



Process Documentation

Macro Process Name: Environment and Sustainable Development

Process Name: Gardening and Plant Health

Vice-Rectorcy: Administrative

General Management: Campus Administration

Address: General Services

Area: MADS

"General Directorate of Planning and Evaluation"

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1 Change Control

The following table shows the changes made to the present document with the facility to identify the reasons and responsible parties.

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Identification:	Gardening and Plant Health	Version	2.1	Page:	5 of 42
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Change Control					
No. Edition	Description of Change			Date	
1	Creation			September, 2017	

2 Objective of the Document

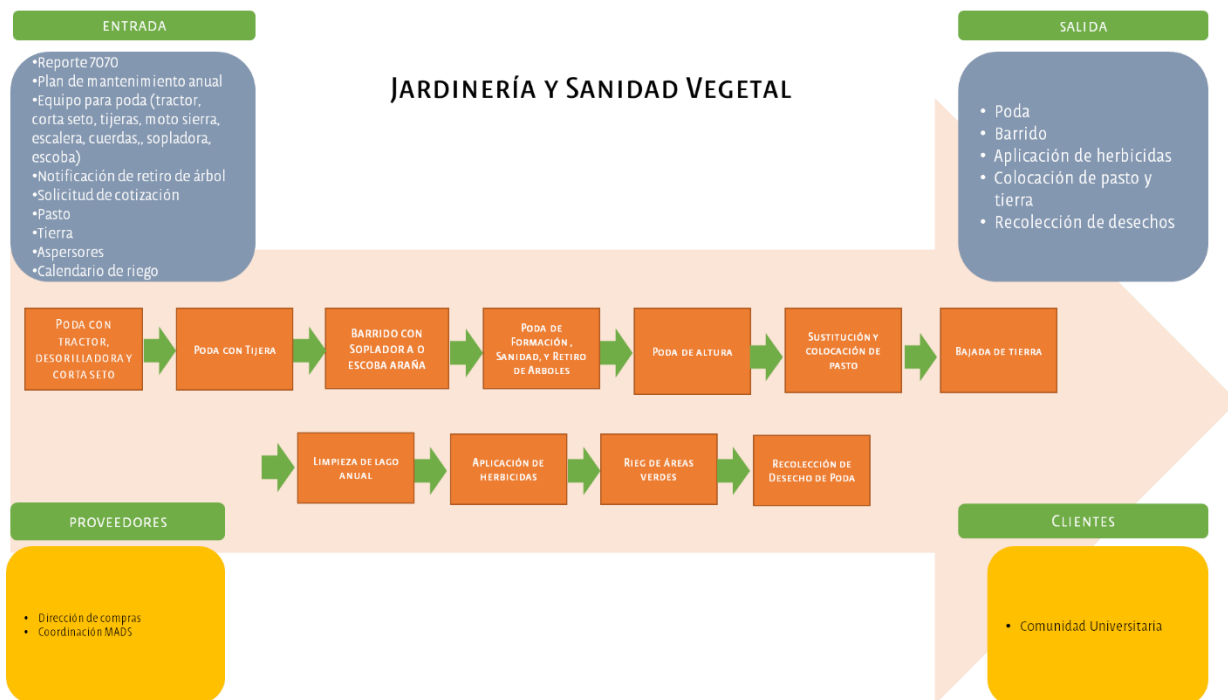
To provide a guide for the operation of the **Gardening and Plant Health** process, including its relationships with other complementary processes; as well as the mechanisms employed with the purpose of minimizing the process time and increasing the level of service.

3 Process Framework

Describe the As-Is model of the **Gardening and Plant Health** process and the sequential order of the activities or steps followed to maintain and conserve the green areas of the institution, generating a safe environment for the university community.

3.1 Process Map

Derived from the Institutional Macro Process, the following process is part of the Support Processes and contributes in a systemic manner to the Infrastructure



a) General Objective of the Process

Develop the activities of the area to generate a green campus that is functional, attractive and safe for the entire university community, with ecological responsibility and environmental commitment, to contribute to the training of professionals through recreational and leisure spaces.

b) Specific Objectives

- Execute the annual maintenance plan for green areas, for a constant improvement of the spaces.
- Design strategies to optimize resources in the different activities developed by the MADS area.

3.2 Process Scope

Perform gardening activities such as pruning, irrigation, herbicide application, sweeping, lake cleaning, etc., foreseen in the annual maintenance plan and 7070 system requests in the green areas of the Campus, Residential Zone, Ranchito La Virgen, Franciscan Library and UDLAP High School.

4 Process Description.

4.1 Subprocess "Pruning with Tractor and Ridger".

Objective of the Sub Process

Establish the steps for the pruning of grass, in the process of maintenance of green areas of the UDLAP, for the generation of attractive and recreational spaces for the university community.

Description of Roles

The following table provides the descriptions of the roles corresponding to this sub process:

Role	Description
Operator	<ul style="list-style-type: none"> • Verify equipment operation • Notify supervisor in case of failure • Check fuel and transmission oil level • Go to the area for pruning • Verify that there are no objects that could be projected or impede cutting. • Perform pruning according to guidelines • Clean pruning equipment at the end of work
MADS Supervisor	<ul style="list-style-type: none"> • Instruct operator to take replacement equipment in the event of a breakdown • Request maintenance of failed equipment
Sweeper	<ul style="list-style-type: none"> • Sweeping and mounding of pruning residues
Waste Collector	<ul style="list-style-type: none"> • Picking up mounds in jumbos and unloading in trucks • Composting waste

Integration

The following table shows the inputs and outputs, suppliers and customers corresponding to this sub process:

Consumables and Products		Users	
Entrance	Exits	Suppliers	Customers
<ul style="list-style-type: none"> ▪ Report 7070 ▪ Maintenance plan ▪ Pruning equipment 	<ul style="list-style-type: none"> ▪ Area pruning ▪ Composting of waste 	<ul style="list-style-type: none"> ▪ MADS Coordinator ▪ Waste collector 	<ul style="list-style-type: none"> ▪ University Community

Formats and tools

The following table details the formats and tools that have been referenced in the description of each of the sub-processes mentioned above.

Type of Document	Name of Document	Responsible
Tool	<ul style="list-style-type: none"> • Tractor • Hedge trimmer • Coring machine 	Gardener

Sub-process activities

The following table shows the activities of the sub process according to the administration and operation within the Institution.

Sub-process: Pruning with tractor and shearing machine		
Activity	Description	Responsible
1.	Home	Operator
2.	Verify proper operation of equipment (Tractor, brush cutter, hedge trimmer)	Operator
3.	is it working properly?	Operator
4.	Yes: Check fuel level and transmission oil level (desorilladora and hedge trimmer at a ratio of one liter of gasoline to 20 ml of two-stroke oil). Follow step 9	Operator
5.	No: Notify supervisor	Operator
6.	Is replacement equipment available?	MADS Supervisor
7.	No: Request maintenance. Follow step 8	MADS Supervisor
8.	Yes: Notify operator to take other equipment. Follow step 4	MADS Supervisor
9.	Go to the area to perform pruning (sports fields, ask security to open facilities, parking area must be closed and without cars).	Operator
10.	Verify that there are no objects that could damage the equipment, projections or structures that could impede cutting.	Operator
11.	Pruning Tractor: start cutting at one end of the area to be pruned and continue the cutting sequence until completion. De-pruning machine: start cutting at one end of the area to be pruned and continue the cutting sequence until the end. At the time of cutting, care should be taken at all times of the transit of the university community. Hedge trimming: Check maximum and minimum height, determine cutting height and hedge thickness.	Operator

Sub-process: Pruning with tractor and shearing machine		
Activity	Description	Responsible
12.	Clean pruning equipment at the end of work Tractor: cleaning tires and hoppers	Operator
13.	Sub Process: Sweeping with blower or spider broom	Gardener
14.	Collect mounds in jumbos, empty into truck and verify that all mounds have been lifted.	Waste Collector
15.	Composting waste	Waste Collector
16.	End	Waste Collector

4.2 Subprocess "Pruning with hedge trimmers and/or shears".

Objective of the Sub Process.

Establish the steps to carry out pruning, in the maintenance process of the green areas of the UDLAP, for the generation of attractive and recreational spaces for the university community.

Description of Roles

The following table provides the descriptions of the roles corresponding to this sub process:

Role	Responsibility
Gardener	<ul style="list-style-type: none"> • Check operation of scissors • Go to area for pruning • Verify that there are no objects that could be ejected. • Perform pruning depending on the area • Sweeping pruning residues • Collect pruning residues with gloves • Deposit waste at the nearest collection point.
Waste Collector	<ul style="list-style-type: none"> • Collect waste at collection point • Composting waste

Integration

The following table shows the inputs and outputs, suppliers and customers corresponding to this sub process:

Consumables and Products		Users	
Entrance	Exits	Suppliers	Customers
<ul style="list-style-type: none"> ▪ Report 7070 ▪ Maintenance plan ▪ Scissors 	<ul style="list-style-type: none"> ▪ Area pruning ▪ Composting of waste 	<ul style="list-style-type: none"> ▪ MADS Coordinator ▪ Waste collector 	<ul style="list-style-type: none"> ▪ University Community

Formats and tools

The following table shows the formats and tools that have been referenced in the description of the aforementioned sub-process.

Type of Document	Name of Document	Responsible
Tool	Pruning shears	Gardener

Sub-process activities.

The following table shows the activities of the sub process according to the administration and operation within the Institution.

Sub Process: Pruning with hedge trimmer and/or shears		
Activity	Description	Responsible
1.	Home	Gardener
2.	Verify proper functioning of scissors (blades in good condition, not bent or separated),	Gardener
3.	is it working properly?	Gardener
4.	No: Take new scissors, follow step 5.	Gardener
5.	Yes: Go to area for pruning	Gardener
6.	Verify that there are no objects that could be ejected.	Gardener
7.	Perform pruning as appropriate to the area, Hedge: check maximum and minimum height, determine cutting height and thickness Flowering pruning: removing senescent flowers Bulbaceous plants: remove the inflorescences (agapandos or pink lilies). Shaped shrubs: respect shape	Gardener
8.	Sub-process: Sweeping with a blower or spider broom	Gardener
9.	Put on gloves and pick up waste to be placed in jumbo	Gardener
10.	Deposit waste at the nearest collection point.	Gardener
11.	Removing waste at collection points	Waste Collector
12.	Composting waste	Waste Collector
13.	End	Waste Collector

4.3 Subprocess "Sweeping with Blower or Spider Broom".

Objective of the Sub Process.

Establish the steps for the sweeping of leaves and grass clippings, in the process of maintenance of green areas of the UDLAP, for the generation of attractive and recreational spaces for the university community.

Description of Roles

The following table provides the descriptions of the roles corresponding to this sub process:

Role	Responsibility
Gardener	<ul style="list-style-type: none"> Verify tool operation Notify supervisor in case of blower failure Check fuel and transmission oil level

Role	Responsibility
	<ul style="list-style-type: none"> Take broom with the teeth corresponding to the work area. Go to area for sweeping Perform sweeping Clean tool at the end of work Collect grass and leaves on assigned jumbo Ask the waste collector to pick up waste
MADS Supervisor	<ul style="list-style-type: none"> Instruct the gardener to take other equipment in case of failure. Request for maintenance of failed equipment
Waste Collector	<ul style="list-style-type: none"> Collect waste and deposit in compost

Integration

The following table shows the inputs and outputs, suppliers and customers corresponding to this sub process:

Consumables and Products		Users	
Entrance	Exits	Suppliers	Customers
<ul style="list-style-type: none"> Report 7070 Maintenance plan Blower Pruning with scissors or spider pruning shears Pruning with tractor, hedgecutter or hedge trimmer 	<ul style="list-style-type: none"> Sweeping with blower Composted waste 	<ul style="list-style-type: none"> MADS Coordinator Waste collector 	<ul style="list-style-type: none"> University Community

Formats and tools

The following table shows the formats and tools that have been referenced in the description of the aforementioned sub-process.

Type of Document	Name of Document	Responsible
Tool	Blower Spider Broom	Gardener

Sub-process activities.

The following table shows the activities of the sub process according to the administration and operation within the Institution.

Sub Process: Sweeping with Blower or Spider Broom		
Activity	Description	Responsible
1.	Home	Gardener
2.	Verify proper tool operation	Gardener

Sub Process: Sweeping with Blower or Spider Broom		
3.	Blower or broom?	
4.	Blower: is it working properly?	Gardener
5.	Yes: Check fuel and transmission oil level (ratio of one liter of gasoline to 20 ml of two-stroke oil). Follow step 13	Gardener
6.	No: Notify supervisor	Gardener
7.	Is replacement equipment available?	MADS Supervisor
8.	Yes: Notify operator to take other equipment. Follow step 5	MADS Supervisor
9.	No: Request maintenance from purchasing department. Follow step 2	MADS Supervisor
10.	Broom: Take an 11 or 22 tooth broom depending on the area (22 teeth for large, open areas, 11 teeth for landscaped or hedged areas).	Gardener
11.	is it working properly?	Gardener
12.	No: Take new broom. Follow step 13	Gardener
13.	Yes: Go to the sweeping area,	Gardener
14.	Sweep in several piles, start sweeping from one end and continue with the sequence until the end, taking care at all times of the transit.	Gardener
15.	Clean tool at the end of work	Gardener
16.	Collect grass and leaves on assigned jumbo	Gardener
17.	Ask the waste collector to pick up waste	Gardener
18.	Collect waste and Composting	Gardener
19.	End	Waste Collector

4.4 Subprocess "Pruning, Health and Removal of Trees".

Objective of the Sub Process.

Establish the steps for the pruning of trees, in the process of maintenance of green areas of the UDLAP, for the generation of attractive and safe spaces for the university community.

Description of Roles

The following table provides the descriptions of the roles corresponding to this sub process:

Role	Responsibility
MADS Coordinator/MADS Supervisor	<ul style="list-style-type: none"> Notify tree removal
MADS Supervisor	<ul style="list-style-type: none"> Notify gardener of scheduled activity Indicate the tool to be used according to the procedure to be followed Indicate number of branches to intervene or tree to remove Notify civil protection of ladder use If the tool fails, indicate replacement tool Request maintenance of failed tool
Climber-Podder	<ul style="list-style-type: none"> Choosing the right chainsaw or hedge cutter

Role	Responsibility
	<ul style="list-style-type: none"> Verify operation Notify supervisor in case of tool failure Check that the chain is in good condition and with sharp teeth. Verify that the tool has fuel and oil In case of chain in bad condition replace or sharpen with file Go to the work area and cordon off according to civil protection indications. If ladder use is required, safety equipment must be worn. Set up ladder if required Perform cutting/pruning according to procedure
Supervisor/Trepador-Podador	<ul style="list-style-type: none"> Notifying civil protection of work to be carried out
Civil Protection	<ul style="list-style-type: none"> Verify that permits and adequate safety equipment are in place.
MADS Coordinator	<ul style="list-style-type: none"> Manage permits in case you do not have them for the work to be carried out
Pruner	<ul style="list-style-type: none"> Provide support for waste removal Waste removal

Integration

The following table shows the inputs and outputs, suppliers and customers corresponding to this sub process:

Consumables and Products		Users	
Entrance	Exits	Suppliers	Customers
<ul style="list-style-type: none"> Annual maintenance plan Notification of tree removal Report 7070 	<ul style="list-style-type: none"> Tree removal Training and health pruning Waste removal 	<ul style="list-style-type: none"> Civil Protection Directorate MADS Coordination 	<ul style="list-style-type: none"> University Community

Formats and tools

The following table shows the formats and tools that have been referenced in the description of the aforementioned sub-process.

Type of Document	Name of Document	Responsible
Format	Permit for work at height	MADS Coordinator
Tool	<ul style="list-style-type: none"> Motor saw Hedge trimmer Ladder 	Nuthatch-pruner

Sub-process activities.

The following table shows the activities of the sub process according to the administration and operation within the Institution.

Sub Process: Formative Pruning, Tree Health and Tree Removal		
Activity	Description	Responsible
1.	Home	MADS Coordinator/MADS Supervisor
2.	Notify tree removal (eventuality)	MADS Coordinator/MADS Supervisor
3.	Notify scheduled activity one day in advance (Annual Maintenance Plan)	MADS Supervisor
4.	Indicate the tool to be used according to the procedure to be followed Small chainsaws for small trees and large chainsaws for thick trunks.	MADS Supervisor
5.	Indicate number of branches to intervene and lower or tree to be removed	MADS Supervisor
6.	Choosing the right chainsaw or hedgecutter for the job	Climber-Podder
7.	Check operation	Climber-Podder
8.	is it working properly?	Climber-Podder
9.	Yes: Check that the chain is in good condition and with sharp teeth. Follow step 14	Climber-Podder
10.	No: Notify supervisor.	Climber-Podder
11.	Is replacement equipment available?	MADS Supervisor
12.	No: Request maintenance from purchasing department. Follow step 13	MADS Supervisor
13.	Yes: Notify operator to take other equipment of equal or larger size.	MADS Supervisor
14.	chain in good condition?	Climber-Podder
15.	No: Replace chain or sharpen with triangular file Follow step 16	Climber-Podder
16.	Yes: Check fuel and oil (ratio of 1 liter of gasoline to 20 ml of two-stroke oil).	Climber-Podder
17.	Go to the work area	Climber-Podder
18.	Notifying civil protection of work to be carried out	Supervisor/Trepador-Podador
19.	Cordon off area according to pc's indications	Climber-Podder
20.	Is the use of a ladder required?	Climber-Podder
21.	Yes: Notify civil protection (height permit). Follow step 23	MADS Supervisor
22.	No: Follow step 28	Climber-Podder
23.	Verify that you have a height permit and adequate safety equipment.	Civil Protection
24.	Do you have a work permit?	Civil Protection
25.	No: Manage permits (height permit). Follow step 23	MADS Coordinator
26.	Yes: Put on safety equipment (helmet, ear protection, transparent glasses, leather gloves, safety bandolier, ropes and boots).	Climber-Podder
27.	Laying of stairs	Climber-Podder
28.	Perform cutting/pruning according to the decided procedure Tree removal: If the tree is taller than 5 meters and close to infrastructure, it will be topped and then the trunk will be removed; if it is smaller and without infrastructure nearby, it will be completely	Climber-Podder

Sub Process: Formative Pruning, Tree Health and Tree Removal		
Activity	Description	Responsible
	felled. If it is over 5 meters and without infrastructure nearby or trees that can be damaged, the tree is fell in free fall. Training: maintain the form that has been managed so that they do not lose it. Sanitation: removed dead branches, pest-infected branches, broken branches	
29.	Provide support (pass tools, move and secure ladder) and remove cutting/pruning debris	Pruner
30.	Branches with disease or infestation?	Pruner
31.	Yes: Handle waste as garbage. Follow step 33	Pruner
32.	No: Remove branch and take to nearest point of re-pruning once pruning is complete. Follow step 33	Pruner
33.	End	Pruner

4.5 Subprocess "Height Pruning" Subprocess "Height Pruning" Subprocess "Height Pruning

Objective of the Sub Process.

Establish the steps for the pruning of trees, in the process of maintenance of green areas of the UDLAP, for the generation of attractive and safe spaces for the university community.

Description of Roles

The following table provides the descriptions of the roles corresponding to this sub process:

Role	Responsibility
Security/Civil Protection	<ul style="list-style-type: none"> Request tree pruning
MADS Supervisor	<ul style="list-style-type: none"> Identify and schedule high pruning Notify personnel of activity to be performed Indicate the tool to be used according to the procedure to be followed If tool fails, indicate replacement tool Request maintenance of failed tool Notify civil protection of activity
Climber-Podder	<ul style="list-style-type: none"> Choosing the right chainsaw or hedge trimmer Verify operation Notify supervisor in case of tool failure Check that the chain is in good condition and with sharp teeth. Verify that the tool has fuel and oil In case of chain in bad condition replace or sharpen with file Go to the work area and cordon off according to civil protection indications. put on safety equipment Perform cutting/pruning according to procedure Tree climbing with harness and lifeline

Role	Responsibility
	<ul style="list-style-type: none"> Removing branches
Civil Protection	<ul style="list-style-type: none"> Verify that permits and adequate safety equipment are in place.
MADS Coordinator	<ul style="list-style-type: none"> Manage permits in case you do not have them for the work to be carried out
Pruner	<ul style="list-style-type: none"> Provide support for waste removal Removal of waste

Integration

The following table shows the inputs and outputs, suppliers and customers corresponding to this sub process:

Consumables and Products		Users	
Entrance	Exits	Suppliers	Customers
<ul style="list-style-type: none"> Pruning request Pruning identification Annual maintenance plan Report 7070 	<ul style="list-style-type: none"> Removal of branches Waste removal 	<ul style="list-style-type: none"> Civil Protection Directorate MADS Coordination 	<ul style="list-style-type: none"> University Community

Formats and tools

The following table shows the formats and tools that have been referenced in the description of the aforementioned sub-process.

Type of Document	Name of Document	Responsible
Format	<ul style="list-style-type: none"> Permit for work at height 	MADS Coordinator
Tool	<ul style="list-style-type: none"> Motor saw Hedge trimmer Harness and lifeline 	Nuthatch-pruner

Sub-process activities.

The following table shows the activities of the sub process according to the administration and operation within the Institution.

Sub Process: Height Pruning		
Activity	Description	Responsible
1.	Home	Security/Civil Protection
2.	Notify tree removal	Security/Civil Protection
3.	Identify and schedule high pruning	MADS Supervisor
4.	Notify activity to be performed	MADS Supervisor

Sub Process: Height Pruning		
5.	Indicate the tool to be used according to the procedure to be followed	MADS Supervisor
6.	Choosing the right chainsaw or hedgecutter for the job	Climber-Podder
7.	Check operation	Climber-Podder
8.	is it working properly?	Climber-Podder
9.	Yes: Check that the chain is in good condition and with sharp teeth. Follow step 14	Climber-Podder
10.	No: Notify supervisor.	Climber-Podder
11.	Is replacement equipment available?	MADS Supervisor
12.	No: Request maintenance from purchasing department. Follow step 13	MADS Supervisor
13.	Yes: Notify operator to take other equipment of equal or larger size.	MADS Supervisor
14.	chain in good condition?	Climber-Podder
15.	No: Replace chain or sharpen with triangular file Follow step 16	Climber-Podder
16.	Yes: Verify fuel and oil availability	Climber-Podder
17.	Go to the work area	Climber-Podder
18.	Cordon off area	Climber-Podder
19.	Notifying civil protection of work to be carried out (height permit).	Supervisor/Trepador-Podador
20.	Verify that the company has the proper permit and safety equipment.	Civil Protection
21.	Do you have a work permit?	Civil Protection
22.	No: Manage permissions (altru permission). Follow step 20	MADS Coordinator
23.	Yes: Install safety equipment	Climber-Podder
24.	Tree climbing with harness and lifeline	Climber-Podder
25.	Remove branches that exceed the height of the lightning rod.	Climber-Podder
26.	Providing support and removing cutting/pruning residues	Pruner
27.	Branches with disease or infestation?	Pruner
28.	Yes: Wait for truck and load waste. Follow step 33	Pruner
29.	No: Remove branch and take to nearest point of re-pruning once pruning is complete. Follow step 33	Pruner
30.	End	Pruner

4.6 Sub-process "Substitution and Laying of Grass".

Objective of the Sub Process.

Establish the steps for the replacement and placement of grass, in the process of maintenance of green areas of the UDLAP, for the generation of attractive and recreational spaces for the university community.

Description of Roles

The following table provides the descriptions of the roles corresponding to this sub process:

Role	Responsibility
MADS Coordinator	<ul style="list-style-type: none"> Verify events requiring grass Take steps to order grass Request harvester logistics for grass removal in case the area is sodded.

Role	Responsibility
	<ul style="list-style-type: none"> Request grass needed Coordinate delivery with supplier Reject grass if it does not meet specifications.
Purchasing Management	<ul style="list-style-type: none"> Acquire pasture and harvester logistics
Suppliers	<ul style="list-style-type: none"> Removing grass with combine harvester logistics Delivery of requested grass
Gardener	<ul style="list-style-type: none"> Laying grass with up to 100% coverage Watering grass at the end of placement Leave a clean area

Integration

The following table shows the inputs and outputs, suppliers and customers corresponding to this sub process:

Consumables and Products		Users	
Entrance	Exits	Suppliers	Customers
<ul style="list-style-type: none"> Maintenance scheduling calendar for sports fields Area measurements Request for quotation Annual maintenance plan 	<ul style="list-style-type: none"> Laying of grass 	<ul style="list-style-type: none"> External suppliers MADS Coordination 	<ul style="list-style-type: none"> University Community

Formats and tools

The following table shows the formats and tools that have been referenced in the description of the aforementioned sub-process.

Type of Document	Name of Document	Responsible
Format	<ul style="list-style-type: none"> Request for quotation 	MADS Coordinator
Tool		

Sub-process activities.

The following table shows the activities of the sub process according to the administration and operation within the Institution.

Sub-process: Grass Replacement and Laying		
Activity	Description	Responsible
1.	Home	MADS Coordinator
2.	Verify important events and maintenance schedule	MADS Coordinator
3.	Take measurements to area to request necessary grasses	MADS Coordinator
4.	Filled area?	MADS Coordinator
5.	Yes: Request harvester logistics. Follow step 7	MADS Coordinator
6.	No: Follow step 9	MADS Coordinator
7.	Sub-process: Procurement of Goods and Services	Purchasing Management

Sub-process: Grass Replacement and Laying		
Activity	Description	Responsible
8.	Removing grass with combine harvester logistics	Suppliers
9.	Request grass needed	MADS Coordinator
10.	Sub-process: Procurement of Goods and Services	Purchasing Management
11.	Coordinate delivery with supplier	MADS Coordinator
12.	Deliver required grass	Suppliers
13.	Does it meet specifications (freshly cut, fresh and rolls do not fall apart until placement)?	MADS Coordinator
14.	No: Reject grass. Follow step 12	MADS Coordinator
15.	Yes: Place grass until 100% coverage is completed (same day of delivery).	Gardener
16.	Water the grass once the placement is finished, this activity depends on the climate, and avoid stressing the grass, in high temperatures water twice a day for at least three days after establishment.	Gardener
17.	Check the area and leave clean without grass or soil residues.	Gardener
18.	End	Gardener

4.7 Sub-process "Land Descent".

Objective of the Sub Process.

Establish the steps for the realization of the lowering of land, in the process of maintenance of green areas of the UDLAP, for the generation of attractive and recreational spaces for the university community.

Description of Roles

The following table provides the descriptions of the roles corresponding to this sub process:

Role	Responsibility
Gardener	<ul style="list-style-type: none"> Verify programming and areas to be intervened Take measurements of the area and request for land slats Coordinate delivery with supplier Reject soil if it does not meet specifications
Purchasing Management	<ul style="list-style-type: none"> Acquiring lama land
Suppliers	<ul style="list-style-type: none"> Deliver land with required specifications
Gardener	<ul style="list-style-type: none"> Incorporate land into specified areas Distribution with wheelbarrow, shovel, rake, etc. Irrigation to incorporate new soil

Integration

The following table shows the inputs and outputs, suppliers and customers corresponding to this sub process:

Consumables and Products		Users	
Entrance	Exits	Suppliers	Customers
<ul style="list-style-type: none"> Land quotation request Annual maintenance plan 	<ul style="list-style-type: none"> Incorporation of land 	<ul style="list-style-type: none"> External supplier MADS Coordination 	<ul style="list-style-type: none"> University Community

Formats and tools

The following table shows the formats and tools that have been referenced in the description of the aforementioned sub-process.

Type of Document	Name of Document	Responsible
Format	<ul style="list-style-type: none"> Request for quotation 	MADS Coordinator
Tool	<ul style="list-style-type: none"> Maintenance plan 	MADS Coordinator
	<ul style="list-style-type: none"> Wheelbarrow, shovel, rake 	Gardener

Sub-process activities.

The following table shows the activities of the sub process according to the administration and operation within the Institution.

Sub Process: Land Descent		
Activity	Description	Responsible
1.	Home	MADS Coordinator
2.	Verify programming and areas to be intervened	MADS Coordinator
3.	Take measurements of the area and request land slats	MADS Coordinator
4.	Sub Process: Procurement of Goods and Services	Purchasing Management
5.	Coordinate delivery with supplier	MADS Coordinator
6.	Deliver soil with the required specifications	Suppliers
7.	Does it meet specifications (no salt or litter, no stones, free of eggs or adult individuals of blind hens, sifted)?	MADS Coordinator
8.	No: Reject soil. Follow step 6	MADS Coordinator
9.	Yes: Incorporate soil into the specified area as it is delivered, deposit a thin layer of soil on the entire surface of the filled area to be worked. In sports fields, wait until the soil is complete.	Gardener
10.	Soil distribution with wheelbarrow, shovel and rake.	Gardener
11.	Start irrigation to incorporate new soil	Gardener
12.	End	Gardener

4.8 Subprocess "Annual Lake Cleanup" Subprocess "Annual Lake Cleanup" Subprocess "Annual Lake Cleanup"

Objective of the Sub Process.

Establish the steps for the annual cleaning of the lake, in the process of maintenance of the UDLAP lake, for the generation of an attractive and recreational space for the university community.

Description of Roles

The following table provides the descriptions of the roles corresponding to this sub process:

Role	Responsibility
MADS Coordinator	<ul style="list-style-type: none"> Request support from the hydraulic area Notify hydraulic area for lake filling
Hydraulics maintenance coordination	<ul style="list-style-type: none"> Install submersible pumps Withdraw water from lake Fill lake
Gardening Staff	<ul style="list-style-type: none"> Put on safety equipment Enter the lake and remove algae Loading algae into truck and transferring to composting plant

Integration

The following table shows the inputs and outputs, suppliers and customers corresponding to this sub process:

Supplies and Products		Users	
Entrance	Exits	Suppliers	Customers
<ul style="list-style-type: none"> Annual maintenance plan 	<ul style="list-style-type: none"> Lake algae removal 	<ul style="list-style-type: none"> Hydraulic maintenance coordination 	<ul style="list-style-type: none"> University Community

Formats and tools

The following table shows the formats and tools that have been referenced in the description of the sub-process.

Type of Document	Name of Document	Responsible
Tool	<ul style="list-style-type: none"> Annual maintenance plan 	MADS Coordinator

Sub-process activities.

The following table shows the activities of the sub process according to the administration and operation within the Institution.

Sub Process: Annual Lake Cleanup		
Activity	Description	Responsible
1.	Home	MADS Coordinator
2.	Request support from the hydraulic area	MADS Coordinator
3.	Install submersible pumps	Hydraulics maintenance coordination
4.	withdraw lake water up to 90% of the total water two days prior to graduation day	Hydraulics maintenance coordination
5.	Put on safety equipment (boots, pants, overalls and gloves).	Gardening Staff
6.	Enter the lake and roll seaweed on itself.	Gardening Staff
7.	Remove the cut seaweed from the lake.	Gardening Staff
8.	Turn 360° to remove all algae from the lake.	Gardening Staff
9.	Loading seaweed into truck and transferring to composting area	Gardening Staff
10.	Notify hydraulics area to fill the lake	MADS Coordinator
11.	Fill lake to 90% capacity	Hydraulics maintenance coordination
12.	End	Hydraulics maintenance coordination

4.9 Subprocess "Herbicide Application".

Objective of the Sub Process.

Establish the steps for the application of herbicides to control weeds in infrastructure areas and thus generate an attractive and clean environment for the community

Description of Roles

The following table provides the descriptions of the roles corresponding to this sub process:

Role	Responsibility
MADS Supervisor	<ul style="list-style-type: none"> Identify weeds in areas Designate personnel, indicate time and dosage to apply
Gardening Personnel	<ul style="list-style-type: none"> Check sprayer fuel level Prepare solution according to instructions for use Fill sprayer with mixture Spot application or application over the entire surface

Integration

The following table shows the inputs and outputs, suppliers and customers corresponding to this sub process:

Consumables and Products		Users	
Entrance	Exits	Suppliers	Customers
Weeds in a grassy area or infrastructure area	<ul style="list-style-type: none"> Herbicide application 	<ul style="list-style-type: none"> MADS Coordination 	<ul style="list-style-type: none"> UDALP Community

Formats and tools

The following table shows the formats and tools that have been referenced in the description of the sub-process.

Type of Document	Name of Document	Responsible
Tool	• Instructions for product use	MADS Supervisor
	• Sprinkler	Gardener

Sub-process activities.

The following table shows the activities of the sub process according to the administration and operation within the Institution.

Sub Process: Herbicide Application		
Activity	Description	Responsible
1.	Home	MADS Supervisor
2.	Identify weeds in a grassed or infrastructure area.	Gardener
3.	Designate personnel for activity and indicate time and dose to be applied.	Gardener
4.	Take sprayer, check operation and fuel levels	Gardener
5.	Prepare solution to be applied according to dosage instructions given	Gardener
6.	Fill sprayer with mixture	Gardener
7.	Weeds in infrastructure or broadleaf?	Gardener
8.	Infrastructure: Make punctual application where weeds are present, in order not to affect the grass in nearby landscaped areas. Follow step 10	Gardener
9.	Broadleaf: Apply covering the entire surface indicated, it is intended to spray the entire surface. Follow step 10	Gardener
10.	Is further mixing required?	Gardener
11.	Yes: Follow Step 5	Gardener
12.	No: Wash sprinkler and place in designated location.	Gardener
13.	End	Gardener

4.10 Subprocess "Irrigation of Green Areas".

Objective of the Sub Process.

Establish steps for the irrigation of green areas, in order to generate attractive and recreational spaces for the university community.

Description of Roles

The following table provides the descriptions of the roles corresponding to this sub process:

Role	Responsibility
MADS Coordinator/Hydraulic Maintenance Coordinator	<ul style="list-style-type: none"> Establish irrigation schedule
Gardening Staff	<ul style="list-style-type: none"> Transfer hose and make corresponding connections Post wet floor sign Start irrigation according to purpose Remove and protect the hose at the end of irrigation. Requesting water supply for irrigation with pipelines Placing pipe in sprinklers Disassemble piping network and protect at the end of irrigation.
Hydraulics maintenance coordination	<ul style="list-style-type: none"> Reschedule outlet supply for pipe connection in case of inability to carry out activity Check the irrigation line and re-establish pressure in case of low pressure. Close supply valve at end of irrigation
MADS Supervisor	<ul style="list-style-type: none"> Schedule pipe changes Check pressure during irrigation Report low pressure Notify end of irrigation

Integration

The following table shows the inputs and outputs, suppliers and customers corresponding to this sub process:

Consumables and Products		Users	
Entrance	Exits	Suppliers	Customers
<ul style="list-style-type: none"> Irrigation calendar 	<ul style="list-style-type: none"> Hose or pipe irrigation 	<ul style="list-style-type: none"> Hydraulic maintenance coordination 	<ul style="list-style-type: none"> University Community

Formats and tools

The following table shows the formats and tools that have been referenced in the description of the aforementioned sub-process.

Type of Document	Name of Document	Responsible
Format	<ul style="list-style-type: none"> NA 	
Tool	<ul style="list-style-type: none"> NA 	

Sub-process activities.

The following table shows the activities of the sub process according to the administration and operation within the Institution.



Sub Process: Scissor Pruning		
Activity	Description	Responsible
1.	Home	MADS Coordinator/Hydraulic Maintenance Coordinator
2.	Establish an irrigation schedule to maintain the campus landscaped and grassed areas in good condition.	MADS Coordinator/Hydraulic Maintenance Coordinator
3.	hose or pipe irrigation?	Gardening Personnel
4.	Hose: Move hose and place in nearest nose wrench (small, landscaped areas). Follow step 6	Gardening Personnel
5.	Piping: Request to the hydraulic area for supply at the required exit (couple's garden, plaza banderas or sports fields). Follow step 9	Gardening Personnel
6.	Post caution sign and wet floor if required.	Gardening Personnel
7.	Start area irrigation depending on the purpose (maintenance is given a light irrigation every day or fertilizer is given an abundant irrigation to lower fertilizer).	Gardening Personnel
8.	At the end of the irrigation, remove hose and move to a safe space. Follow step 21	Gardening Staff
9.	Do you accept application?	Hydraulics maintenance coordination
10.	No: reschedule activity. Follow step 5	Hydraulics maintenance coordination
11.	Yes: Schedule pipe change	MADS Supervisor
12.	Lay pipe with sprinklers 30 minutes before irrigation.	Gardening Staff
13.	Check pressure during irrigation	MADS Supervisor
14.	Low irrigation pressure?	MADS Supervisor
15.	Yes: Report low pressure. Follow step 17	MADS Supervisor
16.	No: Follow step 18	MADS Supervisor
17.	Check the irrigation line and re-establish pressure.	Hydraulics maintenance coordination
18.	Notify end of irrigation	MADS Supervisor
19.	Close intake supply valves	Hydraulics maintenance coordination
20.	Disassemble piping network and place in a designated space for safekeeping.	Gardening Staff
21.	End	Gardening Staff

4.11 Subprocess "Pruning Waste Collection".

Objective of the Sub Process.

Establish steps for the replacement and placement of grass, to generate attractive and recreational spaces for the university community.

Description of Roles

The following table provides the descriptions of the roles corresponding to this sub process:

Role	Responsibility
Gardening Staff	<ul style="list-style-type: none"> Record conditions in which the truck is taken Fill the gas tank if you do not have Move truck to first collection point Install safety equipment Arranging branches by size in pickup trucks Removing waste with the help of buckets and cans Transfer of composted waste Park the truck in the assigned place at the end of the collection period.

Integration

The following table shows the inputs and outputs, suppliers and customers corresponding to this sub process:

Consumables and Products		Users	
Entrance	Exits	Suppliers	Customers
<ul style="list-style-type: none"> Gardening Process 	<ul style="list-style-type: none"> Composting waste 	<ul style="list-style-type: none"> MADS Coordination 	<ul style="list-style-type: none"> University Community

Formats and tools

The following table shows the formats and tools that have been referenced in the description of the sub-process.

Type of Document	Name of Document	Responsible
Format	<ul style="list-style-type: none"> NA 	
Tool	<ul style="list-style-type: none"> NA 	

Sub-process activities.

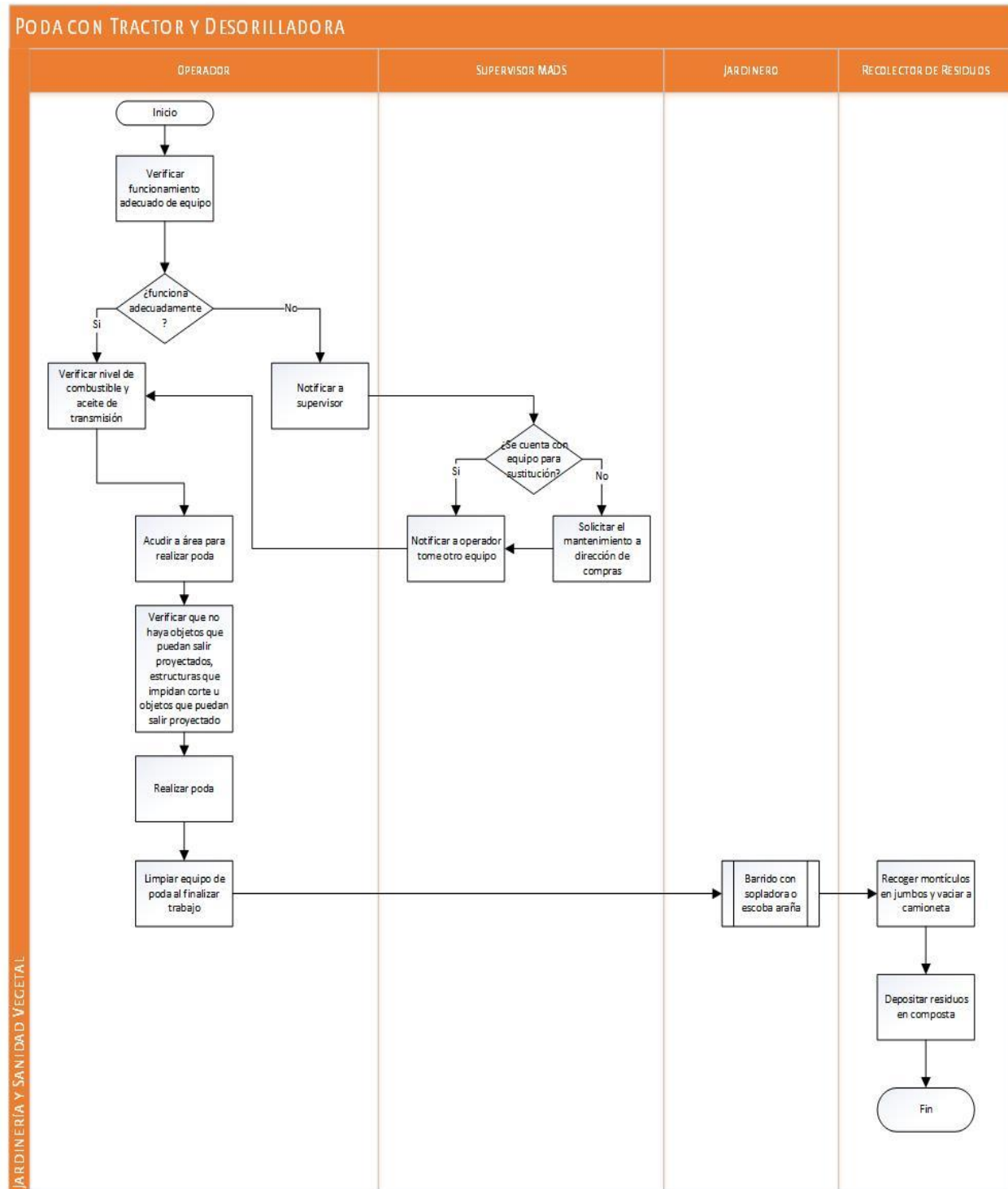
The following table shows the activities of the sub process according to the administration and operation within the Institution.

Sub Process: Pruning Waste Collection		
Activity	Description	Responsible
1.	Home	Gardening Staff
2.	You register the conditions in which the assigned truck is taken	Gardening Staff
3.	Tank has ¼ tank?	Gardening Staff
4.	No: Fill tank Follow step 5	Gardening Staff
5.	Yes: Move truck to first point for pick-up according to indications.	Gardening Staff
6.	Install safety equipment	Gardening Staff
7.	Branch waste?	Gardening Staff
8.	Yes: Arrange branches by size in assigned truck. Follow step 11	Gardening Staff

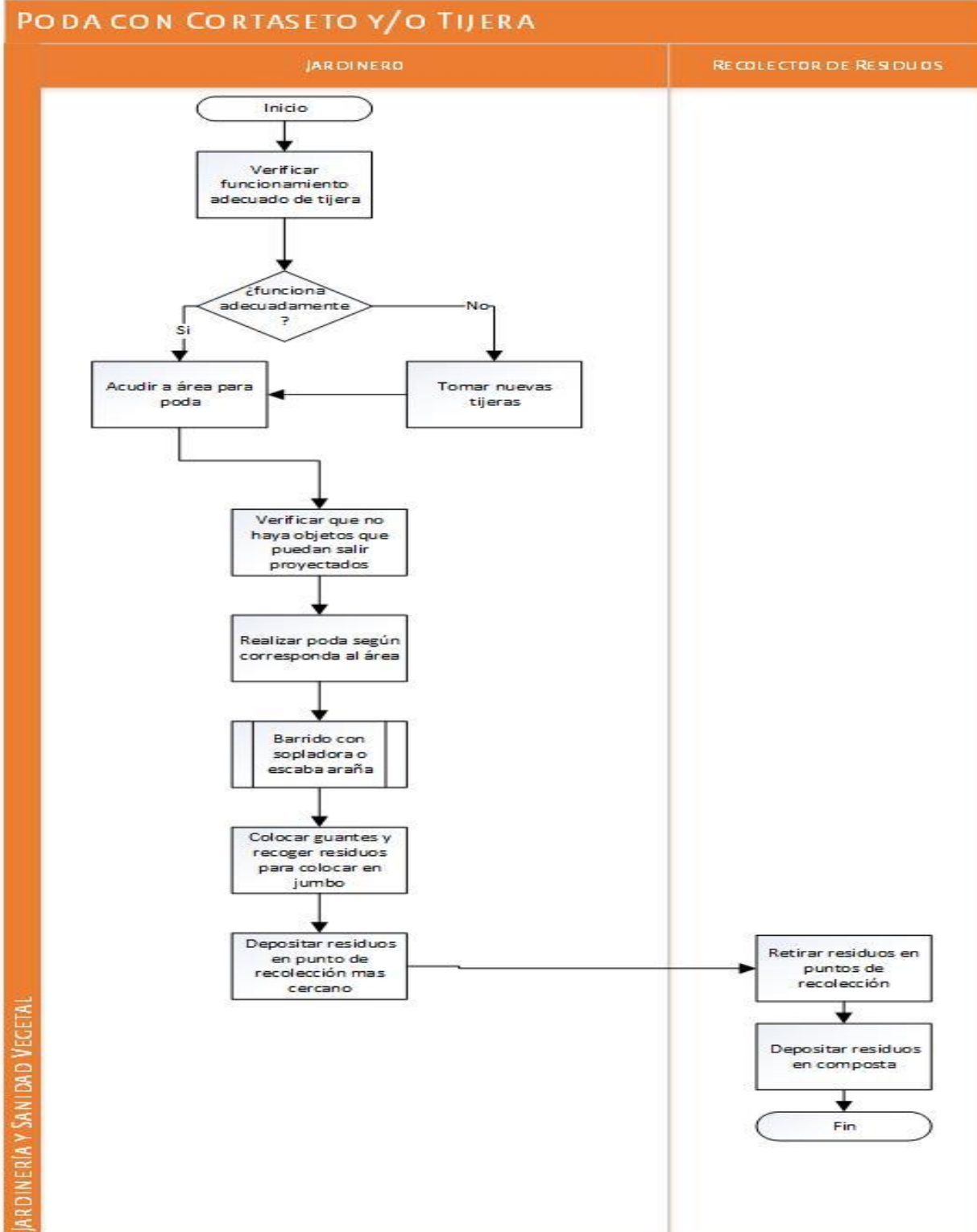
Sub Process: Pruning Waste Collection		
Activity	Description	Responsible
9.	No: Remove debris (grass/leaves) with the help of a bucket and jumbo cans.	Gardening Staff
10.	Emptying waste into a pickup truck	Gardening Staff
11.	Transfer waste to composting area	Gardening Staff
12.	Park the truck in the assigned place at the end of the collection period.	Gardening Staff
13.	End	Gardening Staff

5 Process Flow Diagrams and Sub-Process Flow Diagrams

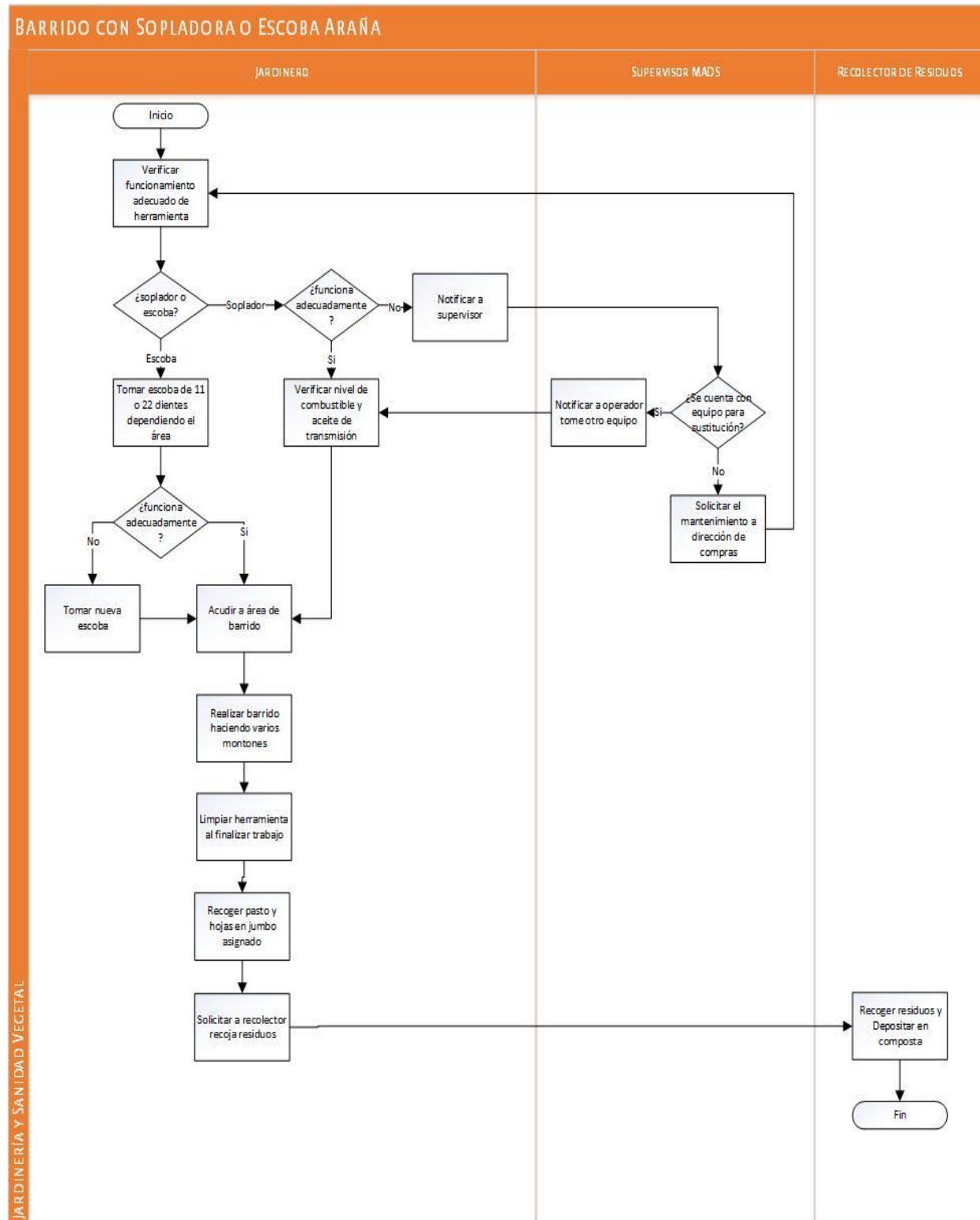
Pruning with Tractor and Ridger



Pruning with pruning shears and/or scissors

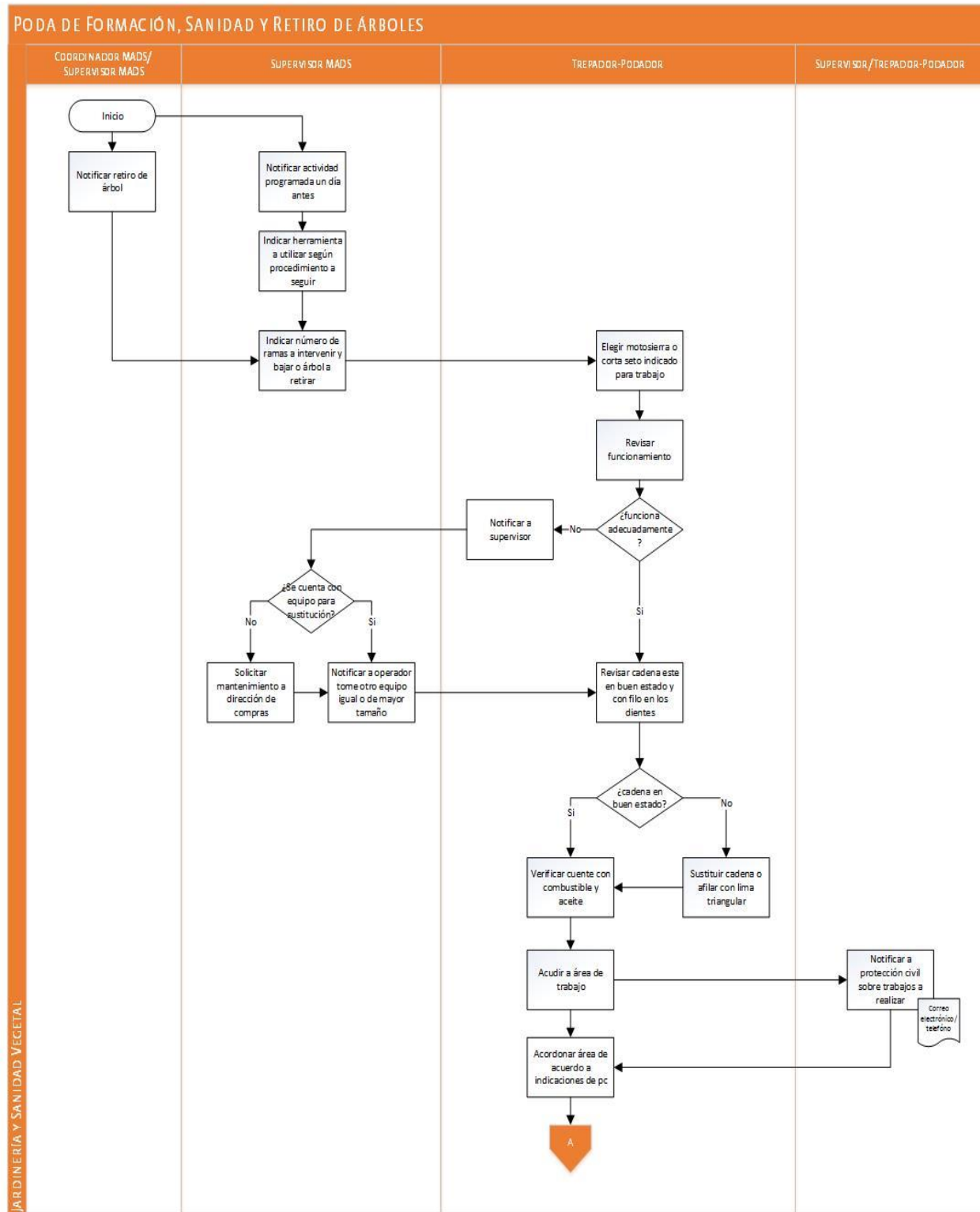


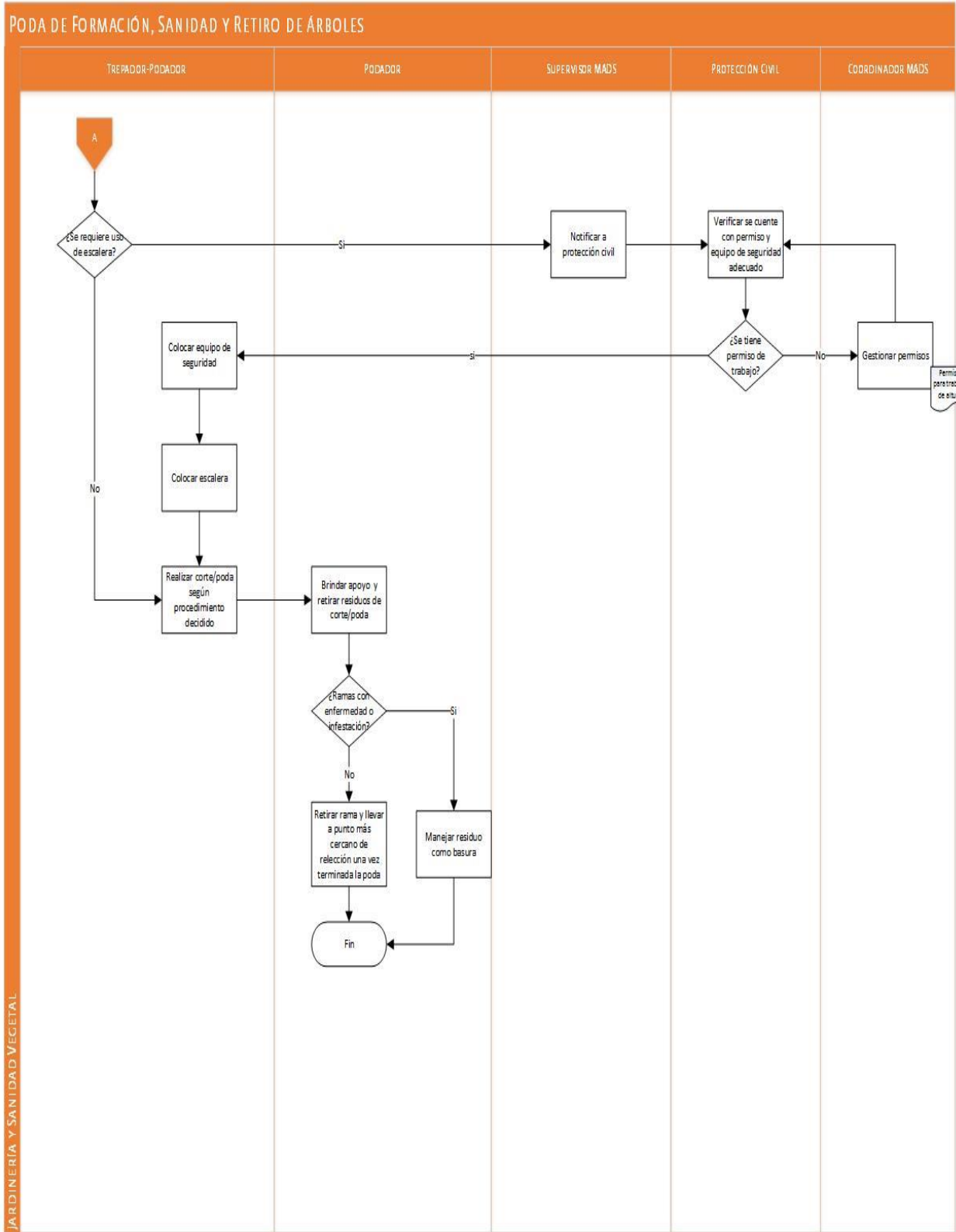
Blower or Spider Broom Sweeping



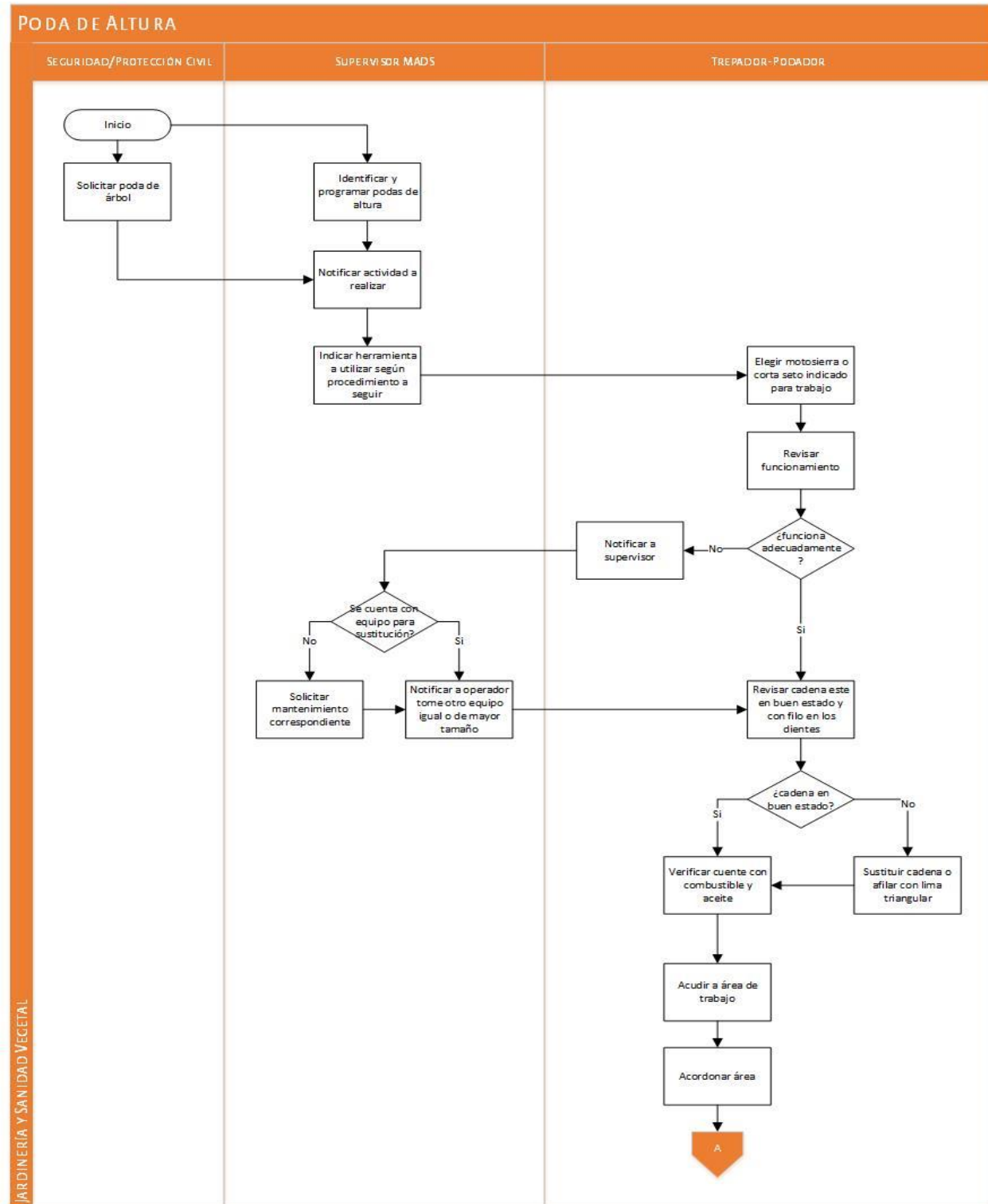
JARDINERÍA Y SANIDAD VEGETAL

Formative Pruning, Tree Health and Removal of Trees

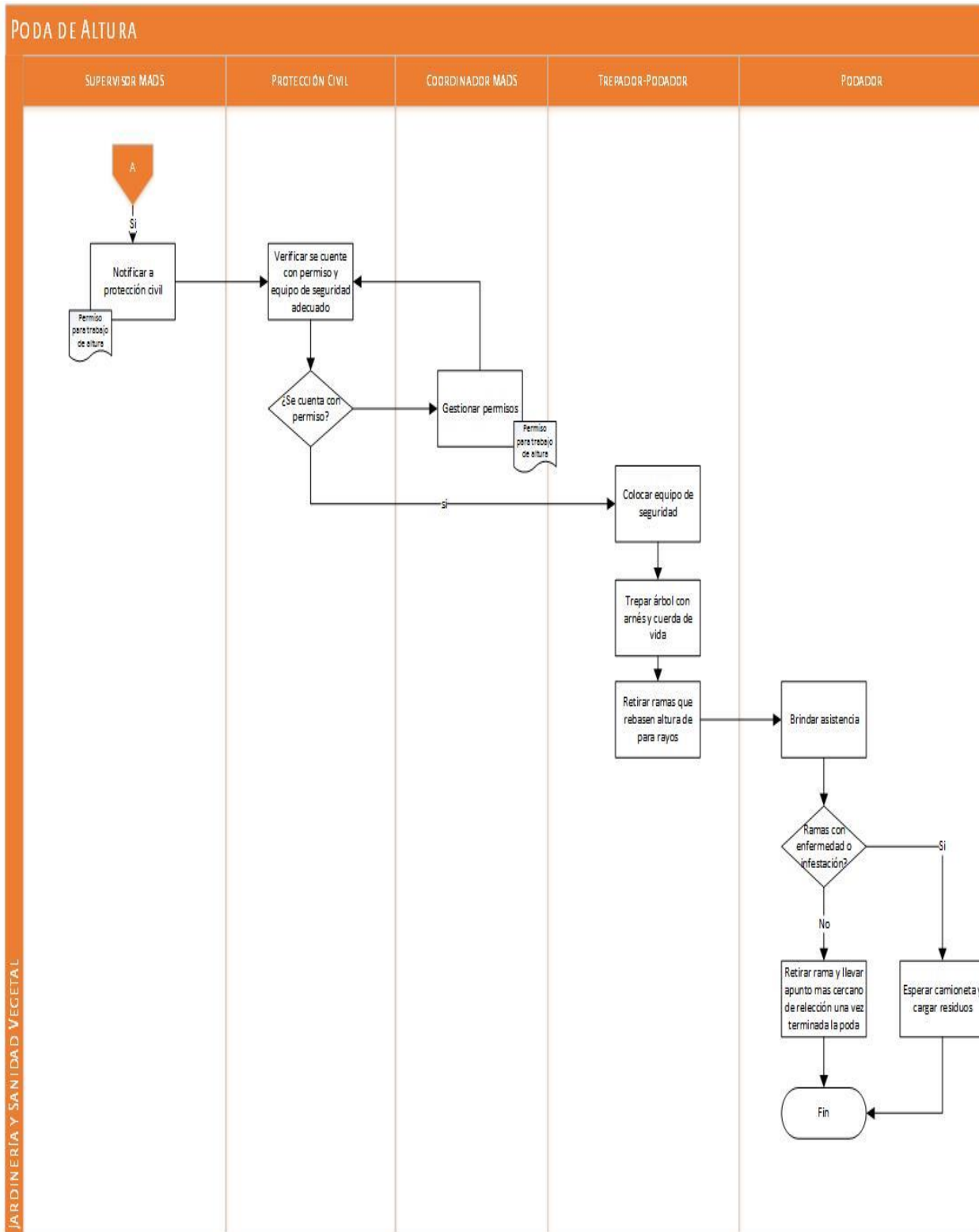




Height Pruning

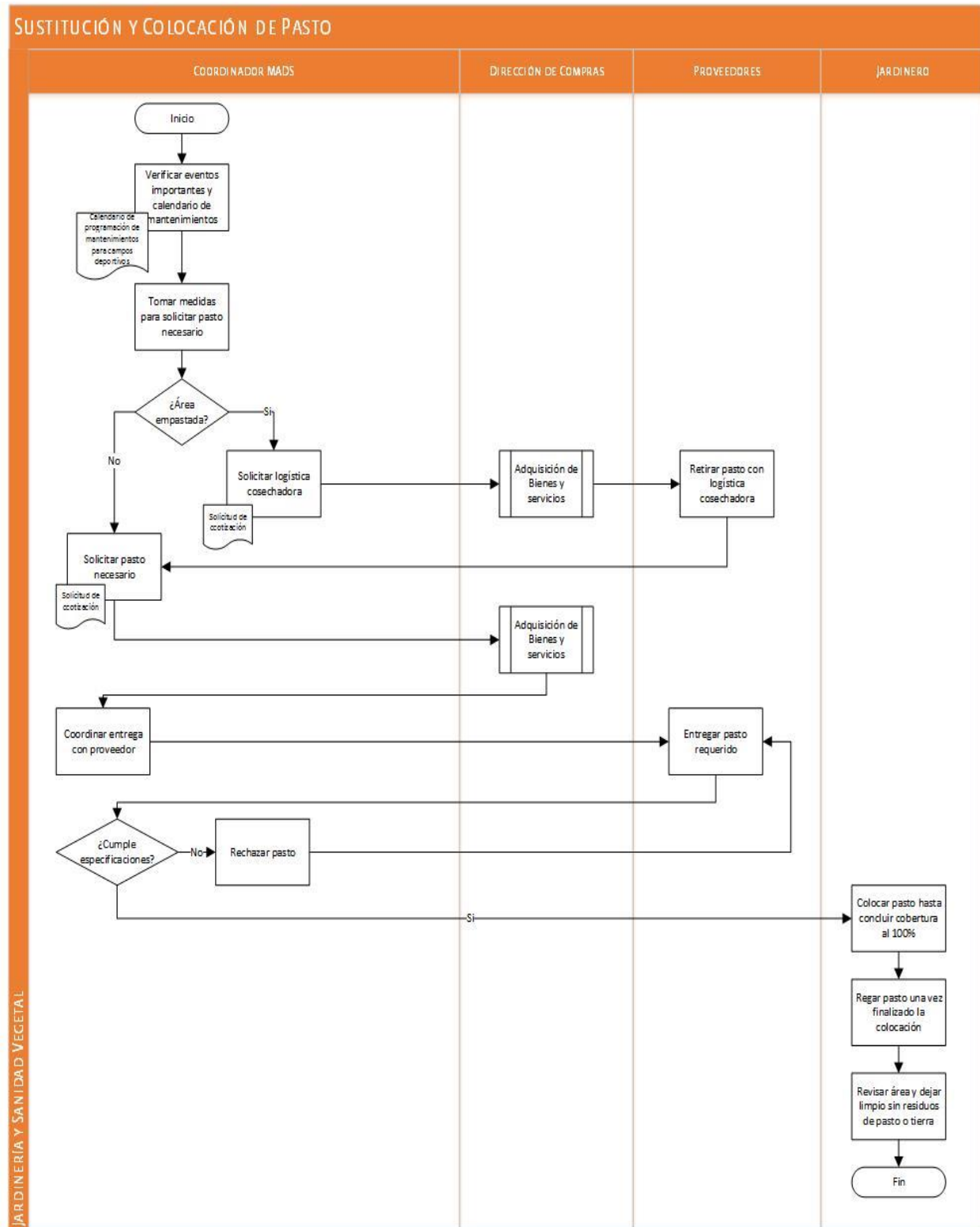


JARDINERIA Y SANIDAD VEGETAL

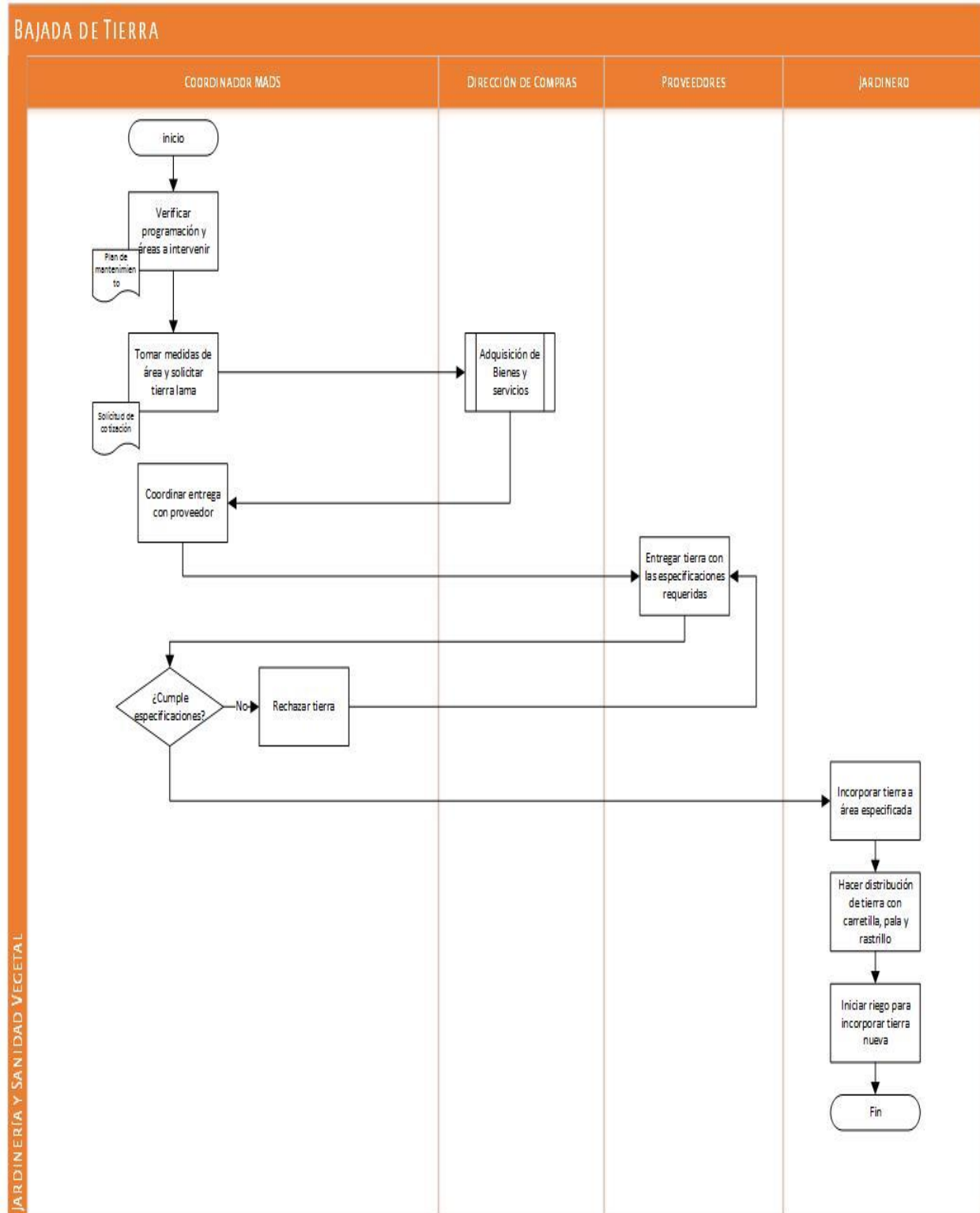


JARDINERIA Y SANIDAD VEGETAL

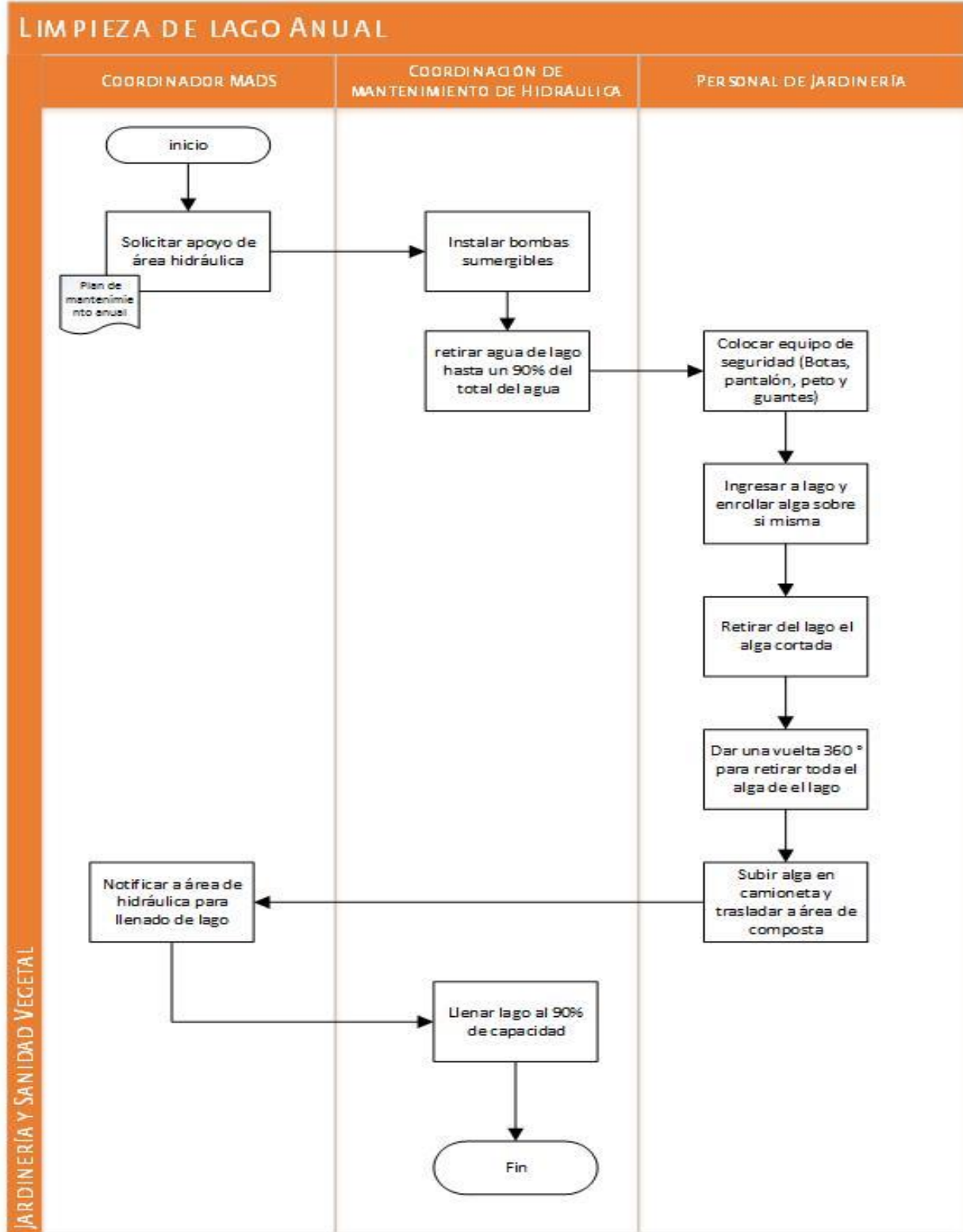
Replacement and Laying of Grass



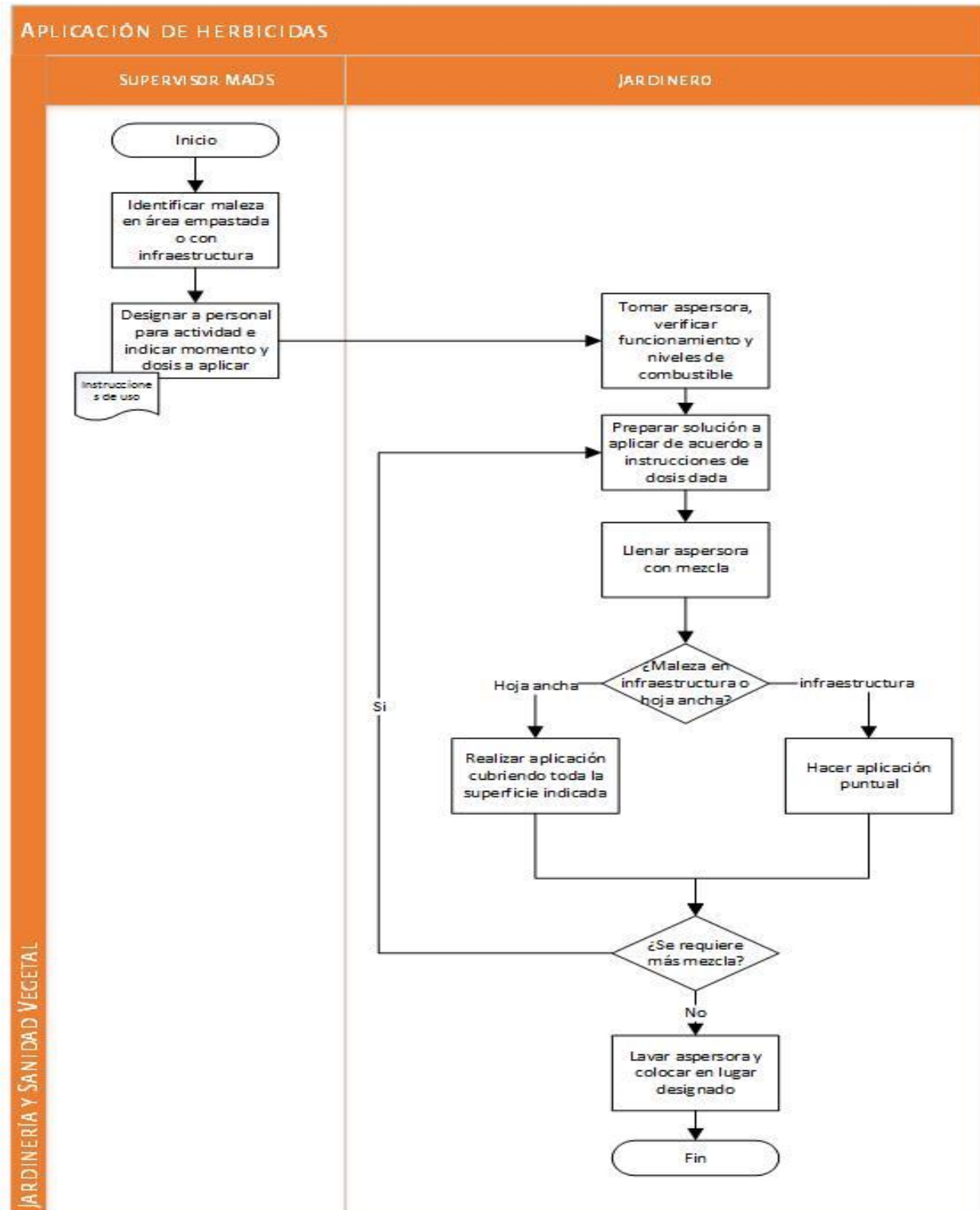
Land Descent



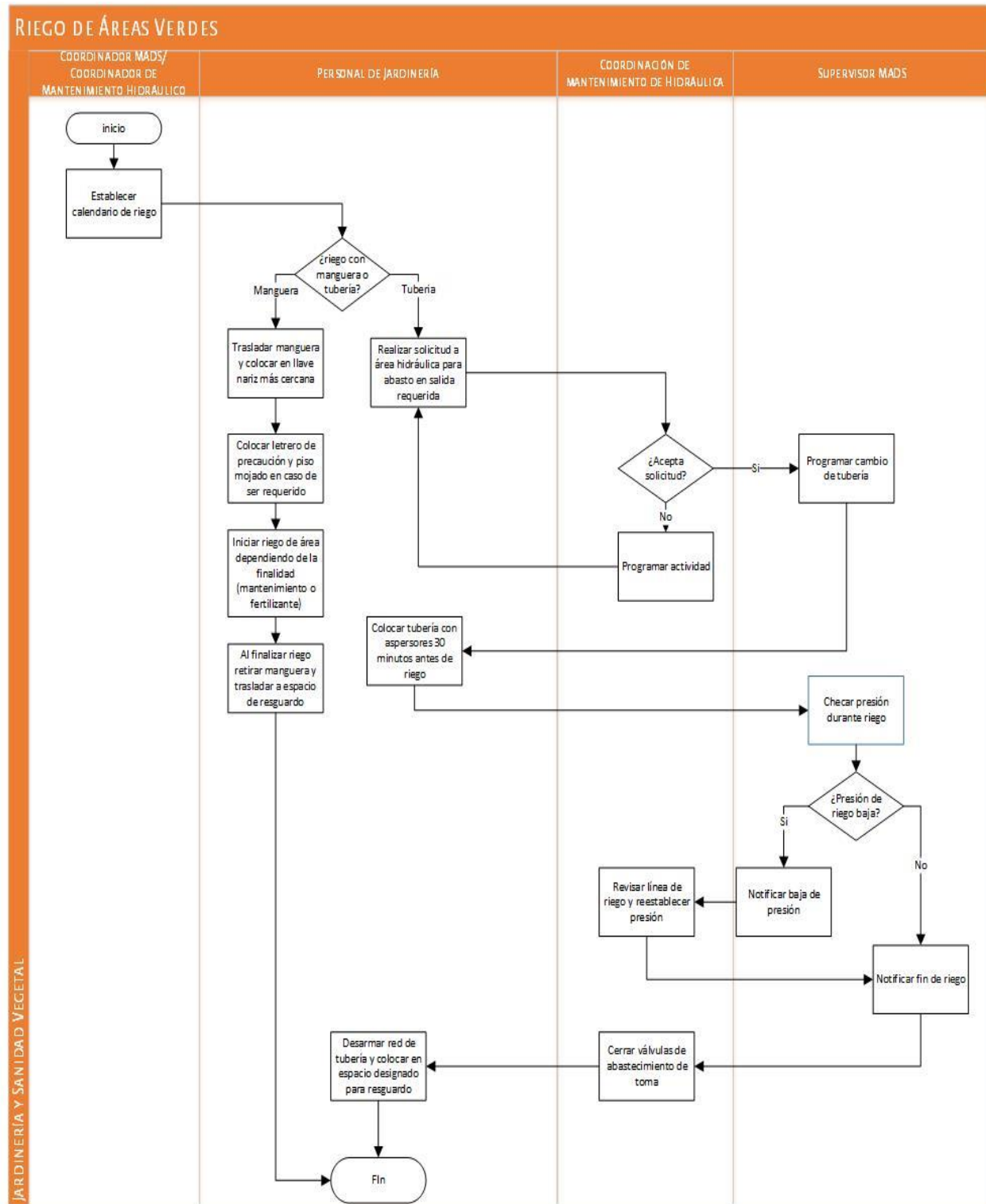
Annual Lake Cleanup



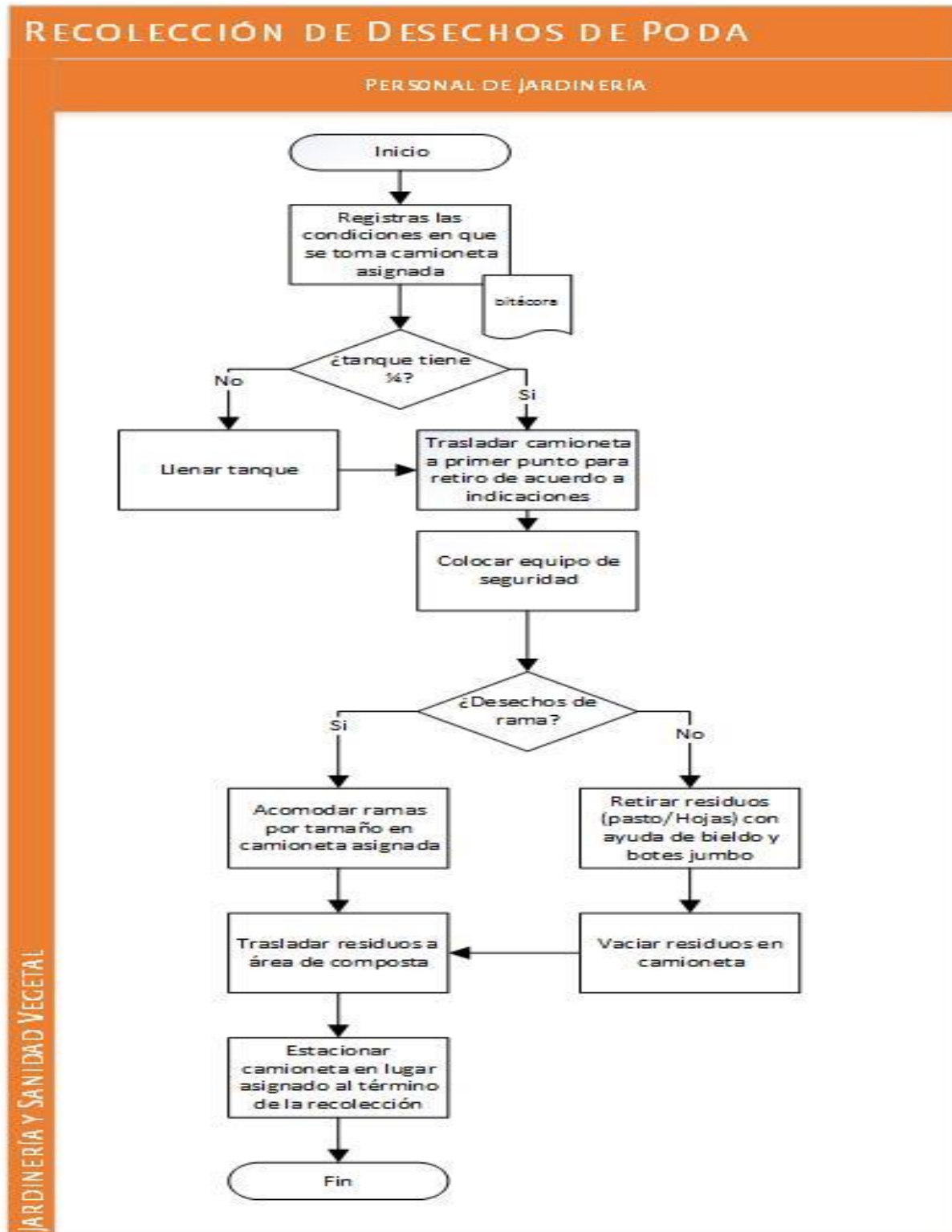
Herbicide Application



Irrigation of Green Areas



Pruning Waste Collection



6 Risks Identified in the Process

Risk	Impact	Probability	Mitigation Actions	Corrective Actions
Projecting objects when mowing grass with a	A car would be damaged, and, in the worst case, a person would be affected.	Download	Observe the traffic in the area being worked on and in the case of a person passing by, stop the activity and continue it as the person passes by.	In areas with traffic, the cut should be lifted two centimeters with a trimmer, do not stick it to the ground and schedule the pruning at times when there is no traffic in the area.
Fall of some pruning personnel	Damage directly to personnel	Very low	To have all the necessary protective equipment for the activity.	Always maintain a full crew of pruners, so that there is one climber and one on the ground to take care of the personnel above. Training of personnel in climbing techniques

7 Glossary

Concept	Description
Hedge trimmer	Gardening tool for hedge trimming
Desorbing machine	Gardening tool for mowing grass in very narrow areas where the tractor does not enter.
Harvester logistics	Grass removal tool
Spider Broom	Tool used for the collection of pruning residues, which have teeth that are more separated and rigid than those of a normal broom.
Blower	Tool which is used for the collection of pruning residues. It has a compressor which blows air to collect the residues.