Terms of Reference

FOR THE PURCHASE, DELIVERY AND INSTALLATION OF REFRIGERATING EQUIPMENT AND RACKS FOR THE CREATION OF BLOCKS FOR LONG-TERM AND SHORT-TERM STORAGE OF SEEDS OF ESPECIALLY VALUEABLE TREE SPECIES FOR RSCE "REPUBLICAN BREEDING AND SEED PRODUCTION CENTER"

Project title and number:	UNDP-GEF Project «Conservation and Sustainable Management of Key Globally Important Ecosystems for Multiple Benefits », 00101043
Place of delivery:	Kazakhstan, Akmola region, Burabay v., 39 Kenesary str., office of the RSCE "Republican Breeding and Seed Production Center"
Terms of delivery:	Incoterms 2020 DDP (Delivered, Duty Paid)
Period of delivery:	60 calendar days after signing the Contract/Purchase Order (including delivery and clearance of equipment)
Contract type:	UNDP Contract for Goods and/or Services / Purchase Order

PROJECT DESCRIPTION:

Kazakhstan has approximately 12.6 million hectares of forest, which makes it one of the most forest-rich countries in Eurasia, despite the fact that its forests amount to only 4.6% of the national territory. Approximately 95% of Kazakhstan's forests are managed by 123 state forestry entities, which are overseen by regional governments (akimats). Under the current forest governance system, forestry entities lack sufficient capacity to effectively manage HCVF, including those forests neighboring highly biodiverse protected areas. Kazakhstan's protected area system covers approximately 24,018,800 ha, or 8.81% (as of 2015) of the total country, although only 5% of Kazakhstan's forests are included within protected areas. Therefore, forest ecosystems are underrepresented in the national protected area systems. Kazakhstan has three main forest ecosystem types: alpine forests, tugai (riparian) forests, and saxaul landscapes (desert and semi-desert shrubs).

Since 2018 on the territory of the Republic of Kazakhstan has been implemented UNDP-GEF Project "Conservation and Sustainable Management of Key Globally Important Ecosystems for Multiple Benefits" (hereinafter referred to as the Project). The project strategy is to comprehensively address the issues of conservation and sustainable use of forest ecosystems in Kazakhstan by improving management approaches both within the system of protected areas and in adjacent landscapes with a view to sustainable use of high conservation value forests. The project involves three main components:

Component 1: Increasing the representativeness of globally important forest ecosystem biodiversity in the network of protected areas and improving the efficiency of management of protected areas.

Component 2: Promoting the integration of forest protected areas in the landscape context by creating conditions for the effective regulation and management of globally important ecosystems.

Component 3: International cooperation and knowledge management.

JUSTIFICATION:

Kazakhstan has signed the Convention on Biological Diversity, which, among other things, makes the country responsible for the conservation and sustainable use of its own genetic resources. Kazakhstan is also a party to the Cartagena Protocol on Biosafety and, in accordance with the Decree of the President of the Republic of Kazakhstan dated March 17, 2015 No. 1025, joined the Nagoya Protocol to the Convention on Biological Diversity.

The territory of Kazakhstan, according to the confirmed hypothesis of the Soviet scientist N.I. Vavilov, belongs to one of the natural foci (centers) of origin of a number of plant species on the planet. Moreover, the country's genetic resources are of global importance for humanity. Forest diversity in Kazakhstan has a number of important genetic resources for the world, wild fruit trees and grasses that are threatened

by poor management and uncontrolled harvesting.

In mountain forests of Kazakhstan are concentrated unique genetic resources of agro-biodiversity of global significance. Mountain fruit forests of Tien Shan have been globally recognized, primarily for wild apple (Asian wild apple – Malus sieversii (Ledeb.) M.Roem., Niedzvetskiy apple – Malus niedzwetzkyana Dieck.), and common apricot (Armeniaca vulgaris Lam.). They grow in mountain forests of Western Tien Shan, Karatau, Zailiyskiy Alatau, Ketmen, Zhongar Alatau and Tarbagatai. The relict turang poplars are endemic to the Balkhash region of Kazakhstan. The presence of these tree species in the region is an integral part of the desert and semi-desert ecosystem of the natural landscape.

At present, as a result of technogenic factors, genetic erosion of species, as well as climate change, the gene pool of woody plants is lost, and therefore for the prospects for further use in breeding, reforestation, and gardening it is necessary to preserve this unique diversity and create a specialized bank of seeds of woody plants.

In accordance with the Project Document, in the framework of the **Project it is envisaged to create a genetic bank of seeds of especially valuable tree and shrub species. (hereinafter- the gene bank).**

In 2019, within the framework of the Project, experts of the Institute of Botany and Phytointroduction developed a Concept for creating a genetic bank of seeds of especially valuable tree and shrub species, which provides for an integrated approach to the conservation and sustainable use of the genetic fund of forest tree and shrub plant species in Kazakhstan using the *ex situ* method. According to this Concept, it is recommended to create a genetic bank on the basis of the Head Office of the Republican Breeding and Seed Production Center in Burabay village. The center has a 2-storey administrative building with a total area of 558 sq.m., in which major repairs have been carried out, appropriate communications have been carried out, and the adjacent territory is being landscaped.

According to the experts' recommendations, **it is planned to locate on the 1st floor of the building**:
a) drying block for primary drying and cleaning of seeds.
b) a block for long-term storage of seeds, storage temperature: -18 ^{0}C;
c) block for short-term storage of seeds, storage temperature: 0-5 ^{0}C, consisting of:
- chambers for short-term storage of coniferous seeds;
- chambers for short-term storage of deciduous seeds.

The layout and photographs of the indicated premises for the installation of these units are given in Annex 1 to this ToR.

On the 2nd floor, it is planned to equip laboratories for preparing seeds before storing them, conducting research on seeds during storage, etc.

It is proposed to create a genetic bank in 2 stages:

At the 1st stage (Q1 - Q3 2021) - the creation of blocks for long-term and short-term storage of seeds, including the purchase, installation and equipping of these blocks with appropriate refrigeration equipment

At the second stage (2021-2023), the preparation of a room for drying forest seeds, an active (work) room, the purchase and installation of equipment and furniture for a drying room (racks, an adsorption air dryer), the purchase of laboratory and computer equipment will be carried out, furniture for laboratory and office premises.

The UNDP project will provide support at the first stage of the creation of a genetic bank, namely in the technical equipping of blocks for long-term and short-term storage of the genetic bank of seeds.

At the first stage (Q1-Q3 2021), the Republican selection center will dismantle window openings, sections of heating radiators in 3 rooms allocated for the creation of blocks for long-term and short-term storage of seeds and all preparatory work has been completed for the installation of modular structures of refrigerating chambers. Also the improvement of the adjacent territory to the building of the genetic bank

will be carried out.

At the second stage (2021-2023) the work will be on the preparation of a room for drying forest seeds, an active (work) room the purchase and installation of equipment and furniture for a drying room (racks, an adsorption air dryer), the purchase of laboratory and computer equipment, furniture for laboratory and office premises.

According to the Annual Workplan for 2021, it is planned to carry out technical support in the creation of a genetic seed bank.

The purpose: purchase, delivery and installation of equipment to create blocks for long-term and short-term storage of seeds of especially valuable tree species in order to preserve the genetic fund of forest ecosystems in Kazakhstan.

Potential suppliers can provide their design solutions for the placement and installation of the above mentioned chambers.

The short characteristics of the rooms:

Room No. 15 (on the scheme) for placement of a long-term storage unit for seeds, with a total area of 14.6 sq.m., ceiling height - 3 m, the room is ventilated and heated, there is one (1) window opening (window). The premises have been renovated, the sanitary condition is satisfactory. The entrance to this room is through the vestibule (No. 14), with an area of 6.5 sq. m.

Room No. 16 (on the scheme) for placement of a block for short-term storage of coniferous seeds, with a total area of 31.3 sq.m., ceiling height - 3 m, the room is ventilated and heated, there are four (4) window openings (window). The premises have been renovated, the sanitary condition is satisfactory.

Room No. 18 (on the scheme) for placement of a chamber for short-term storage of hardwood seeds, with a total area of 24,5 sq.m.., ceiling height - 3 m, the room is ventilated and heated, there are two (2) window openings (window). The premises have been renovated, the sanitary condition is satisfactory

Room No. 17 (on the scheme) – this is a transitional room between rooms 16 and 18, with a total area of 22.1 sq.m., ceiling height - 3 m, the room is ventilated and heated, there are two (2) window openings (window). The premises have been renovated, the sanitary condition is satisfactory. This room can be used to place remote equipment.

This activity is envisaged in 2021 Annual Work Plan of the Project.

Objective: Purchase, delivery and installation of refrigeration equipment and racks for the creation of blocks for long-term and short-term storage of seeds of particularly valuable tree species for the RSE " Republican Forest Breeding Center»

TECHNICAL DESCRIPTION OF THE REFRIGERATION EQUIPMENT AND RACKS FOR THE CREATION OF BLOCKS FOR LONG-TERM AND SHORT-TERM STORAGE OF SEEDS

No.	Name	Technical description	Number
BLOCK FOR LONG-TERM STORAGE OF SEEDS storage temperature: -18 ^{0}C , humidity:40 %. Room with area 14,6 sq.m			
Refrigerating chamber			
1.	**Refrigerating chamber**	• The refrigerating chamber should be a modular collapsible structure consisting of sandwich panels designed to maintain the temperature generated inside the chambers by refrigerating machines; • Inside the chamber, on a permanent basis, the temperature must be: -18^{0}C and humidity: 40%; • Range of ambient air temperature: from -30^{0}C to +40^{0}C;	1

<table>
<tr><td></td><td></td><td>• Overall dimensions of the chamber should be proposed by the supplier and ensure full maintenance of the required temperature regime;
• The internal volume of the chamber must be at least 30 cubic meters;
• The thickness of the sandwich panels must be at least 80 mm and more;
• The size, placement of sandwich panels (wall, ceiling and floor) should be calculated along the entire perimeter of the room with a recommended distance from the main wall of the room at least 20 sm.;
• The floors in the chamber should have additional stainless steel covering (if necessary);
• The chamber should be equipped with an automatic lighting and ventilation system, as well as a system for automatic regulation and control of temperature and humidity, which should be externally brought out;
• The doorway and the door of the refrigerating chamber should consist of: the doorway panel and the door itself.
The package should include:
• doorway panel;
• door with seal;
• a set of hinges and handles with a lock;
• ramp for swing doors.
The entrance door from the inside must be equipped with PVC curtains.</td><td></td></tr>
<tr><td colspan="4">Spllit-system</td></tr>
<tr><td>2.</td><td>Spllit-system</td><td>Refrigeration unit consisting of two separate (internal and external) units: a compressor-condensing unit and an air cooler.
To maintain the set temperature inside the chamber.
• adjustable temperature regime (range): -15 °C… – 25 °C;
• supply pressure (w/f/hz): not less than 380/not less than 3/ not less than 50;
• maximum power consumption, kWt: not less than 3,2/h;
• number of fans – not less than 1;
• productivity, m^3/h: not less than 2400;
• availability of a winter kit;
• availability of a control panel;
• availability of a passport for the equipment.</td><td>1</td></tr>
<tr><td colspan="4">Collapsible production racks</td></tr>
<tr><td>3.</td><td>Collapsible production rack</td><td><table>
<tr><td>Height, mm</td><td>At least 2000</td></tr>
<tr><td>Depth, mm</td><td>At least 400-500</td></tr>
<tr><td>Length, mm</td><td>At least 1000-1500</td></tr>
<tr><td>Number of levels (shelves)</td><td>At least 5</td></tr>
<tr><td>Frame material</td><td>Stainless steel</td></tr>
<tr><td>Plastic adjustable supports</td><td>At least 4</td></tr>
<tr><td>The presence of a shelves adjustment step</td><td>At least 5</td></tr>
<tr><td>Recommended load on the shelf</td><td>At least 100 kg</td></tr>
<tr><td>Holders on the outside of the shelves</td><td>At least 1 on each side</td></tr>
</table></td><td>from 10 and more</td></tr>
</table>

		The number and placement of racks is designed by the supplier. There must be a passage between the racks at least 60 cm. Holders should be provided on the outer sides of the shelves. *It is recommended to design and install a modular (mobile) shelving system to ensure the ergonomic use of the chamber space*	
BLOCK FOR SHORT-TERM STORAGE OF SEEDS			
Chamber for short-term storage of coniferous seeds, storage temperature: 5 ^{0}C, humidity in the room: 40 %, Room with area 31,3 sq.m.			
Refrigerating chamber			
1.	**Refrigerating chamber**	• The refrigerating chamber should be a modular collapsible structure consisting of sandwich panels designed to maintain the temperature generated inside the chambers by refrigerating machines; • Inside the chamber, on a permanent basis, the temperature must be: -5^{0}C and humidity: 40%; • Range of ambient air temperature: from -30^{0}C to +40^{0}C; • Overall dimensions of the chamber should be proposed by the supplier and ensure full maintenance of the required temperature regime; • The internal volume of the chamber must be at least 30 cubic meters; • The thickness of the sandwich panels must be at least 80 mm and more; • The size, placement of sandwich panels (wall, ceiling and floor) should be calculated along the entire perimeter of the room with a recommended distance from the main wall of the room at least 20 sm.; • The floors in the chamber should have additional stainless steel covering (if necessary); • The chamber should be equipped with an automatic lighting and ventilation system, as well as a system for automatic regulation and control of temperature and humidity, which should be externally brought out; • The doorway and the door of the refrigerating chamber should consist of: the doorway panel and the door itself. The package should include: • doorway panel; • door with seal; • a set of hinges and handles with a lock; • ramp for swing doors. The entrance door from the inside must be equipped with PVC curtains.	1
Spllit-system			
2.	**Spllit-system**	Refrigeration unit consisting of two separate (internal and external) units: a compressor-condensing unit and an air cooler. To maintain the set temperature inside the chamber. • adjustable temperature regime (range): -5 °C… + 10 °C; • supply pressure (w/f/hz): not less than 380/not less than 3/ not less than 50; • maximum power consumption, kWt: not less than 3,2/h; • number of fans – not less than 2; • productivity, m^3/h: not less than 1500; • availability of a winter kit;	2

<table>
<tr><td></td><td></td><td>• availability of a control panel;
• availability of a passport for the equipment.</td><td></td></tr>
<tr><td colspan="4">Collapsible production racks</td></tr>
<tr><td>3.</td><td>Collapsible production rack</td><td>
<table>
<tr><td>Height, mm</td><td>At least 2000</td></tr>
<tr><td>Depth, mm</td><td>At least 400-500</td></tr>
<tr><td>Length, mm</td><td>At least 1000-1200</td></tr>
<tr><td>Number of levels (shelves)</td><td>At least 5</td></tr>
<tr><td>Frame material</td><td>Stainless steel</td></tr>
<tr><td>Plastic adjustable supports</td><td>At least 4</td></tr>
<tr><td>The presence of a shelves adjustment step</td><td>At least 5</td></tr>
<tr><td>Recommended load on the shelf</td><td>At least 100 kg</td></tr>
<tr><td>Holders on the outside of the shelves</td><td>At least 1 on each side</td></tr>
</table>
The number and placement of racks is designed by the supplier.
There must be a passage between the racks at least 60 cm.
Holders should be provided on the outer sides of the shelves.
It is recommended to design and install a modular (mobile) shelving system to ensure the ergonomic use of the chamber space
</td><td>from 10 and more</td></tr>
<tr><td colspan="4">Chamber for short-term storage of hardwood seeds
storage temperature: 5 ^{0}C, humidity in the room: 40 %.
Room with area 24,5 sq.m.</td></tr>
<tr><td colspan="4">Refrigerating chamber</td></tr>
<tr><td>1.</td><td>Refrigerating chamber</td><td>• The refrigerating chamber should be a modular collapsible structure consisting of sandwich panels designed to maintain the temperature generated inside the chambers by refrigerating machines;
• Inside the chamber, on a permanent basis, the temperature must be: -5^{0}C and humidity: 40%;
• Range of ambient air temperature: from -30^{0}C to +40^{0}C;
• Overall dimensions of the chamber should be proposed by the supplier and ensure full maintenance of the required temperature regime;
• The internal volume of the chamber must be at least 50 cubic meters;
• The thickness of the sandwich panels must be at least 80 mm and more;
• The size, placement of sandwich panels (wall, ceiling and floor) should be calculated along the entire perimeter of the room with a recommended distance from the main wall of the room at least 20 sm.;
• The floors in the chamber should have additional stainless steel covering (if necessary);
• The chamber should be equipped with an automatic lighting and ventilation system, as well as a system for automatic regulation and control of temperature and humidity, which should be externally brought out;
• The doorway and the door of the refrigerating chamber should consist of: the doorway panel and the door itself.
The package should include:
• doorway panel;
• door with seal;</td><td>1</td></tr>
</table>

<table>
<tr><td></td><td></td><td>• a set of hinges and handles with a lock;
• ramp for swing doors.
The entrance door from the inside must be equipped with PVC curtains.</td><td></td></tr>
<tr><td colspan="4">Spllit-system</td></tr>
<tr><td>2.</td><td>Spllit-system</td><td>Refrigeration unit consisting of two separate (internal and external) units: a compressor-condensing unit and an air cooler. To maintain the set temperature inside the chamber.
• adjustable temperature regime (range): -5 °C… + 10 °C;
• supply pressure (w/f/hz): not less than 380/not less than 3/ not less than 50;
• maximum power consumption, kWt: not less than 3,2/h;
• number of fans – not less than 2;
• productivity, m^3/h: not less than 1500;
• availability of a winter kit;
• availability of a control panel;
• availability of a passport for the equipment.</td><td>2</td></tr>
<tr><td colspan="4">Collapsible production racks</td></tr>
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<tr><td>Height, mm</td><td>At least 2000</td></tr>
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<tr><td>Holders on the outside of the shelves</td><td>At least 1 on each side</td></tr>
</table>
The number and placement of racks is designed by the supplier.
There must be a passage between the racks at least 60 cm.
Holders should be provided on the outer sides of the shelves.
It is recommended to design and install a modular (mobile) shelving system to ensure the ergonomic use of the chamber space</td><td>from 10 and more</td></tr>
<tr><td colspan="4">Equipment installation, warranty and maintenance</td></tr>
<tr><td>1.</td><td>Equipment delivery and installation</td><td>1. Transportation costs to the place of delivery, taking into account the costs of customs clearance of equipment;
2. Construction and installation work: assembly of a modular system of chambers, split system and racks;
3. Commissioning works at the delivery site with 48-hour trial testing of equipment;
4. Briefing and training of 2-3 responsible employees of the breeding center;
5. Installation of information tables / equipment operating instructions for each unit on the outside</td><td>-</td></tr>
<tr><td>2.</td><td>Warranty and maintenance</td><td>Warranty for the supplied equipment:
1. For the refrigeration chamber and split-system at least 3 years;</td><td>-</td></tr>
</table>

		2. For the rack system - 1 year; 3. Maintenance of supplied equipment for 2 years; 4. The presence of service centers in Kazakhstan	

PREREQUISITES:

• Term of delivery - DDP Inco Terms 2020: Kazakhstan, Akmola region, Burabay village, 39, Kenessary str., office, RSCE "Republican Breeding and Seed Production Center" ;
• Period of delivery – 60 calendar days after signing the Purchase Order (including delivery and clearance of equipment);
• Transportation costs for the delivery of the product are included in the price, as well as the costs of customs clearance of equipment and all other related expenses;
• The product will be new, in its original packaging;
• Packaging must ensure the safety of the product during transportation;
• Fire safety compliance certificate (upon delivery);
• Warranty from the moment of delivery and transfer of the equipment for use to the final recipient at the specified address: at least 3 years for cold storage and split systems, at least 1 year for the rack system;
• Availability of service centers in Kazakhstan;
• Replacement with new equipment, if it is impossible to repair the purchased equipment in the case of a factory defect and / or defect;
• The potential supplier must indicate the country of origin and manufacturer of the equipment offered for delivery;
• The provision of the operating manual in Russian language;
• The currency of the commercial offer is tenge;
• The cost of services should include VAT, if the Supplier is a VAT payer, and other applicable indirect taxes;
• Payment terms: 100 % upon full delivery of the equipment, based on financial documents (invoice, invoice for the goods);
• Full acceptance of the General Terms and Conditions of this Terms of Reference;

EXPECTED RESULTS:

#	Description	Terms of execution	Paymnet
1	The complete delivery of all equipment, in accordance with the Technical Description of this TOR, was carried out at the specified address: Kazakhstan, Akmola region, Burabay v., 39 Kenesary str., office of the RSCE "Republican Breeding and Seed Production Center". The invoice and the invoice for the goods are presented.	60 calendar days after signing the Contract/Purchase Order (including delivery and clearance of equipment)	100 % upon full delivery of the equipment

DOCUMENTS PROVIDED BY THE SUPPLIER OF THE PRODUCT:

- A completed and signed application form with a seal on the official letterhead of the service provider in the form of Annexes No 2 and No 3, including a detailed breakdown of costs in accordance with the terms of this technical specification.
- Certificates of state registration and VAT registration
- Own written declaration confirming that the company is not on the UN Security Council List 1267/1989, the UN Procurement Division list or other disqualification lists.

SELECTION CRITERIA:
Determining the lowest price among technically qualified offers.
The purchase order will be issued to the service provider, whose offer will be evaluated and determined as:
1) Meets all the Technical requirements of this Technical Specification
2) Offering the lowest cost of services

All documents are in PDF format should be submitted by e-mail to procurement.kz@undp.org with **obligatory indicating RFQ-2020-084** "Procurement, delivery and installation of refrigeration equipment and racks to create blocks both long and short term storage of seeds of valuable tree species for RSE "Republican forest selection and center" in the subject line.

Approved:

Talgat Kerteshev
Talgat Kerteshev
project manager
Date: 12-Feb-2021

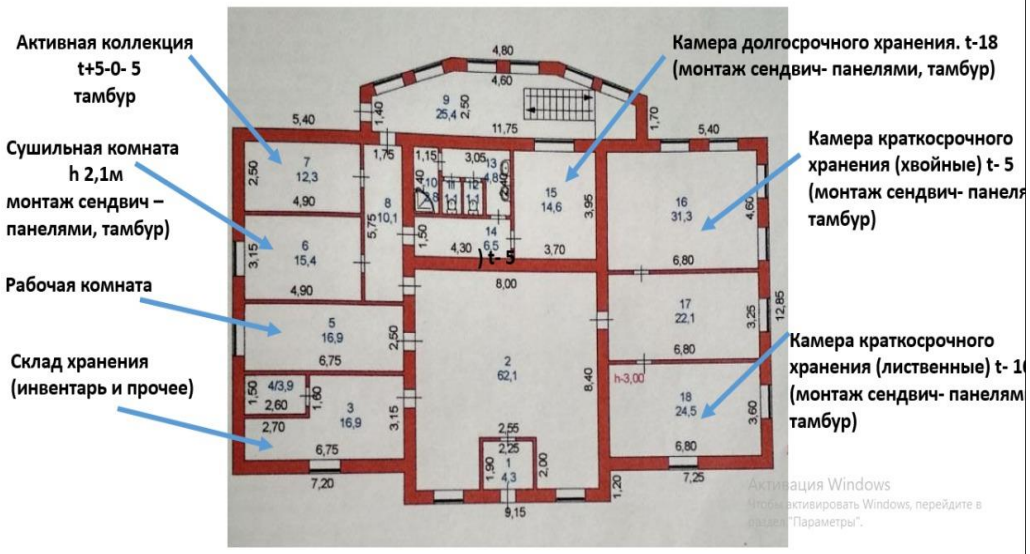
Abduvakkos Abdurahmanov
Abduvakkos Abdurahmanov
GEF portfolio manager
Date: 14-Feb-2021

ANNEX 1

The building plan for the location of bank of seeds

Active collection, t+5-0-5 tambur
Drying room H 2.1 m. Installation by sandwich-pannels, tambur
Working room
Storage (inventory and etc)

План здания для расположения банка семян (1-й этаж)



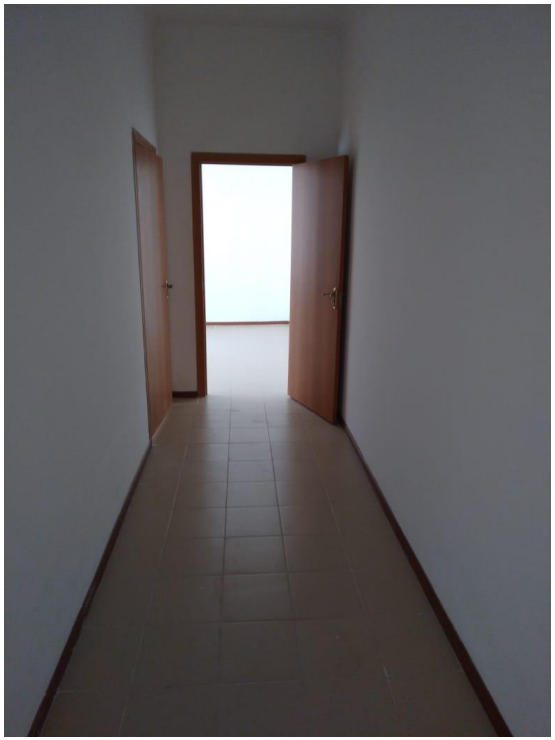
Long-term storage chamber (Installation by sandwich-pannels, tambur)
Short-term storage chamber (coniferous) t-5 (Installation by sandwich-pannels, tambur)
Short-term storage chamber (hardwood) t-10 (Installation by sandwich-pannels, tambur)

ANNEX 2

Photos of rooms

Room No. 15 for placement of a long-term storage unit for seeds, with a total area of 14.6 sq.m.

The room where it is planned equip a block of long-term seed storage



Tambur leading into the room for a block of long-term seed storage

Room No. 16 for placement of a block for short-term storage of coniferous seeds **with a total area of 31.1 sq.m.**

The room where it is planned to equip a chamber for short-term storage of coniferous seeds

Room No. 18 for placement of a chamber for short-term storage of hardwood seeds, with a total area of 24,5 sq.m.

Transitional room between room 16 and 18

The room where it is planned to equip a chamber for short-term storage of hardwood seeds