

Agreement number: 81297265

Project processing number: 18.2062.0-009.00

GIZ Program: ECOServe Armenia

Project: Building Resilience to Enhance Food Security: Establishment of a Circular AgroFood Model at the ANAU-Balahovit Farm in Armenia

Recipient: Armenian National Agrarian University Foundation (ANAU)

TERMS OF REFERENCE

Trial of fertilizer/biohumus, bioliquid for selected crops in open and protected ground

The Armenian National Agrarian University (ANAU) invites qualified organizations to submit a price offer for the services presented below within the framework of the project “Introduction of a Circular Agri-food Model in Armenia” at the Teaching-Experimental Farm of Balahovit, ANAU.

The Armenian National Agrarian University (ANAU) is implementing the measure “Introduction of a Circular Agri-food Model in Armenia” in the Teaching-Experimental Farm of Balahovit of ANAU with the support of ECOServe Armenia Programme implemented by Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH commissioned by the German Federal Ministry for Economic Cooperation and Development (BMZ).

The constituent parts of this statement are:

Participation criteria and evaluation procedure:

- Any legal entities registered in Armenia can submit an application.
- The applicant can act as a joint activity (JA), with all members being jointly responsible for the full implementation of the contract.
- The contract will be awarded based on the principle of giving preference to the bidder who has submitted the lowest price offer among the bids evaluated as satisfactory.

Content of the submitted application:

The applicant must include in his/her application:

- The cost of the bid signed by the participant for ALL lots. The price offer should include all payments required to ensure the performance of the contract, including taxes, duties, fuel, labor calculations, etc.
- A copy of the certificate of registration in the State Register of Legal Entities.
- Documents certifying the applicant's experience in this field.

Procedure for application submission

- The application can be submitted in both paper and electronic versions until **October 27 of this year by 12:00 pm** to the Armenian National Agrarian University Foundation,

located at 74 Teryan, Yerevan, RA. Alternatively, you can send the application to hovh.anna.isyan@gmail.com.

- The "Armenian National Agrarian University" Foundation reserves the right to accept or reject any bid and to cancel the tender process, rejecting all bids at any time before awarding the contract, without imposing any obligation on the bidder(s) or without explaining the Foundation's actions to the bidder(s).
- In case of any questions, you can contact the Program Coordinator at hovh.anna.isyan@gmail.com or call +37494 48 87 85.

Description of the service provided

In the scope of the “Introduction of a Circular Agri-food Model in Armenia,” at the ANAU Teaching-Experimental Farm of Balahovit, the Armenian National Agrarian University has established demonstration models of producing fertilizer/biomass (biohumus) from manure:

1. for producing dry and liquid biomass using microorganisms;
2. for producing dry fertilizer by a simple composting technology;
3. for producing dry fertilizer using the vermicomposting (California red worm) technology.

The **fertilizer/biomass and bioliquid** obtained in the experimental models should be tested for the selected crops in the open and protected ground, as well as to test for the same crops **nitrate fertilizer Ts-2**, the 5 products under trial for the selected 4 crops, with trials to be carried out at least on 1 sq. m area for each product.

The selected crops:

1. Tomato seedlings
2. Tomato
3. Cucumber
4. Cabbage

The fertilizer/biomass, bioliquid under trials:

1. Dry mass, using microorganisms;
2. Bioliquid, using microorganisms;
3. Dry fertilizer, using a simple composting technology;
4. Dry fertilizer, using vermicomposting technology;
5. Nitrate fertilizer Ts-2

The minimum indicators to be recorded during the use of crops should include:

1. Analysis of the content of nutrients in the mineralized biomass (liquid and dry)

2. Collection and analysis of indicators obtained as a result of growing in open and protected ground according to the tables provided below;
3. Photographing of all phases of growing.

Table 1: Phenological indicators						
N	Options	The number of days from mass germination until:				Duration of the yielding ability, days
		Blooming	Fruiting	First harvest	Last harvest	
Name of the selected crop						
1	Dry biomass, using microorganisms					
2	Bioliquid, using microorganisms					
3	Dry fertilizer, using the composting technology					
4	Dry fertilizer, using vermicomposting technology					
5	Nitrate fertilizer Ts-2					

Table 2: Indicators of the yielding capacity						
N	Options	Early yield, Kg/sq. meter	Increased early yield, %	Total yield, Kg/sq. meter	Increased yield, %	Average yield volume, gram
Name of the selected crop						
1	Dry biomass, using microorganisms					
2	Bioliquid, using microorganisms					
3	Dry fertilizer, using the composting technology					
4	Dry fertilizer, using vermicomposting technology					
5	Nitrate fertilizer Ts-2					

Collection of economic data

It is necessary to record the data needed during crop growing and yielding processes, according to Table 3.

Table 3: Economic data					
N	Names of data	Unit of measure	Value per unit	Total value	Additional clarification
1	General description of selection of crops, the variety, growing method (open or protected ground or other)				
2	Amount of seeds	G			
3	Type and name of fertilizer	G or kg, or l			
4	type and name of chemicals	G or kg, or l			
5	Cost of other materials used during the vegetation period (water, gas, electricity, etc.)				
6	Cost of framing machinery or equipment				
7	Cost of labor during crop growing and harvesting	day or hour/man			
8	Cost of specialist				
9	Other indirect costs (organizational, transportation, administrative costs)				
10	Amount of the harvest obtained	kg			
11	Information on the yield obtained and its qualitative characteristics				
12	Other information that will have a significant impact on the costs incurred on the plant and the revenues received				

During the growing period, it is necessary to carry out laboratory research, observing the indicators provided in Table 4.

Table 4: The list of laboratory samplings, agrochemical analyses

№	ID	Name
1	NO ₃ ⁻	Nitrate nitrogen
2	NH ₄ ⁺	Ammonium nitrogen
3	P ₂ O ₅	Phosphorus
4	K ₂ O	Potassium
13	CO ₂	Carbonate
14	Ca ²⁺	Calcium
15	Mg ²⁺	Magnezium
16	EC	Electrical conductivity (amount of dissolved salts)
17	pH	Hydrogen index
18	%C	Organic substance (humus)
21		Detection of nematodes

Sample Form

of provision of price offer for service delivery (APPENDIX 1)

_____/ name, registration number, address of the organization, name and surname of the head/ with this price offer, presents its interest in providing the Armenian National Agrarian University **the full package of services** specified in the Terms of Reference of the announcement on **trial of fertilizer/biohumus, bioliquid for selected crops in open and protected ground.**

The price offer making AMD _____ is presented for the specified services and includes the taxes defined by the RA legislation.

Attached to the price offer, we present the organization's experience in this field and a copy of its certificate of registration.

I hereby inform you that I understand that the Armenian National Agrarian University is under no obligation to accept our offer, and in case of acceptance, the mentioned services may be changed depending on the progress in the project.

Name and surname of the head of the organization:

Date:

Signature:

Seal:

Phone number:

Email: