

# **KENYA FORESTRY RESEARCH INSTITUTE**



## **TREE NURSERY CERTIFICATION PROTOCOL (VOLUNTARY CERTIFICATION PROCESS)**

**2021**

## **1.0 INTRODUCTION**

Forests and trees on farm play a critical in provision of goods and services and it is a major source of livelihoods for many communities. Successful forest conservation and regeneration efforts require the use of reproductive materials that meet appropriate genetic, morphological and physiological quality standards. However, research and field experiences invariably show that most of the seedlings planted out are of low quality leading high mortality rates when out planted. Seedling quality is a major factor that determines the success of tree farming and reforestation. The survival of trees, growth performance, length of rotation period and volume and quality of timber that can be harvested are greatly influenced by the quality of seedlings used. Seedling quality refers to genetic and physical characteristics of the seedling. Genetic quality relates to the genetic characteristics of the mother tree, while physical quality refers to the physical condition of the seedling as it is raised in the nursery. A high quality planting stock, is that which is: grown from germplasm collected from selected sources; healthy and with dark green leaves; having sturdy stems and with relatively large collar diameter; having root systems that are free from deformities and are dense with many root hair tips; having balanced root and shoot mass; and fully hardened, accustomed to full sunlight and reduced water and fertilizer. Certification of tree nurseries will address problems of low quality, low vigor and poor health that is associated with high field mortality at out-planting. The main purpose of tree nursery certification is to ensure production of quality and healthy planting materials for quality products and maintain environmental health.

## **2.0. PURPOSE AND SCOPE OF THE TREE NURSERY CERTIFICATION SCHEME**

The main purpose of certification or accreditation scheme is to ensure production of quality and healthy planting materials for quality products and maintain environmental health.

The scope of the accreditation scheme is to establish a network of ~~quality~~ nurseries across the country for the purpose of propagation and distribution of high quality planting material of specified tree species. The accreditation recognizes two types of tree nurseries:

- (i) Commercial tree nurseries whose sole purpose is to produce certified tree seedlings of any of the commercial tree species and
- (ii) General purpose tree nursery which may combine production of commercial tree species and other species for conservation purposes.

Further, depending on the level of operation, a tree nursery can either be a wholesale (for both large and small scale growers), retail or production by order.

Certification shall be accorded to the tree nurseries that:

- a) Show proof of traceability of the source of planting materials that form ~~from~~ a certified seed source
- b) Have basic necessary infrastructure that include:
  - (i) Minimum size of one acre for general purpose tree nurseries with at least a minimum production capacity of 2000 seedlings
  - (ii) Secured by a fence, nursery store, office, potting shed, water source, loading bay, sterilization unit/bin and a greenhouse (optional)
  - (iii) Commercial tree nurseries will be classified by production capacity as follows;
    - a. Small scale commercial and individual tree nursery with an output of 5000-500,000 seedlings

- b. Medium scale commercial tree nursery with an output of over 501000-1000,000 seedlings
- c. Large scale commercial tree nursery with an output of over 1 million seedlings
- c) Show proof of proper record keeping of movement of materials in and out of the nurseries and destinations;
- d) Have healthy seedlings with no or slight incidences of pest and disease and proof of readiness to control.
- e) Use of chemicals approved by the Pesticide Control and Protection Board (PCPB) for the control of pests and diseases or known biological /organic means of pest and disease control.
- f) Production of quality planting material of one or more specified tree species by adopting good nursery management practices
- g) Must adhere to approved national labour wages
- h) Nursery operator to provide evidence of knowledge in basic nursery operating principles

**Note:** If different premises are used for seedling production, recognition of all the above requirements are required to be obtained separately and individually.

2.2 The recognition shall be accorded to the nurseries for the tree species specified in the document of certification.

2.3 Recognition shall be granted as such or after upgrading as per requirement.

2.4 A nursery licensed under National/County shall be given certification for a period of one year under the purview of this scheme but their final certification will be subject to assessment by the Tree Nursery Certification Committee.

2.5 Certification of tree nursery by recognized authority shall be period specific.

2.6 Nursery certification shall cover all public and private tree nurseries undertaking production of commercial tree species within the republic of Kenya

### **3.0 WHO CAN APPLY FOR CERTIFICATION**

1. Tree nurseries owned and managed by Government Ministries, Departments and Agencies/Institutions;
2. Tree nurseries owned and managed by learning institutions, both public and private;
3. Tree nurseries owned and managed by Non-Governmental Organizations (NGOs), Private Companies; Faith Based Organizations (FBOs) and Community Based Organizations (CBOs);
4. Tree nurseries owned and managed by Community Forest Associations (CFAs);
5. Tree nurseries owned and managed by Timber Manufacturers Associations (TMAs) and Tree Growers Associations (TGAs);
6. Tree nurseries owned and managed by groups (youth, men/women groups);
7. Tree nurseries owned and managed by individuals; and
8. Tree nurseries owned and managed by any other organized groups;

### **4.0 REQUIREMENTS FOR APPLICATION**

The requirements for application for a tree nursery certification are as follows:

4.1 A nursery seeking certification must be in the KFS register of nurseries

- 4.2 A nursery seeking certification shall provide evidence that sources of planting materials, either seeds, or cuttings, are from certified sources (such as seed orchard, seeds stands, selected elite trees, clonal banks) that are certified by Kenya Forestry Research Institute (KEFRI)
- 4.3 Certificate of attendance to training on tree nursery establishment and management by a recognized training institution
- 4.4 The nursery manager must apply prescribed Best Management Practices (BMP) for nursery operation;
- 4.5 Business permit from the County Government where the nursery is located;
- 4.6 Photographs of the nursery
- 4.7 List of nursery infrastructures, equipment and materials.

## **5.0 THE CERTIFICATION PROCESS**

- 5.1 The applicant submits the completed application form FNC-001 (Annex1) and other requirements under this protocol to the certification entity
- 5.2 The certification entity reviews the submitted documents and qualifies successful applicants for field verification.
- 5.3 The certification entity conducts field verification and assessment of the nursery
- 5.4 The certification entity approves or disapproves the application for certification and promptly informs the applicant.
- 5.5 The certification will be valid for one year with annual inspection and audits for compliance.
- 5.6 The inspection and audit report will inform the basis for operation, suspension or cancellation of the certificate.

## **6.0 TREE NURSERY INSPECTORS (TTCC)**

The certification entity shall appoint and train tree nursery inspectors

The inspectors shall have gone through training in:

Soil media

Seed quality and sources

Seedling quality

Integrated Pest management

Plant healthy

Use of the ICT portal

The Nursery Checklist and scoring

## **7.0. THE ROLE OF NURSERY INSPECTORS**

The tree nursery inspectors shall have the following functions:

1. Review the application for certification of tree nursery manager;
2. Conduct proper verification and assessment of the applying nursery earmarked for certification
3. Undertake scheduled inspection and audit of certified nurseries to ensure compliance.
4. Advice on proper best practices of nursery management
4. Recommend to the certifying entity the continuation, review or cancellation of the certificate
6. Conduct periodic review every five years of the certification protocol to keep it in tandem with emerging issues.

## **8.0 ISSUANCE OF CERTIFICATION CERTIFICATE**

8.1 In case the Nursery Certification Committee is satisfied that the nursery conforms to the requirements of this protocol, it will recommend for an issuance of a certificate with respective conditions.

8.2 Any change in the location, layout, design or capacity of the nursery shall be communicated to the certification entity.

8.3 Upon request of variation of the attributes of a certified nursery, the certification entity shall assess and verify and issue or decline to issue a variation certificate.

8.3 The date of validity of the nursery certification shall be specified on the certification certificate

8.4 The recognition certificate once issued shall continue to be in force till the date specified in the certificate unless suspended or cancelled at earlier date by certification entity.

8.5 The entity shall conduct periodic inspections to ensure compliance.

## **9.0. VALIDITY OF CERTIFICATION**

9.1 Upon approval, the certificate will be valid for a period of one year.

9.2 The effective date of recognition shall be considered from the date of issuance of Certificate.

## **10.0 CANCELLATION OF NURSERY CERTIFICATION**

A certificate may be cancelled or suspended:

- i. If the nursery does not conform or fails to perform as per requirements of this protocol;
- ii. If there are adverse reports from stakeholders or any other complaints made to the entity; and
- iii. upon enquiry duly conducted by the entity, the complaints are found to be valid



**11.0 APPEAL AGAINST CANCELLATION OF THE CERTIFICATE**

11.1 Appeal against cancellation of the nursery certificate shall be heard and determined by the Nursery certification committee and the decision communicated within 30 days from the receipt of such complaint

**ANNEX 1: APPLICATION FORM FOR NURSERY CERTIFICATION (this should be provided at the time registration)**

*(To be completed by the applicant)*

- 1) Name of Nursery:.....
- 2) Name of Nursery Manager/Supervisor/Representative:.....
- 3) Phone Number.....
- 4) Email Address.....
- 5) Year of Establishment.....
- 6) Nursery Location:.....
- 7) County.....
- 8) Sub County.....
- 9) Ward.....
- 10) Location.....
- 11) Sub location.....
- 12) List of seedling raised in the nursery and their quantities

**ANNEX 2: CRITERIA FOR CERTIFICATION OF NURSERIES**

**CERTIFICATION CRITERIA**

A set of criteria will serve as basis for certification of forest nurseries. These criteria put emphasis on the following major concerns:

- (1) Seedling physical quality which will include seedling health, stem form, root form and sturdiness
- (2) Skills of nursery managers or their capacity to produce high quality planting materials;
- (3) Nursery facilities
- (4) Production capacity

## ASSESSMENT CRITERIA

### SEEDLING NURSERY AUDIT CHECKLIST

The purpose of this Checklist is to facilitate the accreditation of Commercial Tree Nurseries in Kenya. Satisfying point numbers 1 and 2 is a pre-requisite for entering the nursery accreditation process, i.e

1. The seed used must have been obtained from a KEFRI recommended source
2. The nursery must have a holding capacity of 2000 seedlings in a season.

Name of Nursery:.....

Name of Nursery Manager/Supervisor/Representative:.....

Full address-Phone/Email.....

Year of Establishment.....

Nursery Location:.....

County.....

Sub County.....

Ward.....

Location.....

Sub location.....

Name of Auditor(s):.....

Date of Audit:.....

GPS Coordinates:.....

### SEEDLING NURSERY AUDIT CHECKLIST

NO.		ISSUE	STANDARD		
<b>1</b>	<b>Category</b>	1.1	Private non-commercial (no sale of seedlings)	Pass mark 60%	
		1.2	Public non-commercial (e.g Schools)	Pass mark 60%	
		1.3	Commercial (all nurseries that sell seedlings)	Pass mark 75%	
<b>2</b>	<b>Production Capacity</b>	2.1	Small scale commercial and individual tree nursery with an output of 5000-500,000 seedlings	Class 3	
		2.2	Medium scale commercial tree nursery with an output of over 501000-1000,000 seedlings	Class 2	

		2.3	Large scale commercial tree nursery with an output of over 1 million seedlings	Class 1	
	<b>Source of seed</b>		Indicate source of seed	Certified source	
<b>Nursery audit score</b>					
<b>NO.</b>		<b>ISSUE</b>	<b>STANDARD</b>	<b>Marks</b>	<b>Score</b>
1	<b>Accessibility</b>	1.1	Is the road leading to the nursery trafficable?	0.5	
		1.2	Is there a nursery signpost?	0.5	
		1.3	Does the nursery design allow easy movement of vehicles and people?	0.5	
				<b>1.5</b>	
1	<b>Seed quality</b>	1.1	Are the seeds true to type?	3	
		1.2	Are the seeds properly labeled?	1	
		1.3	Do the seeds look contaminated	5	
		1.4	Do you have seed storage facility?	2	
				<b>11</b>	
2	<b>Seedling quality</b>	2.1	Are seedlings well positioned/well centred in the pot relative to the root ball?	1	
		2.3	Is there one plant per pot? Is there a single, straight, sturdy and well centred seedling in the pot?	1	
		2.4	Absence of overgrown seedlings in the nursery/seedling carried over from the previous season	2	
		2.5	Is there any sign of root distortions? Are the roots well balanced and developed with no coiling in the pots? Is there satisfactory root plug development?	2	
		2.6	Are the seedlings sorted?	2	
		2.7	Is there a good Root: Shoot ratio (1:2)? Are ready seedlings having the shoot twice the root in height?	2	
		2.8	Are the seed or transplant beds constructed at the recommended height (at least 30cm high) to facilitate proper root development?	2	
		2.9	Is the nursery weeded? Free from weeds	2	

			Are there symptoms of nutrient deficiencies (Coloration)	2		
		2.10	For nurseries raising, <i>Eucalypts</i> , <i>Pinus patula</i> , <i>Grevillea robusta</i> , : Is transplanting of the germinated seedlings (pricking out) to the growing beds/pots done with great care to prevent deformation of the root system?	2		
				<b>24</b>		
<b>3</b>	<b>Seedling Health</b>			<b>Level of severity</b>		
		3.1	Are there incidences of plant pests of commercial species	10-15 seedlings affected (1)	5-9 seedlings affected (2)	Less than 5 seedlings affected (3)
			Species 1			3
			Species 2			3
			Species 3			3
			Species 4			3
			Species 5			3
						15
		3.2	Are there incidences of plant diseases of commercial species			
			Species 1			3
			Species 2			3
			Species 3			3
			Species 4			3
			Species 5			3
						15
		3.3	For any pests were they reported to relevant authorities (KEFRI) and appropriate preventive	2		

			and control measures taken?			
		3.4	For any diseases, were they reported to relevant authorities (KEFRI) and appropriate preventive and control measures taken?	2		
		3.5	Are there any management system, knowledge or effort to control pest and diseases	2		
						<b>36</b>

4	<b>Seedling care and maintenance</b>	4.1	Are young seedlings put under shade after pricking out?	1	
		4.2	Are the seedling well watered	1	
		4.3	Is root pruning done frequently?	1	
		4.4	Is the nursery weeded? Free from weeds	1	
		4.5	Is hardening up properly done	1	
				<b>5</b>	
5	<b>Record Keeping</b>	5.1	Are seed and seedling purchase records kept up to date? E.g. (date of receipt, supplier, species, Lot No. etc.)	0.5	
		5.2	Are seed sowing and germination records/data recorded?	0.5	
		5.3	Are financial transactions recorded? Payment vouchers, receipts, invoices etc?	0.5	
		5.4	Are activity records kept to date?	0.5	
		5.5	Are fertilizers, pesticides and fungicides used recorded?	0.5	
		5.6	Are pest and diseases incidence records made	0.5	

		5.7	Are there records of the nursery stock	0.5	
		5.8	Do they have an upto date visitors book	0.5	
				<b>4</b>	
6	<b>Nursery beds</b>	6.1	Are the beds well aligned in the East-West direction?	0.5	
		6.2	Are the beds constructed at the recommended height and width?	0.5	
		6.3	Is each bed clearly labelled with species and sowing details?	0.5	
		6.4	Are the beds partitioned for easy stock taking as well as maintenance?	0.5	
		6.5	Is shade provided to the seedlings?	0.5	
		6.6	Are the beds free of weeds?	0.5	
				<b>3</b>	
7	<b>Growing media and potting</b>	7.1	Are pots used of the recommended sizes	0.5	
		7.2	Do the tubes have perforations to allow for excess drainage?	0.5	
		7.3	Is the media freely draining?	0.5	
		7.4	Is the media cohesive for transport?	0.5	
		7.5	Is the soil ball around the roots stable?	0.5	
				<b>2.5</b>	
8	<b>General Nursery hygiene/neatness</b>	8.1	Is the nursery and its surrounding clean and tidy?	1	
		8.2	Is there a rubbish pit? Is Waste/Refuse disposed of in an appropriate manner?	1	
		8.3	Is the nursery well drained?	1	
				<b>3</b>	
9	<b>Environment</b>	9.1	Are there alternative /innovative potting materials used in the nursery	0.5	
		9.2	Are the potting materials disposed off in an appropriate manner? Does the nursery recycle, re-use or bury old polythene pots?	0.5	
		9.3	Are there no signs of erosion in the nursery?	0.5	
				<b>1.5</b>	
10	<b>Water quality &amp; quantity</b>	10.1	Is the water used clean and clear of suspensions?	0.5	
		10.2	Are there adequate water storage facilities?	0.5	

		10.3	Does the nursery have a reliable water source?	0.5	
		10.4	Do they use the right watering equipments/tools?	0.5	
				<b>2</b>	
11	<b>Nursery protection</b>	11.1	Is there a fence to protect the nursery from animals and other intruders?	1	
		11.2	Is the nursery protected from wind damage?	1	
		11.3	Does the nursery quarantine plants from other nurseries? Is there isolation from other plants?	1	
				<b>3</b>	
12	<b>Workers' welfare</b>	12.1	Are workers provided with appropriate clothing and Personal Protective Equipment (PPE)?	0.5	
		12.2	Is drinking water provided?	0.5	
		12.3	Are workers provided with a shade to carry out some operations?	0.5	
		12.4	Is ergonomics taken into consideration in the working environment?	0.5	
		12.5	Is there a toilet for workers and other nursery visitors?	0.5	
		12.6	Is there a complete(well-stocked) First Aid kit at the nursery	0.5	
		12.7	Is there a trained First Aider with valid training certificates?	0.5	
		12.8	Are employment contracts available for employees? Is a signed copy of the formal work contract available?	0.5	
				<b>4.5</b>	
13	<b>Stores</b>	13.1	General appearance and cleanliness of storage area: Is the store well organized. Are there shelves to clearly separate tools, Safety equipment, chemicals, food etc?	2	
		13.2	Is the tools register kept up to date?	1	
				<b>3</b>	
14	<b>Skills of nursery manager</b>	14.1	Evidence of having attended a training in nursery management from a recognized institution	<b>3</b>	
				<b>100</b>	

### Corrective Action Report for the Nursery

CAR NO.	Description of Non-conformance	Date to be Closed	Closed by
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*NB: Corrections on major findings should be supplied within reasonable time before certificate is awarded.*

**Observation Report for the Nursery**

Observation No.	Description of Observation	Comment



**Star Rating System:**

<b>Stars</b>	<b>% Range</b>	<b>Certificate</b>
*****	>90%	✓
****	80-89%	✓
***	75-79%	✓
**	50-74%	X
*	<49%	X

Signed: -----  
Nursery Manager/Supervisor

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Signature

-----  
Date

Signed Off: -----  
Auditor

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Signature

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Date