CONVENTION ON INTERNATIONAL TRADE IN ENDANGERED SPECIES
OF WILD FAUNA AND FLORA

Seventy-eighth meeting of the Standing Committee
Geneva (Switzerland), 3-8 February 2025

Compliance

Compliance matters

EXPEDITED APPLICATION OF ARTICLE XIII FOR WEST AFRICAN ROSEWOOD (*PTEROCARPUS ERINACEUS*) FOR ALL RANGE STATES

1. This document has been prepared by the Secretariat.

2. The Secretariat reported on the expedited application of Article XIII for West African rosewood *Pterocarpus erinaceus* for all range States to the Standing Committee at its 77th meeting (SC77; Geneva, November 2023) in document SC77 Doc. 33.2.3 (Rev. 1) and to the Plants Committee at its 27th meeting (PC27; Geneva, July 2024) in document PC27 Doc. 15.3 for the cases of range States also undergoing recommendations under the Review of Significant Trade (RST) process.

3. The present document provides an update on the implementation of the Standing Committee's recommendations under these two processes following SC77 and PC27, and reports on the CITES legal acquisition findings (LAF) and non-detriment findings (NDF) regional workshop for West African rosewood (*Pterocarpus erinaceus*) that took place in September 2024 in Douala, Cameroon. It is divided in five sections to facilitate its consideration by the Standing Committee:

   - Overview of Article XIII and RST recommendations relevant to *Pterocarpus erinaceus*;
   - Section 1 on progress in the implementation of Article XIII recommendations for range States of *Pterocarpus erinaceus* subject to a recommendation to suspend trade, including those also subject to RST recommendations;
   - Section 2 on progress in the implementation of RST recommendations for the range States of *Pterocarpus erinaceus* having established a voluntary zero export quota;
   - Section 3 on the CITES regional workshop on NDF and LAF for West African rosewood (*Pterocarpus erinaceus*); and
   - Section 4 on reflections on the simultaneous implementation of the expedited application of Article XIII and RST for *Pterocarpus erinaceus.*

Overview of Article XIII and RST recommendations relevant to *Pterocarpus erinaceus*

4. The Standing Committee might recall that all 16 known range States of *Pterocarpus erinaceus* are concerned by the application of the expedited Article XIII process, as explained in this section. There are two conditions to withdraw the recommendation to suspend trade for the eight countries currently concerned by such a recommendation, which also apply to the eight countries that have established voluntary zero export quotas should they wish to resume international trade. The two conditions are that:

   a) The Party concerned makes scientifically based NDFs for trade in the species in their countries to the satisfaction of the Secretariat and the Chair of the Plants Committee, having regard to Resolution

Conf. 16.7 (Rev. CoP17) on *Non-detriment findings* and based on the outcomes of the RST process for this species; and [henceforth referred to as the "NDF-related recommendation"]

b) The Party provides evidence of adequate LAFs to the satisfaction of the Secretariat and the Chair of the Standing Committee, having regard to Resolution Conf. 18.7 (Rev. CoP19) on *Legal acquisition findings* [henceforth referred to as the "LAF-related recommendation"]

5. At PC27, the Plants Committee examined the NDF-related recommendations on the basis of document PC27 Doc. 15.3 that provided some background and updates on the exceptional selection of *Pterocarpus erinaceus* in the RST process. For ease of reference, Annex 1 to the present document includes the RST recommendations for the eight cases concerned.

6. The LAF-related recommendations are examined by the Standing Committee under the expedited application of Article XIII. Where relevant, the Secretariat has incorporated in the present document outcomes of SC77 and PC27 for the eight *P. erinaceus*/country RST concerns, as well as any updates available at the time of writing.

7. It is important to bear in mind that amongst the eight *P. erinaceus* range States subject to a recommendation to suspend commercial trade under Article XIII of the Convention, four have also been examined in the context of the RST process. These are indicated in **bold** and marked with an asterisk (*) in Table 1 below and throughout the document. The eight cases listed in the table below are the focus of Section 1 and Annex 1 of the present document:

Table 1 – Parties subject to a recommendation to suspend trade, including those subject to RST recommendations **(*)**

***P. erinaceus* range State** **(*)** countries undergoing both Article XIII and RST recommendations	**LAFs to be examined by the Secretariat and the Chair of the Standing Committee**	**NDFs to be examined under the RST process**
Cameroon	The trade suspension recommendation shall remain in place until the conditions of paragraph 10 of Notification to the Parties No. 2022/045 are met. See also Notification to the Parties No. 2024/006.	N/A
Central African Republic		N/A
Chad		N/A
Gambia (the)*		Section 1 and Annex 1 to the present document.
Guinea-Bissau*		Section 1 and Annex 1 to the present document.
Mali*	Partial withdrawal of the trade suspension recommendation as per the conditions of Notification to the Parties No. 2024/057. See also Notification to the Parties No. 2024/006.	Section 1 and Annex 1 to the present document.
Nigeria*	The trade suspension recommendation shall remain in place until the conditions of Notification to the Parties No. 2018/084 and Notification to the Parties No. 2024/006 are met.	Section 1 and Annex 1 to the present document.
Togo	The trade suspension recommendation shall remain in place until the conditions of paragraph 10 of Notification to the Parties No. 2022/045 are met. See also Notification to the Parties No. 2024/006.	N/A

8. Four *P. erinaceus*/country combinations are undergoing recommendations under the RST process but not subject to a recommendation to suspend commercial trade under Article XIII of the Convention. These are marked with an asterisk (*) in Table 2 below. They are the focus of Section 2 of the present document:

Table 2 – Parties with voluntary zero export quotas that are also subject to RST recommendations

***P. erinaceus* range States undergoing the RST process** (*) Countries undergoing RST recommendations	**RST recommendations and update on implementation**
Benin*	Section 2 and Annex 1 to the present document.
Burkina Faso*	
Ghana*	
Sierra Leone*	

9. The remaining four *P. erinaceus* range States are not subject to specific recommendations to suspend commercial trade under the Article XIII procedure nor included in the RST process, as explained in the table below. These four cases, listed in Table 3 below, are not discussed further in the present document:

Table 3 – Parties with voluntary zero export quotas not subject to further specific recommendations

***P. erinaceus* range State**	**Article XIII procedure / RST process**
Côte d'Ivoire	Publication of a zero export quota for commercial trade (see paragraph 8 of Notification to the Parties No. 2022/045).
Guinea	Recommendation to suspend trade not applicable to pre-Convention stocks of specimens of *P. erinaceus* for the reasons explained in paragraph 13 of Notification to the Parties No. 2022/045. For further information, see also Notification to the Parties No. 2022/082, issued at the request of Guinea on 5 December 2022.
Niger	Publication of a zero export quota for commercial trade (see paragraph 8 of Notification to the Parties No. 2022/045).
Senegal	

Section 1: Progress in the implementation of Article XIII recommendations for range States of *P. erinaceus* subject to a recommendation to suspend trade, including those also undergoing RST recommendations

10. At SC77, the Committee agreed to maintain the recommendation to suspend commercial trade in specimens of the species *P. erinaceus* from Cameroon, the Central African Republic, Chad, and Togo under the expedited application of Article XIII until the conditions of paragraph 10 of Notification to the Parties No. 2022/045 were fully met. At the time of writing, the Secretariat has not received any information on progress made by these four countries in the implementation of the conditions set in Notification to the Parties No. 2022/045.

11. The Secretariat notes that Cameroon is currently working on reinforcing its NDF procedures and developing NDFs for various CITES-listed tree species (see document SC78 Doc. 33.4 on *Application of Article XIII in Cameroon*), but no update has been received concerning *P. erinaceus* specifically.

12. Among the eight Parties currently subject to a recommendation to suspend trade under the expedited application of Article XIII procedure, four are also subject to recommendations under RST (indicated in bold and marked with an asterisk (*) below, *i.e.* the **Gambia*, Guinea-Bissau*, Mali*** and **Nigeria***).

13. The Secretariat notes that the NDF-related recommendation of the Article XIII procedure is closely aligned with the long-term recommendations of the RST process for the four countries concerned. Thus, for these four countries, progress in the implementation of the Article XIII NDF-related recommendation is assessed against the progress in the implementation of the long-term RST recommendations. Progress in the implementation of the *P. erinaceus*/country combinations selected as an exceptional case of the RST process was most recently considered at PC27 (see document PC27 Doc. 15.3 and summary record PC27 SR).

Gambia (the)*

14. At SC77, the Standing Committee:

    a) agreed to maintain the recommendation to suspend commercial trade in specimens of the species *Pterocarpus erinaceus* from the Gambia under the expedited application of Article XIII until the conditions of paragraph 10 of Notification to the Parties No. 2022/045 are met;

b) noted that no progress has been made by the Gambia in the implementation of the RST recommendations contained in the Annex to document SC77 Doc. 33.2.3 (Rev. 1); and

c) agreed that the short-term and long-term RST recommendations a) through d) have not been implemented (see Annex 1 to the present document).

15. In the context of RST, at PC27, the Plants Committee considered progress in implementing the NDF-related recommendation as reported in document PC27 Doc. 15.3 and:

a) invited The Gambia to provide clarification on the terms processed and semi-processed logs ahead of the Secretariat's report to the 78th meeting of the Standing Committee, in accordance with the provisions of Resolution Conf. 10.13 (Rev. CoP18) relating to 'logs'.

b) recommended that The Gambia revise the terms of reference of the NDF study (Annex 2 of document PC27 Doc. 15.3), taking into account:

- the long-term recommendations directed to it; and

- the recent *CITES Non-Detriment Findings Guidance* published on the CITES website.

c) invited the Secretariat to work with The Gambia to revise the above-mentioned terms of reference and to explore ways to support the implementation of the NDF study (and its possible future revisions) contained in Annex 2 of document PC27 Doc. 15.3.

Progress in the implementation of the NDF-related recommendation

16. On 31 July 2024, the Secretariat wrote to the Gambia concerning the outcome of PC27 regarding *P. erinaceus*, inviting the Gambia to provide updates on the implementation of the RST recommendations by 25 November 2024. The Gambia also attended the regional NDF and LAF workshop (see Section 3) and engaged with the Secretariat on the implementation of the RST recommendations. At the time of writing, the Secretariat has no further updates to report on this case.

Progress in the implementation of the LAF-related recommendation

17. At the time of writing, no progress has been reported from the Gambia concerning the implementation of the LAF-related recommendation related to *P. erinaceus*.

Progress in the management of inherited stockpile of processed timber

18. Since SC77, the Gambia further engaged with the Secretariat concerning the management of "the inherited processed stock" of timber that had been declared in letters dated 19 July and 28 August 2023, and for which the Gambia had requested a "one-time allocation" of an export authorization for 10,000 m^3 of "old, processed wood stock of *Pterocarpus erinaceus* and others". The Secretariat had reported on this matter to SC77 in document SC77 Doc. 33.2.3 (Rev. 1) and, since then, has continued to provide guidance to the Gambia on the preparation of an inventory of the timber concerned.

19. In May 2024, the Gambia confirmed that the inventory had been done and that the stockpile was composed of:

- 1,539 m^3 of *Cordylla pinnata*
- 986 m^3 of *Detarlium senegalensis*
- 388 m^3 of *Erythropholeum guinensis*
- 1,004 m^3 of *Prosopis africana*
- 4,348 m^3 of *Khaya senegalensis*
- 1,976 m^3 of *Afzelia africana*
- 478 m^3 of *Pterocarpus erinaceus*

20. The Secretariat was thus able to confirm to the Gambia that:

a) *Cordylla pinnata, Detarlium senegalensis, Erythropholeum guinensis* and *Prosopis africana* are not included in the CITES Appendices and can be exported in accordance with Gambian national legislation;

b) *Khaya senegalensis* and *Afzelia africana* are included in Appendix II of the Convention and are not covered by the recommendation do suspend trade. Both species could be exported in accordance with the provisions of Article IV and other relevant provisions of the Convention; and

c) The 478 m^3 of *Pterocarpus erinaceus* fall under the expedited application of Article XIII and are therefore covered by the recommendation to suspend trade. In order to trade these 478 m^3, the Gambia would need to implement the conditions stated in Notification to the Parties No. 2024/006 (NDF and LAF-related recommendations).

Guinea-Bissau*

21. At SC77, the Standing Committee:

a) agreed to maintain the recommendation to suspend commercial trade in specimens of the species *Pterocarpus erinaceus* from Guinea-Bissau under the expedited application of Article XIII until the conditions of paragraph 10 of Notification to the Parties No. 2022/045 are met;

b) noted that no progress has been made by Guinea-Bissau in the implementation of the RST recommendations contained in the Annex to document SC77 Doc. 33.2.3 (Rev. 1); and

c) agreed that the short-term and long-term RST recommendations a) through d) have not been implemented (see Annex 1 to the present document).

22. In the context of RST, at PC27, the Plants Committee considered progress in implementing the NDF-related recommendation as reported in document PC27 Doc. 15.3 and:

a) recognized the important progress made by Guinea-Bissau in the implementation of short and long-term recommendations.

b) recommended that Guinea-Bissau revise the terms of reference of the NDF study (Annex 5 of document PC27 Doc. 15.3), taking into account:

- the long-term recommendations directed to it; and

- the recent *CITES Non-Detriment Findings Guidance* published on the CITES website.

c) invited the Secretariat to work with Guinea-Bissau to revise the above-mentioned terms of reference and to explore ways to support the implementation of the NDF study (and its possible future revisions) contained in Annex 5 of document PC27 Doc. 15.3.

Progress in the implementation of the NDF-related recommendation

23. On 31 July 2024, the Secretariat wrote to Guinea-Bissau concerning the outcome of PC27 regarding *P. erinaceus* inviting Guinea-Bissau to provide updates on the implementation of the RST by 25 November 2024. Guinea-Bissau also attended the regional NDF and LAF workshop (see Section 3) and engaged with the Secretariat on the implementation of the RST recommendations. At the time of writing the Secretariat has no further updates to report on this case.

Progress in the implementation of the LAF-related recommendation

24. At the time of writing, no report concerning progress made in the implementation of the LAF-related recommendation has been received concerning Guinea-Bissau, and Guinea-Bissau has not engaged with the Secretariat on this matter.

Mali*

25. At SC77, the Standing Committee:

a) acknowledged the significant progress made by Mali in implementing recommendations under the expedited application of Article XIII and long-term RST recommendations;

b) noted that the Plants Committee accepted that the NDF presented by Mali supports the quota of 55,384.8 m^3 requested by Mali;

c) recommended that the Secretariat publish any potential future export quota proposed by Mali in round wood equivalent;

d) noted the incremental progress made by Mali in the preparation of the legal acquisition findings for *Pterocarpus erinaceus*; and

e) agreed to maintain the recommendation to suspend commercial trade in specimens of the species *Pterocarpus erinaceus* from Mali under the expedited application of Article XIII until Mali finishes providing the evidence of adequate legal acquisition findings to the satisfaction of the Secretariat and the Chair of the Standing Committee, having regard to Resolution Conf. 18.7 (Rev. CoP18) as required in paragraph 10 (b) of Notification to the Parties No. 2022/045.

26. At PC27, the Plants Committee considered progress in implementing in the NDF-related recommendation as reported in document PC27 Doc. 15.3 and:

a) recognized the important progress made by Mali in the implementation of short and long-term recommendations, as well the progress achieved with the partial withdrawal of the recommendation to suspend trade for a volume of 39,950.4 m^3 of *Pterocarpus erinaceus* in accordance with Notification to the Parties No. 2024/057 of 29 April 2024.

b) encouraged Mali to continue to provide updates following its consultations with the Secretariat and the Chair of the Standing Committee regarding the submission of legal acquisition findings for the remaining 15,434.4 m^3 of the quota accepted at PC26, ahead of the Secretariat's report to SC78.

c) reminded Mali of the importance of following the process until the implementation of RST recommendation d) (regarding the conditions that need to be met to increase their export quotas, see PC27 Doc. 15.3, Annex 1, column B for Mali).

Progress in the implementation of the NDF-related recommendation

27. On 31 July 2024, the Secretariat wrote to Mali concerning the outcome of PC27 regarding *P. erinaceus* inviting Mali to provide updates on the implementation of the RST by 25 November 2024.

28. Mali attended the regional NDF and LAF workshop (see Section 3) and engaged with the Secretariat in the implementation of the RST recommendations. Noting that the NDF has been completed with a quota accepted by the Plants Committee, the next step to follow is the implementation of the LAF-related recommendation.

Progress in the implementation of the LAF-related recommendation

29. At the time of writing, Mali is working on preparing the submission of additional legal acquisition findings for the remaining 15,434.4 m^3 of the quota of 55,384.8 m^3 accepted at PC26.

Progress in the management of stockpiles of P. erinaceus *held in Senegal*

30. Mali also engaged with the Secretariat on the status of the 124 containers (approximately 2,480 m^3) of *P. erinaceus* seized by Senegal on 10 August 2022 and still being held in Dakar (see Notification to the Parties No. 2022/063 of 30 August 2022). In June 2023, the Secretariat had informed all Parties that Mali had submitted supporting documents to certify that the 124 containers had left Mali's borders prior to 28 March 2022 (Notification No. 2023/071 of 19 June 2023). However, the export permits for these specimens had expired by that time. Upon request from Mali, the Secretariat confirmed to Mali that it could proceed with the cancellation of the expired permits and issue new ones on an exceptional basis, on the condition that the new permits contained the same information as the expired ones, and that copies of both sets of permits be sent to the Secretariat for verification, along with any other relevant information. Upon verification of the permits and additional information, the Secretariat confirmed that Mali could proceed with the exceptional issuance of new export permits for this stockpile, replacing and cancelling the expired permits.

31. Mali further informed the Secretariat that other containers remained in the port of Dakar since the entry into effect of the recommendation to suspend trade concerning *P. erinaceus*, but without having been formally

seized by Senegal. Mali provided documentation concerning the containers. During a meeting between Mali and Senegal held in the margins of the regional LAF and NDF workshop (see Section 3), Mali and Senegal agreed to conduct a joint inventory of any specimens or stockpiles of timber originating from Mali and possibly present on Senegal's territory. The inventory was undertaken in September 2024 and the representatives of Mali and Senegal sent a report to the Secretariat. At the time of writing, the Secretariat is reviewing the information received, in collaboration with Mali and Senegal.

Nigeria*

32. Nigeria has been subject to an Article XIII procedure since 2018 and the applicable Article XIII recommendation for *P. erinaceus* were initially specified in paragraph 1 of Notification to the Parties No. 2018/084, referring only to the making of a scientifically-based NDF as a condition for lifting the recommendation to suspend trade. However, at SC77, the Standing Committee agreed that the recommendation for Nigeria concerning *P. erinaceus* should be the same as for the other range States mentioned above, i.e., an NDF-related recommendation and an LAF-related recommendation (see summary record SC77 SR). This has been updated in Notification to the Parties No. 2024/006.

33. At SC77, the Standing Committee:

    a) agreed to maintain the recommendation to suspend commercial trade in specimens of the species *Pterocarpus erinaceus* from Nigeria under Article XIII until the following conditions are met:

        A. The Party concerned makes a scientifically based NDF for trade in the species to the satisfaction of the Secretariat and the Chair of the Plants Committee, having regard to Resolution Conf. 16.7 (Rev. CoP17) on *Non-detriment findings* and based on the outcomes of the Review of Significant Trade process for this species; and

        B. The Party provides evidence of adequate legal acquisition findings to the satisfaction of the Secretariat and the Chair of the Standing Committee, having regard to Resolution Conf. 18.7 (Rev. CoP19) on *Legal acquisition findings*.

    b) acknowledged the progress made by Nigeria in implementing the short-term RST recommendation (paragraph a) (see Annex 1); and

    c) recommended the retention of the short- and long-term RST recommendations a) through d).

34. At PC27, the Plants Committee considered progress in implementing the NDF-related recommendation as reported in document PC27 Doc. 15.3 and:

    a) recognized the progress by Nigeria with the inclusion of the NDF study for *Pterocarpus erinaceus* as part of the Compliance Assistance Programme (CAP).

    b) encouraged Nigeria to provide updates on progress with the implementation of its Compliance Assistance Programme, in particular with the NDF study, ahead of the Secretariat's report to SC78.

Progress in the implementation of the NDF-related recommendation

35. On 31 July 2024, the Secretariat wrote to Nigeria concerning the outcome of PC27 regarding *P. erinaceus* inviting Nigeria to provide updates on the implementation of the RST by 25 November 2024.

36. Nigeria attended the regional NDF and LAF workshop (see Section 3) and engaged with the Secretariat in the implementation of the RST recommendations. In the context of the Compliance Assistance Project (CAP), Nigeria worked on strengthening the capacity of the Scientific Authority to produce NDFs and the implementation of RST-related recommendations, including for timber-producing tree species (see also SC78 Doc. 33.9 on the *application of Article XIII in Nigeria*). Nigeria will also focus on the field data collection necessary to develop an NDF on *P. erinaceus* which will be shared with the Secretariat upon completion.

Progress in the implementation of the LAF-related recommendation

37. The CAP funding provided an opportunity for Nigeria to develop guidance and receive training for the Management Authority on how to produce a LAF, focusing on the legality of timber in trade. A Standard Operating Procedure will be integrated into the electronic permitting system for the issuance of permits and

certificates and the verification of the legal acquisition and traceability of specimens in trade. When completed, LAFs will be shared with the Secretariat.

Section 2: Progress in the implementation of RST recommendations for the range States of *P. erinaceus* subject to a voluntary zero export quota

Benin/ *Pterocarpus erinaceus**

38. At SC77, provided this Party maintains its voluntary zero export quota, the Standing Committee:

    a) acknowledged the progress made by Benin in implementing the RST short-term recommendation (paragraph a);

    b) recommended that the remaining RST recommendations be addressed as a case study at the NDF workshop; and

    c) recommended the retention of the short- and long-term RST recommendations b) through d) (see Annex 1).

39. At PC27, the Plants Committee considered progress in implementing the NDF-related recommendation as reported in document PC27 Doc. 15.3 and:

    a) recognized the progress made by Benin in the implementation of short-term RST recommendation a) by confirming the maintenance of the zero export quota for *Pterocarpus erinaceus* for 2024 and 2025; and

    b) encouraged Benin to continue its implementation of RST short-term recommendation a) and long-term recommendations c) and d) (see Annex 1), and to share any progress for review and revision by the Plants Committee ahead of SC78.

Progress in the implementation of the recommendations

40. On 31 July 2024, the Secretariat wrote to Benin concerning the outcome of PC27 regarding *P. erinaceus* inviting Benin to provide updates on the implementation of the RST by 25 November 2024.

41. Benin attended the regional NDF and LAF workshop (see Section 3) and engaged with the Secretariat in the implementation of the RST recommendations. At the time of writing, the Secretariat has no further updates to report on this case.

Burkina Faso/ *Pterocarpus erinaceus**

42. At SC77, provided this Party maintains its voluntary zero export quota, the Standing Committee:

    a) acknowledged the progress made by Burkina Faso in implementing the RST short-term recommendation (paragraph a); and

    b) recommended the retention of the short- and long-term RST recommendations b) through d).

43. At PC27, the Plants Committee considered progress in implementing the NDF-related recommendation as reported in document PC27 Doc. 15.3 and:

    a) recommended to Burkina Faso that they confirm a voluntary zero export quota for 2024 and 2025 ahead of the Secretariat's report to the Standing Committee at SC78.

    b) encouraged Burkina Faso to continue its implementation of RST short-term recommendation a) and long-term recommendations c) and d) (see Annex 1), and to share any progress for review and revision by the Plants Committee ahead of SC78.

Progress in the implementation of the NDF-related recommendation

44. On 31 July 2024, the Secretariat wrote to Burkina Faso concerning the outcome of PC27 regarding *P. erinaceus* inviting Burkina Faso to provide updates on the implementation of the RST by 25 November 2024.

45. Burkina Faso attended the regional NDF and LAF workshop (see Section 3) and engaged with the Secretariat in the implementation of the RST recommendations. At the time of writing, the Secretariat has no further updates to report on this case. The voluntary zero export quota for the species for 2024-25 has not been confirmed by the Party.

Ghana/ *Pterocarpus erinaceus**

46. At SC77, provided this Party maintains its voluntary zero export quota, the Standing Committee:

    a) acknowledged the progress made by Ghana in implementing the short-term RST recommendation (paragraph a);

    b) recommended the retention of the short- and long-term RST recommendations b) through d); and

    c) requested the Secretariat to initiate an intersessional consultation process with the Plants Committee through its Chair to review the NDF submitted by Ghana, and inform the Chair of the Standing Committee about the outcomes.

47. At PC27, the Plants Committee considered progress in implementing the NDF-related recommendation as reported in document PC27 Doc. 15.3, and:

    a) recognized the important progress made by Ghana in the implementation of RST short and long-term recommendations (see Annex 1);

    b) accepted a 40,000 m^3 quota in round wood equivalent for the off-reserve underwater (Volta Lake) operations; and,

    c) invited Ghana, if they wish to re-submit in future a revised quota for living stands, to submit an NDF and associated quota for consideration by the Secretariat and the Chair of the Plants Committee, taking into account the comments made by the Plants Committee.

Progress in the implementation of the NDF-related recommendation

48. Ghana attended the regional NDF and LAF workshop (see Section 3) and engaged with the Secretariat in the implementation of the RST recommendations.

49. On 10 September 2024, the Secretariat wrote to Ghana concerning the outcome of PC27 regarding *P. erinaceus* inviting Ghana to provide updates on the implementation of the RST by 25 November 2024. On 13 September 2024, in accordance with paragraph 47 c) above, Ghana submitted an updated NDF (see Annex 2) including updates on a proposed annual export quota for living stands of *P. erinaceus* of 18,719.93 m^3. It is important to note that this quota is additional to the 40,000 m^3 of *P. erinaceus* in round wood equivalent for the off-reserve underwater (Volta Lake) operation accepted at PC27.

50. At the time of writing, the Secretariat is in the process of consulting with the Plants Committee about the additional quota for living stands of trees, in accordance with the NDF-related recommendation, and will provide an update of these consultations at SC78.

Progress in the implementation of the LAF-related recommendation

51. Under the expedited application of the Article XIII to *P. erinaceus* range States, resuming trade in the species would further require the presentation of LAF to the satisfaction of the Secretariat and the Chair of the Standing Committee, having regard to Resolution Conf. 18.7 (Rev. CoP19).

52. At the time of writing, the Secretariat understands that Ghana is working on the development of a LAF for the quota of 40,000 m^3 of *P. erinaceus* in round wood equivalent for the off-reserve underwater (Volta Lake) operation accepted at PC27.

Sierra Leone/ *Pterocarpus erinaceus**

53. At SC77, provided this Party maintains its voluntary zero export quota, the Standing Committee:

a) acknowledged the progress made by Sierra Leone in implementing the short-term RST recommendation (paragraph a);

b) recommended the retention of the short- and long-term RST recommendations b) through d);

c) further acknowledged the significant progress made in addressing the long-term recommendations; and

d) requested the Secretariat to initiate an intersessional consultation process with the Plants Committee through its Chair to review the NDF submitted by Sierra Leone, and inform the Chair of the Standing Committee about the outcomes.

54. At PC27, the Plants Committee considered progress achieved in the NDF-related recommendation as reported in document PC27 Doc. 15.3. The Plants Committee acknowledged the important progress made by Sierra Leone in implementing the RST recommendations (see Annex 1) and accepted the NDF presented by Sierra Leone in support of the requested export quota of 76,324.5 m^3 in round wood equivalent.

Progress in the implementation of the NDF-related recommendation

55. On 31 July 2024, the Secretariat wrote to Sierra Leone concerning the outcome of PC27 regarding *P. erinaceus* inviting Sierra Leone to provide updates on the implementation of the RST by 25 November 2024.

56. Sierra Leone attended the regional NDF and LAF workshop (see Section 3) and engaged with the Secretariat in the implementation of the RST recommendations. Noting that the NDF has been completed with a quota accepted by the Plants Committee, the next step to follow is the implementation of the LAF-related recommendation.

Progress in the implementation of the LAF-related recommendation

57. Under the expedited application of the Article XIII to *P. erinaceus* range States, resuming trade in the species would further require the presentation of LAF to the satisfaction of the Secretariat and the Chair of the Standing Committee, having regard to Resolution Conf. 18.7 (Rev. CoP19).

58. At the time of writing, the Secretariat understands that Sierra Leone is working on the development of a LAF for the quota of 76,324.5 m^3 of *P. erinaceus* in round wood equivalent accepted at PC27.

Section 3: CITES regional workshop on non-detriment findings (NDF) and legal acquisition findings (LAF) for West African rosewood (*Pterocarpus erinaceus*)

59. In accordance with the recommendations made by the Standing Committee at its 77th meeting, the Secretariat organized a regional workshop on NDF and LAF for *P. erinaceus* range States in Douala, Cameroon, from 2 to 6 September 2024. The objective of the workshop was to catalyze the implementation of recommendations under the expedited application of Article XIII and the RST processes for *P. erinaceus* at the regional level through theoretical and practical capacity-building approaches for the preparation of NDFs and LAFs.

60. The workshop was opened by His Excellency Jules Doret Ndongo, Minister of Forestry and Wildlife of Cameroon, and was attended by 63 participants from 18 Parties (15 range States of *P. erinaceus* and three range States of other African tree species). A total of 34 sponsored delegates from 18 Parties and eight observer organizations (international governmental organizations and non-governmental organizations) attended the workshop. The workshop and its preparatory work were supported by the generous contribution of the European Union. The Secretariat appreciates the support provided in this regard. The Secretariat also thanks the Association technique internationale des bois tropicaux (ATIBT) for their partnership and collaboration in the preparation of the workshop.

61. The workshop had two major components:

a) the NDF component, which focused on principles and concepts for NDFs and Module 10 on NDFs for tree species of the *CITES Non-detriment Findings Guidance*. Module 10 outlines forest management principles relevant to NDFs for CITES-listed tree species. The Secretariat delivered presentations on the *Guidance* and Ghana, Mali, and Sierra Leone presented illustrative case studies on NDFs for *P. erinaceus*; and

b) the LAF component, which focused on concepts, objectives and principles of LAFs and LAF guidance, particularly regarding tree species and traceability mechanisms for timber specimens. Additional considerations were discussed concerning the management of stockpiles of timber and wood specimens. The Secretariat delivered presentations on the guidance and Cameroon and Mali presented illustrative case studies on LAFs and traceability for *P. erinaceus*.

62. Complementary to the above, the workshop also addressed:

    a) linkages between CITES implementation and the timber sector;

    b) the CITES Task Force on illegal trade of CITES listed tree species; and

    c) opportunities under the new CITES Tree Species Programme (CTSP).

63. The workshop documentation, including the background document and presentations, is available on the CITES website. The final workshop report is included in the Annex 3 to the present document (to be published in January 2025).

Section 4: Reflections on the simultaneous implementation of the expedited application of Article XIII and RST for *P. erinaceus*

64. As indicated in paragraph 4 above, the expedited application of the Article XIII for *P. erinaceus* applies to the sixteen known range States of the species. Eight of them have chosen to publish a voluntary zero export quota, and eight are currently subject to a recommendation to suspend trade in this species. Resuming trade in specimens of *P. erinaceus* requires fulfilling the same two conditions in both cases, namely: making a scientifically based NDF to the satisfaction of the Secretariat and the Chair of the Plants Committee, having regard to Resolution Conf. 16.7 (Rev. CoP17), and providing evidence of an adequate LAF to the satisfaction of the Secretariat and the Chair of the Standing Committee, having regard to Resolution Conf. 18.7 (Rev. CoP19).

65. Amongst the sixteen range States, eight are concurrently under an RST process for *P. erinaceus*; four are subject to a recommendation to suspend trade and four have published a voluntary zero export quota. As indicated in paragraph 13 above, the NDF-related recommendation of the Article XIII procedure is closely aligned with the long-term recommendations of the RST process. The difference is that RST recommendations are usually more detailed and contain criteria that should be taken into account by Parties in the making of their NDF.

66. The Secretariat has made efforts to report on progress made by Parties under both processes, in the clearest manner possible. However, the Secretariat notes that, with the two processes running in parallel and the NDF recommendations being aligned, this parallel reporting concerning the same countries and the same species might create confusion. A solution to avoid this could be that when an Article XIII process is ongoing concurrently with RST, the RST recommendations be included in the set of Article XIII recommendations, for the Secretariat to report on all recommendations without distinguishing whether the recommendations originated from the RST or the Article XIII process. Reporting for recommendations originally issued by the Animals Committee or the Plants Committee under the RST process would still be made to the relevant scientific committee, as appropriate.

Recommendations

67. The Standing Committee is invited to review the information provided and to consider the following recommendations:

Progress in the implementation of Article XIII recommendations for range States of *P. erinaceus* subject to a recommendation to suspend trade, including those also undergoing RST recommendations

Gambia (The)*:

a) The Standing Committee is invited to:

i) maintain the recommendation to suspend commercial trade in specimens of the species *Pterocarpus erinaceus* from The Gambia under the expedited application of Article XIII until the conditions of paragraph 10 of Notification to the Parties No. 2022/045 are met;

ii) with regards to RST, note that some progress has been made by the Gambia towards the implementation of short-term recommendation b) and the long-term recommendation c), however this progress remains in its early stages; and

iii) agree to retain the RST short-term and long-term recommendations.

Guinea-Bissau*:

b) The Standing Committee is invited to:

i) maintain the recommendation to suspend commercial trade in specimens of the species *Pterocarpus erinaceus* from Guinea-Bissau under the expedited application of Article XIII until the conditions of paragraph 10 of Notification to the Parties No. 2022/045 are met;

ii) with regards to RST, note that some progress has been made by Guinea-Bissau towards the implementation of short-term recommendation b) and the long-term recommendation c), however this progress remains in its early stages; and

iii) agree to retain RST short-term and long-term recommendations.

Mali*:

c) The Standing Committee is invited to:

i) agree that the RST short-term recommendations a) and b), and long-term recommendation c) have been implemented through the Plants Committee's acceptance of the quota for *Pterocarpus erinaceus* of 55,384.8 m3 in round wood equivalent;

ii) agree to retain long-term recommendation d), provided that Mali would wish to make any increase to the quota approved by the Plants Committee at PC26;

iii) acknowledge the significant progress made by Mali in implementing recommendations under the expedited application of Article XIII and long-term RST recommendations, particularly concerning the submission of evidence of legal acquisition findings for a volume of 39,950.4 m^3 of *Pterocarpus erinaceus* in accordance with Notification No. 2024/057 of 29 April 2024, thus achieving a partial withdrawal of the recommendation to suspend trade in *P. erinaceus*;

iv) note the progress made by Mali in the preparation of the legal acquisition findings for *P. erinaceus*;

v) acknowledge the efforts made by Mali, with the support of Senegal, in preparing an inventory of any specimens or stockpiles of timber originating from Mali and possibly present on Senegal's territory, invite Mali to continue liaising with the Secretariat and with Senegal to ensure that these specimens are managed in accordance with the provisions of the Convention; and

vi) maintain the recommendation to suspend commercial trade in specimens of the species *P. erinaceus* from Mali under the expedited application of Article XIII until Mali finishes providing the evidence of adequate legal acquisition findings to the satisfaction of the Secretariat and the Chair of the Standing Committee for the remaining 15,434.4 m^3 of the quota accepted at PC26 as required under Notification to the Parties No. 2022/045.

Nigeria*:

d) The Standing Committee is invited to:

i) acknowledge the progress made by Nigeria in implementing recommendations under the expedited application of Article XIII and long-term RST recommendations in the context of the compliance assistance programme;

ii) encourage Nigeria to continue implementing these recommendations;

iii) maintain the recommendation to suspend commercial trade in specimens of the species *Pterocarpus erinaceus* from Nigeria under the expedited application of Article XIII until the conditions of paragraph 10 of Notification to the Parties No. 2022/045 are met; and

iv) agree to retain the RST short and long-term recommendations.

Cameroon, the Central African Republic, Chad, and Togo:

e) The Standing Committee is invited to maintain the recommendation to suspend commercial trade in specimens of the species *Pterocarpus erinaceus* from Cameroon, the Central African Republic, Chad, and Togo under the expedited application of Article XIII until the conditions of paragraph 10 of Notification to the Parties No. 2022/045 are fully met;

Progress in the implementation of RST recommendations for range States of *P. erinaceus* subject to a voluntary zero export quota

Benin*

f) The Standing Committee is invited to:

i) agree that the RST short-term recommendation a) has been implemented by confirming the maintenance of a zero export quota for *Pterocarpus erinaceus* for 2024 and 2025; and

ii) agree to retain RST short-term recommendation b) and the long-term recommendations c) and d).

Burkina Faso*

g) The Standing Committee is invited to:

i) request Burkina Faso to confirm a voluntary zero export quota for 2024 and 2025 for *Pterocarpus erinaceus*; and

ii) agree to retain the short and long-term RST recommendations.

Ghana*

h) The Standing Committee is invited to:

i) agree that the RST short-term recommendations a) and b), have been implemented through the Plants Committee's acceptance at PC27 of the 40,000 m^3 quota in round wood equivalent for the off-reserve underwater (Volta Lake) operations;

ii) note that the long-term recommendations c) and d) are in process of implementation, pending the Plants Committee's review of the additional quota for 18,719.93 m^3 living stands of *Pterocarpus erinaceus*; and

iii) remind Ghana that the next step to follow in implementing the PC27-accepted quota is the presentation of LAF to the satisfaction of the Secretariat and the Chair of the Standing Committee, having regard to Resolution Conf. 18.7 (Rev. CoP19).

Sierra Leone*

i) The Standing Committee is invited to:

   i) agree that the RST short-term recommendations a) and b), and long-term recommendation c) have been implemented through the Plants Committee's acceptance of the quota for *Pterocarpus erinaceus* of 76,324.5m^3 in round wood equivalent;

   ii) agree to retain long-term recommendation d), provided that Sierra Leone would wish to make any increase to the quota approved by the Plants Committee at PC27; and

   iii) remind Sierra Leone that the next step to follow in implementing the PC27-accepted quota is the presentation of LAF to the satisfaction of the Secretariat and the Chair of the Standing Committee, having regard to Resolution Conf. 18.7 (Rev. CoP19).

<u>With regards to Parties with voluntary zero export quotas not subject to further specific recommendations (Côte d'Ivoire, Guinea, Niger and Senegal)</u>

j) The Standing Committee is invited to note that no further recommendations with regard to Côte d'Ivoire, Guinea, Niger and Senegal are required.

<u>CITES regional workshop on non-detriment findings (NDF) and legal acquisition findings (LAF) for West African rosewood (*Pterocarpus erinaceus*)</u>

k) The Standing Committee is invited to:

   i) take note of the elements provided in Section 3 of the present document and the report of the workshop contained in Annex 3; and

   ii) encourage Parties to continue sharing experiences and best practices concerning NDFs and LAFs for *Pterocarpus erinaceus* in order to share knowledge and build capacity in the implementation of the Article XIII and RST recommendations for this species.

<u>Reflections on the simultaneous implementation of the expedited application of Article XIII and RST for *P. erinaceus*</u>

l) The Standing Committee is invited to consider and provide views on the proposal that, when Article XIII and RST processes are running concurrently, the RST recommendations be included within the Article XIII recommendations to facilitate reporting.

Review of Significant Trade for *Pterocarpus erinaceus*

RECOMMENDATIONS OF THE PLANTS COMMITTEE[1]

Benin*

Short term recommendations

Within 30 days:

a) Establish a zero export quota for all trade in *Pterocarpus erinaceus* and communicate the quota to the Secretariat for publication on the national export quota section of the CITES website. This quota shall remain in place and be renewed annually until such time as applicable recommendations have been implemented.

b) Prior to revising the zero export quota, communicate the basis for the non-detriment finding taking into account the concepts and non-binding guiding principles in Resolution Conf. 16.7 (Rev. CoP17) and in line with paragraph c), to the Secretariat and members of the Plants Committee through its Chair, for their agreement. No exports should occur until the quota has been published on the Secretariat's website.

Long term recommendations

Within two years

c) With the support of the Secretariat, in consultation with the Plants Committee, and taking account of regional and other expertise and experience, establish a science-based non-detriment finding taking into account the concepts and non-binding guiding principles in Resolution Conf. 16.7 (Rev. CoP17).

   The non-detriment finding could, *inter alia* include the following elements:

   - science-based studies on the status of the species (e.g. population size/ stem density, trends, DBH distribution, annual increment rates), for example as part of a national forestry assessment;

   - national/and or local management plans (that include harvest management considerations) with clear monitoring requirements;

   - adaptive management to ensure that further decisions about the harvesting and management of the species are based on monitoring results (regular review of harvest records and the impact of harvesting, and adjustment of harvest instructions as necessary);

   - estimated sustainable harvest taking into account the population data and harvest pressure resulting from legal and illegal trade relative to the vulnerability of the species (intrinsic and extrinsic factors that increase the risk of extinction of the species);

   - calculation of a proposed country-specific sustainable export quota including how the quota shall be allocated among management areas and information on the location and extent of those areas; and,

   - clearly defined management measures (e.g., minimum rotation periods, minimum exploitable diameter, harvest maximums, best management practices for harvesting), as well as details of a locally appropriate traceability and effective monitoring system, including the development or sharing of identification materials.

[1] *As agreed through intersessional decision-making of the Plants Committee, see Notification to the Parties No. 2022/50*

d) Before making any increase to export quotas, communicate the scientific basis for such change to the Plants Committee, through its Chair, annually for a period of three years after exiting the Review of Significant Trade. No increases in export should occur until the quota has been published on the Secretariat's website.

Burkina Faso*

Short term recommendations

Within 30 days:

a) Establish a zero export quota for all trade in *Pterocarpus erinaceus* and communicate the quota to the Secretariat for publication on the national export quota section of the CITES website. This quota shall remain in place and be renewed annually until such time as applicable recommendations have been implemented.

b) Prior to revising the zero export quota, communicate the basis for the non-detriment finding taking into account the concepts and non-binding guiding principles in Resolution Conf. 16.7 (Rev. CoP17) and in line with paragraph c), to the Secretariat and members of the Plants Committee through its Chair, for their agreement. No exports should occur until the quota has been published on the Secretariat's website.

Long term recommendations

Within two years

c) With the support of the Secretariat, in consultation with the Plants Committee, and taking account of regional and other expertise and experience, establish a science-based non-detriment finding taking into account the concepts and non-binding guiding principles in Resolution Conf. 16.7 (Rev. CoP17).

   The non-detriment finding could, *inter alia* include the following elements:

   - science-based studies on the status of the species (e.g. population size/ stem density, trends, DBH distribution, annual increment rates), for example as part of a national forestry assessment;

   - national/and or local management plans (that include harvest management considerations) with clear monitoring requirements;

   - adaptive management to ensure that further decisions about the harvesting and management of the species are based on monitoring results (regular review of harvest records and the impact of harvesting, and adjustment of harvest instructions as necessary);

   - estimated sustainable harvest taking into account the population data and harvest pressure resulting from legal and illegal trade relative to the vulnerability of the species (intrinsic and extrinsic factors that increase the risk of extinction of the species);

   - calculation of a proposed country-specific sustainable export quota including how the quota shall be allocated among management areas and information on the location and extent of those areas; and,

   - clearly defined management measures (e.g., minimum rotation periods, minimum exploitable diameter, harvest maximums, best management practices for harvesting), as well as details of a locally appropriate traceability and effective monitoring system, including the development or sharing of identification materials.

d) Before making any increase to export quotas, communicate the scientific basis for such change to the Plants Committee, through its Chair, annually for a period of three years after exiting the Review of Significant Trade. No increases in export should occur until the quota has been published on the Secretariat's website.

Gambia (The)*

Short term recommendations

Within 30 days:

a) Establish a zero export quota for all trade in *Pterocarpus erinaceus* and communicate the quota to the Secretariat for publication on the national export quota section of the CITES website. This quota shall remain in place and be renewed annually until such time as applicable recommendations have been implemented.

b) Prior to revising the zero export quota, communicate the basis for the non-detriment finding taking into account the concepts and non-binding guiding principles in Resolution Conf. 16.7 (Rev. CoP17) and in line with paragraph c), to the Secretariat and members of the Plants Committee through its Chair, for their agreement. No exports should occur until the quota has been published on the Secretariat's website.

Long term recommendations

Within two years

c) With the support of the Secretariat, in consultation with the Plants Committee, and taking account of regional and other expertise and experience, update and establish a science-based non-detriment finding taking into account the concepts and non-binding guiding principles in Resolution Conf. 16.7 (Rev. CoP17).

   The updated non-detriment finding could, *inter alia* include the following elements:

   - science-based studies on the status of the species (e.g. population size/ stem density, trends, DBH distribution, annual increment rates), for example as part of a national forestry assessment;

   - national/and or local management plans (that include harvest management considerations) with clear monitoring requirements;

   - adaptive management to ensure that further decisions about the harvesting and management of the species are based on monitoring results (regular review of harvest records and the impact of harvesting, and adjustment of harvest instructions as necessary);

   - estimated sustainable harvest taking into account the population data and harvest pressure resulting from legal and illegal trade relative to the vulnerability of the species (intrinsic and extrinsic factors that increase the risk of extinction of the species);

   - calculation of a proposed country-specific sustainable export quota including how the quota shall be allocated among management areas and information on the location and extent of those areas; and,

   - clearly defined management measures (e.g., minimum rotation periods, minimum exploitable diameter, harvest maximums, best management practices for harvesting), as well as details of a locally appropriate traceability and effective monitoring system, including the development or sharing of identification materials.

d) Before making any increase to export quotas, communicate the scientific basis for such change to the Plants Committee, through its Chair, annually for a period of three years after exiting the Review of Significant Trade. No increases in export should occur until the quota has been published on the Secretariat's website.

Ghana*

Short term recommendations

Within 30 days:

a) Establish a zero export quota for all trade in *Pterocarpus erinaceus* and communicate the quota to the Secretariat for publication on the national export quota section of the CITES website. This quota shall remain in place and be renewed annually until such time as applicable recommendations have been implemented.

b) Prior to revising the zero export quota, communicate the basis for the non-detriment finding taking into account the concepts and non-binding guiding principles in Resolution Conf. 16.7 (Rev. CoP17) and in line with paragraph c), to the Secretariat and members of the Plants Committee through its Chair, for their agreement. No exports should occur until the quota has been published on the Secretariat's website.

Long term recommendations

Within two years

c) With the support of the Secretariat, in consultation with the Plants Committee, and taking account of regional and other expertise and experience, establish a science-based non-detriment finding taking into account the concepts and non-binding guiding principles in Resolution Conf. 16.7 (Rev. CoP17).

   The non-detriment finding could, *inter alia* include the following elements:

   - science-based studies on the status of the species (e.g. population size/ stem density, trends, DBH distribution, annual increment rates), for example as part of a national forestry assessment;

   - national/and or local management plans (that include harvest management considerations) with clear monitoring requirements;

   - adaptive management to ensure that further decisions about the harvesting and management of the species are based on monitoring results (regular review of harvest records and the impact of harvesting, and adjustment of harvest instructions as necessary);

   - estimated sustainable harvest taking into account the population data and harvest pressure resulting from legal and illegal trade relative to the vulnerability of the species (intrinsic and extrinsic factors that increase the risk of extinction of the species);

   - calculation of a proposed country-specific sustainable export quota including how the quota shall be allocated among management areas and information on the location and extent of those areas; and,

   - clearly defined management measures (e.g., minimum rotation periods, minimum exploitable diameter, harvest maximums, best management practices for harvesting), as well as details of a locally appropriate traceability and effective monitoring system, including the development or sharing of identification materials.

d) Before making any increase to export quotas, communicate the scientific basis for such change to the Plants Committee, through its Chair, annually for a period of three years after exiting the Review of Significant Trade. No increases in export should occur until the quota has been published on the Secretariat's website.

Guinea-Bissau*

Short term recommendations

Within 30 days:

a) Establish a zero export quota for all trade in *Pterocarpus erinaceus* and communicate the quota to the Secretariat for publication on the national export quota section of the CITES website. This quota shall remain in place and be renewed annually until such time as applicable recommendations have been implemented.

b) Prior to revising the zero export quota, communicate the basis for the non-detriment finding taking into account the concepts and non-binding guiding principles in Resolution Conf. 16.7 (Rev. CoP17) and in line with paragraph c), to the Secretariat and members of the Plants Committee through its Chair, for their agreement. No exports should occur until the quota has been published on the Secretariat's website.

Long term recommendations

Within two years

c) With the support of the Secretariat, in consultation with the Plants Committee, and taking account of regional and other expertise and experience, establish a science-based non-detriment finding taking into account the concepts and non-binding guiding principles in Resolution Conf. 16.7 (Rev. CoP17).

The non-detriment finding could, *inter alia* include the following elements:

- science-based studies on the status of the species (e.g. population size/ stem density, trends, DBH distribution, annual increment rates), for example as part of a national forestry assessment;

- national/and or local management plans (that include harvest management considerations) with clear monitoring requirements;

- adaptive management to ensure that further decisions about the harvesting and management of the species are based on monitoring results (regular review of harvest records and the impact of harvesting, and adjustment of harvest instructions as necessary);

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- calculation of a proposed country-specific sustainable export quota including how the quota shall be allocated among management areas and information on the location and extent of those areas; and,

- clearly defined management measures (e.g., minimum rotation periods, minimum exploitable diameter, harvest maximums, best management practices for harvesting), as well as details of a locally appropriate traceability and effective monitoring system, including the development or sharing of identification materials.

d) Before making any increase to export quotas, communicate the scientific basis for such change to the Plants Committee, through its Chair, annually for a period of three years after exiting the Review of Significant Trade. No increases in export should occur until the quota has been published on the Secretariat's website.

Mali*

Short term recommendations

Within 30 days:

a) Establish a zero export quota for all trade in *Pterocarpus erinaceus* and communicate the quota to the Secretariat for publication on the national export quota section of the CITES website. This quota shall remain in place and be renewed annually until such time as applicable recommendations have been implemented.

b) Prior to revising the zero export quota, communicate the basis for the non-detriment finding taking into account the concepts and non-binding guiding principles in Resolution Conf. 16.7 (Rev. CoP17) and in line with paragraph c), to the Secretariat and members of the Plants Committee through its Chair, for their agreement. No exports should occur until the quota has been published on the Secretariat's website.

Long term recommendations

Within two years

c) With the support of the Secretariat, in consultation with the Plants Committee, and taking account of regional and other expertise and experience, establish a science-based non-detriment finding taking into account the concepts and non-binding guiding principles in Resolution Conf. 16.7 (Rev. CoP17).

The non-detriment finding could, *inter alia* include the following elements:

- science-based studies on the status of the species (e.g. population size/ stem density, trends, DBH distribution, annual increment rates), for example as part of a national forestry assessment;

- national/and or local management plans (that include harvest management considerations) with clear monitoring requirements;

- adaptive management to ensure that further decisions about the harvesting and management of the species are based on monitoring results (regular review of harvest records and the impact of harvesting, and adjustment of harvest instructions as necessary);

- estimated sustainable harvest taking into account the population data and harvest pressure resulting from legal and illegal trade relative to the vulnerability of the species (intrinsic and extrinsic factors that increase the risk of extinction of the species);

- calculation of a proposed country-specific sustainable export quota including how the quota shall be allocated among management areas and information on the location and extent of those areas; and,

- clearly defined management measures (e.g., minimum rotation periods, minimum exploitable diameter, harvest maximums, best management practices for harvesting), as well as details of a locally appropriate traceability and effective monitoring system, including the development or sharing of identification materials.

d) Before making any increase to export quotas, communicate the scientific basis for such change to the Plants Committee, through its Chair, annually for a period of three years after exiting the Review of Significant Trade. No increases in export should occur until the quota has been published on the Secretariat's website.

Nigeria*

Short term recommendations

Within 30 days:

a) Establish a zero export quota for all trade in *Pterocarpus erinaceus* and communicate the quota to the Secretariat for publication on the national export quota section of the CITES website. This quota shall remain in place and be renewed annually until such time as applicable recommendations have been implemented.

b) Prior to revising the zero export quota, communicate the basis for the non-detriment finding taking into account the concepts and non-binding guiding principles in Resolution Conf. 16.7 (Rev. CoP17) and in line with paragraph c), to the Secretariat and members of the Plants Committee through its Chair, for their agreement. No exports should occur until the quota has been published on the Secretariat's website.

Long term recommendations

Within two years

c) With the support of the Secretariat, in consultation with the Plants Committee, and taking account of regional and other expertise and experience, update and establish a science-based non-detriment finding taking into account the concepts and non-binding guiding principles in Resolution Conf. 16.7 (Rev. CoP17).

   The updated non-detriment finding could, *inter alia* include the following elements:

   - science-based studies on the status of the species (e.g. population size/ stem density, trends, DBH distribution, annual increment rates), for example as part of a national forestry assessment;

   - national/and or local management plans (that include harvest management considerations) with clear monitoring requirements;

   - adaptive management to ensure that further decisions about the harvesting and management of the species are based on monitoring results (regular review of harvest records and the impact of harvesting, and adjustment of harvest instructions as necessary);

   - estimated sustainable harvest taking into account the population data and harvest pressure resulting from legal and illegal trade relative to the vulnerability of the species (intrinsic and extrinsic factors that increase the risk of extinction of the species);

   - calculation of a proposed country-specific sustainable export quota including how the quota shall be allocated among management areas and information on the location and extent of those areas; and,

- clearly defined management measures (e.g., minimum rotation periods, minimum exploitable diameter, harvest maximums, best management practices for harvesting), as well as details of a locally appropriate traceability and effective monitoring system, including the development or sharing of identification materials.

d) Before making any increase to export quotas, communicate the scientific basis for such change to the Plants Committee, through its Chair, annually for a period of three years after exiting the Review of Significant Trade. No increases in export should occur until the quota has been published on the Secretariat's website.

Sierra Leone*

Short term recommendations

Within 30 days:

a) Establish a zero export quota for all trade in *Pterocarpus erinaceus* and communicate the quota to the Secretariat for publication on the national export quota section of the CITES website. This quota shall remain in place and be renewed annually until such time as applicable recommendations have been implemented.

b) Prior to revising the zero export quota, communicate the basis for the non-detriment finding taking into account the concepts and non-binding guiding principles in Resolution Conf. 16.7 (Rev. CoP17) and in line with paragraph c), to the Secretariat and members of the Plants Committee through its Chair, for their agreement. No exports should occur until the quota has been published on the Secretariat's website.

Long term recommendations

Within two years

c) With the support of the Secretariat, in consultation with the Plants Committee, and taking account of regional and other expertise and experience, establish a science-based non-detriment finding taking into account the concepts and non-binding guiding principles in Resolution Conf. 16.7 (Rev. CoP17).

   The non-detriment finding could, *inter alia* include the following elements:

   - science-based studies on the status of the species (e.g. population size/ stem density, trends, DBH distribution, annual increment rates), for example as part of a national forestry assessment;

   - national/and or local management plans (that include harvest management considerations) with clear monitoring requirements;

   - adaptive management to ensure that further decisions about the harvesting and management of the species are based on monitoring results (regular review of harvest records and the impact of harvesting, and adjustment of harvest instructions as necessary);

   - estimated sustainable harvest taking into account the population data and harvest pressure resulting from legal and illegal trade relative to the vulnerability of the species (intrinsic and extrinsic factors that increase the risk of extinction of the species);

   - calculation of a proposed country-specific sustainable export quota including how the quota shall be allocated among management areas and information on the location and extent of those areas; and,

   - clearly defined management measures (e.g., minimum rotation periods, minimum exploitable diameter, harvest maximums, best management practices for harvesting), as well as details of a locally appropriate traceability and effective monitoring system, including the development or sharing of identification materials.

d) Before making any increase to export quotas, communicate the scientific basis for such change to the Plants Committee, through its Chair, annually for a period of three years after exiting the Review of Significant Trade. No increases in export should occur until the quota has been published on the Secretariat's website.

REPORT ON NON-DETRIMENTAL FINDINGS OF PTERICARPUS ERINACEUS IN GHANA

BY

RESOURCE MANAGEMENT SUPPORT CENTRE

&

FACULTY OF RENEWABLE NATURAL RESOURCES

KWAME NKRUMAH UNIVERSITY OF SCIENCE TECHNOLOGY

SEPTEMBER 2024

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TABLE OF CONTENT

Lists of Figures

List of Tables

ACRONYMS

CITES	Convention on International Trade in Endangered Species
CSR	Clark Sustainable Resources
EIA	Environmental Impact Assessment
FC	Forestry Commission
FSD	Forest Services Division
GNA	Ghana News Agency
GPS	Global Positioning System
HFZ	High Forest Zone
IWT	Ghana's Inland Water Transport
LV	Lake Volta
MTV	Mean Tree Volume
NASA	National Aeronautics and Space Administration
NDF	Non Detrimental Findings
RMSC	Resource Management Support Centre
TIDD	Timber Industry Development Division
USAID	United States Agency for International development
VRA	Volta River Authority
WABiCC	West Africa Biodiversity and Climate Change

EXECUTIVE SUMMARY

Background

Pterocarpus erinaceus commonly referred to as African Rosewood occurs mainly in the forest savannah transitional zone and parts of the northern savannah woodland of Ghana. The species is currently listed in the Appendix II of CITES. The listing of the species in Appendix II means that (among other issues), any further exploitation, transportation and trade in the species has to meet permitted quotas and must be based on recommendations of valid non-detrimental findings (NDF). In 2017 and 2021, inventories of the species were conducted in areas where the species are commonly found to determine the stocking levels. As an interim measure to ensure sustainable harvesting, felling quotas were recommended for all the political districts where the species were found using the static volumes (m^3) estimated from the survey. Harvesting, however, went on without adequate regulation of felling quotas. In recent times, estimates from inventories were characterized by large uncertainties making them largely unreliable from a sustainable resource management perspective. In an effort to pursue sustainable management of *Pterocarpus erinaceus*, an inventory of the species was carried out in August 2022 with the view of updating the results of the 2021 static inventory to determine the current status of the species. The purpose of the assessment was to conduct a Non Detrimental Findings (NDF) study on *Ptericarpus erinaceus* to determine whether trade levels were sustainable.

Methodology

The approach used was desk study involving a review of existing reports/maps and field measurements using rectangular plots of 40m x 1000m. The plots were randomly laid in rosewood endemic areas in the different political districts. A felling quota system based on a number of assumptions, were used to determine number of stems and volume of trees that could be considered for felling annually at the national and district levels. Given that there is virtually no information locally on the growth dynamics and mortality, as much as possible a precautionary approach was adopted to generate conservative estimates. To regulate harvesting of the species, annual felling quotas were recommended based on three scenarios: 50year, 40years and 30years. The 40-year was adopted for the implementation of annual felling quotas in off reserve in the endowed areas (terrestrial areas). A 16-year felling quota was recommended for the underwater stands in the Volta lake based on a study conducted in 2007

Key findings

The study shows that the stocking and stand volume for species in most endowed areas has reduced significantly between 2013 and 2022. The mean stem numbers and volume per km^2 estimates showed a decline. Total stem numbers above the felling limit (of all stems $\geq$ 30 cm dbh) were estimated to be 1,362,742.34 stems with an equivalent standing volume of 1,871,992.59 m^3. Trends in natural regeneration show that the rate of decline reduced from 72% between 2017-2021 to 9% 2021-2022, indicating a positive effect of the implementation of the conservation measures.

The felling quota per annum approach per Political District of the endemic zones of Ghana using three

different life spans (felling cycles) of 50, 40, and 30 years gave a volume of 14,975.94 m^3, 18,719.93 $m^{3,}$ and 24,959.90 m^3 annual felling quota respectively.

Recommendations

The bans on rosewood harvesting, zero quota, and other conservation measures have immensely contributed to improving regeneration as well as the capacity of the species to adapt to various shocks including wildfires, over-harvesting, etc. To further enhance the management of the species in both on and off-reserve areas, the following suggestions are made

a. A conservative national felling quota per annum using a 40-year cycle is proposed as a precautionary measure.

b. To ensure the sustainable exploitation of *Ptericarpus erinaceus* in off-reserve areas (terrestrial), a quota system is proposed for adoption and implementation by the Forestry Commission as a means of regulating the harvesting of Rosewood.

c. An indicative national felling quota of **18,719.93 m^3** (terrestrial land outside forest reserves) is proposed. This proposed quota should not be exceeded.

d. For **underwater rosewood** in the Volta Lake, an indicative felling quota of **40,000m^3** per annum has been proposed for a period of 16 years. This is consistent with the objectives of the Revised National Transport Policy (2020), the Volta Lake Strategic Plan (2010 – 2014), and the Draft Volta Lake Master Plan 2014.

e. Therefore, the proposed annual aggregate quota for off-reserve areas (terrestrial) and underwater rosewood harvesting in Ghana is **58,719.93 m^3.** Barring any changes in policy and other unforeseen circumstances, the proposed harvesting quotas are expected to be implemented for 16 years until the underwater stock **(40,000 m^3)** is depleted. After which, the **18,719.93 m^3** will remain operational based on the forty (40) year scenario.

f. Additional permanent sample plots should be established in the savannah environment in both on and off reserves to monitor the dynamics of the species and other species of economic importance.

g. Increase the population of *Pterocarpus erinaceus* in off reserve areas through upscale of existing plantation trials in the savanna and transition zone of Ghana where the species predominantly occurs

h. The national quota which is to be implemented by the Forest Services Division, should be monitored by RMSC and endorsed by the representative of CITES in Ghana.

i. The Forestry Commission should gradually integrate harvesting of *Ptericarpus erinaceus* into the existing wood tracking system for documentation and traceability

j. Increase awareness creation on wildfires to reduce the frequency of occurrence and severity in the savanna and transition zones

k. Promote the adoption of more efficient technologies and alternative species for charcoal production. Also, encourage the establishment of woodlots to meet the energy needs of local people

1.0 INTRODUCTION

1.1 Background

The term Rosewood is a name for a wide array of hardwoods native to the tropical areas of Southeast Asia, Africa, Central and South America which comprises of selected species of the genera Dalbergia ('true rosewood') and Pterocarpus (substitute rosewood) (Dumenu and Bandoh, 2016). *Pterocarpus erinaceus* is a deciduous legume tree of African savannas and dry forests famous for producing one of the finest woods in its native region. *Pterocarpus erinaceus* is one of the common species of rosewood exploited in Ghana. The species mainly occurs in the forest savannah transitional zone and parts of the northern savannah woodland ecological zone of Ghana. The species was formerly mainly used for charcoal production by the local people to generate income. It is however, now a threatened species as its demand as timber especially, has been on the increase in the last decade leading to massive exploitation and export in the form of billets to the Asian countries particularly China (Dumenu and Bandoh, 2016)

West Africa's Rosewoods, after their classification as Hongmu (Redwood) suffered overexploitation as exports rose dramatically to meet the demand for Chinese classical furniture, between 2010 and 2016, compared to rosewood exports before 2010 ((USAID and WABiCC, 2021). The high unsustainable exploitation levels of the species in the last decade demand that mechanisms are put in place to regulate its exploitation. Led by Senegal, 10 West African countries, the European Union and Chad successfully lobbied for the listing of the rosewood *Pterocarpus erinaceus* in Appendix II of CITES in 2017. This means (among other issues), any further exploitation, transportation and trade in the species has to meet permitted quotas and must be based on recommendations of valid non-detrimental findings (NDF) (USAID and WABiCC, 2021).

There is therefore the urgent need to control exploitation levels of the species and bring it to sustainable levels. The new approach, following the 2017 Rosewood inventory, was the adoption of district level felling quotas as a means of regulating harvesting levels. This is a similar approach to the off-reserve annual felling quotas which were developed for all forest districts within the Ghana High Forest Zone (GHFZ) after a national inventory had been conducted. This was an approach to regulate the off-reserve timber resources in 1996 (FC, 1996). The rationale was that felling quotas should be adopted to regulate harvesting levels in all rosewood endemic areas of Ghana until efforts are made to understand better the ecology and population dynamics (increment, mortality and recruitment rates) of the species.

1.2 Submerged tree resources under the Volta Lake

Water bodies have been an amazing mode of transport for carrying people and/or goods within and across regional, national and continental borders. A lot of countries still depend on inland water transport for the transportation of bulk and general cargo across lakes/rivers over long

distances (Boadu *et al*., 2021). Similarly, Ghana's Inland Water Transport (IWT) system managed by Volta Lake transport Company (VLTC) has been in operation for decades. Regardless of the

long years of operation, one of the main challenges facing IWT is the removal of underwater stems and stumps of dead trees causing a lot of boat accidents on the lake.

Lake Volta (LV) dominates the territory of the West African state of Ghana. Formed by the construction of the Akosombo Dam over the River Volta between 1961 and 1965, it has an area of 8,482 sq km. The river has divisions of Black Volta, the White Volta, and the Red Volta. In the north-western part of Ghana, the Black Volta forms the frontiers between the Burkina Faso, Ivory Coast and Ghana. In the southern part of Ghana, the Volta River flows through Akwapim-Togoland highlands, and enters the Atlantic Ocean at the Gulf of Guinea at Ada. The reservoir named 'Lake Volta' has a stretch of water from Akosombo in the eastern region to the northern part of Ghana (NASA, 2018).

LV does not only serve as the main source of water to power Ghana's biggest hydroelectric dam; the Akosombo dam, but also provides the main medium through which goods and people are transported from one point to the other on Ghana's inland waters (NASA, 2018). It is Ghana's major navigable river which is sourced from Bobo Dioulasso highlands of Burkina Faso and covers an extensive area thereby making the lake the biggest man-made lake in the world with respect to surface area. It flows through major towns like Yeji, Dambai, Kpando, Kete Krachi, etc. that depend on the use of this water body for their livelihood and business activities.

The Revised National Transport Policy (2020), the Volta Lake Strategic Plan (2010 – 2014) and the Draft Volta Lake Master Plan 2014 recognizes that, one of the safety aspects that need to accompany the development of an integrated transport system on Volta Lake is the continuation of tree stump removal programme prioritizing the main navigational channels.

Approximately two million people live along the shores of the lake, with 80,000 people making a living directly from fishing. The lake contributes 85% of the country's aquaculture production and 16% of the wild fish catch. A total of 3,500km^2 of dense forest area were flooded during the dam's construction. The submerged trees remain standing, and hardwood timber is perfectly preserved. Protruding tree stumps limit the lake's navigability, repeatedly cause fatalities, and limit the scope for recreation and aquaculture (World Bank, 2015).

According to Fitzgerald (2008) and Thrower et al (2007), Ghana has submerged over 14 million cubic meters of rot-resistant hardwoods such as Rosewood, Mahogany (*Khaya spp*), Odum (*Milicia excelsa*) and Ebony trees (refer to Annex V for details on volume estimates for submerged

rosewood pp 28-30) when they created the Volta Lake. Owing to the lack of oxygen underwater, the

trees typically do not deteriorate, keeping their outstanding, often old-growth, character, and physical properties.

In February 2006, the Government of Ghana and the Volta River Authority (VRA) signed an agreement with Clark Sustainable Resources (CSR) Developments, a Canadian firm (Ablordeppey, 2009). The said agreement granted a concession to CSR Developments to harvest trees from the submerged forests in the Volta Lake. This is to be done in two Phases, a Preparatory Phase and a Commercial Phase. It is estimated that the Lake is home to timber resources worth 2.8 billion dollars (Ghana News Agency, 2011).

1.3 Progress and challenges with compliance with CITES requirements in Ghana

A recent study conducted on rosewood in 2021 in West African countries including Ghana highlighted a number of challenges confronting most countries in meeting CITES requirements (USAID and WABiCC, 2021). In Ghana's case, the progress made and challenges being confronted are summarized below:

- A ban has been in place on the harvest and export of rosewood since March 2019, only stocks of salvaged and confiscated rosewood auctioned by the government (Forestry Commission) can be exported.
- Government reiterates that key elements of CITES are being followed. A recent report (2020) on Ghana by **EIA** seems to indicate a net downward trend in rosewood exports to China. This was a result of a ban on the exploitation of the species which led Ghana to take a zero quota and therefore no harvesting, transport, or export of the species is permitted
- Independent observers, however, presented a mixed picture of permit issuances not backed by non-detrimental findings (NDFs), as recently as July, 2019, although at that point, rosewood exports were trending downward.
- Civil society observers believe that increased transparency in CITES compliance will be of benefit to the process, to address issues of illegal exports that seem to continue even under enforcement of bans and absence of NDF studies.
- One proposal for the Ghana High Forest Zone by the Resource Management Support Center (RMSC) of the Forest Commission is to institute felling quotas to regulate harvesting levels in all rosewood endemic areas until NDF efforts can generate results of ecology and population dynamics (covering increment, mortality and recruitment rates) of the species.
- Management and monitoring of off-reserve harvesting of the species has been characterized by a number of challenges. These challenges include species identification,

- illegal fuelwood collection and charcoal production, lack of involvement of traditional leaders and local communities and the fact that the species was not integrated into the National Wood Tracking System (WTS) because it was then a Lesser-Used Species (LUS)

- Effective control and monitoring of the export of the species at the point of exit was hampered by weak collaboration among management and enforcement agencies in combatting wood trafficking and the absence of specific legislation for CITES implementation. Moreover, low penalties in extant laws for illegal export and import of wildlife and wood products have been a stumbling block to effective management.

- Management of regeneration has been challenging due to annual wildfires incidences that burn the seedlings saplings, slash and burn agriculture practices that lead to the removal or destruction of the small-sized trees. Furthermore, grazing activities by livestock contribute to adverse impact on natural regeneration of the species in off reserve landscape.

1.4 Rationale for the study

In 2019, a ban was imposed by the Government of Ghana on the harvesting, transporting and export of Rosewood. The ban was a measure taken by the government to stop illegal harvesting, transporting, processing, trading, and exporting of rosewood and control its exploitation. The ban remains in force and the Minister for Lands and Natural Resources has directed the Forestry Commission to cease the issuance of the Convention on International Trade in Endangered Species (CITES) permits for the export of rosewood from Ghana except stocks of salvage and confiscated rosewood from the field auctioned by the Forestry Commission with approval from the Minister

of Lands and Natural Resources. The CITES Secretariat issued Notification 2022/021, of 28th March 2022 inviting range States of Pterocarpus erinaceus to either: a.) Submit a Non-Detriment Finding (NDF) and Legal Acquisition Finding (LAF) to the Secretariat or request the Secretariat to publish a voluntary zero export quota for commercial trade in *Pterocarpus erinaceus*. Ghana, agreed to adopt a precautionary approach to the species conservation by requesting the Secretariat to publish a Voluntary Zero Export Quota for commercial trade in the species until detailed non-detriment finding (NDF) and legal acquisition finding (LAF) reports are provided for the species. In recent times, there have been calls for the ban to be lifted but this needed to be situated within a risk assessment and risk management context. To provide the basis for such an action, an NDF report needed to be prepared to determine whether exploitation could be sustainable based on available information on the current status and management of species. This report therefore seeks to provide detailed data and information (robust NDF) on *Pterocarpus erinaceus* and also provide the CITES Secretariat with information required to assess the implementation of Article IV, paragraphs 2(a), 3 and 6(a) of the convention with regards to harvesting and trade of the species.

Following the comments and feedback from the 27th Plant Committee meeting in Geneva, Switzerland (PC27 COM.6), the document was revised to incorporate the committee's comments and recommendations, aiming to develop a comprehensive NDF.

1.5 Objectives

To conduct a Non-Detrimental Findings (NDF) study on *Ptericarpus erinaceus* to determine whether trade levels were sustainable

Specific objectives

The specific objectives of the study are:

1. To estimate static volume (m^3) and stocking of Rosewood in the endemic areas of Ghana.
2. To determine sustainable harvesting levels for all the endemic areas (political districts).
3. To assess the effectiveness of implemented conservation measures on the species sustainability

2.0. NON- DETRIMENT FINDING DECISION-MAKING (NDF) PROCESS AND INSTITUTIONS IN GHANA

2.1 Process

The Faculty of Renewable Natural Resources, College of Agriculture and Natural Resources, Kwame Nkrumah University of Science and Technology, Kumasi (KNUST) is the Scientific Authority for CITES in Ghana. Non-Detriment Findings (NDF) are conducted to objectively examine aspects such as species distribution and habitats, population status and trends, harvest techniques, and the volume and effect of trade on target species. The outcome results in either a positive or negative recommendation to Ghana's CITES Management Authority which is the Wildlife Division of the Forestry Commission. To conduct an NDF, the Scientific Authority generally goes through several cycles, as shown in Figure 1. It begins with a preliminary examination to determine whether a comprehensive, science-based NDF is required for the species and specimens involved. If a science-based NDF is required, conservation considerations and potential biological threats must be assessed. These assessments provide the framework of risk in which the harvest, trade, and management should be examined (Figure 1). The method is then followed by a comprehensive examination of harvest impacts and trade impacts relevant to the species in question, as well as an assessment of whether the management mechanisms in place are stringent enough to reduce the concerns, risks, and impacts identified.

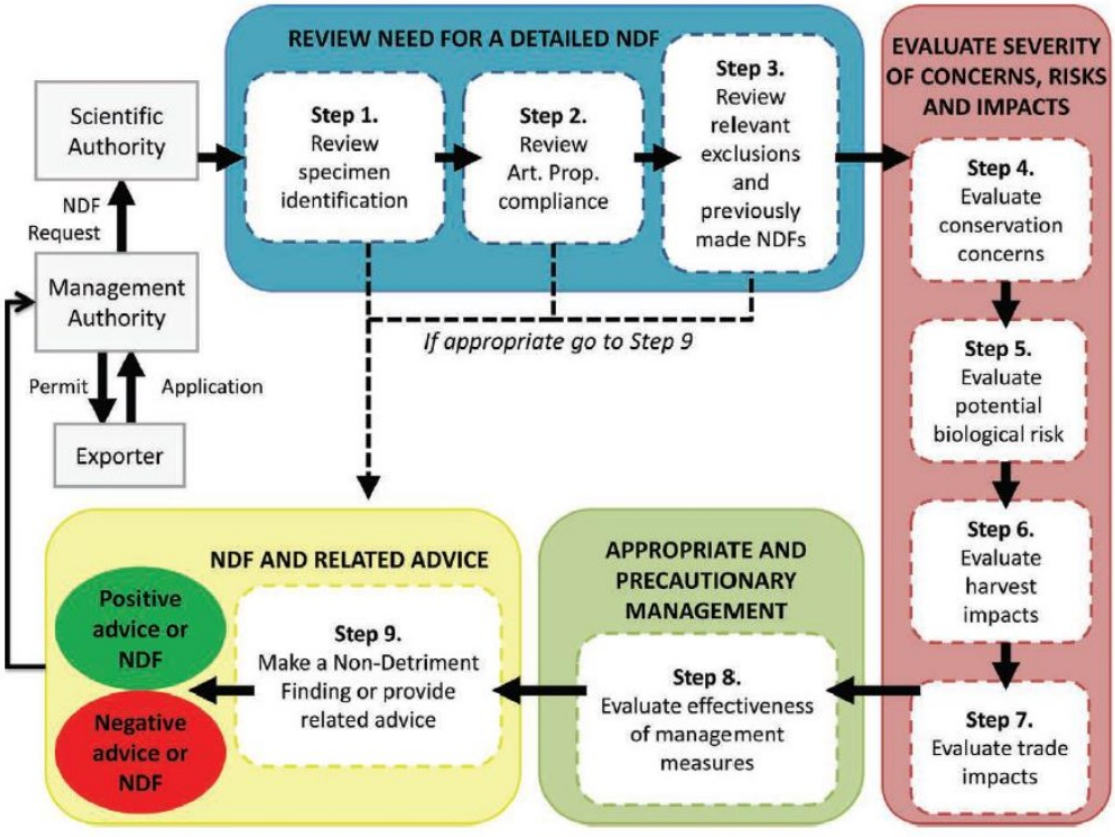

Figure 1 Simplified pathway adopted by the Scientific Authority for making NDF for Timber/Tree species listed in CITES Appendix II Adopted from Wolf et al. 2018)

2.2 Collaborating Institution

The CITES Scientific Authority in Ghana coordinates NDF for species that are commercially harvested in Ghana. It coordinates the efforts of various governmental and non-governmental research organizations as well as works with private organizations. The following agencies made contributions to this report on the NDF for *Ptericarpus erinaceus*.

• **Resource Management Support Centre of the Forestry Commission (RMSC)** is the technical and research wing of the Forestry Commission (FC) with responsibility to explore, develop, facilitate and support the implementation and monitoring of effective and affordable forest management systems in Ghana. The Centre as part of its mandate conducts inventories of populations across the range of all species in Ghana. The Centre collaborated with the Scientific Authority to perform the NDF for the species.

• **Wildlife Division of the Forestry Commission (WD):** It is responsible for management and conservation of Wildlife Protected Areas and Zoos in Ghana. The WD is the CITES Management Authority in Ghana and responsible issuing CITES permit.

• **Forest Services Division of the Forestry Commission (FSD):** The Forest Services Division is in charge of implementing policies, rules, regulations, and procedures in place to guide the management and utilization of Ghana's forest resources. The awarding of licenses to harvest wood is a key operation of the FSD under Ghana's Legality Assurance System (GhLAS). These rights are divided into four categories: 1. Timber Utilization Contracts, 2. Timber Utilization Permits, 3. Salvage Permits, and 4. Special Permits. Before all trees could be transported, the FSD is the authority to issue (Log Measurement Conveyance Certificate-LMCC) which is the legal document that permits transportation of logs overland.

• **Timber Industry Development Division of Forestry Commission (TIDD)**: TIDD is responsible for establishing guiding price systems for the vetting of contracts of export of wood products. It conducts pre-shipment inspection and examination of wood products and issue permits for the export of timber and wood products. TIDD is also responsible for publishing market intelligence to inform industry, government and public regarding pricing, trade and product trends that could impact on the sector, track the movement of logs from forest gates after the issuance of conveyance certificates. While TIDD provides management and technical training for the wood industry and undertake the certification and registration of authorized timber graders and establish levels of certification for such graders, it also monitors the supply of lumber to the local market by recognized millers with the support of the Forest Services Division. Additionally, TIDD advises on approvals to establish new processing mills and register timber processors and traders in timber and wood products and collaborate with international and timber associations on marketing and utilization of wood products as well as coordinate foreign technical assistance aimed at improving efficiency in the industry.

2.3 Monitoring of export levels of species

The monitoring structures for harvesting and trade in timber resources are shown in Figure 2. RMSC monitors the harvesting of trees in Ghana through endorse of yields and periodically undertakes post audits. The FSD monitors volumes harvested and conveyed for processing or export through the issuing Conveyance Certificate (LMCC) systems. Export volumes are monitored by TIDD. The WD issues CITES permits for Timber in trade in endangered species listed in the CITES Appendices. The Custom Division of the Ghana Revenue Authority (GRA) at the Tema and Takoradi ports monitor export containers and documentation for specified tree volumes. Currently, Ghana is implementing a system or systems (Ghana Wood Tracking System) to verify that timber products for shipment have been legally-produced and that only shipments verified as such are exported to the international market. The system for verification includes checks of compliance to provide assurance that the timber products destined for export to the international market have been legally produced and that legality licences are not issued in respect of shipments of timber that have not been legally-produced or are of unknown sources.

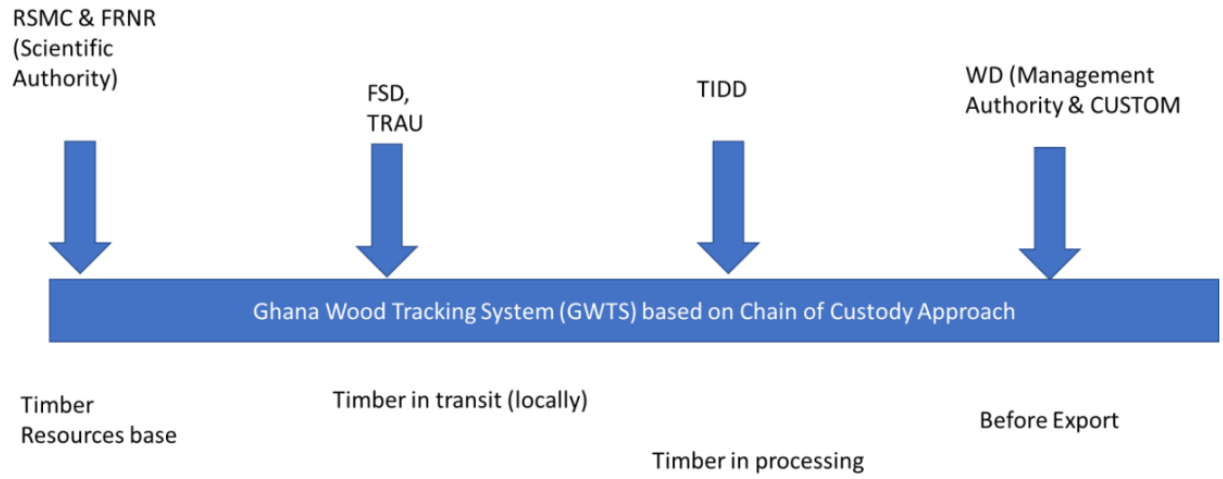

Figure 2 Mechanisms for monitoring population and volumes of *Ptericarpus erinaceus* in Ghana

3.0 ECOLOGY, EXPLOITATION AND TRADE

3.1 Botany and Ecology of *Pterocarpus erinaceus*

Pterocarpus erinaceus is a deciduous legume tree of African savannas and dry forests famous for producing one of the finest woods in its native region (Hutchinson *et al*., 1958). This species together with *Parkia biglobosa* is said to be one of the main components of the remnants of the former dense Sudanian forest. The species occurs in areas with altitudes of 0-600 m, and mean annual temperature of 15-32 deg. C, mean annual rainfall of 600-1200 mm (Aubreville, 1950). The species belongs to the family Fabaceae. It is a medium-sized, deciduous tree 12-15 m tall, bole often of poor form, strongly fluted and gnarled, with numerous, plank-like buttresses (Hutchinson *et al*., 1958). The bark surface is finely scaly fissured, brown-blackish with thin inner bark. The

crown is usually dense and domed with branchlets often lenticel-led. Old stems are often hollow. It grows on shallow soils and growth tends to be stunted on poor soils (Hutchinson *et al*., 1958; Aubreville, 1950). The wood has a fine-grained appearance and once seasoned, maintains shape very well. The tree readily regenerates after cutting, and once established it requires very little attention. *Pterocarpus erinaceus* is a prolific seed producer and is easy to propagate by planting nursery-raised seedlings or rooted cuttings. The fruit, an indehiscent pod, must be cracked open. There are about 3500 unshelled seeds per kg (19,800 per kg if shelled). The recommended seed pretreatment is immersion in water at room temperature for 18–24 hours, or in sulfuric acid for 30–60 minutes and then in tap water for 5–10 minutes (Roussel, 1996). The species produces good quality charcoal and therefore usually extensively exploited for charcoal production.

3.2 Maturity and Optimal Minimum Felling Diameter

Generally, a tree becomes mature when it starts producing fruits or flowers. This is when the tree is at its most productive. The African rosewood (*P. erinaceus*) is reported to reach maturity at 5cm stem diameter (van der Burgt 2016 in litt., to the IUCN/TRAFFIC Analyses Team in IUCN/TRAFFIC, 2016). A study by Barstow (2018) estimated that *P. erinaceus* reaches maturity between 5 and 10 years of age. Furthermore, Barstow (2018) estimated a diameter growth rate of 1cm to 1.3 cm per year. Segla et al in 2016 and 2023 suggest 30 to 35 years, on average by which time 79.04% and 80.77% of the wood surface is transformed into heartwood (in Guinean and Sudanian zones, respectively) for average diameters of 31.93 cm and 32.5 cm, respectively. The recommended optimal MDE of 35 cm by Segla et al 2016 was for a rotation period of 20 years while the NDF for Sierra Leone found the optimal Minimum Diameter Exploitation for the country to be 30cm (CITES Scientific Authority, 2023).

3.3 Exploitation and Trade

Commercial harvesting and trade in rosewood in Ghana over the years has been restricted to the off-reserve areas. A review of information based on permits issued by the Forestry Commission revealed that the export volumes of the species increased from 77962.5 m^3 in 2017 to 113,253.05 m^3 in 2019 (Figure 3). However, there was a sharp decline in export volumes between 2019 and 2022 due to a temporal ban placed on rosewood harvesting by the Government of Ghana. Moreover, in 2021 a salvage permit issued by the Minister of Lands and Natural Resources under LI 2254, Section 29 to pave way for a developmental project resulted in the harvesting of 716 m^3 of rosewood.

Figure 3 Figure Export volumes based on permits issued by the CITES Management Authority in Ghana, Source, WCMC-UNEP, August 2023

4.0 METHODOLOGY

4.1 Study area description

The species occurs in the Savanna and transitional (Dry Semi-deciduous) zone of Ghana (Figure 3). The Savannah ecosystem is much drier than the southern areas of Ghana, due to its proximity to the Sahel region. The vegetation consists predominantly of grass, and sparsely distributed drought-resistant trees including baobabs and acacias. The dry season occurs between December and April while the wet season is between July and November with an average annual rainfall of 750mm to 1050 mm. The highest temperatures are reached at the end of the dry season. However, the Harmattan winds from the Sahara blow frequently between December and the beginning of February. The temperatures can vary between 14 °C at night and 40 °C during the day.

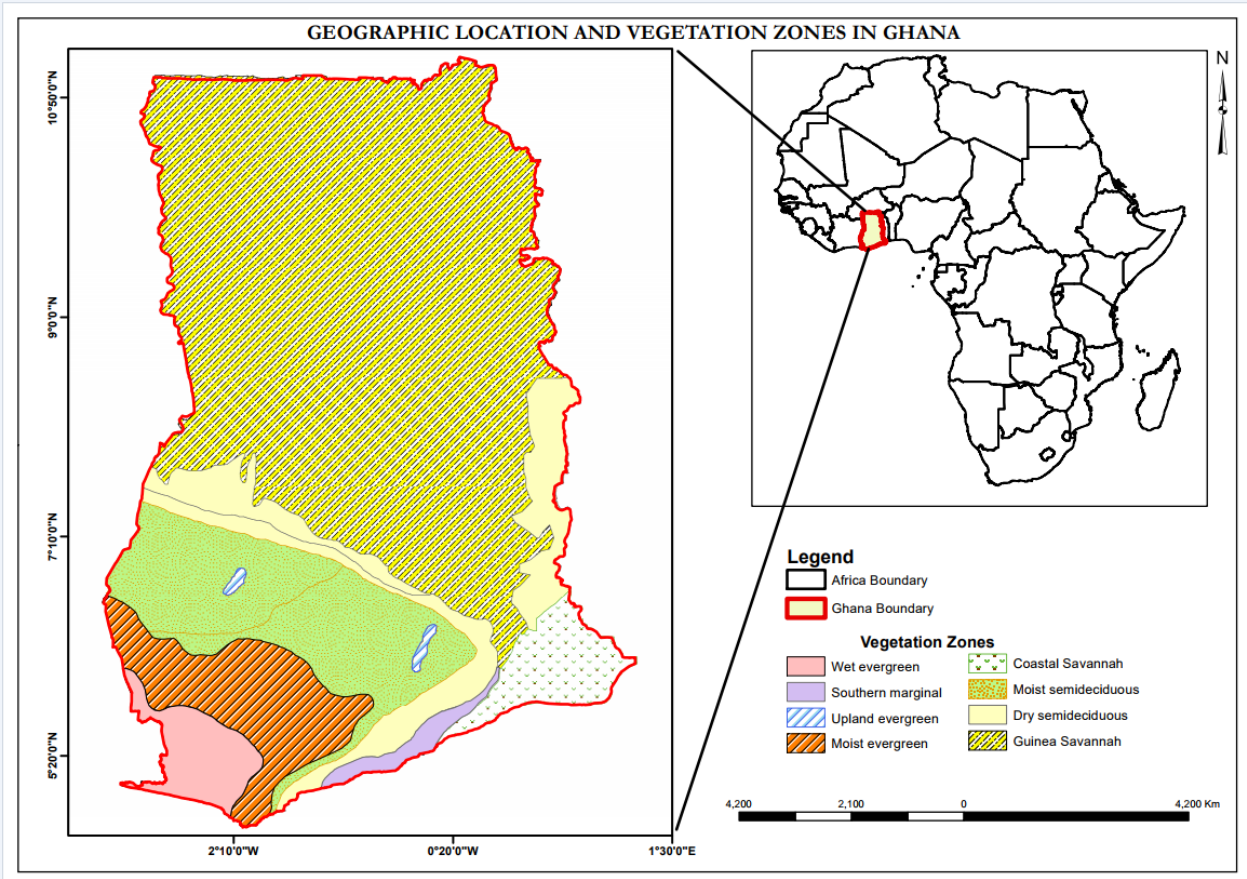

Figure 4 Geographic location and vegetation zones of Ghana

4.2 Selection of sites

A total of twenty-six political districts were selected for the field assessment (Figure 5). The selection of these districts was based on a review of past inventories and interviews with the district forestry staff. These areas were considered to have significant stocks of *Pterocarpus erinaceus*. The selected districts were mapped by the Mapping and GIS Unit, Resource Management Support Centre to guide the field teams in the distribution of sampling plots.

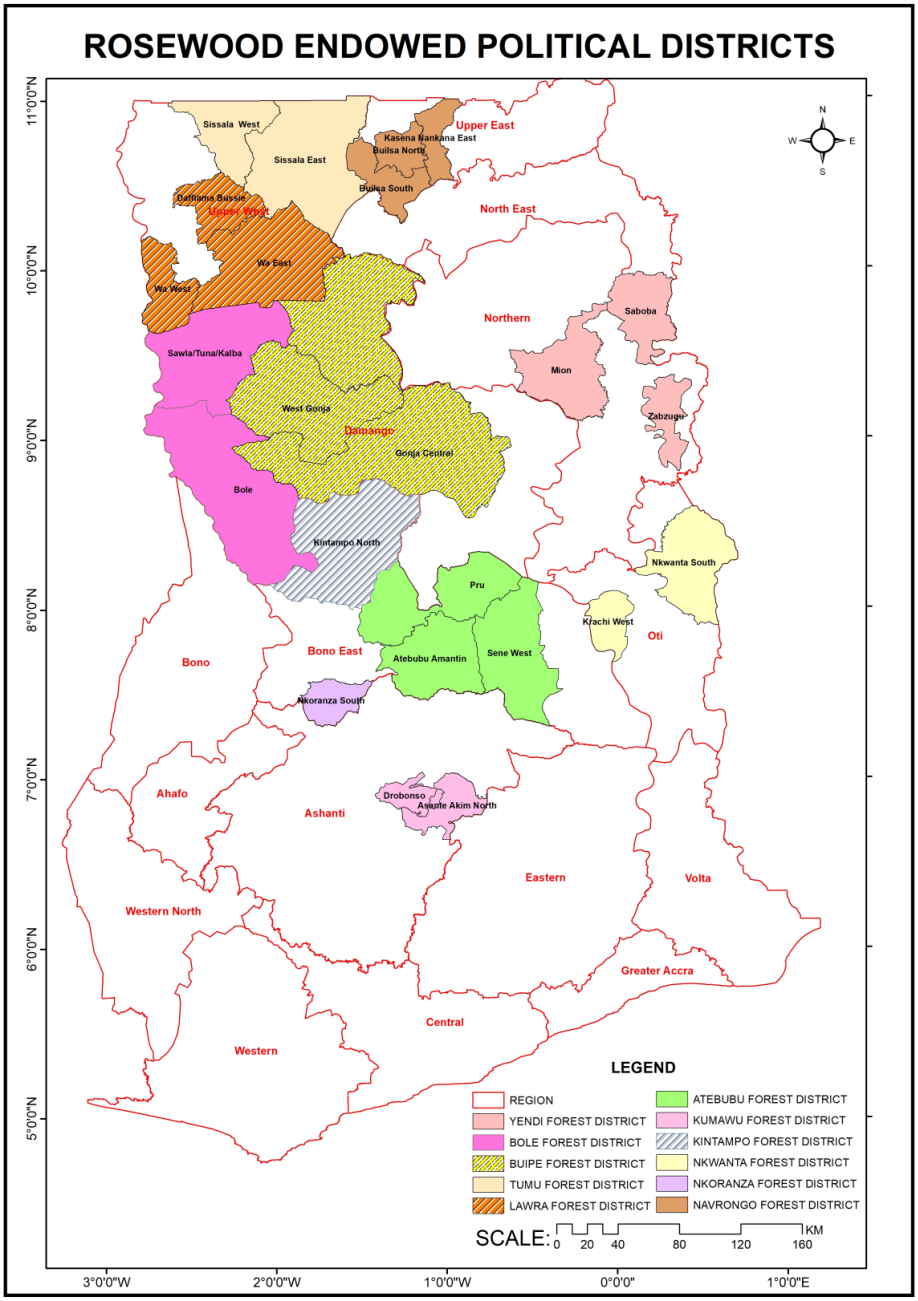

Figure 5 Spatial distribution of rosewood endemic districts

4.3 Desk study

Prior to the field measurement, a review of the methods used for 2013 and 2017 assessment of *Pterocarpus erinaceus* was undertaken to guide the development of sampling procedures for the current study. Subsequently, RMSC liaised with the FSD district offices in the savannah and transitional zones of Ghana to determine where the species occurred in relatively substantial quantities.

4.4 Sampling procedures

Plot size and shape: rectangular plots of size 40 m by 1000 m (i.e., four ha) and sub-divided into 10 quadrats or subplots of 40 m by 100 m were used (Figure 6). These long plots enabled the team to capture data in all the various land use types associated with off reserve areas.

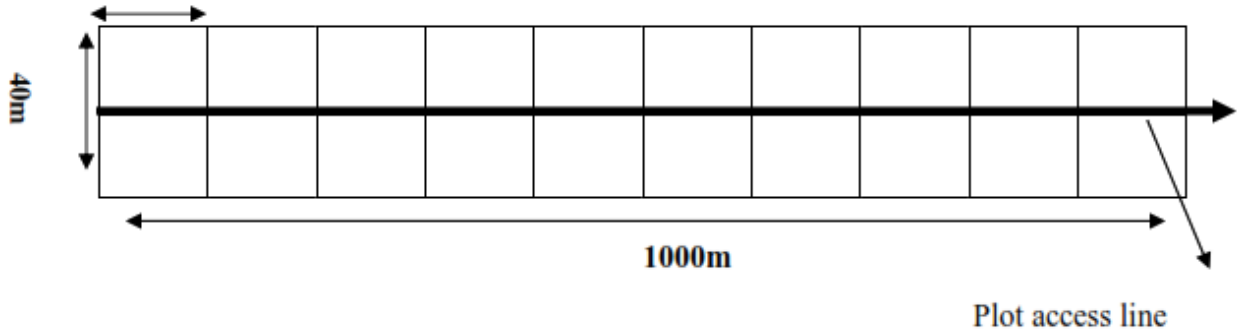

Figure 6 Sample plot layout

Sampling Intensity: Three (3) to five (5) plots depending on the extent of the resource were laid per forest district. In each forest district, the sample plots were distributed across the different political districts in order to capture representative data on species. A forest district is usually made up of a number of political districts.

Plot location and demarcation: Using 1:50,000 topo-sheets of the targeted area, the coordinates of the plots starting points were located. To enhance plot location on the field by the demarcation teams, the starting point of each plot as well as their direction were first identified and constructed on a photocopied topo-Sheet of the site at the office. In each stand, the starting point for each plot was randomly selected.

With the assistance of GPS for direction and machetes for access, these starting points were located on the ground. Similarly, plot directions were also identified using compasses and GPS. Machetes were used for cutting plots access lines. Beacons were placed at each 100 m length along the access line indicating the end of a particular subplot and the beginning of a new subplot (e.g., end of subplot 1, beginning of subplot 2). The demarcation team also determined the major land use type together with terrain condition in each of the 40 by 100 m subplot.

Plot Enumeration: In each plot, all Rosewood trees greater than 10 cm were identified and their diameter at breast height (dbh) measured and recorded. Sapling sampling, where trees between 2 to 9.9 cm diameters were also captured in subplot 1 and 10.

Plate 1 Diameter measurement of rosewood using diameter tape and calipers

4.5 Data entry and analysis

Data captured was keyed into access database and edited to correct errors. Mean stem numbers per ha including their standard errors were generated per Forest District. Mean volume (m^3) per ha including their standard errors for each Forest District were generated using an existing volume equation.

$$\mathbf{V}= 0.0004634(d^{2.201})$$

Where: V= tree volume, d= diameter at breast height

Approach for District Felling Quotas

Extraction per year per Forest/Political District scenarios (Felling Quotas) were generated for discussion and final adoption by FC and other key stakeholders. In proposing the annual felling quota estimates per Political District, the following assumptions were made:

Extraction per year per Forest/Political District scenarios (Felling Quotas) were generated for discussion and final adoption by FC and other key stakeholders. In proposing the annual felling quota estimates per Political District, the following assumptions were made:

- Only the static estimates of stem numbers/volume (m^3) were used. Thus, the proposal excluded or did not factor in the dynamics (increment, regeneration / recruitment, mortality rates) of the species. This is because information on these parameters were not available

Determination of Net area for the Political districts

- The total area of each Political district (Table 1) was obtained from the GIS/Mapping Department of RMSC.
- A net area was then estimated for each Political district where the field assessments were conducted. In the estimation of the net area, 60% of the gross area of each Political district was designated as settlement/barelands, roads, waterbodies, cultural sites (sacred groves, burial grounds, etc.) forest reserves and national parks (Annex V). These areas were excluded from the total area of the political district used in the calculation of total stocking (stems and volumes).

Estimation of total stems and volumes

- First, mean static volume/stem estimates per km^2 were generated for all the rosewood endemic political districts and regions namely; Ashanti, Upper West, Upper East, Northern, Brong Ahafo and Volta.
- The mean values for the political districts coupled with the net areas (less 60% of the gross area) were used to estimate total stem numbers and corresponding volume (m^3) of each Political district.
- Those stems within or above the Minimum Felling Diameter (MFD) were aggregated and used in the determination of felling quotas

Determination of felling quotas

- First, about 40% of the total stems/volume (m^3) above felling limit (30 cm dbh) per Political District was retained to cater for conservation, and destructions caused by wildfire, clearance for farming and domestic use.
- Then an additional 20% of the total stems/volume (m^3) above felling limit per Political district was again maintained to cater solely for charcoal production because currently the species is extracted for this purpose.
- Of the remaining stock (40%) of stems/volume (m^3) above felling limit, three scenarios with an assumed lifespan of 30, 40, and 50 years were used in determining the annual felling quotas

- **District Quotas:** The annual felling quotas for Political Districts in each Forest District are to be added to generate the Forest District Quota. The felling quotas should be administered by the district offices of the Forest Services Division. This will promote better collaboration between the District Assemblies and Forestry Commission and enhance protection and monitoring of the resources.

- **National Quota:** All the assigned district quotas were summed up to give the national quota, which shall be monitored by RMSC and endorsed by the representative of CITES Scientific Authority in Ghana.

- **Scenario:** Three scenarios of 30 years, 40 years, and 50 years were considered for rosewood harvesting. Due to inadequate information on the mortality rate, recruitment, and the slow growth rate of the species, a conservative 40-year scenario was selected from the three options for setting national and district quotas. In Ghana, there are two felling cycles for all species: 30 years and 40 years. The 30-year cycle applies to species with a basal area of 25m² per hectare and above, while the 40-year cycle applies to species with a basal area of less than 25m² per hectare. The 40-year scenario was chosen because it is the most conservative of the two felling cycles recommended for timber harvesting in Ghana. Additionally, this proposed scenario is longer than the 20-year rotation period generally recommended for the Guinea, Sudan, and Sahelian regions (Segla et al., 2016).

5.0 RESULTS

5.1 Diameter class

The stem numbers per km^2 grouped according to diameter classes averaged for all the districts were averaged and generally, the diameter class distribution followed the negative exponential curve typical of natural stands (Figure 7). In most districts, trees recorded were below 40 cm dbh. Large trees greater than or equal to 40cm dbh were recorded in Pru, Sene West, Central Gonja, West Gonja, Biakoye, Wa East, Wa West, Nkwanta South, Saboba and Zabzugu districts (see Annex I for details). Figure 6 shows that about 50% of the trees in the 10-19.9 cm diameter class able to grow to the next diameter class (20-29.9cm dbh) i.e. those below the minimum felling diameter.

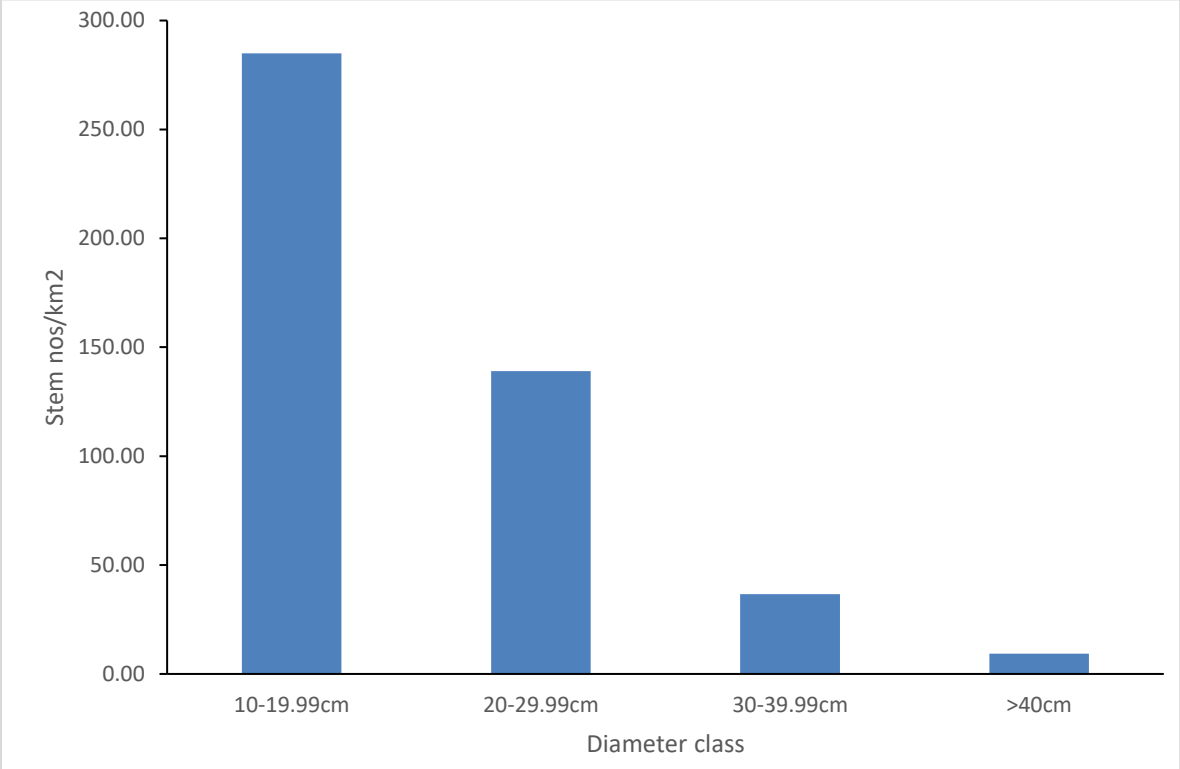

Figure 7 Mean stem number per km^2 diameter class distribution for all the political

5.2 Natural regeneration

Advanced regeneration (10-19.9 cm dbh) for the various districts were pooled and averaged to provide an indication of regeneration performance of *Pterocarpus erinaceus*. Regeneration for the species in most political districts was generally good and particularly high in the Kintampo North, Drobonso, Bole, Pru, Nkwanta South and Zabzugu. The performance of species was poor in Saboba, Navrongo, Builsa South and Kassena Nakana with estimates below 70 stems per km^2 (See Annex I for details). Figure 8 shows a decline in regeneration by 72% between 2017 and 2021.

Between 2021 and 2022 there was reduction of about 9% in natural regeneration. This shows a relatively small reduction in natural regeneration compared to the benchmark value for the year 2017. This improvement in the percentage of natural regeneration reduction could be attributed to the implementation of conservation measures that were prescribed in 2021 NDF report.

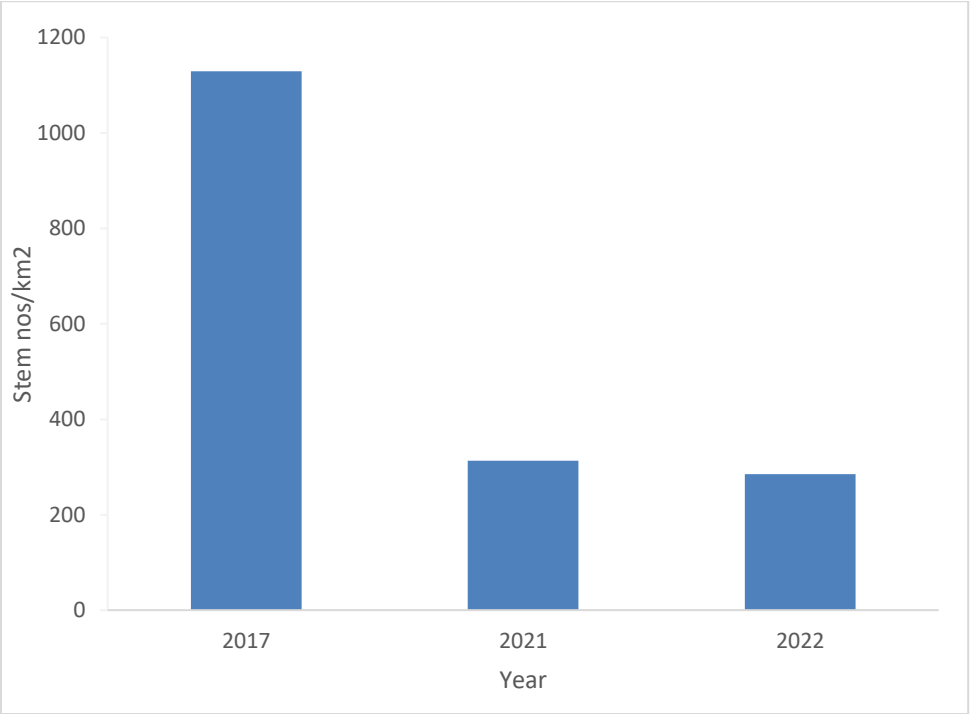

Figure 8 Natural regeneration per km^2 across all the districts

5.3 Mean estimates

Mean value per km^2 (100 ha) estimates were generated for stem number and stand volume. Mean stem numbers per km^2 above the felling limit (greater than or equal to 30 cm dbh) and its equivalent mean volume estimates are presented in Table 1. The Volta region recorded the highest mean stem numbers of 81.7 stems per km^2. The Ashanti region recorded the least figure of stems per km^2. Mean volume estimates were rather highest in Volta region with 106 m^3 per km^2 while Ashanti region recorded the lowest average stand volume of 17 m^3 per km^2. Mean stem numbers and volume per km^2 estimates for the various political districts are presented in Annexes I and II.

Table 1: Mean stem numbers and volume (m3) per 100 ha estimates equal or greater than felling limit (≥ 30 cm) of rosewood grouped according to regions.

Region	Stems>=Flimit	Sampling error (%)	Vol>=Flimit	Sampling error (%)
ASHANTI	16.88	0.17	17.00	0.43
BRONG AHAFO	24.78	2.28	26.08	0.93
NORTHERN	46.54	2.14	67.21	0.72
UPPER EAST	58.50	7.95	66.73	2.37
UPPER WEST	43.33	5.26	65.01	2.06
VOLTA	81.67	1.69	106.13	0.44

5.4 Variation in rosewood stockings

A trend analysis of the mean stem numbers and stand volume estimates for 2017 and 2021 showed a downward trend in stem numbers above the felling limit (≥20cm dbh) in all the rosewood endowed regions (Figures 9 & 10). This information indicates the stocking of rosewood has declined over the years except in the Volta region. The trend pin points to the fact that existing regulatory mechanisms aimed at controlling the exploitation of the species over the years have not been largely effective.

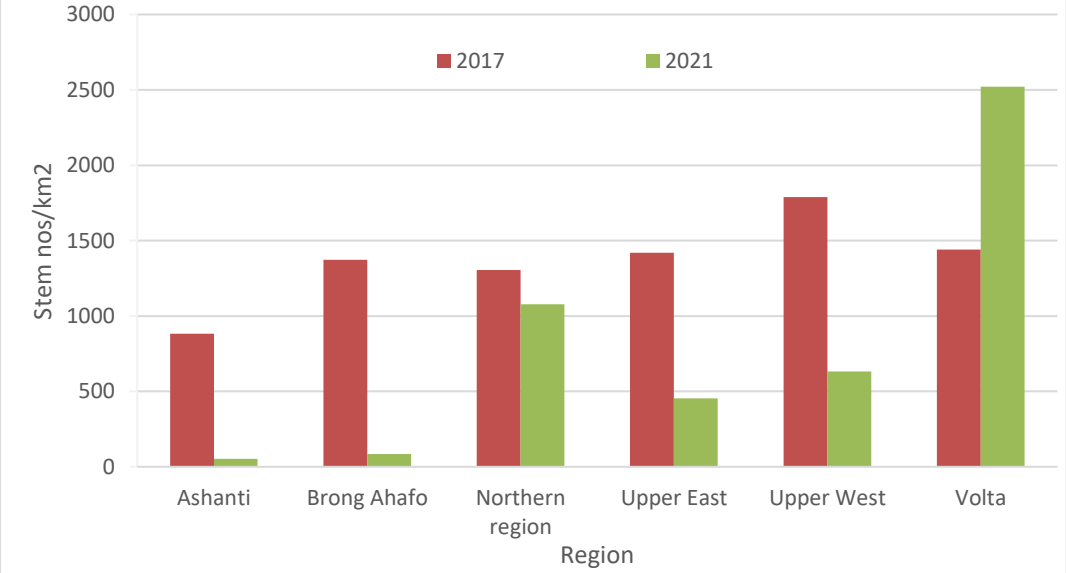

Figure 9 Comparison of stem numbers per km2 of rosewood in 2017 and 2021 for six regions in Ghana

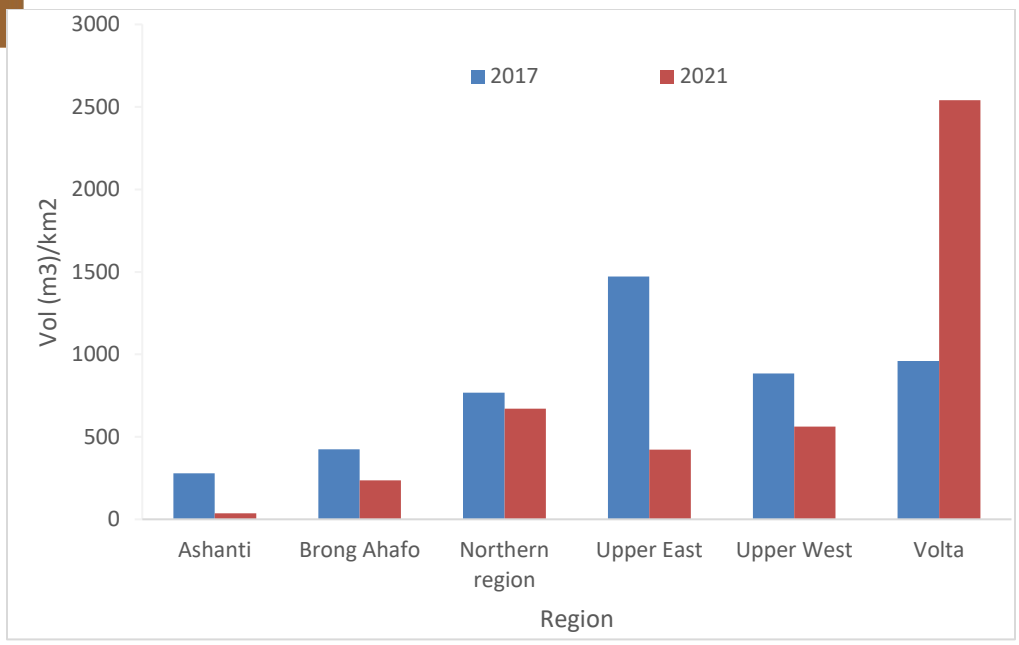

Figure 10 Comparison of volume per km2 of rosewood in 2017 and 2021 for six regions in Ghana

5.5 Total stem and volume estimates

Total standing volume of all stems ≥ 30 cm dbh was estimated to be 1,871,992.59m^3 with an estimated stem numbers of 1,362,742.34 stems (Annex III). Total stem numbers and stand volume above the felling limit were very high in the Saboba, East Gonja, Nkwanta South, Sissala East, Central Gonja, and West Gonja among others (Table 2).

Table 2 Total stems and volume estimates for five endowed political districts

Region	**Political district**	**Total stem ≥ 30cm**	**Total volume (m^3)≥ 30cm**
Northern	Saboba	54,589.50	93,733.87
Northern	East Gonja	84,159.00	81,837.69
Volta	Nkwanta South	78,967.25	98,249.98
Upper West	Sissala East	138,405.00	201,483.20
Northern	Central Gonja	206,287.05	311,278.45
Northern	West Gonja	192,858.22	376,784.83

5.6 Felling Quota Estimates

5.6.1 National and District Felling Quotas

Felling quotas were estimated for the various political districts based on several considerations. These felling quotas were done with the view to suggest a regulatory mechanism to make of rosewood harvesting in Ghana sustainable. Annual felling quotas estimate based on three scenarios (felling cycles) of 50, 40 and 30 years gave stem numbers of 10,901.94 stems, 13,627.42 stems and 18,169.90 stems for the annual felling quotas respectively. The equivalent in volume is 14,975.94 m^3, 18,719.93 m^3 and 24,959.90m^3 for 50, 40 and 30 years respectively (refer to Annex III detailed information). The national felling quota was further disaggregated for the twenty-six (26) Political districts that were surveyed. Table 3 shows the ranking of the first five Political districts with the highest felling quota among the three scenarios. The East Gonja District recorded the highest annual felling quota followed by West Gonja, Central Gonja, Bole and Kintampo North in that order. In terms of the proposed annual felling quota for rosewood, these five political districts, out of the total of twenty-six, contribute approximately 45% to both stems and stand volume.

Table 3 First five Political Districts with the highest proposed felling quota per annum

No.	Political district	Scenario 1 (50years)		Scenario 2 (40years)		Scenario 3 (30years)	
		Stem nos.	Vol (m^3)	Stem nos	Vol (m^3)	Stem nos	Vol (m^3)
1	East Gonja	528.63	564.16	660.78	705.20	881.04	940.26
2	Saboba	631.74	786.00	789.67	982.50	1,052.90	1,310.00
3	Nkwanta South	673.27	654.70	841.59	818.38	1,122.12	1,091.17
4	Sissala East	1,107.24	1,611.87	1,384.05	2,014.83	1,845.40	2,686.44
5	Central Gonja	1,542.87	3,014.28	1,928.58	3,767.85	2,571.44	5,023.80
6	West Gonja	1,650.30	2,490.23	2,062.87	3,112.78	2,750.49	4,150.38

3.6.2 Trends in national felling quotas

National felling quotas proposed over a 40-year felling period have reduced considerably between 2017 and 2022 (Figure 11). The proposed quotas show a reduction of 84% between 2017 from 116,237 m^3 to 18,719.93 m^3. This is expected to result in more residual stands.

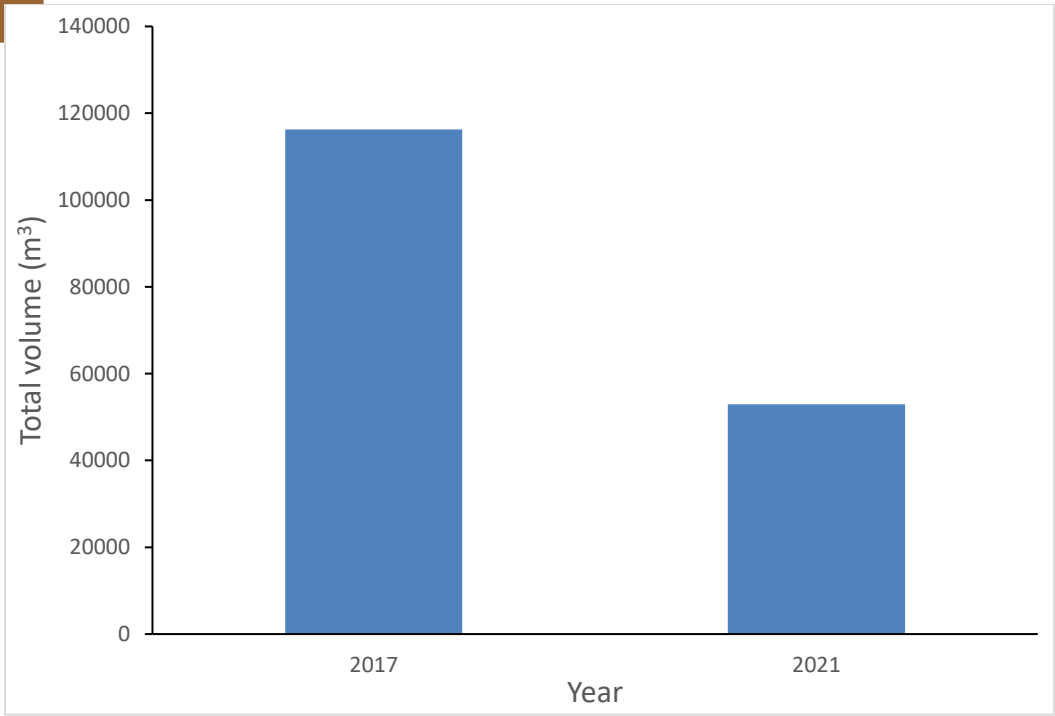

Figure 11 National felling quotas for Rosewood in m3 for 2017 and 2021

5.7 Estimates for rosewood underwater

A study conducted on trees under water within the Volta Basin in 2007 by Volta River Authority (VRA) and the Forestry Commission (FC) revealed that there were large quantities of submerged Ptericarpus erinaceus (rosewood) trees in the lake (Thrower et al., 2007) (see Annex V for details on methodology and volume statistics). The underwater rosewood is distributed within an estimated area of 116,167 ha in the Volta Lake. The total is divided into four Lots according to their locations. Their distribution is either discontinuous (scattered) or wooded (dense). Estimated mean volume across Lots was 5.52 m^3/ha. The total stand volume for all Lots was therefore estimated to be 641,242 m^3 (Table 3). It is estimated that 40,000 m^3 of rosewood will be harvested per annum within the Volta Lake in Ghana. The harvesting of underwater rosewood is expected to be completed within sixteen (16) years barring any eventualities.

Table 4 Projection for Underwater Harvesting of *Pterocarpus erinaceus* (Rosewood) in Volta Lake

Description (Location)	Discontinuous	Wooded	Mean Volume (m^3/ha)	Volume (m^3) Discontinuous	Volume (m^3) Wooded	Total volume (m^3)
Lot 2	2,867	21,882	5.52	15,825.84	120,788.64	136,614.48
Lot 3	6,045	24,657	5.52	33,368.40	136,106.64	169,475.04
Lot 4	9,024	15,498	5.52	49,812.48	85,548.96	135,361.44
Lot 5	7,959	28,235	5.52	43,933.68	155,857.20	199,790.88
Total	**25,895**	**90,272**		**142,940**	**498,301**	**641,242**

5.7 Threats

- Wildfire incidence was observed in almost all sites visited.
- Charcoal production and farming were identified as a major threat to rosewood conservation
- Illegal chain sawing activities

Plate 3: Felled rosewood trees for charcoal production

6.0 DISCUSSION

The study was designed to capture information on stand characteristics in a way that was representative of the range of the species in Ghana. However, it is important to highlight that the field teams could not conduct the assessment in most of the riparian areas where a substantial quantity of the existing stands occur, could not be accessed during the inventory period due to flooding or inundation of the riverbanks. These areas were excluded during the inventory due to inaccessibility. Harvesting of *Pterocarpus erinaceous* between 2013 and 2017 in the off-reserve areas was initially ad-hoc and poorly regulated. These deficiencies in the implementation of regulatory measures for the harvesting of rosewood have significantly contributed to decline in the species population and volume. Subsequently, steps were taken to address these gaps in implementation to ensure sustainable management of the species. Interim measures included a series of moratorium (ban) on rosewood exploitation in the off-reserve areas in Ghana. Additionally, in recent times other actions including awareness creation, plantation trials, development of electronic App for issuance and tracking of CITES permit, among others are being implemented. Three scenarios for annual quota implementation have been proposed based on fieldwork and ecology of the species – 30years, 40years and 50 years. Among the three scenarios, the 40-year option was selected because it was considered to be conservative when compared with the 20years rotation period recommended by Segla et al 2016. The selection of the 40-year scenario was also informed by the limited information on the dynamics and ecology of the species as well as with lack of information on mortality.

The proposed felling quota of **18,719.93 m^3** for the 40-year scenario is be implemented only in off-reserve areas and therefore does not include populations of the species that occur in over 80 forest reserves and national parks in Ghana. The forest reserves and national parks serve as gene banks and refugia for a significant population of the species (Annexes for details).

For the underwater rosewood trees in the Volta basin, an annual quota of **40,000m^3** is projected for a 16-year period. As earlier indicated in the report, there have been concerns over the accidents caused on the Volta Lake and the danger posed by the submerged trees and recommendations made in Revised National Transport Policy (2020), the Volta Lake Strategic Plan (2010 – 2014) and the Draft Volta Lake Master Plan 2014 made for their removal.

7.0 SPECIES MANAGEMENT AND CONSERVATION MEASURES

Prior to the implementation of a zero quota and the development of the Non-Detriment Findings (NDF), several shortfalls were identified in the management and regulatory measures concerning the species. Key issues included inadequate management and monitoring of off-reserve harvesting, where challenges like species identification, illegal fuelwood collection, and charcoal production were rampant, and was exacerbated by the lack of involvement from traditional leaders and local communities. Additionally, the species was not initially tracked under the National Wood Tracking System (WTS) due to its classification as a Lesser-Used Species (LUS). Moreover, at the points of exit, the control and monitoring of species exports were hampered by the absence of a quota system, species identification difficulties, insufficient collaboration among management and enforcement agencies to combat wildlife trafficking, a lack of specific legislation for CITES implementation, and low penalties for illegal export and import of wildlife. Furthermore, regeneration management faced threats from recurring annual wildfires, slash-and-burn agricultural practices, and grazing by livestock. These factors collectively highlighted significant gaps in the regulatory mechanisms, leading to unsustainable practices and the eventual need for stricter controls. Against this backdrop, several measures have been put in place to ensure the sustainable management of the species.

Policies and laws: Several laws have been enacted that prescribes procedures, punitive measures and structures to regulate the commercial exploitation of trees in Ghana. Notable among them is the Timber Resources Management Act, 1997 (No. 547 of 1997) and amended in 2002 (Act 617 of 2002) and the Subsidiary Legislation on Timber Resources Management and Legality Licensing Regulation LI 2254 of 2017. The LI 2254 outlines conditions under wood sourced and/or processed in Ghana could be issued with a license for sale within Ghana or for export from Ghana. The implementation of Ghana's Legality Assurance Systems also considers the legal framework that governs the management, enforcement, and trade of the species (FC, 2017). Furthermore, Ghana recently passed the Wildlife Resources Management Act 2023 (Act 1115). which consolidates and revises the laws relating to wildlife and protected areas and provides for the implementation of international conventions on wildlife to which Ghana is a signatory. This law addresses the challenge of low penalties and provides the opportunity for prosecuting cases of illegalities related to non-compliance with CITES implementation, especially illegal exports and imports of wildlife products. This initiative is expected to deter illegal timber traffickers and reduce illegal exports.

Ban on rosewood exploitation: In 2019, a ban was imposed by the Government of Ghana on the harvesting, transporting and export of Rosewood except stocks of salvage and confiscated rosewood auctioned by the Forestry Commission with approval from the Minister of Lands and Natural Resources. The ban is a measure taken by the government to stop illegal harvesting, transporting, processing, trading and exporting of rosewood and control its exploitation. The ban remains in force and the Minister for Lands and Natural Resources has directed the Forestry

Commission to cease the issuance of the Convention on international Trade in Endangered Species (CITES) permits for the export of rosewood from Ghana.

Wildfire education: Extensive annual wildfire sensitization and education continue to be undertaken during the dry season in several communities in the savanna and transitional zones. Farmers are regularly educated and sensitized on the prevention of wildfires and the sustainable production of legal charcoal. Other activities include the establishment and training (Fire management techniques) of fire volunteer squads in selected communities. These activities have been intensified through the implementation of projects (e.g. Shea Landscape Restoration Project, Africa Landscape Restoration Initiative (AFR100) and Ghana Landscape Restoration and Small-Scale Mining Project).

Energy efficient technologies for charcoal production: Energy-efficient technologies have been implemented through number of projects in the savanna and transitional zones since 2019 in selected communities. For example, the "Forest Landscape Restoration through a Sustainable Wood Energy Value Chain" has benefitted over 400,000 people and over a million dependents are engaged in charcoal production in the northern and transitional zones of Ghana (Energy Commission, 2006; GSS, 2019). The project supports therefore farmers and charcoal producers in the wood energy value chain to increase efficiency in the charcoal production process aiming at avoiding tree biomass wastage and reducing deforestation. In addition, the Government of Ghana

is promoting the adoption of more efficient energy technologies, such as LPG, as an alternative to charcoal usage. Charcoal producers are increasingly being encouraged to establish woodlots for charcoal and fuelwood production to meet the needs of local people.

Review of Quota system: To ensure the sustainable exploitation of the Rosewood trees in Ghana, the Forestry Commission has established a quota system to set annual thresholds.

Exclusion of wild populations in protected areas: Presently, rosewood exploitation is restricted to off-reserve areas. This excludes wild populations located in Wildlife Parks and forest reserves.

Voluntary Partnership Agreement (VPA): The Government of Ghana as part of the VPA has put in place a robust wood tracking system (WTS) in collaboration with the EU to monitor the exploitation of trees in Ghana. The rationale is to ensure that all harvested trees for trade are sourced legally from a sustainably managed forest. The WTS has been in use over the last five years and has been useful in monitoring compliance with existing laws and regulatory mechanisms.

Development of electronic permitting system/App: The Wildlife Division which is the CITES Management Authority of Ghana in collaboration with the ICT directorate of the Forestry Commission is developing a robust software App for the issuance of the CITES permit in Ghana. The electronic permit system is expected to provide the interface for other institutions like Customs, TIDD, including importers to verify the authenticity of the permits at various entry and exit points as well as destination countries.

Restoration: The Forestry Commission has initiated rosewood trials across three (3) ecological zones (Northern Savannah and Dry Semi-Deciduous) and outside its native range in the Moist Semi- Deciduous Forest of Ghana. The trails are aimed at studying the growth dynamics and the feasibility of establishing large-scale commercial plantations across the country. The 87.2 ha of Rosewood trials established within the three (3) ecological zones in the previous years in eight (8) forest districts within six (6) regions were maintained**.** In 2021, an additional area of 57.0 ha was established in eight (8) forest districts (Dormaa, Bibiani, Lawra, Goaso, Bechem, Sunyani, Assin Fosu and Nkawie)**.** The Commission intends to expand the total area covered by rosewood plantations established under various programmes and projects. Upscaling of these plantations will support regeneration and future stock for harvesting.

Improved Systems for Species Identification: The Forestry Commission, in collaboration with the U.S. Forest Service, has recently developed a tree identification application known as Xylorix Inspector for easy identification of Pterocarpus erinaceus (African rosewood) and Afzelia africana using handheld devices. This will eliminate the challenge of identifying the species both in the wild and at points of entry and exit.

Improvement in Collaboration Among Management and Enforcement Agencies: Joint implementation of programmes and policies in recent times has led to improved collaboration among management and enforcement agencies in combating wildlife crime. The United States Agency for International Development (USAID) and the Bureau of International Narcotics and Law Enforcement Affairs (INL), through WABiLED and Born Free USA, have supported Ghana in developing a draft national strategy for combating wildlife crime and in establishing a national task force to combat wildlife crimes. These initiatives are expected to reduce the possibility of illegal exports.

Monitoring of P. erinaceus through the Ghana Wood Tracking System (GWTS): To ensure enhanced traceability, Ghana has developed and implemented an electronic national Wood Tracking System (GWTS) based on Ghana's existing forest management system under the Voluntary Partnership Agreement with the European Union. The system monitors the exploitation of trees to ensure that all harvested trees for trade are sourced legally and sustainably. As indicated in the NDF and LAF, the species will be monitored through the GWTS when trade resumes, which will significantly reduce illegal harvesting and illegal exports.

Regulation of Charcoal Production: Charcoal producers are issued licenses for the production and transportation of their products; however, they are not currently registered, making monitoring of their activities difficult. To ensure better management and monitoring of the activities of charcoal producers, the Forestry Commission has initiated a process to register them.

Involvement of Traditional Leaders and Local Communities in Natural Resource Management: In recent times, traditional authorities, opinion leaders, and local communities have

been involved in the management of natural resources through the implementation of the concept of Community Resource Management Areas (CREMAs) developed by the Wildlife Division of the Forestry Commission. CREMAs empower communities to protect important fauna and flora resources within their communal lands in off-reserve areas. Many CREMAs in the northern regions have significant populations of P. erinaceus within designated areas called 'core zones' where no harvesting of the species is permitted, thereby creating refuge areas for the conservation of the species.

Review of the Minimum Diameter of Exploitation: Ghana's minimum diameter of exploitation (MDE) was initially established at 20 cm. However, it has now been revised to 30 cm, with a rotation period of 40 years, to allow sufficient time for the recruitment of trees in diameter classes below the felling limit. This revision was informed by available literature and was prompted by feedback and recommendations from the CITES Plants Committee.

Review of NDF

Ghana will adopt an adaptive management approach in implementing the Non-Detriment Finding (NDF). This approach will involve regularly reviewing quotas and monitoring programs based on the most current data available regarding the status of the species, their regeneration rates, the impacts of harvesting, and other relevant factors. The NDF will be reviewed and updated every five years to ensure it reflects the latest scientific information and management practices.

Plate A two-year old *Ptericarpus erinaceus* (rosewood) stand in the Bosomkese Forest Reserve. Source. RMSC, 2023

8.0 RECOMMENDATIONS

Pterocarpus erinaceus is one of the key remnants species of the former dense Sudanian forest. The species is mainly found in the savanna and dry forest which are considered vulnerable ecosystems. These ecosystems are particularly prone to wildfires and therefore prescriptions in the past for felling of trees in these areas have been very restrictive in order to minimize its impact. The study did not cover rosewood populations in Protected Areas such as forest reserves and national parks where the species is known to occur extensively, but commercial harvesting not permitted (Annex V). Taking into account, the conservation measures initiated so far and other ecological consideration, the following actions are suggested to ensure the sustainable management of *Pterocarpus erinaceus* in Ghana:

i. A conservative national felling quota per annum using 40-year scenario should be adopted until they are reviewed as more information particularly on the dynamics of the species has

been fully addressed. Thus, an indicative national felling quota of **18,719.93 m^3** (terrestrial land outside forest reserves) is proposed.

ii. For underwater rosewood in the Volta Lake, an indicative felling quota of 40,000m^3 per annum has been proposed for a period of 16years. This is consistent with the objectives of the Revised National Transport Policy (2020), the Volta Lake Strategic Plan (2010 – 2014) and the Draft Volta Lake Master Plan 2014.

iii. Therefore, the proposed annual aggregate quota for off reserve areas (terrestrial) and under water rosewood harvesting in Ghana to be **58,719.93 m^3.** Barring any changes in policy and other unforeseen circumstances, the proposed harvesting quota is expected to be implemented for 16years until the underwater stock is depleted. After which, the 18,719.93 **m^3** will remain operational over the forty (40) year scenario.

iv. The annual quota should be strictly adhered to through surveillance and a tracking system put in place by the Forestry Commission at the local and national levels. Ensure that exploitation of Rosewood meets the Appendix II requirements of CITES.

v. Additional permanent sample plots should be established in the savannah environment in both on and off reserves to monitor the population dynamics (recruitment, mortality and growth) of the species.

vi. Increase the population of *Pterocarpus erinaceus* through extensive restoration or plantation programmes in the savanna and transition zone.

vii. The felling Political Districts quotas should be administered by the district offices of the Forest Services Division. This will promote better collaboration between the District Assemblies and Forestry Commission and enhance protection and monitoring of the resources.

viii. The national quota which will be implemented by the Forest Services Division, should be monitored by RMSC and endorsed by the representative of CITES in Ghana.

ix. The Forestry Commission gradually integrate harvesting of *Ptericarpus erinaceus* into existing wood tracking system for documentation and traceability.

x. Increase awareness creation on wildfires in order to reduce the frequency of occurrence and severity in the savanna and transition zones.

xi. Promote the adoption of more efficient technologies and alternative species for charcoal production. Also, encourage the establishment of woodlots to meet the energy needs of local people.

9.0 CONCLUSION

The assessment of the *Pterocarpus erinaceus* is a major initiative that has provided an update report on the status of the species in off reserve areas (terrestrial) as well as those under water trees in the Volta Lake. There is also a considerable stock of dead underwater (submerged) rosewood in the Volta Basin that should be included in the annual felling quotas determined for the terrestrial off-reserve stock. Implementation of the existing Volta Lake master plan which prescribes the removal of underwater trees as the only way to prevent boat accidents will be very critical to saving lives. If the prescribed annual felling quotas are adhered to (40-year cycle for the terrestrial rosewood trees) and implementation of conservation measures are sustained, harvesting of the species will be sustainable. The introduction and fast adaptation of *Ptericarpus erinaceus* outside its native range in the Moist Semi deciduous ecological zone of Ghana, where precipitation is higher gives a positive indication for the development of the species through plantation establishment.

Limitations of the study

Even though illegal harvesting of rosewood has contributed significantly to the placement of the species under Appendix II of CITES, the inadequacies in the dynamics of the species highlighted earlier led to adoption of a **precautionary approach (conservative estimates)** to the determination of annual quotas for the species in off reserve areas. There is also lack of information on the dynamics and general ecology of rosewood and many other tree species in the savannah zone of Ghana. This has been a major limitation in determining allowable cut of many savannah species. When this information has been gathered and analyzed then we will be in a better position to understand increment, mortality and regeneration behavior of the species.

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11.0 ANNEXES

Annex I Mean stem numbers per km^2 grouped according to diameter classes for Rosewood. September, 2022

Region	District Assembly	Forest District	Total area (Km2)	Net area (Km2)-40%	STEMS 10	STEMS 20	STEMS 30	STEMS 40	STEMS 50	STEMS 60	STEMS >60	STEMS TOT	STEMS ≥20cm	STEMS ≥30cm
Ashanti	Asante Akyem North	Kumawu	1126.72	450.7	100.0	250.0	140.0	17.5	0.0	0.0	0.0	507.5	157.5	17.5
Ashanti	Drobonso	Kumawu	3867.42	1547.0	265.0	541.3	136.3	16.3	0.0	0.0	0.0	958.8	152.5	16.3
Brong Ahafo	Pru	Atebubu	2309.65	923.9	120.0	572.5	240.0	40.0	2.5	0.0	0.0	975.0	282.5	42.5
Brong Ahafo	Sene West	Atebubu	4110.13	1644.1	110.0	295.0	105.0	17.5	0.0	0.0	0.0	527.5	122.5	17.5
Brong Ahafo	Nkoranza North	Kintampo	1003.86	401.5	344.0	632.0	216.0	36.0	1.0	0.0	0.0	1229.0	253.0	37.0
Brong Ahafo	Sene East	Atebubu	4110.13	1644.1	226.7	360.0	155.0	16.7	1.7	0.0	0.0	760.0	173.3	18.3
Brong Ahafo	Kintampo North	Kintampo	4832.98	1933.2	157.1	432.9	112.1	8.6	0.0	0.0	0.0	710.7	120.7	8.6
Northern	Central Gonja	Buipe	8142.91	3257.2	60.0	246.7	190.0	46.7	6.7	8.3	1.7	560.0	253.3	63.3
Northern	West Gonja	Buipe	9272.03	3708.8	76.0	151.0	163.0	26.0	11.0	9.0	6.0	442.0	215.0	52.0
Northern	Saboba	Yendi	1819.65	727.9	40.0	40.0	85.0	45.0	15.0	15.0	0.0	240.0	160.0	75.0
Northern	Zabzugu	Yendi	2365	946.0	100.0	335.0	208.3	63.3	1.7	1.7	0.0	710.0	275.0	66.7
Northern	Bole	Bole	5745.93	2298.4	470.0	597.5	105.0	26.3	2.5	0.0	0.0	1201.3	133.8	28.8
Northern	East Gonja	Yendi	9,351	3740.4	100.0	535.0	235.0	22.5	0.0	0.0	0.0	892.5	257.5	22.5
Northern	Sawla Tuna Kaba	Bole	4223.21	1689.3	220.0	425.0	165.0	17.5	0.0	0.0	0.0	827.5	182.5	17.5

Region	District Assembly	Forest District	Total area (Km2)	Net area (Km2)-40%	STEMS 10	STEMS 20	STEMS 30	STEMS 40	STEMS 50	STEMS 60	STEMS >60	STEMS TOT	STEMS ≥20cm	STEMS ≥30cm
Upper East	Tongo	Bolgatanga	867	346.8	20.0	152.5	142.5	72.5	10.0	0.0	0.0	397.5	225.0	82.5
Upper East	Builsa North	Navrongo	816.91	326.8	20.0	60.0	22.5	17.5	5.0	0.0	0.0	125.0	45.0	22.5
Upper East	Builsa South	Navrongo	1241.99	496.8	30.0	62.5	80.0	55.0	12.5	0.0	0.0	240.0	147.5	67.5
Upper East	Navrongo	Navrongo	1704.6	681.8	320.0	205.0	130.0	80.0	5.0	0.0	0.0	740.0	215.0	85.0
Upper East	Kassena Nakana	Navrongo	767	306.8	260.0	60.0	105.0	30.0	5.0	0.0	0.0	460.0	140.0	35.0
Upper West	Wa East	Lawra	3633.13	1453.3	100.0	225.0	225.0	18.3	1.7	3.3	0.0	573.3	248.3	23.3
Upper West	Wa West	Lawra	1554.42	621.8	153.3	66.7	73.3	15.0	11.7	6.7	1.7	328.3	108.3	35.0
Upper West	Sissala East	Tumu	4613.5	1845.4	95.0	151.3	171.3	55.0	17.5	0.0	2.5	492.5	246.3	75.0
Upper West	Sissala West	Tumu	1913.35	765.3	120.0	52.5	75.0	32.5	0.0	7.5	0.0	287.5	115.0	40.0
Volta	Biakoye	Jasikan	1105.9	442.4	68.0	319.0	134.0	46.0	18.0	5.0	1.0	591.0	204.0	70.0
Volta	Nkwanta South	Nkwanta	2134.25	853.7	40.0	307.5	85.0	75.0	15.0	2.5	0.0	525.0	177.5	92.5
Volta	Krachi West	Nkwanta	930.28	372.1	70.0	332.5	115.0	57.5	22.5	2.5	0.0	600.0	197.5	82.5

Annex II Mean volume estimates per km^2 grouped according to diameter classes for Rosewood. September, 2022

District Assembly	Total area (Km2)	Net area (Km2)- 40%	<9.99cm	10-19.99cm	20-29.99cm	30-39.99cm	40-49.99cm	50-59.99cm	VOL>60cm	VOL TOT	Total Volume ≥20cm	Total Volume ≥30cm
Asante Akyem North	1126.72	450.69	2.78	46.37	70.34	16.45	0.00	0.00	0.00	135.94	86.79	16.45
Drobonso	3867.42	1546.97	10.68	91.79	62.50	17.55	0.00	0.00	0.00	182.52	80.05	17.55
Pru	2309.65	923.86	6.33	99.70	119.69	40.31	4.07	0.00	0.00	270.10	164.07	44.38
Sene West	4110.13	1644.05	4.89	50.77	49.80	17.64	0.00	0.00	0.00	123.09	67.43	17.64
Nkoranza North	1003.86	401.54	12.63	102.57	106.66	39.31	1.61	0.00	0.00	262.78	147.58	40.92
Sene East	4110.13	1644.05	9.84	63.90	77.93	16.68	2.67	0.00	0.00	171.02	97.29	19.35
Kintampo North	4832.98	1933.19	5.47	75.26	54.07	8.13	0.00	0.00	0.00	142.93	62.19	8.13
Central Gonja	8142.91	3257.16	1.78	50.48	95.80	48.98	15.55	23.91	7.13	243.62	191.37	95.57
West Gonja	9272.03	3708.81	2.64	29.13	85.04	28.37	20.58	25.34	27.30	218.40	186.63	101.59
Saboba	1819.65	727.86	2.16	6.31	48.90	50.49	28.73	49.57	0.00	186.16	177.68	128.78
Zabzugu	2365	946.00	3.49	67.99	110.75	65.29	3.39	4.72	0.00	255.63	184.15	73.40
Bole	5745.93	2298.37	18.59	94.65	50.84	26.54	4.14	0.00	0.00	194.76	81.52	30.68
East Gonja	9,351	3740.40	3.14	98.59	116.72	21.88	0.00	0.00	0.00	240.33	138.60	21.88
Sawla Tuna Kaba	4223.21	1689.28	7.74	66.48	79.68	18.54	0.00	0.00	0.00	172.43	98.22	18.54
Talensi	867	346.80	0.86	31.15	82.98	73.22	15.88	0.00	0.00	204.08	172.08	89.10

District Assembly	Total area (Km2)	Net area (Km2)- 40%	<9.99cm	10-19.99cm	20-29.99cm	30-39.99cm	40-49.99cm	50-59.99cm	VOL>60cm	VOL TOT	Total Volume ≥20cm	Total Volume ≥30cm
Builsa North	816.91	326.76	0.78	11.72	9.35	19.10	8.72	0.00	0.00	49.66	37.17	27.82
Builsa South	1241.99	496.80	1.49	14.12	40.47	57.85	22.60	0.00	0.00	136.52	120.91	80.44
Navrongo	1704.6	681.84	9.69	45.20	68.53	89.91	8.27	0.00	0.00	221.60	166.71	98.18
Kassena Nakana	767	306.80	8.33	10.98	57.25	29.85	8.27	0.00	0.00	114.67	95.37	38.12
Wa East	3633.13	1453.25	3.57	40.05	108.24	20.02	2.61	8.55	0.00	183.05	139.43	31.18
Wa West	1554.42	621.77	3.46	12.52	39.38	15.47	23.15	18.30	6.40	118.68	102.70	63.32
Sissala East	4613.5	1845.40	3.62	30.29	89.80	58.45	34.30	0.00	16.43	232.89	198.98	109.18
Sissala West	1913.35	765.34	4.55	9.11	42.77	35.59	0.00	20.75	0.00	112.76	99.11	56.34
Biakoye	1105.9	442.36	2.65	62.66	72.92	47.06	31.00	14.72	3.87	234.88	169.57	96.65
Nkwanta South	2134.25	853.70	1.38	70.63	47.06	79.56	28.51	7.03	0.00	234.16	162.15	115.09
Krachi West	930.28	372.11	2.80	77.52	67.46	58.74	40.54	7.36	0.00	254.42	174.10	106.64

Annex III Annual felling quotas (stem numbers and volume) for three scenarios of 50years, 40years and 30years for Rosewood. September, 2022

Region	District Assembly	Forest District	Total area (Km2)	Net area (Km2)	Stems per ha	Total Stems	Vol (m3/ha)	Total Vol.	60% deducted from stock> 30cm		Scenario 1 (50years)		Scenario 2 (40years)		Scenario 3 (30years)	
									Stem >=FLT	Vol >=FLT	Stem >=FLT	Vol >=FLT	Stem >=FLT	Vol >=FLT	Stem >=FLT	Vol >=FLT
Ashanti	Asante Akyem North	Kumawu	1126.72	450.688	17.50	7,887.04	16.45	7,414.41	3,154.82	2,965.77	63.10	59.32	78.87	74.14	105.16	98.86
Ashanti	Drobonso	Kumawu	3867.42	1546.968	16.25	25,138.23	17.55	27,144.54	10,055.29	10,857.82	201.11	217.16	251.38	271.45	335.18	361.93
Brong Ahafo	Pru	Atebubu	2309.65	923.86	42.50	39,264.05	44.38	40,999.02	15,705.62	16,399.61	314.11	327.99	392.64	409.99	523.52	546.65
Brong Ahafo	Sene West	Atebubu	4110.13	1644.052	17.50	28,770.91	17.64	28,999.37	11,508.36	11,599.75	230.17	231.99	287.71	289.99	383.61	386.66
Brong Ahafo	Nkoranza North	Kintampo	1003.86	401.544	37.00	14,857.13	40.92	16,430.90	5,942.85	6,572.36	118.86	131.45	148.57	164.31	198.10	219.08
Brong Ahafo	Sene East	Atebubu	4110.13	1644.052	18.33	30,140.95	19.35	31,814.47	12,056.38	12,725.79	241.13	254.52	301.41	318.14	401.88	424.19
Brong Ahafo	Kintampo North	Kintampo	4832.98	1933.192	8.57	16,570.22	8.13	15,713.12	6,628.09	6,285.25	132.56	125.70	165.70	157.13	220.94	209.51
Northern	Central Gonja	Buipe	8142.91	3257.164	63.33	206,287.05	95.57	311,278.45	82,514.82	124,511.38	1,650.30	2,490.23	2,062.87	3,112.78	2,750.49	4,150.38
Northern	West Gonja	Buipe	9272.03	3708.812	52.00	192,858.22	101.59	376,784.83	77,143.29	150,713.93	1,542.87	3,014.28	1,928.58	3,767.85	2,571.44	5,023.80
Northern	Saboba	Yendi	1819.65	727.86	75.00	54,589.50	128.78	93,733.87	21,835.80	37,493.55	436.72	749.87	545.90	937.34	727.86	1,249.78
Northern	Zabzugu	Yendi	2365	946	66.67	63,066.67	73.40	69,434.20	25,226.67	27,773.68	504.53	555.47	630.67	694.34	840.89	925.79
Northern	Bole	Bole	5745.93	2298.372	28.75	66,078.20	30.68	70,519.72	26,431.28	28,207.89	528.63	564.16	660.78	705.20	881.04	940.26
Northern	East Gonja	Yendi	9,351	3740.4	22.50	84,159.00	21.88	81,837.69	33,663.60	32,735.08	673.27	654.70	841.59	818.38	1,122.12	1,091.17
Northern	Sawla Tuna Kaba	Bole	4223.21	1689.284	17.50	29,562.47	18.54	31,320.41	11,824.99	12,528.16	236.50	250.56	295.62	313.20	394.17	417.61
Upper East	Tongo	Bolgatanga	867	346.8	82.50	28,611.00	89.10	30,900.23	11,444.40	12,360.09	228.89	247.20	286.11	309.00	381.48	412.00
Upper East	Builsa North	Navrongo	816.91	326.764	22.50	7,352.19	27.82	9,090.45	2,940.88	3,636.18	58.82	72.72	73.52	90.90	98.03	121.21

Region	District Assembly	Forest District	Total area (Km2)	Net area (Km2)	Stems per ha	Total Stems	Vol (m3/ha)	Total Vol.	60% deducted from stock> 30cm		Scenario 1 (50years)		Scenario 2 (40years)		Scenario 3 (30years)	
									Stem >=FLT	Vol >=FLT	Stem >=FLT	Vol >=FLT	Stem >=FLT	Vol >=FLT	Stem >=FLT	Vol >=FLT
Upper East	Builsa South	Navrongo	1241.99	496.796	67.50	33,533.73	80.44	39,964.51	13,413.49	15,985.80	268.27	319.72	335.34	399.65	447.12	532.86
Upper East	Navrongo	Navrongo	1704.6	681.84	85.00	57,956.40	98.18	66,943.86	23,182.56	26,777.54	463.65	535.55	579.56	669.44	772.75	892.58
Upper East	Kassena Nakana	Navrongo	767	306.8	35.00	10,738.00	38.12	11,693.85	4,295.20	4,677.54	85.90	93.55	107.38	116.94	143.17	155.92
Upper West	Wa East	Lawra	3633.13	1453.252	23.33	33,909.21	31.18	45,316.51	13,563.69	18,126.60	271.27	362.53	339.09	453.17	452.12	604.22
Upper West	Wa West	Lawra	1554.42	621.768	35.00	21,761.88	63.32	39,370.33	8,704.75	15,748.13	174.10	314.96	217.62	393.70	290.16	524.94
Upper West	Sissala East	Tumu	4613.5	1845.4	75.00	138,405.00	109.18	201,483.20	55,362.00	80,593.28	1,107.24	1,611.87	1,384.05	2,014.83	1,845.40	2,686.44
Upper West	Sissala West	Tumu	1913.35	765.34	40.00	30,613.60	56.34	43,116.91	12,245.44	17,246.76	244.91	344.94	306.14	431.17	408.18	574.89
Volta	Biakoye	Jasikan	1105.9	442.36	70.00	30,965.20	96.65	42,755.29	12,386.08	17,102.12	247.72	342.04	309.65	427.55	412.87	570.07
Volta	Nkwanta South	Nkwanta	2134.25	853.7	92.50	78,967.25	115.09	98,249.98	31,586.90	39,299.99	631.74	786.00	789.67	982.50	1,052.90	1,310.00
Volta	Krachi West	Nkwanta	930.28	372.112	82.50	30,699.24	106.64	39,682.47	12,279.70	15,872.99	245.59	317.46	306.99	396.82	409.32	529.10
			83,562.95	**33,425.18**		**1,362,742.34**		**1,871,992.59**	**545,096.94**	**748,797.04**	**10,901.94**	**14,975.94**	**13,627.42**	**18,719.93**	**18,169.90**	**24,959.90**

Notes and assumptions

1. Population dynamics (increment, regeneration / recruitment, mortality rates) are not included in the analysis
2. Tree volumes were calculated using the equation $V= 0.0004634(d^{2.201})$, where: V= tree volume, d= diameter at breast height
3. 60% of the gross area of each District Assembly is designated as settlements, protected areas/forest reserves,
4. Only stems above felling limit (30 cm dbh) were used for the analysis
5. 60% retention of all stems above Felling Limit to cater for destruction such as, wildfire, clearance for farming, charcoal burning, domestic use
6. The 40years scenario was selected among the three scenarios because is consistent with existing felling cycle for Ghana and is lower than the 20years recommended by Segla et al 2016. The selection of the scenario was also due to inadequate information on growth rate , mortality rate and recruitment of the *Pterocarpus erinaceus*

Annex IV Addendum

Under water rosewood inventory in the Volta Basin in Ghana

Kete Krachi Timber Recovery (KKTR) was granted a permit to salvage under water trees in the Volta Basin by the Minister of Lands and Natural Resources in 2010. These were submerged trees which died about 60years ago during the construction of the Akosombo Hydro electric dam in 1961. A study conducted in 2007 estimated the under water rosewood volume to be 640,855m^3 (Volta Lake Timber Inventory Program – Initial Timber Inventory, September 2007 Population Status, Trade and Sustainable Management of African Rosewood in Ghana- Forestry Commission , September 2021). The underwater rosewood have a different appearance from the terrestrial rosewood in Ghana and therefore make them easy to differentiate. This feature will help in monitoirng to prevent abuse of harvesting permits.

Annex IV Correspondence, methodology and statistics on under water trees in the Volta Basin

KETE KRACHI TIMBER RECOVERY

Mr. John Allotey
Chief Executive, Forestry Commission
Accra

September 30th, 2022

Dear Sir:

KKTR's Exemptions to Export Rosewood, Ghana's Submission to CITES At November's COP 19 in Panama City

I trust this letter finds you well.

I write to follow up on a report that we understand is presently being compiled for presentation to CITES at the above-referenced COP 19, concerning determination of sustainable export volumes for Ghana's rosewood.

As you know, in the course of KKTR's operations we regularly salvage quantities of rosewood from Lake Volta, being submerged trees that died 60+ years ago, so extraction of same has no impact on Ghana's remaining living rosewood stocks. In recognition of this, the Ministry of Lands and Natural Resources in February of 2022 directed that KKTR be granted an exemption from the ban on rosewood export so as to enable us to conduct our commercial operations per our April 2010 salvage concession agreement.

We estimate that Lake Volta contains ~640,000m^3 in recoverable rosewood roundlogs (Sources: Population Status, Trade and Sustainable Management of African Rosewood in Ghana - Forestry Commission, September 2021; Volta Lake Timber Inventory Program - Initial Timber Inventory, September 2007), and are eager to assist in the completion of the report to be presented at COP 19 to ensure that it appropriately represents Lake Volta as a source of rosewood that should be exempted from both export restrictions and calculations of any quotas determined for land-based rosewood. As you appreciate, at this juncture in the economic life of our nation, all foreign exchange earnings are crucial, and we stand ready to do our part to realise this neglected national resource.

I trust the above is in order, we are at your disposal to discuss, and thank you in advance for your consideration.

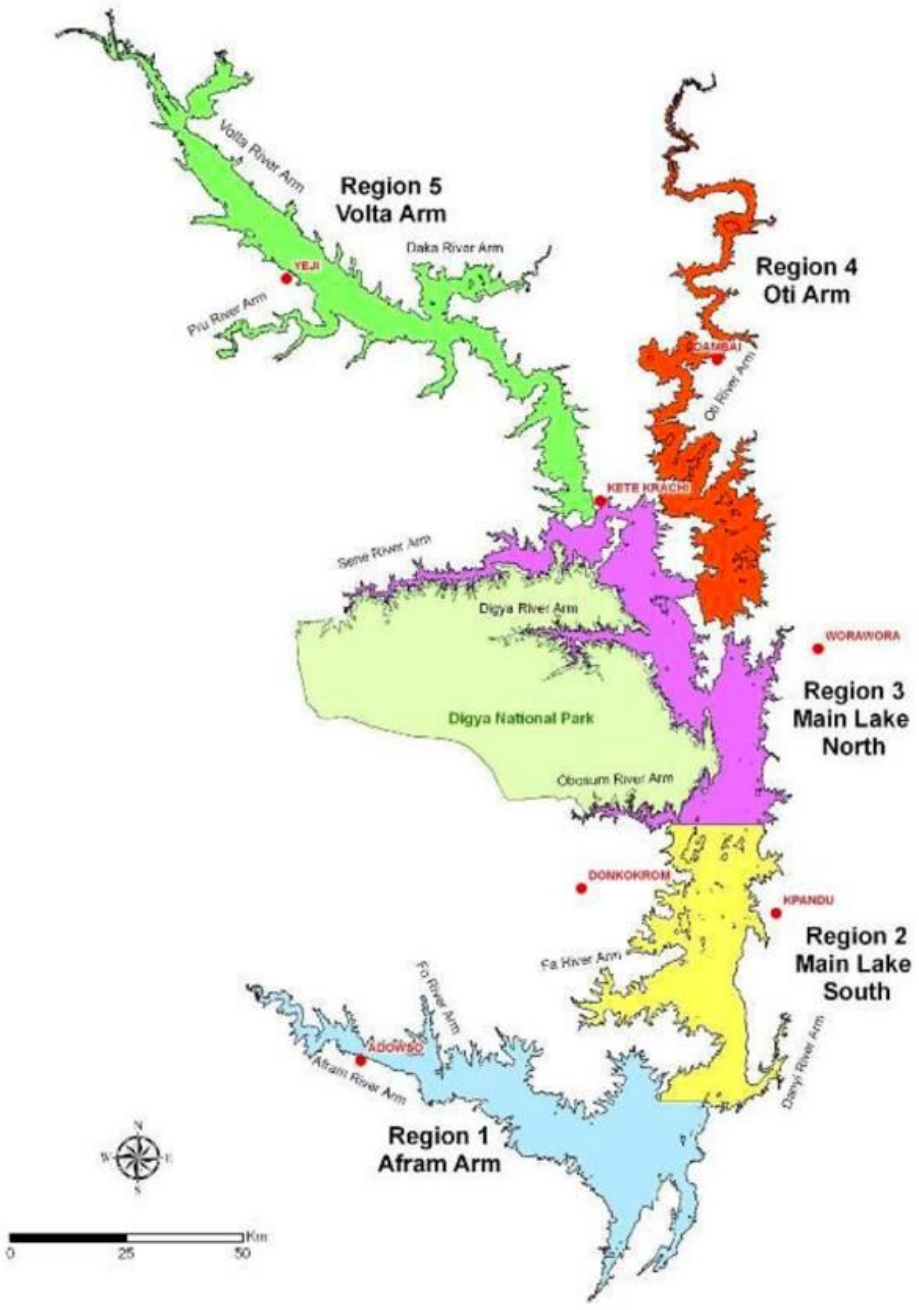
Elkin Pianim
CEO

Copy:

Honourable Samuel A. Jinapor, Ministry Of Lands And Natural Resources
Mr. Yoofi Grant, CEO, Ghana Investment Promotion Center

5 Abafun Crescent, Accra, Ghana. Tel:+233 302 768960-61; Fax:+233 302 768966
Company Number: CS453572014

- The Five Regions of Volta Lake



Source. Thrower et al. 2007

2. Information Sources

2.1 Aerial Photographs & Maps

Aerial Photographs

We acquired 1,750 aerial photographs taken in 1946/47 by the British Royal Air Force (RAF) of the lake area prior to flooding. These are high resolution black and white photos with scales ranging from about 1:25,000 to 1:30,000 (Appendix 1).

Maps

We also acquired the 1:50,000 scale maps made those photos with features updated to 1954. Those maps include geographic features, water features (rivers and creeks), improvements (towns, roads, etc.), contour lines (50 ft intervals), and vegetation mapping symbols (Appendix 2).

Identifying Forested Areas

We identified and mapped the location of closed-canopy forest areas from the photos and maps in Regions 1, 2, 3, and 4 (Appendix 3). Mapping for Region 5 is underway and will be completed near the end of 2007. We used the vegetation symbols on the maps to cross-reference with the location of forested area on the photos to precisely locate and map closed-canopy forest areas. This gives us an accurate location and estimate of size of these areas that are now submerged in the lake.

We did not identify the spatial location of the potentially commercial areas of wooded savanna. That may be done in subsequent phases of mapping and photo interpretation.

Change Before Flooding

We do not believe that any significant changes would have occurred to the forest area identified on these maps and photos in the eight or nine years from the time the maps were published in 1954 to 1962 when flooding of the lake began. Two of the retired forestry experts we interviewed worked in the Afram River area prior to flooding and specifically noted that no commercial timber harvesting was occurring in the area at that time. The area had relatively poor access and commercial timber harvesting in the southern wetter forests (more valuable) had not yet progressed into the northern drier forests (less valuable at that time). They also noted that local villagers would take the occasional tree for local use using pit sawing methods.

Source. Thrower et al. 2007

2.2 *Inventory Data*

Source

The inventory data used in this process were obtained from Dr. William Hawthorne at Oxford University. The data were originally taken under the Ghana National forest inventory completed from 1986 to 1990. Dr. Hawthorne worked in the data collection and analysis on that inventory.

The data were collected in temporary sample plots in Forest Reserves including Afram Headwaters, Afrensu-Brohuma, Awura, Asubima, Chirimfa, Bandai Hills South, Kwamisa, Mankrang, Opro River, and Tain 2. These reserves were selected by Dr. Hawthorne as ones in drier than average, transition areas, and savanna areas from the larger group of Forest Reserves in the dry semi-deciduous (DS) forest type. The intent was to ensure that the summaries, that we use to represent the average of large areas, included these areas and was not biased to better stocked and more classic DS forest types.

Modification to the Data

Most experts consulted noted that the Reserves included in these summaries would have had one and possibly two logging entries prior the data being collected for the National Inventory, and that the area that now flooded would not have had any large scale commercial timber harvesting. This was confirmed by two retired Forestry Commission staff that worked in the area prior to flooding. Consequently, we add a small number of large trees to the data to partially account for those expected differences. These additions were 14 trees per square km (14 trees/100 ha or 0.14 trees/ha) which was about 4.0 m^3/ha (Table 1). We reviewed these additions with some experts and they believe they are reasonable and probably conservative.

Source. Thrower et al. 2007

Volume Reduction for Decay & Defect

We estimated the volume of trees in the inventory data using the equations developed for the Ghana National Forest Inventory (Wong and Blackett 1994). We assigned the mid-point of each 30 cm diameter class to each tree in the class and estimated bole (outside bark) volume using the overall average equation for Zone 1 (defined by Wong and Blackett). Equations are given for specific species groups, but they do not cover all species and thus we used the overall average equation to avoid bias.

We reduced those volumes by 10% to account for bark volume and defect as recommended by Wong and Blackett. We did not make the log-log correction for the back transformation, which reduced the volume by an additional 4%. This was to account for additional internal and some external rot that may have occurred in the trees while submerged. The resulting net volumes are used in these summaries.

Volume Reduction for Silt Accumulation

We did not make any volume reduction for the possibility of silt accumulation on the lake floor (which may require felling trees at some point above the original ground line). Although this is a possibility, we have no information to suggest this is the case. Furthermore, sonar images of the lake floor in Afram Arm suggest that silt accumulation is minimal and should not impact harvesting operations.

2.3 Expert Opinion

Process

We reviewed the inventory data with active and retired operational and research personnel at the Forest Research Institute of Ghana (FORIG) and the Forestry Commission (Ministry of Lands and Forests) in Ghana. The review included the estimates for volume (m^3/ha), species composition (volume by species and species groups), and diameter distributions (numbers of trees/ha by diameter class, species, and species groups). We also spent considerable time with Dr. Hawthorne at Oxford University collating and reviewing these data. The contribution of these experts was essential in developing these estimates and provided frequent *logical checks* of the data, summaries, and assumptions that we made throughout this process.

All experts agreed that the summaries give a reasonable expectation of what to find – on average – in Region 1 and 2 of the lake. Some experts were familiar with Region 3

Source. Thrower et al. 2007

and suggested that the information should be applicable to the closed-canopy forest in that area.

Contributors

The experts directly consulted and who provided major contributions to this process included:

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Mr. Francis Balfour Agurgo, Forestry Commission
Mr. Charles Dei-Amoah, Forestry Commission
Mr. Oppon Sasu, Forestry Commission
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Dr. Mark Ashton, Professor of Tropical Forest Ecology, Yale University
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Dr. Michael Swaine, Professor of Tropical Forest Ecology, University of Aberdeen
Dr. A.Y. Omule, Consultant in Tropical Forest Inventory
Dr. Jacob Boateng, Research Scientist, BC Ministry of Forests

Source. Thrower et al. 2007

- Volume by Forest Type and Region

Region	Forest Type	Variant	Area (ha)	Of Region	Of Lake	Volume (m^3)	Of Region	Of Lake
1	DS	Closed Canopy	40,688	31%	7%	3,824,672	85%	27%
	DS	Discontinuous	2,889	2%	0%	135,783	3%	1%
	WS	Wooded	22,174	17%	4%	554,344	12%	4%
	Other	Non Forested	67,417	51%	11%			
	Total		133,168	100%	23%	4,514,799	100%	32%
2	DS	Closed Canopy	17,939	16%	3%	1,686,266	71%	12%
	DS	Discontinuous	2,867	3%	0%	134,749	6%	1%
	WS	Wooded	21,882	20%	4%	547,055	23%	4%
	Other	Non Forested	66,531	61%	11%			
	Total		109,219	100%	18%	2,368,070	100%	17%
3	DS	Closed Canopy	22,983	17%	4%	2,160,402	70%	15%
	DS	Discontinuous	6,045	5%	1%	284,115	9%	2%
	WS	Wooded	25,647	19%	4%	641,174	21%	5%
	Other	Non Forested	77,977	59%	13%			
	Total		132,652	100%	22%	3,085,691	100%	22%
4	DS	Closed Canopy	12,476	15%	2%	1,172,744	59%	8%
	DS	Discontinuous	9,024	11%	2%	424,128	21%	3%
	WS	Wooded	15,498	18%	3%	387,455	20%	3%
	Other	Non Forested	47,121	56%	8%			
	Total		84,119	100%	14%	1,984,327	100%	14%
5	DS	Closed Canopy	10,612	8%	2%	997,536	48%	7%
	DS	Discontinuous	7,959	6%	1%	374,076	18%	3%
	WS	Wooded	28,235	21%	5%	705,869	34%	5%
	Other	Non Forested	85,845	65%	15%			
	Total		132,651	100%	22%	2,077,480	100%	15%
All	DS	Closed Canopy	104,698		18%	9,841,620		70%
	DS	Discontinuous	28,784		5%	1,352,851		10%
	WS	Wooded	113,436		19%	2,835,897		20%
	Other	Non Forested	344,891		58%			
	Total		591,809		100%	14,030,368		100%

Source. Thrower et al. 2007

Annex V Profiles of Forest Reserves and National Parks found within the natural range of *Pterocarpus erinaeus* in Ghana

No.	Name of Reserve	Area/Size (km2)	Latitude	Longitude	Conservation area
1	Tain Tributaries I	30.56	7 25'N	2 14'W	Forest reserve
2	Yaya	51.28	7 27'N	2 08'W	Forest reserve
3	Nsemre	18.1	7 32'N	2 12'W	Forest reserve
4	Sawsaw	62.94	7 36'N	2 10'W	Forest reserve
5	Tain II	509.19	7 35'N	2 30'W	Forest reserve
6	PamuBerekum	189.1	7 25'N	2 56'W	Forest reserve
7	Bosomoa	170.94	7 55'N	1 49'W	Forest reserve
8	Buru	302.3			Forest reserve
9	Klemu Headwaters	10.88	6 46'N	0 31'E	Forest reserve
10	Abutia Hills	8.99			Forest reserve
11	Kpandu Range West	35.5	5 45'N	0 17'E	Forest reserve
12	Togo Plateau	150	7 14'N	0 25 'E	Forest reserve
13	Ho Hills	0.2			Forest reserve
14	Kpando Plantation	0.44			Forest reserve
15	Odome River	16.06	7 19'N	0 29'E	Forest reserve
16	Kabo River	135.97	7 37'N	0 26'E	Forest reserve
17	Apepesu	60.6	7 50'N	0 35'E	Forest reserve
18	Asuokoko River	116.03	7 47'N	0 25'E	Forest reserve
19	Chai River	182.3	8 02'N	0 26'E	Forest reserve
20	Bopona	61.75			Forest reserve
21	Sisili Central	155.09			Forest reserve
22	Gia	21.7			Forest reserve
23	Kanjarga-Fumbisi	12.95			Forest reserve
24	Chasi	72.52			Forest reserve
25	Chiana	43.59			Forest reserve
26	Tankara	4.82			Forest reserve
27	Asebiliki	38.85			Forest reserve
28	Dedoro	3.11			Forest reserve
29	Saboro Gov't	0.28			Forest reserve
30	Kologu-Naga	45.33			Forest reserve
31	Kadembali	23.85			Forest reserve
32	Sisiili North	82.88			Forest reserve
33	Wiaga	9.84			Forest reserve
34	WiagaKandema	67.34			Forest reserve
35	Pogi	26.06			Forest reserve
36	Red Volta West	281.59			Forest reserve
37	Nyokoko Plantation	0.41			Forest reserve
38	Takwindi East	193.21			Forest reserve
39	Takwiddi West	119.14			Forest reserve
40	Bumbuga	4.14			Forest reserve
41	Bumbuga Ex Blk 1	0.41			Forest reserve
42	Morago West	39.76			Forest reserve
43	Basua Bridge (Proposed)	2.18			Forest reserve

No.	Name of Reserve	Area/Size (km2)	Latitude	Longitude	Conservation area
44	Red Volta East	217.61			Forest reserve
45	Zamse Hills BLK 1 & 2	10.13			Forest reserve
46	Zamse Plantation	2.28			Forest reserve
47	Upper TamneBlk 1 - 5	17.28			Forest reserve
48	Gambaga East	127.53			Forest reserve
49	Gambaga South West 1	115			Forest reserve
50	Gambaga South West 2	222.22			Forest reserve
51	Morago River	88.06			Forest reserve
52	Nasia Tributaries	314.69			Forest reserve
53	Tamale FuelwoodBlk 1 & 2	2.2			Forest reserve
54	Tamale waterworks	1.41			Forest reserve
55	Sinsangblewini	73.8			Forest reserve
56	Education Plantation	2.6			Forest reserve
57	Biligu	56.7			Forest reserve
58	Daka	2.6			Forest reserve
59	Kulupene	2.2			Forest reserve
60	Karaga	24.5			Forest reserve
61	Bombi	1.48			Forest reserve
62	Damongo Scarp	39.37			Forest reserve
63	Kenikeni	512.98			Forest reserve
64	Nyembong	4.66			Forest reserve
65	Yerada	424.81			Forest reserve
66	Yakombo	1210.95			Forest reserve
67	Kumbo	164.49			Forest reserve
68	Lambo	113.39			Forest reserve
69	Pudo	51.8			Forest reserve
70	Chira	41.44			Forest reserve
71	Tumu	54.39			Forest reserve
72	Mawbia	129.5			Forest reserve
73	Kulpawn Headwaters	155.3			Forest reserve
74	Pulumbugala	39.21			Forest reserve
75	Tapania Tributaries	46.62			Forest reserve
76	Poli	35.61			Forest reserve
77	Kamba	37.56			Forest reserve
78	Lawra Station	1.27			Forest reserve
79	BagwonBawo	64.73			Forest reserve
80	Nandom	1.86			Forest reserve
81	Kulpawn Tributaries	99.95			Forest reserve
82	Ambalaara	99.95			Forest reserve
83	Nuale	51.8			Forest reserve
84	Bambule	204.09			Forest reserve
85	Bomfobri Wildlife Sanctuary	53.1	6 54’-7 01’N	1 08’-1 13’W	Wildlife Protected Area
86	Digya National Park	3,478.30	7 06’-7 44’N	0 06’-0 42’W	Wildlife Protected Area

No.	Name of Reserve	Area/Size (km2)	Latitude	Longitude	Conservation area
87	Bui National Park	1,820.60	8 01'-8 50'N	2 12'-2 33'W	Wildlife Protected Area
88	Kogyae Strict Nature Reserve	385.7	7 00'-7 21'N	1 00'-1 13'W	Wildlife Protected Area
89	Shai-Hill Resource Reserve	53	5 85'-5 97'N	0 38' 9 06'E	Wildlife Protected Area
90	Kalakpa Resource Reserve	320.2	6 18'-6 29'N	0 18'-0 31'E	Wildlife Protected Area
91	Kyabobo National Park	222	8 17'–8 31'N	0 31'–0 44'E	Wildlife Protected Area
92	Mole National Park	4,840.00	9 11'–10 10'N	1 22'-2 13'W	Wildlife Protected Area
93	Gbele Resource Reserve	565.4	10 22'-10 44'N	2 03'–2 12'W	Wildlife Protected Area

WORKSHOP REPORT

NON-DETRIMENT FINDINGS (NDF) AND LEGAL ACQUISITION FINDINGS (LAF) FOR WEST AFRICAN ROSEWOOD (*PTEROCARPUS ERINACEUS*) (2 TO 6 SEPTEMBER 2024, DOUALA, CAMEROON)

Executive summary

In accordance with the recommendations made by the Standing Committee at its 77th meeting, the Secretariat organized a regional workshop on NDF and LAF for *P. erinaceus* range States in Douala, Cameroon, from 2 to 6 September 2024. The objective of the workshop was to catalyze the implementation of recommendations under the expedited application of Article XIII and the RST processes for *P. erinaceus* at the regional level through theoretical and practical capacity-building approaches for the preparation of non-detriment findings (NDFs) and legal acquisition findings (LAFs).

The workshop was opened by His Excellency Jules Doret Ndongo, Minister of Forestry and Wildlife of Cameroon, and was attended by 63 participants from 18 Parties (15 range States of *P. erinaceus* and three range States of other African tree species). A total of 34 sponsored delegates from 18 Parties and eight observer organizations (international governmental organizations and non-governmental organizations) attended the workshop.

The workshop and its preparatory work were supported by the generous contribution of the European Union. The Secretariat appreciates the support provided in this regard. The Secretariat also thanks the *Association technique internationale des bois tropicaux* (ATIBT) for their partnership and collaboration in the preparation of the workshop.

The workshop had two major components:

a) the NDF component, which focused on principles and concepts for NDFs and Module 10 on NDFs for tree species of the *CITES Non-detriment Findings Guidance*. Module 10 outlines forest management principles relevant to NDFs for CITES-listed tree species. The Secretariat delivered presentations on the *Guidance* and Ghana, Mali, and Sierra Leone presented illustrative case studies on NDFs for *P. erinaceus*; and

b) the LAF component, which focused on concepts, objectives and principles of LAFs and LAF guidance, particularly regarding tree species and traceability mechanisms for timber specimens. Additional considerations were discussed concerning the management of stockpiles of timber and wood specimens. The Secretariat delivered presentations on the guidance and Cameroon and Mali presented illustrative case studies on LAFs and traceability for *P. erinaceus*.

Complementary to the above, the workshop also addressed:

a) linkages between CITES implementation and the timber sector;

b) the CITES Task Force on illegal trade of CITES listed tree species; and

c) opportunities under the new phase of CITES Tree Species Programme (CTSP).

The workshop also provided an opportunity to observe the customs procedures and CITES enforcement practices in Cameroon, including through the visit to the Port of Douala.

The workshop documentation, including the background document presentations, and final list of participants, is available on the CITES website.

The workshop concluded with recommendations for strengthening regional cooperation and improving management mechanisms for CITES-listed tree species. Participants also stressed the need for continued commitment to the implementation of the measures identified, in particular the monitoring of quotas and the implementation of NDFs and LAFs. The workshop reaffirmed CITES as a crucial tool not only for the sustainable management of natural resources, but also for supporting and improving local economies through sustainable, legal and traceable trade.

Contents

0. Introduction

The African populations of *Pterocarpus erinaceus* (African rosewood) are listed in Appendix II of the Convention with annotation #17 (*Logs, sawn wood, veneer sheets, plywood and transformed wood*).

Since the 74th meeting of the Standing Committee (SC74, Lyon, February 2023), all sixteen known range States of *Pterocarpus erinaceus* are concerned by the expedited application of Article XIII process and eight of the range States are subject to a recommendation to suspend trade. The countries subject to a recommendation to suspend trade are: Cameroon, Central African Republic, Chad, the Gambia, Guinea-Bissau, Mali, Nigeria and Togo.

There are two conditions to withdraw the recommendation to suspend trade for these eight countries, which also apply to countries that established voluntary zero export quotas should they wish to resume international trade, namely:

a) The Party concerned makes scientifically based non-detriment findings (NDFs) for trade in the species in their countries to the satisfaction of the Secretariat and the Chair of the Plants Committee, having regard to Resolution Conf. 16.7 (Rev. CoP17) on Non-detriment findings and based on the outcomes of the Review of Significant Trade (RST) for this species; and,

b) The Party provides evidence of legal acquisition findings (LAFs) to the satisfaction of the Secretariat and the Chair of the Standing Committee, having regard to Resolution Conf. 18.7 (Rev. CoP19) on Legal acquisition findings.

The other eight countries have published voluntary zero export quotas for *Pterocarpus erinaceus* and thus are not concerned by the recommendation to suspend trade. These countries are: Benin, Burkina Faso, Ghana, Sierra Leone, Côte d'Ivoire, Guinea, Niger and Senegal. However, any resumption of the trade in this species would be submitted to the same conditions relating to the making of NDFs and LAFs.

Eight of the sixteen *Pterocarpus erinaceus* range States are undergoing recommendations under the review of significant trade process [Resolution Conf. 12.8 (Rev. CoP18)] in parallel to the expedited application of Article XIII process, these are: Benin, Burkina Faso, the Gambia, Ghana, Guinea-Bissau, Mali, Nigeria.

At its 77th meeting (SC77, Geneva, 2023), the Standing Committee requested the Secretariat to organize a regional workshop on NDFs and LAFs for *Pterocarpus erinaceus* range States, thus adopting an integrated range-State approach in addressing NDF and LAF recommendations under the expedited Article XIII procedure and the RST process.

The objective of the workshop was to catalyse at a regional level the implementation of recommendations under CITES expedited Article XIII and the review of significant trade processes for *Pterocarpus erinaceus*, through a theoretical and practical capacity building approach for the preparation of NDFs and LAFs for the species.

The present report is thus structured in accordance with the three major components of the workshop, as outlined in the executive summary:

- the NDF component (Section 1);
- the LAF component (Section 2); and,
- the complementary component (Section 3), covering aspects on law enforcement, customs and the new phase of the CITES Tree Species Programme (CTSP).

The working programme of the workshop and the list of Parties and organizations that participated in the workshop are available in Annexes A and B to the present report, respectively. This and all other workshop documentation are also available on the CITES website.

Supporting resources for the workshop included: the Non-Detriment findings Guidance (CITES Secretariat, 2024) available in the CITES website, the workshop background document available in (English and French), the *Report on the conservation and trade of CITES-listed rosewood tree species [Leguminosae (Fabaceae)]* (CITES Secretariat, 2024), the executive summary and factsheet for *Pterocarpus erinaceus* (available in English and French); and the CITES-Lex pamphlet (available in English and French).

1. Section 1: The NDF component

The CITES Secretariat outlined the fundamental principles involved in preparing NDFs with a focus on *Pterocarpus erinaceus* as per the presentation available in this link. This presentation is based on Modules 0 to 2 of the CITES NDF Guidance.

With the general principles of the NDF having been reviewed in detail, the *Association technique internationale des bois tropicaux* (ATIBT), as the Secretariat's partner in the organization of the workshop, provided an overview of NDFs for tree species with focus on CITES African tree species, which is available in French in this link. This presentation is based on Module 10 of the CITES NDF Guidance.

This presentation highlighted aspects relating to: (i) the forest management plan, (ii) the forest inventory, (iii) the structure of tree distribution classes, (iv) the rate of regeneration and reconstitution of tree species, (v) the minimum logging diameter, (vi) the rotation cycle (logging rotation cycle), (vii) the annual logging base, (viii) silvicultural practices, (ix) logging techniques and (x) the conversion of tree volumes into timber or timber products.

To illustrate the general principles of NDFs for tree species, and in particular *Pterocarpus erinaceus*, a review of the NDFs developed by Ghana, Mali and Sierra Leone was also presented, *vis a vis* the principles outlined in Module 10 of the CITES NDF Guidance. This review is available in French in this link.

These case studies allowed to showcase the diversity and adaptability of the principles for drafting NDFs according to the specific contexts. It was clearly established in the documents that the following elements had been spelt out: (i) a study area, (ii) a forest inventory, (iii) a management plan for the exploitation area guaranteeing sustainable management and (iv) monitoring of the exploitation of the species.

As a complement to the NDF component, ATIBT presented an overview of linkages between CITES implementation and the timber sector. This overview is available in French in this link. As an example of this, ATIBT presented its mission, and how the Association assists its members in preparing the documents needed to comply with the various CITES regulations relating to timber species.

Box 1 below summarizes the main outcomes and insights of the NDF component of the workshop.

Box 1. Main insights and outcomes of the workshop's NDF component

- Parties acquired a better understanding of NDFs through the new preliminary CITES NDF Guidance (CITES Secretariat, 2024).

- Module 10 on NDFs for CITES tree species was an important focus area, noting that it recapitulates known principles of forestry that apply to all CITES tree species.

- Emphasis was placed on forest inventories that are at the core of any NDF process for a CITES-tree species.

- Scientific Authorities are encouraged to opt for a precautionary approach, including recommending conservative quotas and including conditions or pre-requirements to a positive NDF to ensure long-term monitoring of populations under harvest.

- Range States of *Pterocarpus erinaceus* wishing to resume legal and sustainable trade can learn from the progress made by Mali, Ghana and Sierra Leone in having NDFs and

associated quotas accepted by the Plants Committee.

- CITES NDFs can also serve as a means to further the knowledge on the conservation and population status of *Pterocarpus erinaceus* at the national and global levels.

2. Section 2 the LAF and traceability component

Through a series of capacity-building presentations, the CITES Secretariat outlined: concepts, objectives and principes of LAFs (available English); LAFs for tree species, from concession to shipment (available in English); an overview of matters relating to stockpiles of timber and wood specimens (available in English); and an overview of the steps towards resuming legal and sustainable trade of *Pterocarpus erinaceus* (available in English).

Following the presentations by the Secretariat, range States shared their experiences in developing LAFs for tree species, and in particular *Pterocarpus erinaceus*. These presentation by Sierra Leone, Ghana and Mali underlined the importance of procedures adapted to each national context in order to draw up reliable LAFs, and also pointing out, as in the case of NDFs, that these procedures can be adapted to the laws and regulations in force in each country.

An example of the elements showcased by these range States are summarized below:

a) Ghana has developed a checklist for the LAF which includes matters relating to:

   - Origin of the wood
   - Allocation of timber harvesting rights
   - Harvesting operation
   - Transport: verification of legal surveillance certificates and transport schedules
   - Sawmill registration
   - Vendor registration

b) In Sierra Leone, LAF procedures are governed by the Ministry of the Environment and Climate Change. Main stages of the LAF procedures include:

   - Verification and confirmation of ownership: verification of concession maps.
   - Data collection and document review: validation of contracts, permits, NDF files and scientific authorisation.
   - Use of the Geoportal for forest management to ensure the traceability of concessions.
   - Checking transport permits: verifying stamps, dates, volumes, species, etc.
   - Checking documents relating to log storage and location.

c) The information required for LAF by Mali includes:

   - Commercial operating conditions: verification of licences and business cards.

- Transport ticket
- Certificate of origin
- Deposit permits
- Export permits
- Documents must be strictly consistent (dates, signatures, stamps, competent authorities).

The LAF component of the workshop also provided an opportunity for range States to showcase their approach to traceability. Traceability refers to the ability to follow a forest product from its current location back to its original source, ensuring continuous tracking of all movements of the specimen to its final destination. The extent of this tracking depends on each country's internal regulations. It is crucial to understand how different states ensure that traceability of CITES-listed species is controlled throughout the management and conservation chain.

Examples of traceability systems implemented on *Pterocarpus erinaceus* were presented by Cameroon, Ghana, Mali and Sierra Leone. Some of these countries also mentioned that they have migrated from manual systems based on paper documents to digital systems:

- Cameroon uses the Second generation Forest Information Management System (SIGIF2) digitised system, comprising 18 modules, accessible to forest concessions and economic operators. Each forest product is assigned a unique barcode containing traceable information that can be checked at any time.
- Ghana has also adopted a digital traceability system, whereby each forest product is identified by a unique reference number, enabling precise tracking throughout the chain, right up to export.

Box 2 below summarizes the main outcomes and insights of the LAF component of the workshop.

Box 2. Main insights and outcomes of the workshop's LAF and traceability component

- Parties have gained a better understanding of LAF and traceability considerations through the principles and recommendations of the LAF Fast Track Procedure.
- The LAF must be preceded by an NDF. Both are required to issue a CITES permit.
- The LAF development process requires a solid institutional infrastructure and coordination between the main stakeholders, with the management body playing the role of coordinator.
- Traceability and the chain of custody are ways of achieving LAFs.
- LAFs and traceability must be implemented on a case-by-case basis for each consignment, taking account of national procedures.
- Mali is a good example of the significant progress made in LAF for *P. erinaceus*, and range states are encouraged to learn from its experience.
- With regards to traceability, Ghana, Mali, Sierra Leone and Cameroon are good examples of the range of approaches implemented at national level to establish traceability systems in support of the LAF process.

3. Section 3: Enforcement and customs, and opportunities under the new phase of the CITES Tree Species Programme (CTSP)

3.1. Enforcement and customs

The Secretariat presented an overview of the CITES Task force on illegal trade of CITES listed tree species (available in English). The discussion that followed this presentation allowed participants to acquire a thorough understanding of the law enforcement provisions of the Convention and the tools and resources available to implement them effectively.

On 5 September 2024, Cameroon led a visit to the Port of Douala, which offered participants an opportunity to observe the process that Cameroon follows to monitor the export and re-export of CITES listed tree species, and clearances procedures applicable (MINFOF and Customs). The visit to the Port was followed by a question-and-answer session led by the host Country.

3.2. Opportunities under the new phase of the CITES Tree Species Programme (CTSP)

The Secretariat presented on the next phase of the CTSP, as an approach to address challenges in the implementation of CITES for tree species. The presentation is available in English and French.

Following the discussion of the presentation, the Secretariat took note of the main challenges expressed by participants on NDF, LAF and other CITES provisions for tree species. This will assist the Secretariat to identify potential areas of support to be address through the next phase of the CTSP.

Participants received information on the upcoming funding opportunity under CTSP and next steps, including project selection and the envisioned project management workshop. Party representatives were encouraged to submit concept notes and proposals for *Pterocarpus erinaceus* and other African tree species.

4. Media coverage of the workshop

In addition to the CITES Secretariat news item on the workshop, the workshop was covered by several media and news sources, as showcased by the articles listed below:

- https://vitrineducameroun.com/2024/09/06/bois-de-rose-africain-latibt-la-cites-et-leurs-partenaires-intensifient-la-mobilisation-generale-pour-un-commerce-durable-de-lespece-lors-dun-atelier-regional-a-doua/
- https://vitrineducameroun.com/2024/09/06/bois-de-rose-africain-les-etats-de-laire-de-repartition-vent-debout-contre-lexploitation-non-durable-du-pterocarpus/
- https://www.gabon365.net/2024/09/06/bois-de-rose-africain-latibt-la-cites-et-leurs-partenaires-intensifient-la-mobilisation-generale-pour-un-commerce-durable-de-lespece-lors-dun-atelier-regional-a-douala/
- https://www.cemacnews.net/2024/09/06/bois-de-rose-africain-les-etats-de-laire-de-repartition-vent-debout-contre-lexploitation-non-durable-du-pterocarpus/
- https://www.mediaterre.org/actu,20240917080639,6.html
- https://www.plusecho.com/2024/09/21/cameroun-latibt-accompagne-les-entreprises-forestieres-dans-lexploitation-et-la-mise-sur-le-marche-des-essences-tres-peu-connues/
- https://vitrineducameroun.com/2024/09/21/cameroun-latibt-accompagne-les-entreprises-forestieres-dans-lexploitation-et-la-mise-sur-le-marche-des-essences-tres-peu-connues/

The Secretariat is grateful for the efforts of Cameroon as host country to coordinate the coverage by local and international media on this regionally relevant workshop.

Annex A

Regional workshop for range States of African rosewood

Douala (Cameroon), 2 to 6 September 2024

Hotel Sawa

488 Rue de Verdun – Bonanjo

B.P 2345, Douala (Cameroon)

Final working programme*

**All workshop documentation is available at: https://cites.org/eng/node/139090*

DAY 1: Monday 2 September 2024

08:00 – 09:00 : Registration

09:00 – 10:30

- Opening ceremony
    - Mayor of Douala, Cameroon
    - CITES Secretariat [Haruko Okusu, CITES Secretariat]
    - His Excellency Jules Doret Ndongo, Minister of Forests and Wildlife (MINOF), Cameroon
- End of the opening ceremony and photo with the participants

10:30 – 12:00

- Objectives of the workshop [Thomas Deleuil, CITES Secretariat]
- Working programme and conduct of the workshop [Isabel Camarena, CITES Secretariat]

12:00 – 14:00: Lunch

14:00 – 17:00

- CITES Non-detriment findings (NDFs)
    - Principles and concepts of NDFs [Isabel Camarena, CITES Secretariat]

- NDFs for tree species and forest management principles (NDF Guidance, Module 10) [ATIBT]
- Illustrative case studies of NDFs for *Pterocapus erinaceus*: Ghana, Mali, Sierra Leone [ATIBT]

DAY 2: Tuesday 3 September 2024

9:00 – 12:00

- *[cont…]* Illustrative case studies of NDFs for *Pterocapus erinaceus* [ATIBT]

- Linkages between CITES implementation and the timber sector: An overview [ATIBT]

12:00 – 14:00: Lunch

14:00 – 17:00

- CITES legal acquisition findings [Thomas Deleuil, CITES Secretariat]
  - Concept, objectives, and principles of LAFs
  - LAFs for tree species: from concession to shipment
  - Stockpiles of timber and wood specimens

DAY 3: Wednesday 4 September 2024

9:00 – 12:00

- Illustrative examples of LAF for *Pterocarpus erinaceus* and linkages with Article XIII [CITES Secretariat and ATIBT]

12:00 – 14:00: Lunch

14:00 – 17:00

- Traceability considerations [Thomas Deleuil, CITES Secretariat]
- Traceability examples of *Pterocarpus erinaceus*: Cameroon and other range States (tbc) [ATIBT in coordination with range States]
- Question and answer session to revisit any NDF and LAF matters [facilitated by ATIBT]

DAY 4: Thursday 5 September 2024

08:30: RDV Hotel Sawa for the field trip to the port of Douala

12:00 – 14:00: Lunch at Hotel Sawa

14:00 – 17:00

- Question and answer session following visit to the Port [facilitated by ATIBT]
- Opportunities under the new phase of the CITES Tree Species Project (CTSP) [Haruko Okusu, CITES Secretariat]

DAY 5: Friday 6 September 2024

9:00 – 12:00

- CITES Task force on illegal trade of CITES listed tree species [Pia Jonsson, CITES Secretariat]
- Review of the workshop report [facilitated by ATIBT]
- Closure [CITES Secretariat]

12:00 – 14:00 Lunch

Annex B

CITES LAF and NDF workshop for African rosewood (*Pterocarpus erinaceus*)

Douala (Cameroon), 2-6 September 2024

LIST OF PARTICIPANTS

Parties (*not a range States of *Pterocarpus erinaceus*)	
Benin	Guinea Bissau
Burkina Faso	Liberia*
Burundi*	Madagascar*
Cameroon	Mali
Central African Republic	Niger
Chad	Nigeria
Cote d'Ivoire	Senegal
Gambia	Sierra Leone
Ghana	Togo

IGOs, NGOs and private sector	
Africa-Twix	Forest Source
ATIBT	FRMi
CITES Secretariat	ITTO
EIA	TRAFFIC