Skills:**
 - a. **Data Modeling:** Experience in creating and refining data models, particularly within traceability or forest monitoring domains. Ability to align models with industry standards (e.g., GS1).
 - b. **Experience with Data Exchange Standards:** Familiarity with designing and implementing data exchange specifications that ensure interoperability between different stakeholders and platforms.
 - c. **Python Programming:** Strong proficiency in Python, especially for data validation, geospatial processing, and data handling.
 - d. **Geospatial Data Handling:** Experience working with geospatial data, particularly using GeoJSON, and familiarity with validating geospatial features like polygons.
 - e. **API Development & Integration (desired):** Knowledge of APIs, especially in the context of integrating multiple systems to ensure data flow and exchange across different platforms, though not a primary focus in this phase.
2. **Collaboration & Communication Skills:** Ability to collaborate with multiple stakeholders to align on data requirements and system integration.
3. **Domain Knowledge:** Familiarity with sustainability metrics, traceability standards, and forest monitoring initiatives.

5. Period of assignment and budget: This consultancy is from February 1, 2025 through May 31, 2025, but may begin sooner.

- The budget for this assignment is up to 42,000 Euro.

6. Location: Contractor's own location. Excellent internet connectivity required. Must be available for phone and email communication during COSA business hours (ca. 8am-5pm) East Coast USA time zone.)

7. Submission of proposal:

Applications must include the following:

1. A formal bid that describes your previous experience and qualifications relating to the work outlined in the "Responsibilities, Tasks, Deliverables" Section # 3, above, and why you would be a good fit for this consultancy. No more than **3-5 pages**. Additional documentation may be requested of finalist candidates.

2. Your Curriculum Vitae (C.V / resume) or, if an entity, please list names of staff who would be assigned.
3. Professional References (up to 3) if you have not worked with COSA before
4. Please specify city/country of current residence

To apply:

1. Submit your proposal via e-mail to: "Careers@thecosa.org".
2. Deadline for submission is January 22, 2025.
3. Applications will be reviewed the week of January 27th. Selected applicant is expected to begin work by February 1, 2025.