



Norway's International
Climate and Forest Initiative
(NICFI)

Annual Work Plan 2019

November 2018

PLANNING

Provision of Adequate Tree Seed Portfolios (PATSPO)

Annual Work Plan 2019

(November 2018)

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

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28 November 2018

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List of Abbreviations and Acronyms

AFE	Amhara Forest Enterprise
AWP	Annual Work Plan
BSO	Breeding Seed Orchard
CRGE	Climate Resilient Green Economy
EBI	Ethiopia Biodiversity Institute
EEFRI	Ethiopia Environment and Forest Research Institute
EFCCC	Environment, Forest and Climate Change Commission Ethiopia
CEE-FRC	Central Ethiopian Environment and Forest Research Centre
GIZ	German International Cooperation
GOE	Government of Ethiopia
ICRAF	World Agroforestry Centre
INDC	Intended Nationally Determined Contribution
ITA	International Technical Assistance
MANR	Ministry of Agriculture and Natural Resources
MEFCC	Ministry of Environment, Forest and Climate Change, Ethiopia (now EFCCC)
M&E	Monitoring and Evaluation
NFG	Norwegian Forestry Group
NGO	Non-Governmental Organisation
NICFI	Norwegian International Climate and Forest Initiative
OFWE	Oromia Forest and Wildlife Enterprise
PATSPO	Provision of Adequate Tree Seed Portfolios
PIP	Project Implementation Plan
PMF	Performance Measurement Framework
PMT	Project Management Team
RAF	Risk Assessment Framework
RNE	Royal Norwegian Embassy
RSE	Regional Seed Enterprises
RTSC	Regional Tree Seed Centre
SC	Steering Committee (for PATSPO 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
UAA	University of Addis Ababa

1 INTRODUCTION

This Annual Work Plan 2019 for PATSPO is based on the Project Document (ICRAF & MEFCC 2017) and the 4-year work plan in the project document, 2017-2020 (PATSPO 2017). The Annual Work Plan (AWP) covers the full calendar year January to December 2019.

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, capacity 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 year, and finally provides information on the budget implications. An activity plan and implementation schedule are presented in appendix I. The foreseen technical assistance for 2019 is given in appendix II. The Risk Assessment Framework together with an assessment of relevant risk, as well as assessment of cross cutting issues in appendix III, and the Performance Measurement Framework in appendix IV (based on the updates presented in the AWP 2018, last update November 2018).

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 inception phase thus in practise started on the 1st of July 2017 and ended on the 31st of December 2017. The inception phase was followed by implementation in 2018 based on an annual work plan for 2018 submitted in November 2017. Reporting of the implementation phase and the plan for 2018 was discussed at the Annual Formal Meeting between the Royal Norwegian Embassy and ICRAF on 22 May 2018, in accordance with the Grant Agreement. The last plan referred to is thus the plan for 2018.

A number of issues were discussed during the meeting, for details reference is made to the minutes from the Annual Formal Meeting.

With respect to planning, the following general guidance has been deducted from the meeting:

- a. AWP's shall be made based on assessment of activities and with possible quantified and detailed deliverables referring to indicators in an updated Performance Measurement Framework (PMF).
- b. Updated budgets shall be prepared and included in the AWP's. The budget shall be based on the 'lessons learnt' from previous years to ensure a good match to project activities and provide a realistic picture of the financial inputs required for the year.
- c. The PMF shall be updated and indicators possibly quantified based on the results achieved so far. The PMF shall 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.

The present plan has been prepared accordingly.

MEFCC went through a re-structuring to become a commission (EFCCC) towards the end of 2018. It may have implications for some of the activities of the project, e.g. the establishment of the tree seed network.

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 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 of the project document, "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 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; and the updated Risk Assessment Framework (RAF) and the updated assessment of cross cutting issues in appendix III.

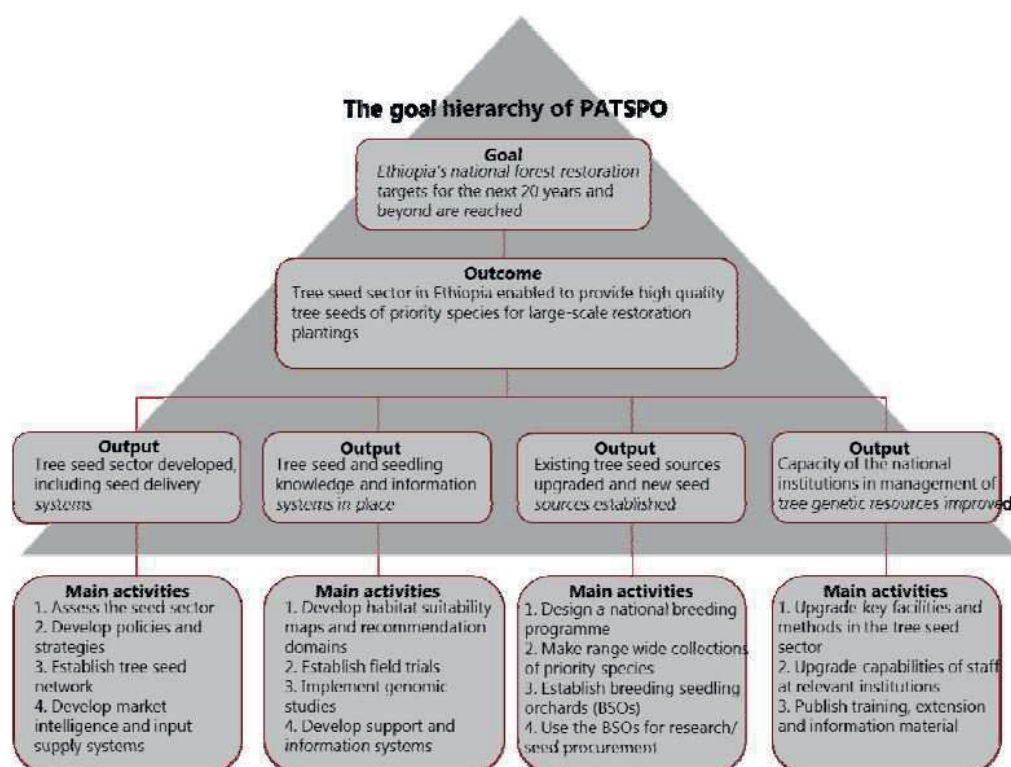


Figure 1. Elements of the PATSPO Project results framework, the goal hierarchy (which also encompass the project *theory of change*, as described in the project document).

c. Outputs

To meet the project outcome, four Project Outputs will be delivered by the project: (page 5-7):

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 continuously updated information on the actual situation in the tree seed sector in Ethiopia. The data gathered so far is presented in a 'Baseline Report' (2018) for the project, made to support of 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 a 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 (cf. Appendix IV):

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

The baseline was – with some difficulties - produced in 2018 (cf. AWP 2018 and progress 2018, in preparation). The sector review will be presented and discussed at a workshop for the project stakeholders early 2019.

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 (cf. Appendix IV):

- 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.

Maps and field trials are underway, genomic studies have been initiated, and work on the portal will start in 2019 (cf. progress report 2018, in preparation). There will be work in all areas during 2019.

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 (cf. Appendix IV):

- 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).

The preparation of the breeding programme, establishment of seed orchards and seed source identification/description were all begun in 2018; and seed was delivered from the four operational of the five centres being supported (cf. progress report 2018, in preparation). All activities will be continued in 2019.

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); number of (relevant) training and extension material produced; and upgrade of technical facilities. The performance targets include (cf. Appendix IV):

- 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.
- Technical facilities of partners upgraded.

Training needs were assessed, an extensive training plan prepared, which include outsourcing of a number of training courses to Ethiopian training institutions. This is done to expand the PATSPO training programme to better meet the needs. The application-provision strategy are put into practice, three technical training courses held, a number on the job trainings done, a number of technical and extension publications made, and technical facilities of partners upgraded (cf. progress report 2018, in preparation). Upgrade of technical facilities has been added as a performance indicator following the assessment of facilities in 2017/18. All activities will continue in 2019.

4 WORK PLAN FOR THE YEAR 2019

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 2019 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, which includes the

overall work plan for the project period. The sub-activities and their expected results for the year 2019 are listed in the following sections (4.2.1 – 4.2.4).

4.2.1 OUTPUT I: 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 and support to the establishment of a national tree seed source register.

1.1.2 Implement workshop for presentation and discussion of results from the tree seed sector assessment. Data necessary for development of the sector.

1.1.3 Make a critical analysis of seed supply/seed demand situation in Ethiopia. Seed demand/supply scenarios, incl. support to seed procurement plans at regional and national levels.

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 (Workshop ref. 1.1.2). 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, quarantine regulation, in collaboration with MANR, EBI, EFCCC and GIZ. Roles and responsibilities among national institutions defined, incl. clear mandates and regulation for import/export of tree seed (quantities, usage).

1.2.3 Support preparation/finalization of 'tree seed proclamation' under preparation in EFCCC with support from GIZ. Proclamation prepared and published.

1.2.4 Prepare strategy for gene conservation of selected priority species as part of an integrated approach for optimal use and protection of tree genetic resources. Gene conservation strategy.

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 Support establishment of a tree seed network in EFCCC to support information, exchange and optimal use of tree germplasm (seed) in Ethiopia. Workshop and 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 Prepare plan for optimal seed supply/demand situation for 10 priority spp. using potential vegetation map of Ethiopia, spp. distribution maps and seed demand/supply data. Plans for optimal tree seed demand/supply of 10 priority spp.

1.4.2 Select sites for BSO/SSO establishments of 6-10 priority species 2019/2020, in collaboration with AFE, OFWE, EEFR and the RTSCs. Sites selected and described for BSO/SSC establishments 2019/2010 for 6-10 priority spp.

4.2.2 OUTPUT II: 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 (EBI, UAA, RTSCs, 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. Distribution maps of priority spp. for use in conservation, tree improvement and seed procurement activities and species distribution atlas of Ethiopia.

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. Main activity finalised in 2018 (status and plan). Report will be published in 2019.

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 through testing on Shea (*Vitellaria paradoxa*) and *Faidherbia albida*. Model testing for possible application in BSO/SSO establishments and other tree improvement activities.

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.

2.4.1 Establish database on distribution, use, growth/site requirements, etc. for 150 tree species. Database to be used for preparing an app on ‘what tree for what location’.

4.2.3 OUTPUT III: 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 next 15 priority spp. to be included in the breeding programme, - through a participatory stakeholder process, including use of 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 6-10 priority species and make plans for collections. Sites of 6-10 priority species, incl. plans for collection.

3.2.2 Prepare collection modality/org. structure for the actual collections and collect/import seed. Plans for collections incl. logistics and seed collections/imports.

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 14 BSOs for six priority species on 3-10 sites, including selection of sites. Documents describing the establishment of BSOs.

3.3.2 Obtain available seed of the six priority species from abroad and in country and collect from selected provenances and single trees in Ethiopia. Required seed obtained and stored at FRC.

3.3.3 Finalise and sign MoU between PATSPO/ICRAF and AFE, OFWE and EFFRO and make contracts/budgets for establishment of 14 BSOs/SSOs. MoUs and contracts/budgets

3.3.4 Prepare guideline for all aspects of BSC establishment (nursery operation, preparation of planting site, fencing of site, transport of seedlings to site, prepare planting according to BSO design, plant seedlings and maintenance of seedlings. Seedlings for the BSOs/SSOs raised.

3.3.5 Supervise AFE, OFWE and EFFRI in all phases (ref. III.3.4) of the BSO establishment. Established BSOs/SSOs

3.3.6 Prepare establishment reports for all BSOs established 2019. Reports, manual and maintained BSO.

3.3.7 Select the next 6-10 priority species on the list and initiate the establishment of BSO/SSOs following the activities described above III.3.1 to III.3.3. Start of establishment of BSO/SSO for 5-10 additional priority spp.

3.4 Assess, manage and use the BSO/SSOs for research, breeding and seed procurement.

3.4.1 Prepare protocol for data registration from the BSOs and collect data accordingly from the established BSOs. Data registered for management of the BSOs.

3.4.2 Prepare manual/guide for maintenance of the BSOs/SSOs year 1-3. Manual.

4.2.4 OUTPUT IV: 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 Renovate seed processing facilities at CEE-FRC following recommendation from PATSPO consultants and design to be prepared by CEE-FRC/EFFRI. Increased seed procession capacity at CEE-FRC.

4.1.2 Repair cold store rooms at Mekele RTSC and upgrade seed store rooms (ambient temperature) at other RTSCs on requests. Better seed storage facilities at the seed centres.

4.1.3 Purchase and deliver additional minor equipment to CEE-FRC and the four 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 cold stores at all 5 TSCs – service agreement w. CELTIC (private company). 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 Expanding the PATSPO training activities through finalising selection of Ethiopian training institutions to do training on behalf of PATSPO. List of training institutions to do training on behalf of PATSPO

4.2.2 Prepare syllabus and tenders for selection of training institutions for individual courses, incl. budgets and contracts. Well prepared and implemented courses through outsourcing.

4.2.3 Update PATSPO training plan 2019-2020 including outsources training courses. PATSPO training plan 2019-2020

4.2.4 Implement training courses, etc., according to the PATSPO training plan. Stakeholders trained according to needs.

4.2.5 Implement the PATSPO Application – Provision Strategy. RTSC 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 activities scheduled for 2019 whereas others will be identified, approved and implemented following the “Guideline to: Application/Provision Strategy for Training and Extension Activities” (PATSPO 2018).

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 and other training activities according to the PATSPO training plan 2019-2020. 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.

4.3.4 Publish and distribute technical reports from consultants and other sources. Technical reports available for stakeholders.

4.3.5 Maintain and upload information, documents, reports, guidelines etc. on the PATSPO homepage: <http://www.worldagroforestry.org/project/provision-adequate-tree-seed-portfolio-ethiopia>. Information on PATSPO made available to a larger audience.

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' 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

Five vehicles have been procured by the project to service the project and partners. One additional vehicle might be procured during the year for Mekele RTSC, which became operational in the third quarter of 2018.

5.3 International and National Technical Services

35 months of international technical assistance for PATSPO are foreseen for 2019:

1. Training of farmer cooperatives, incl. dev. of course, material and training of trainers.
2. Support to installation and use of seed lab. equipment and training on seed centre procedures.
3. Support to assessment and registration of existing seed sources.
4. Seminar on results from seed sector assessment and follow-up.
5. Gene conservation strategy for selected priority spp.
6. Make designs and layout plans for BSOs 2019.
7. Planning- and field establishment of BSOs.
8. Training of staff from agricultural research institution on maintenance and use of clonal mother blocks of Baobab, Sisyrinchium and Tamarind established by PATSPO in Tigray Region.
9. Priority species mapping and data compilation for app for mob. phones.
10. Assessment and application of DNA tools on selected spp.
11. Prepare plan for seed demand/supply for 10 priority species based on data from sector review, distribution maps and potential vegetation map.
12. Support to EFCCC on preparation of tree seed proclamation

13. Follow-up on coordination and implement of training activities outsourced to Ethiopian institutions.
14. 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 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 and updated during 2018.

The Risk Assessment Framework from the Project Document with an assessment of the defined potential risks as per November 2018 is presented in appendix III. The risk assessment of cross cutting issues updated November 2018 is also given in appendix III.

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 (Head of RTSC and PATSPO RTSC Coordinator) has been 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, EFCCC, TSTC (under EEFRI), RTSCs, ICRAF, Norwegian Forestry Group (NFG), NGOs, private seed dealers and other relevant organizations.

Co-ordination of PATSPO Activities:

PATSPO has annual planning meetings with the TSTC and the RTSCs, in addition annual planning meetings with TSTC are implemented. Further several “ad hoc” meetings will be held for planning and implementing specific activities mentioned in this AWP. Finally, the

PATSPPO-staff and advisers regularly visit the RTSCs to expand the PATSPPO-support to the RTSC-activities.

7.2 Project Monitoring

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

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

Input and progress monitoring of the supported institutions and organisations (TSTC, Regional Seed Enterprises (RSEs), NGOs etc.) will be undertaken regarding visits by project staff and advisers. The SC plays 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 2019 the following major PATSPPO-reports/publications are foreseen:

- Annual progress report (March 2019)
- Final Annual Work Plan, 2019 (prepared by November 2018, final following Formal Meeting in May 2019)
- Technical reports and guidelines in accordance with the detailed activity plan in appendix I.

8. BUDGET IMPLICATIONS FOR THE YEAR

The budget presented for 2019 is based in part on the original budget of the project in the project document; and in part on the experience gained during the inception phase (2017) and the first year of implementation (2018). Significant delays were experienced in 2017 Planning was unrealistic with respect to recruitment of local staff, delivery of international services, and the baseline survey, which took longer than planned and consequently resulted in delay of operational activities. The delays of recruitment extended into 2018 and the budget prepared for 2018 was therefore also smaller than originally foreseen. 2019 will thus be the first year where all the planned staff is in place. To catch up with some of the delays, a

slightly higher level of operation in terms of capacity building and seed source development has been planned and the budget for 2019 is therefore also slightly higher than the original budget for 2019.

The request for disbursement will be re-assessed in connection with the finalisation of the progress report for 2018.

Appendix I: PATSPO Activity Plan and Implementation Schedule (2019 AWP)

Output I. Tree seed sector developed, including delivery systems.																
Main activity I.1 Seed sector assessment: Assessment of the tree seed sector.					Year 2019											
Sub-Activity	Expected Result	Inputs	PERSON(S) RESPONSIBLE ¹	J	F	M	A	M	J	J	A	S	O	N	D	Remarks
I.1.1 Survey existing established seed sources in Ethiopia.	Overview of seed production capacity and support to the establishment of a national tree seed source register.	Consultants, PATSPO/ PATSPO/ ICRAF staff.	RTSC, NGOs and students. <u>SM</u> , AA, KM, CTN, RTSC- Coordinators													
I.1.2 Implement workshop for presentation and discussion of results from the tree seed sector assessment.	Data necessary for development of the sector.	Consultants, PATSPO/ PATSPO/ ICRAF staff.	<u>JPL, AD</u> RTSC, NGOs and students. (KH,SM)													
I.1.3 Make a critical analysis of seed supply/seed demand situation in Ethiopia.	Seed demand/supply scenarios, incl. support to seed procurement plans at regional and national levels.	Consultants, PATSPO/ PATSPO/ ICRAF staff.	<u>JPL, AD</u> (KH,SM)													

¹ List of staff and consultants given at the end of the table (page 27)

Main activity 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.				Year 2019											Remarks	
Sub-Activity	Expected Result	Inputs	PERSON(S) RESPONSIBLE	J	F	M	A	M	J	J	A	S	O	N		D
I.2.1 Analysis of the organisation of the tree seed sector, - stakeholder roles and responsibilities. <u>Workshop ref.</u> 1.1.2	Proposals for possible improvements of major stakeholders' roles and responsibilities.	Consultants, PATSPO/ ICRAF staff.	JPL, AD (KH,SM)													
I.2.2 Make a critical review of the current seed movement regulations in Ethiopia, including import/export, quality control, quarantine regulation, in collaboration with MANR, EBI, EFCCC and GIZ.	Roles and responsibilities among national institutions defined, incl. clear mandates and regulation for import/export of tree seed (quantities, usage).	Consultants, PATSPO/ ICRAF staff.	WT, YM KM, AA. (KH,SM)													
1.2.3 Support preparation/ finalization of 'tree seed proclamation' under preparation in EFCCC w. support from GIZ.	Proclamation prepared and published.	Consultants, PATSPO/ ICRAF staff.	PD, YM, KM, AA. (KH, SM)													
1.2.4 Prepare strategy for gene conservation of selected priority species as part of an integrated approach for optimal use and protection of tree genetic resources.	Gene conservation strategy.	Consultants, PATSPO/ ICRAF staff.	<u>LGR, AK, WT.</u> (KH, SM)													

Main activity I.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.				Year 2019												Remarks
Sub-Activity	Expected Result	Inputs	PERSON(S) RESPONSIBLE	J	F	M	A	M	J	J	A	S	O	N	D	
I.3.1 Support establishment of a tree seed network in EFCCC to support information exchange and optimal use of tree germplasm (seed) in Ethiopia.	Workshop and tree seed network.	PATSPo/ ICRAF staff, funds.	SM, KH													
Main activity I.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.				Year 2019												Remarks
Sub-Activity	Expected Result	Inputs	PERSON(S) RESPONSIBLE	J	F	M	A	M	J	J	A	S	O	N	D	
I.4.1 Prepare plan for optimal seed supply/demand situation for 10 priority spp. using potential vegetation map of Ethiopia, spp. distribution maps and seed demand/supply data.	Plans for optimal tree seed demand/supply of 10 priority spp.	Consultants, PATSPo/ ICRAF staff.	Stepha M. SM, LGR, KH													
I.4.2 Select sites for BSO/SSO establishments of 6-10 priority species 2019/2020, in collaboration with AFE, OFWE, EEFR and the RTSCs.	Sites selected and described for BSO/SSC establishments 2019/2020 for 6-10 priority spp.	AFE, OFWE, EEFR and the RTSCs. Consultants, PATSPo/ ICRAF staff.	AA, CTN, KM. SM, KH,													

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

Main activity II.1 <i>Habitat Suitability Maps and Recommendation Domains</i> : Development of high resolution habitat suitability maps that delineate species- and provenance-specific recommendation domains for up to 150 priority tree species in Ethiopia.				Year 2019												Remarks
Sub-Activity	Expected Result	Inputs	PERSON(S) RESPONSIBLE	J	F	M	A	M	J	J	A	S	O	N	D	
II.1.1 Compile data on distribution of the priority tree species from various sources (EBI, Univ. of A.A., RTSCs, FRC, etc.)	Data on distribution of priority spp. resulting in more accurate spp. distribution maps.	Consultants, PATSPO/ ICRAF staff, FRC, EEFR, funds.	<u>RK</u> (KH,SM)													
II.1.2 Prepare distribution maps for up to 150 priority tree species.	Distribution maps of priority spp. for use in conservation, tree improvement and seed procurement activities. Species distribution atlas of Ethiopia.	Consultants, PATSPO/ ICRAF staff, FRC, EEFR.	<u>RK</u> (KH,SM)													
Main activity II.2 <i>Genetic differentiation of selected species based on field trials</i> : Document important patterns of genetic differentiation (in growth, phenology, productivity and health) of selected indigenous species in experimental tests. Main activity finalized in 2018 (status and plans). Report to be published in 2019.				Year 2019												Remarks

Main activity II.3 <i>Genetic differentiation of selected species based on genomic studies:</i> 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.	Year 2019												Remarks				
	Sub-Activity	Expected Result	Inputs	PERSON(S) RESPONSIBLE	J	F	M	A	M	J	J	A	S	O	N	D	
	II.3.1 Assess if genomic testing should be included as part of the general survey of existing seed sources for selected species through testing on Shea (<i>Vitellaria paradoxa</i>) and <i>Faidherbia albida</i> .	Model testing for possible application in BSO/SSO establishments and other tree improvement activities.	Consultants, PATSPO/ICRAF staff.	HP, OKH LGR, SM,													
	Main activity II.4 <i>Development of a decision support system and interactive information portal:</i> 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.	Year 2019												Remarks			
		Sub-Activity	Expected Result	Inputs	PERSON(S) RESPONSIBLE	J	F	M	A	M	J	J	A	S	O	N	D
		II.4.1 Establish database on distribution, use, growth/site requirements, etc. for 150 tree species.	Database to be used for preparing an app on ‘what tree for what location’.	Consultants, PATSPO/ICRAF staff.	RK KH, SM, LGR												

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

Main activity III.1 <i>Design of a national breeding programme:</i> Design a national breeding programme for more than 50 priority species, including identification of distribution and deployment zones - also considering climate change aspects.					Year 2019												Remarks
Sub-Activity	Expected Result	Inputs	PERSON(S) RESPONSIBLE	J	F	M	A	M	J	J	A	S	O	N	D		
III.1.1 Identify next 15 priority spp. to be included in the breeding programme, - through a participatory stakeholder process, including use of distribution maps.	Consolidated and agreed tree species priority list and corresponding distribution maps.	Consultants, PATSPO/ICRAF staff, FRC, EEFRI, RTSC, MEFCC.	PATSPO/ICRAF staff. AA, KM, CTN (KH,SM)														
Main activity III.2 <i>Range wide collections of priority species:</i> Make range wide collections of plus tree families (from natural stands as well as possible landraces) complementing existing collections.					Year 2019												Remarks
Sub-Activity	Expected Result	Inputs	PERSON(S) RESPONSIBLE	J	F	M	A	M	J	J	A	S	O	N	D		
III.2.1 Identify selection sites and plus trees, covering the distribution area, for 6-10 priority species and make plans for collections.	Sites of 6-10 priority spp., incl. plans for collection.	Consultants, PATSPO/ICRAF staff, EEFRI, RTSCs, AFE, OFWE.	AA, KM, CTN, RTSC Coordinators (KH,SM)														
III.2.2 Prepare collection modality/org. structure for the actual collections and collect/import seed.	Plans for collections incl. logistic and seed collections/imports.	Consultants, PATSPO/ICRAF staff.	AA, KM, CTN,RTSC Coordinators (KH,SM)												Collections/imports to be finalised in 2020.		

Main activity III.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.	Year 2019												Remarks		
	PERSON(S) RESPONSIBLE	Inputs	Expected Result	J	F	M	A	M	J	J	A	S		O	N
III.3.1 Finalise establishment plans of 14 BSOs for six priority species on 3-10 sites, including selection of sites.	Consultants, PATSPO/ICRAF staff.	Documents describing the establishment of BSOs.	AA, KM, JKH, CTN (KH,SM)												
III.3.2 Obtain available seed of the six priority species from abroad and in country and collect from selected provenances and single trees in Ethiopia.	Consultants, PATSPO/ICRAF staff, FRC, EEFRI, RTSCs	Required seed obtained and stored at FRC.	AA, KM, CTN, RTSC coordinators (KH,SM)												
III.3.3 Finalise and sign MoU between PATSPO/ICRAF and AFE, OFWE and EFFRO and make contracts/budgets for establishment of 14 BSOs/SSOs.	PATSPO/ICRAF staff and staf from AFE, OFWE and EEFRI.	MoUs and contracts/budgets	AA, KM, CTN, RTSC coordinators (KH,SM)												
III.3.4 Prepare guideline for all aspects of BSC establishment (nursery operation, preparation of planting site, fencing of site, transport of seedlings to site, prepare planting according to BSO design, plant seedlings and maintenance of seedlings.	Consultants, PATSPO/ICRAF staff, FRC, EEFRI, RTSCs and other stakeholders	Seedlings for the BSOs/SSOs raised.	AA, KM, JKH, CTN (KH,SM)												
III.3.5 Supervise AFE, OFWE and EFFRI in all phases (ref. III.3.4) of the BSO establishment.	Consultants, PATSPO/ICRAF staff.	Established BSOs/SSOs	AA, KM, CTN, RTSC coordinators (KH,SM)												

[illegible]

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

Output IV. Capacity of the national institutions in management of tree genetic resources improved.																
Main activity IV.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 Regional Tree Seed Centres), 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: This part of the main activity to be covered under output III and main activity IV.2.	Year 2019												Remarks			
	Sub-Activity	Expected Result	Inputs	PERSON(S) RESPONSIBLE	J	F	M	A	M	J	J	A	S	O	N	D
	IV.1.1 Renovate seed processing facilities at CEE-FRC following recommendation from PATSPO consultants and design to be prepared by CEE-FRC/EEFRI.	Increased seed procession capacity at CEE-FRC.	Consultants, PATSPO/ ICRAF staff, FRC and funds.	KM, PE, CTN, RTSC Staff <u>(KH,SM)</u>												
	IV.1.2 Repair cold store rooms at Mekele RTSC and upgrade seed store rooms (ambient temperature) at other RTSCs on requests.	Better seed storage facilities at the seed centres.	Consultants, PATSPO/ ICRAF staff, FRC, RTSC, private company	KM, PE, RTSC staff. <u>(KH,SM)</u>												
	IV.1.3 Purchase and deliver additional minor equipment to CEE-FRC and the four RTSCs according to recommendations from PATSPO consultants.	Well-equipped seed labs at all 5 TSCs.	Consultants, PATSPO/ ICRAF staff, FRC, RTSC and funds.	PE, KM <u>(KH,SM)</u>												
	IV.1.6. Assist in setting up maintenance system for cold stores at all 5 TSCs – service agreement with CELTIC (private	Well maintained TSCs.	Consultants, PATSPO/ ICRAF staff, FRC, RTSC.	KM, PE, RTSC staff. <u>(KH,SM)</u>												

Main activity IV.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.	Year 2019												Remarks			
	Sub-Activity	Expected Result	Inputs	PERSON(S) RESPONSIBLE	J	F	M	A	M	J	J	A		S	O	N
IV.3.1 Compile, adjust, prepare and publish training material for courses and other training activities according to the PATSPO training plan 2019-2020.	Training material in large quantities available for PATSPO activities	Consultants, PATSPO/ ICRAF staff, FRC, RTSC.	PATSPO/ ICRAF staff. (KH,SM)													
IV.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.	Consultants, PATSPO/ ICRAF staff, FRC, RTSC.	PATSPO/ ICRAF staff. (KH,SM)													
IV.3.3 Use published material for PATSPO training and extension activities and distribute material to major stakeholders.	Stakeholders use quality training and extension material.	Consultants, PATSPO/ ICRAF staff, FRC, RTSC.	PATSPO/ ICRAF staff. (KH,SM)													
IV.3.4 Publish and distribute technical reports from consultants and other sources.	Technical reports available for stakeholders.	Consultants, PATSPO/ ICRAF staff	PATSPO/ ICRAF staff. (KH,SM)													
IV.3.5 Maintain and upload information, documents, reports, guidelines etc. on the PATSPO homepage: http://www.worldagroforestry.org/project/provision-adequate-tree-seed-portfolio-ethiopia	Information on PATSPO made available to a larger audience.	Consultants, PATSPO/ ICRAF staff.	PATSPO/ ICRAF staff. (KH,SM)													

ITA/TA persons for PATSPO activities 2019

Initials	Name	ICRAF HQ	ICRAF Eth.	UCPH	EFFRI	Other
KM	Kedra Mohammed					
KH	Kiros Hadgu					
AA	Abraham Abiyo					
CTN	Carsten Tom Norgaard					
AD	Abayneh Derero					
JPL	Jens-Peter Lilliso					
WT	Wubalem Tadesse					
YM	Yigardu Mengesha					
PD	Phil Dobie					
LGR	Lars Graudal					
AK	Antoine Kalinganire					
SM	Soren Moestrup					
St.M	Stepha McMullin					
RK	Roeland Kindt					
HP	Hendra Prasad					
OKH	Ole Kim Hansen					
JKH	Jon Kehlet Hansen					
PE	Poul Elgaard					
AS	Arvis Sloth					
SiM	Sime Mekdes					
LS	Lars Schmidt					

Appendix II: Scheduling of Technical Assistance Services to PATSPO 2019

Technical Service	Duration in mm	Timing during the year											
		Jan mm	Feb mm	Mar mm	Apr mm	May mm	Jun mm	Jul mm	Aug mm	Sep mm	Oct mm	Nov mm	Dec mm
1. Training of farmer cooperatives, incl. dev. of course, material and training of trainers.	3 months		xxxx	xxxx								xxxx	
2. Support to installation and use of seed lab. equipment and training on seed centre procedures.	2 months			xxxx							xxxx		
3. Support to assessment and registration of existing seed sources.	4 months		xxxx	xxxx							xx	xxxx	xx
4. Seminar on results from seed sector assessment and follow-up.	1.5 months	xx					xxxx						
5. Gene conservation strategy for selected priority spp.	2 months										xxxx xxxx		
6. Make designs and layout plans for BSOs 2019.	1 month					xxxx							
7. Planning- and field establishment of BSOs.	4 months				xxxx	xxxx	xxxx	xxxx					
8. Training of staff from agricultural research institution on maintenance and use of clonal mother blocks of Baobab, Sisyphus and Tamarind established by PATSPO in Tigray Region.	1.5 months			xxxx	xx								
9. Priority species mapping and data compilation for app for mob. phones.	2 months	xxxx					xxxx						
10. Assessment and application of DNA	2 months		xxxx		xxxx								

Technical Service	Duration in mm	Timing during the year											
		Jan mm	Feb mm	Mar mm	Apr mm	May mm	Jun mm	Jul mm	Aug mm	Sep mm	Oct mm	Nov mm	Dec mm
tools on selected spp.													
11. Prepare plan for seed demand/supply for 10 priority species based on data from sector review, distribution maps and potential vegetation map.	1 month									xxxx			
12. Support to EFCCC on preparation of tree seed proclamation	1 month				xxxx								
13. Follow-up on coordination and implement of training activities outsourced to Ethiopian institutions.	1 month									xxxx			
14. Senior Team Leader.	9 months	xxxx	xxxx	xxxx	xxxx	xxxx				xxxx	xxxx	xxxx	xxxx
Total	35	2.5	4	4	4.5	4	3	1		3	4.5	3	1.5

x = Approx. 1 week

Appendix III: PATSPO Risk Assessment Framework

The Risk Assessment Framework (RAF) is presented in the project document (page 38-40). Following the first formal meeting between RNE and the project in May 2018 (in accordance with the grant agreement), the RAF was expanded with respect to output IV with three specific factors. It was further decided that monitoring of RAF should also apply to the cross-cutting issues described in the project document (page 35-37). The cross-cutting themes covered in the project document are: Climate change and environment, institutional capacity, women's rights and gender equality, anti-corruption, and human rights. To these were added the risk of conflict in Ethiopia and a risk of un-realistic planning.

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 it has been added as a risk factor

Below follow therefore three tables:

- The original RAF with a status assessment of November 2017
- RAF for three issues identified during inception with a status assessment of June 2018
- RAF for cross-cutting themes with a status assessment of July 2018.

A full status assessment at the end of 2018 will be included in the progress report for 2018. A preliminary qualitative update as of November 2018 is given in a column added to the right in each table.

RISK ASSESSMENT FRAMEWORK, STATUS AS PER NOVEMBER 2017						November 2018
Planning Level	Relevant factors	Risk indicators/ effects	Risk probability (without project intervention)	Response/ Mitigation	Risk probability assessed November 2017	
<i>Impact:</i> 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.	No change
<i>Outcome:</i> 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	Sufficient tree seed seems to be available, thus room for improvement of quality and quality control.	No change. Impatience with respect to quick results has been shown by some stakeholders. Dialogue with these has generally resolved the issues. The interest is considered positive.

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	November 2018
				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		
<i>Output 1:</i> 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.	No change. The re-structuring of MEFC to become EFCCC may delay some of the work.

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	November 2018
<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.	No change.
<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	Activity just initiated and the interest of stakeholders is high.	The work in 2018 has received great interest and expectations for 2019 are high.

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	November 2018
				of the tree seed sector (TSTC, PSE, NGOs, etc.)		
<i>Output IV:</i> 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.	No change. The five operational tree seed centres are at different levels of expertise and progress which needs to be taken into consideration. See also next table.

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

EXTRACT of the RISK ASSESSMENT FRAMEWORK for the PMF						
Planning Level	Relevant factors	Risk indicators/ effects	Actual situation posing a risk	Recommended action	PATSPO response	November 2018
<i>Output IV:</i> 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	Staff now in place and technical support initiated
	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	No change
	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.	In satisfactory progress

Risk assessment of cross cutting issues – from project document 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)	November 2018
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	No change
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	No change
Women’s rights and gender equality	As above	As above	Medium/high	As above	Low	No change
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	No change
Human rights	Beneficiaries Stakeholders Partners	Lack of involvement, in-adequate benefit sharing, violation of	Medium	Application of the SHARED approach and a set of relevant safeguard	Low	No change

Cross-cutting theme	Relevant factors	Risk indicators/ effects	Risk probability (without project intervention)	Response/ Mitigation	Risk probability (during/ after project intervention)	November 2018
		tenure and traditional rights		policies		
Violent conflicts within Ethiopia	Project implementation, - in particular at field level	Hindering of movements, communication and implementation of project activities	Medium	Follow the developments and recommendations of the security situation in Ethiopia through the ILRI security monitoring modality	Medium	No change. Implementation has so far not been hampered
Unrealistic project planning (PATSP0)	Less optimal implementation of the PATSP0 Project	Financial implications and lesser degree of timely delivering of the project outcomes, results and outputs.	Low	More focus on planning based on previous years implementation of the project activities and more realistic estimates of activity costs.	Low	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. In 2018 plans and implementation have been adequately congruent

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

The Performance Management Framework (PMF) is presented in the project document (page 30-33 and annex 1, page 42-43). The PMF here is updated to provide for qualitative and quantitative assessment. First annual assessment will be part of the progress reporting for 2018.

Planning Level	Performance Indicators	Performance Targets	Baseline	Means of Verification	Verification Frequency	Responsibility
<i>Impact</i> 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
<i>Outcome</i> 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
<i>Output 1:</i> 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
<u>Output II:</u> 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.			

Planning Level	Performance Indicators	Performance Targets	Baseline	Means of Verification	Verification Frequency	Responsibility
<u>Output III:</u> 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/ RSEs/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
<i>Output IV:</i> 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/ RSEs/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			
	Technical facilities of partners upgraded ²	The five centres up to standard and in function. Partner entrepreneurs and cooperatives equipped to enhance their performance and business	4 centres in function at varying levels of standard. Number of active partners and cooperatives unknown	Assessment and maintenance reports and facility/equipment registry.	Yearly	ICRAF/TSTC/ RSEs/NGOs

² This performance indicator has been added following an assessment of technical facilities in 2017/2018.



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