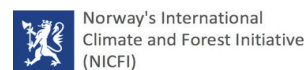




Provision of adequate tree seed portfolios



# Annual Work Plan 2018

(November 2017 version updated July 2018  
based on Annual Formal Meeting  
RNE/ICRAF May 2018)

31 July 2018 (with minor updates November 2018)

PLANNING

Prepared by  
World Agroforestry Centre (ICRAF)  
in collaboration with the  
Environment, Forest and Climate Change Commission (EFCCC)



# **Provision of Adequate Tree Seed Portfolios (PATSPO)**

## **Annual Work Plan 2018**

**(November 2017 version updated July 2018**

**based on Annual Formal Meeting RNE/ICRAF May 2018)**

**Prepared by**

**World Agroforestry Centre (ICRAF)**

**in collaboration with the**

**Ministry of Environment, Forestry and Climate Change of Ethiopia (MEFCC)**

**This report contains restricted information  
and is for official use only**

**31 July 2018**

**(with minor updates November 2018)**



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## List of Abbreviations and Acronyms

AWP	Annual Work Plan
BSO	Breeding Seed Orchard
CRGE	Climate Resilient Green Economy
EBI	Ethiopia Biodiversity Institute
EEFRI	Ethiopia Environment and Forest Research Institute
FRC	Forest Research Centre
GOE	Government of Ethiopia
ICRAF	World Agroforestry Centre
INDC	Intended Nationally Determined Contribution
ITA	International Technical Assistance
M&E	Monitoring and Evaluation
MEFCC	Ministry of Environment, Forest and Climate Change Ethiopia
NFG	Norwegian Forestry Group
NGO	Non-Governmental Organisation
NICFI	Norwegian International Climate and Forest Initiative
PATSPPO	Provision of Adequate Tree Seed Portfolios
PIP	Project Implementation Plan
PMF	Performance Measurement Framework
PMT	Project Management Team
PSE	Provincial Seed Enterprises
RAF	Risk Assessment Framework
RNE	Royal Norwegian Embassy
RTSC	Regional Tree Seed Centre
SC	Steering Committee (for PATSPPO Project)
SNNPR	Southern Nations, Nationalities and Peoples Region
SSO	Seedling Seed Orchard
TCC	Technical Coordination Committee
TOR	Terms of Reference
TSC	Tree Seed Centre
TSTC	Tree Seed Technology Coordination of EEFRI
Univ. of A.A.	University of Addis Ababa

# 1 INTRODUCTION

This Annual Work Plan 2018 for PATSPO is based on the Project Document (ICRAF & MEFCC 2017) and the 4-year Project Implementation Plan, 2017-2020 (PATSPO 2017). The Annual Work Plan (AWP) covers the full calendar year January to December 2018. The Performance Management Framework (PMF) is being used as the planning system for PATSPO together with the Risk Assessment Framework (RAF). In the PMF and RAF, the cornerstones related to annual activity planning are:

**Impact:** Development objective (goal or long-term objective): The main overall objective that the project is meant to contribute to in the long run, and which explains the reason why the project is implemented. Impacts are positive and negative, primary and secondary long-term effects resulting from a chain of events to which development and research has contributed, directly or indirectly, intended or unintended. These effects can be economic, socio-cultural, institutional, environmental, and technological or of other types.

**Outcome:** Immediate objective (project purpose or short-term objective): The immediate reason for a project. The effect, which the project is expected to achieve, if completed successfully and on time. Outcomes are intended or unintended short-term and medium-term effects resulting from an intervention's outputs, change in knowledge, attitudes and skills, manifest as change in discourse, institutions, policy and practice that result in part from the activities.

**Outputs/expected results:** The results that can be guaranteed by the project as a consequence of its activities. The sum of the outputs should result in the achievement of the project objectives (outcome and impact), provided valid assumptions with respect to risks.

**Activities:** Actions taken, or work performed within a project in order to transform inputs (funds, materials) into outputs (organisation, buildings, etc.).

**With performance indicators, performance targets, means of verification, verification frequency and responsibility.**

The AWP assesses the relevance of the project objectives and outputs; continues with the major project activities for the year; provides a graphic time schedule of the planned sub-activities; lists the expected main results to be produced; presents the major assumptions with respect to risks of relevance for PATSPO during the coming fiscal year, and finally provides information on the budget implications. An updated (July 2018) activity plan and implementation schedule are presented in appendix I, foreseen technical assistance for 2018 (updated July 2018) is given in appendix II, the Risk Assessment Framework 2017 together with an assessment of relevant risk June 2018, as well as assessment of cross cutting issues updated July 2018 in appendix III and the Performance Measurement Framework updated July 2108 in appendix IV-V.

## 2 MAJOR CHANGES SINCE LAST PLAN

The implementation of the project was initiated with a six months inception phase following the approval of the project agreement between the Royal Norwegian Embassy (RNE) and ICRAF in May 2017 with final deliberations taking place during the month of June. The last plan was for this inception phase, which thus in practise started on the 1<sup>st</sup> of July 2017 and will be ending on the 31<sup>st</sup> of December 2017. The reporting of this phase was due by end of February 2018.

The Annual Formal Meeting between the Royal Norwegian Embassy and ICRAF (ref. Grant Agreement) took place ultimo May 2018. A number of issues were discussed during the meeting, for details ref. Minutes from the Annual Formal Meeting. The following actions were agreed regarding the AWP (Annual Work Plan) for 2018:

- a. An updated AWP for 2018 shall be made based including assessment and changes of activities and with possible quantified and more detailed deliverables referring to indicators in an updated Performance Measurement Framework (PMF). The updated AWP will make it easier to monitor the progress of the project in a more detailed and specific manner. The finalisation of the seed sector assessment is a major activity from the inception phase that has been carried over to 2018 and included in the AWP.
- b. An updated budget for 2018 shall be prepared and included in the AWP 2018. The budget will be based on the 'lessons learnt' from the inception phase to better match the project activities and give a more correct picture of the financial inputs required for the year.
- c. The PMF will be updated and indicators possibly quantified based on the results from the seed sector assessment. The PMF will be included in future AWP's and Progress Reports (with a column for assessment of targets) for better monitoring of the project results and impact.

## 3 OBJECTIVES AND OUTPUTS

A major challenge of tree based restoration work is that it generally requires the use of many tree species at the same time. Where restoration is based on natural regeneration, it would thus require the presence of healthy and diverse seed sources and/or soil seed banks. When planting is necessary, whether for replenishment or enrichment, the supply of a broad spectrum of genetically diverse, healthy and productive tree species is generally not easily available. Traditional supply programmes focus on relatively few species, most of them of unknown genetic quality and often with insufficient knowledge on adaptation to site conditions and adaptability to climate change.

The present project addresses this major challenge by providing a multiple tree species programme able to provide:

- organizational setup of the tree seed sector, including stakeholder identification and roles and responsibilities, - based on a sector analysis,
- species specific knowledge for most priority tree species, including:
  - the plant ecological base line for restoration
  - the potential natural distribution of multiple species and how they may be affected by climate change



- DNA-based genetic variation patterns for priority tree species
- an interactive knowledge and information portal for users,
- a buildup and establishment of the tree genetic resources for the future, comprising exploration, mobilisation, conservation, establishment, management and improvement,
- capacity to monitor and deliver quality seed and seedlings of multiple species required for large scale restoration.

The strategy of the project linking impact, outcome, and outputs is further elaborated in this section.

### **a. Impact and Indicators**

The Project Impact (development goal) is: *Ethiopia's national forest restoration targets for the next 20 years and beyond are reached.*

This is an impact objective which is highly dependent on government and other actors and activities outside of the project's control. However, it is the ultimate impact on society that the project is aiming to contribute to (cf. Executive Summary, "the project is designed to support the large-scale forest and landscape restoration programme, which is part of the green growth strategy of GOE"). The project is a long-term investment by which current and future landscape restoration activities in Ethiopia involving the use of trees will be enhanced.

The major Impact Performance Indicators are associated with the substantial landscapes to be restored through planting of trees:

- Area restored using quality tree seedlings raised from quality seed [Impact].
- Amount of quality tree seed of priority species made available (produced and delivered) for restoration plantings in Ethiopia [Outcome].
- Tree seed delivery system elements in place [Output I].
- Technical knowledge and information system for the tree seed sector available [Output II].
- Number of existing seed sources upgraded and in use and number of new seed sources (Breeding Seed Orchards - BSO/SSOs) established and in use [Output III].
- Number of staff and stakeholders trained (at training courses and through extension activities) and number of (relevant) training- and extension material produced [Output IV].

The positive effects of restoration will also manifest in improvements like:

- Water availability increased, soil erosion reduced, and agriculture production potential increased in restored landscapes.
- Livelihood increased for people living in and around the restored landscapes.

The extent to which such effects can be measured will be considered during the project.

### **b. Outcome and Indicators**

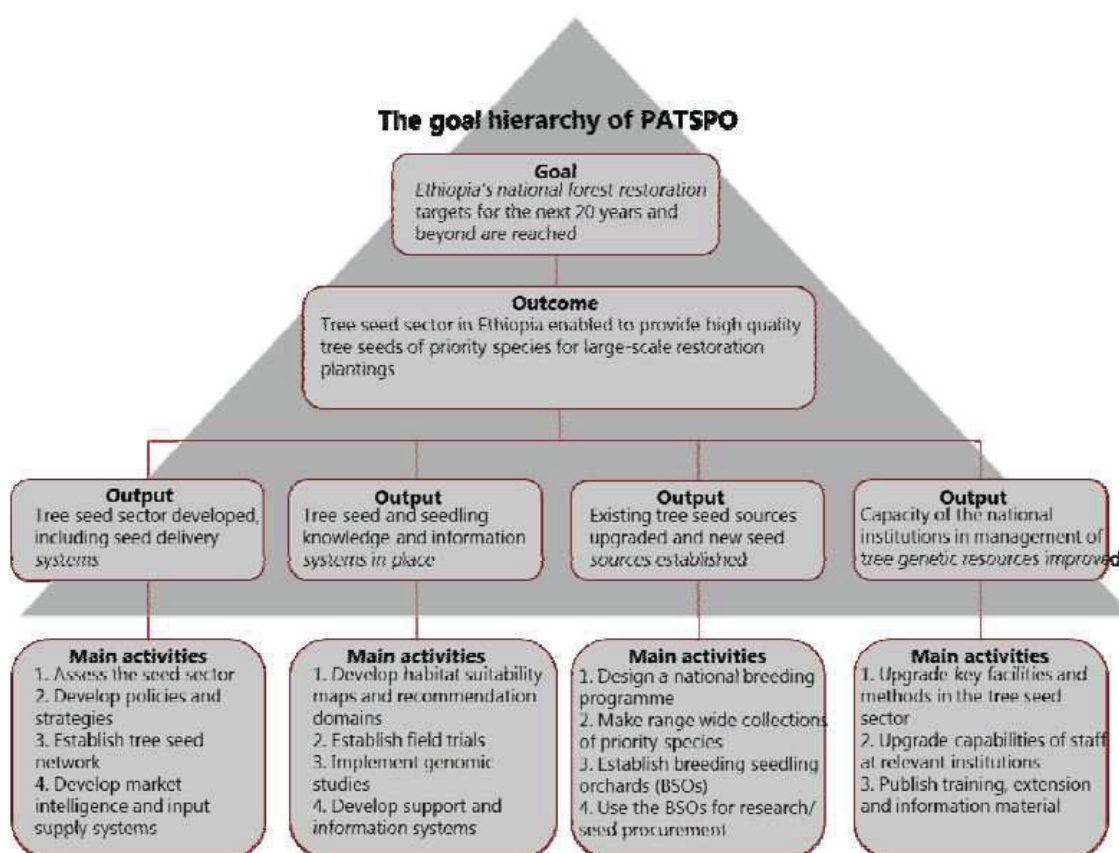
The Project Outcome (project purpose) is: *Tree seed sector in Ethiopia enabled to provide high quality tree seeds of priority species for large-scale restoration plantings.*

The implication is that improved reproductive material of indigenous and exotic tree species for use in landscape restoration purposes in Ethiopia is explored, characterised, conserved, mass produced and delivered by the tree seed sector.

The major outcome performance indicators are associated with the actual delivery of quality tree seed as a basis for better forest landscape restoration:

- Amount of quality tree seed of priority species made available (produced and delivered) for restoration plantings in Ethiopia [Outcome].
  - Amount of quality tree seed of priority species produced.
  - Amount of quality tree seed of priority species distributed.
  - Ratio of supply vs demand of quality tree seed of priority species.

The indicators and means of verification for impact, outcome and outputs are summarised in the updated Performance Measurement Framework (PMF) in appendix IV-V. And the Risk Assessment Framework 2017, the assessment of relevant risks as per June 2018 and the updated assessment of cross cutting issues (July) in appendix III



**Figure 1.** Elements of the PATSPO Project results framework, the goal hierarchy, (which also encompass the project *theory of change*).

### c. Outputs

To meet the project outcome, four Project Outputs will be delivered by the project: (page 4-6):

#### ***Output I. Tree seed sector developed, including delivery systems***

The role of the tree seed sector is to provide reproductive material for the right tree at the right place for the right purpose. This involves the productive functions of providing good seed and

the normative functions of providing standards, guidance and mechanisms to influence and monitor the use of seed.

This output will strengthen the tree seed sector in Ethiopia and gather information on the actual situation in the tree seed sector in Ethiopia. The data compiled will be presented in a ‘Baseline Report’ for the project and form the starting point for the preparation of strategies, definition of roles and responsibilities of the actors in the sector, seed supply-demand modalities, seed source establishment, etc. To identify appropriate models for seed supply, a sub-sector assessment is a useful tool for developing appropriate business development services. The objective of the sub-sector assessment is to analyse all of the participants, their linkages, and influential factors in the agribusiness system in order to identify constraints and opportunities for growth. The sub-sector review should explore opportunities for leveraged intervention, determining where opportunities for intervention and points of leverage converge.

Typical immediate areas of action to improve the situation are:

- Immediate and future germplasm sources for particular agroforestry interventions should be determined at the planning stage or as early as possible within the program.
- Consultations among the possible public and private actors involved in germplasm delivery should be undertaken before field implementation of the activities begin.
- The participation of small-scale entrepreneurs including commercial nurseries and seed suppliers should be considered.
- A monitoring and evaluation (M&E) protocol to measure the impacts of chosen approaches should be established.

The performance indicator for *Output I* is Tree seed delivery system elements in place. The performance targets include:

- Assessed and upgraded strategies and policies for the tree seed sector in place, - done in close collaboration with MEFCC.
- Demand and supply scenarios in place.
- Established and well-functioning tree seed network and – forum for the tree seed sector in place.

### ***Output II. Tree seed and seedling knowledge and information systems in place***

This output will provide the knowledge and information required to establish a national modality for conservation, improvement and utilization of tree genetic resources, leading to establishment of improved seed sources cum conservation areas, as well as delivery of germplasm of the priority tree species in Ethiopia. The project will develop and test species and provenance specific recommendation domains, combining the expertise of national and international tree seed and research centres, high resolution present and future climate data sets, species distribution records and new approaches for habitat distribution mapping, recently developed by the partners involved in the project.

The performance indicator for *Output II* is Technical knowledge and information system for the tree seed sector available.

The performance targets include:

- Maps and related tree planting recommendation domains covering all provinces of Ethiopia in place.
- Species/seed source selection portal/system (“What to plant where”) in place.
- Field trials (incl. BSOs) to support development of superior seed sources in place and analysed.
- Genomic studies of selected priority species to support development of superior seed sources performed.

***Output III. Existing seed sources upgraded, and new seed sources established (tree genetic resources for the future mobilised and developed)***

This output will identify existing- and establish new seed production *cum* conservation areas of the priority tree species in Ethiopia. The new seed production areas will be established as breeding trials and at the same time serving as seed production areas producing genetically high-quality seed. The aim is to make the at any time best quality seed available for tree planting activities in Ethiopia, while at the same time continuously improve the quality of the seed.

The performance indicators for *Output III* are Number of existing seed sources upgraded and in use. And number of new seed sources (BSOs/SSOs) established and in use.

The performance targets include:

- National tree breeding programme for priority tree species covering 80-90 % of the seed demand (base of seed sources).
- Up to 75-150 BSOs/SSOs of the priority tree species established.
- Up to 400-500 seed sources identified and described in existing forests and plantations throughout Ethiopia.
- Between 250 - 1000 tons of quality tree seed of priority species procured annually by the tree seed sector, ref. section 10a in the project document (output of seed sources).

***Output IV. Capacity of the national institutions in management of tree genetic resources improved***

This output will, through a substantial training and education programme, provide capacity building for all major actors in the tree seed sector in Ethiopia. In addition, needed equipment will be made available for the major national and provincial organisations. The primary focus is on 1) the Tree Seed Technology Coordination of EEFRI (TSTC) and the four Regional Tree Seed Centres (RTSCs) to be adequately upgraded, staffed and equipped; 2) that project relevant knowledge and capabilities of staff at all levels among relevant stakeholders are upgraded and maintained; and 3) that relevant technologies and capabilities in appropriate tree seed procurement are imparted to target beneficiaries through training, information, marketing and extension. The intention of this focus is to achieve large scale impact through the technical training.

The performance indicators for *Output IV* are number of staff and stakeholders trained (at training courses and through extension activities). And number of (relevant) training and extension material produced.

The performance targets include:

- 1000 staff members from stakeholder institutions in the tree seed sector trained in technical subjects through 10 annual training courses with 25 participants per course.
- 4000 user group members reached through extension activities, - 10 extension events per year with min. 100 attendants per event.
- 10-25 technical guidelines/-notes and 20-30 extension briefs/leaflets produced annually, - in total 150-200 publication during the project period.

## **4 WORK PLAN FOR THE YEAR**

### **4.1 Major Fields of Support**

During the implementation of PATSPO (2017- 2020) the following fields of the Ethiopian national tree seed sector will receive support from PATSPO:

- Tree seed sector developed, including delivery systems [Output 1].
- Tree seed and seedling knowledge and information systems in place [Output 2].
- Existing seed sources upgraded, and new seed sources established (tree genetic resources for the future mobilised and developed) [Output 3].
- Capacity of the national institutions in management of tree genetic resources improved [Output 4].

### **4.2 Planned Activities and Expected Results**

The major PATSPO-activities planned for 2018 are presented in the following four sub-sections. For each of the four project outputs/ work packages, the detailed sub-activities and schedules are given in appendix I. All activities will be developed, implemented and products disseminated as outlined in the PATSPO proposal document and Project Implementation Plan (PIP). The sub-activities and their expected results for the year are listed in the following section.

#### **4.2.1 Tree seed sector developed, including delivery systems**

1.1 *Seed sector assessment:* Assessment of the tree seed sector.

1.1.1 Survey existing established seed sources in Ethiopia. Overview of seed production capacity.

1.1.2 Survey existing seed procurement practices and institutions in the sector. Identification of gaps in seed procurement chain and proposals for improvement.

1.1.3 Make a critical analysis of seed supply/seed demand situation in Ethiopia. Identification of gaps in demand/supply of tree seed and proposals for improvement.

1.2 *Policies and strategies:* Development of appropriate policies, legal framework for and organisation of the tree seed sector as well as strategies for conservation and use of genetic resources of priority species.



- 1.2.1 Analysis of the organisation of the tree seed sector, - stakeholder roles and responsibilities. Proposals for possible improvements of major stakeholders' roles and responsibilities.
- 1.2.2 Make a critical review of the current seed movement regulations in Ethiopia, including import/export, quality control, and quarantine regulation. Potential areas for improvements in seed regulations defined and proposals for modifications.
- 1.3 *Tree seed network*: The establishment of a tree seed network of relevant stakeholders to cover the national seed demand with quality seed of priority species from appropriate seed sources.
  - 1.3.1 Arrange for meeting with major stakeholders in the tree seed sector. Preparation for and inputs to the establishment of the Tree Seed Network.
- 1.4 *Market intelligence and input supply systems*: Demand-supply scenarios developed for all tree species priority groups, based on which location and size of seed sources to be established can be determined, and quality material promoted through the most appropriate channels of supply.
  - 1.4.1 Define and describe present seed supply/demand situation for 10 priority spp. Knowledge of seed supply gaps for 10 priority spp.
  - 1.4.2 Define location of new seed sources for 10 priority spp. based on present and future demand and supply scenario. Locations for establishment of new seed stands/BSO/SSOs for 10 priority spp.

#### **4.2.2 Tree seed and seedling knowledge and information systems in place**

- 2.1 *Habitat Suitability Maps and Recommendation Domains*: Development of high resolution habitat suitability maps that delineate species- and provenance-specific recommendation domains for up to 150 priority tree species in Ethiopia.
  - 2.1.1 Compile data on distribution of the priority tree species from various sources (IBC, Univ. of A.A., RSCs, FRC, etc.). Data on distribution of priority spp. resulting in more accurate spp. distribution maps.
  - 2.1.2 Prepare distribution maps for up to 150 priority tree species. Accurate distribution maps of priority spp. for use in conservation, tree improvement and seed procurement activities of PATSPO and stakeholders.
- 2.2 *Genetic differentiation of selected species based on field trials*: Document important patterns of genetic differentiation (in growth, phenology, productivity and health) of selected indigenous species in experimental tests.
  - 2.2.1 Compile and assess results from existing tree improvement trials in Ethiopia. Data and analysis from field trials supporting preparation of additional field trials.
  - 2.2.2 Prepare plan for establishment of additional field trials as required. Information on patterns of genetic differentiation of selected indigenous species supporting establishment of optimal BSO/SSO for production of quality seed.
- 2.3 *Genetic differentiation of selected species based on genomic studies*: Introduce and use genomic studies as a supplement to field testing to clarify genotype by environment patterns and

to provide recommendations for practical application of genomic tools for forest genetic resources management in face of climate change.

2.3.1 Assess if genomic testing should be included as part of the general survey of existing seed sources for selected species. Knowledge of genotype variation in existing seed sources.

2.4 *Development of a decision support system and interactive information portal*: Develop and introduce a user-friendly decision support system and interactive information portal (“choosing your tree for planting”), allowing stakeholders to make informed choices regarding the best-suited tree species and their seed sources location.

No activities for main activity 2.4 in 2018. Will start in 2019.

#### **4.2.3 Existing seed sources upgraded, and new seed sources established (tree genetic resources for the future mobilised and developed)**

3.1 *Design of a national breeding programme*: Design a national breeding programme for more than 50 priority species, including identification of distribution and deployment zones - also considering climate change aspects.

3.1.1 Identify 15 of the 50 priority spp. to be included in the breeding programme, - through a participatory stakeholder process, including detailed distribution maps. Consolidated and agreed tree species priority list and corresponding distribution maps.

3.2 *Range wide collections of priority species*: Make range wide collections of plus tree families (from natural stands as well as possible landraces) complementing existing collections.

3.2.1 Identify selection sites and plus trees, covering the distribution area, for 10 priority species and make plans for collections. Location from where to collect/obtain germ plasm of ten priority spp., incl. plans for collection.

3.2.2 Prepare collection modality/org. structure for the actual field collections. Plans for collections incl. logistic arrangements.

3.3 *Establishment of breeding seedling orchards (BSO/SSOs)*: Design and establishment of breeding seedling orchards (BSO/SSOs – combined provenance/progeny testing and seed production/multiplication/conservation) in relevant deployment zones.

3.3.1 Finalise establishment plans of BSOs for two priority species for three sites, including selection of sites. Documents describing the full procedure for establishment of the BSOs.

3.3.2 Obtain available seed of the two species from abroad and in country and collect from additional in country sources if feasible/required. Required seed obtained and stored at TSC at FRC in Addis Ababa.

3.3.3 Prepare guide line for and raise seedlings in nurseries close to locations for the establishment of the BSOs. Seedlings for the BSOs produced.

3.3.4 Prepare guideline for and establish the BSOs of two species at 3 sites. BSOs of two species established at three sites.

3.3.5 Prepare establishment reports and manual for maintaining of the BSOs and introduce the manual in the field. Reports, manual and maintained BSO.

3.3.6 Select the next 10 priority species on the list and initiate the establishment of BSO/SSOs following the activities described above 3.3.1 to 3.3.5. Start of establishment of BSO/SSO for 10 additional priority spp.

3.4 Assess, manage and use the BSO/SSOs for research, breeding and seed procurement. Main activity 3.4 will not be started in 2018.

#### **4.2.4 Capacity of the national institutions in management of tree genetic resources improved**

4.1 *Rehabilitation, upgrading and maintenance of key facilities and methods in the tree seed sector:* Support rehabilitation and maintenance of existing key facilities of the major stakeholders in the tree seed sector (EEFRI and Provincial Seed Enterprises), to cover part of the national seed demand and promote good practices among other seed suppliers in the private sector. This includes improved methods for documentation and technologies for seed source establishment and management, for collection, handling and storage of tree seed. (The latter part of this main activity to be covered under output 3 and main activity 4.2.).

4.1.1 Manufacturing, purchasing, transport and installing of furniture to laboratories at the Tree Seed Centre (TSC) at the FRC and Mekele RTSC, according to recommendations from PATSPO Consultants. Well-organised and modern seed labs.

4.1.2 Support and assist in installation and use of lab. equipment at Mekele RTSC after furniture are in place. Well-organised and modern seed lab. in Mekele.

4.1.3 Renovate seed procession facilities at TSC/ FRC following recommendation from PATSPO consultants. Increased seed procession capacity at TSC/FRC.

4.1.4 Repair cold store rooms at TSC/FRC and the 4 RTSCs. Better seed storage facilities at the 5 TSCs.

4.1.5 Purchase and deliver equipment to TSC/FRC and the 4 RTSCs according to recommendations from PATSPO consultants. Well-equipped seed labs at all 5 TSCs.

4.1.6. Assist in setting up maintenance system for equipment and cold stores at all 5 TSCs. Well maintained TSCs.

4.2 *Upgrade knowledge and capabilities of selected staff at relevant stakeholder institutions:* Upgrade knowledge and capabilities of selected staff at relevant stakeholder institutions, including research, education and training in relevant methods and relevant technologies in tree seed procurement, as well as extension of knowledge target beneficiaries.

4.2.1 Prepare ‘Training- and Capacity Needs Assessment’ for major stakeholders of PATSPO, - consultancy. Training needs of major stakeholders and outline of training methods and - plan.

4.2.2 Update training/ extension plan based on results from 4.2.1. Training outline- plan for PATSPO.

4.2.3 Implement training courses and other capacity activities according to plan. Stakeholders trained according to needs.

4.2.4 Finalise the ‘Application – Provision Strategy’ and introduce it to the five TSCs. TSC staff actively participating in planning and implementation of training activities.



The development and implementation by PATSPO of courses, seminars, workshops and study tours will be a continuous activity during the year, and the same will be the case for the production and dissemination of extension materials.

PATSPO will plan and implement the below activities scheduled for 2018 whereas others will be identified, approved and implemented following the “Guideline to: Application/Provision Strategy for Training and Extension Activities” (PATSPO 2018).

Most of the PATSPO- training and extension activities will be planned and implemented for PATSPO’s primary target groups (TSTC, RTSCs, and PATSO staff). Individuals from the secondary target group, such as institutions, companies, seed dealers and others concerned with tree seed, will be invited to participate in selected training / extension activities.

*4.3 Prepare, publish and distribute training, extension and information material:* Prepare, publish and distribute of training, extension and information material in all aspects of a national tree seed procurement programme, - in large quantities.

4.3.1 Compile, adjust, prepare and publish training material for courses to be prioritised according to the training needs assessment. Training material in large quantities available for PATSPO activities

4.3.2 Compile, adjust, prepare and publish teaching posters and other technical posters for extension activities. Extension material in large quantities available for PATSPO activities.

4.3.3 Use published material for PATSPO training and extension activities and distribute material to major stakeholders. Stakeholders use quality training and extension material.

## **5. INPUTS REQUIRED FOR THE YEAR**

### **5.1 Equipment and Materials**

PATSPO will continue to provide equipment to the TSTC and the RTSCs based on assessed need and through the use of the ‘Provision/Application Strategy’ to be introduced in 2018. The equipment will be procured from abroad or within Ethiopia. A part of the material will be locally manufactured following descriptions available at PATSPO.

### **5.2 Vehicles**

According to the Project Document for PATSPO, a total of 200,000USD has been allocated for the purchase of vehicles, depending on needs assessed and unit cost, three to five vehicles may be purchased. One vehicle has been ordered during the Inception Phase.

### **5.3 International and National Technical Services**

36 months of international technical assistance for PATSPO are foreseen for 2018:

1. Training- and capacity needs assessment.

2. Installation and use of seed lab. equipment and planning assessment of existing seed sources.
3. Assessment of existing seed sources.
4. Second part of seed sector analyses.
5. Gene conservation and tree breeding strategy.
6. Implement survey on seed demand/ supply situation in Ethiopia.
7. Planning and establishment of BSOs.
8. Priority species mapping.
9. Breeding of food trees.
10. Preparation of training and extension material.
11. Training course in Seed Procurement.
12. Coordinate and implement training activities with Ethiopian Institutions.
13. Senior Team Leader.

National consultants will be engaged as deemed necessary when the final ToRs and work plans for the individual technical services are being prepared. An updated (July 2018) schedule of consultancies is presented in appendix II.

## **6. RISK ASSESSMENT**

The assessment of risks associated with the implementation of the project follows the Risk Assessment Framework presented in the Project Document p. 39-40.

The Risk Assessment Framework from the Project Document with an assessment of the defined potential risks as per November 2017 is presented in appendix III together with a specific assessment of the relevant risks as per June 2018 and the risk assessment of cross cutting issues updated July 2018.

## **7. CO-ORDINATION, MONITORING AND REPORTING**

### **7.1 Co-ordination**

#### *Project Steering Committee Meetings:*

The focus of the project steering committee (SC) is on matters relating to the agreed framework for project implementation and on policies and actions affecting the project environment and implementation. The SC will meet once a year to review project progress, based on the PATSPO progress reports which will be distributed to each SC member before each meeting.

A local management team will be established in each of the provinces where the project will have its major activities; initially this means the four provinces (Amhara, Oromia, SNNPR, and Tigray) where the RTSCs are established. The major functions of the local management teams are to ensure close contact between the federal and the regional governments as well as other major stakeholders in the regions, and to ensure close collaboration within the regions between the project, the RTSCs and the major stakeholders.

A technical coordinating committee (TCC) has been established to ensure coordination, collaboration and information exchange among all major stakeholders involved in technical aspects covered by the project implementation. The technical committee includes representatives from EEFRI, MEFCC, TSTC (under EEFRI), RTSCs, ICRAF, Norwegian Forestry Group (NFG), NGOs, private seed dealers and other relevant organizations.

#### *Co-ordination of PATSPO Activities:*

PATSPO will have annual planning meetings with the TSTC and the RTSCs, in addition annual planning meetings with TSTC will be implemented. Further several “ad hoc” meetings will be held for planning and implementing specific activities mentioned in this AWP. Finally, the PATSPO-staff and advisers will visit the RTSCs regularly to expand the PATSPO-support to the RTSC-activities.

## **7.2 Project Monitoring**

The Project Management Team (PMT) will supervise the day-to-day implementation of the PATSPO activities. Overall monitoring of inputs, outputs, progress, and assumptions will similarly be undertaken by the PMT, while the PATSPO staff and individual advisers will be responsible for monitoring the implementation of specific activities. Monitoring of activities and progress will be based on the indicators specified in the performance management framework (appendix IV-V) and in the Activity Plan and Implementation Schedule (appendix I).

Appendix V provides a note on the update of the PMF.

Input and progress monitoring of the RTSCs will be undertaken in connection with visits by PATSPO staff and advisers, and as part of the regular planning meetings with TSTC and the RTSCs. The project will support the TSTC and the RTSCs in further developing their monitoring system to meet the requirements of the MEFCC while at the same time feeding into the project’s monitoring system, which will meet the requirements of RNE and Norwegian International Climate and Forest Initiative (NICFI) as well as MEFCC.

Input and progress monitoring of the supported institutions and organisations (TSTC, Provincial Seed Enterprises (PSE), NGOs etc.) will be undertaken regarding visits by project staff and advisers. The SC will play an important role regarding monitoring of project implementation. Before each meeting by the SC the project will submit copies of any new reports and technical documents. Part of the SC’s standard agenda will be to review the project progress, including bottlenecks and constraints and ways to overcome these. Both NICFI, represented by the RNE and GOE, represented by MEFCC, are members of the SC.

## **7.3 Reports Foreseen**

During the implementing year 2018 the following major PATSPO-reports/publications are foreseen:

- Annual progress report (March 2018)
- Four Years Project Implementation Plan (PIP) 2018-2021
- Final Annual Work Plan, 2018 (prepared by November 2017, update July 2018)
- Provision - Application Strategy of PATSPO
- Seed Source Establishment Guideline
- Additional technical reports and guidelines (to be specified)

## **8. BUDGET IMPLICATIONS FOR THE YEAR**

The budget presented for 2018 in November 2017 in the first version of the Annual Work Programme for 2018 (AWP 2018) was based solely on the original budget of the project in the project document. In the table below is presented the financial status at the end of 2017 (as provided in the progress report for 2017), the original budget for 2018 and a revised budget for 2018. The revised budget for 2018 is based on the updated AWP for 2018 as of July 2018. The budget for AWP 2018 has been adjusted based on the experience from 2017 and the first five months of 2018. To cover the planned expenses of 2018 the transfer of an additional amount of USD 653,881 will be required to complement the surplus available from 2017.

A low level of project spending in 2017 is explained in the progress report for 2017. Planning was unrealistic with respect to recruitment of local staff, delivery of international services, in particular the baseline survey, which took longer than planned and consequently resulted in delay of operational activities.

On the way forward, the status of work during the first 5-6 months of 2018, confirm that the project is now up to speed with original intentions. Nevertheless, the original budget for 2018 is too high. Technical staff only came in place during the third quarter of 2018 and costs will therefore only correspond to about 70 % of the original budget in 2018. The lower level of spending in 2017 and 2018 is expected to be caught up in 2019 and 2020.

Experience from 2017 and 2018 has shown that presence of senior technical advisors staff is critical for continuous progress in the built-up phase of the programme. Presence of somewhat longer term advice will therefore be prioritised as part of Technical Staff from ICRAF Nairobi and the International Technical Assistance Services.





[illegible]

[illegible]



## Output II. Tree seed and seedling knowledge and information systems in place.

Main activity II.1 Habitat Suitability Maps and Recommendation Domains: Development of high resolution habitat suitability maps that delineate species- and provenance-specific recommendation domains for up to 150 priority tree species in Ethiopia.											
Sub-Activity	Expected Result	Inputs	PERSON(S) RESPONSIBLE	Year 2018							
				J	F	M	A	M	J	J	D
II.1.1 Compile data on distribution of the priority tree species from various sources (EBI, Univ. of A.A., RSCs, FRC, etc.)	Data on distribution of priority spp. resulting in more accurate spp. distribution maps.	Consultants, ICRAF staff, FRC, EEFR, funds.	<u>Roeland</u> (KH,SM)								
II.1.2 Prepare distribution maps for up to 150 priority tree species.	Accurate distribution maps of priority spp. for use in conservation, tree improvement and seed procurement activities of PATSPO and stakeholders.	Consultants, ICRAF staff, FRC, EEFR.	<u>Roeland</u> (KH,SM)								
Main activity II.2 Genetic differentiation of selected species based on field trials: Document important patterns of genetic differentiation (in growth, phenology, productivity and health) of selected indigenous species in experimental tests.											
Sub-Activity	Expected Result	Inputs	PERSON(S) RESPONSIBLE	Year 2018							
				J	F	M	A	M	J	J	D
II.2.1 Compile and assess results from existing tree improvement trials in Ethiopia.	Data and analysis from field trials supporting	Consultants, ICRAF staff, FRC, EEFR	<u>Wubalem, LGR, SM</u>								

[illegible]



[illegible]

[illegible]

**Output IV. Capacity of the national institutions in management of tree genetic resources improved.**

[illegible]

[illegible]

[illegible]



## Appendix II: Scheduling of Technical Assistance Services to PATSPO in 2018

Technical Service	Duration	Timing during the year											
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1. Training- and capacity needs assessment.	1 month		xxxx										
2. Installation and use of seed lab. equipment and planning assessment of existing seed sources.	2 months	x	xxx									xxxx	
3. Assessment of existing seed sources.	4 months		xxxx	xxxx							xx	xxxx	xx
4. Second part of seed sector analyses.	2 months		xxxx xxxx										
5. Gene conservation and tree breeding strategy.	1 months				xxxx								
6. Implement survey on seed demand/ supply situation in Ethiopia.	4 months				xxxx xxxx	xxxx							
7. Planning and establishment of BSOs.	4 months	x	xxx			xx	xxxx xxxx	xx					
8. Priority species mapping.	2 months							xxxx	xxxx				
9. Breeding of food trees.	1 months						xxxx						
10. Preparation of training and extension material.	2 months			xx					xx			xx	
11. Training course in Seed Procurement.	1 months			xx						xx			xx

Technical Service	Duration	Timing during the year											
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
12. Coordinate and implement training activities with Ethiopian Institutions.	3 months						xxxx			xxxx	xxxx		
13. Senior Team Leader.	9 months	xxxx	xxxx	xxxx		xxxx		x	xxx	xxxx	xxxx	xxxx	xxxx
<b>Total</b>	<b>36 months</b>	<b>1 m</b>	<b>7 m</b>	<b>4 m</b>	<b>3 m</b>	<b>3 m</b>	<b>3 m</b>	<b>2 m</b>	<b>2 m</b>	<b>2 m</b>	<b>4 m</b>	<b>3 m</b>	<b>2 m</b>

**x = Approx. 1 week**

### Appendix III: PATSPO Risk Assessment Framework 2017

<b>RISK ASSESSMENT FRAMEWORK, STATUS AS PER NOVEMBER 2017</b>					
<b>Planning Level</b>	<b>Relevant factors</b>	<b>Risk indicators/ effects</b>	<b>Risk probability (without project intervention)</b>	<b>Response/ Mitigation</b>	<b>Risk probability assessed November 2017</b>
<u>Impact:</u> Ethiopia's national forest restoration targets for the next 20 years and beyond are reached.	Substantial areas of landscapes restored	Lack of political support to landscape restoration  Lack of stakeholder interest and involvement in landscape restoration	Medium/ low	GOE strongly committed to landscape restoration (Bonn Challenge and INDC) which is embedded in the CRGE.  The landscape restoration leads to higher production potential and thus directly benefits the stakeholders.	Political support and stakeholder interest still high.
<u>Outcome:</u> Tree seed sector in Ethiopia enabled to provide high quality tree seeds of priority species for large-scale restoration plantings.	Availability of quality tree seed in quantities to meet the demand.	Quality and quantity of tree seed not sufficient to meet demand  Low transparency and lack of quality control in the tree seed sector.	Medium/ high	The TSTC, the four regional tree seed centres and a number of private tree seed dealers form a solid institutional foundation from where the project can support the expansion of the quantity and quality of tree seed being procured. The tree seed sector analysis and the additional project support to normative functions of the government institutions as well as the overall focus on quality will provide for transparency and quality control	Sufficient tree seed seems to be available, thus room for improvement of quality and quality control.
<u>Output I:</u> Tree seed sector developed, including seed delivery systems.	Policies and strategies on tree seed. Tree seed network and forum for stakeholders in the tree seed sector.	Facilitating and supporting strategies on tree seed lacking and cannot be developed. A functional tree seed network and forum is lacking and cannot be formed.	Medium/ high	The support and dedication of the MEFC and TSTC towards improving the seed procurement system together with the experience brought into the tree seed sector by the project.	Assessment of risk not yet applicable.

RISK ASSESSMENT FRAMEWORK, STATUS AS PER NOVEMBER 2017					
Planning Level	Relevant factors	Risk indicators/ effects	Risk probability (without project intervention)	Response/ Mitigation	Risk probability assessed November 2017
<u>Output II:</u> Tree seed and seedling knowledge and information systems in place.	Maps and recommendation domains. Decision support system and interactive information portal	Adequate recommendations and guidelines are absent and the supportive tools and systems are not being developed and put into operation.	High	The key institution (TSTC) is staffed with highly qualified staff and substantial work related to mapping is already being done. Support from the project will further develop the tools and ensure they are put into operation (cf. also output IV).	Recommendation and guidelines under preparation. Stakeholder interest high.
<u>Output III:</u> Existing seed sources upgraded and new seed sources established (Tree genetic resources for the future mobilized and developed).	National breeding programme.  Range wide collections of priority species.  Breeding seedling orchards (BSO/SSC)	Breeding programme, collections and establishment of BSOs/trials/production areas will not be established at sufficient scale.	High	The capacity of TSTC, the dedication of the regional tree seed centres and the vibrant private tree seed sector together with the technical- and funding input from the project will ensure mentioned outputs.  The seed sources will be established on land under the control of and close to the institutions being part of the tree seed sector (TSTC, PSE, NGOs, etc.)	Activity just initiated and the interest of stakeholders is high.
<u>Output IV:</u> Capacity of national institutions in management of tree genetic resources improved.	Qualified staff at national tree seed institutions and private seed dealers.	Qualified staff not available at scale.  Trained staff will not remain within the tree seed sector.	High	The project will be based on a thorough ‘training needs assessment’, and develop and implement comprehensive capacity development at all levels in the public and private sectors.  When the large national forest and landscape programme is taking off, the tree seed sector will continue to develop, become an attractive sector to work in and thus attract the needed qualified staff.	Motivated staff at key national tree seed institutions available for upgrading through support from PATSPO.

**The following three situations, as per June 2018, pose a risk for less optimal implementation of PATSPO**

<b>EXTRACT of the RISK ASSESSMENT FRAMEWORK for the PMF</b>					
<b>Planning Level</b>	<b>Relevant factors</b>	<b>Risk indicators/ effects</b>	<b>Actual situation posing a risk</b>	<b>Recommended action</b>	<b>PATSPO response</b>
<u>Output IV:</u> Capacity of national institutions in management of tree genetic resources improved.	a) Qualified staff at national tree seed institutions and private seed dealers.	a) Qualified staff not available at scale.	a) No staff appointed at the RTSC in Mekele.	a) Staff to be employed by the local authority without delay at the RTSC in Mekele	a) Technical support on hold until staff is in place
	b) Maintenance of equipment and facilities at CEEFRC and RTSCs in Hawassa and Mekele, which are under central- or regional public administration	b) Government/ institutional budget/ finance not available for maintenance	b) The centres cannot operate, as essential facilities and equipment are not working (cold stores, generators, etc.)	b) The centres allowed retaining income by their respective authority as part of their budgets	b) Maintenance plans and initial repairs are implemented, whereas in the longer term maintenance will depend on the ability of centres' own management capacity and budget
	c) Sufficient and clean space at centre compounds, -offices and other facilities.	c) Centre compound, offices and storerooms full of old not functioning equipment (vehicles, equipment, tyres, etc.)	c) Not sufficient space for the centres' operations and not a good working environment.	c) Discard old and not functioning equipment and material from the centres and their compounds.	c) Consider the recommended action to be conditional for delivery of new equipment and vehicles with support from PATSPO.

## Risk assessment of cross cutting issues – from PATSPO Proj. Doc. March 2017 and updated July 2018

Cross-cutting theme	Relevant factors	Risk indicators/ effects	Risk probability (without project intervention)	Response/ Mitigation	Risk probability (during/ after project intervention)
Climate change and environment	Species selection, recommendation domains, resource mobilisation	In-appropriate matching to site and purpose, loss of productivity, invasiveness, loss of biodiversity.	High	Application of evidence based response models, and policies for appropriate use of genetic resources, and for of invasive alien species.	Low
Institutional capacity	Delivery of seed and seedlings (sub-sector functioning)	‘Un-conscious’ delivery of in-appropriate material	High	Developing an enabling regulatory framework and a collaborative seed supply network. Building capacity to sustain such application.	Low
Women’s rights and gender equality	As above	As above	Medium/high	As above	Low
Anti-corruption	Financial sustainability	Fiduciary risk (money used for un-intended purpose, not providing adequate return, not adequately accounted for)	Medium/high	Adequate financial management implemented. Fraud prevention, monitoring and response policy adhered to	Low
Human rights	Beneficiaries Stakeholders Partners	Lack of involvement, in-adequate benefit sharing, violation of tenure and traditional rights	Medium	Application of the SHARED approach and a set of relevant safeguard policies	Low
Violent conflicts within Ethiopia	Project implementation, - in particular at field level	Hindering of movements, communication and implementation of project activities	Medium	Follow the development and recommendations of the security situation in Ethiopia through the ILRI security	Medium



<b>Cross-cutting theme</b>	<b>Relevant factors</b>	<b>Risk indicators/ effects</b>	<b>Risk probability (without project intervention)</b>	<b>Response/ Mitigation</b>	<b>Risk probability (during/ after project intervention)</b>
Unrealistic project planning (PATSPo)	Less optimal implementation of the PATSPo Project	Financial implications and lesser degree of timely delivering of the project outcomes, results and outputs.	Low.	monitoring modality More focus on planning based on previous years implementation of the project activities and more realistic estimates of activity costs.	Low.

The two last issues (‘Violent conflicts’ and ‘Unrealistic Project Planning’) have been added following the Annual Formal Meeting with RNE in May 2018 as mentioned in the progress report for 2017. The issue of political unrest is mentioned in annex 9 of the Project Document. The recent periods of curfew in Ethiopia have not prevented any major field operations of the project so far, although visits to some areas have been adjusted in time to avoid any potential problems. Communication has not been hindered either, although phone calls have to be used quite extensively at times of unstable internet. Support to improve the latter at the regional centres is being considered. It is correct that the project plans for 2017 were unrealistic in particular with respect to recruitment of local staff, delivery of international services and the baseline survey to be provided. This is not considered to be a major risk in the future but in order to make sure that it is monitored; we agree that it is relevant to add as a risk factor.

## Appendix IV: Updated Performance Measurement Framework (July 2018, Baseline added November)

See also appendix V providing explanation to the update of the PMF.

Planning Level	Performance Indicators	Performance Targets	Baseline	Means of Verification	Verification Frequency	Responsibility
<u>Impact</u> Ethiopia's national forest restoration targets for the next 20 years and beyond are reached	Area restored using quality tree seedlings raised from quality seed	Increase the area restored using quality tree seedlings raised from quality seed from current levels of close to none to about half of the annual restoration area or around 0.5 million ha at the end of the project period. Quality measures defined in the monitoring and evaluation protocol.	Area restored using quality tree seedlings 2017: 0 ha (0 %)	Assessment reports based on data from MEFC and other government institutions.	Yearly	ICRAF/MEFCC
<u>Outcome</u> Tree seed sector in Ethiopia enabled to provide high quality tree seeds of priority species for large-scale restoration plantings.	Amount of quality tree seed of priority species made available (produced and delivered) for restoration plantings in Ethiopia	Increase the amount of quality tree seed of priority species from current level of close to none to about half of the demand for the annual restoration programme. Quality measures defined in the monitoring and evaluation protocol.	Amount of quality tree seed of priority species used for restoration: 0 kg (0%)	Assessment reports based on data and statistics from stakeholders in the tree seed sector in Ethiopia.	Yearly	ICRAF/TSTC
<u>Output I:</u> Tree seed sector developed, including seed delivery systems	Tree seed delivery system elements in place.	Assessed and upgraded strategies and policies for the tree seed sector in place, - done in close collaboration with MEFC. Target: government policy recommended.	No official government policy exists.	Analysis reports. Technical reports. System reports. Seminar- and meeting reports.	Yearly	ICRAF/TSTC



Planning Level	Performance Indicators	Performance Targets	Baseline	Means of Verification	Verification Frequency	Responsibility
<i>Output II:</i> Tree seed and seedling knowledge and information systems in place		Demand and supply scenarios in place.	No demand-supply scenarios exist.			
		Established and well-functioning tree seed network and – forum for the tree seed sector in place.	No tree seed network and forum exist.			
	Technical knowledge and information system for the tree seed sector available.	Maps and related tree planting recommendation domains covering all regions of Ethiopia in place. Target: 150 species.	No species specific maps exist.	Manuals for the systems. Technical reports. Progress reports on use of the systems and knowledge.	Yearly	ICRAF/TSTC
		Species/seed source selection portal/system (“What to plant where”) in place. Target: A portal covering tree species of Ethiopia	No portal is available.			
		Field trials/BSOs to support development of superior seed sources in place and analysed.	No BSOs exist. A baseline of existing field trials will be prepared in 2018.			
		Genomic studies of priority species to support development of superior seed sources performed.	No species at present covered by genomic studies.			

<b>Planning Level</b>	<b>Performance Indicators</b>	<b>Performance Targets</b>	<b>Baseline</b>	<b>Means of Verification</b>	<b>Verification Frequency</b>	<b>Responsibility</b>
<i>Output III:</i> Tree genetic resources for the future mobilized and developed	National tree breeding programme formulated	National tree breeding programme, incl. BSOs, for priority tree species covering 80-90 % of the seed demand (base of seed sources).	No national breeding programme exist. Baseline of existing species specific programmes will be prepared in 2018.	Breeding programme documents. Seed source assessments/ descriptions. Seed source/BSO/SSO establishment reports. Seed collection reports.	Yearly	ICRAF/TSTC/ PSEs/NGOs
	Number of new seed sources (BSOs) established and in use.	75-150 BSOs/SSOs of the priority tree species established.	No BSOs/SSOs exist.			
	Number of existing seed sources upgraded and in use.	4-500 seed sources identified and described in existing forests and plantations throughout Ethiopia.	Existing seed sources are generally not described			
	See outcome	Between 250 - 1000 tons of quality tree seed of priority species procured annually by the tree seed sector, ref. section 10a in the Project Document.	Quality of current supply is not documented			

Planning Level	Performance Indicators	Performance Targets	Baseline	Means of Verification	Verification Frequency	Responsibility
<u>Output IV:</u> Capacity of national institutions in management of tree genetic resources improved	Number of staff and stakeholders trained (at training courses and through extension activities).	1000 staff members from stakeholder institutions in the tree seed sector trained in technical subjects through 10 annual training courses with 25 participants per course.	0	Training course reports. Guidelines, training- and extension material published.	Yearly	ICRAF/TSTC/ PSEs/NGOs
		4000 user group members reached through extension activities, - 10 extension events per year with min. 100 attendants per event.	0			
	Number of (relevant) training- and extension material produced.	10-25 technical guidelines/notes and 20-30 extension briefs/leaflets produces annually, - in total 150 - 200 publication during the project period.	0			

## Appendix V: Note on Update of the Performance Measurement Framework (PMF) of PATSPO, July 2018

The Performance Measurement Frame (PMF) of PASTPO is given in Annex 1 of the Project Document and described in the text of this document. The PMF was prepared according to the Guidelines for Results Management in Norwegian Development Cooperation. At the time of preparation, not all indicators could be adequately quantified and an update with such quantification was therefore planned as part of the inception phase in 2017. As described in the progress report for 2017, establishing the ‘baseline of the tree seed sector in Ethiopia’ was initiated shortly after project start but turned out to be a more difficult task than anticipated at the time of planning.

One of the major tasks of the baseline establishment was to survey current and planned planting programmes in the country to establish a list of species preferences and the required seed quantities by species for the different tree planting programmes in Ethiopia. This information was thought to be easily available in the two ministries (MoANR and MEFCC). It turned out not to be the case and it was therefore necessary to initiate a set of more thorough surveys of relevant activities at the different administrative levels in the country (federal, regional, zonal, woreda and kebele). Although of importance for the assessment of the performance of the project it was not considered critical for the initial activities of capacity building, establishment of seed sources, and awareness raising, so these elements have been implemented with highest priority in parallel with the sector baseline assessment. Data have now been collected and a first quantification of all indicators in the PMF has been made (see the updated PMF given in *appendix IV*). Two reports on the tree seed supply/demand situation in Ethiopia are available (Lillesø and Derero, in prep.; and Duguma and Tadesse, in prep.) and will be supplemented with further analyses and – as stipulated in the project document - the preparation (during second half of 2018) of a monitoring and evaluation protocol to measure the impacts of the chosen approaches.

Overall plans for tree planting are available as part of the GTP (MEFCC FY Plan, 2010, in Amharic). Information compiled on planting areas and numbers of seedlings used in the different regions are shown in the table below.

Planted seedlings in 2016/17 and planned seedling production in 2017/18						
No.	Region	Planted seedlings in 2016/17		Planned seedling production in 2017/18		
		No. of seedlings (billion)    Area (Ha)		No. of seedlings (billion)    Area (Ha)		
1	Oromia	1.31	207,778	1.56	389,557	
2	SNNP	0.86	193,135	1.00	227,506	
3	Amhara	1.21	184,851	1.53	287,390	
4	Tigray	0.15	68,000	0.15	79,880	
5	Other	0.02	9,902	0.03	15,667	
Country total		3.55	1,317,431	4.24	984,333	

These overall figures confirm the annual national planting target of about 1 million ha using some 3-4 billion seedlings, primarily taking place in the regions Oromia, SNNP, Amhara, and Tigray.

Information on species used are not available from all planting programmes but the supply of species from the four regional tree seed centres and information from SLMP provide a good indication of national and regional priorities. These five species are available in the reports referred to above (Lillesø and Derero, in prep.; and Duguma and Tadesse, in prep.) Supply for planting is dominated by exotic species (60-90 % depending on region) with the majority of seed sources being plantations, farmland and natural forest. It is estimated that the five tree seed centres in Ethiopia provide for around half of the planting programmes in Ethiopia. The rest would be from private seed suppliers and local procurement. Quality is formally reported

but not documented, so almost all seed can be considered of unknown quality and to a large extent procured with the assistance of local farmers as collectors.

The performance indicator for impact can thus be quantified with a performance target of increasing the area restored using quality tree seedlings raised from quality seed from current levels of close to none to about half of the annual restoration area or around 0.5 million ha at the end of the project period. Quality measures (see below) will be defined in the monitoring and evaluation protocol.

The performance indicator for outcome can similarly be quantified with a performance target of increasing the amount of quality tree seed of priority species from current level of close to none to about half of the demand for the annual restoration programme. Quality measures will be defined in the monitoring and evaluation protocol.

Quality measures with respect to impact and outcome will report on physiological quality of seed (germination and survival), documentation of provenance (source), compliance with recommendation domains, priority and suitability of species (for purpose and site), the ratio of indigenous species being used; and policy measures introduced in support of using quality seed.

Performance targets of indicators at output levels are in principle unchanged. During inception and the first half of 2018, it has been realized that targets with respect to breeding programme (output III) and publication of extension material (guidelines and briefs – Output IV) are higher than realistic, given less local capacity to perform these tasks than anticipated. They have therefore been somewhat reduced. Otherwise performance targets for all outputs are in progress and will be reported at the end of 2018.







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