Section 3

TERMS OF REFERENCE

MEASURING FOREST AREA CHANGE FROM ICF INVESTMENTS

Development and testing of methodology for
Key Performance Indicator 8: No of hectares of avoided deforestation and degradation resulting from ICF interventions

Introduction

1. The International Climate Fund (ICF) is a £9.7 billion HMG fund from 2011/12 to 2020/21, managed jointly by the Department for International Development (DFID), the Department of Energy and Climate Change (DECC), and the Department for Environment, Food and Rural Affairs (Defra). ICF programmes are grouped under three broad intervention areas: adaptation, low-carbon development and forestry.

2. All ICF programmes are expected to report against a set of Key Performance Indicators (KPIs). These indicators are used to demonstrate the achievements of the ICF as well as providing a means of comparison across programmes, which in turn influence how future resources are spent to maximise impact and value-for-money.

3. Current and forthcoming forestry programmes under the ICF include: 1) Investment in Forests and Sustainable Land Use; 2) Forest Governance, Markets and Climate; 3) International Forestry Knowledge (Knowfor); 4) The Forest Carbon Partnership Facility; 5) Programmes managed by the cross-Government UK Climate Change Unit (UKCCU) in Indonesia, which combines DFID, DECC and the Foreign and Commonwealth Office (FCO); 6) DFID Nepal Programmes; 7) DFID Bangladesh Programmes; 8) Defra's Avoiding Deforestation in the Brazilian Cerrado; 9) Defra's Low Carbon Agriculture for Avoided Deforestation and Poverty Reduction; 10) The Biocarbon Fund's Investment in Sustainable Forest Landscapes initiative and 11) DECC's Colombian Silvo-Pastoral Programme[1].

4. For ICF forestry programmes, the most relevant KPIs are: i) hectares of avoided deforestation and degradation; ii) tonnes of Greenhouse Gas (CO_2) emissions reduced/avoided; iii) number of forest-dependent people with livelihoods protected; iv) ecosystem services and biodiversity protected and/or increased and (v) transformational impact. There are other KPIs to which programmes may contribute depending on the nature of the activities carried out (e.g. volume of private finance mobilised as a result of ICF funding).

5. There is a need for a consistent, cost-effective and practicable methodology for measuring the hectares indicator that can be applied across all ICF forestry programmes. However, attributing increase in forest cover or decrease in deforestation to actions by ICF forestry programmes within reporting time-frames is challenging.

6. In 2013/14 DFID engaged The University of Edinburgh and Ecometrica to examine the practicability and application of the hectares indicator, to recommend how it could be adjusted for easier use or alternatively, to suggest an alternative approach. The work was completed by early 2014, a critique of the existing methodology was produced and

[1] Details about DFID's current programmes can be found by using relevant search criteria at http://devtracker.dfid.gov.uk/ or http://projects.dfid.gov.uk/

a potential new methodology was proposed and recommended for testing[2].

7. The European Space Agency subsequently provided a one-year grant which enabled the proposed risk-based methodology to be tested in three countries; Brazil, Nepal and Ghana over a one year period 2014-15. The test showed promising results but also highlighted the need for further testing and refinement in more countries and different project types, particularly those that engage in policy influencing and reform rather than area-based interventions.

The objective

8. The objective of the assignment is to further refine and test the risk based methodology proposed during the testing phase 2014/15[3]; to extend the methodology to more countries and programme intervention types, and to provide training and support to programme and/or country teams to implement the methodology and gather data on actual results. The intended outcome is a methodology and supporting tools for data management that can be applied by programme teams across the broad range of relevant ICF forest projects.

9. In particular, this phase of work will work closely with programmes such as the Forest Governance, Markets and Climate Programme (FGMC)[4] and with the ICF Monitoring Evaluation and Learning (MEL) Programme to determine how: (a) the methodology can be aligned with country priorities and resources, (b) can be adapted to programmes that are not implemented within discrete geographical areas or across geographical boundaries, (c) can deliver interim or proxy indicators of progress, (d) can address questions of contribution or attribution.

10. The methods and the underpinning systems of data collection and management will be developed in a way that allows recipient countries, multilateral and NGO partners, and other international donors to adopt, replicate and develop these as part of collaborative MEL frameworks. DFID shall therefore also make efforts to share methods and underlying evidence with other international forest / REDD donors and multilaterals and interested forest nations.

The recipient

11. In the first instance: DFID, DECC, and Defra staff that are involved in ICF forestry programmes, including economists, policy advisors and forestry advisors; and host countries grappling with forest monitoring. The methodologies developed and data gathered as a result will enable the ICF to deliver better programmes to developing country beneficiaries. Additionally, there is a global public good element to this work. It has so far generated interest from other donors and institutions interested in forest monitoring. All documents produced so far are openly available and the work to be carried out under this contract will also be publicly available.

The scope

[2] Summary report: http://ecometrica.com/article/earth-observation-support-for-assessing-the-performance-of-uk-governments-icf-forest-projects
[3] Final report on initial testing of Hectares Indicator method: http://ecometrica.com/article/earth-observation-support-for-assessing-the-performance-of-uk-governments-icf-forest-projects
[4] FGMC is specifically mentioned since it is one of the most complex forest programmes in the ICF portfolio and presents the most challenges in testing the proposed methodology

12. A budget of up to £650,000 (six hundred and fifty thousand pounds) is available to carry out the following work and deliverables under two streams;

    (a) **First,** an action research work stream focussing on the further development and refinement of the methodology in Brazil, Nepal and Ghana and its extension to at least another 3 countries, one of which will be Indonesia, and another 2 selected from Table A[5]

    (b)**Second**, a service delivery agreement for the provision and maintenance of a mapping platform running applications for the curation, management and analysis of spatial data / evidence relevant to specific project areas, countries or biomes (e.g. pan-tropical) programmes. This stream will include all necessary support and training activities for programme / country users.

13. Work will cover a range of ICF forestry programmes representing key geographical regions, programme types, and implementing government department (DFID, DECC, DEFRA).The methodology has already been tested and baselines set for Brazil, Nepal and to a limited extent Ghana. This new phase of work will continue to provide support to project teams in Brazil and Nepal. Additionally, this new phase of work will include work in Ghana, Indonesia and at least two other countries selected during the inception phase.

14. For new programmes and/or in early stages of start-up, this contract will provide an opportunity to establish reference / baseline data and a framework for the collection of relevant information relating to the area of forest impacted by a programme, the drivers affecting forest loss / change and, where data is available from IFRI or project teams, the associated socio-economic conditions.

15. Wherever possible, work will be carried out in close coordination with the International Forest Research Institutions (IFRI) working on KPI 3 (forest dependent people), and the ICF Monitoring, Evaluation and Learning contract working on KPI 10 (ecosystem services). The project team will also liaise with ICF partner organisations including multilaterals, other donors and recipients, so that wherever possible impact assessment activities use consistent datasets and approaches and avoid duplication.

STREAM 1

<u>Further development/refinement of the methodology</u>

16. The following activities were identified as potential improvements to the methodology at the stakeholder review stage[6]. These advanced methodology components will be tested in selected countries, as shown in Table A:

    a. *Use of multiple reference levels / scenarios.* This component addresses questions posed by stakeholders in the previous stage of methodology development regarding the validity and comparability of risk based reference levels with other approaches that might be used, either following from REDD+ climate negotiations, or cost-benefit analysis of programmes. This component will allow impact to be measured relative to different reference levels. It will also allow the users (programme or country teams responsible for KPI reporting) to assess the cost versus benefit value of undertaking more detailed modelling:

[5] Table A provides details of the likely countries / programmes to be covered and activities to be carried out in each, final selection to be made during inception phase.

[6] A stakeholder peer review workshop was held in June 2015 to seek feedback on the proposed methodology and field test results

i. variants on existing risk based reference levels to incorporate local and regional policy variables
ii. uniform, extrapolated forest loss (e.g. from negotiated REDD+ reference levels)
iii. reference scenarios based on economic and policy assumptions or theory of change models,

The outputs from this activity are expected to be:

1. Improved risk mapping guidelines and worked examples, showing how policy changes can be incorporated into risk maps
2. Improved availability of data for risk mapping, with recommendations for specific countries or regions relevant to the ICF forest programmes
3. Guidance on how uniform, extrapolated rate loss or gain calculations can be made on the mapping platform, examples and training materials
4. Guidance on how outputs from economic models or theory of change models could be represented as rates of change or absolute forest loss / gain in reference levels. Worked example, showing how this can be done on the mapping platform

These outputs will be specified in more detail during the inception phase.

b. *Test improved change detection methods, particularly in areas where the University of Maryland (UMD) forest loss detection methods are shown to have low accuracy.* The previous phase of work demonstrated that the UMD forest loss data product varies in accuracy depending on factors such as the pattern of forest loss and cloud cover. Further work will be conducted in Ghana and potentially other countries from the agreed final selection where relevant, to identify suitable detection methods for small scale forest loss or degradation in areas with moderate to high levels of cloud cover. Where possible the improved methods should make use of free or low cost data products. This component should build on related work being supported by the UK Space Agency, GNU partners and ESA. Likely methods to test include:
    i. Sentinel 1 radar methods
    ii. Woods Hole Research Centre (WHRC) carbon stock change methods
    iii. Landsat Time Series (ECOSUR methods)
    iv. Ground based stratified sampling, guided by earth observation

    The outputs from this activity are expected to be:

    1. Updated recommendations on best data to measure forest change (condition and area) based on improved understanding of whether Sentinel 1, WHRC-Modis methods or others can reliably detect changes in areas where UMD forest loss measurement is poor.
    2. Guidelines on how to access and analyse the relevant datasets
    3. Understanding on which data products may need processing or preparation prior to use by ICF programmes

    These outputs will be specified in more detail during the inception phase.

c. *Analysis of the relative contribution or attribution of impacts between multiple programmes or activities operating at different scales*. Improved understanding and agreement within the ICF MEL programme on how best to analyse and describe the relative contributions of different programmes influencing forests and governance within particular region is a priority for the ICF as a whole. It is

proposed that forest area or forest condition changes should be the main focus of this activity. These could include:

i. How to analyse programmes targeted at specific areas, forest types or crop types or producers(e.g. project activities to promote zero deforestation cacao can be linked to specific growing areas, aiding attribution analysis)[7];
ii. How to analyse broader improvements to governance across whole countries, regions (e.g. forest departments) or for specific social groups.

The outputs from this activity are expected to be:

1. Guidelines on how to apply contribution / attribution analysis for the Hectares Indicator in a range of different programme and project types

These outputs will be specified in more detail during the inception phase.

d. *Integration of social data for joint analysis of Hectares and Livelihoods indicators. Integration of social data on the mapping platform*. The integration of social and demographic data relating to livelihoods with forest change can help to address important questions such as whether reducing forest loss is associated with improving or deteriorating livelihoods. The mapping platform can also be used as a repository and access point for relevant social data. The contractor will collaborate with IFRI to determine what sorts of social data can be mapped consistently over time in a way that would allow useful analysis.

The outputs from this activity are expected to be:

1. Examples of social data uploaded to mapping platform
2. Examples of relevant cross queries between social data and forest change data
3. Guidelines on how to combine forest area, risk, change and social data to extract useful information

These outputs will be specified in more detail during the inception phase.

e. *Consideration of Proxy or Interim measures of impact*. Identification of appropriate interim measures that can be used to indicate progress towards desired impacts prior to more definitive evaluation. The approach to selecting appropriate measures will be discussed with the MEL team.

The outputs from this activity are expected to be:

1. Proxy or interim impact measures identified and described
2. Examples of proxy or interim impact measures provided for at least one project[8]
3. Guidelines on how to make inferences from interim or proxy measures

These outputs will be specified in more detail during the inception phase.

Build evidence in existing countries and extend to at least 3 more countries

[7] Noting that not all deforestation is illegal, the way in which legal deforestation should be reported should also be considered.

[8] If useful/workable, project teams will be responsible for testing proxy indicators in their own context

17. Building on the previous work carried out in Ghana, Nepal and Brazil, existing and enhanced methods will be applied to these and at least three new countries (could be selected from Indonesia, Ethiopia, Colombia, Liberia, Myanmar, Guyana). The main objectives in this work stream are (i) improved detection of forest change, (ii) improved availability and consistency of data across ICF supported activities through different channels (e.g. bilateral and multilateral), and (iii) better understanding of ways in which ICF supported activities influence forest cover in certain landscapes. The potential priority activities and outputs (results) for each country are shown in Table A. The details of which methods and new components to apply in each country or programme will be determined during the inception phase.

Share knowledge, evidence and methods

18. The knowledge, evidence and methods gained through this process should be shared with relevant internal stakeholders, recipients and international partners including Norway, Germany, the World Bank, FAO, UN-REDD and other international NGOs. Good practice will be channelled to the Global Forest Observation Initiative (GFOI).

The outputs from this activity are expected to be:

1. Methods and data sources published
2. Public versions of mapping platform for specified countries made open
3. 2 international workshops on impact assessment on forests (could be in collaboration with international partners)
4. Active dissemination of Hectares Indicator practice through meetings with stakeholders

These outputs will be specified in more detail during the inception phase.

Table A Basic and advanced Hectares Indicator methodology applications planned per country 2015 to 2017.

The details of methodology components to be developed and tested in specific countries will be agreed during the inception phase. Indicative plans are shown here.

	Basic Method	Multiple Reference Level Comparison	Test improved Change Detection Methods	Attribution Analysis	Social Data Integration	Proxy / interim measures	Other expansion / improvement
Ghana	Done	Y	Y	Y	Y	Y	Attempt to differentiate / aggregate FIP and FGMC activity
Nepal	Done			Y	Y	Y	Attempt to obtain FRA forest map data
Brazil	Done				Y	Y	Expand to other FIP areas / Mato Grosso?
Indonesia	Y						
Colombia	?						Integrate with national MRV system?
Liberia	?						
Myanmar	?						
Guyana	?						Integrate with national MRV system?

STREAM 2

A service agreement to develop and maintain and curate the mapping platform

19. Spatial datasets in the form of maps of forest area, biomass, drivers / risks of land use change and actual deforestation or degradation are fundamental components of evidence used for indicator analysis as well as for broader analysis of programme requirements and learning processes. These datasets come from a wide variety of sources including national forest mapping and inventory initiatives, research projects and earth observation missions. There is a need to manage this evidence to ensure that it is kept in a form that is accessible, combinable and queryable in-situ, so that it can be added to and improved upon over time. It is important to preserve data in a central location and query it in situ to avoid producing multiple versions on many different systems.

20. After 24 months an independent review[9] will be undertaken to assess the future spatial data needs of ICF Monitoring, Evaluation and Learning activities, the suitability of the current platform, the availability and cost of alternative systems.

21. During the agreed period the Supplier will deploy and maintain a mapping platform to the following service level:

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Essential functions - viewing, querying, download results

- The platform should allow viewing of multiple data / map layers against a number of zoomable base layers. Meta-data for each layer should be supported

- Relevant areas of interest (e.g. protected areas, forest districts, national boundaries) should be managed in a way that is scaleable (grouped into categories and editable)

- The data for any area of interest should be queryable, with results displayed in suitable graphical or tabular form

- It should be possible to cross-query between data layers to provide breakdowns or time-series, as may be required

- It should be possible for users to add and manage their own areas of interest

- The results of queries on data layers should be downloadable as CSV or PDF.

Multi-app environment with Accessibility Controls

- The platform should accommodate multiple country applications, with each application bringing together the relevant data sets, ancillary information (documents, descriptions, etc).

- The mapping platform should have a built in permission system to allow access to individuals or groups of stakeholders to access the maps and queries relevant to a specific country (or sub-national programme) in a single place.

[9] To be commissioned independently of Ecometrica

- The user permissions system to allow access: ICF country managers will be given administrative user rights, allowing them to invite stakeholders and contributors.

- It will be the responsibility of each user to maintain their own password details safe and secure and to adhere to the terms of use for users (Annex)

- It will be the responsibility of administrators to invite and control access levels of the users.

- Ecometrica technical team will have administrator+ level access on all applications that will allow them to check for any errors, misuse or problems.

Number of Country Applications Supported

- Apps for up to 6 countries will be developed, maintained and supported

- Each country app may have a "development version" and a public version, which will not require login, and may have a more limited selection of queries and data layers

Development Support

22. The Supplier will be responsible for providing adequate support to end users and stakeholders, including:

    - identifying, quality assuring, formatting and uploading relevant data layers (relevance will be defined through consultation with programme teams and stakeholders)

    - Identifying, quality assuring and uploading, grouping relevant areas of interest (e.g. municipal or district boundaries, village areas, etc)

    - specifying, coding and testing relevant queries to run on the datasets (e.g. area of forest at risk, loss per year, risk rated loss levels)

    - carrying out user-led improvements to the interface and analytical capabilities

Training

23. The Supplier will provide training to end user teams ensuring their ability to apply the methodology and interact with the data platforms. Training requirements will be assessed and timetabled during the inception period and outlined in the inception report.

User Support

24. The intended users are ICF programme / country teams responsible for reporting on the indicators. During the inception phase and the main project we may identify other stakeholders or sub-contractors who could be included as users (e.g. MEL team).

25. The platform should provide a number of automated processes to help new users to get started input / retrieve information. However, additional support should be provided to individual users for any problems that may occur in the use of the platform.

Reliability, Backup and Security

26. The platform should be provided to an adequate level of reliability (>99% uptime). All data on the system should be backed up no less than every 48 hours. A good level of security is expected with SSL connections provided. When bugs do occur the Supplier should:

    - inform users of the problem and initiate repairs within 24 hours
    - keep users informed of any delays and likely implications to results

Handover and Termination

27. Upon termination or transfer of the service contract the Supplier should ensure a smooth transition to whatever system may be used to replace it, including the following possibilities:
    - Download to archive (tapes or disks)
    - Handover to a federated mapping platform (such as an externally hosted EO Lab)
    - Handover to a 3rd party system

28. Towards the end of the contract period, DFID will assess next steps, data needs, and potentially tender for the supply of continuing platform hosting services. The Supplier under this contract would be eligible to tender.

The requirements and deliverables

29. An initial **inception phase** of up to 4 months will be required to agree with programme teams and MEL leads how the work will proceed, and to resolve key questions such as:

    a) How to ensure co-ordination and consistency with broader MEL development activities and work undertaken on other KPI's particularly other forest KPI's.

    b) How to deal with countries like Ghana where there are multiple ICF supported interventions as well as complex governance reform programmes that have different spatial dimensions (whole country to specific regions). Should the methodology focus on FGMC alone (in which case what are the boundaries that constitute FGMC) or encompass the collective efforts of <u>all</u> ICF funded forest programmes in the country (FGMC, FIP, FCPF)?

    c) How to approach attribution/contribution analysis in a consistent and credible way across different KPIs relevant to ICF forest programmes?

    d) What additional processes or evidence gathering may be required to complement or contextualise the proposed methodology?

    e) What potential proxy or interim measures could be used to estimate progress towards desired KPI outcomes?

    f) How will the project support and/or align with country-led monitoring priorities and efforts, for example the VPA monitoring framework in Ghana and/or the REDD+ national MRV process? How do we ensure the buy-in and relevance to programme level staff?
    g) How to coordinate and deal with programme supported monitoring efforts (for FGMC: WRI Global Forest Watch; rainforest Foundation community mapping; etc)?
    h) Which countries apply the methods over the main project phase, and what specific methods / approaches to test

30. It will be important for the Hectares KPI work to be joined up and well-coordinated with other suppliers working on other KPIs, in particular the MEL Programme Lead, who will ensure that the KPI analysis fits within the overall MEL framework, and IFRI with whom the contractors shall be working to integrate social and environmental progress metrics. The work plan should make clear how Ecometrica will share lessons and integrate spatial data from other relevant KPIs onto the user interface platform.

31. At the end of the inception period, a detailed and costed work plan will be produced and shared with all stakeholders, including the MEL contractors and IFRI. A table showing the types of key outputs for the Inception Phase, according to work-stream, is provided below as an example.

Table B Inception Phase likely outputs / Deliverables

Ecometrica - Hectares Indicator
STREAM 1: Methodology Development and Applications
1.1 Agreement on arrangements and roles with MEL contractor, IFRI and DFID
1.2 Description of all ICF programmes / activities relevant to the Hectares Indicator, current status of MEL activity, identification of individuals or teams responsible for KPI reporting (users)
1.3 principles agreed on alignment with broader KPI work, country priorities & capabilities (MEL team)
1.4 agreed approach to deal with multi-intervention reporting within / across countries (FGMC and others)
1.5 initial approaches for contribution / attribution analysis and how these could apply to KPI8 (MEL) defined
1.6 potential interim or proxy metrics (MEL team, DFID FGMC) identified for testing
1.7 Plan agreed for international collaboration (e.g. Norway, Germany, FAO, UNEP, WB..)
1.8 detailed specification of outputs for main project phase specified, including countries for further testing
STREAM 2: Mapping platform maintenance and delivery
2.1 Maintenance for Nepal, Ghana and Brazil platforms already up and running
2.2 Test upload of social data for 1 country (with IFRI)
2.3 Develop user policy and training programme (who gets access to what; who needs training)
2.4 Upload available 2014 data to existing applications in Brazil, Nepal, Ghana
2.5 Identify additional functional requirements (e.g. in country data upload and management)
2.6 Agree system and user interactions with the ICF Knowledge Platform
1.10 Inception report and detailed fully costed work plan submitted no later than 4 months after contract signing

Main Delivery Phase (Depending on outcome of Inception Phase)

32. **Key outputs to be delivered** are likely to include the following, but will be further refined on completion of the inception period and in accordance with the detailed work plan. Payment schedules will be linked to progress against the key outputs set out in the inception report:

    a) An updated core methodology, plus additional components suitable for use in programmes such as FGMC which operate at broader regional geographic scales, and in countries where multiple projects or programmes operate, tested and agreed for use.

b) Methods rolled out to up to 3 additional countries with advice on the staffing, time and cost implications for programmes to implement the methodology on their own.

c) Actual data on avoided deforestation to show progress against "baselines" from the test phase in Nepal and Brazil, and systems in place to collect progress data for other countries in alignment with DFID results reporting cycles.
d) Training provided to project teams to be able to make use of the user interface platforms, input additional project data, and interrogate datasets

e) Expansion of platforms to new countries, and routine maintenance and updating of platforms carried out.

f) Agreement with Global Forest Watch / University of Maryland and other international partners to work jointly on accuracy assessments

g) Effective Coordination and lesson learning arrangements with ICF forest programmes, the MEL and IFRI.

Constraints and dependencies

33. The main constraints and dependencies for a successful completion of this work are as follows:

- Effective co-ordination with the principal MEL contractor and associated partners and stakeholders including IFRI, FGMC management team and DFID programme managers: To address this an initial co-ordination agreement has been identified as an important initial task within the inception process

- Communication with country / programme teams regarding the usefulness and effort required to implement the methods: This is likely to be a common point across all KPI's and to address this initial buy-in and commitment from ICF programmes is needed along with an agreed framework for co-ordination to support effective communication.

- Availability of satellite and other spatial data. Data availability can constrain the analysis that is possible on forest change: However, there appear to be several potential sources of data of sufficient quality. The main exception is data on forest change at small scales by subsistence / smallholder agriculture, which remains a technical challenge. Collaboration with the UK Space Agency, European Space Agency and other international expert groups should go some way to address this.

Performance requirements

34. Detailed performance requirements will be set out in the inception report and agreed with DFID, however these are likely to include the following:

For Stream 1 activities it is anticipated that performance requirements will include:
- Being responsive to MEL lead contractor for methodology improvements and consistency with broader KPI approaches
- Ensuring that the updated methodology is practical and useful for programme managers and that the mapping platform use usable
- Completion and testing of methodological components within agreed timelines

- Provision of appropriate quality descriptions (meta-data) on the sources of evidence, whether spatial or non-spatial
- Provision of good quality training materials and ensuring training outcomes are satisfactorily achieved

35. The performance requirements for Stream 2 service provision will be set out in detail in the Service Agreement, to cover aspects such as system performance, uptime, training and support, covering the specifications and requirements set out from paragraph 19 of this terms of reference and other issues by mutual consent.

Reporting

Report	Date	Contents
Inception report	4 months after signing contract	See list of outputs in Table B
Platform performance report	Quarterly	System performance Status of live applications New queries and data added Numbers of users Support requests and feedback Training delivered
Financial reporting	With each payment request	Invoice

36. Reports should be submitted to the responsible DFID adviser and the management team for the Forest Governance, Markets and Climate (FGMC) programme.

Timeframe

37. The work will take place over a 2.5 year period commencing in March 2016 and ending in September 2018. No extension is anticipated, but there will be an option to extend for 6 months.

38. There will be a formal break clause at the time of inception report delivery, and a further break clause will be identified during inception.

39. Towards the end of the contract period, DFID will assess whether and how to take this work forward. In the event that continuity is recommended, a tender process will be initiated for the ongoing provision of data platform services.

DFID co-ordination

40. The main points of contact will be the Forests and Land Use Adviser in DFID's Natural Resources and Resilience team. A monthly call with the DFID lead will be held to ensure the project is on track. This will be more frequent during the inception phase (weekly initially).

41. Coordination meetings with IFRI and MEL teams to ensure coherence across forest related KPIs, quality assurance, lesson learning etc will be determined during the inception period and roles and responsibilities clarified and set out in the inception report.

42. Regular coordination with DEFRA and DECC as required.

Digital

43. Many of DFID's programmes include communications activities that are in direct support of poverty reduction and deliver clear development results. These activities are not subject to spending controls, unless they involve digital or web based activities. All communications activities in support of development results must be targeted at specific audiences rather than the general public and still be delivered in a cost-effective way. Digital is defined as any service provided through the internet to citizens, businesses, civil society or non-government organisations. This includes, but is not limited to information services, websites, transactional services, web applications (e.g. maps), mobile apps, and extranets. **DFID's approval is needed for all spending relating to the development and delivery of digital elements of externally facing programme work.**

Duty of Care

44. The Supplier is responsible for the safety and well-being of their Personnel (as defined in Section 2 of the Contract) and Third Parties affected by their activities under this contract, including appropriate security arrangements. They will also be responsible for the provision of suitable security arrangements for their domestic and business property.

45. DFID will share available information with the Supplier on security status and developments in-country where appropriate. DFID will provide the following if required: [All Supplier Personnel will be offered a security briefing by the British Embassy/DFID on arrival. All such Personnel must register with their respective Embassies to ensure that they are included in emergency procedures.

46. A copy of the DFID visitor notes (and a further copy each time these are updated), which the Supplier may use to brief their Personnel on arrival.

47. The Supplier is responsible for ensuring appropriate safety and security briefings for all of their Personnel working under this contract and ensuring that their Personnel register and receive briefing as outlined above. Travel advice is also available on the FCO website and the Supplier must ensure they (and their Personnel) are up to date with the latest position.

48. This Procurement may require the Supplier to operate in a seismically active zone and is considered at high risk of earthquakes. Minor tremors are not uncommon. Earthquakes are impossible to predict and can result in major devastation and loss of life. There are several websites focusing on earthquakes, including http://geology.about.com/library/bl/maps/blworldindex.htm. The Supplier should be comfortable working in such an environment and should be capable of deploying to any areas required within the region in order to deliver the Contract (subject to travel clearance being granted).]

49. This Procurement may require the Supplier to operate in conflict-affected areas and parts of it are highly insecure. Travel to many zones within the region will be subject to travel clearance from the UK government in advance. The security situation is volatile and subject to change at short notice. The Supplier should be comfortable working in such an environment and should be capable of deploying to any areas required within the region in order to deliver the Contract (subject to travel clearance being granted).]

50. The Supplier is responsible for ensuring that appropriate arrangements, processes and procedures are in place for their Personnel, taking into account the environment they will be working in and the level of risk involved in delivery of the Contract (such as working in dangerous, fragile and hostile environments etc.). The Supplier must ensure their Personnel receive the required level of training and, if required, complete a UK government approved hostile environment training course SAFE (Security Awareness in Fragile Environments). The course should be booked through DFID and factored into the commercial tender) or safety in the field training prior to deployment.

51. Tenderers must develop their Response and Tender on the basis of being fully responsible for Duty of Care in line with the details provided above and the initial risk assessment matrix prepared by DFID (see Appendix A of this ToR). They must confirm in their Tender that:
    - They fully accept responsibility for Security and Duty of Care.
    - They understand the potential risks and have the knowledge and experience to develop an effective risk plan.
    - They have the capability to manage their Duty of Care responsibilities throughout the life of the contract.

52. If you are unwilling or unable to accept responsibility for Security and Duty of Care as detailed above, your Tender will be viewed as non-compliant and excluded from further evaluation.

53. Acceptance of responsibility must be supported with evidence of Duty of Care capability and DFID reserves the right to clarify any aspect of this evidence. In providing evidence, interested Suppliers should respond in line with the Duty of Care section in the ITT.

Transparency

54. DFID has transformed its approach to transparency, reshaping our own working practices and pressuring others across the world to do the same. DFID requires Suppliers receiving and managing funds, to release open data on how this money is spent, in a common, standard, re-usable format and to require this level of information from immediate sub-contractors, sub-agencies and partners.

55. It is a contractual requirement for all Suppliers to comply with this, and to ensure they have the appropriate tools to enable routine financial reporting, publishing of accurate data and providing evidence of this DFID – further IATI information is available from;

    http://www.aidtransparency.net/

Background

56. The hectares indicator used by ICF programmes currently feeds into the DFID Climate and Environment Operational Plan, ICF annual results report and the DFID Departmental Results Framework. It is also a direct contributor to the livelihoods, ecosystems and biodiversity, and carbon indicators, so is of high relevance to DECC and Defra's objectives. As an ICF Key Performance Indicator (KPI), it is present in all programmes funded under the ICF. The indicator is defined as: "Number of hectares where deforestation and degradation have been avoided through ICF funding".

57. While conceptually appealing for its apparent simplicity, the indicator is actually fraught with technical difficulties that prevent easy measurement and reporting. For this reason, in 2013 DFID commissioned the university of Edinburgh and Ecometrica to undertake a review of the indicator methodology proposed at the time, and to suggest viable cost

effective alternatives should the existing methodology be deemed inadequate. The alternative that was proposed forms the basis of this contract; a risk based approach.

58. The current risk based methodology for KPI 8 described by Ecometrica and the University of Edinburgh was developed following comprehensive literature review of alternative methods and approaches that have been applied in this area (Tipper et al, 2014)[10]. The summary findings on economic models of land use change were as follows:

> *Economic models are numerous and diverse in their approach[es], but all start from this theory and use empirical evidence to tune and test their models, rather than drive them (Kaimowitz & Angelsen, 1998). Basic models apply the land rent theories of von Thunen and Ricardo, which gives increased value to land nearer markets and thus predicts these will be deforested first, which relates well to reality in several studies (Chomitz & Gray, 1996; Hofstad, 1997; Serneels & Lambin, 2001).*
>
> *However, such economic models are normally viewed as too simplistic and unable to include enough variables to explain true deforestation patterns, as the theoretical basis for interactions between all these variables does not exist (Irwin & Geoghegan, 2001).*
>
> *Thus more recent models combine economic theory of decision making with spatially explicit data similar to an empirical framework, with some successes (Chomitz & Gray, 1996; Irwin & Geoghegan, 2001; Bacon et al., 2002; Namaalwa et al., 2007). As these models become more complex however they become harder to interpret, and results of scenario analyses are harder to trust: such models remain largely untested against real data.*

59. It was further found that economic models of land use change tend to be very demanding in terms of input data, and also difficult to standardise between different countries and regions, thus making model construction, parameterisation and validation onerous in terms of time and resources.

60. Alternative (simpler) approaches such as extrapolating historic trends are likely to be used as the basis of reference scenarios within REDD+ agreements. However, there is a widely recognised limitation of extrapolation in the failure to take account of new threats or land use change drivers. For some of the UK's results-based initiatives the simplicity and efficiency of the methodological approach is one of the key determinants of the overall value-for-money of the programme. In these cases we may continue to rely on simple baselines and attribution rules.

61. Another difficulty with extrapolation based reference levels lies in the defining the spatial extent of the reference area. As the boundaries of the reference area change, so will the historic rates of loss and consequently the reference level.

62. Risk based methods were recommended because of the ability to incorporate a range of variables (accessibility of forests to drivers of forest loss; suitability of forests for alternative land uses; degree of protection by legal or land tenure systems). Detailed policy changes can also be reflected in risk mapping. For example, a recent change in the Brazilian forest code altered the distance from water bodies where forest conservation was mandatory. Our methodology test was able to map and quantify the

[10] Tipper, et al. (2014). The ICF Hectares Indicator: A review and suggested improvements to the indicator methodology. Available at http://ecometrica.com/white-papers/can-donor-funded-forest-programmes-measure-impacts-terms-avoided-deforestation-degradation

change in the forest at risk under the revised code. As risk based methods assign each pixel to a risk class, there are no problems with setting the area boundaries.

APPENDIX A - DUTY OF CARE RISK ASSESSMENT MATRIX

	Country	Threats		
		Overall Security	Violent Crime and Disorder	Terrorism
1	Afghanistan	5	4	5
2	Bangladesh	3	3	3
3	Barbados	2	2	1
4	Burma	2	2	1
5	China	2	2	1
6	Democratic Republic of the Congo	5	5	2
	Egypt	3	3	4
	Ethiopia	3	2	3
	Ghana	3	3	1
	Guyana	4	4	1
	India	2	2	3
	Indonesia	3	3	3
	Iraq	5	5	5
	Jamaica	3	4	1
	Jordan	3	2	4
	Kenya	5	5	4
	Lebanon	3	3	4
	Lesotho	2	2	1
	Libya	3	3	4
	Malawi	3	3	2
	Morocco	3	2	3
	Mozambique	3	3	2
	Nepal	2	2	1
	Nigeria	4	4	4
	Pakistan	4	2	5
	Palestine	3	3	4
	Rwanda	3	4	3
	Sierra Leone	3	3	2
	Somalia	5	4	5
	South Africa	4	5	3
	South Sudan	4	4	4
	Sudan	3	3	4
	Syria	4	3	4
	Tajikistan	3	2	2
	Tanzania	3	4	3
	Tunisia	3	3	3
	Ukraine	3	2	3
	Uganda	3	3	3
	Vietnam	2	2	1
	Yemen	5	3	5
	Zambia	3	3	1
	Zimbabwe	3	3	1

Overall Security

5 Critical	4 Severe	3 Substantial	2 Moderate	1 Low	0 Negligible

Violent Crime and Disorder

1 (Very High)	2 (High)	3 (Significant)	4 (Moderate)	5 (Low)	6 (Negligible)

Terrorism

Alpha (Very High)	Bravo (High)	Charlie (Significant)	Delta (Moderate)	Echo (Low)	Foxtrot (Negligible)

DFID Duty of Care to Suppliers

5 Very High	4 High	3 Medium	2 Low	1 Very Low