



TITLE:

Flora Conservation Plan

NOTE:

The document is applicable to eni Ghana Exploration and Production limited activities

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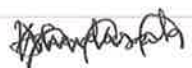
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REVISION SHEET

Rev.	Date	N. pages	Change Description	Prep	Ver.	Appr.
00	31-07-2016	42	Final issue	J Sanchez	F Climent C Ortuño	D Strippoli
01	31-07-2017	42	Updated ORF Layout	J Sanchez	F Climent C Ortuño	D Strippoli
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Flora Conservation Plan (plan ms hse 019 Eni Ghana r01 Appendix F)

Action as per 2021 work plan	Summary of review in document	Status
Review and ensure alignment with NNL strategy	1. Broadened the scope to include production phase Comments are included for discussion 1. Within AMTE 2. With experts during consultations Additional revision will be undertaken following consultations.	In progress



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1. Purpose

The purpose of this plan is to provide practical guidance on the specific actions required for the conservation of the flora of interest found within the OCTP onshore Project footprint. This plan has been prepared taking into account the species of interest and footprint locations and is based on the information gathered during the Pre-construction field survey (March 2016). This plan is focused exclusively on the conservation of the flora in the onshore section of the OCTP Project.

Note that the plan is designed to set the tools required for the construction phase only. For details on the future reinstatement and revegetation activities refer to the Reinstatement and Revegetation Standard (std ms hse 004 Eni Ghana).

The actions proposed in this plan constitute a key element for the conservation of the target flora species and the mitigation of the impacts on the onshore flora as derived from the Environmental Impact Statement (EIS) and the surveys developed along the Project footprint.

This plan shall be read in conjunction with other management plans and work instructions relevant for the conservation of the flora and vegetation, such as the Reinstatement and Revegetation Standard (std ms hse 004 Eni Ghana), the Prevention and Control of Alien and Invasive Species Work Instruction (opi ms hse 025 Eni Ghana), the Topsoil Management Work Instruction (opi ms hse 026 Eni Ghana), Pre-construction Flora, Landscape and Erosion Survey Report of the BMP (Plan ms hse 019 Eni Ghana) and the Environmental Monitoring Program (plan-ms hse 018 Eni Ghana).



2. Scope of application

The document applies to all Eni Ghana activities and it represents a guideline for all employees, contractors and visitors during the construction and development drilling, and operational phase of the Offshore Cape Three Points (OCPT) Project.

Health	Safety	Environment
		✓

3. References

3.1 Internal references

Ref.	Title
[Ref.1]	Plan ms hse 019 Eni Ghana – Biodiversity Management Plan
[Ref.2]	std ms hse 004 Eni Ghana r01 - Reinstatement and Revegetation Standard
[Ref.3]	opi ms hse 025 Eni Ghana r01 – Prevention and Control of Alien and Invasive Species Work Instruction
[Ref.4]	opi ms hse 026 Eni Ghana r01 - Topsoil Management Work Instruction
[Ref.5]	Plan ms hse 018 Eni Ghana - Environmental Monitoring Program
[Ref.6]	Plan ms hse 009 Eni Ghana - OCTP Framework ESHMP
[Ref.7]	Plan ms hse 019 Eni Ghana Appendix E - Pre-construction Flora, Landscape and Erosion Survey Report of the BMP

The list reported in the table above refers to the most updated version of the mentioned documents and also to all successive revisions and integrations.



4. Acronyms

AIS	Alien Invasive Specie
AoI	Area of Influence
BMP	Biodiversity Management Plan
DP MGR	Department Manager. Technical, HSE, Exploration, etc.
EGH	Eni Ghana
EIS	Environmental Impact Statement
E&P	Exploration and Production
ESHIA	Environmental Social and Health Impact Assessment
ESHMP	Environmental Social and Health Management Plan
HSE	Health Safety and Environment
IUCN	International Union for Conservation of Nature
MD	Managing Director
OCPT	Offshore Cape Three Points (OCPT)
RRP	Reinstatement and Revegetation Plan
RRS	Reinstatement and Revegetation Standard

5. Definitions

For the purposes of this document, the following terms shall be defined:

Term	Definition
Alien Invasive Species	Species, subspecies or lower taxon occurring outside its natural range that becomes established in natural or semi-natural ecosystems or habitat and threatens native biological biodiversity.
Company	Eni Ghana employees and assets engaged in the oil and gas operations.
Contractor	An outside company awarded a contract by the Company to perform a defined work or to provide services or facilities.
Endemic	Native to, and restricted to, a particular geographical region.
Eni Ghana	Eni Ghana exploration and production Ltd.
Native species	Species, subspecies or lower taxon occurring within its natural range and dispersal potential.
Translocation sites	Selected locations where the targetted plant species will be planted to ensure their proper conservation and compensate for those individuals cleared along the footprint.
Protected species	Any flora species protected under Ghanaian regulations or assessed by the IUCN in any of the following categories: Vulnerable (VU), Endangered (En) or Critically Endangered (CR).
Reference locations	Sites located outside of the Project footprint where the habitats are very similar to those where the target species are located within the Project footprint and that will serve as the source of cuttings or seeds.
Species of Conservation Concern	All endemic and protected flora species



6. Responsibilities

Project and Development Manager

Project and Development Manager shall be responsible for ensuring the necessary resources, material, equipment and facilities are in place for the implementation of the present document.

HSE Manager

HSE Manager shall be responsible for monitoring the correct implementation of this document in the OCTP Project.

HSE Site Supervisor

HSE Site Supervisor is the main point of contact between contractors' HSE Representatives and Eni HSE Manager.

HSE Site Supervisor shall be responsible for monitoring the specific actions carried out when a target species or habitat of interest is found within the Project footprint, and to do the subsequent follow-up when needed (i.e. ensure the clearance of the site has been avoided and marking is adequate to avoid impacting, etc.)

Contractor's HSE Representative

Contractor's HSE Representatives shall be responsible for maintaining records on conservation actions carried out, to monitor them and the outcomes (i.e. success of translocation and offset activities), training and monitoring of potential species of conservation concern identified during works executed by the contractor's personnel.

All personnel

All project personnel, on first arrival on site, shall undergo the site HSE induction which includes special awareness on the importance of the flora species of conservation concern and the existence of hierarchized conservation actions that need to be applied on them and on relevant habitats to minimize impacting from construction activities and ensure their conservation.

Upon completion of training, they shall sign the HSE induction form or register.



During execution of works, all personnel shall comply with the requirements described in this plan, as applicable to their activities.



7. Flora Conservation Process Description

As part of the pre-construction field survey undertaken in March 2016, a team of flora experts surveyed project footprint. The main objective of the survey was to locate the specific sites and species of interest along the footprint areas. After having recorded this information, the flora experts performed an evaluation on the best conservation options, taking into account: the particular species, the site characteristics, and the practicality/feasibility of the proposed action (i.e. this evaluation was specific to each target species recorded and to each location where they were found).

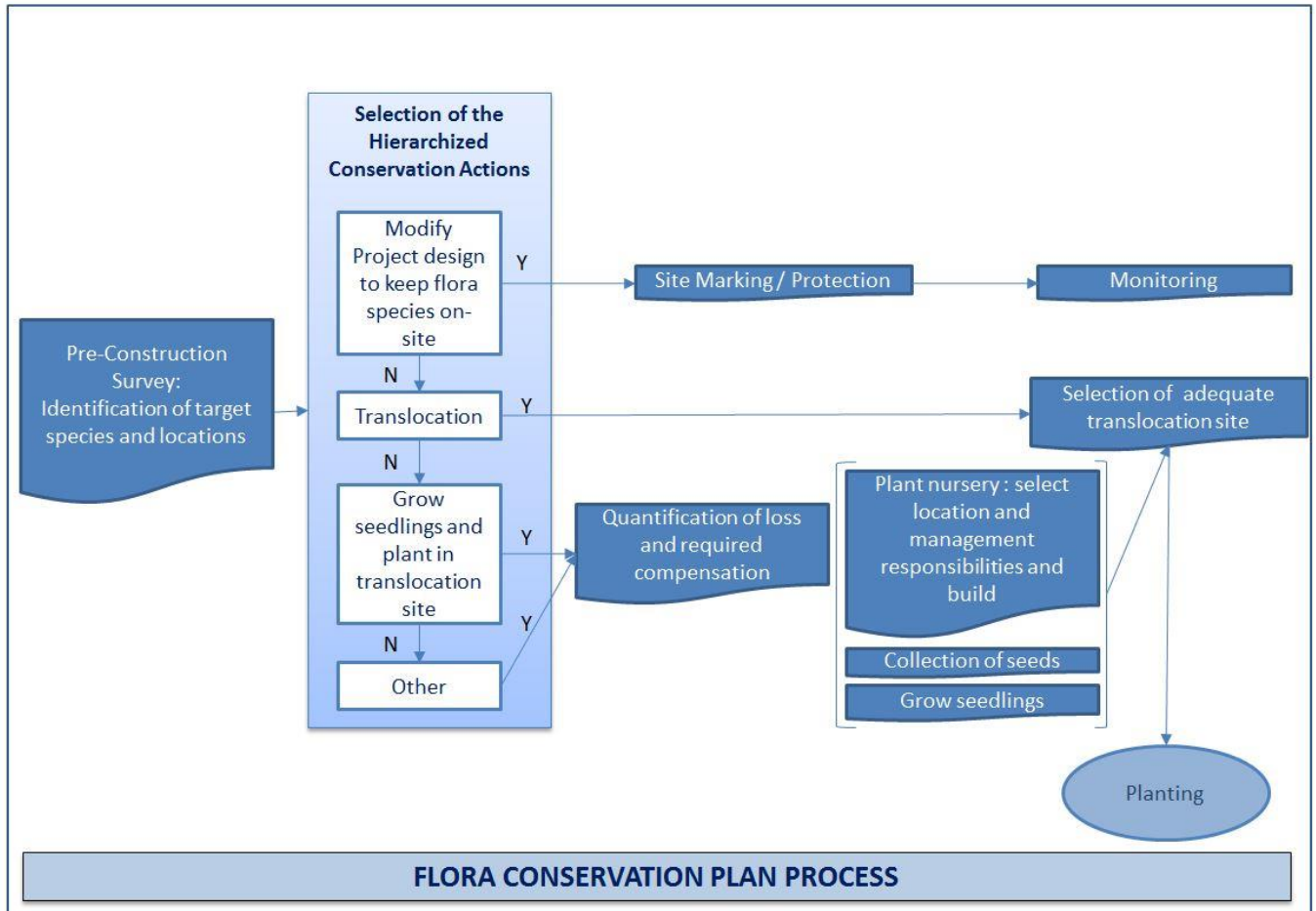
The procedure applied for the definition of the conservation actions was organized hierarchically. This procedure ensures the selection of an adequate conservation action for each species and location. The hierarchy considers a number of options that range from avoidance to growing through seedlings (see Figure 7.1).

Once a conservation action has been selected for a given species in a given location, the process follows different steps depending on the conservation action selected.

The following diagram illustrates and summarizes this process, including the different conservation action options organized by preference. Every step, and available results, is then detailed in the following sections of this document.



Figure 7.1 Diagram of Flora Conservation Process



8. Species Considered for the Plan

The target species for this plan have been identified based on the following categories.

1. Flora species assessed as Black, Gold or Blue Star according to the Ghanaian Star Rating System (which corresponds to species assessed as rare at Ghanaian or international level);
2. Flora species assessed as vulnerable (VU), Endangered (EN) or Critically Endangered (CR) by the IUCN; and
3. Flora species endemic to Ghana.

Any vegetation found within the Project footprint (or in its immediate vicinity) and fulfilling at least one of the above criteria was considered as a target species/site for this plan.

The first criterion makes reference to the star system for rating species that defines the conservation merit of each plant species in Ghana (Hawthorne, 1992; 1996; Hawthorne & Abu Juam, 1995). Stars are based primarily on global and local rarity. The highest conservation priority corresponds to those species rated as Black Star, which are rare internationally, and uncommon in Ghana, while those rated as Green Star are pioneer species with no conservation interest. Among the target species and as a result of the field survey, no black star species were recorded but only gold or blue star species.

The second criterion focuses on the IUCN classification. From the various categories considered as relevant only vulnerable (VU) species were recorded in the survey.

Finally, for the third criterion, the pre-construction field survey confirmed that no endemic flora species are present within the Project footprint.



8.1 Pre-construction survey

The pre-construction survey was performed by two local flora experts with academic backgrounds and appropriate taxonomic expertise, supervised by the ERM field manager as follows:

- Dr. James K .Adomako: senior lecturer, Botany department, University of Ghana
- John Amponsah: Local Vegetation/Forest expert, and Flora survey assistant
- Marco Rusmini: ERM Field manager.

All project footprints were surveyed in 7 full days of work, during the first week of March 2016. The survey focused on the identification of target species a set in the criteria previously described. As a result of the field survey, it was confirmed that no endemic species are present within the Project footprint area.

When any of the target species were identified, they were recorded in a specific register which served as the basis for setting this Flora Conservation Plan. An ad-hoc conservation action was defined for each specific individual/location. Where applicable, the individuals were marked on the ground by means of a spray paint. For the encountered individuals, pictures and GPS locations were recorded using specific field sheets (Figure 8.2).

Figure 8.2 Pre-construction Survey



The results of the pre-construction survey was used to inform this Flora Conservation Plan, by setting the final list of target species and the particularities associated to each of them, in terms of the conservation action to be developed in any of them.

Annex A presents the referred list of species found as a result of the pre-construction survey. Annex B includes four maps showing the location of target species within the Project footprint.

In addition, during the pre- construction survey a number of areas/sites of interest for flora conservation have been identified within the AoI. These areas are presented in the Map B (Annex B) and include the following:

- **Reference Site:** reference areas in the vicinity of the project area (but outside the project footprint) where habitats hosting target species have been identified. These sites have been identified for two main purposes: (1) to set the basis for defining future revegetation objectives (see std ms hse 004 Eni Ghana Reinstatement and Revegetation Standard); (2) as potential source of seeds or cuttings. Note: seeds/cuttings can be gathered from these sites only if the quality of the site and vegetation cover is not compromised. *Two reference areas were selected for Swamp Forest and Thicket/abandoned palm plantation, and one reference site for Coastal Strand.*
- **Translocation Site:** these sites are the proposed areas for translocating and offsetting the target cleared flora species. These areas already host target species and thus are suitable locations for translocation and offsetting (i.e. either to be translocated or planted). *Two options of each habitat as Translocation locations are also provided (-1- swamp forest, -2- thicket/abandoned palm plantation and -3- coastal strand).*
- **Nursery Location:** Suitable area to locate a plant Nursery in order to grow seedlings to compensate the vegetation clearance. A single nursery ranging from 1000 to 5000 seedlings can serve all the revegetation activities for the different habitats. The locations were selected according to aspects such as water availability and proximity to access roads. *Two potential locations were identified.*



As an overall consideration downstream the Pre-construction field survey, the team noticed that agricultural activities (crops and plantations) have often been abandoned within the Concession. As a consequence, all Habitat classes related to agriculture will progressively transform, through a process of ecological succession to Thicket. The phenomenon was already ongoing in some areas within TCF and Accommodation footprints. In Annex B, the Translocation area O3 occupies at the moment two land cover classes: Palm plantation and Thicket. The area occupied by the plantation will all rapidly transform into Thicket, already present in the north-western part of the concession (resulted from Excavation Works field survey, July 2015). Full results of the Pre-construction survey can be consulted in the Environmental Pre-construction Survey Reports (rep ms hse 011 Eni Ghana).



Species	Global threat Status (IUCN)	Ghana star rating	Proposed Conservation Action	Preferred habitat	Locations where the action should be applied
<i>Canarium schweinfurthii</i>	LC	Pink	Collect seeds, grow in nursery and plant in offshore area	Thicket	12 individuals recorded in 12 different locations (082, 101, 102, 105, 106, 177, 207, 218, 220, 242, 278 and 283).
<i>Crinum jagus</i>	LC	blue	Excavate and translocate to translocation area	Fresh Water Swamp Forest	Species recorded in 17 locations (024, 025, 157, 289, 295, 296, 298, 299, 300, 301, 302, 303, 304, 389, 393, 395 and 396), where either single individuals or clumps of up to 5 individuals were found.
<i>Funtumia elastica</i>	LC	Unknown	Collect seeds, grow in nursery and plant in translocation area	Thicket	A total of 24 individuals of this tree were recorded in 19 locations within the footprint
<i>Hallea ledermannii</i>	Vu	Red	Collect seeds, grow in nursery and plant in translocation area	Fresh Water Swamp Forest	One individual recorded of this tree in the site 109.
<i>Hallea stipulosa</i>	Vu	Red	Collect seeds, grow in nursery and plant in translocation area	Fresh Water Swamp Forest	A total of 49 individuals of this tree were recorded in 41 locations within the footprint
<i>Lophira alata</i>	Vu	Red	Collect seeds, grow in nursery and plant in translocation area	Fresh Water Swamp Forest/ Thicket	6 tree individuals recorded in 5 locations (028, 032, 190, 198 and 392) within Project footprint
<i>Nauclea diderrichii</i>	Vu	Unknown	Collect seeds, grow in nursery and plant in translocation area	Fresh Water Swamp Forest	1 tree recorded in site 020
<i>Pycnanthus angolensis</i>	LC	Pink	Collect seeds, grow in nursery and plant in translocation area	Thicket	6 trees of various sizes recorded in 6 different locations (108, 189, 208, 240, 349 and 350) within Project footprint
<i>Rauvolfia cumminsii</i> (vomitoria)	LC	Green	Collect seeds, grow in nursery and plant in translocation area	Thicket	2 small trees recorded in sites 069 and 257
<i>Sansevieria liberica</i>	NE	Blue	Excavate and translocate to translocation area	Coastal strand	Herb species recorded in 5 locations (001, 002, 003, 011 and 018), where clumps of up to 4 individuals were found.
<i>Syzygium guineense</i>	LC	Blue	Collect seeds, grow in nursery and plant in translocation area	Thicket	This species was recorded in 87 different locations appearing either individually or in clumps of up to 8 individuals. In total 132 individuals have been recorded in addition to 16 clumps with an undetermined number of individuals
<i>Syzygium guineense</i> var. <i>littorale</i>	LC	Blue	Collect seeds, grow in nursery and plant in translocation area	Thicket	This subspecies was recorded in 4 different locations (008, 009, 010 and 012) totalling 6 individuals plus a clump of undetermined size



<i>Tetracera dinklagii (alnifolia)</i>	NE	Green	Collect seeds, grow in nursery and plant in translocation area	Fresh Water Swamp Forest	This climber species was recorded in 32 locations along the Project footprint
<i>Turraeanthus africanus</i>	Vu	Unknown	Collect cuttings, grow in nursery and plant in translocation area	Fresh Water Swamp Forest/ Thicket	10 individuals of this tree were recorded in 9 locations (117, 134, 141, 188, 196, 197, 241, 243 and 244) along the Project footprint
<i>Uvaria chamae</i>	LC	Blue	Collect seeds, grow in nursery and plant in translocation area	Thicket	This climber species was recorded in 59 locations along the Project footprint
<i>Xylopia rubescens</i>	NE	Gold	Collect seeds, grow in nursery and plant in translocation area	Fresh Water Swamp Forest	17 individuals of this tree were recorded in 13 locations (022, 023, 044, 087, 139, 160, 386, 387, 389, 390, 391, 394 and 401) along the Project footprint



9. Flora Conservation Actions

Flora Conservation Actions apply to all works within the ORF concession area that require the removal of vegetation. This is currently anticipated during the construction phase, while flora conservation actions, specifically re-vegetation, shall continue during the operational phase of the project. .

Whenever a target flora species, either a plant a bush or a tree, was identified in the field, its location was recorded and mapped (see Annex B for maps with project footprint and relevant plant locations and Annex C for the complete list of sites and species remarks).

The flora experts have defined the most suitable conservation action in alignment with the *Hierarchized Conservation Actions* (see Figure 7.1) and taking into account the particularities of the species and location.

The potential actions considered, ordered by preference include:

1. In-situ Conservation by means of Project Design changes (Section 9.1);
2. Excavation and direct Translocation to translocation location(Section 9.2);
3. Collection of cuttings or seed and planting in a translocation location (Section 9.3);
4. Other (no other actions have been defined in this plan).

Table 9.1 below, presents the proposed conservation actions to each of the target species and locations (see Annex B for maps with specific site locations).

Table 9.1 Site specific proposed conservation actions on each flora species

9.1 Conservation in-situ (avoidance activities)

When a target species is recorded in a site and is considered as especially sensitive (based on its rarity, its good conservation status, etc.) the priority action is in-situ conservation. That is, typically marking and keeping the site and were feasible, slightly modifying the project design (e.g. shifting few meters an access road).

Because the project will need to create an elevated embankment in both the areas for permanent facilities and for temporary construction (i.e. construction



accommodation camp) the adoption of this conservation action is not, in most cases, feasible. As a consequence, during the pre-construction the team did not identify any specific site where in-situ conservation was defined as the proposed conservation action.

Still, because avoidance of vegetation is a better approach than mitigating clearance, the contractor will identify sites where this measure may still be feasible. This could be the case for those sites which are located within pipeline route, the access roads and the temporary facilities that will not require an elevated embankment.

Should avoidance be feasible in any area, the sites should be properly identified and marked and protected from construction/clearance works. The working maps and designs shall identify this area and all affected workers shall be briefed of its existence and on the signaling used to identify the site by the contractor's HSE representative in the field.

It should be noted that in all cases the adoption of the in-situ conservation measure shall involve the approval of the construction/engineering (i.e. confirmation that it is acceptable because it does not pose any significant H&S risk and the project design can be adapted/modified).



9.2 Excavation and Direct Translocation

The translocation process will be applied to all plant species and locations for which this methodology was selected as the most appropriate to ensure its survival. Table 9.1 indicates the two species (*Crinum jagus* and *Sansevieria liberica*) for which translocation is being proposed as well as the number of sites for evaluation.

The translocation and establishment of viable populations of flora species of conservation concern is a complex process that will involve the following steps:

1. Selection of an appropriate translocation site: This site must have similar habitat to areas populated with wild plants and be away of the project footprint to maximize survival rate. The sites selected should match soils and vegetation to the original site. Two sites have been preliminary selected for plant translocation as part of the pre- construction survey of March 2016. These sites are presented in the Maps in Annex B, corresponding to the locations "O2" (located in a wet swamp forest area east of the pipeline corridor to translocate individuals of *Crinum jagus*) and "O5" (located in the coastal strand to translocate individuals of *Sansevieria liberica*).
2. Design a layout and plant out: The translocation site identified shall be, to the extent possible, fenced to protect plants from herbivores or vandalism. To the extent possible the translocation shall be planned so as to match the preferred period for the translocation of each species (see Table A-1 in Annex A). The preferred period for the translocation of the two target species identified to be conserved by this methodology is the second quarter of the year (April-June).
3. Excavate the original plant: Those plants identified as a result of the pre-construction survey as subject for direct translocation will be removed from its original site by carefully excavating around them in a way to ensure the



roots are removed undamaged. This excavation shall take place immediately before planting in the new site¹.

4. Monitor and maintenance of translocated plants: Plants shall be monitored regularly for survival, growth, production of flowers and fruits and their ability to produce the next generation of plants. In addition they shall be maintained (watered, protected from herbivores, etc.) to maximize survival rate. Monitoring determines the success of the translocations and provides valuable data on the translocation process as a whole.

9.3 Collection of cuttings or seeds and subsequent planting

When direct translocation is not possible, the collection of cuttings or the collection of seeds should be considered. In both cases these shall be grown in a nursery and then planted in a new location. The selection of the species for which this methodology has been selected is based on the criteria of the flora experts' team that performed the pre-construction survey in March 2016.

The process involves the following steps:

1. Collection of cuttings / seeds: As a top priority the cuttings or seeds will be collected from the footprint areas being cleared (i.e. the use of cleared vegetal material for future reinstatement shall be maximized in all cases). Where considered appropriate, seeds and cuttings could also be gathered from the surrounding areas, such as the reference locations identified during the pre-construction survey in March 2016 (see maps in Annex B). These reference locations have been selected considering they are composed by habitats and species very similar to those where the target species have been found. As a result, these locations are expected to include the target species from which seeds or cuttings can be collected. Each species has one reference location assigned (see tables A-2 and A-3 in Annex A). The collection of seeds /cuttings will not be limited to the

¹ Note that a secondary option instead of translocation, *Crinum jagus* can be also be re-planted using bulbs and *Sansevieria liberica* can be re-planted by vegetative parts or cuttings.



reference site, but also from any other nearby locations if needed. In all cases the collection must be done in a way that the habitats are not degraded.

2. Growing: When seeds or cuttings are collected, new plants will be grown for offset planting by germinating seeds or planting the cuttings in a nursery. They should be grown in conditions that ensure no weeds, pests or diseases are to be translocated with the plants until they are ready for translocation to the new site. Maps in Annex B present two potential locations suggested to host the nursery.
3. Selection of an appropriate site for planting: This site must have similar habitat to areas populated with wild plants and be sufficiently away from the project footprint to ensure no interference with the project construction operation and maximization of the survival rate. The sites selected must match soils and vegetation to the original site. As a result of the pre-construction survey 6 locations suitable to be used as translocation locations have been identified (see Maps in Annex B). Each of these locations lies within a different habitat so as to cover all the original habitats of the target species identified (mainly swamp, thicket and coastal strand areas). As a result, each target species have a preliminary translocation location assigned as presented in the tables A-2 and A-3 in annex A.
4. Design a layout and plant out: To guarantee a good start for plants, planting shall take place during the most appropriate moment for each species. The appropriate timing for planting each species in the new translocation location is included in Tables A-2 and A-3 in Annex A. Additional relevant information on the procedures for the revegetation and soil management are presented in the Reinstatement and Revegetation Standard (std ms hse 004 Eni Ghana). In any case the plantation and the preparation of the translocation location shall be carried out by the contractor with the involvement of specialized personnel (this is to be



defined in the specific Reinstatement and Revegetation Plan – std ms hse 004 Eni Ghana).

5. Monitor and maintain plants: Plants shall be monitored for survival, growth, production of flowers and fruits and their ability to produce the next generation of plants within the translocation location. Monitoring determines the success of the planting and provides valuable data on the reproductive biology of the plant. Monitoring shall be completed with maintenance and care of the plants (i.e. watering, protection from herbivores, etc.) to be realized by specialized personnel.



10. Monitoring and Reporting

The monitoring of conservation actions success shall be included within the routine monitoring procedures established under the Environmental Monitoring Program (plan ms hse 018 Eni Ghana), the Reinstatement and Revegetation Standard (std ms hse 004 Eni Ghana) and the Prevention and Control of Alien Invasive Species (AIS) Work Instruction (opi ms hse 025 Eni Ghana).

These monitoring will be focused on:

- Ensuring the Conservation in-situ is considered as an option where the circumstances allow;
- Recording revegetation evolution;
- Documenting survival rate; and
- Recording alien species absence.

The monitoring for this plan will be focused on the Project footprint areas, the translocation areas and the nurseries. The monitoring will involve visiting all these areas to verify/document the implementation of works (e.g. confirm translocations, maintenance, survival, etc.). Survival rate for the planted and translocated species, their height and the cover they offer will be recorded and validated to confirm the objectives defined are being achieved or, where, if required, evaluate the need to perform additional actions. This shall apply also to the target species that may be close to the footprint.

The conservation of the flora of interest is a key element for the project and its short, mid and long term success is dependent also on the implementation of several other plans and factors such as a soil management (see opi ms hse 026 Eni Ghana – Topsoil Management Work Instruction) and the adoption of the correct revegetation procedures (std ms hse 004 Eni Ghana Reinstatement and Revegetation Standard).

The translocation and project footprint areas will also be monitored for AIS as the disturbance generated during the clearance and the translocation/planting of the target species may offer an opportunity for AIS to develop. If any of these species is found the procedures established within the Working Instruction for the Prevention



and Control of AIS shall be applied (opi ms hse 025 Eni Ghana Prevention & Control of AIS).

The nurseries will also be monitored to ensure their management is adequate and the growing of seedlings is adequate

Every month, as part of the monthly reporting under the EMP, the contractor's HSE Representative shall submit a Flora Conservation Report to the HSE Site Supervisor. The report shall contain a summary of the conservation actions carried out, monitoring activities, findings, corrective and preventive actions to ensure success of the conservation actions, incidences found, plant survival rate for each species, surface occupied by each of them, etc.

Eni Ghana HSE Site Supervisor shall update project information, communicate the onsite team and submit the report to the HSE Manager, who shall be responsible to take further actions if needed.



11. Training and Awareness

Raising awareness among personnel present on site has positive impact on the entire project's management. It increases knowledge of the conservation actions designed, the risks they face (i.e. mortality of planted individuals, presence of AIS, etc.) and it also increases vigilance in detecting any improper action or behavior posing a risk to the target species.

Contractors' HSE Representatives shall undergo a more detailed training program on Flora Conservation Plan, the Conservation Actions, inspection, monitoring and control. The training shall be aligned with the activities set in the Reinstatement and Revegetation Standard (std ms hse 004 Eni Ghana) and in the Environmental Monitoring Program (Plan ms hse 018 Eni Ghana) as well as where other key items for flora are covered (i.e. work instructions on Topsoil management and in Prevention and Control of AIS).

Training material shall highlight key species with photographs in order to train personnel to recognize them. Such material shall be updated by the HSE Manager as monitoring progresses.

Training records shall be kept by contractors' HSE Representatives and be available for review as part of the monitoring program.



12. Annexes

- Annex A Species of Conservation Interest, sites and proposed actions
- Annex B Flora Conservation Plan Maps.
- Annex C Summary of the results of the Pre-construction survey of March 2016



ANNEX A - Species of Conservation Interest, sites and proposed actions

The tables presented below provide the summary of the results from the pre-construction survey. The tables include the following information:

- *Species*: Latin name of the species considered;
- *Number of locations*: indicates the number of waypoints (locations) recorded during the pre-construction survey in which the species has been identified;
- *Total surface occupied*: indicates the total surface occupied by the species along all the locations where it has been recorded.
- *Associated habitat*: indicates the habitat where this species is generally found. The translocation site selected should correspond to this habitat;
- *Proposed translocation site*: indicates the proposed translocation site to plant, or translocate the target species. These translocation sites are also presented in the Maps in Annex B;
- *Optimum Period for seeds collection*: indicates the optimum period of the year where seeds can be collected for subsequent growing or planting; and
- *Optimum Period for translocation*: indicates the optimum period of the year where the translocation can be carried out with higher probability of success.

Table A-1. Target flora species to be preserved by means of translocation.

Species	Number of Locations	Total Surface occupied	Associated habitat	Proposed Translocation area	Optimum period for seeds collection	Optimum period for Translocation
<i>Crinum jagus</i>	17	10 m ²	Fresh Water Swamp Forest	O2	All Year	April - June
<i>Sansevieria liberica</i>	5	5 m ²	Coastal Strand	O5	All Year	April - June



Table A-2. Target flora species to be preserved by the collection of cuttings to be planted in a translocation site

Species	Number of Locations	Surface occupied	Associated habitat	Translocation area	Optimum period for cuttings collection	Optimum period for Translocation
<i>Tetracera dinklagei</i>	32	20 m ²	Fresh Water Swamp Forest/ Thicket	O2/ O3	All Year	April - June

Table A-3. Target flora species to be preserved by the collection of seeds to be grown in a nursery and then planted as seedlings in a translocation area.

Species	Number of Locations	Surface occupied	Associated habitat	Optimum period for seeds collection	Reference site	Optimum period for Translocation	Translocation area
<i>Canarium schweinfurthii</i>	12	8 m ²	Thicket	July-December	R3	April - June	O3
<i>Funtumia elastica</i>	18	10 m ²	Thicket	October-March	R4	April - June	O4
<i>Hallea ledermannii</i>	1	2 m ²	Fresh Water Swamp Forest	April-September	R1	April - June	O1
<i>Hallea stipulosa</i>	41	200 m ²	Fresh Water Swamp Forest	April-September	R1	April - June	O1
<i>Lophira alata</i>	5	8 m ²	Fresh Water Swamp Forest/ Thicket	January-March	R3	April - June	O3
<i>Nauclea diderrichii</i>	1	2 m ²	Fresh Water Swamp Forest	July-December	R1	April - June	O1

Species	Number of Locations	Surface occupied	Associated habitat	Optimum period for seeds collection	Reference site	Optimum period for Translocation	Translocation area
<i>Pycnanthus angolensis</i>	6	10 m ²	Thicket	October-March	R4	April - June	O4
<i>Rauvolfia cumminsii</i>	2	4 m ²	Thicket	October-March	R3	April - June	O3
<i>Syzygium guineense</i>	87	300 m ²	Thicket	October-March	R3	April - June	O3
<i>Turraeanthus africanus</i>	9	8 m ²	Fresh Water Swamp Forest/Thicket	July-December	R2	April - June	O2
<i>Uvaria chamae</i>	59	120 m ²	Thicket	All Year	R3	April - June	O3
<i>Xylopia rubescens</i>	13	10 m ²	Fresh Water Swamp Forest	July-December	R2	April - June	O2

ANNEX B - Flora Conservation Plan Maps

Annex B includes four maps as follows:

- Map B – 01: map showing the overall concession with Reference, Translocation and Nursery sites as well as flora target species observations classified according to the conservation measure to be adopted.
- Maps B – 02, 03 and 04: maps showing the location of each target plant classified according to the flora species. The maps show for each location the ID number in order to link the field sheets.



ANNEX C – Results of the Pre-construction survey of March 2016

The following table presents the summarized results of the Pre-Construction survey carried out in March 2016, focused on the target species recorded. For additional information please refer to the Pre-construction Flora, Landscape and Erosion survey report, included as Appendix E to the Biodiversity Management Plan (ms-hse-19 - Eni Ghana).

The table presents the following information.

- *Point Id*: corresponds to code of the waypoint where the species was recorded. These points appear represented in maps in Annex B;
- *UTM Coordinates*: indicates the coordinates where the point, and therefore the species is located (UTMWGS84 Zone 28N);
- *Elevation*: elevation above mean sea level of the location as per GPS device;
- *Sector*: the sector of the Project footprint where the site. These sectors are located in the maps in Annex B. This allows for the identification of potential sites subject to evaluation of in-situ conservation (see Section 9.1) Note TCF stands for “temporary Construction Facility”;
- *Species*: scientific name of the species recorded in the referred location;
- *Conservation Action*: proposed conservation action for the species and location as indicated by the flora experts team; and
- *Life form*: life form of the species (herb, tree, bush, etc.)

Point ID	UTM Coordinates		Elevation	Sector	Species	Conservation action	Life Form
	X	Y					
001	561127,0	548129,0	9,8	Southern Pipeline - South	Sansevieria liberica	Translocation	Herb
002	561126,0	548131,0	9,8	Southern Pipeline - South	Sansevieria liberica	Translocation	Herb
003	561104,0	548135,0	9,6	Southern Pipeline - South	Sansevieria liberica	Translocation	Herb
008	561159,0	548218,0	9,7	Southern Pipeline - South	Syzygium guineense var. littorale	Seeds	Tree
009	561159,0	548212,0	11,3	Southern Pipeline - South	Syzygium guineense var. littorale	Seeds	Tree
010	561181,0	548216,0	11,6	Southern Pipeline - South	Syzygium guineense var. littorale	Seeds	Tree



Point ID	UTM Coordinates		Elevation	Sector	Species	Conservation action	Life Form
	X	Y					
011	561177,0	548224,0	11,1	Southern Pipeline - South	Sansevieria liberica	Translocation	Herb
012	561172,0	548232,0	10,9	Southern Pipeline - South	Syzygium guineense var. littorale	Seeds	Tree
013	561197,0	548266,0	11,8	Southern Pipeline - South	Syzygium guineense	Seeds	Tree
017	561203,0	548384,0	12,5	Southern Pipeline - South	Syzygium guineense	Seeds	Tree
018	561193,0	548401,0	13,3	Southern Pipeline - South	Sansevieria liberica	Translocation	Herb
020	561201,0	548435,0	13,1	Southern Pipeline - South	Nauclea diderichii	Seeds	Tree
021	561197,0	548446,0	12,8	Southern Pipeline - South	Hallea stipulosa	Seeds	Tree
022	561213,0	548462,0	3,2	Southern Pipeline - South	Xylopia rubescens	Seeds	Tree
023	561213,0	548464,0	14,9	Southern Pipeline - South	Xylopia rubescens	Seeds	Tree
024	561230,0	548484,0	10,6	Southern Pipeline - South	Crinum jagus	Translocation	Herb
025	561191,0	548568,0	14,9	Southern Pipeline - South	Crinum jagus	Translocation	Herb
026	561189,0	548588,0	13,5	Southern Pipeline - South	Hallea stipulosa	Seeds	Tree
028	561206,0	548686,0	14,3	Southern Pipeline - South	Lophira alata	Seeds	Tree
029	561204,0	548690,0	14,0	Southern Pipeline - South	Hallea stipulosa	Seeds	Tree
030	561204,0	548688,0	13,3	Southern Pipeline - South	Hallea stipulosa	Seeds	Tree
031	561207,0	548687,0	14,9	Southern Pipeline - South	Hallea stipulosa	Seeds	Tree
032	561214,0	548735,0	14,5	Southern Pipeline - South	Lophira alata	Seeds	Tree
036	560858,0	548809,0	8,1	Accommodation	Uvaria chamae	Seeds	Climber
038	560869,0	548816,0	10,0	Accommodation	Uvaria chamae	Seeds	Climber
040	560864,0	548865,0	10,6	Accommodation	Uvaria chamae	Seeds	Climber
043	560872,0	548874,0	11,2	Accommodation	Syzygium guineense	Seeds	Tree
044	560874,0	548883,0	10,8	Accommodation	Xylopia rubescens	Seeds	Tree
047	560870,0	548907,0	10,8	Accommodation	Syzygium guineense	Seeds	Tree
049	560882,0	548960,0	10,7	Accommodation	Syzygium guineense	Seeds	Tree
052	560985,0	548936,0	7,6	Accommodation	Syzygium guineense	Seeds	Tree
053	560944,0	548993,0	10,6	Accommodation	Syzygium guineense	Seeds	Tree
054	560952,0	548991,0	9,0	Accommodation	Syzygium guineense	Seeds	Tree
056	560953,0	548963,0	10,7	Accommodation	Syzygium guineense	Seeds	Tree
057	560984,0	548954,0	11,0	Accommodation	Syzygium guineense	Seeds	Tree
058	560965,0	548892,0	11,4	Accommodation	Uvaria chamae	Seeds	Climber
059	560961,0	548891,0	10,4	Accommodation	Syzygium guineense	Seeds	Tree
060	560957,0	548890,0	11,0	Accommodation	Syzygium guineense	Seeds	Tree

Point ID	UTM Coordinates		Elevation	Sector	Species	Conservation action	Life Form
	X	Y					
061	560941,0	548872,0	9,6	Accommodation	Syzygium guineense	Seeds	Tree
062	560952,0	548879,0	10,7	Accommodation	Uvaria chamae	Seeds	Climber
063	560995,0	548891,0	11,8	Accommodation	Syzygium guineense	Seeds	Tree
064	560969,0	548838,0	12,1	Accommodation	Syzygium guineense	Seeds	Tree
065	560969,0	548837,0	9,2	Accommodation	Syzygium guineense	Seeds	Tree
066	560967,0	548838,0	11,4	Accommodation	Uvaria chamae	Seeds	Climber
067	560953,0	548828,0	11,6	Accommodation	Uvaria chamae	Seeds	Climber
069	560980,0	548818,0	12,3	Accommodation	Rauvolfia cumminsii	Seeds	Tree
070	560978,0	548830,0	13,5	Accommodation	Syzygium guineense	Seeds	Tree
073	560909,0	548874,0	13,4	Accommodation	Syzygium guineense	Seeds	Tree
074	560941,0	548868,0	14,5	Accommodation	Syzygium guineense	Seeds	Tree
075	560926,0	548907,0	11,9	Accommodation	Syzygium guineense	Seeds	Tree
076	560912,0	548915,0	13,8	Accommodation	Uvaria chamae	Seeds	Climber
076	561880,0	548954,0	1,4	Accommodation	Uvaria chamae	Seeds	Climber
079	561847,0	548956,0	3,8	Southern Pipeline - North	Syzygium guineense	Seeds	Tree
080	561843,0	548934,0	4,2	Southern Pipeline - North	Hallea stipulosa	Seeds	Tree
082	561816,0	548908,0	7,6	Southern Pipeline - North	Canarium schweinfurthii	Seeds	Tree
083	561807,0	548927,0	6,3	Southern Pipeline - North	Hallea stipulosa	Seeds	Tree
085	561778,0	548929,0	4,0	Southern Pipeline - North	Hallea stipulosa	Seeds	Tree
086	561764,0	548930,0	6,5	Southern Pipeline - North	Hallea stipulosa	Seeds	Tree
087	561763,0	548924,0	7,2	Southern Pipeline - North	Xylopia rubescens	Seeds	Tree
090	561820,0	548867,0	9,3	Southern Pipeline - North	Uvaria chamae	Seeds	Climber
092	561784,0	548862,0	9,1	Southern Pipeline - North	Funtumia elastica	Seeds	Tree
094	561773,0	548868,0	10,4	Southern Pipeline - North	Funtumia elastica	Seeds	Tree
095	561759,0	548856,0	13,7	Southern Pipeline - North	Syzygium guineense	Seeds	Tree
096	561764,0	548856,0	13,4	Southern Pipeline - North	Funtumia elastica	Seeds	Tree
097	561752,0	548858,0	6,7	Southern Pipeline - North	Funtumia elastica	Seeds	Tree
098	561723,0	548877,0	12,9	Southern Pipeline - North	Syzygium guineense	Seeds	Tree
100	561709,0	548889,0	11,4	Southern Pipeline - North	Uvaria chamae	Seeds	Climber
101	561690,0	548888,0	11,6	Southern Pipeline - North	Canarium schweinfurthii	Seeds	Tree
102	561689,0	548889,0	11,6	Southern Pipeline - North	Canarium schweinfurthii	Seeds	Tree
103	561692,0	548877,0	12,6	Southern Pipeline - North	Syzygium guineense	Seeds	Tree
104	561565,0	548858,0	13,7	Southern Pipeline - North	Syzygium guineense	Seeds	Tree

Point ID	UTM Coordinates		Elevation	Sector	Species	Conservation action	Life Form
	X	Y					
105	561559,0	548868,0	12,3	Southern Pipeline - North	Canarium schweinfurthii	Seeds	Tree
106	561543,0	548865,0	12,2	Southern Pipeline - North	Canarium schweinfurthii	Seeds	Tree
107	561520,0	548848,0	12,0	Southern Pipeline - North	Syzygium guineense	Seeds	Tree
108	561414,0	548813,0	9,2	Southern Pipeline - North	Pycnanthus angolensis	Seeds	Tree
109	561388,0	548788,0	12,4	Southern Pipeline - North	Hallea ledermannii	Seeds	Tree
110	561385,0	548782,0	12,5	Southern Pipeline - North	Hallea stipulosa	Seeds	Tree
111	561382,0	548784,0	11,4	Southern Pipeline - North	Hallea stipulosa	Seeds	Tree
112	561388,0	548787,0	9,7	Southern Pipeline - North	Hallea stipulosa	Seeds	Tree
113	561388,0	548790,0	12,3	Southern Pipeline - North	Hallea stipulosa	Seeds	Tree
117	561504,0	548904,0	11,2	ORF - East Sector	Turraeanthus africanus	Seeds	Tree
119	561500,0	548903,0	15,4	ORF - East Sector	Tetracera dinklagii	Seeds	Climber
121	561518,0	548945,0	8,4	ORF - East Sector	Syzygium guineense	Seeds	Tree
122	561521,0	548951,0	6,2	ORF - East Sector	Tetracera dinklagii	Seeds	Climber
124	561547,0	548947,0	9,0	ORF - East Sector	Tetracera dinklagii	Seeds	Climber
134	561496,0	549045,0	5,9	ORF - East Sector	Turraeanthus africanus	Seeds	Tree
135	561498,0	549050,0	8,0	ORF - East Sector	Hallea stipulosa	Seeds	Tree
136	561495,0	549051,0	8,2	ORF - East Sector	Hallea stipulosa	Seeds	Tree
137	561496,0	549057,0	9,2	ORF - East Sector	Hallea stipulosa	Seeds	Tree
138	561490,0	549066,0	10,3	ORF - East Sector	Hallea stipulosa	Seeds	Tree
139	561488,0	549066,0	11,3	ORF - East Sector	Xylopia rubescens	Seeds	Tree
141	561555,0	548965,0	16,5	ORF - East Sector	Turraeanthus africanus	Seeds	Tree
142	561550,0	548952,0	16,6	ORF - East Sector	Syzygium guineense	Seeds	Tree
146	561562,0	548998,0	16,4	ORF - East Sector	Uvaria chamae	Seeds	Climber
148	561531,0	549027,0	14,2	ORF - East Sector	Uvaria chamae	Seeds	Climber
150	561513,0	549058,0	4,1	ORF - East Sector	Hallea stipulosa	Seeds	Tree
151	561512,0	549055,0	12,5	ORF - East Sector	Hallea stipulosa	Seeds	Tree
152	561551,0	549110,0	14,0	ORF - East Sector	Hallea stipulosa	Seeds	Tree
153	561554,0	549123,0	12,8	ORF - East Sector	Hallea stipulosa	Seeds	Tree
154	561555,0	549133,0	14,4	ORF - East Sector	Hallea stipulosa	Seeds	Tree
155	561488,0	549095,0	17,3	ORF - East Sector	Hallea stipulosa	Seeds	Tree
156	561476,0	549097,0	17,3	ORF - East Sector	Hallea stipulosa	Seeds	Tree
157	561521,0	549075,0	15,8	ORF - East Sector	Crinum jagus	Translocation	Herb
158	561575,0	549141,0	18,3	ORF - East Sector	Hallea stipulosa	Seeds	Tree

Point ID	UTM Coordinates		Elevation	Sector	Species	Conservation action	Life Form
	X	Y					
159	561572,0	549153,0	7,0	ORF - East Sector	Hallea stipulosa	Seeds	Tree
160	561521,0	549191,0	18,4	ORF - East Sector	Xylopia rubescens	Seeds	Tree
162	561542,0	549155,0	21,1	ORF - East Sector	Hallea stipulosa	Seeds	Tree
163	561568,0	549169,0	27,9	ORF - East Sector	Hallea stipulosa	Seeds	Tree
165	561872,0	549199,0	19,9	ORF - East Sector	Syzygium guineense	Seeds	Tree
166	561860,0	549208,0	19,0	ORF - East Sector	Syzygium guineense	Seeds	Tree
167	561821,0	549182,0	17,7	ORF - East Sector	Syzygium guineense	Seeds	Tree
168	561771,0	549180,0	20,0	ORF - East Sector	Syzygium guineense	Seeds	Tree
174	561622,0	549108,0	17,0	ORF - East Sector	Uvaria chamae	Seeds	Climber
175	561610,0	549108,0	17,8	ORF - East Sector	Funtumia elastica	Seeds	Tree
177	561606,0	549070,0	-2,9	ORF - West Sector	Canarium schweinfurthii	Seeds	Tree
181	561639,0	549089,0	5,1	ORF - West Sector	Funtumia elastica	Seeds	Tree
185	561660,0	549094,0	8,3	ORF - West Sector	Uvaria chamae	Seeds	Climber
186	561670,0	549099,0	8,5	ORF - West Sector	Uvaria chamae	Seeds	Climber
187	561667,0	549131,0	8,7	ORF - West Sector	Funtumia elastica	Seeds	Tree
188	561668,0	549132,0	0,9	ORF - West Sector	Turraeanthus africanus	Seeds	Tree
189	561671,0	549128,0	9,0	ORF - West Sector	Pycnanthus angolensis	Seeds	Tree
190	561678,0	549131,0	10,8	ORF - West Sector	Lophira alata	Seeds	Tree
191	561669,0	549138,0	9,7	ORF - West Sector	Funtumia elastica	Seeds	Tree
193	561689,0	549096,0	10,0	ORF - West Sector	Syzygium guineense	Seeds	Tree
194	561685,0	549056,0	10,7	ORF - West Sector	Tetracera dinklagii	Seeds	Climber
195	561710,0	549072,0	10,5	ORF - West Sector	Syzygium guineense	Seeds	Tree
196	561699,0	549044,0	9,2	ORF - West Sector	Turraeanthus africanus	Seeds	Tree
197	561706,0	549050,0	10,5	ORF - West Sector	Turraeanthus africanus	Seeds	Tree
198	561727,0	549058,0	10,9	ORF - West Sector	Lophira alata	Seeds	Tree
199	561746,0	549080,0	13,3	ORF - West Sector	Syzygium guineense	Seeds	Tree
200	561774,0	549081,0	0,3	ORF - West Sector	Syzygium guineense	Seeds	Tree
201	561745,0	549095,0	11,0	ORF - West Sector	Syzygium guineense	Seeds	Tree
202	561754,0	549115,0	9,3	ORF - West Sector	Uvaria chamae	Seeds	Climber
203	561799,0	549076,0	12,7	ORF - West Sector	Funtumia elastica	Seeds	Tree
204	561804,0	549074,0	10,7	ORF - West Sector	Funtumia elastica	Seeds	Tree
205	561800,0	549070,0	14,4	ORF - West Sector	Tetracera dinklagii	Seeds	Climber
206	561829,0	549063,0	15,3	ORF - West Sector	Funtumia elastica	Seeds	Tree



Point ID	UTM Coordinates		Elevation	Sector	Species	Conservation action	Life Form
	X	Y					
207	561819,0	549063,0	16,3	ORF - West Sector	Canarium schweinfurthii	Seeds	Tree
208	561835,0	549087,0	16,7	ORF - West Sector	Pycnanthus angolensis	Seeds	Tree
209	561842,0	549098,0	8,7	ORF - West Sector	Funtumia elastica	Seeds	Tree
210	561842,0	549100,0	3,5	ORF - West Sector	Funtumia elastica	Seeds	Tree
211	561842,0	549098,0	15,1	ORF - West Sector	Funtumia elastica	Seeds	Tree
212	561820,0	549109,0	16,2	ORF - West Sector	Funtumia elastica	Seeds	Tree
213	561807,0	549148,0	13,0	ORF - West Sector	Syzygium guineense	Seeds	Tree
214	561812,0	549157,0	12,7	ORF - West Sector	Syzygium guineense	Seeds	Tree
215	561830,0	549141,0	15,6	ORF - West Sector	Syzygium guineense	Seeds	Tree
216	561840,0	549151,0	13,6	ORF - West Sector	Syzygium guineense	Seeds	Tree
217	561860,0	549151,0	13,5	ORF - West Sector	Syzygium guineense	Seeds	Tree
218	561861,0	549148,0	13,7	ORF - West Sector	Canarium schweinfurthii	Seeds	Tree
219	561879,0	549157,0	12,0	ORF - West Sector	Syzygium guineense	Seeds	Tree
220	561880,0	549142,0	13,4	ORF - West Sector	Canarium schweinfurthii	Seeds	Tree
221	561883,0	549120,0	13,4	ORF - West Sector	Syzygium guineense	Seeds	Tree
222	561872,0	549092,0	-2,0	ORF - West Sector	Funtumia elastica	Seeds	Tree
223	561890,0	549074,0	-0,5	ORF - West Sector	Syzygium guineense	Seeds	Tree
224	561880,0	549062,0	2,1	ORF - West Sector	Syzygium guineense	Seeds	Tree
225	561865,0	549057,0	2,9	ORF - West Sector	Syzygium guineense	Seeds	Tree
226	561832,0	549069,0	4,9	ORF - West Sector	Syzygium guineense	Seeds	Tree
227	561838,0	549039,0	6,9	ORF - West Sector	Tetracera dinklagii	Seeds	Climber
232	561852,0	549007,0	10,8	ORF - West Sector	Tetracera dinklagii	Seeds	Climber
237	561806,0	549040,0	15,0	ORF - West Sector	Syzygium guineense	Seeds	Tree
238	561798,0	549043,0	13,3	ORF - West Sector	Funtumia elastica	Seeds	Tree
239	561682,0	548981,0	12,8	ORF - West Sector	Hallea stipulosa	Seeds	Tree
240	561672,0	548942,0	14,1	ORF - West Sector	Pycnanthus angolensis	Seeds	Tree
241	561625,0	548918,0	16,9	ORF - West Sector	Turraeanthus africanus	Seeds	Tree
242	561629,0	548909,0	15,4	ORF - West Sector	Canarium schweinfurthii	Seeds	Tree
243	561608,0	548950,0	15,5	ORF - West Sector	Turraeanthus africanus	Seeds	Tree
244	561613,0	548961,0	14,9	ORF - West Sector	Turraeanthus africanus	Seeds	Tree
245	561580,0	548947,0	17,3	ORF - West Sector	Tetracera dinklagii	Seeds	Climber
247	560516,0	548513,0	10,8	Access Roads & Helipad	Hallea stipulosa	Seeds	Tree
257	560618,0	548676,0	10,8	Access Roads & Helipad	Rauvolfia cumminsii	Seeds	Tree

Point ID	UTM Coordinates		Elevation	Sector	Species	Conservation action	Life Form
	X	Y					
258	560640,0	548714,0	11,3	Access Roads & Helipad	Uvaria chamae	Seeds	Climber
259	560650,0	548742,0	10,6	Access Roads & Helipad	Syzygium guineense	Seeds	Tree
260	560708,0	548805,0	11,3	Access Roads & Helipad	Tetracera dinklagii	Seeds	Climber
261	560711,0	548809,0	10,5	Access Roads & Helipad	Uvaria chamae	Seeds	Climber
262	560714,0	548834,0	12,2	Access Roads & Helipad	Tetracera dinklagii	Seeds	Climber
263	560718,0	548829,0	15,4	Access Roads & Helipad	Syzygium guineense	Seeds	Tree
264	560723,0	548838,0	10,6	Access Roads & Helipad	Tetracera dinklagii	Seeds	Climber
265	560736,0	548854,0	12,3	Access Roads & Helipad	Tetracera dinklagii	Seeds	Climber
266	560733,0	548865,0	11,7	Access Roads & Helipad	Syzygium guineense	Seeds	Tree
267	560752,0	548905,0	11,7	Access Roads & Helipad	Syzygium guineense	Seeds	Tree
268	560764,0	548930,0	12,0	Access Roads & Helipad	Syzygium guineense	Seeds	Tree
269	560792,0	548975,0	13,2	Access Roads & Helipad	Syzygium guineense	Seeds	Tree
270	560799,0	548998,0	12,9	Access Roads & Helipad	Tetracera dinklagii	Seeds	Climber
271	560794,0	548996,0	13,2	Access Roads & Helipad	Uvaria chamae	Seeds	Climber
272	560814,0	549008,0	12,5	Access Roads & Helipad	Syzygium guineense	Seeds	Tree
273	560821,0	549019,0	12,8	Access Roads & Helipad	Syzygium guineense	Seeds	Tree
274	560932,0	549014,0	12,8	Access Roads & Helipad	Uvaria chamae	Seeds	Climber
276	561026,0	549020,0	13,3	Access Roads & Helipad	Uvaria chamae	Seeds	Climber
277	561055,0	549008,0	13,0	Access Roads & Helipad	Syzygium guineense	Seeds	Tree
278	561087,0	549011,0	14,5	Access Roads & Helipad	Canarium schweinfurthii	Seeds	Tree
279	561095,0	549012,0	15,0	Access Roads & Helipad	Syzygium guineense	Seeds	Tree
280	561138,0	549023,0	15,2	Access Roads & Helipad	Syzygium guineense	Seeds	Tree
281	561148,0	549024,0	15,1	Access Roads & Helipad	Uvaria chamae	Seeds	Climber
282	561161,0	549001,0	14,8	Access Roads & Helipad	Syzygium guineense	Seeds	Tree
283	561195,0	549010,0	14,5	Access Roads & Helipad	Canarium schweinfurthii	Seeds	Tree
287	561376,0	549030,0	14,7	Access Roads & Helipad	Hallea stipulosa	Seeds	Tree
288	561400,0	549024,0	15,8	Access Roads & Helipad	Hallea stipulosa	Seeds	Tree
289	561406,0	549010,0	15,2	Access Roads & Helipad	Crinum jagus	Translocation	Herb
290	561443,0	549008,0	15,9	Access Roads & Helipad	Hallea stipulosa	Seeds	Tree
294	561447,0	548911,0	11,4	Access Roads & Helipad	Hallea stipulosa	Seeds	Tree
295	561436,0	548922,0	9,3	Access Roads & Helipad	Crinum jagus	Translocation	Herb
296	561428,0	548927,0	10,3	Access Roads & Helipad	Crinum jagus	Translocation	Herb
297	561432,0	548933,0	11,6	Access Roads & Helipad	Hallea stipulosa	Seeds	Tree



Point ID	UTM Coordinates		Elevation	Sector	Species	Conservation action	Life Form
	X	Y					
298	561418,0	548939,0	6,1	Access Roads & Helipad	Crinum jagus	Translocation	Herb
299	561407,0	548943,0	12,3	Access Roads & Helipad	Crinum jagus	Translocation	Herb
300	561400,0	548948,0	14,1	Access Roads & Helipad	Crinum jagus	Translocation	Herb
301	561373,0	548951,0	12,9	Access Roads & Helipad	Crinum jagus	Translocation	Herb
302	561362,0	548967,0	12,2	Access Roads & Helipad	Crinum jagus	Translocation	Herb
303	561367,0	548987,0	10,2	Access Roads & Helipad	Crinum jagus	Translocation	Herb
304	561363,0	548993,0	13,9	Access Roads & Helipad	Crinum jagus	Translocation	Herb
305	561368,0	549007,0	14,8	Access Roads & Helipad	Hallea stipulosa	Seeds	Tree
308	560924,0	549134,0	21,4	Access Roads & Helipad	Uvaria chamae	Seeds	Climber
311	560873,0	549232,0	21,6	Access Roads & Helipad	Tetracera dinklagii	Seeds	Climber
312	560889,0	549231,0	22,9	Access Roads & Helipad	Uvaria chamae	Seeds	Climber
313	560902,0	549239,0	23,4	Access Roads & Helipad	Uvaria chamae	Seeds	Climber
314	560911,0	549236,0	24,1	Access Roads & Helipad	Uvaria chamae	Seeds	Climber
319	561034,0	548946,0	7,6	TCF	Syzygium guineense	Seeds	Tree
321	561046,0	548971,0	7,8	TCF	Uvaria chamae	Seeds	Climber
323	561047,0	548964,0	6,2	TCF	Syzygium guineense	Seeds	Tree
324	561059,0	548982,0	8,1	TCF	Syzygium guineense	Seeds	Tree
325	561074,0	548973,0	8,3	TCF	Syzygium guineense	Seeds	Tree
326	561089,0	548977,0	6,9	TCF	Uvaria chamae	Seeds	Climber
328	561104,0	548983,0	9,3	TCF	Syzygium guineense	Seeds	Tree
329	561107,0	548986,0	10,1	TCF	Uvaria chamae	Seeds	Climber
330	561110,0	548955,0	9,3	TCF	Uvaria chamae	Seeds	Climber
332	561130,0	548935,0	8,6	TCF	Syzygium guineense	Seeds	Tree
333	561109,0	548921,0	12,0	TCF	Syzygium guineense	Seeds	Tree
334	561084,0	548902,0	16,3	TCF	Syzygium guineense	Seeds	Tree
335	561077,0	548900,0	12,5	TCF	Uvaria chamae	Seeds	Climber
336	561067,0	548894,0	12,5	TCF	Syzygium guineense	Seeds	Tree
337	561090,0	548927,0	11,7	TCF	Syzygium guineense	Seeds	Tree
338	561074,0	548950,0	12,2	TCF	Syzygium guineense	Seeds	Tree
340	561056,0	548938,0	12,1	TCF	Tetracera dinklagii	Seeds	Climber
341	561067,0	548911,0	13,4	TCF	Syzygium guineense	Seeds	Tree
343	561041,0	548862,0	12,2	TCF	Uvaria chamae	Seeds	Climber
345	561050,0	548882,0	14,3	TCF	Syzygium guineense	Seeds	Tree

Point ID	UTM Coordinates		Elevation	Sector	Species	Conservation action	Life Form
	X	Y					
346	561094,0	548895,0	13,2	TCF	Uvaria chamae	Seeds	Climber
347	561087,0	548886,0	12,8	TCF	Uvaria chamae	Seeds	Climber
348	561097,0	548845,0	12,2	TCF	Tetracera dinklagii	Seeds	Climber
349	561093,0	548845,0	11,7	TCF	Pycnanthus angolensis	Seeds	Tree
350	561085,0	548850,0	12,5	TCF	Pycnanthus angolensis	Seeds	Tree
351	561071,0	548858,0	13,0	TCF	Syzygium guineense	Seeds	Tree
352	561130,0	548856,0	11,3	TCF	Syzygium guineense	Seeds	Tree
353	561137,0	548852,0	11,5	TCF	Uvaria chamae	Seeds	Climber
354	561151,0	548859,0	13,7	TCF	Tetracera dinklagii	Seeds	Climber
355	561149,0	548884,0	15,1	TCF	Funtumia elastica	Seeds	Tree
356	561127,0	548894,0	13,5	TCF	Syzygium guineense	Seeds	Tree
357	561125,0	548912,0	15,0	TCF	Syzygium guineense	Seeds	Tree
358	561143,0	548905,0	16,8	TCF	Syzygium guineense	Seeds	Tree
359	561161,0	548911,0	16,0	TCF	Uvaria chamae	Seeds	Climber
360	561159,0	548952,0	12,3	TCF	Tetracera dinklagii	Seeds	Climber
361	561151,0	548943,0	16,8	TCF	Tetracera dinklagii	Seeds	Climber
362	561185,0	548892,0	15,3	TCF	Uvaria chamae	Seeds	Climber
363	561175,0	548891,0	14,0	TCF	Syzygium guineense	Seeds	Tree
364	561179,0	548887,0	13,5	TCF	Syzygium guineense	Seeds	Tree
365	561175,0	548872,0	14,3	TCF	Uvaria chamae	Seeds	Climber
367	561156,0	548980,0	11,8	TCF	Uvaria chamae	Seeds	Climber
368	561202,0	548990,0	11,8	TCF	Uvaria chamae	Seeds	Climber
371	561221,0	549005,0	12,0	TCF	Uvaria chamae	Seeds	Climber
372	561261,0	548990,0	10,7	TCF	Uvaria chamae	Seeds	Climber
377	561239,0	548966,0	12,7	TCF	Uvaria chamae	Seeds	Climber
378	561221,0	548962,0	12,9	TCF	Uvaria chamae	Seeds	Climber
381	561206,0	548934,0	13,8	TCF	Syzygium guineense	Seeds	Tree
384	561216,0	548915,0	12,0	TCF	Uvaria chamae	Seeds	Climber
385	561227,0	548908,0	10,7	TCF	Tetracera dinklagii	Seeds	Climber
387	561263,0	548897,0	10,0	TCF	Xylopia rubescens	Seeds	Tree
388	561268,0	548896,0	10,6	TCF	Hallea stipulosa	Seeds	Tree
389	561272,0	548882,0	11,5	TCF	Crinum jagus	Translocation	Herb
390	561269,0	548879,0	10,2	TCF	Xylopia rubescens	Seeds	Tree



Point ID	UTM Coordinates		Elevation	Sector	Species	Conservation action	Life Form
	X	Y					
391	561265,0	548883,0	12,2	TCF	Xylopia rubescens	Seeds	Tree
392	561256,0	548882,0	11,6	TCF	Lophira alata	Seeds	Tree
393	561254,0	548882,0	11,6	TCF	Crinum jagus	Translocation	Herb
394	561232,0	548873,0	16,2	TCF	Xylopia rubescens	Seeds	Tree
395	561248,0	548872,0	14,0	TCF	Crinum jagus	Translocation	Herb
396	561245,0	548858,0	12,8	TCF	Crinum jagus	Translocation	Herb
397	561255,0	548854,0	13,2	TCF	Hallea stipulosa	Seeds	Tree
399	561221,0	548867,0	13,8	TCF	Tetracera dinklagii	Seeds	Climber
401	561205,0	548867,0	15,8	TCF	Xylopia rubescens	Seeds	Tree
402	561197,0	548896,0	17,6	TCF	Syzygium guineense	Seeds	Tree
403	561199,0	548899,0	17,2	TCF	Uvaria chamae	Seeds	Climber
404	561831,0	549229,0	5,7	Northern Pipeline	Uvaria chamae	Seeds	Climber
405	561850,0	549226,0	3,6	Northern Pipeline	Syzygium guineense	Seeds	Tree
406	561840,0	549233,0	6,9	Northern Pipeline	Uvaria chamae	Seeds	Climber
415	561828,0	549419,0	5,7	Northern Pipeline	Tetracera dinklagii	Seeds	Climber
416	561829,0	549420,0	5,5	Northern Pipeline	Funtumia elastica	Seeds	Tree
417	561829,0	549443,0	5,2	Northern Pipeline	Tetracera dinklagii	Seeds	Climber
418	561823,0	549443,0	5,8	Northern Pipeline	Tetracera dinklagii	Seeds	Climber
419	561811,0	549456,0	6,4	Northern Pipeline	Tetracera dinklagii	Seeds	Climber
420	561842,0	549453,0	6,4	Northern Pipeline	Tetracera dinklagii	Seeds	Climber
421	561825,0	549521,0	3,4	Northern Pipeline	Tetracera dinklagii	Seeds	Climber
422	561814,0	549544,0	5,2	Northern Pipeline	Hallea stipulosa	Seeds	Tree
423	561805,0	549573,0	8,1	Northern Pipeline	Hallea stipulosa	Seeds	Tree
425	561849,0	549626,0	7,2	Northern Pipeline	Tetracera dinklagii	Seeds	Climber
426	561840,0	549640,0	6,8	Northern Pipeline	Hallea stipulosa	Seeds	Tree