Forest Carbon Partnership Facility (FCPF)
Technical Assessment of Advanced Draft ER-PD of Lao

I General Approach of the Review

This assessment report is based on an Advanced Draft ER-PD submitted to the Carbon Fund on March 26th 2018, which was just under 3 weeks following a Country Visit to Lao by four members of the TAP from 5th to 9th March 2018. Prior to the Country Visit, Lao had submitted a first draft ER-PD which was subjected to a 2-week desk review by the TAP, hence the advanced draft has built upon the earlier draft and has also benefitted from TAP comments that emanated from the Country Visit.

During the country visit, members of the team held discussions with a variety of stakeholders of the Lao REDD+ Readiness Process and also read a number of background documents on Lao's forest sector and REDD+ related documents which had been generated under the readiness and other related processes. The various stakeholders interviewed were mainly members of the 6 REDD+ Technical Working Groups. In addition, the team interviewed representatives of a national NGO forum, indigenous peoples, the private sector and also those from the Ministries of Justice and Lands. These in-country consultations enabled the TAP to assess the nature of activity data that Lao had generated, history of policy and legislative reform, land tenure and the comprehensiveness and logic of the program design, among others. The TAP also has a chance to read reports on the analyses of drivers of deforestation and forest degradation and how they had influenced the design of, or were reflected in the mitigation or emission reduction options. The TAP also read reports on Lao's Strategic Social and Environmental Assessment (SESA). This report therefore provides a written record of an independent assessment done by the TAP, to test Lao's compliance with the criteria set in the Carbon Fund's "Methodological Framework".

The TAP Team for the March 26th 2018 submission was composed of five members, one of whom was a country expert. The team organized itself around four main components of the ER-PD (Program Design, Carbon Accounting, Social and Environmental Safeguards and Legal Issues). Although experts focused mainly on their areas of expertise, the TAP worked as a team to produce the final assessment, and collaborated on a few areas of the ER-PD. The results of the assessment were presented in the approved assessment template, and the bulk of the reporting relates to issues of carbon accounting and reference levels /reference emission levels (RL/REL).

The lead reviewer focused on the program design and safeguards sections assisted by the country expert, two members reviewed the carbon accounting section and the fifth concentrated on the ER transactions sections of the ER-PD.

PART 1 OF TECHNICAL ASSESSMENT: Summary

Date of Current Assessment: April 6, 2018**.** Advanced Draft ER-PD; March 26, 2018

Name of Assessment team members:
de Ligt Rob (Carbon Accounting), Ingalls Micah (Country Expert, Safeguards & Program Design), Kojwang Harrison (Program Design, Safeguards & TAP Lead), Lopez Ludovino (Legal Issues), and Waterworth Rob (Carbon Accounting)

Summary Assessment of the Quality and Completeness of the ER-PD:	Indicators	Initial review	1st Assessment	2nd assessment (final)
The Advanced Draft of the Lao ER-PD, which is the subject of this TAP assessment report, was produced following a TAP country visit to Lao in March 2018. The TAP therefore commends the Lao Team for an effort that has produced a well-written and comprehensive document, which has presented an ambitious ER proposal based on anticipated emission reduction activities in its 6 northern provinces. The ER-PD has demonstrated the ability of the Lao team to handle the difficult technical aspects of carbon accounting quite well, and the competency of Lao Nationals and their donor counterparts in carbon accounting is apparent. Despite a clear understanding of the principles of carbon accounting and their applications, there are still a few issues that need further work. These include issues such as; the use of the 'stock difference method' and associated assumptions, problems associated with the use of minimum DBH values in its forest definitions and the use of Approach 2, instead of 3 for deforestation in their accounting approach, and some issues on the accuracy of estimates ex-ante emissions and removals, which the TAP had already pointed out. On safeguards, the ER-PD has demonstrated a good understanding of both World Bank and Cancun (UNFCCC) safeguard policies and procedures. In this regard, the ER-PD has also stressed the importance of tenure reform including the legal protection for land under customary tenure, which is a significant non-carbon benefit and an appropriate step in the legal empowerment of the rural poor. Nevertheless, issues of targeted poverty reduction among the rural poor and clear measures to limit further conversions of degraded and other natural forests, still need to be strengthened. The Lao ER-PD in the program design section, has presented an interesting analysis of both direct and underlying drivers, and made interesting proposals on how the ER-Program will address the drivers. The ER targets will be met through interventions in the agriculture and the forest sectors, supported by a raft of enabling conditions described in the ER-PD. The TAP has however observed that on the analysis of drivers, the ER-PD did not sufficiently take into account, the ever-increasing importance of both foreign and local investments in the agricultural sectors, as a driver of forest cover loss. It is therefore an issue which need to be prioritized and addressed. In addition, the TAP has observed that, despite the fact that key ER interventions will be in the agriculture and land administration sectors, those two sectors have no visible roles in the implementation arrangements that have been proposed. As such, more prominent roles in the implementation of the REDD+ Program by those and other sectors are recommended. From both policy and technological perspectives, the program design is still not strong and clear, on what they consider as key 'policy and technological levers' that will help Lao deliver on its ambitious ER targets. Finally, the benefit sharing arrangements that have been proposed will need a clear benefit sharing plan that clearly is clearly pro-poor. On legal matters or ER Program Transactions, the ER-PD has yet to demonstrate legal provisions and clarity on its ability to transfer ER titles and as such more work is needed in this area and has been explained in more detail in the main body of the report				

II. Level of Ambition → Criteria 1 – 2, including issues relating to legal aspects The Lao ER-PD chose 6 northern provinces for the ER Program, and hence the carbon accounting area of the 6 provinces (Bokeo, Houaphan, Luang Namtha, Luang Prabang, Oudomxay and Sayabouri) constitute 35% of the total land area of its terrestrial territory; forming a contiguous landscape. Each province shares an international border with one of the surrounding countries of Thailand, Myanmar, China and Viet Nam. It is noteworthy that the accounting area is characterized by hilly topography, remote accessibility and limited public and industrial infrastructure, unique ethnic communities, and a persistent prevalence of poverty. Historically, the combined area of deforestation and forest degradation in the ER Program area in 2005-2015 was approximately 72,000 ha/year, compared to a national average of 181,000 ha/year. Approximately 40% of the deforestation and degradation took place within the selected six provinces. Today, its proximity to major economic growth centers across its national boundaries and its predominantly poor inhabitants, makes the ER Program Area, a compelling challenge for implementing an ER Program. In summary, the six provinces of the ER-Program Area, constitute a well-defined Jurisdictional Area, within which, Lao proposes to achieve emission reduction targets and the enhancement of carbon removals of approximately 21.6 million tCO_2e, against its 2005-2015 reference level (RL). Of this, 13.1 million tCO_2e are from reduced emissions, and 8.5 million tCO_2e from enhanced removals. With such ER targets, Lao PDR will clearly need to significantly transform the performance of its forest and associated sectors to levels commensurate with its stated ER ambitions. So far, some outstanding legal issues are in the aspects of carbon rights, ability to transfer ER titles and the often complex issue of benefit sharing, for which Lao PDR has developed roadmaps and action plans for their completion.	1.1 1.2 2.1	YES YES YES	YES YES YES	
III. Carbon Accounting **III (a) Scope and methods→ Criteria 3 - 6** **III (b) Uncertainties→ Criteria 7 - 9** **III (c) Reference Level→ Criteria 10 - 13** **III (d) Reference Level, Monitoring & Reporting on Emission Reductions→ Criteria 14-16** **III (e) Accounting for Displacement (leakage) → Criterion 17** **III (f) Accounting for Reversals→ Criteria 18 – 21** **III (g) Accounting for ERs → Criteria 22 - 23** In the opinion of the TAP, Laos has demonstrated a strong capacity in the estimation of REDD+ emissions and removals. This capacity exists both within the Department of Forestry (DOF) as well as with donor partners and consultants. Laos was able to respond effectively to many of the TAP comments from the country visit, and implemented satisfactory revisions within a very short period of time. As with all measurement, reporting and verification (MRV) systems, from developing and developed countries, there is always room for continuous improvement, but the ERPD demonstrates a solid foundation for Laos to continue to develop their MRV capacity.	3.1 3.2 3.3 4.1 4.2 5.1 6.1 6.2 7.1 7.2 8.1 8.2 9.1 9.2 9.3 10.1 10.2 10.3 11.1 11.2 12.1 13.1 13.2	YES YES YES YES YES NO NO NO NO YES NO YES YES N.A YES YES YES NO YES YES NO YES N.A	YES YES YES YES YES NO YES YES YES YES YES YES YES N.A YES YES YES YES YES YES NO YES N.A	

The emissions and removals estimates are reasonable within the context of the Tier and Approaches implemented by Laos and are comparable to those developed by countries with a similar policy and development context. The TAP has identified some remaining issues which are detailed against the specific criteria and indicators. For indicators that have been identified as 'NO', these issues include: • Indicator 5.1 – the ERPD incorrectly identifies that Laos has applied the stock-difference method, and assumptions regarding the period of time over which removals occur are not sufficiently justified. This issue is considered to be major. The current assertion that the stock-difference method has been applied is not likely to have a material effect on the RL. However, if Laos was to attempt to apply the stock-difference method for measurement, monitoring and reporting (MMR), this could introduce material bias and inconsistency between the RL and MMR. In addition, the length of the period over which removals occur can have a material influence on the removals that are estimated to occur during the RL and the program period. The length of these periods needs to be more clearly justified. Finally, the TAP considers that the activity data only serves as a proxy for detecting land use/cover change for the RV (regenerating vegetation) category, and therefore emissions and removals from deforestation, reforestation, restoration and degradation activities that involve the RV vegetation category should have a 15% conservativeness factor applied. • Indicator 12.1 – while the TAP does not have an issue with the forest definition per-se, there are some issues with a clear description of how the thresholds were applied and how the forest definition was translated into the activity data. The Lao forest definition is unusual as it contains minimum diameter at breast height (DBH) as a criteria which means it is not directly comparable to forest definitions from other countries. The TAP was not able to confidently predict the outcome of these issues on potential uncertainty and bias. At present this is major, however, if Laos can develop a clear description of the forest definition thresholds (particularly DBH) and how they were implemented, and this is taken together with the application of a 15% conservativeness factor for activities involving RV, the TAP would consider the issue to be resolved. • Indicator 14.2 – Laos has not used Approach 3 for Deforestation, instead Approach 2 land area matrices have been developed from the spatial-temporal forest cover data which are effectively independent and do not track the land use history for the spatial areas. This is a common situation where countries have implemented basic AD X EF (activity data, emissions factor) methods. The TAP considers this issue to be minor for the RL, because although the issue has the potential to introduce systematic error (that cannot be confidently predicted), this issue is common across FCPF country systems. I.e. any country that has used a two date land area matrices as the basis for their activity data will be in this same situation. The issue is likely to become more problematic as the length of the time-series increases and the potential for multiple land use changes increases. In addition, the proxy stump method for estimating degradation emissions may not be able to be implemented for MMR, as it relies upon the completion of a NFI for the proxy data. This is considered to be a major issue because at best it will only be possible to capture data once	**13.3** **13.4** **14.1** **14.2** **14.3** **15.1** **16.1** **17.1** **17.2** **17.3** **17.4** **18.1** **18.2** **19.1** **20.1** **20.2** **21.1** **21.2** **22** **23**	N.A N.A NO NO NO YES YES YES YES N.A N.A YES NO YES N.A N.A NO N.A YES NO	N.A N.A YES NO YES YES YES YES YES N.A N.A YES YES YES N.A N.A NO N.A NO NO	

during the MMR period for the stump degradation method, while it may not be possible to capture data for the method at all if an NFI is not completed.

- Indicator 21.1 – A method for reporting on reversals was developed for the Advanced ERPD but it was not adequately documented. It is therefore considered to be minor issue.
- Criteria 22 – some issues in the calculation of the ex-ante emissions and removals were identified from the development of the advanced draft (I.e., the inclusion of removals from activities that occurred during the RL period which will no longer be accruing removals and a simple error in the calculation of the ex-ante Total ERs). This is considered minor, because it does not have a bearing on the accounting of ERs and will be relatively easy for Laos to rectify.
- Criteria 23 – The level of detail of information on the management of double counting shows that Laos has begun to consider the issue. However there is no system or framework in place to ensure that double-counting will not occur. These frameworks require considerable effort to design and implement. At this stage we consider this issue to be minor because the ERPD shows that Laos has begun to consider the issue, however if the technical, policy and legal mechanisms are not put in place prior to the first reporting under the MMR, this would become a major issue.

In addition, there are a number of criteria/indicators that have been assessed as 'Yes' that will require continued development by Laos to ensure that it continues to meet and remain compliant with the requirements of the Methodological Framework, if the country is to progress in the ER Program and into MMR. These are detailed under each of the indicator comments.

IV. Safeguards

Actions undertaken to meet WB and Cancun Safeguards→ Criteria 24-26

The ER-PD has demonstrated a clear understanding of World Bank and Cancun Safeguard Policies and requirements in relation to their ER Program and has provided a comparative analysis on how Lao conforms to, or meets safeguards policies of the two. The TAP has also taken note of the fact that tenure security on customary lands is a welcome development which will be achieved in the context of land use plans and where applicable, under village forest management agreements (VFMAs). This quite a positive development.

The TAP while appreciating the above, has noted that the ER-PD has not clearly stated or described with examples, its historical experiences with safeguard policies or issues in Laos. In addition, more work remains to be done to safeguard currently degraded natural forests against unplanned conversions. More attention by Laos to reduce poverty among the poor ethnic groups that dominate the accounting area is needed, and should be accompanied by an operational system to implement and monitor compliance with safeguard policies and procedures of the World Bank.

Another issue which also requires attention, is the fact that, contract farming which is increasing in the ER Program Area, often involves the use of agrochemicals, and as such, safeguards against ground and surface water pollution are called for.

Finally, the TAP is of the opinion that the reliability of 'self-monitoring' by an implementing agency, without adequate and specific measures of transparency and accountability, runs the risk of being questioned in the future. As such, the expectation from the TAP would be an independent oversight for safeguards, which Lao has already accepted for its planned National REDD+ Data Management and ER Registries.

24.1	**YES**	**YES**	
24.2	**NO**	**NO**	
25.1	**NO**	**NO**	
25.2	**N.A**	**N.A**	
26.1	**NO**	**NO**	
26.2	**NO**	**NO**	
26.3	**YES**	**YES**	

V. Sustainable Program Design and Implementation **V. (a) Drivers and Land Resource Tenure Assessment → Criteria 27-28** **V. (b) Benefit sharing → Criteria 29 – 33** **V. (c) Non-Carbon Benefits → Criteria 34 – 35** The Lao ER-PD has presented a well described set of processes used in the analysis of drivers of deforestation and forest degradation, also used to develop Provincial REDD+ Action Plans (PRAPs). However, the TAP has noted that the potential impacts of foreign direct investment (FDI) and domestic investment as a driver which is growing in importance, has not been given a low rank, which is contrary to recent data and information available within Lao. As such, the possible impacts of FDI needs to be revisited and adjustments made in the Program Design. While ER targets stated in the ER-PD are ambitious, the TAP is of the opinion that to meet the targets, policy and technological options that will transform both the forest and other land use sectors are needed in the ER-PD. Furthermore, the responsibility to implement the ER Progam seems to disproportionately fall under the Department of Forestry, despite the fact that, the main drivers which the ERPD will need to address relate to agricultural practices. As such, the Agriculture and the Lands Departments, should ideally play higher roles than what is currently reflected in the ER-PD. While the TAP appreciates the proposal to initiate irrigation projects in the ER Program Area, to improve rice production and reduce further conversion of land for food security, it would be prudent that, the program clearly targets those villages and households which have the highest instance of shifting cultivation. It is also because of this, that under safeguards, the TAP expected a strong poverty reduction focus on poor ethnic groups in the ER Program Area. The TAP has also taken note that Benefit Sharing Arrangements are under development, as are plans to ensure the sustainable supply and monitoring of non-carbon benefits emanating from the ER-Program. It is also the TAP's expectation that, as much as possible, the benefits of the ER Program should accrue to those who will be affected by the program, especially those villages and households that practice shifting cultivation who will lose livelihood opportunities for the sake of ensuring reduced emissions and enhanced removals.	27.1 27.2 28.1 28.2 28.3 29 30.1 31.1 32.1 33.1 34.1 34.2 35.1 35.2	YES NO NO NO NO YES N.A N.A N.A NO YES NO NO N.A	YES NO YES YES NO YES N.A N.A N.A YES YES NO NO N.A	
VI. ER Program Transactions **VI (a) ERPA Signing Authority and Transfer of Title To ERs → Criterion 36** **VI (b) Data Management and ER Transaction Registries → Criteria 37 - 38** The TAP has observed that as of now, the ER-PD has yet to demonstrate its ability to transfer titles to ERs. This is a situation that the country has recognized and has made plans to work on going forward. So far, the assessment on the legal aspects has sufficient details on what is still required and the non-conformity are mostly minor. On data management and ER transaction registries, Lao is developing a national registry database on all REDD+ projects in the country, but has decided that an ER transaction registry will be outsourced to an external entity.	36.1 36.2 36.3 37.1 37.2 37.3 37.4 38.1 38.2 38.3 38.4	NO NO NO YES NO NO NO NO N.A N.A N.A	NO NO NO YES YES NA YES NO N.A N.A N.A	

SUMMARY SCORE and overall comment: The TAP commends Laos for the considerable effort it has put in the last year to produce the initial draft ER-PD and for its quick response to TAP comments that emanated from the country visit and led to the production of this Advanced Draft. In the process, the country has demonstrated its technical expertise in the aspects MMR, RL and RELs, analysis of drivers of deforestation and degradation and the design of ER activities which is evident in this ER-PD. In summary, out of a total of 78 indicators, **42 are met**, **18 are not met** and **18 are not applicable**. The majority of the indicators that are not met fall under the category of minor non-conformities**.**			

PART 2 OF TECHNICAL ASSESSMENT: DETAILED ASSESSMENT

C. 1 The proposed ER Program is ambitious, demonstrating the potential of the full implementation of the variety of interventions of the national REDD+ strategy, and is implemented at a jurisdictional scale or programmatic scale.

Ind. 1.1 The ER Program Measures aim to address a significant portion of forest-related emissions and removals [Ambition and strategic rationale for the ER Program – 2.2]	**YES**

In terms of its strategic vision on reduced emissions, the ER-PD is aligned with Laos REDD+ Strategy (2025), its current and 8th National Socio-Economic Development Plan (NSEDP 2016-2020) and Vision 2030. In this regard, the NSEDP has stated a national goal to increase of forest cover from an estimated 58% in 2015 to 70% by 2020, which will entail enhancements of carbon stocks and avoided deforestation over 6 million ha of natural forest areas, and an ambitious target of 500,000 ha of planted forests. The emission reduction targets associated with this are net ER and enhanced removals of 21.6 million tCO2e against the 2005-2015 RL. The ER target in relative terms would address a significant portion of forest related emissions and removals and would suggest a major transformation of the forest and other land use related sectors.

Ind. 1.2 The ER Program is ambitious, uses new or enhanced ER Program Measures to reduce Emissions or enhance removals**,** is undertaken at a jurisdictional scale and/or takes a programmatic approach (i.e., involves multiple land areas, landowners or managers within one or several jurisdictions), and reflects a variety of interventions from the national REDD+ strategy in a coordinated manner. [Ambition and strategic rationale for the ER Program – 2.2, 2.3]	**YES**

The ER-PD and the draft National REDD+ Strategy specifies programs and strategic interventions over three phases, (2018-2020), (2021-2025), and (2026-2030) with 5 core interventions areas namely; development of sustainable agriculture in coordination with forest protection measures, infrastructure and mining development including resettlement and urban expansion in coordination with forest protection measures, sustainable timber harvesting and forest management (wood and forest products), turning pioneering shifting cultivation to sedentary cultivation, controlling forest fires and forest restoration (carbon stock enhancement), and the development of sustainable commercial tree plantations. Given the fact that Lao had forest cover of 70% in the 1950's, when it had an estimated national population of only 1 million people, against today's population of 7 million people, of which an estimated 4 million are largely agricultural, the ER Program appears to be quite ambitious, hence carries a risk of conflict with agricultural and food-security needs. This is an issue that the ER-PD should recognize and could understandably require a revision of the stated 70% forest cover national target.

C. 2 The Accounting Area matches a government- designated area that is of significant scale

Ind. 2.1 The Accounting Area is of significant scale and aligns with one or more jurisdictions; or a national-government-designated area (e.g., ecoregion) or areas. [Accounting Area of the ER Program – 3.1]	**YES**

The Accounting Area covers six Northern Provinces, which together constitute 35% of the national territory. Furthermore, the same area accounts for 40% of the deforestation and forest degradation that the nation has so far incurred. The TAP is of the opinion that the six provinces are jurisdictional areas which constitute a significant surface of Laos' territory.

C. 3 The ER Program can choose which sources and sinks associated with any of the REDD+ Activities will be accounted for, measured, and reported, and included in the ER Program Reference Level. At a minimum, ER Programs must account for emissions from deforestation. Emissions from forest degradation also should be accounted for where such emissions are significant.

Ind. 3.1 The ER Program identifies which anthropogenic sources and sinks associated with any of the REDD+ Activities will be accounted for in the ER Program [Description of Sources and Sinks selected – 8.1]	**YES**
The ERPD identifies anthropogenic sources associated with the activities of deforestation and forest degradation, and carbon sinks from the REDD+ activity of enhancement of forest carbon stocks (through country defined activities of restoration and reforestation). It does not include activities for conservation of forest carbon stocks or sustainable management of forests. Laos notes that these activities overlap with the reporting of emissions and removals from other activities. The ERPD notes (Section 7.1 footnote 113 p 112) that in relation to the activity emissions and removals from conservation of forest carbon stock: "In the future, Lao PDR may include restoration from improved RV management and forests remaining in the same category with increased carbon stock in this category – but for now, this is not possible due to lack of datasets. For the same reason, emissions from degradation occurring in forests remaining in the same category is also not accounted, except for the emission from selective logging estimated through measurement of tree stumps as a proxy indicator." The TAP notes that sources and sinks related to the activities indicated in this statement have not been included in the RL and a method for estimating the sources and sinks during the MMR period has not been defined. It would therefore not be possible to include these additional sources and sinks during the MMR period without also including them in the calculation of the RL. The methodological framework does not contain any provisions in relation to the future inclusion of additional activities. Therefore without explicit approval it would not be possible to include these additional sources and sinks in the MMR.	
Ind. 3.2 The ER Program accounts for emissions from deforestation. [Description of Sources and Sinks selected – 8.1]	**YES**
Emissions from deforestation are included in the RL and will be monitored in the MMR. Policies and actions to reduce deforestation are included in the ER-PD and the calculation of ex-ante and ERs during the MMR period also includes reduced emissions from deforestation.	
Ind. 3.3 Emissions from forest degradation are accounted for where such emissions are more than 10% of total forest-related emissions in the Accounting Area, during the Reference Period and during the Term of the ER-PA. These emissions are estimated using the best available data (including proxy activities or data). [Description of Sources and Sinks selected – 8.1]	**YES**
Forest degradation accounts for greater than 10% of forest-related emissions in the Accounting Area during the Reference Period and during the Term of the ER-PA. The emissions from degradation are estimated in the RL and ex-ante calculations. Degradation is estimated using two methods. The degradation of forests from a higher to a lower biomass forest strata, and also a proxy method that accounts for emissions due to selective logging in forests that do not degrade to a lower biomass strata. The first method estimates emissions that are the result of changes in forest classes detected using the Forest Type Maps, produced using remote sensing. An accuracy assessment and ratio correction was applied using Collect Earth which identified a relatively high level of uncertainty for changes between forest classes. The TAP questioned whether it was possible that variation due to natural causes, such as rainfall variability could be the cause of some of these changes. Laos indicated that it was possible that some change could be due to variation due to natural causes, but it was considered that the majority of change was due to human causes. The second method for accounting for biomass degradation is a proxy method and a conservativeness factor of 15% has been applied to this component of degradation. The accounting for this degradation during the MMR period has two challenges. The method relies upon data collected as part of the National Forest Inventory (NFI). This means that during the MMR period an NFI will need to be conducted to be able to consistently estimate the emissions from this source. The next NFI is identified to occur around 2019, and then another during the ERPA period. Potential issues with this method in relation to monitoring are discussed.	

C. 4 The ER Program should account for, measure and report, and include in the ER Program Reference Level, significant carbon pools and greenhouse gases, except where their exclusion would underestimate total emission reductions.

Ind. 4.1 The ER Program accounts for all Carbon Pools and greenhouse gases that are significant within the Accounting Area, both for Reference Level setting and Measurement, Monitoring and reporting (MMR). **[**Description of Carbon Pools and greenhouse gases selected – 8.2]	**YES**

For the REDD+ activities included in the RL the ER Program accounts for and reports the significant carbon pools of Above Ground Biomass (AGB) and Below Ground Biomass BGB). See Indicator 4.2 for discussion on excluded carbon pools and gases.

Ind. 4.2 Carbon Pools and greenhouse gases may be excluded if: I. Emissions associated with excluded Carbon Pools and greenhouse gases are collectively estimated to amount to less than 10% of total forest-related emissions in the Accounting Area during the Reference Period; or II. The ER Program can demonstrate that excluding such Carbon Pools and greenhouse gases would underestimate total emission reductions. [Description of Carbon Pools and greenhouse gases selected – 8.2]	**YES**

Laos has excluded emissions and removals from Deadwood (DW), Litter (L), Soils (S) and Harvested Wood Products (HWP). Non-CO_2 emissions from biomass burning have also been excluded. Laos has indicated that the exclusion of the pools and gases is a combination of their collective contribution estimated to be less than 10% of total forest-related emissions as well as their exclusion underestimating total emissions reductions.

Regarding the exclusion of pools:

- Removals in Aboveground and Belowground biomass in forests that are not subject to a change in forest cover are excluded. While it is impossible to know if this is conservative or not without explicit information on forest age classes and growth rates, it is likely that this is conservative. This assessment is on the basis that if the interventions during the MMR are successful, then the removals for these forests would likely increase on balance.
- Deadwood and Litter have been excluded on the basis that the exclusion is conservative and also estimated to amount to less than 10% of total forest related emissions. The estimation of significance was done on the basis of Deadwood and Litter emissions when there is a change in forest cover such as Reforestation, Restoration or Deforestation. This probably underestimates the emissions from Deadwood and Litter because it does not capture emissions due to degradation of Deadwood carbon stocks in forests due to the collection of fuelwood and other activities. The argument of conservativeness is on the basis that the pools are a source of emissions during the REL period, and that the interventions implemented during the ERP period are targeted at reducing the drivers and therefore the emissions from these pools. If the interventions are successful, it is reasonable to consider the exclusion of the Deadwood and Litter pools to be conservative, however, in the case of underperformance and the activities are not reduced the opposite will be true.
- Soil carbon – Laos provided a worksheet based upon data collected on the carbon stock of soils in Laos. This analysis indicates that emissions from soil carbon may be in the order of 5% of forest carbon emissions and approximately 5% of forest carbon removals. As with Deadwood and Litter, it is argued that excluding soil is conservative on the basis that the proposed activities under the ERP will reduce emissions from soil, however as noted if there is underperformance this may not be conservative.
- CH_4 and N_20 from biomass burning were excluded on the basis that slash and burn emissions contribute 5.2% of forest related carbon emissions. The estimation of these emissions is a challenge as the main source of these emissions are the result of shifting cultivation and a large amount of this activity occurs in RV where it is not possible to accurately capture the changes in land cover between RV and non-forest due to the large gaps in the activity data time series (5 years). Other sources of biomass burning emissions are difficult to accurately quantify. If the interventions are successful, it is reasonable to consider the exclusion of CH_4 and N_20 from biomass burning to be conservative, however, in the case of underperformance and the activities are not reduced the opposite will be true.

- Harvested Wood Products – Laos has not included Harvested Wood Products in the RL.

C. 5 The ER Program uses the most recent Intergovernmental Panel on Climate Change (IPCC) guidance and guidelines, as adopted or encouraged by the Conference of the Parties as a basis for estimating forest-related greenhouse gas emissions by sources and removals by sinks.

Ind. 5.1 The ER Program identifies the IPCC methods used to estimate emissions and removals for Reference Level setting and Measurement, Monitoring and reporting (MMR). [Description of method used for calculating the average annual historical emissions over the Reference Period – 8.3] [Measurement, monitoring and reporting approach for estimating emissions occurring under the ER Program within the Accounting Area– 9.1]	**NO**

The ERPD identifies that the 2006 IPCC Guidelines have been used as the basis for estimating emissions and removals for the Reference Level setting. Further the ERPD indicates that the same, or demonstrably equivalent methods will be applied for MMR. In this respect Laos is using the most recent IPCC guidelines adopted by the COP, however, Laos has misinterpreted some aspects of the guidance in developing their RL.

The ERPD indicates that the IPCC stock-difference method has been applied to calculate emissions and removals for the RL. This is incorrect because the stock-difference method can only be applied where carbon stocks in the relevant pools within each land use and land use change class are measured at two points in time. Because Laos has only a single NFI it does not have measurements at two points in time and as such the gain-loss method should be applied. Despite the indication of the ERPD, the method applied by Laos is similar, although simplified compared to the gain-loss method, however, without using the explicit IPCC equations.

For Deforestation activities this is mainly an issue for transparency because Laos combines carbon gains and carbon losses due to land use change/changes in forest strata into a single emissions estimate, whereas the 2006 Guidelines separates carbon gains and carbon losses in the gain-loss method for purposes of transparency.

For reforestation and restoration, the gain-loss method estimates annual gains in biomass due to biomass growth on the land. Laos has approximated this annual growth by calculating an emission factor for the different reforestation and restoration strata and then assuming that the growth occurs over different length time periods depending upon the change type.

For conversion of RV (regenerating vegetation) to MD (Mixed Deciduous) a period of 20 years is applied, which is the Tier 1 default length of transition period for carbon stock changes following land use. This is an improvement made by Laos compared the first draft where an assumption was made that 25% of all biomass accumulated on reforestation and restoration in each 5 year activity data period, which introduced additional inaccuracies. However, the IPCC 2006 guidance also notes that the actual length of transition period depends on natural and ecological circumstances of a particular country or region and may differ from 20 years. The 2006 Guidelines for Land converted to forest land, choice of emission factors, Tier 2, states that where possible it is “good practice to determine annual increment values…appropriate for national circumstances”. The ERPD does not detail any analysis that was done to determine the appropriate annual increment values, relying instead on the default assumption. The appropriate period to apply in Laos must also take into account Laos’ forest definition, where according to Laos’ analysis to transition from ‘Potential Forest’ to ‘Current Forest’, the ‘forest’ must already be 8 years old or greater.

As a basic comparison, applying the Tier 1 default Above-ground net biomass growth in natural forests, the period of growth for Tropical forests can be 30 to greater than 40 years. It is difficult to make an accurate assessment of whether the 20 year assumption for carbon gains that is applied by Laos is conservative or not, because there is a complicated interaction between the length of the period, the forest stratification system used by Laos, activity definitions, the RL period and the ER Program period, and what the appropriate growth period should be.

Where forest cover changes between categories from a lower biomass strata to a higher biomass strata (referred to as restoration by Laos), Laos assumes that the biomass accumulates instantaneously when the forest is identified as the

new strata. This assumption is likely to be incorrect, because the implication is that the biomass has already been accumulating when the forest was still in the strata that has a lower biomass and that the forest will not continue to accumulate biomass once it has reached the new strata. However, the outcome of this assumption is likely to be conservative, and is more conservative than the 20 year period that was applied by Laos in the first draft of the ERPD. The reason for this likely conservativeness is because where previously a period of 20 years was assumed, the areas of activities during the RL period would have continued to accumulate carbon during the ERP period, and would therefore would have been accounted for as a removal in MMR. However, because the carbon is now assumed to occur instantaneously, none of the areas of activities during the RL period will be producing accountable removals during the ERP period. The TAP notes however, that the removals from these areas of activities have been included in the estimation of ex-ante emissions, which is no longer correct and should be removed from the ex-ante total as well as excluded from future MMR calculations.

A similar issue is the period of gains for removals from reforestation. In response to the TAP comments, Laos made the decision to change the assumption of 20 years for the period of removals to 5 years. The outcome of this change is now more conservative because like the restoration example above, the removals from areas of these activities during the RL period will no longer be assumed to be producing accountable removals during the ER program period. As with restoration noted above, the TAP notes, that the removals from these areas of activities have been included in the estimation of ex-ante emissions, which is no longer correct and should be removed from the ex-ante total as well as excluded from future MMR calculations.

The estimation of emissions and removals from the RV category is a distinct challenge. As identified in the ERPD and in discussions with the Laos team, it is apparent that the RV category consists to a considerable extent of vegetation which is cyclically cleared under shifting cultivation. It was suggested that this occurs on average around every 4 to 5 years. This, in combination with the low density time-series of activity data (every 5 years) means that it is not truly possible to characterise the carbon stock balance of this land category. This is likely to contribute to systematic error that is difficult to quantify, and is discussed further under uncertainty indicator. The ERPD argues that this is not an issue because the lack of activity data to capture the cyclical clearing/regrowth symmetrically excludes emissions as well as removals. This may be the case if the area of the activities is constant over time, but this is almost certainly not the case, and the policies and interventions in the ERPD may in fact increase the frequency of the clearing cycles, by focusing on the utilisation of RV lands for agriculture to reduce degradation of more intact forests.

Because of these issues and the difficulty in quantifying the systematic error due to the fact that the activity data does not adequately capture the clearing and regrowth cycles of RV, the TAP considers that the activity data actually serves as a proxy, rather than being true Approach 2 or Approach 3 data. This issue is therefore considered to be major. In this case the emissions and removals due to deforestation, restoration, reforestation, and degradation associated with the RV category should be considered as estimated using proxy methods, and a conservativeness factor of 15% applied, rather than the 4% that is currently applied.

C. 6 Key data and methods that are sufficiently detailed to enable the reconstruction of the Reference Level, and the reported emissions and removals (e.g., data, methods and assumptions), are documented and made publicly available online. In cases where the country's or ER Program's policies exempt sources of information from being publicly disclosed or shared, the information should be made available to independent reviewers and a rationale is provided for not making these data publicly available. In these cases, reasonable efforts should be made to make summary data publicly available to enable reconstruction.

Ind. 6.1 The following methodological steps are made publicly available: I. Forest definition; II. Definition of classes of forests, (e.g., degraded forest; natural forest; plantation), if applicable; III. Choice of activity data, and pre-processing and processing methods; IV. Choice of emission factors and description of their development; V. Estimation of emissions and removals, including accounting approach; VI. Disaggregation of emissions by sources and removal by sinks; VII. Estimation of accuracy, precision, and/or confidence level, as applicable; VIII. Discussion of key uncertainties; IX. Rationale for adjusting emissions, if applicable; X. Methods and assumptions associated with adjusting emissions, if applicable. [Forest definition used in the construction of the Reference Level 9.2] [Description of method used for calculating the average annual historical emissions over the Reference Period 8.3] [Activity data & emission factors used for calculating the average annual historical emissions over the Ref. Period 8.3] [Measurement, monitoring and reporting approach for estimating emissions occurring under the ER Program within the Accounting Area 9.1]	**YES**

The information required by this criterion is contained within the ERPD, with a considerable amount of information and data also available through an NFMS web portal that can be accessed with access permission. A summary of each of the methodological steps is:

- Forest definition: discussion regarding the Forest definition is contained in indicator 12.1.
- Definition of classes of forests: Land use classes and a land use stratification system are described in section 8.2 of the ERPD. The classification system is consistent with the FREL/FRL submitted to the UNFCCC, while it should be noted that the ERPD stratifies all non-land Forest land use classes into a single stratum, and while this was initially proposed also for the FREL/FRL Laos may change this stratification in response to comments from the UNFCCC technical assessment (TA).
- Choice of activity data: A description of the activity data and the methods used to create the activity data are detailed in the ERPD as well as in Annex 11 to the ERPD titled 'Activity Data Report'.
- Choice of emission factors: A description of the emission factors and a description of their development can be found in the ERPD as well as in Annex 12 to the ERPD titled 'Emission/Removal Factor Report'.
- Estimation of emissions and removals: The ERPD provides information on how the emissions and removals were calculated for the RL, and the ERPD provides information indicating that demonstrably consistent methods will be used to estimate emissions for MMR.
- Disaggregation of emissions by sources and removals by sinks: This is partly achieved by Laos by disaggregating activities that are net sources and net sinks. The methods employed however do not allow Laos to disaggregate all sources and sinks within activities such as separating losses due to conversion from gains due to the new activity, if the IPCC gain-loss method was implemented correctly. This is discussed further under indicator 5.1
- Estimation of accuracy, precision and/or confidence level: Discussion of these aspects can be found within the appropriate sections within the ERPD.
- Discussion of key uncertainties: The ERPD contains discussion and analysis of uncertainties.
- Rationale for adjusting emissions: Not Applicable – no adjustments were made.
- Methods and assumptions associated with adjusting emissions: Not Applicable – no adjustments were made.

The ERPD is considered by the TAP to present the required information in a transparent manner. There are some exceptions (such as the Forest definition in indicator 12.1) but comments addressing these issues have been provided by the TAP separately under the relevant indicators. As such this indicator has been considered to be conforming.

Ind 6.2 For the following spatial information, maps and/or synthesized data are displayed publicly, and reasonable efforts are made to explain how these were derived from the underlying spatial and other data, and to make key data sets or analyses publicly available: I. Accounting Area II. Activity data (e.g., forest-cover change or transitions between forest categories) III. Emission factors IV. Average annual emissions over the Reference Period V. Adjusted emissions Any spatial data used to adjust emissions, if applicable. [Forest definition used in the construction of the Reference Level 9.2] [Description of method used for calculating the average annual historical emissions over the Reference Period 8.3] [Activity data &emission factors used for calculating the average annual historical emissions over the Ref. Period 8.3] [Measurement, monitoring and reporting approach for estimating emissions occurring under the ER Program within the Accounting Area 9.1]	**YES**

The information required by this criterion is contained within the ERPD, with a considerable amount of information and data also available through an NFMS web portal that can be accessed with access permission. A summary of each of the data sets is:

- Accounting area: this is outlined in the ERPD as well as in the NFMS web portal.
- Activity data: the spatial data is available in the NFMS portal and the design based sampling results are available in the ERPD as well as Annex 11 to the ERPD.
- Emission factors: the emission factors are presented in the ERPD, in Annex 12 to the ERPD and also the NFMS web portal.
- Average annual emissions over the Reference Period: these are presented in the ERPD.
- Adjusted emissions: this is Not Applicable – Laos did not apply any adjustments.

The NFMS web portal was demonstrated to the TAP during the country visit and Laos is commended on the development of the portal and the transparency it provides through the information and data that is contained within the portal. The TAP is of the understanding that the web portal will be made publicly available once the portal is finalized, but that the portal can currently be accessed with login credentials provided by DoF.

There are some remaining issues in relation to the NFMS and availability of the data. In particular it is not clear who will be able to gain access permission to view the data and system. It is also not clear if monitoring data will be included in the portal (page 146) and there is no clear indication that it will be included.

Clarifying this is essential for transparency and accountability for the ER Program. If key monitoring data is not made publicly accessible it should be made clear and justified and evaluated against standards of transparency and safeguard standards.

C.7 Sources of uncertainty are systematically identified and assessed in Reference Level setting and Measurement, Monitoring and reporting

Ind 7.1 All assumptions and sources of uncertainty associated with activity data, emission factors and calculation methods that contribute to the uncertainty of the estimates of emissions and removals are identified. [Activity data and emission factors used for calculating the average annual historical emissions over the Reference Period 8.3] [Measurement, monitoring and reporting approach for estimating emissions occurring under the ER Program within the Accounting Area 9.1] [Identification and assessment of sources of uncertainty 13.1]	**YES**

Laos has identified sources of uncertainty consistent with the 2006 IPCC Guidelines for the identification of random errors.

The ERPD discusses the potential systematic error that could occur as the result of applying emission factors developed using the NFI and applying them in the restricted area of the program area. The analysis conducted by Laos and contained with the Annex 12 Emission/Removal Factor Report' indicates that this source of uncertainty is likely to be minor. This could be partly explained by the fact that the NFI was modified so that the sampling intensity within the program area was increased, therefore meaning that the 'national' emission factors are in fact likely to be biased towards the program area.

The ERPD does not discuss a number of potential systematic uncertainties which are common to simplified approaches to emissions estimation such as applied in Tiers 1 and 2 and Approach 2. In particular these are uncertainties due to:

- unknown age class and growth rates of forests, influencing both removals and emissions estimates.
- the simplification of complex land use change dynamics into basic emission factors and activities, rather than using methods to explicitly estimate carbon pools and emissions and removals on land areas based on their true dynamics.
- long periods between land cover data, meaning that the activity data is widely spaced and will not be able to detect short term cyclical changes in land cover that will impact on emissions and removals estimates. In particular the short cyclical nature of RV, where according to the ERPD land cover is likely to change from RV to Cropland and back to RV within a period of 1 to 2 years. As such the 5 yearly activity data will not be able to accurately identify the amount of cyclical RV clearing leading to a high level of uncertainty. As noted under indicator 5.1 the TAP considers that the activity data for RV should be considered to be proxy data, due to its inability to track the true land cover change dynamics and trends.
- Increasing the frequency of collection of activity data during the MMR will lead to some systematic error because the increased frequency will allow for the detection of a greater proportion of the true land use/land cover change that is occurring. On balance this is likely to be conservative, as a greater amount of deforestation and degradation activity is likely to be identified during MMR.
- Climatic variability has the potential to influence the estimation of emission factors as well as the potential to influence land cover change which may incorrectly be interpreted as due to REDD+ activities. Laos indicated that the systematic error due to climate variability effects on the detection of land cover change were managed through processes applied to develop the activity.

The TAP believes that Laos have identified and reduced uncertainties as far as practical in the ERPD, not-withstanding the issues that have been raised under other indicators (eg indicator 5.1).

Ind 7.2 The sources of uncertainty identified in Indicator 7.1: are assessed for their relative contribution to the overall uncertainty of the emissions and removals. [Identification and assessment of sources of uncertainty 13.3]	**YES**

Laos has applied the IPCC 2006 error propagation method to make a quantitative assessment of the sources of random error identified under Indicator 7.1.

As noted under Indicator 7.1 there are additional sources of systematic error identified, but it would be difficult to provide a qualitative assessment of the impact of these systematic errors on the emissions and removals estimates. It would only be feasible to address these sources of uncertainty if higher Tiers and Approaches were implemented by countries and is therefore not considered to be a non-conformity.

C 8 The ER Program, to the extent feasible, follows a process of managing and reducing uncertainty of activity data and emission factors used in Reference Level setting and Measurement, Monitoring and reporting.

Ind 8.1 Systematic errors are minimized through the implementation of a consistent and comprehensive set of standard operating procedures, including a set of quality assessment and quality control processes that work within the local circumstances of the ER Program. [Activity data and emission factors used for calculating the average annual historical emissions over the Reference Period, 13.2] [Measurement, monitoring and reporting approach for estimating emissions occurring under the ER Program within the Accounting Area]	**YES**
Laos has some standard operating procedures in place, such as for the undertaking of the NFI, and they are in the process of developing SOPs for the development of the Activity Data and the emissions estimation methods. While not all SOPs are currently in place, the ERPD and it's Annexes demonstrate that quality control processes were in place for the development of the activity data and emissions factors in the ERPD. The minimization of the systematic errors listed by the TAP under Indicator 7.1 could only be done by implementing more advanced methods, which are not required under the Methodological Framework and is therefore not considered to be a non-conformity.	
Ind 8.2 Random errors and other uncertainties are minimized to the extent practical based on the assessment of their relative contribution to the overall uncertainty of the emissions and removals. [Activity data and emission factors used for calculating the average annual historical emissions over the Reference Period 10, 13] [Measurement, monitoring and reporting approach for estimating emissions occurring under the ER Program within the Accounting Area 9.1] [Identification and assessment of sources of uncertainty 13.1]	**YES**
Laos took reasonable steps to minimize random errors and other uncertainties in the activity data and emission factors used for calculating the RL. It is not possible to fully assess the capacity of the MMR to minimize all random errors and uncertainties until the system is operational. However, the ERPD documents the proposed ER Program methods and data and sets out a reasonable set of processes to manage errors and uncertainties. Laos also identifies a number of opportunities to improve the uncertainty of AD and EF, which is commendable but in minimizing random errors care must be taken not to introduce potential inconsistencies in the AD and EF between the RL and MMR.	
C 9 Uncertainty of activity data and emission factors used in Reference Level setting and Measurement, Monitoring and reporting is quantified in a consistent way, so that the estimation of emissions, removals and Emission Reductions is comparable among ER Programs	
Ind 9.1 Uncertainty associated with activity data and emission factors is quantified using accepted international standards, for example by providing accuracy, confidence interval, distribution of error, and propagation of error. Where errors in data and methods are considered large as defined in IPCC Guidelines, Monte Carlo methods (numerical simulations) should be used to estimate uncertainty [Activity data and emission factors used for calculating the average annual historical emissions over the Reference Period 13.1] [Measurement, monitoring and reporting approach for estimating emissions occurring under the ER Program within the Accounting Area 9.1]	**YES**
The uncertainty associated with activity data and emissions factors has been quantified in the ERPD for the RL using accepted international standards, in particular IPCC 2006 Guidelines methods for error propagation. The proposed methods and data for the MMR system should also be capable of quantifying uncertainty in a consistent way.	

Ind 9.2 Uncertainty of the estimate of Emission Reductions is quantified using Monte Carlo methods. Underlying sources of error in data and methods for integrated measurements of deforestation, forest degradation and enhancements (e.g., as in a national forest inventory) are combined into a single combined uncertainty estimate and are reported at the two-tailed 90% confidence level [Quantification of uncertainty in Reference Level setting 13.2]	**N.A**

Because only basic EF X AD methods were applied by Laos, Monte Carlo methods are not appropriate for the quantification of uncertainty.

Ind 9.3 Uncertainty of Emissions Reductions associated with deforestation, forest degradation and enhancements are reported separately if measured through separate (i.e., non-integrated) approaches and when degradation is estimated using proxy data. [Quantification of uncertainty in Reference Level setting 13.2]	**YES**

Yes the uncertainty of emissions associated with deforestation, forest degradation and enhancements are reported separately. The uncertainty for degradation emissions estimated using a proxy method was treated separately to the other approaches. Rather than explicitly estimate uncertainty, the maximum15% conservativeness factor was applied by Laos.

C 10 The development of the Reference Level is informed by the development of a Forest Reference Emission Level or Forest Reference Level for the UNFCCC

Ind 10.1 The Reference Level is expressed in tons of carbon dioxide equivalent per year [Estimated Reference Level 9.7]	**YES**

Yes, the RL is expressed in tons of carbon dioxide equivalent per year. The Reference Level (Table 8.5 of the ERPD) is shown here for convenience:

Table 8.5.a: ER Program Reference level over the Reference Period (tCO_{2e}/yr)

	Average annual historical emissions by sources and sinks					
Year	**Emissions: Deforestation**	**Emissions: Forest Degradation**	**Removals: Reforestation**	**Removals: Restoration**	**Reference level (tCO_{2e}/yr)**	
					Emissions	**Removals**
2005	3,785,703	6,780,619	-1,418,501	-1,295,140	10,566,322	-2,713,641
2006	3,785,703	6,780,619	-1,418,501	-1,295,140-	10,566,322	-2,713,641
2007	3,785,703	6,780,619	-1,418,501	-1,295,140	10,566,322	-2,713,641
2008	3,785,703	6,780,619	-1,418,501	-1,295,140	10,566,322	-2,713,641
2009	3,785,703	6,780,619	-1,418,501	-1,295,140	10,566,322	-2,713,641
2010	3,785,703	6,780,619	-1,418,501	-1,295,140	10,566,322	-2,713,641
2011	3,785,703	6,780,619	-1,418,501	-1,295,140	10,566,322	-2,713,641
2012	3,785,703	6,780,619	-1,418,501	-1,295,140	10,566,322	-2,713,641
2013	3,785,703	6,780,619	-1,418,501	-1,295,140	10,566,322	-2,713,641
2014	3,785,703	6,780,619	-1,418,501	-1,295,140	10,566,322	-2,713,641
2015	3,785,703	6,780,619	-1,418,501	-1,295,140	10,566,322	-2,713,641

Ind 10.2 The ER Program explains how the development of the Reference Level can inform or is informed by the development of a national Forest Reference Emission Level or Forest Reference Level, and explains the relationship between the Reference Level and any intended submission of a Forest Reference Emission Level or Forest Reference Level to the UNFCCC [Relation between the Reference Level, the development of a FREL/FRL for the UNFCCC and the country's existing or emerging greenhouse gas inventory 9.8]	**YES**

Laos concurrently developed the submission of their ERPD and their FREL/FRL to the UNFCCC (January 2018). The FREL/FRL is currently undergoing the UNFCCC TA process. There was effort made to harmonise the development of the two submissions and many of the elements of both submissions were consistent. There are however differences in the data and methodologies applied which means that the two submissions are not strictly consistent. These differences are detailed in the ERPD, however, it is not possible to fully document the differences because Laos is considering making adjustments to the FREL/FRL for an updated submission in response to the TA process, it is not clear when this process will be completed. The current main difference is that the national FREL/FRL uses the national forest type maps to develop Approach 2 activity data, while the RL use the forest type maps as a stratification for design based sampling to develop Approach 2 data. This means that there are differences between the FREL and RL in the areas of activities within the program area. The difference being equal to the ratio correction applied in the RL design based sampling method.

Ind 10.3 The ER Program explains what steps are intended in order for the Reference Level to achieve consistency with the country's existing or emerging greenhouse gas inventory [Relation between the Reference Level, the development of a FREL/FRL for the UNFCCC and the country's existing or emerging greenhouse gas inventory 9.6]	**YES**

Laos details steps and measures that are in place or will be in place to achieve consistency between the National Communication and BUR due for submission in 2019. The responsibility for developing the NGGI sits within the Department of Climate Change and is therefore a separate entity to the FIPD in DOF who have developed the RL and the FREL/FRL. To mitigate the potential for inconsistency there is crossover between staff through technical working groups and taskforces responsible for the NGGI and the RL and FREL/FRL. Laos will need to work hard to maintain consistency through these measures, but they are considered by the TAP to be reasonable measures for managing consistency.

C 11 A Reference Period is defined

Ind 11.1 The end-date for the Reference Period is the most recent date prior to two years before the TAP starts the independent assessment of the draft ER Program Document and for which forest-cover data is available to enable IPCC Approach 3. An alternative end-date could be allowed only with convincing justification, e.g., to maintain consistency of dates with a Forest Reference Emission Level or Forest Reference Level, other relevant REDD+ programs, national communications, national ER program or climate change strategy [Reference Period 9.1]	**YES**

The end date for the Reference Period is identified as 2015. This is calculated from Remote Sensing imagery captured between November 2014 and February 2015. This means that the latest activity data for the Reference Period is almost three years earlier than when the TAP started the independent assessment at the end of February 2018. While this date is greater than two years prior to the initiation of the TAP assessment, this earlier date has been used by Laos because of the availability of forest-cover data in 2015.

Ind 11.2 The start-date for the Reference Period is about 10 years before the end-date. An alternative start-date could be allowed only with convincing justification as in Indicator 11.1, and is not more than 15 years before the end-date. [Reference Period 9.1]	**YES**

The ER-PD proposes a start date of 2005 based on RS captured between October 2004 and April 2006, which is approximately 10 years before the end-date of 2015 based on RS captured between November 2014 and February 2015.

C 12 The forest definition used for the ER Program follows available guidance from UNFCCC decision 12/CP.17

Ind 12.1 The definition of forest used in the construction of the Reference Level is specified. If there is a difference between the definition of forest used in the national greenhouse gas inventory or in reporting to other international organizations (including an Forest Reference Emission Level or Forest Reference Level to the UNFCCC) and the definition used in the construction of the Reference Level,	**NO**

then the ER Program explains how and why the forest definition used in the Reference Level was chosen. [Forest definition used in the construction of the Reference Level 9.2]	

Laos specified the forest definition used in the ERPD. The definition is consistent with the definition provided by Laos in its recent submission of its FREL to the UNFCCC. The ERPD states that the same definition will be used for future National Greenhouse Gas Inventories (submitted through National Communications and Biennial Update Reports). However, in the opinion of the TAP there are some issues with the implementation of the forest definition, meaning that this Indicator could not be considered a 'Yes'.

The definition is unusual in the sense that it includes a minimum DBH of >10cm as one of the threshold criteria to identifying forests. This is alongside more common threshold criteria which include a minimum crown density of 20% and a minimum area of 0.5ha.

To the knowledge of the TAP, no other country has included a minimum DBH criteria as part of its forest threshold definition, making it difficult to compare with other country definitions. The stated reason for incorporating DBH instead of a more traditional height criteria is to "…to allow for better results in the identification of land/forest cover classes." Because the Laos forest definition also includes "Potential forests", areas of land that have regenerating vegetation are also included as forests, even though they may at the time of observation not meet all of the threshold definitions of forests. In Laos this makes up a large proportion of the program area (in the order of 37% of the program area) and it appears that Laos has attempted to use the DBH criteria as a method for stratifying forests into 'Potential Forests' and 'Current Forests' rather than being used to identify 'forests' per-se.

In the opinion of the TAP, the issues with the forest definition that need to be clarified include:

- The application of the DBH threshold has some challenges, some of which are identified by Laos in the ERPD:
    - The ERPD does not clearly state how the DBH threshold of 10cm is applied. In the RV survey method, it states that the DBH threshold was applied by identifying the trees for each survey site that had a DBH greater than 10cm and then determining the canopy cover percentage of these trees. The site was only considered forest if the canopy cover percentage of trees with a DBH greater than 10cm was greater than 20%. On the other-hand the ERPD indicates that a minimum stand DBH of 10cm was applied, while the Annex 11 Activity Data Report indicates that a minimum average stand DBH of 10cm was applied. It is therefore not clear to the TAP how the minimum DBH threshold was applied.
    - While it may be difficult to identify height from remote sensing, forest type classifications, and forest cover/height relationships can be determined. This means that it is not strictly necessary to determine height from the remote sensing because reasonable assumptions can be made about the expectation of the forest meeting the height threshold. For DBH however, Laos has attempted to explicitly identify a forest class of 'Potential Forest' using remote sensing and design based sampling methods, and then supplementing this with an additional forest cover change proxy derived from Hansen et al (2014) forest cover data. The outcome of doing this is that there is a high uncertainty, and misclassification of the 'Potential Forest' class. For example, the RV survey report suggests that 'Potential Forest' may achieve a canopy density greater than 20% within 1 to 2 years of regeneration, but according to the RV survey it may take around 8 years to reach the DBH threshold (as applied in the RV Survey method). Added in to this challenge is that the vegetation which makes up much of the 'Potential Forest' class is subject to cyclical clearing meaning that it is not possible for the 5 yearly activity data to track the change in vegetation cover, this has the potential to introduce systematic error that cannot be quantified.
    - It is likely that the forest type map includes vegetation areas that meet all of the structural definitions of forests (i.e. 20% canopy density and 0.5ha) but does not meet the >10cm DBH requirement. While conversely, when calculating emissions factors, any plots that did not have a minimum DBH greater the 10cm were excluded from the analysis which may mean that the EFs developed for forests do not align directly with the mapped forests.
- The forest definition does not clearly state what constitutes 'Potential Forests'. For example it does not explicitly state how these areas are identified when the land cover transitions from croplands to Regenerating Vegetation.
- This issue of Forest Definition becomes conflated with the IPCC Approach and emissions estimation method applied. If an Approach 3 tracking of land was applied using a dense time-series, it would be possible to track

the age of the forests and make the quantification of the carbon stocks more accurate using the gain-loss method. Therefore Laos would have no reason for implementing a structural threshold such as DBH, as it would be possible to classify the land based upon the observed cover change and accurately track the carbon stocks and emissions and removals based on the true dynamics. Because a sparse time-series has been used, together with Approach 2, this is not currently possible.

The TAP is not able to confidently predict the impact that these issues with the Forest definition would have on uncertainty and potential bias in emissions and removals estimates. The outcome of these issues with the forest definition potentially will have only a small bearing on the emissions and removals estimates. However, because the issue relates to clear articulation of the forest definition the TAP considers this to be a major issue until the issues are adequately clarified in the ERPD.

C 13 The Reference Level does not exceed the average annual historical emissions over the Reference Period. For a limited set of ER Programs, the Reference Level may be adjusted upward by a limited amount above average annual historical emissions. For any ER Program, the Reference Level may be adjusted downward.

Ind 13.1 The Reference Level does not exceed the average annual historical emissions over the Reference Period, unless the ER Program meets the eligibility requirements in Indicator 13.2. If the available data from the National Forest Monitoring System used in the construction of the Reference Level shows a clear downward trend, this should be taken into account in the construction of the Reference Level [Average annual historical emissions over the Reference Period 9.6, 13.2]	**YES**

The proposed reference level has been calculated separately for average emission and average removals and does not exceed the average annual historical emissions over the Reference Period. The data does not indicate a downward trend and therefore there was no need to take such a trend into account in the construction of the Reference Level.

Ind 13.2 The Reference Level may be adjusted upward above average annual historical emissions if the ER Program can demonstrate to the satisfaction of the Carbon Fund that the following eligibility requirements are met: (i)Long-term historical deforestation has been minimal across the entirety of the country, and the country has high forest cover (country or jurisdictional area); (ii)National circumstances have changed such that rates of deforestation and forest degradation during the historical Reference Period likely underestimate future rates of deforestation and forest degradation during the Term of the ERPA. [Explanation and justification of proposed upward or downward adjustment to the average annual historical emissions over the Reference Period, Quantification of the proposed upward or downward adjustment to the average annual historical emissions over the Reference Period 9.6].	**N.A**

An adjustment was not applied by Laos.

Ind 13.3 For countries meeting the eligibility requirements in Indicator 13.2, a Reference Level could be adjusted above the average historical emission rate over the Reference Period. Such an adjustment is credibly justified on the basis of expected emissions that would result from documented changes in ER Program circumstances, evident before the end-date of the Reference Period, but the effects of which were not fully reflected in the average annual historical emissions during the Reference Period. Proposed adjustments may be rejected for reasons including, but not limited to: i. The basis for adjustments is not documented; or ii. Adjustments are not quantifiable.	**N.A**

[Explanation and justification of proposed upward or downward adjustment to the average annual historical emissions over the Reference Period, Quantification of the proposed upward or downward adjustment to the average annual historical emissions over the Reference Period 9.6]	
An adjustment was not applied by Laos.	
Ind 13.4 An adjustment of the Reference Level above the average annual historical emissions during the Reference Period may not exceed 0.1%/year of Carbon Stocks [Explanation and justification of proposed upward or downward adjustment to the average annual historical emissions over the Reference Period, Quantification of the proposed upward or downward adjustment to the average annual historical emissions over the Reference Period 9.6]	**N.A**
An adjustment was not applied by Laos.	
C 14 Robust Forest Monitoring Systems provide data and information that are transparent, consistent over time, and are suitable for measuring, reporting and verifying emissions by sources and removals by sinks, as determined by following Criterion 3 within the proposed Accounting Area	
Ind 14.1 The ER Program monitors emissions by sources and removals by sinks included in the ER Program's scope (Indicator 3.1) using the same methods or demonstrably equivalent methods to those used to set the Reference Level. [Measurement, monitoring and reporting approach for estimating emissions occurring under the ER Program within the Accounting Area 10.1]	**YES**
While this Indicator can only be truly assessed at the time of MMR, Laos has identified that consistent methods or demonstrably consistent methods will be used to monitor emissions for the ER Program. At the time of MMR, if demonstrably equivalent methods are applied as opposed to the same methods, the challenge for Laos will be in demonstrating consistency.	
Ind 14.2 Activity data are determined periodically, at least twice during the Term of the ERPA, and allow for ERs to be estimated from the beginning of the Term of the ERPA. Deforestation is determined using IPCC Approach 3. Other sinks and sources such as degradation may be determined using indirect methods such as survey data, proxies derived from landscape ecology, or statistical data on timber harvesting and regrowth if no direct methods are available [Measurement, monitoring and reporting approach for estimating emissions occurring under the ER Program within the Accounting Area 9.1]	**NO**
Laos has plans to develop activity data at two points during the ERPA, in late 2021 using data from 20201/2021 and again in late 2024 using data from 2023/2024. This will allow emissions to be estimated from the beginning of the ERPA with the first reporting in 2021. The activity data collected for 2023/2024 is likely to mean that a complete observation of data for the full ERPA period will not be available because the satellite data will be collected only through to the 2024 dry season which ends around March. Therefore there will not be any activity data for the period from March to December 2024. While Laos has developed Forest Type Maps that could be used to implement Approach 3, the actual method used by Laos is Approach 2, due to the creation of simple two axes (two dates) land area matrices. This means that the land use change in the emissions estimation method is not being tracked through time as characterized by Approach 3. Sample based methods can be Approach 3 if they are geo-referenced and track land use through time, however the sample based approach applied by Laos does not track land use through time. This is a common issue where countries apply the	

standard AD X EF estimation methods, because the AD is typically generated as an Approach 2 land area matrix rather than tracking land use change in each unique spatial area through time.

In the case of Laos, the ERPD has attempted to partially address this issue by additionally tracking where reversals of reforestation and restoration activities have occurred. Because Laos has partially addressed this issue by excluding reversals (although further documentation is needed as noted under indicator 21.1), the most likely outcome of not applying Approach 3 under the Methodological Framework will be that estimates of ERs will be conservative. This is because deforestation emissions will tend to be overestimated in the case of Laos, because the method will apply the strata specific EF, rather than using the accumulated biomass which may be lower. The outcome being that compared to Approach 3, emissions will tend to be overestimated for deforestation during the ERPA program period.

Laos has applied a proxy method to estimate degradation due to selective logging. This method relies upon stump data collected through the NFI. A fourth NFI is planned to occur during the ER Program period providing data for this method only once during the ERPA, rather than twice as required under this indicator. There is a possibility that Laos will not have the resources to conduct the 4th NFI, in which case there may be no data for this method available during the ERPA, although it is noted that this is a risk with any data collection program.
One possible solution to this has been proposed in the ERPD, which would involve developing a new degradation method based upon remote sensing detection of degradation. If it was possible to implement this solution, the issue of consistency with the RL would be paramount and Laos indicates in the ERPD that they may approach the CF to revise the RL if this new method is implemented. Because of the potential compounding issues for the proxy degradation method, this issue is considered to be major.

Ind 14.3 Emission factors or the methods to determine them are the same for Reference Level setting and for Monitoring, or are demonstrably equivalent. IPCC Tier 2 or higher methods are used to establish emission factors, and the uncertainty for each emission factor is documented. IPCC Tier 1 methods may be considered in exceptional cases [Measurement, monitoring and reporting approach for estimating emissions occurring under the ER Program within the Accounting Area 10.1]	**YES**

Laos has developed Tier 2 carbon stock factors for all of their forest strata except for plantations. The Laos 2015 NFI was used to develop the carbon stock factors for the forest strata that are grouped under the 'Current Forest' classification and used a survey method to estimate the carbon stock factors for the Regenerating Vegetation strata that makes up the 'Potential Forest' classification.

The carbon stock factors were then used to estimate emission factors for the different REDD+ activities identified by Laos, by calculating the carbon stock difference between the initial and final land use class or forest strata. Uncertainty estimates were calculated for the emission factors and included in the uncertainty assessment.

The RV survey method was conducted as a survey and did not appear to be implemented using a statistical sampling method. Rather a combination of historical land cover data and expert judgement was used to locate the survey sites. As such the quantified uncertainty for emission factors involving the RV class will represent the random error of the survey plots. However, it is possible that there is systematic errors due to the survey site selection, which has not been quantified.

Laos used Tier 1 emission factors for the non-forest land use classes, as there was not better information available at the time of the development of the ERPD.

The ERPD identifies opportunities for conducting further NFIs during 2019 and then again during the term of the ERP, and using emission factors developed from these NFIs for MMR. The ERPD also raises the possibility of enhancing the sampling intensity in the program area to improve the accuracy of the updated emissions factors. While Laos should be encouraged to continuously improve their MRV capacity, changes such as this have the potential to lead to inconsistency in the Reference Level the MMR. Such changes must be carefully considered in terms of addressing consistency.

C 15 ER Programs apply technical specifications of the National Forest Monitoring System where possible

Ind 15.1 ER Programs articulate how the Forest Monitoring System fits into the existing or emerging National Forest Monitoring System, and provides a rationale for alternative technical design where applicable. [Relation and consistency with the National Forest Monitoring System 10.3]	**YES**
Laos is in the process of designing the National Forest Monitoring System. Laos is aiming to use the NFMS as the basis for MRV and MMR as well as monitoring of the drivers and interventions. Laos is focusing on trying to maintain consistency between the MRV and MMR methods and data, with the aiming of managing these data and methods through the NFMS. Laos is commended for working towards having a single system for MRV and MMR to promote consistency, and as discussed under other indicators, working towards full consistency in data and methods is a sensible goal. This may be challenging in the future with UNFCCC encouraging continuous improvement of the data and methods in the NFMS and revising the FREL/FRL over time, while the FCPF has a stronger focus on maintaining consistency between the RL and MMR methods and data.	
C 16 Community participation in Monitoring and reporting is encouraged and used where appropriate	
Ind 16.1 The ER Program demonstrates that it has explored opportunities for community participation in monitoring and reporting, e.g., of ER Program Measures, activity data, emission factors, safeguards and Non-Carbon Benefits, and encourages such community participation where appropriate [Measurement, monitoring and reporting approach for estimating emissions occurring under the ER Program within the Accounting Area 10.1, 10.3]	**YES**
The ERPD provides a basic exploration of opportunities for community participation in monitoring and reporting. The main avenue identified is community monitoring of drivers and interventions such as shifting cultivation and monitoring of forest enhancement activities. The development of the Community Engagement Framework (CEF) in the future may also contain further exploration of potential community participation in the monitoring of Safeguards. Laos is encouraged to further explore how community participation could be included in monitoring and reporting.	
C 17 The ER Program is designed and implemented to prevent and minimize potential displacement	
Ind 17.1 Deforestation and degradation drivers that may be impacted by the proposed ER Program measures are identified, and their associated risk for displacement is assessed, as well as possible risk mitigation strategies. This assessment categorizes Displacement risks as high, medium or low. [Identification of risk of Displacement 11.1]	**YES**
The ERPD identifies deforestation and degradation drivers that may have potential for displacement. These have been categorized in terms of their risk (high, medium or low). The TAP believes that the list of drivers is complete and accurate and the assessed risk levels are reasonable.	
Ind 17.2 The ER Program has in place an effective strategy to mitigate and/or minimize, to the extent possible, potential Displacement, prioritizing key sources of Displacement risk. [ER Program design features to prevent and minimize potential Displacement 11.2]	**YES**
The risk levels are considered to be reasonable and the ERPD details mechanisms that are in place (eg Ministerial orders), will be in place (FLEGT VPA and bilateral collaboration), and are included within the program design (eg the design of interventions) to minimize potential displacement to the extent possible. The effectiveness of the proposed strategies were discussed at length with Laos bilateral partners, particularly in relation to the FLEGT process and the effectiveness of the Ministerial orders. The TAP was satisfied that the strategies identified in the ERPD will be effective for minimizing displacement outside of the program area as well as outside Laos' borders.	

Ind 17.3 By the time of verification, the ER Program has implemented its strategy to mitigate and/or minimize potential Displacement	**N.A**
Only applicable at the time of verification.	
Ind 17.4 ER Programs are also invited to report on changes in major drivers in the ER Accounting Area, any Displacement risks associated with those drivers, and any lessons from the ER Programs' efforts to mitigate potential Displacement	**N.A**
Only applicable at the time of verification.	
C 18 The ER Program is designed and implemented to prevent and minimize the risk of reversals and address the long-term sustainability of ERs	
Ind 18.1 The ER Program has undertaken an assessment of the anthropogenic and natural risk of reversals that might affect ERs during the Term of the ERPA and has assessed, as feasible, the potential risk of reversals after the end of the Term of the ERPA [Identification of risk of Reversals 12.1]	**YES**
The TAP believes that the ER Program has undertaken an assessment of the risk of reversals during the Term of the ERPA. The overall default risk has been assessed as 23%. The ERPD does not separate the discussion of risk of reversals during the term of the ERPA and after the end of the term of the ERPA. The TAP does not consider this to be a non-conformity because the relevant information is contained in the ERPD, however, the clarity of the ERPD would benefit from this separation.	
Ind 18.2 The ER Program demonstrates how effective ER Program design and implementation will mitigate significant risks of Reversals identified in the assessment to the extent possible, and will address the sustainability of ERs, both during the Term of the ERPA, and beyond the Term of the ERPA [ER Program design features to prevent and mitigate Reversals 12.2]	**YES**
The ERPD outlines program design elements as well as existing and proposed mechanisms to mitigate reversals. These are considered plausible, but they will in effect rely upon the successful implementation of the ER Program. The main mechanism for Laos to address reversals beyond the life of the ER Program is to roll the ER Program into the National REDD+ Program beyond the end of the program period. This would mean that the policies and measures of the ER Program would be continued beyond the life of the ER Program, mitigating risks of reversals. If there is no follow on REDD+ program beyond the life of the ER Program, then the risk of reversals would be considerably higher than assessed by Laos.	
C 19 The ER Program accounts for Reversals from ERs that have been transferred to the Carbon Fund during the Term of the ERPA	
Ind 19.1 During the Term of the ERPA, the ER Program accounts for Reversals from ERs using one of the following options: ▪ Option 1: The ER Program has in place a Reversal management mechanism (e.g., buffer reserve or insurance) that is substantially equivalent to the Reversal risk mitigation assurance provided by the 'ER Program CF Buffer' approach referred to in option 2 below, appropriate for the ER	**YES**

Program's assessed level of risk, which in the event of a Reversal during the Term of the ERPA will be used to fully cover such Reversals. ▪ Option 2: ERs from the ER Program are deposited in an ER Program-specific buffer, managed by the Carbon Fund (ER Program CF Buffer), and based on a Reversal risk assessment. ERs deposited in the ER Program CF Buffer (Buffer ERs) will not be transferred to the Carbon Fund. In the event that a Reversal event occurs during the Term of the ERPA, an amount of Buffer ERs will be cancelled from the ER Pro [Reversal management mechanism, Selection of Reversal management mechanism 12.3]	
Laos has selected Option 2, with an estimated 23% of ERs to be deposited into the Carbon Fund ER Program Buffer.	
C 20 The ER Program, building on its arrangements put in place during the readiness phase and during the Term of the ERPA, will have in place a robust Reversal management mechanism to address the risk of Reversals after the Term of the ERPA	
Ind 20.1 At the latest 1 year before the end of the Term of the ERPA, the ER Program will have in place a robust Reversal management mechanism or another specified approach that addresses the risk of Reversals beyond the Term of the ERPA	**N.A**
Only applicable before the end of the ERPA term.	
Ind 20.2 If the ER Program has selected option 2 under Indicator 19.1, all or a portion of the Buffer ERs of the ER Program, subject to a Carbon Fund review of the Methodological Framework and a decision of the parties to the ERPA in 2019, will be transferred to the mechanism identified in Indicator 20.1 at the end of the Term of the ERPA. If the ER Program fails to meet the requirements of Indicator 20.1, all remaining Buffer ERs in the ER Program CF Buffer will be cancelled	**N.A**
Only applicable before the end of the ERPA term.	
C 21 The ER Program monitors and reports major emissions that could lead to reversals of ERs transferred to the Carbon Fund during the Term of the ERPA	
Ind 21.1 The ER Program Monitoring Plan and Monitoring system are technically capable of identifying Reversals [Monitoring and reporting of major emissions that could lead to Reversals of ERs 12.4]	**NO**
The initial draft ERPD was not able to demonstrate that the monitoring system would be capable of capturing emissions from reversals of reforestation and restoration activities. The reason for this was that while Laos has a wall-to-wall time series of land cover data, the application of design based sampling to create simplified Approach 2 land area matrices from the spatio-temporal data meant that it was not possible to track the land cover change through time. I.e., the system did not implement Approach 3 therefore it was not possible to track if multiple activities had occurred on the same area of land. The outcome was that reversals of sinks from reforestation and restoration activities that were subsequently deforested were not being tracked. In essence the methods continued to accumulate sinks from reforestation and restoration activities even though they had been subsequently deforested. In response to TAP comments during the country review, Laos estimated emissions from reversals of reforestation and restoration that had already occurred during the RL period. This basic methodology was not adequately documented in the ERPD. The approach applied by Laos was discussed with the TAP during the country visit and it was considered to be appropriate. However, because of the method is not adequately documented, it is considered to be a minor issue by the	

TAP. The method will need to be consolidated, documented and incorporated into the MMR methods to ensure that such reversals are monitored and reported during the program period.

Ind 21.2. The ER Program reports to the Carbon Fund within 90 calendar days after becoming aware of any emissions in the Accounting Area or changes in ER Program circumstances that, in the reasonable opinion of the ER Program, could lead to Reversals of previously transferred ERs by the next Monitoring event. The ER Program explains how the potential Reversals would be addressed by additional ER Program Measures or by the Reversal management mechanism described in Indicator 19.1.	**N.A**

Only applicable at the time a reversal occurs and at the time of verification.

C 22 Net ERs are calculated by the following steps:

1. Subtract the reported and verified emissions and removals from the Reference Level

2. Set aside a number of ERs from the result of step 1, above, in a buffer reserve. This amount reflects the level of uncertainty associated with the estimation of ERs during the Term of the ERPA. The amount set aside in the buffer reserve is determined using the conservativeness factors for deforestation listed in the MF. For estimated emissions reductions associated with degradation, the same conservativeness factors may be applied if spatially explicit activity data (IPCC Approach 3) and high-quality emission factors (IPCC Tier 2) are used. Otherwise, for proxy-based approaches, apply a general conservativeness factor of 15% for forest degradation Emission Reductions.

3. Set aside a number of ERs in the ER Program CF Buffer or other reversal management mechanism created or used by an ER Program to address Reversals

[Ex-ante estimation of the Emission Reductions 14.3]	**NO**

The updated calculation of the ex-ante emissions reductions for the Advanced ERPD has introduced some errors. The estimation of ex-ante emission reductions has errors in the calculation steps and some inconsistencies between the quantities in the text and in table 13.1 and there are errors in the calculations in table 13.1. As noted under indicator 5.1 the ex-ante calculation also includes removals from reforestation and restoration activities that no longer continue to contribute removals during the ER Program period. This is due to the updated period of removals for reforestation and restoration activities applied by Laos. This issue is considered to be minor, but these errors will need to be corrected. Beyond these errors, the calculation follows the steps outlined in this indicator.

C 23 To prevent double-counting, ERs generated under the ER Program shall not be counted or compensated for more than once. Any reported and verified ERs generated under the ER Program and sold and/or transferred to the Carbon Fund shall not be sold, offered or otherwise used or reported a second time by the ER Program Entity. Any reported and verified ERs generated under the ER Program that have been sold and/or transferred, offered or otherwise used or reported once by the ER Program Entity shall not be sold and transferred to the Carbon Fund

(i) [Participation under other GHG initiatives 14.1]	**NO**

The ERPD demonstrates that some high-level thinking about double-counting and double compensation of ERs generated under the ER Program and other GHG initiatives has taken place. However, there does not appear to be any transfer or commitments of ERs within the program area at present, and Laos indicates in the ERPD that it is open to considering other initiatives in the future.

The ERPD indicates that the approach used by Laos to manage the issue of double-counting will involve “requiring, as far as possible, the application of a FREL/FRL and MRV/MMR that is consistent with that of the ER Program” as well as

nesting "…any REDD+ results will be nested in the national REDD+ performance…" and "…an option to be explored may be to spatially cut-out nested project boundaries from the accounting area." Laos also indicates the national Registry system will be used to ensure that verified ERs will not be sold twice.

These high level concepts begin to explore the issue, however, before Laos is able to implement other GHG initiatives, further analysis, policy and legal processes will need to be in place to ensure that double-counting is not an issue. Some key questions include: if it is not possible to enforce the application of consistent data and methods between other GHG initiatives and the ER program, how will this be managed?; how will the inconsistencies between the ER Program methods and data, and the UNFCCC FREL/FRL methods be addressed?; what policy and legal measures will be in place to ensure that ERs are not sold by other parties?; how would consistency be maintained between the RL and the MMR if Laos were to consider spatially cutting-out nested project boundaries?.

Where countries have addressed this issue in a comprehensive manner, the development of considerable legal and technical frameworks has been required. This is considered to be a minor non-conformity, but will need to be addressed before any other initiatives that credit ERs are considered in the program area.

(ii) [Data management and Registry systems to avoid multiple claims to ERs 19.2]	**NO**

The ERPD indicates that for the duration and purpose of the ER Program, Laos will use a centralized ER transaction registry managed by a third party.

C 24 The ER Program meets the World Bank social and environmental safeguards and promotes and supports the safeguards included in UNFCCC guidance related to REDD+

Ind 24.1 The ER Program demonstrates through its design and implementation how it meets relevant World Bank social and environmental safeguards, and promotes and supports the safeguards included in UNFCCC guidance related to REDD+, by paying particular attention to Decision 1/CP.16 and its Appendix I as adopted by the UNFCCC [Description of how the ER Program meets the World Bank social and environmental safeguards and promotes and supports the safeguards included in UNFCCC guidance related to REDD+ 15.1]	**YES**

The ER-PD expresses a good understanding of the Policies and Operational Policies of the World Bank and has also made an interesting comparison of WB, UNFCCC (Cancun) and National Safeguard Policies. As already stated, the section on safeguards has demonstrated that it understands which of the World Bank Policies on Safeguards will be triggered by the proposed ER Program and has also made reference to the UNFCCC (Cancun) Safeguard Policies. Table 14.1 shows the possible risks associated with each ER Program Area and relevant mitigation measures. Comments on what other issues should be subjected to safeguard measures have been described under indicators; 24.1 and 14.2, even though ER Program implementation has not started. However and despite claiming that safeguard issues are not new Lao, the ER-PD has provided no specific information on any experiences in Lao, describing how social and environmental safeguards have been applied.

The ER Program implies that enhanced removals will be achieved through the promotion of commercial tree plantations, particularly within regenerating vegetation (RV) areas. This would trigger Cancun Safeguards on the conversion of natural forests in relation to the conversion into forest plantations. Because RV is considered to be forest according to the Laos forest definition, the ER program should not serve to promote the conversion of natural forest to plantations for the purpose of emissions reductions or removals. As such, these activities, in the opinion of the TAP, should be excluded from future carbon and in addition, Lao should develop mechanisms to ensure that no further forests and forest lands in the accounting area will be converted to Rubber and other commercial agricultural crops. Despite identifying the risks in the context of World Bank Safeguards, safeguards against future conversions of natural forests is required but other than that, it meets the Criterion.

Ind 24.2 Safeguards Plans address social and environmental issues and include related risk mitigation measures identified during the national readiness process, e.g., in the SESA process and the ESMF, that are relevant for the specific ER Program context (e.g., land tenure issues), taking into account relevant existing institutional and regulatory frameworks. The Safeguards Plans are prepared concurrently with the ER Program Document, and are publicly disclosed in a manner and language appropriate for the affected stakeholders [Description of how the ER Program meets the World Bank social and environmental safeguards and promotes and supports the safeguards included in UNFCCC guidance related to REDD+ 15.1]	**NO**

The aspect of social and environmental safeguards came out of a Strategic Social and Environmental Assessment (SESA), from which an Environmental and Social Management Framework (ESMF) was developed. Tenure security on customary lands is a welcome development which will be achieved in the context of land use plans, and where applicable, under village forest management agreements (VFMAs). While the above are positive, the TAP had expected the ER-PD to emphasize a special poverty reduction program for ethnic groups in the accounting area, who as expressed in the ER-PD, are the poorest in the country. Another safeguard issue, is the use of agrochemicals under contract farming arrangements, bearing in mind that contract farming is a growing trend in the accounting area. The TAP is of the opinion that safeguards against ground and surface water pollution in the ER Program area, should apply in contract farming arrangements, hence the need to be clearly and strongly stated in the ER-PD. Since these are issue that can be included into the Safeguards Framework, this is a minor non-conformity.

C 25 Information is provided on how the ER Program meets the World Bank social and environmental safeguards and addresses and respects the safeguards included in UNFCCC guidance related to REDD+, during ER Program implementation

Ind 25.1 Appropriate monitoring arrangements for safeguards referred to in Criterion 24 are included in the Safeguards Plans [Description of arrangements to provide information on safeguards during ER Program implementation 15.2 and 6.1]	**NO**

From the ER-PD, safeguard monitoring will be carried out the by Programme Management Unit (PMU), who will bear responsibility for the collating and reporting on safeguards (page 183, section 14.2). The TAP is of the opinion that the reliability of 'self-monitoring' by a government agency, without adequate and specific measures of transparency and accountability, runs the risk of being questioned in the future. The expectation from the TAP is a provision for independent oversight, by an external party, to confirm compliance, which Lao has already accepted for its planned National REDD+ Data Management and ER Registries. This is particularly crucial since the ER-PD has also admitted that much more capacity is required not only to monitor compliance with safeguard principles, policies and procedures, but also ERs and non-carbon benefits. As such the TAP considers this a minor non-conformity.

Ind 25.2 During ER Program implementation, information on the implementation of Safeguards Plans is included in an annex to each ER monitoring report and interim progress report. This information is publicly disclosed, and the ER Program is encouraged to make this information available to relevant stakeholders. This information is also made available as an input to the national systems for providing information on how safeguards are addressed and respected (SIS) required by the UNFCCC guidance related to REDD+, as appropriate.	**N.A**

Only applicable at the time of verification.

C 26 An appropriate Feedback and Grievance Redress Mechanism (FGRM) developed during the Readiness phase or otherwise exist(s), building on existing institutions, regulatory frameworks, mechanisms and capacity

Ind 26.1 An assessment of existing FGRM, including any applicable customary FGRMs, is conducted and is made public. The FGRM applicable to the ER Program demonstrates the following: i) Legitimacy, accessibility, predictability, fairness, rights compatibility, transparency, and capability to address a range of grievances, including those related to benefit-sharing arrangements for the ER Program; ii) Access to adequate expertise and resources for the operation of the FGRM [Description of the Feedback and Grievance Redress Mechanism (FGRM) in place and possible actions to improve it 15.3]	**NO**
Section 14.3 of the ER-PD describes both statutory and traditional systems for handling grievances or complaints (Figs. 14.3a and 14.3b. The description of the current FGRM policies and procedures are adequate and reference has been made to Lao's community engagement framework as providing more detail on FGRM in Laos. What is not clear is whether the proposed FGRM has been made public or subjected to public comments. This constitutes a minor non-conformity which can be addressed.	
Ind 26.2 The description of FGRM procedures, included in the Benefit-Sharing Plan and/or relevant Safeguards Plans, specifies the process to be followed to receive, screen, address, monitor, and report feedback on, grievances or concerns submitted by affected stakeholders. As relevant, the Benefit-Sharing Plan and/or relevant Safeguards Plans and/or ER Program Document describe the relationship among FGRM(s) at the local, ER Program, and national levels **[**Description of the Feedback and Grievance Redress Mechanism (FGRM) in place and possible actions to improve it 15.3**]**	**NO**
The ER-PD has described traditional and statutory procedures for dealing with grievances in general and which would apply under REDD+. On sections 14.2 and 14.3, the ERPD envisions that the Provincial and National REDD+ Task Forces might be the appropriate entities for handling complaints. While that may sound reasonable, it carries the obvious risks of conflict of interest, since potentially, one can conceive of a situation in which the offending party may also be the arbiter of the dispute. The TAP therefore expected some form of an external oversight role played by an entity other than one that will be involved in implementing the REDD+ Program. Since this is an issue that can be addressed, it is a minor non-conformity.	
Ind 26.3 If found necessary in the assessment mentioned in Indicator 26.1, a plan is developed to improve the FGRM [Description of the Feedback and Grievance Redress Mechanism (FGRM) in place and possible actions to improve it 15.3]	**YES**
The ER-PD in section 41.3 states that to improve existing systems of addressing grievances, much greater awareness raising will be needed to enable stakeholders understand and assert their legal rights and options for redress mechanisms. Since most complaints are required to be submitted, the government has set up a 'hot line' which some villagers can use to register their complaints and thereby overcome inabilities to formally write their complaints. Despite their admission that much more awareness creation is needed the criterion has been largely met.	
C 27 The ER Program describes how the ER Program addresses key drivers of deforestation and degradation	
Ind 27.1 The ER Program identifies the key drivers of deforestation and degradation, and potentially opportunities for forest enhancement **[**Analysis of drivers and underlying causes of deforestation and forest degradation, and existing activities that can lead to conservation or enhancement of forest carbon stocks 4.1]	**YES**
A set of drivers of deforestation and forest degradation, and barriers that stand in the way of mitigation actions have been identified, described and used to formulate a National REDD+ Strategy with five programs areas already described	

and are indeed opportunities to address the drivers. There is also a clear Strategic Vision and Ambition in support of the ER-Program (Section 2.1, 2.2 of the ER-PD) and a National REDD+ Action Plan (NRAP) supported by PRAPs from each of the 6 Provinces of the ER-Program Area. The ER Program now clearly address the identified drivers, both direct and underlying as shown in Figures 4.3 a, b, c, d, e and 4.7 and tables 4.5 to 4.8.

Despite an impressive effort on the analysis of drivers of deforestation and forest degradation, the TAP has noted that, while the potential impacts of FDI and domestic investment projects are referenced in the assessment, and some general numbers are presented, the ERPD potentially underestimates the impacts of these and systematically re-focuses attention of the ERP away from these drivers toward a clear focus on shifting cultivators. It also appears that updated information on land-based investments is currently available but was not used, partly due to the timing of data availability. Notably, exploration concessions for the mineral sector now exceed 10 million hectares in Lao PDR, massively underestimated in the ERPD's estimation of 1 million hectares. The recent data regarding these, suggest that land based investments as a driver should be given a higher status above the current levels and its management in the context of the ER Program be developed. Despite this shortcoming the ER-PD has largely provided a comprehensive analysis of drivers that were necessitated during the process of developing Provincial REDD+ Action Plans (PRAPs) and therefore meets the criterion.

Ind 27.2 The ER Program identifies currently planned ER Program Measures and how they address the key drivers identified in Indicator 27.1, and the entities that would undertake them [Description and justification of the planned actions and interventions under the ER Program that will lead to emission reductions and/or removals 4.3] [Institutional and implementation arrangements 6.1]	**NO**

While the measures described to address the drivers are appropriate, they may not be sufficient to achieve the ER targets, if not accompanied by proposals that would be in the form of transformative policies and measures needed to achieve the stated ER ambitions of the program. This would require a convincing set of policies and technological options that would transform the sector to the required level of performance.

Another critical point is how the measures will be implemented and in that regard, the ER Programme implementation arrangement places heavy emphasis on two departments; the Department of Forestry (under Ministry of Agriculture and Forestry or MAF) as lead agency with the Department of Land (under Ministry of Natural Resources and Environment) being responsible for land registration and land use planning. Subsidiary roles are envisioned for other departments, notably the Department of Agricultural Land Management (DALaM) and the Department of Agriculture (DoA), both under MAF. The main drivers which the ERPD will engage relate to agricultural practices, with key mitigation measures being agricultural intensification, extension, land use planning, among others. As such, these agencies should have a higher-level role in the programme design and institutional setup. For instance DALaM, in particular, should play a lead role in agricultural land use planning, as consistent with their mandate, while registration. On page 142, various roles and functions are laid out for agencies in the context of programme monitoring but DALaM and DoA are not explicitly mentioned here. As agricultural investments are a central element in the ER design, one could reasonably expect that they be overseen by these departments.

Despite the largely good work done on drivers, the inclusion of clear policies and technological proposals needed to bring about transformative changes are necessary. The TAP considers this a minor non-conformity, since such proposals will 'add value' to the good proposals that have been proposed..

C 28 The ER Program has undertaken and made publicly available an assessment of the land and resource tenure regimes present in the Accounting Area

Ind 28.1 The ER Program reviews the assessment of land and resource tenure regimes carried out during the readiness phase at the national level (i.e., SESA) and, if necessary, supplements this assessment by undertaking an additional assessment of any issues related to land and resource tenure regimes in the Accounting Area that are critical to the successful implementation of the ER Program, including:	**YES**

I. The range of land and resource tenure rights (including legal and customary rights of use, access, management, ownership, exclusion, etc.) and categories of rights-holders present in the Accounting Area (including Indigenous Peoples and other relevant communities); II. The legal status of such rights, and any significant ambiguities or gaps in the applicable legal framework, including as pertains to the rights under customary law; III. Areas within the Accounting Area that are subject to significant conflicts or disputes related to contested or competing claims or rights, and if critical to the successful implementation of the ER Program, how such conflicts or disputes have been or are proposed to be addressed; and IV. Any potential impacts of the ER Program on existing land and resource tenure in the Accounting Area. The ER Program demonstrates that the additional assessment has been conducted in a consultative, transparent and participatory manner, reflecting inputs from relevant stakeholders [Description of land tenure systems, analysis of laws and regulatory framework 4.4 and 4.5, stakeholder consultation process 5.1]	
The land tenure systems in Lao have been clearly expressed and a clear reference to the often complicated issue of tenure security for communally owned land has been addressed. The TAP has noted that the enhancement of local tenure security expressed in the ER-PD, particularly with regard to customary land uses which are protected in principle in Lao, but have been inadequately recognized in practice, is a major contribution to land and forest governance reform in Lao and constitutes a key non-monetary benefit of the proposed ERP. In addition, the fact that in the Program Design, Land Use Planning is a core mechanism for improved forest management and enhancement of carbon stocks. As such, proposed efforts to ensure that village-determined LUPs (and related VFMPs, etc.) are elevated to the status of providing legal tenure security is a welcome contribution. The criterion is met.	
Ind 28.2 The ER Program explains how the relevant issues identified in the above assessment have been or will be taken into consideration in the design and implementation of the ER Program, and in the relevant Safeguards Plan(s). If the ER Program involves activities that are contingent on establishing legally recognized rights to lands and territories that Indigenous Peoples have traditionally owned or customarily used or occupied, the relevant Safeguards Plan sets forth an action plan for the legal recognition of such ownership, occupation, or usage. Beyond what is required for the successful implementation of the ER Program, the ER Program is encouraged to show how it can contribute to progress towards clarifying land and resource tenure in the Accounting Area, where relevant. [Assessment of land and resource tenure in the Accounting Area 4.4] [Description and justification of the planned actions and interventions under the ER Program that will lead to emission reductions and/or removals 4.3]	**YES**
As stated under the preceding indicator, the issue of customary land rights has now been more explicitly stated in the ER-PD, hence this indicator is met.	
Ind 28.3 The ER Program provides a description of the implications of the land and resource regime assessment for the ER Program Entity's ability to transfer Title to ERs to the Carbon Fund [Transfer of Title to ERs 18.2]	**NO**
The ER-PD provides a detailed description of the implications of the land and resource regime assessment, especially by detailing the different types of land tenure and the legal tools used to address the diverse relations between the state and the legal structure for land title (Article 49 of the Land Law (2003) (individuals and communities), Land Certificates - Article 48 of the Land Law (2003); Land Survey Certificates (LSC); Land Development Certificates (LDC); Certificates of Land Ownership History. Two important instruments are also the Village forest management plans (VFMPs) – regulated on Article 90 of the Forestry Law (2007) and established on the Forestry Strategy 2020 Policy, and the Village forest management agreements (VFMA). Finally the Land Tax certificates and contract farming are important legal tools in the	

context of the mechanisms to address the implications of the land and resource regime. While those tools and legal provisions are important in the context of land tenure implications, they remain unclear on the ability of Laos to address the ability to transfer title to ERs to the Carbon Fund. One also needs to make reference to the general national provision stipulated on the Constitution (2015) and Land Law (2003) on the land ownership and natural resources:

- "natural resources … belongs to the national community (or population) and is managed by the State on its behalf"

The rationale in the ER Program that supports the ability to the host country to transfer Title to the Carbon Fund is based on the legal interpretation of the following premises:

- "natural resources … belongs to the national community (or population) and is managed by the State on its behalf"
- Taking into consideration that the state can manage those resources, the construction, design and/ elaboration of a negotiated benefit sharing arrangement with the different stakeholders (land tenure and right holders) will need to conform with the methodological criteria to prove the ability of the ER Program Entity transfer in the future Title to the Carbon Fund. In other words, the benefit sharing plan will be designed in a way that will address the potential land and resource tenure rights holders (including those holding legal and customary rights) in a way that will allow the State to formalize the ER Program Entity's ability to transfer Title to ERs to the Carbon.

The rationale inserted on the description gives the clarity that the Host country has defined the way to address the challenges to deal with the land tenure implications, but nevertheless not the main tool that will address those challenges "The Benefit Sharing Plan" is not yet finalized. This is a minor non-conformity in the sense that the existing evidence is insufficient to prove conformity but does not lead to breakdown in the system of delivery.

C 29 The ER Program provides a description of the benefit-sharing arrangements for the ER Program, including information specified in Indicator 30.1, to the extent known at the time.

Description of benefit-sharing arrangements [16.1 in ER-PD of 15 Jan. 2016]	**YES**

The ER Program provides an initial description of the benefit sharing arrangements for the ER Program. The host country declared that it is in the process of consultation, construction and development of the BSP, and an initial advanced draft is already described on Section 15.1 of the ERPD and elaborated in Tables 15.1a, 15.1b and 15.1c, and Figures 15.1b and c. The section contains descriptions of categories of beneficiaries, eligibility criteria, use of existing of forest funds (such as a REDD+ Fund, Forestry and Forest Resource Development Funds), benefit sharing structure at the sub-national level, legal context and monitoring provisions. Despite details that will still be addressed, the current proposals meet the criterion.

C 30 The Benefit Sharing Plan will elaborate on the benefit-sharing arrangements for Monetary and Non-Monetary Benefits, building on the description in the ER Program Document, and taking into account the importance of managing expectations among potential beneficiaries.

Ind 30.1 The Benefit-Sharing Plan is made publicly available prior to ERPA signature, at least as an advanced draft, and is disclosed in a form, manner and language understandable to the affected stakeholders for the ER Program. The Benefit-Sharing Plan contains the following information: The categories of potential Beneficiaries, describing their eligibility to receive potential Monetary and Non-Monetary Benefits under the ER Program and the types and scale of such potential Monetary and Non-Monetary Benefits that may be received. Such Monetary and Non-Monetary Benefits should be culturally appropriate and gender and inter-generationally inclusive. The identification of such potential Beneficiaries takes into account emission reduction strategies to effectively address drivers of net emissions, anticipated implementers and geographical distribution of those strategies, land and resource tenure rights (including legal and customary rights of use, access, management, ownership, etc. identified in the assessments carried out under Criterion 28), and Title to ERs, among other considerations.	**N.A.**

Criteria, processes, and timelines for the distribution of Monetary and Non-Monetary Benefits. Monitoring provisions for the implementation of the Benefit-Sharing Plan, including, as appropriate, an opportunity for participation in the monitoring and/or validation process by the Beneficiaries themselves [Description of benefit-sharing arrangements 16.1]	
With reference to the assessment provided under criterion C 29, the broad details of the Benefit Sharing Plan are available and the key tenets under C30 have been largely described in the ER-PD with intentions (Section 15.2) to hold public consultations with local ethnic groups, particularly the poor forest dependent ones, when it is finalized. Since the plan is yet to be made publicly available and public consultations have yet to be help outside the circles of technical specialists, it is not applicable at this time.	
C 31 The benefit-sharing arrangements are designed in a consultative, transparent, and participatory manner appropriate to the country context. This process is informed by and builds upon the national readiness process, including the SESA, and taking into account existing benefit-sharing arrangements, where appropriate	
Ind 31.1 The Benefit-Sharing Plan is prepared as part of the consultative, transparent and participatory process for the ER Program, and reflects inputs by relevant stakeholders, including broad community support by affected Indigenous Peoples. The Benefit-Sharing Plan is designed to facilitate the delivery and sharing of Monetary and Non-Monetary Benefits that promote successful ER Program implementation. The Benefit-Sharing Plan is disclosed in a form, manner and language understandable to the affected stakeholders of the ER Program [Description of stakeholder consultation process 5.1] [Summary of the process of designing the benefit-sharing arrangements 16.2]	**N.A.**
The Benefit Sharing Plan is still in the process of development, with indications that it is being prepared as part of a consultative, transparent and participatory process for the ER Program,. So far, stakeholder inputs have come mainly from technical specialists in working groups, but there are intentions that this will include consultations with, and inputs from affected Indigenous Peoples, and will also be a mechanism to deliver monetary and non-monetary benefits that will promote the ER Program implementation. Since the last requirement under 31.1, is a public disclosure of a benefit sharing plan, the TAP cannot confirm this, since it will only happen in the future before an ERPA is negotiated and signed. As such, this criterion is non-applicable at this stage.	
C 32 The implementation of the Benefit-Sharing Plan is transparent	
Ind 32.1 Information on the implementation of the Benefit-Sharing Plan is annexed to each ER Program monitoring report and interim progress report and is made publicly available [16.1]	**N.A**
Only applicable at the time of verification.	
C 33 The benefit-sharing arrangement for the ER Program reflects the legal context	
Ind 33.1 The design and implementation of the Benefit-Sharing Plan comply with relevant applicable laws, including national laws and any legally binding national obligations under relevant international laws [Description of the legal context of the benefit-sharing arrangements 16.3]	**YES**
Section 15.3 recognizes the existence of the national applicable laws (Constitution 2015 - Land Law 2003 and Forestry Law 2007) and concludes that; through the Benefit Sharing TWG, rights to REDD+ benefits have been discussed based on the land and natural resource principles enshrined in the Constitution (2015) and Land Law (2003) and Forestry Law	

(2007). From the documents it is understood that rights holders of the land or forests are also rights holders of the forest carbon contained within those forests. (See also Section 4.5). Following that rationale the ERPD justifies the model that will be designed in the future :

- Based on the above, and in the context of REDD+ in Lao PDR and the ER Program in particular, the distribution of benefits from the ERs generated shall be based on a number of criteria including, but not limited to the rights holder rationale. (Other proposed criteria are listed under Section 15.1.1.)

The legal basis of the ability to transfer Title to ERs will be in accordance with the ER Program, established on the Benefit Sharing Arrangement :

- The legal basis of the above proposed arrangements will be established through a benefit sharing arrangement, to be articulated in the Benefit Sharing Plan. The State, and specifically MAF, on behalf of the national community, is charged with the management of land and natural resources, will be responsible for ensuring a due process of consultation and adoption of such a Benefit Sharing Plan by the Government.

What is important in the context of this indicator is the fact that, the ER Program explains that it is in accordance with the legally binding national obligations under relevant international laws to which the country is signatory (See Section 15.3, which among others, has made reference to; the Convention to Eliminate Discrimination Against Women (CEDAW); the Voluntary Guidelines on the Responsible Governance of Tenure of Land, Fisheries and Forests in the Context of National Food Security). Taking these into consideration we consider the criterion is met.

C 34 Non-Carbon Benefits are integral to the ER Program

Ind 34.1 The ER Program outlines potential Non-Carbon Benefits, identifies priority Non-Carbon Benefits, and describes how the ER Program will generate and/or enhance such priority Non-Carbon Benefits. Such priority Non-Carbon Benefits should be culturally appropriate, and gender and inter-generationally inclusive, as relevant [Outline of potential Non-Carbon Benefits and identification of Priority Non-Carbon Benefits 17.1 in the reviewed ER-PD of 15 January 2016]	**YES**

Despite the observation that this aspect has not been treated in much depth, it has stated the key non-carbon benefits of the program. The TAP has also pointed out that targeted poverty reduction strategies (support for small scale irrigation to reduce shifting cultivation and others) for the relatively poor ethnic groups in the accounting area, alongside tenure security for customary land, would also qualify as non-carbon benefits of the ER Program**.**

Ind 34.2 Stakeholder engagement processes carried out for the ER Program design and for the readiness phase inform the identification of such priority Non-Carbon Benefits [Description of stakeholder consultation process 5.1]	**NO**

There is no evidence in the ER-PD to suggest that the identification of non-carbon benefits was done through a Technical Working Group or through a general stakeholder engagement process. In view of the fact that the non-carbon benefits have been identified, and further stakeholder consultations can be conducted in a fairly short time, this is minor non-conformity.

C 35 The ER Program indicates how information on the generation and/or enhancement of priority Non-Carbon Benefits will be provided during ER Program implementation, as feasible.

Ind 35.1 The ER Program proposes an approach utilizing methods available at the time to collect and provide information on priority Non-Carbon Benefits, including, e.g., possibly using proxy indicators. If relevant, this approach also may use information drawn from or contributed as an input to the SIS [Approach for providing information on Priority Non-Carbon Benefits 17.2]	**NO**

So far, section 16 of the ER-PD states that collection of data and information on non-carbon benefits 'can be partially' covered by a Safeguard Information System and additional key information will be added into the National Forest Monitoring System (NFMS). It is further stated that it is during the completion of the Benefit Sharing Plan, when the key indicators for priority non-carbon benefits will be selected. While the first statement is tentative and not convincing, the

second misses the point, since biodiversity and other ecosystems services such as water should fall under an MMR / MRV framework. More clarity is required on this indicator, hence the TAP is of the opinion that this is a major non-conformity.

Ind 35.2 Information on generation and/or enhancement of priority Non-Carbon Benefits will be provided in a separate annex to each ER Program monitoring report and interim progress report, and will be made publicly available	**N.A.**

Only applicable at the time of verification.

C 36 The ER Program Entity demonstrates its authority to enter into an ERPA and its ability to transfer Title to ERs to the Carbon Fund

Ind 36.1 The ER Program Entity demonstrates its authority to enter into an ERPA with the Carbon Fund prior to the start of ERPA negotiations, either through: i. Reference to an existing legal and regulatory framework stipulating such authority; and/or ii. In the form of a letter from the relevant overarching governmental authority (e.g., the presidency, chancellery, etc.) or from the relevant governmental body authorized to confirm such authority. [Authorization of the ER Program 18.1]	**NO**

The ER-PD clearly defines the Entity that will be authorized to sign the ERPA and transfer title to ERs to the Carbon Fund as the Ministry of Agriculture and Forestry (MAF). According to the initial TAP assessment, there is a decree that establishes MAF authority as the National coordinator of the REDD+ National Task Force – PM Decree n 06 of January.07. 2011, hence the ER-PD expressly states in Section 17.1 that: "The assignment of MAF as the specific agency of the Government is expected to be issued through a letter by the Prime Minister or similar documentation, within 2018, or at least before the signing of the ERPA".
At the moment of this assessment there is only a declaration of intentions of the host country that will fulfil the necessary evidence in the near future, but no legal evidence exists that can prove the MAF as the authority to represent the country and sign the ERPA neither through;

i. Reference to an existing legal and regulatory framework stipulating such authority;

and/or

ii. In the form of, say, a letter from the relevant overarching governmental authority! (e.g., the Presidency, Chancery) or from the relevant governmental body authorized to confirm such authority.

The host country has already declared the intention to issue a letter by the Prime Minister or similar documentation, within 2018, or at least before the signing of the ERPA. Therefore this is a minor non-conformity in the sense that the existing evidence is insufficient to prove conformity but does not lead to breakdown in the system of delivery, and the preparation and delivery a Prime Minister's Letter will need to be verified in the near future.

Ind 36.2 The ER Program Entity demonstrates its ability to transfer to the Carbon Fund Title to ERs, while respecting the land and resource tenure rights of the potential rights-holders, including Indigenous Peoples (i.e., those holding legal and customary rights, as identified by the assessment conducted under Criterion 28), in the Accounting Area. The ability to transfer Title to ERs may be demonstrated through various means, including reference to existing legal and regulatory frameworks, sub-arrangements with potential land and resource tenure rights-holders (including those holding legal and customary rights, as identified by the assessments conducted under Criterion 28), and benefit-sharing arrangements under the Benefit-Sharing Plan [Transfer of Title to ERs 18.2]	**NO**

The ER-PD describes in a detailed way the land and resource tenure rights of the potential rights holders, including legal and customary rights, as identified by the assessment conducted under Criterion 28, in the Accounting Area. But the ER-PD does not demonstrate its ability to transfer to the Carbon Fund, Title to ERs, neither with the reference to:

1) An existing legal and regulatory framework, or a
2) sub arrangements with the potential land and resource tenure rights holders (including those holding legal and customary rights, as identified by the assessments conducted under Criterion 28), or
3) a benefit sharing arrangement under the Benefit Sharing Plan

The ER-PD describes in section 17.2 the intention to use the benefit sharing arrangement as the basis to establish the legal transfer of the ERs, but that instrument is still under the process of development:

- "The legal basis of the above proposed arrangements will be established through means of a benefit sharing arrangement articulated within the Benefit Sharing Plan to be developed through consultative processes and adopted by the Government. The State, and specifically MAF, on behalf of the national community as charged with the management of land and natural resources, will be responsible for ensuring a due process of consultation and adoption of such a Benefit Sharing Plan by the Government.

The absence of a legal framework and instrument could be considered in the future as a major non-conformity if this instrument will not be delivered. However, at the moment of this assessment, the TAP is of the opinion that the declaration of the intention to elaborate the benefit sharing arrangement as the tool to accomplish the criteria is fundamental and gives the right direction to the future accomplishment of the indicator. Taking into consideration the absence of the description and the detailed structure of the Benefit Sharing Arrangement, this is therefore a minor non-conformity.

Ind 36.3 The ER Program Entity demonstrates its ability to transfer Title to ERs prior to ERPA signature, or at the latest, at the time of transfer of ERs to the Carbon Fund. If this ability to transfer Title to ERs is still unclear or contested at the time of transfer of ERs, an amount of ERs proportional to the Accounting Area where title is unclear or contested shall not be sold or transferred to the Carbon Fund [Transfer of Title to ERs 17.2]	**NO**

At the time of this assessment, the ER-PD has not demonstrated its ability to transfer Title to ERs. The host country declared the intention and it remains 'work in progress' to create the legal instruments to achieve it in the future – (prior to ERPA signature or at the latest, at the time of transfer of ERs to the Carbon Fund- the ability to transfer the Title to ERs).

At the moment, there is neither;

- a legal definition of ERs that defines the legal nature and ownership of the Emission Reductions, nor
- a legal arrangement under the benefit sharing plan that would support the state ability to transfer title and distribute benefits.

In accordance with the country's existing legal framework, land and natural resources ownership belong to the national community and only the State has the ability to manage them.

- the Constitution (2015) and Land Law (2003) stipulates, land and natural resources belongs to the national community (or population) and is managed by the State on its behalf. Under the Forestry Law (2007) it is stipulated that natural forests belong to the national community, and are managed by the State, whereas planted trees belong to the individuals or entities that plant them. Both the Land Law and Forestry Law have provisions for land and forests to be acquired and/or titled to rights holders for a maximum of five rights, including the right to protect, use, usufruct, transfer and inherit.

The rationale that supports the future ability of the ER Program Entity to transfer title and avoid future risk of claim of the Title ownership in accordance to the host country, will be based on the construction of the benefit sharing arrangement, that is still in 'work in progress'.

"Taking this into consideration, and acknowledging ongoing work, it is not possible to say at the moment, if this assessment can confirm that the country will have the ability to transfer the Title to ERs prior to ERPA signature (or at the latest, at the time of transfer of ERs to the Carbon Fund). That ability will depend on:

- the creation of the legal provision (letter issued by the Prime Minister or similar document) that will allow the ER Program Entity to sign the ERPA (as described in indicator 36.1) and depends on the development and detailed description of the benefit sharing arrangement.

The absence of the legal provision (letter issued by the Prime Minister) and of the legal instrument (benefit sharing arrangement), could be considered in the future a major non-conformity if those instruments are not delivered. However, at the moment, the declaration of intent to elaborate the benefit sharing arrangement as the tool to accomplish the criteria is fundamental and gives the right direction to the future accomplishment of the indicator. Taking

into consideration the absence of the description and the detailed structure of the Benefit Sharing Arrangement, the TAP considers this a minor non-conformity.

C 37 Based on national needs and circumstances, the ER Program works with the host country to select an appropriate arrangement to avoid having multiple claims to an ER Title.

Ind 37.1 Based on national needs and circumstances, the ER Program host country has made a decision whether to maintain its own comprehensive national REDD+ Program and Projects Data Management System, or instead to use a centralized REDD+ Programs and Projects Data Management System managed by a third party on its behalf. In either case of a country's use of a third party centralized REDD+ Programs and Projects Data Management System, or a country's own national REDD+ Programs and Projects Data Management System, the indicators below apply [Data management and Registry systems to avoid multiple claims to ERs 18.2]	**YES**

In the ER-PD a REDD+ Data Management and Registry System is under consideration and a Data Management System is already under development, which could include a registry function in the future. This registry is considered to be a part of the country's national carbon registry for all sectors (if and when available), and to ensure integrity and consistency in the context of the NDC, Greenhouse Gas Inventory (GHG-I), the National REDD+ Program, and with the domestic carbon market, if established in the future. A clear statement of decision has been made that for emission reductions (ERs) under the ERPA, Lao will rely on a centralized registry management by a third party, to ensure that each ER unit is appropriately issued, serialized, transferred, retired, and/or cancelled; and ensure that ERs are not issued, counted, or claimed by more than one entity.

The ER Program will also be open to the possibility of other initiatives that may be launched within the ER Program area, which may include the transfer of ERs, in a 'nested arrangement' which will require as far as possible, the application of a FREL/FRL and MRV/MMR that is consistent with that of the ER Program

Ind 37.2 A national REDD+ Programs and Projects Data Management System or a third party centralized REDD+ Programs and Projects Data Management System needs to provide the attributes of ER Programs, including: i. The entity that has Title to ERs produced; ii. Geographical boundaries of the ER Program or project; iii. Scope of REDD+ activities and Carbon Pools; and iv. The Reference Level used. An ER Program for the Carbon Fund should report its activities and estimated ERs in a manner that conforms to the relevant FCPF Methodological Framework C&Is [Data management and Registry systems to avoid multiple claims to ERs 18.2]	**YES**

Under section 18.2 Laos has stated that the REDD+ Data Management System will consist of the information listed above, and that a demonstration version is expected to be ready by 2020 and further upgraded in subsequent years. In addition the database will also include monitoring data on drivers and effectiveness of interventions, safeguards and non-carbon benefits. While this is in plan, it largely shows Lao's appreciation of what is required, hence meets the criterion.

Ind 37.3 The information contained in a national or centralized REDD+ Programs and Projects Data Management System is available to the public via the internet in the national official language of the host country (other means may be considered as required). [Data management and Registry systems to avoid multiple claims to ERs 19.2]	**N.A.**

This indicator would only apply if such a database is operation and the ER Program would be under implementation, hence is non-applicable at this stage.

Ind 37.4 Administrative procedures are defined for the operations of a national or centralized REDD+ Programs and Projects Data Management System; and an audit of the operations is carried out by an independent third party periodically, as agreed with the Carbon Fund [Data management and Registry systems to avoid multiple claims to ERs 18.2]	**YES**
It has been stated that for ERs, a centralized data registry managed by a third party will be used. In addition a REDD+ Projects Data Management System, will be developed and will make provisions for an external audit as needed and agreed with the Carbon Fund. While the statements are not conclusive evidence, they demonstrate that the country is working on it.	
C 38 Based on national needs and circumstances, ER Program host country selects an appropriate arrangement to ensure that any ERs from REDD+ activities under the ER Program are not generated more than once; and that any ERs from REDD+ activities under the ER Program sold and transferred to the Carbon Fund are not used again by any entity for sale, public relations, compliance or any other purpose	
Ind 38.1 Based on national needs and circumstances, the ER Program host country has made a decision whether to maintain its own national ER transaction registry, or instead to use a centralized ER transaction registry managed by a third party on its behalf [Data management and Registry systems to avoid multiple claims to ERs 18.2]	**NO**
As already stated under indicator 37.1 a decision has been made that for emission reductions (ERs) under the ERPA, Lao will rely on a centralized registry management by a third party, to ensure that each ER unit is appropriately issued, serialized, transferred, retired, and/or cancelled; and ensure that ER are not issued, counted, or claimed by more than one entity. Under Criterion C 23, the ability to avoid double counting has been questioned on the basis that Lao will need a legal provision to guard against double counting, should a deliberate case of double accounting occur. This is an issue that Lao should revisit, and in its current state in a minor non-conformity.	
Ind 38.2 The national or centralized ER transaction registry reports ERs for the Carbon Fund using the accounting methods and definitions described above in the MF [Data management and Registry systems to avoid multiple claims to ERs 19.2]	**N.A.**
Not-applicable	
Ind 38.3 An independent audit report certifying that the national or centralized ER transaction registry performs required functions is made public. [Data management and Registry systems to avoid multiple claims to ERs 19.2]	**N.A.**
Not-applicable	

Ind 38.4 Operational guidance exists, or is in advanced stage of preparation, that clarifies the roles and responsibilities of entities involved in the national or centralized ER transaction registry, as well as rules for operation of the registry. [Data management and Registry systems to avoid multiple claims to ERs 19.2]	**N.A.**
Not-applicable	

Annex 1 to the TAP technical assessment