

Agriculture Modernization Project

Terms of Reference for Consulting Services for the Design and Creation of a Temporary Inventory for State-Owned Agricultural Land

1. Background

The Government of the Republic of North Macedonia is undertaking efforts to modernize its agriculture sector in order to realize the economic and social benefits for future development and prosperity. The Government has requested the World Bank support for an Agriculture Modernization Project (AMP), which was approved by the World Bank's Board of Executive Directors on January 30, 2020 and became effective on June 18, 2021.

The National Strategy for Agriculture and Rural Development 2021 - 2027 sets the objectives, policies, and measures for developing agriculture and rural areas in the country. The strategic goals are: improving the competitiveness of the agri-food sector, economic sustainability and income of agricultural holdings, application of environmental practices in production that lead to mitigation and adaptation to climate change and ensuring sustainable development of rural areas. The AMP supports the National Strategy implementation. The project responds to the World Bank Country Partnership Framework 2019-2023 for North Macedonia objective, to improve connectivity and access to markets. The project is also in line with IBRD engagement goals, one of which is to contribute to a more productive rural economy with the potential to increase incomes for underserved groups that face greater barriers to achieving sustainable livelihoods, such as women, young people, and minority groups.

The AMP's objective is to improve the competitiveness of the North Macedonia's agriculture sector and strengthen public institutions in the framework of the country's accession process to the European Union (EU). The project is structured around three complementary components as follows:

- (i) Component 1: Agriculture Sector Competitiveness with its sub-component 1.1 Access to Training and Advisory Services, and sub-component 1.2 Agriculture and Food Distribution Systems;
- (ii) Component 2: Institutional Capacity for European Union (EU) Accession with its sub-component 2.1 Evidence-Based Policy-Making, sub-component 2.2 IPARD Implementation Capacity, and sub-component 2.3; and Safe disposal of animal by-products; and
- (iii) Component 3: Project Management.

Sub-component 2.1 will also strengthen the capacity of the Ministry of Agriculture, Forestry and Water Economy (MAFWE) to manage state-owned agricultural land and provide technical assistance, advisory services, and goods; and more specifically, among other things, assist the MAFWE in the drafting of a government policy on state land administration and management and of relevant legal framework updates.

There is currently no single, unified policy or law on public land, its administration or its management. The responsibility for protecting and utilizing state land lies with different institutions depending on whether land is arable, pasture or forest. Management of arable state-owned land falls under the responsibility of the MAFWE, management of pastures under the responsibility of the Public Enterprise for Management of Pasture (PEMP), and management of forests under the Public Enterprise for State Forests "National forests". The project is focused on the management of agricultural land in state ownership, which means arable land and pastures.

The importance of up-to-date inventories on public land is clearly recognized in a broader context of the FAO Voluntary Guidelines on the Responsible Governance of Tenure of Land, Fisheries and Forests in

the Context of National food Security (VGGT), endorsed by the Committee on World Food Security in 2012, in section 8. on public land, fisheries and forests.

There is no reliable and up-to-date inventory of state-owned agricultural land, and the reliability, actuality and correctness of real property data on state land registered with the Agency for Real Estate cadastre (AREC) is not known. For all the institutions involved, it is challenging to manage state-owned land in a sustainable and financially responsible manner, throughout its life cycle, and to support an optimal, cost-effective and efficient delivery of government programs. Also, without having these inventories in place, no evidence-based land policy could be agreed and implemented.

The responsibility for management of arable state land falls under the responsibility of the MAFWE (the Client) and its 33 branch offices, and for management of state pastures under the PEMP with its 20 branch offices with extensions. AREC is a national registration agency for all types of land and other real estate objects, recording their physical characteristics, and ownership and related rights.

In line with the legal framework, the MAFWE regulation dated 2017 and upon confirmation of representatives from three MAFWE sectors on September 23, 2019, the cadastral cultures of land being maintained in the AREC Geodetic - Cadastral Information System are standardized to the following: garden, vineyard, orchard, rocky terrain, meadow, field, rice field, pasture, naturally infertile lands, fisheries, yards, reeds and swamps, artificially infertile lands, other artificially infertile lands, dales, fields/greenhouses, fields/farms, fields/auxiliary structures, fields under greenhouses, fields under auxiliary structures and fields under primary agricultural production facilities.

Under the AMP, the aim is to:

- (i) Create an up-to-date inventory of both, arable land and pastures in state ownership;
- (ii) Develop a new information system to collect, manage and exchange the data of the inventory under (i), and
- (iii) Improve state arable land and pasture data quality and actuality and, where appropriate and relevant, submit proposals to the AREC for updating real estate cadastre data.

This assignment covers the design and creation of a temporary inventory for state-owned agricultural land, which is required to be materialized in order to start the preparation, improvement and actualization of the data in the inventory as early as possible in the lifetime of the AMP.

The temporary inventory will cover descriptive/alphanumeric/attribute data without any graphical/geospatial data. The data model structure developed for the temporary inventory database will later be applied in the new state agricultural land management information system, planned under the AMP. Data sources for filling in the temporary inventory once this assignment is completed will be data on leases of arable land from the MAFWE electronic system¹, and further, from the Excel tables and paper records, with a required set of pre-defined quality controls.

For arable land in state ownership, it was estimated by the MAFWE in March 2022 that there were about 10,000 active leasing contracts for an area of about 95,000 hectares. For pastures, all active leasing contracts and agreements have expired at the end of 2019, and in 2022 a temporary solution is used. It is expected that amendments to the Law on pastures will be adopted early in 2023 that will enable new leasing arrangements, which will consequently bring their data and documents into the temporary inventory. In 2021, 2,362 minutes on “temporary leasing” of pastures for the period of one year have been signed.

Financial and accounting support to the management of rents for arable land at the MAFWE includes calculation of yearly rent, delayed payments of rent, compensation with subsidies funded by the budget

¹ out of operation and maintenance since 2012 or 2013 (created with the FAO support); old data and majority of scanned leasing contracts, including actual entries is in the system; in March 2022 without data back-up

and the IPARD², management of Bank guaranties, calculation of interests, related claims and objections. It seems most likely that the MAFWE will not develop electronically-based support to this part in 2022/2023, which could be then adequately linked to the new state agricultural land management information system when developed. If financial and accounting functionalities for the management of rents for arable land at the MAFWE are not automated, they will have to be designed and implemented in the new state agricultural land management information system. The PEMP uses its own well-functioning electronic financial and accounting system, which will continue to be maintained by the PEMP, complementary to the state agricultural land management information system.

At the next stage, the data from the temporary inventory will be transferred to the newly set up state agricultural land management information system. Once the information system is established and data from the temporary inventory migrated into the new system, this data collection will be treated and recognized as an inventory of agricultural land in state ownership, and will continue to be maintained in the new state agricultural land management information system. The temporary inventory for state-owned agricultural land will be archived and at disposal for any required checking, or the control of its data preparation.

2. Objectives

The objectives of the consulting services are to:

- (i) design a temporary inventory for state-owned agricultural land (arable land and pastures); and
- (ii) create a temporary inventory for state-owned agricultural land (arable land and pastures).

3. Scope of Work and Tasks

The tasks the Consultant shall carry out are the following:

(i) Review of the current and past processes for managing arable land at the MAFWE and its branch offices, and pastures at the PEMP and its branch offices. The focus will be mainly on the different types of documents and data produced in leasing and related activities at the MAFWE, PEMP and other organizations and institutions (AREC, Ministry of Finance, Paying Agency, State Agriculture Inspectorate, Food and Veterinary Agency, Public Prosecutor's Office, ...), including but not limited to the following:

- Processes, documents and data required following the leasing of arable land or pastures in public advertisements, (electronic) auctions and direct agreements;
- Data and documents included in the MAFWE electronic system out of operation and maintenance;
- Data included in Excel tables at the MAFWE and branch offices, and documents of the leasing process, like contracts, which were not inserted to the old MAFWE electronic system;
- Data and documents of the PEMP produced as a result of "temporary leasing" arrangements in 2022.

(ii) Assess the processes, documents and relevant data:

Analyze and assess the current and past processes for managing arable land and pastures, and of the availability and usability of different types of documents and data produced in leasing and related activities, as reviewed under (i). This will be an input in designing the temporary inventory.

(iii) Prepare an overview of international experience:

Use examples of countries such as Slovakia, Hungary and Slovenia to present ways and experience with setting up and maintenance of the national inventory of state-owned agricultural land. The Consultant will advise the MAFWE and PEMP about how they can organize and develop the temporary inventory

² Instrument for Pre-Accession Assistance for Rural Development

which will be the predecessor to the inventory of agricultural land in state ownership. This will be as well an input in designing the temporary inventory.

(iv) Design a data model and a temporary inventory for state-owned arable land and pastures:

A data model shall be designed to organize and integrate data and information related to the leasing contracts, including but not limited to:

- Advisement/call number and date; Contract number; Date of contract signature; Annexes' numbers; Date of annexes'; Minutes of taking over the possession; Date of minutes of taking over the possession; Lease expiration date; Inactive contract (terminated by the force of law), Deposits, Bank Guarantee Decision of the MAFWE/PEMP number and date; Inactive contract (terminated by the bridge of contract), Statement of the MAFWE/Decision of the PEMP; Number of minutes /decision for taking the possession away and date; Branch office; Lessee; Lessee Personal ID; Lessee Company ID; Lessee Company Tax ID; Cadastral municipality; Parcel and sub/parcel number; Cadastral culture, Cadastral class; Remarks of the real estate cadastre sheet; Area under lease in m2 (current); Purpose of the lease; Rent (in EUR, MKD, number of kg of wheat); Unit price for a kg of wheat;
- Relevant key information on the Claims, Complaints, Objections, Court disputes.

The temporary inventory shall include relevant documents in digital form like scanned contracts, annexes, minutes, claims, geodetic elaborates. It shall be designed to maximize quality controls where relevant, and ensure data integrity, stability of data integrity, verification of linkages and correct entity relationships.

Temporary inventory data in electronic form shall be organized and stored in a centralized database and fit the information infrastructures of the MAFWE and the PEMP. The modules, lists, code-lists, libraries and similar shall be considered and designed to enable user friendly input and control of data in the temporary inventory and among others, enable search and edit functionalities. A technical solution for the temporary inventory shall be designed and proposed. The security of data in electronic form in the temporary inventory and the preparation of backup copies of the data shall be ensured. The data in the temporary inventory shall be protected to prevent illegal gathering, processing, storage, use or transfer of data, accidental or intentional modification or destruction of data and illegal export of data. Access to the temporary inventory database shall be strictly controlled with varying degrees of access permitted. The source code belongs to the Client.

The proposed data model and the overall design of the temporary inventory shall be approved and accepted by the Client before moving to the following tasks.

(v) Develop a temporary inventory for state-owned arable land and pastures and testing:

After the approval and acceptance of the design of the temporary inventory, including a technical solution by the Client, the Consultant shall develop the technical solution and test its appropriateness following entry of at least 100 MAFWE contracts with all related documents for different time periods, and 40 PEMP minutes with related documents (with all types of different situations and dated in different time periods. These testing cases will be selected by the MAFWE and PEMP, and delivered to the Consultant by the appointed Client's representative for this assignment.

The Consultant shall develop the relevant documents, including a user manual with instructions, and a Testing Report.

(vi) Conduct one training course to work with the temporary inventory:

The training course shall be conducted by the Consultant. It shall convey in a clear and effective manner the knowledge and experience needed to work with the temporary inventory. It shall be a three-day training for 50 trainees.

(vii) Develop draft technical specifications for Analysis of MAFWE leasing contracts and PEMP minutes on leasing, and mass data input into a temporary inventory; and develop draft Terms of Reference/Technical Specifications for state agriculture land management information system,

hardware and other software. Based on experience gained under this assignment, and based on discussion and requirements of the Client.

(viii) Execute the final testing, install the technical solution, finalize relevant documents, including a product description, an installation and configuration manuals, an administration manual (back-up, archiving, restoring), and a user manual with instructions

The final testing of the technical solution before acceptance will be carried out by the Client's staff with the assistance of the Consultant. Upon the successful completion of the testing, the Consultant will install the final technical solution in the MAFWE and PEMP information infrastructures, deliver relevant documents, described in para 1 of item (viii) above, prepare and deliver the Final report., and deliver a final Source code.

4. The Consultant's Reports and Deliverables

The reports and deliverables produced by the Consultant shall include:

(i) Initial report:

The Consultant shall submit an Initial report to the Client for review and approval covering: (a) an assessment of processes for managing arable land and pastures, documents and relevant data on leasing of state-owned agricultural land; (b) an international comparison overview with detailed analysis;

(ii) Design of the temporary inventory for state-owned arable land and pastures:

The Consultant shall submit to the Client for review and approval data model and temporary inventory for state-owned arable land and pastures design with the proposed technical solution;

(iii) Temporary inventory for state-owned arable land and pastures:

The Consultant shall develop a technical solution for the temporary inventory for state-owned arable land and pastures and submit it to the Client for review and approval. Technical documents including a User manual with instructions and a Testing Report shall be prepared and enclosed.

(iv) Conducted training course to work with the temporary inventory:

The Consultant shall prepare and conduct one three-day training course on the functioning and use of the temporary inventory technical solution for 50 trainees, selected by the Client, presumably for the staff of the MAFWE and the PEMP.

(v) Draft Technical specifications for Analysis of MAFWE leasing contracts and PEMP minutes on leasing, and mass data input into a temporary inventory; and draft ToRs/Technical Specifications for state agriculture land management information system, hardware and other software.

The Consultant shall submit to the Client for review and approval both draft technical documents.

(vi) Executed final testing, technical solution installation and the Final report:

The Consultant shall assist the Client in the final testing of the temporary inventory technical solution before its acceptance, The Consultant shall install the technical solution in the MAFWE and PEMP information infrastructures, and deliver the final Source code to the Client. The Final report of the assignment with all enclosures, as described in chapter 3., of elaborated documents shall be provided to the Client for review and approval.

The Client shall provide comments or approvals to reports and deliverables provided by the Consultant within 10 working days (5 days for the training). The Consultant shall update documents based on comments provided by the Client within 5 working days.

All reports shall be submitted in digital format MS Word and in three bound hard copies. Reports and all correspondence shall be submitted to the Client's representative (Trajan Dimkovski, Project

Director/State Advisor for Rural Development, Aminta Treti No.2, 1000 Skopje, procurement@amp.mk). The Client's representative will be authorized to provide feedback of the Client on reports and solutions to the Consultant in agreed deadlines, and issue the approvals.

5. Qualifications and Experience

The Consultant shall be a legal entity registered with the competent registration body for performing the activities related to the subject of the assignment, or an association in the form of a joint venture, partnership or sub-contracting, with a legal entity as a lead partner with the following qualifications:

- (i) At least 5 years of proven experience and positive achievements in providing consultancy and technical services in information technologies' applications, and larger information systems to public authorities or public bodies, and to the private sector clients;
- (ii) Proven experience in providing consultancy and technical services in designing and setting-up information systems by means of modern technologies (participation in the design and development of at least three information systems);
- (iii) At least 2 years of proven experience and knowledge in business analysis and reengineering, system and software architecture, and software engineering;
- (iv) Proven experience in providing technical services to public clients in the area of land management and land administration;
- (v) Relevant financial capacity.

The team proposed to implement the assigned activities shall include the following local key experts:

- (i) system architect
- (ii) database expert
- (iii) software developer
- (iv) land management expert

The role of the team leader may be combined with any key expert position.

As proof for the above-mentioned, the Consultant shall submit:

- (i) A proof of registration in the relevant register (not older than three months);
- (ii) Certificates of contractual parties on proper contractual execution substantiating the Consultant's relevant experience;
- (iii) A proof of financial capacity of the Consultant providing evidence for annual turnover of at least EUR 75,000;
- (iv) A proof that the Consultant's key personnel will include at least the following key experts available for the full duration of the assignment possessing the following qualifications:

System architect:

- Relevant university degree, preferably degree in information systems, software engineering or equivalent with no less than 8 years of experience working on tasks or projects in the field of system architecture design;
- Proven experience of successfully acting as a system architect for at least two public or private sectors' applications;
- Demonstrated experience in open-source software-based solutions.

Database expert:

- Relevant university degree, preferably degree in information systems, software engineering or equivalent with no less than 8 years of experience working on tasks or projects in the field of database modelling, designing, development and optimization;
- Proven experience of successfully acting as a database expert for at least two public or private sectors' applications;
- Proven knowledge of database programming languages.

Software developer:

- Relevant university degree, preferably a degree in information systems, software engineering or equivalent with no less than 8 years of experience working on tasks or projects in the field of software development;
- Proven experience of successfully acting as a software developer for at least two public or private sectors' applications;
- Demonstrated experience of open-source application development.

Land management expert:

- Relevant university degree, preferably in geomatics engineering, agriculture or land administration with no less than 8 years of experience working on tasks or projects in the field of land management and land administration;
- Proven experience of successfully completed his/her land administration expert support on at least one land management or land administration automation project;
- Familiar with modern concepts of land management and land administration.

6. Reporting Requirements

Deliverable	Deadline for Submission	Approval by the Client	Revision of the Consultant
Initial Report	6 weeks after contract signing	10 working days after submission	5 working days after receiving comments from the Client
Design of the temporary inventory	1 month after approval of the Initial Report	10 working days after submission	5 working days after receiving comments from the Client
Technical Solutions Creation, data insertion and initial testing, Testing report	6 months after the approval of the Design	10 working days after submission	5 working days after receiving comments from the Client
Training of MAFWE and PEMP Staff	7 working days after testing of the technical solution	5 working days after submission	5 working days after receiving comments from the Client
Draft Technical specifications and ToRs	8 months after Contract signing	10 working days after submission	5 working days after receiving comments from the Client
Final testing and Final Report with annexes, Source code	9 months after contract signing	10 working days after submission	5 working days after receiving comments from the Client

The payment schedule for deliverables shall follow the requirements presented in chapter 4. The Consultant's Reports and Deliverables.

7. Timing and Duration

The assignment shall be completed in the period of 9 (nine) months after signing the contract.

8. Language

The official language of this assignment shall be Macedonian. All materials and reports produced by the Consultant, except an installation and configuration manual, an administration manual, and a user manual shall be delivered to the Client in Macedonian and English language. An installation and configuration manual, an administration manual, and a user manual shall be delivered to the Client in Macedonian language.

9. Client's Input and Counterpart Personnel

As needed, the Consultant shall perform their tasks on the premises of the MAFWE, Aminta Treti 2, 1000 Skopje; and PEMP, Bul. Partizanski odredi 145, 1000 Skopje.

The Client will provide the Consultant all relevant documents, required to successfully complete the assignment.

Professional and support counterpart of the Client to the Consultant's team is (list/to be specified after signing a contract).

The training course delivered by the Consultant shall be conducted in the Client's premises, most probably in Skopje.