

## SEEDLING NURSERY AUDIT CHECKLIST

| <b>NO.</b>                 |                            | <b>ISSUE</b> | <b>STANDARD</b>   |                  |              |
|----------------------------|----------------------------|--------------|---|------------------|--------------|
| <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   | 2                |              |

|          |                        |      |   |                              |  |
|----------|------------------------|------|---|------------------------------|--|
|          |                        |      | the nursery/seedling carried over from the previous season  |                              |  |
|          |                        | 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)<br>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 and control measures taken?     | 2 |  |           |
|  |  | 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   | 1          |  |

|    |                                     |      |   |            |  |
|----|-------------------------------------|------|---|------------|--|
|    |                                     |      | disposed of in an appropriate manner?   |            |  |
|    |                                     | 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   | 0.5        |  |

|           |                                  |      |  |            |  |
|-----------|----------------------------------|------|--|------------|--|
|           |                                  |      | formal work contract available?  |            |  |
|           |                                  |      |  | <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>   |  |
| <b>14</b> | <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> |  |