



## EU Green Agricultural Initiative in Armenia (EU-GAIA)

### TERMS OF REFERENCE (ToR)

**For international and local Experts ("Consultants") to develop a special Course for a new MSc programme in Precision Agriculture and Training programme courses in Sustainable/Green Agriculture at the Armenian National Agrarian University**

#### 1. BACKGROUND INFORMATION

##### **BACKGROUND**

Agriculture is the priority sector of the Austrian Development Cooperation (ADC) for Armenia, as about half of the Armenian population is engaged in agriculture and it is also one of the most important sectors of the Armenian economy. Nevertheless, the agricultural potential in Armenia is highly underutilized and the production remains predominately at subsistence level. Insufficient capacities, lack of access to agricultural inputs, credits, markets new technologies and information hamper agricultural productivity and competitiveness. Since Armenia has good preconditions for the development of green agriculture – due to its unique geographic and natural conditions – the Ministry of Economy (Agricultural division) (MoEc) of the Republic of Armenia has prioritized its promotion through incorporation in appropriate governmental policies and regulatory legislative framework.

EU Green Agriculture Initiative in Armenia (EU-GAIA), a project funded by the European Union with contribution from ADC, aims at further developing green (and organic) agriculture in Armenia. The previous achievements and success of the ADA OASI project is to be enhanced and new green agriculture “paradigm”, which envisages creation of conducive policy and legislation environment as well as introduction of new green agriculture technologies and good agricultural practices in Armenia, will be developed and widely promoted among all relevant stakeholders including governmental authorities, public and private actors, farmers as well as educational sector and Civil Society Organizations.

The various capacity development programmes and awareness raising campaigns based on stakeholders’ needs and knowledge gaps assessment are provided to the relevant stakeholders through the project lifetime.

One of the main objective of the EU-GAIA project is the development of capacities of educational institutions through enhancing higher education/academy and research by elaborating of appropriate educational materials including curricula and special courses on Green/Sustainable and Precision Agriculture.

Prioritizing the importance of technological development of agriculture sector through higher education and taking into consideration the cooperation framework between the Austrian Development Agency and the Armenian National Agrarian University, which is defined and stipulated in the MoU signed between ADA and ANAU in the framework of EU-GAIA project, the project intends to

contract international and local experts/consultants for leading the development process of special course for a new MSc programme in Precision Agriculture as well as special Training programme courses in Green/ Sustainable Agriculture at the Armenian National Agrarian University.

### **RATIONAL DESCRIPTION**

**Precision farming** practices have already proven to be a key driver for the sustainability and profitability of agricultural sector. Nevertheless, most of the Armenian farmers use outdated and less effective technologies, leading to stagnant or dwindling productivity and returns. Improved technologies nowadays are affordable, impactful, and safe but have not yet penetrated the vast small-holder market. At the same time, the agricultural sector needs more young professionals who can both create and/or manage tech-enabled agricultural ventures.

The mission of ANAU is to become an outstanding and leading educational, scientific-research and consultative Agri-Tech excellence centre in Armenia and in the region, which mobilizes the resources in the fields of education and science, integrates the results of basic scientific research and practice. With its newly established MSc in Precision Agriculture (PA) the ANAU aims to introduce students to the main theories, debates, and research methods in PA from a multidisciplinary perspective. The graduates of the MSc in PA programme should be able to bridge the gaps between agronomy, agriculture machinery management, and data sciences caused by the rapid evolution of high-speed sensor technology. The main objective associated with the MSc in PA is to provide knowledge and skills on promoting the adoption and evaluation of state-of-the-art precision agriculture machinery, equipment, and techniques with a goal of improving the profitability, production efficiency, and environmental sustainability related to modern high-tech agricultural production systems.

The entire MSc in PA programme has three main pillars. On the one hand, students will obtain knowledge and the necessary foundations in sustainable agriculture by focusing on topics such as vegetable and crop production technologies; soil fertility and plant nutrient management; integrated natural resource management; climate risk management with PA; etc. On the other hand, they will learn about automation, mechanical engineering, emerging technologies and machinery management using PA technologies, e.g., the use of soil and plant sensors in crop production. Finally, the third pillar will consist of courses for providing knowledge about informatics and telematics, GIS, IoT, big data analytics, etc.

**To develop high quality six courses as integral parts of the curriculum for this one-year new interdisciplinary graduate degree programme as well as Training Programme in Green/Sustainable Agriculture (TP in GA/SA)**, the EU-GAIA project in collaboration with ANAU seeks to involve international and local specialists/experts and scholars with relevant experiences for developing the following 7 courses in PA curricula, as well as 3 TP units in GA/SA within ANAU educational programmes:

#### **7 Courses in PA curricula**

- P2C4 - Emerging technologies in agriculture
- P2C5 - Farm machinery management and remote sensing
- P2C6 -Artificial intelligence
- P3C7 -Geographic Information Systems
- P3C8 -Informatics /telematics
- P3C9 -Internet of Things in PA.
- P3C10-Climate risk management with PA

#### **3 units of TP in GA:**

- TU1. Sustainable Agriculture
- TU2. Precision Agriculture
- TU3. Organic Agriculture.

## **2. DESCRIPTION OF THE ASSIGNMENT**

### **SCOPE OF WORK**

Under the overall direction of the ANAU Faculty of Agrarian Engineering and Faculty of Agronomy and in collaboration with the EU-GAIA project, the courses development specialists will lead the design and development of instructionally sound and engaging courses for educational and training purposes in the frame of the MSc in PA programme and TP in GA. More specifically, the course development specialist will undertake the following:

- conduct an initial assessment of ANAU's educational requirements
- conduct a preliminary review of existing and relevant learning materials related to subject areas of the proposed courses
- carry out a brief needs assessment to determine the training requirements of targeted ANAU staff,
- execute research on best practices from other organisations on delivering similar programmes with a special emphasis on benchmarking against other internationally renowned universities and training centres,
- develop learning materials, including PA and TP in GA courses content, syllabi, teaching methodologies and support material, learning outcomes, PPT, etc.
- assist in refining the curriculum and selected courses, duration, and sequencing of components,
- supervise, coordinate and assist in directing the work of local subject matter experts and trainers at ANAU and ensure compliance with curriculum standards and best practices,
- participate in curriculum related discussions, provide technical contributions to scopes of work, implementation plans, and TP in GA trainings and demonstration plans, materials, and presentations,
- work closely with the Faculty of Agrarian Engineering and the Faculty of Agronomy to monitor implementation, gather and disseminate feedback, incorporate findings, and recommend related adjustments to new extension materials and trainings,
- establish a methodology/framework for measuring the effectiveness of the training, including methods for skills assessment and any recommendations for longitudinal tracking,

## **3. EXPECTED DELIVERABLES**

The selected Specialist/s/Consultant/s is expected to deliver the following results/outputs:

- inception report outlining the approach to the assignment including schedule for key components and activities, implementation timeline and final outputs including ANAU's educational requirements, subject areas and all relevant learning materials related to the proposed courses and trainings.
- final report of the executed research on benchmarking of the best practices from other organisations/institutions on similar programmes/assignments.
- full package of learning materials related to the subject areas of the proposed courses, including the teaching methodologies, PA and TP in GA courses content, syllabi, support materials, instructional aides, review and feedback mechanisms, and assessment methodology required for an effective course,
- a final report recommending appropriate systems and tools (also online formats) for the implementation of the course including coordination/coherence mechanism of joint work for local subject matters experts and trainers to ensure compliance with curriculum standards and best practices.
- developed methodology/framework for measuring the effectiveness of the training programme courses
- developed short version of the same course(s) for a new training programme in green agriculture and guidelines for its implementation.

#### **4. PERIOD OF ASSIGNMENT**

The assignment is planned to commence **in October 2021**.

The duration of the assignment is estimated up to **90 working days** over a period of **4 months**.

The assignment must be accomplished, and all related outputs/deliverables must be submitted **by January 30, 2022**.

#### **5. WORKING LANGUAGE**

The Working Language for this assignment is **English**. All communication and reporting is to be held in English and all the required materials are to be prepared in English, while all translations of the learning materials required by this assignment as well as some required communication to Armenian will be done by the national experts of ANAU with the technical support provided by EU-GAIA project.

#### **6. CONTRACTING MODALITIES**

A service contract will be concluded between the Austrian Development Agency (Client) and the Service Provider (Contractor) supervised by the EU-GAIA Project Team Leader solely for delivering the above assignment/outputs, within the agreed time frame.

The EU-GAIA project team as the Client shall provide necessary support to the Contractor to execute the assignment.

Interested candidates are invited to apply for the development of one or more courses based of their professional knowledge and expertise (See Annex 1. for more information about the courses).

The Contractor payment shall be based on the detailed financial proposal developed for this assignment and due to agreed payment schedule of tranches.

#### **7. INTELLECTUAL PROPERTY**

All information pertaining to the project (documentary, audio, digital data, project documents, etc.) belonging to the client (ADA/EU-GAIA), which the Contractor may come into contact with while performing his/her duties under this consultancy shall remain the property of the Client who shall have exclusive rights over their use. Except for purposes of this assignment, the information shall not be disclosed to the public nor used in whatever without written permission of the Client in line with the national and International Copyright Laws applicable.

#### **8. QUALIFICATIONS OF THE CONTRACTOR**

##### **FUNCTIONAL COMPETENCIES**

- profound knowledge on at list one of the disciplines related to subject areas of the proposed courses,
- applied knowledge and competencies on a wide range of precision farming technologies as well as technologies for educational development, scaling and adoption,
- knowledge and skills of adult learning principles and communication styles,
- knowledge of instructional design methodologies,
- strong interpersonal, team leading work and communication skills as well as cultural awareness and sensitivity.

##### **REQUIRED SKILLS AND EXPERIENCE**

- Master's degree or higher in education, agriculture, agribusiness, agricultural engineering, or other relevant science discipline related to subject areas of the proposed courses, PhD is an asset,
- At least 5 years of professional experience in education and training of which 3 years of experience related to curricula and course development, i.e., course design and deployment, design and implementation of learning systems,

- Proven experience in developing institutional capacities and providing technical assistance in the field of curricula and course development preparation and implementation, as well as training programmes design and implementation,
- Proven track record in developing similar courses in different subjects,
- Extensive hands-on experience and knowledge of learning systems,
- Experience in managing the development and deployment of short- and long-term training courses desirable,
- Understanding of programming and project management concepts, including results-based management,
- Excellent capacity building skills,
- Excellent oral and written English. Knowledge of Armenian and Russian is an asset.

## 9. APPLICATION PROCEDURE

Please provide the following information:

- Technical Proposal;
- Methodology on the approach and implementation of the assignment (can be a part of the Technical proposal);
- Letter of Interest;
- CV (s) highlighting qualifications and experience of expert (s) in similar assignments;
- Financial proposal indicating consultancy fee and a breakdown of expenses (unit price together with any other relevant expenses) related to the assignment;
- Work references (fact sheet)- i.e. companies/institutions for whom you've produced similar assignments; as well as samples of work (available online).

**The deadline for submission is 29 September 2021 by 10 a.m. local Armenia time.**

## 10. CONTACT

Mr. Pascal Bokkers, EU-GAIA Project Team Leader.

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The Project's Policy and Advocacy Expert, or who else is later delegated, acts as daily counterpart of the Contractor.

The Contractor is bound to maintain regular communications with the Project Team Leader and/or delegated ADA staff and to inform about any relevant issue concerning the project, as well as sending all documentary outputs of his/her assignment.

## 11. PUBLICATION

The Contractor agrees that the following information will be made public as required by the General Conditions to the European Union Pillar Assessed Grant Agreement signed by ADA:

- title and type of the contract,
- name and address of the contractor,
- amount of the contract.