UN-REDD PROGRAMME

National Programme Final Report

Papua New Guinea

UN-REDD Programme

4th August 2017

In accordance with the decision of the Policy Board, hard copies of this document will not be printed to minimize the environmental impact of the UN-REDD Programme processes and contribute to climate neutrality. The UN-REDD Programme's meeting documents are available on the internet at: www.unredd.net or www.un-redd.org.

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Final Report for the UN-REDD National Programmes

The Final Report for the National Programmes (NPs) highlights overall results throughout the implementation of the NP. These results are reported against the consolidated National Programme Document results framework, as approved by the Programme Steering Committee or Executive Board, or as adjusted following a mid-term review or evaluation.

The report includes the following sections: 1.) National Programme Identification; 2.) Progress Reporting; 3.) Lessons Learned; 4.) Warsaw Framework for REDD+ and Associated UNFCCC Decisions; 5.) Financial Delivery; and 6.) Adaptive management.

The lead agency for each National Programme is responsible for coordinating inputs to the Final Reports, and for ensuring all agency and counterpart perspectives have been collected - in particular government and civil society organizations. The reports are reviewed and vetted by the regional agency teams, who provide quality assurance and recommendations to the national teams for a focus on results and adjustments to be made. It therefore follows an iterative process which serves to enhance the quality of the reports and enable a meaningful assessment of progress and identification of key lessons that could be exchanged among partner countries.

The Final Report for the National Programmes should be submitted to the UN-REDD Programme Secretariat (un-redd@un-redd.org).

1. National Programme Identification

Please identify the National Programme (NP) by completing the information requested below. The Government Counterpart and designated National Programme focal points of the Participating UN Organizations are requested to provide their electronic signatures below, prior to submission to the UN-REDD Secretariat.

National Programme Title	UN-REDD PNG National Programme
Implementing Partners[1]	Climate Change and Development Authority (CCDA: former Office of Climate Change and Development)
Participating Organizations	PNG Forest Authority

Project Timeline			
Programme Duration	5 years 9 months	No-Cost Extension	Yes
NPD Signature Date	16th June 2011	Current End Date	31st March 2017
Date of First Fund Transfer[2]	23rd June 2011	Mid-term Review	Yes/No
Original End Date[3]	31st December 2013	Mid-term Review Date	N.A.

Financial Summary (USD)[4]			
UN Agency	Approved Budget[5]	Amount Transferred[6]	Cumulative Expenditures up to 31 March 2017[7]
FAO	4,225,000	4,225,000	4,235,916
UNDP	1,595,920	1,595,920	1,595,920
UNEP	150,000	100,000	100,000
Indirect Support Cost (7%)	417,964	414,464	415,229
Total	6,388,884	6,335,384	6,347,065

Signatures from the designated UN organizations[8]			Signature by the Government Counterpart
FAO	UNDP	UNEP	
13/09/2017	14/9/2017	18/9/2017	07/09/2017
MICHAEL PIZZARI	TRACY HENINGS	Johan Kieft	Mr. Ruel Yamuna

1 Those organizations either sub-contracted by the Project Management Unit or those organizations officially identified in the National Programme Document (NPD) as responsible for implementing a defined aspect of the project.
2 As reflected on the MPTF Office Gateway http://mptf.undp.org.
3 The original end date as stated in the NPD.
4 The financial information reported should include indirect costs, M&E and other associated costs. The information on expenditure is unofficial. Official certified financial information is provided by the HQ of the Participating UN Organizations by 30 April and can be accessed on the MPTF Office GATEWAY (http://mptf.undp.org/factsheet/fund/CCF00).
5 The total budget for the entire duration of the Programme as specified in the signed Submission Form and NPD.
6 Amount transferred to the participating UN Organization from the UN-REDD Multi-Partner Trust Fund.
7 The sum of commitments and disbursement
8 Each UN organization is to nominate one or more focal points to sign the report. Please refer to the UN-REDD Programme Planning, Monitoring and Reporting Framework document for further guidance.

2. Progress Reporting

This section aims to summarize the results and identify key achievements of the NP. Additionally, the section provides the opportunity to capture government and civil society perspectives and for these parties to provide additional or complementary information.

2.1 Overall Results of the National Programme

Please provide a brief overall assessment of the extent to which the NP has reached the expected outcomes and outputs identified in the National Programme Document. [500 words]
The PNG UN-REDD National Programme (NP) has achieved the outcomes and overall objective as described in the National Programme Document (NPD). The Programme aimed to support the Government of PNG to initiate and progress its efforts towards REDD+ readiness, with an emphasis on the development of a Measurement, Reporting and Verification (MRV) system for PNG, as an important complement to the country's domestic climate change efforts. The PNG UN-REDD NP was responsible for establishing the management arrangements for REDD+ in the country, particularly through the strengthening of technical working groups (TWGs) and facilitation of their regular meetings. A 'REDD+ network' was established, with the TWGs serving as fora not only for discussing technical issues but also as convening events for all relevant stakeholders; which were supplemented by extensive awareness raising campaigns at national and provincial levels. According to the guidance of the Intergovernmental Panel on Climate Change (IPCC) and the Decisions on REDD+ of the UN Framework Convention on Climate Change (UNFCCC), ultimately outlined in the Warsaw Framework for REDD+, a National Forest Monitoring System (NFMS) for REDD+ should enable a country to conduct MRV of Greenhouse Gas (GHG) emissions from the forest sector by generating Activity Data (AD) and Emission Factors (EFs), leading to the creation of a GHG Inventory. PNG's MRV system consists of two different GIS methodologies (point sampling and wall-to-wall mapping) operated by two government agencies (PNG Forest Authority: PNGFA and Climate Change and Development Authority: CCDA) to monitor AD, and a National Forest Inventory (NFI) to determine EFs. National forest and land use monitoring using point sampling method was conducted in 2014 and 2016. Annual land use change between 1999 and 2015 was also assessed. A land use map was produced in 2015. The PNG REDD+ and Forest Monitoring Web-portal was developed, which allows public access to spatially-explicit information on forest and land use, thus enhancing transparency of the REDD+ process in the country. Methodologies for the multipurpose NFI were developed, tested and documented. Numerous technical trainings were conducted and the field assessment was commenced. Strong capacity was built for operating PNG's MRV system through trainings and actual implementation. A REDD+ Forest Reference Level (FRL) was established using the data derived from PNG's MRV system and was submitted to the UNFCCC in January 2017. PNG has established a complete MRV system and built capacity to operate the system. Several tools were developed to support REDD+ readiness: National Guidelines on Social and Environmental Safeguards, National Guidelines for Free, Prior and Informed Consent (FPIC), and a REDD+ training manual. Through the development of National Guidelines on Social and Environmental Safeguards, based on regional and provincial circumstances, which were thereafter field-tested in provinces, work on REDD+ safeguards was initiated. Guidelines for FPIC were also developed, inclusive of gender considerations, and were field tested in collaboration with Wildlife Conservation Society (WCS) and ForCert, with results used to further strengthen the guidelines. Similarly, an initial REDD+ training manual was revised and used to conduct trainings in selected

provinces. Throughout the duration of the NP, close coordination was ensured with other donors and programmes, particularly AUSAID and JICA.

The PNG UN-REDD NP has also initiated steps to effectively take into account the potential social and environmental benefits of REDD+ beyond GHG abatement in the design of PNG's REDD+ strategy, through the use of spatial information.

A practical framework for a benefit sharing and distribution system (BSDS) in PNG was developed with input from an Institutional Context Analysis (ICA) study. A draft national REDD+ Communication Strategy was prepared, providing recommendations for the short and medium term.

A study of National Circumstances in the Context of REDD+ and Identification of REDD+ Abatement Levers was carried out, which included in-depth analyses of the drivers of deforestation and forest degradation in PNG.

2.2 Ancillary results

Please provide a description of results that had not been planned for in the National Programme Document but delivered in the process of implementing the National Programme. [250 words]
The government is proud of what was achieved through the implementation of the UN-REDD National Programme. The results and achievements have been presented on many occasions at national and international levels, including UNFCCC COPs. Such events raised the awareness of REDD+ in the country and of how REDD+ has been framed as an important component of national policy. For example, PNG held a side event on "Promoting Transparency on National Forest Monitoring for REDD+ in PNG" at the Asia Pacific Forestry Week held in Philippines in February 2016 to internationally launch the web-portal. The NFI and the web-portal were launched in-country by the Prime Minister in March 2016. PNG also organized many other national and international events to present their achievements from the National Programme including the MRV system and FRL. Although the UN-REDD NP took time to get started, it ultimately built the foundations for REDD+ readiness in PNG that continue to be built upon through advanced readiness initiatives (such as FCPF, delivered through UNDP, and the EU forest inventory project, delivered by FAO). As such the NP leaves a lasting legacy for sustainable forest and land management in PNG.

2.3 In Focus

Please provide an example of an outstanding achievement made by the NP. [150 words]
PNG developed an accurate and reliable, yet cost-effective and transparent, MRV system. PNG's MRV system, with point sampling and wall-to-wall mapping, contains a comprehensive Quality Control and Quality Assurance (QC/QA) process verifying the data with internationally and locally available Remote Sensing (RS) and Geographic Information Systems (GIS), providing accurate land use information. PNG's MRV system uses only open source software and RS imageries. It makes the system economical (therefore sustainable) and transparent. The Web-portal provides map-based land use information to the public, enhancing the transparency of the REDD+ process of the country. PNG's government built strong ownership and domestic capacity to operate the MRV system and is proud of the system they have developed, promoting it both locally and internationally through documentation and through the events mentioned in the above section.

PNG was the second NP in the Asia-Pacific region to develop national guidelines for FPIC. The process was widely lauded by government agencies and civil society as inclusive and transparent, while the guidelines were reflective of the challenges faced and strived to provide practicable actions.

2.4 Government Comments

Government counterparts to provide their perspective and additional complementary information not included in the overall progress assessment. [500 words]
The National UNREDD Programme provided many first lessons for the government and particularly for the Climate Change and Development Authority (then OCCD) in aspects of stakeholder coordination and engagement, agency collaboration, policy coordination and technical cooperation. The management arrangements allowed for the first time the PNGFA and CCDDA to co-direct an international programme with outputs that were specific but complementary. Issues and challenges were encountered including mandate boundaries, roles and responsibilities but through continuous dialogue and progress these issues have been gradually overcome and clarified The Programmme helped to build some specific technical skills within the CCDA, the PNGFA and other agencies particularly in the MRV outputs and components of the NFMS , FRL, AFOLU GHG Inventory. This will support and enable on going and regular monitoring, measurement and reporting of greenhouse gas emissions and carbon stocks in the forest and land use sector not only to support our international reporting obligations but will also be useful for future development planning and decision making. The Programme also was instrumental in giving government experience and insight into working with three UN agencies in a tripartite arrangement. It gave CCDA in particular some experience in the strengths and weaknesses of the UN system and the three agencies and the ability to understand how best to work with them. As a result the government has a stronger working relationship with the UN on climate change as can be seen by the number of new projects initiated or in the pipeline. It also contributed to the capacity and strengthening of CCDA staff in specific tasks such as drafting of TORs, work planning and budget preparations and negotiation and stakeholder engagement skills and overall project management and people management skills. This in turn has contributed to the strengthened capacity of CCDA staff that makes the CCDA to be seen as an effective government agency. - Ms Gwen Sissiou, General Manager, REDD+ and Mitigation Division, Climate Change and Development Authority

2.5 Non-Government Comments

Civil society stakeholders to provide their perspective and additional complementary information (Please request a summary from existing stakeholder committees or platforms). [500 words]
The UNREDD Programme in Papua New Guinea signified the first, formal international financial support to develop key REDD+ design elements and to initiate a national REDD+ program in the country. From a non-government stakeholder point of view, this funding was a major boost for the Government of Papua New Guinea (Go-PNG) to recognize REDD+ as an important issue of national interest while putting in place the necessary management and stakeholder engagement mechanisms. The establishment and capacity development of PNG's Climate Change and Development Authority (CCDA) has been an important achievement under UN-REDD support. This also demonstrated Go-PNG's commitment to address climate change locally when CCDA was set up to focus primarily on coordinating climate change issues in the country. Prior to the commencement of the PNG UN-REDD Program, and due to a national climate change policy or regulatory vacuum, many cases of 'illegitimate' carbon projects arose. However, CCDA via UN-REDD support has played a major role in stakeholder engagement and policy development with various stakeholders which saw the passing of the National Climate Change Policy and the Climate Change Act by PNG's Parliament. One of the most important aspects of REDD+/climate change coordination was the establishment of technical working groups/technical working committees in which the members comprised representatives from various agencies within government, civil society including NGOs and industry, particularly from the palm oil and logging industries. This provided an opportunity for all stakeholders to sit at the same table and discuss issues in relation to climate change/REDD+. For NGO partners, this was probably the first time that NGO staff were able to participate at government sanctioned meetings in relation to addressing climate change issues. A number of NGO staff were also sponsored together with government colleagues to attend safeguards and FPIC (free, prior and informed consent) related training events overseas. The co-chair of the Social and Environmental Safeguards Technical Working Group was an NGO representative. An important element of stakeholder engagement under the Programme was the field-testing of PNG's National REDD+ FPIC Guidelines which were developed by CCDA with communities that civil society groups were already working with in PNG. The field tests were conducted in several provinces by CCDA in collaboration with NGO staff and demonstrated the necessity of informing and validating national policies and guidelines through on-the-ground field experiences. This was an important lesson and particularly relevant to the PNG context given the huge cultural diversity and varying levels of exposure of local forest communities and landowners to the concepts of climate change and REDD+. Overall, the UN-REDD program has played a critical, start-up role in the institutionalization and development of REDD+ in Papua New Guinea. - Mr Bensolo Ken, Wildlife Conservation Society

2.6 Results Framework Matrix

The results framework aims to measure overall results of the National Programme against the outcome and output targets identified in the National Programme document log frame. In cases where there are no achievements or shortfalls in achieving targets, a thorough justification is required. Requirements for the sections include:

- For each outcome, please provide the outcome title and indicate if the outcome was achieved. Please list each outcome indicator, the associated baseline and expected target for the National Programme. Please provide an assessment of whether the target has been achieved and expected outcome met.
- For each output, please provide the output title and list each performance indicator, the associated baseline and expected overall target and delivery against this target.
- Please repeat this for all outputs and outcomes listed in the NP results framework (or revised version after inception workshop or mid-term review).

Outcome 1: Readiness Management Arrangements in Place	
☒ Outcome Achieved	☐ Outcome not achieved
Results against the Outcome: [100 words] This outcome was successfully achieved through the establishment of effective REDD+ management arrangements including TWGs. Throughout the lifetime of the NP, the Project Executive Board (PEB) effectively served as the de facto coordinating body for REDD+ in PNG. TWGs served effectively as vehicles for convening relevant stakeholders to present on the latest status of activities, and are now well known among stakeholders in PNG. Awareness on REDD+ among relevant stakeholders in PNG was greatly strengthened through the NP, an outcome significantly bolstered by the proactive actions of OCCD and PNGFA staff in engaging stakeholders and disseminating information through appropriate channels.	

Output 1.1: Management arrangements between GoPNG and stakeholders strengthened		
Baseline	*Indicator*	*Assessment Against Indicator*
• GoPNG liaises with donors through FCC; REDD+ NGO workshop and whole of government workshop conducted in 2010	• All donor support on climate change is effectively coordinated and aligned along GoPNG priorities • At least 1 REDD+ NGO workshop and 1 whole-of-government workshop have been held annually to progress REDD+ readiness	• REDD+ activities in PNG are coordinated among all donor agencies. • A functionally operating inclusive national REDD+ "network" was established, in which the relevant government departments, NGO's, CSOs and private and development partners regularly meet and discuss REDD+ development and implementation in PNG. A lessons learned workshop in December 2015 brought together stakeholders from across government, academia, NGOs and the private sector.

Assessment towards Output:

The management arrangements between the government and REDD+ stakeholders improved during the lifetime of the NP. This is particularly true in the case of OCCD (which in 2016 became the Climate Change and Development Authority – CCDA). The NP supported regular meetings between OCCD and relevant stakeholders. TWG meetings (on REDD+, Safeguards and MRV) have enabled direct interaction and communication between stakeholders, OCCD and PNGFA, and between the national and provincial government. The NP also supported bilateral meetings between GoPNG and international and other REDD+ related donor funded activities. The PMU acted as the secretariat for organising Programme Executive Board (PEB) meetings. The PMU also successfully supported GoPNG in organising a number of national and sub-national workshops, including a national REDD+ Lessons learned Workshop (4-5 November 2015), a National REDD+ Awareness Raising Workshop (11 September 2013), and two regional and five provincial workshops on REDD+ Training and Awareness, FPIC and safeguards.

Output 1.2: National Programme implementation strengthened

Baseline	*Indicators*	*Assessment Against Indicators*
• Project documents (work plans, budgets, reports, TORs etc.) are not produced on time.	• Ongoing during NP implementation: Project documents (work plans, budgets, reports, TORs etc.) are produced on time	A PMU was established in CCDA (formerly OCCD), that provided day-to-day support to government counterparts on REDD+ readiness, including integration of FCPF readiness grant activities, which led to timely delivery of activities and products and financial delivery according to budget plans.

Assessment towards Output:

The PMU provided work and budget planning support for review by the PEB, prepared ToRs for the scheduled international and national advisory work, published the related job advertisements (website and local newspapers), prepared and submitted annual and semi-annual progress reports, prepared the meetings and workshops, including the agenda and the minutes, etc. The CCDA REDD+ Division was supported and trained in taking over certain of the above-mentioned tasks, i.e. the preparation for, and minuting of, the workshops and TWG meetings, and were supported in delivering REDD+ awareness trainings, and FPIC and safeguard validation missions. Frequent knowledge sharing sessions were organised. Several (expert) workshops and meetings were supported by the NP, such as training sessions/workshops on REDD+, BSDS, FPIC, NFI, NFMS. In November 2015, a National REDD+ Lessons Learned Workshop was held in Port Moresby, which identified achievements to date in PNG and facilitated discussion on next steps. Lessons learned will feed into next steps that the country will take towards REDD+ implementation. The NP supported initial work on a National REDD+ Communication Strategy. This strategy intends to support the REDD+ readiness development in PNG through the provision of clear and effective information, targeted and delivered to key national and international stakeholders.

Outcome 2: National MRV system developed	
☒ Outcome Achieved	☐ Outcome not achieved
Results against the Outcome: [100 words]	

A Satellite Land Monitoring System (SLMS) has been established to produce Activity Data for the MRV system. The SLMS in PNG consist of Terra PNG (wall to wall mapping) operated by CCDA, and Collect Earth (point sampling) operated by PNGFA. These two systems verify, supplement and improve the data accuracy of each other. These in-house land use spatial information tools, together with extensive information from other national and international sources, are uploaded on the web-portal, which enables the public to observe land use and forest information of PNG, and enhances transparency of the REDD+ process in the country. The National Forest Inventory (NFI) is the primary information source for Emission Factors of the MRV system. Methodologies were prepared and tested in the field. Numerous trainings were conducted, necessary capacity was built and the field assessment was commenced. The national MRV system was thus fully developed and Outcome 2 was achieved.

Output 2.1: National REDD+ Information System developed		
Baseline	*Indicator*	*Assessment Against Indicator*
• No centralized source for information on REDD+ or safeguards	• Information on REDD+ and safeguards is available to all stakeholders through a web-based interface and an annual report	A web-portal, which provides spatial information on forest and land use to the public, was established. A demo version web-portal, which can run only on individual computers was created in 2014 for demonstration purposes. Web-portal demonstrations were conducted at numerous meetings with stakeholders and the consultation workshops. Since the majority of data planned to be loaded on the web-portal belonged to different government agencies and the private sector including PNG Forest Authority, Conservation and Environmental Protection Authority, Mineral and Resources Authority, National Statistics Office, Climate Change and Development Authority and PNG Palm Oil Council, it was necessary to show what the web-portal looked like and how the data of each organization would be displayed. After agreement was reached with the data source organizations for displaying the relevant data to the public, the web-portal was loaded on the internet permitting the access to limited people in 2015 for trial and further consultation purpose. After the trial period, the web-portal was internationally launched by the A/Managing Director of PNGFA at the PNG side event "Promoting Transparency on National Forest Monitoring for REDD+ in Papua New Guinea (flyer)" during Asia Pacific Forestry Week held in Philippines in February 2016. The web-portal (together with NFI) was also launched in the country by the Prime Minister Hon. Peter O'Neil on 9th March (NFI & web-portal launching event report) and the web-portal became fully available to public. The web-

		portal is accessible from the following link (http://png-nfms.org/portal/). It contains spatial information of land use including forest base map 2012, Terra PNG land use map 2015, Collect Earth point sampling 2013 data, logging concession, protected area, village and population, oil palm plantation, mining concession, Hansen tree cover loss and gain (University of Maryland), roads, rivers etc. The web-portal allows users to overlay information to understand the complex land use of the country. The contents and functions of the web-portal are described in detail in the final draft of web-portal document. A PNG REDD+ website to provide PNG REDD+ and safeguards information is currently under construction as part of FCPF Project in the country.
	• Safeguards have been tested in the field	The draft National Guidelines on Social and Environmental Safeguards were field tested in Milne Bay province at the end of 2014. The indicators identified in the current guidelines need further detailing to cater for regional or provincial circumstances.

Assessment towards Output:

Web-portal is an important component of the national MRV system for ensuring the transparency of the national REDD+ process. PNG Forest Monitoring and REDD+ Web-portal was launched by the Prime Minister in March 2016. It was also launched internationally at Asia Pacific Forestry Week held in Philippines in February 2016. The web-portal is publicly available through the following link (http://png-nfms.org/portal/). The web-portal is populated with numerous spatial information including, land use map, logging concession, protected area, REDD+ project sites, international tree cover loss/gain data. Two CCDA officers and the national consultants (GIS and IT specialists) were trained for the management of the Web-portal. It is necessary to continue improving the systems with more information and functions but Output 2.1 was achieved.

Output 2.2: Satellite land Monitoring System set up

Baseline	*Indicators*	*Assessment Against Indicators*
• Fragmented use of GIS systems in GoPNG departments, often relying on outdated data	• Methodological approach, technical system and institutional responsibilities specified • SLMS provides annual GIS data sets used for MRV and across GoPNG	It was agreed that two different RS/GIS methods be tested to assess forest and land use change in the country. Considering the existing capacity of CCDA and PNGFA, and also for providing capacity building opportunities for the both government agencies, GIS point sampling assessment using Collect Earth was implemented by PNGFA and wall to wall GIS mapping assessment using Terra tool was conducted by CCDA. Collect Earth

		Collect Earth is GIS point sampling tool developed by FAO. It is open source software using Google Earth platform. The user-friendly interface of Collect Earth allows operators without previous GIS experience to conduct the assessment. After several training activities, national forest and land use assessment was commenced by PNGFA in October 2013. Collect Earth software itself was not fully developed at that time. New functions and changes were made to the software according to the request and suggestions provided by PNGFA operator. The first edition of the Collect Earth manual was produced based on the operation conducted by PNGFA. Scientific journal article describing and examining Collect Earth based on PNG assessment was also published. The development of Collect Earth software was also partly funded by the UN-REDD PNG National Programme. The Collect Earth tool itself is also an output of the PNG National Programme. At the 2013 Collect Earth assessment, historical land use change could not be assessed due to slow and frequently interrupted internet of PNGFA at the time. The assessment requires accessing historical Landsat images in Google Earth Engine and comparing them year by year. With the slow internet, it was impossible to conduct the assessment. Only the current land use at that time was assessed and the 2013 Collect Earth land use assessment report was produced. The assessment significantly improved our understanding of PNG forest status with considerably higher forest cover than previously reported. The results were presented on numerous occasions and were reported in the local media including newspaper articles. The assessment report was launched in September 2014 by the Minister of Forest, European Commissioner for Climate Action and Energy and FAO Subregional Coordinator for the Pacific at the 46th Pacific Island Forum held in Port Moresby (press release). Computers and accessories were procured and fibre optical cable were installed at PNGFA in 2015. National historical forest and land use change assessment for 2000-15 using Collect Earth was conducted in 2016 (implementation report). A total of 32 PNGFA officers participated in the trainings and the actual assessment. Annual land use change between 2000 and 2015 was assessed. The assessment data was used to develop a REDD+ Forest Reference Level, which was submitted to UNFCCC in January

		2017. PNG was the first country to conduct a national forest and land use assessment using Collect Earth and to produce a national FRL based on the data derived from Collect Earth. Terra PNG A satellite land Monitoring System Lab equipped with computers and fast internet was established in CCDA. The lab was officially opened by the Minister for Environment, Conservation and Climate Change, and the FAO Deputy Regional Representative of Asia Pacific Region on in May 2015 (press release, TV news). Terra is an open source GIS software developed by INPE (National Institute for Space Research). Their system (Terra Amazon) is used for monitoring the Brazilian Amazon forest. PNG experts of both CCDA and PNGFA were sent to INPE for trainings in 2012 and 2014. The system was modified for PNG and called Terra PNG. In country trainings were conducted and a manual was prepared. The assessment was conducted by CCDA and the national land use map in 2015 was produced in 2016 (Terra PNG mapping 2015 report) and the map was uploaded to the web-portal, to be available for public access. Satellite Land Monitoring System PNG's Satellite Land Monitoring System to monitor activity data on land use consists of two different GIS methodologies (point sampling and wall-to-wall mapping) operated by two different government agencies. Collect Earth point sampling produces statistical data containing very detailed information, which is suitable for national reporting but it does not produce a map. Terra PNG enables the production of historical and updated land use maps relatively quickly at reasonable cost. These two systems verify, supplement and improve the data accuracy of each other. Having two different methodologies make the PNG Satellite Land Monitoring System robust and reliable.
Assessment towards Output: Satellite Land Monitoring System (SLMS) produce Activity Data for PNG's MRV system. SLMS in PNG consist of Terra PNG (wall to wall mapping) operated by CCDA and Collect Earth (point sampling) operated by PNGFA. These two systems form an in country verification system, which makes the SLMS in PNG accurate and reliable. PNGFA conducted national forest and land use assessment using Collect Earth twice in 2014 and 2016. The second assessment was to assess the annual land use change from		

2000 to 2015. The data was used for establishing a REDD+ Forest Reference Level. CCDA produced a national land use map in 2015 using Terra PNG. The map is uploaded to the web-portal for public access. The capacity for producing the activity data was built within the government. Further improvement of the capacity is needed for more accurate monitoring but it is considered that SLMS in the country has been established and this output was achieved.

Output 2.3: Multipurpose national forest carbon inventory developed

Baseline	*Indicators*	*Assessment Against Indicators*
• FIMS, FIPS and Persyst in use by PNGFA with limited data on carbon	• Measurement protocols and sampling design for forest carbon survey defined • GoPNG has capacity to regularly undertake forest carbon monitoring and reporting	National Forest Inventory (NFI) designing For designing PNG's first National Forest Inventory (NFI), national consultation workshops were conducted three times; in October 2012 (NFI preparatory WS 2012 report), in February 2013 and in May 2014 (NFI preparatory WS 2014 report). The NFI methodology was also discussed at the NFI inception workshop held in April 2015 (inception workshop report). The design of the NFI was finally agreed through the above four major workshops. A two-phase approach was taken to conduct NFI, the remote sensing based forest assessment (1st phase) to stratify the forest, then conduct the field implementation (2nd phase) at each forest strata. Collect Earth assessment was conducted in 2013 and forest in PNG was stratified to 15 strata according to vegetation type and human disturbance. In addition to tree and botanical inventory, zoological (birds, moths, fruit fries and ants) and soil inventory were decided to be included in NFI. Considering the limited capacity on zoological research in PNGFA, collaboration with Binatang Research Centre (BRC, local NGO) was facilitated. After numerous consultations and discussions among national and international experts, NFI protocols were finalized. Methodologies for all the NFI components were documented mostly in manual format (tree inventory, Non-tree plant biodiversity, ornithology, entomology, and soil). NFI capacity building For building the capacity for conducting the multipurpose NFI covering a wide variety of scientific aspects, there were numerous trainings implemented for all NFI components. **Botany**

		There are over 3,000 tree species in PNG. Accurate identification of tree species are one of the major challenges for implementing NFI. PNG tree species identification manual was produced and one week long species identification trainings were conducted for at each of the four regions (New Guinea Islands training report, Highlands training report, Momase training report and Southern training report) in PNG during the period between December 2014 and June 2015. A total of 53 officers (50 from PNGFA and 3 from BRC) were trained. All the participants were tested at the end of trainings and the results were taken into account for the team selection of NFI field implementation. **Biodiversity** Training on biodiversity survey including non-tree plant diversity, ornithology and entomology was conducted for two weeks in July 2015 in Madang, PNG. National and international experts provided trainings to 19 participants from PNG universities, PNGFA and Binatang Research Centre (training report). Intensive ornithology training was conducted for two months from October to December 2015 by two international experts. Six candidates who passed the screening participated in the training. After two month of bird identification training at different elevation ranges from sea level to 3000 m, five participants were considered capable of conduct NFI ornithological survey independently (ornithology training report). **Soil** A one week training was conducted in November 2014 in Lae, PNG. Fifteen PNGFA officers and one academic staff of University of Technology participated in the training (soil training report). An advanced training was conducted at the University of Tasmania, Australia in November 2015. Three participants were trained (advanced soil training report). **Data management** Open Foris is a set of free and open-source software tools developed by FAO, which facilitates flexible and efficient data collection, analysis and reporting. Open Foris

		tools was selected to be used for the management of NFI data in PNG. Several PNGFA officers participated in the Open Foris trainings at FAO HQ in 2012 and 2014. In-country training for Open Foris Collect (data management tool) was conducted in August 2016, and for Open Foris Collect Mobile (field data collection tool) training was conducted in November 2016 (Collect Mobile training report) and for Open Foris Calc (data analysis tool) training was conducted in February 2017. **Overall NFI** Regional trainings were conducted at each four regions in PNG from May to August 2016 participated by a total of 68 PNGFA officers. Duration of each training was one week. Trainings were conducted at actual NFI plot clusters and all NFI components were conducted with the participants (regional training report). NFI awareness NFI was launched by the Prime Minister Hon. Peter O'Neil on 9th March 2016. Media statements on NFI were released through various media including TV and newspaper (NFI & web-portal launching event report). Awareness materials were produced (NFI booklet) and an NFI awareness campaign was commenced across the country in 2017.
Assessment towards Output: National Forest Inventory (NFI) is the primary information source of Emission Factors of MRV. Phase 1 NFI assessment (remote sensing based) was completed. Forest stratification and cluster selection based on the phase 1 assessment was completed. Methodologies were prepared and agreed among the key stakeholders including PNGFA, national and international academic institutes and development partners through four major workshops and numerous Technical Working Group meetings. The methodologies were tested in the field. Field manuals were prepared for tree inventory, biodiversity and soil. Numerous NFI trainings including remote sensing, data management, species identification, soil survey and biodiversity assessment were conducted to the officers and researchers of PNGFA, PNGFRI, BRC and Unitech. Regional trainings at all four regions in the country were conducted. Required capacity for NFI implementation was built. Field assessment commenced as part of trainings and implementation plan was prepared. Rolling out of NFI fields sampling is about to start. This Output was achieved.		
Output 2.4: National GHG inventory for REDD+ established		
Baseline	*Indicators*	*Assessment Against Indicators*
• Preparation of SNC underway with support from UNDP	• First REDD+ related GHG inventory completed based on PNG's MRV system	National forest and land use assessment using Collect Earth was completed in 2014. Although the historical land use change was not fully assessed at that time, it was identified that information obtained through Collect Earth assessment was suitable for

	• PNG has institutional capacity to regularly report GHG emissions from REDD+ related activities	GHG inventory of LULUCF sector. The assessment on annual land use change between 1999 and 2015 was conducted in 2016. Annual GHG emissions from LULUCF sector were estimated using the Collect Earth data. The results were used for establishment of REDD+ Forest Reference Level, which was submitted to UNFCCC in January 2017. A two-day GHG inventory working session (working session report) to estimate GHGi in AFOLU sector was held in June 2016 with 13 participants from various government agencies and private sector. This was followed up by a one-week working session at FAO HQ in October 2016, where one CCDA officer was trained. A further working session was held in March 2017 (AFOLU hands-on training report), where three CCDA officers and one officer of Department of Agriculture and Livestock were further trained and the work plan for Biennial Update Report (BUR) for submission in 2018 was prepared. The first REDD+ related GHG inventory was completed based on PNG's MRV system and Forest Reference Level was established. Further capacity building for improving the accuracy of GHGi and the preparation of BUR and National Communications was conducted.
Assessment towards Output: The information obtained by Collect Earth assessment is considered as the most suitable for GHG inventory of the LULUCF sector in PNG. This was agreed among national and international experts who examined the Collect Earth data of PNG. Annual GHG emission of LULUCF sector was estimated and such data was used for the establishment of REDD+ FRL, which was submitted to UNFCCC in January 2017. PNG has developed institutional capacity to regularly report GHG emissions from LULUCF sector. This Output was achieved.		
Output 2.5: Technical advice, capacity building and implementation support provided		
Baseline	*Indicators*	*Assessment Against Indicators*
• Limited and fragmented capacity for elements of a MRV system in GoPNG and non-government stakeholders	• Capacity gap assessment and capacity building plan for MRV elements in place. • GoPNG and stakeholders have capacity to independently operate PNG's MRV system	As fully described in Output 2.1 to 2.4 sections above, the capacity gaps were fully assessed and numerous capacity building activities for addressing the capacity gaps were conducted. The government of PNG estimated annual GHG emission from 1999 to 2015 in LULUCF sector and established a REDD+ Forest Reference Level, which was submitted to UNFCCC in January 2017. Forest and land use information is provided to the public through PNG REDD+ and Forest Monitoring Web-portal for ensuring the

		transparency of REDD+ process of the country. NFI field assessment has commenced. PNG REDD+ MRV was established and the government of PNG has built capacity to operate it.
Assessment towards Output: Sufficient and appropriate capacity building activities were conducted. Government of PNG built their capacity to operate the established REDD+ MRV system. This output was achieved.		

Outcome 3: Establishment of REL/RL supported	
☒ Outcome Achieved	☐ Outcome not achieved
Results against the Outcome: [100 words] Forest and land use change assessment and the study on national circumstances were conducted. National stakeholder consultation workshops were held three times. CCDA and PNGFA officers jointly drafted a FRL submission. The draft FRL submission was finalized through a validation process including a national multi-stakeholder validation workshop. PNG's FRL was submitted in January 2017. Outcome 3 was achieved.	

Output 3.1: Historical drivers of deforestation assessed		
Baseline	*Indicator*	*Assessment Against Indicator*
• Preliminary assessment of drivers of deforestation and GHG emissions	• Data to develop REL/RL compiled and clear guidance on methodology for REL/RL developed	The first national consultation workshop for PNG Forest Reference Emission level/Forest Reference Level (FRL) was held in October 2014 (FRL workshop report 2014). At the workshop, purpose, scope, scale, data and methodology of PNG FRL were discussed and the work plan was prepared. According to the workshop recommendations, various methodologies including CLASLite and University of Maryland data (Hansen data) were reviewed and a study on proxy measures using log export/extraction data was conducted (proxy approach study report). It was concluded that data obtained using Collect Earth tool was the most appropriate data source for establishing PNG's FRL. Other information mentioned above were also used for QC/QA of Collect Earth data for improving the accuracy. Annual forest and land use change assessment from 1999 to 2015 using Collect Earth was conducted in 2016 and the data was used for establishment of PNG FRL.

		Working/training session of FRL establishment was held in May where FRL Technical Working Group (TWG) members sat together with international experts to draft PNG FRL. 2nd National FRL stakeholder consultation workshop was held in June 2016 (2nd FRL workshop report) and 3rd consultation workshop was held in October 2016. Important elements of FRL including Scope, Scale, REDD+ activities and carbon pools included in FRL were discussed and agreed. Another working session was held at FAO HQ in Rome in October 2016 for PNG and international experts who finalized the draft PNG FRL together. The Draft PNG FRL was presented at the validation workshop held in December 2016 and submitted to UNFCCC in January 2017 (PNG FRL submission, Jan-2017).

Assessment towards Output:

The assessment on annual forest and land use change in 1999-2015 using Collect Earth provided Activity Data for PNG Forest Reference Level (FRL). The most appropriate Emission Factors were determined through careful reviewing of published studies in PNG and IPCC Guidelines (2006). PNG has established FRL using the data derived through the above studies. The PNG FRL was discussed by a wide variety of stakeholders at three national consultation workshops and the validation workshop. PNG FRL was finalized through the above process and submitted to UNFCCC in January 2017. Output 3.1 was achieved.

Output 3.2: National circumstances assessed

Baseline	*Indicators*	*Assessment Against Indicators*
• Existing land tenure and macro-/socio-economic research & studies with limited assessment of impacts on REDD+ and emissions	• National circumstances and their impact on GHG emissions and REDD+ assessed	The study on national circumstances was completed and a list of PAMs developed that address specific drivers of deforestation and forest degradation.

Assessment towards Output:

To estimate projected GHG emissions from land use, land use change and forestry (LULUCF), a review of international approaches on adjusting historical emissions from deforestation and forest degradation, according to national circumstances was carried out. This was achieved through the identification of a clear set of criteria and indicators to analyse the national circumstances in the context of REDD+ implementation. These indicators in particular refer to the specific spatial and environmental characteristics of PNG; its policies, laws and regulations (PLRs; already identified under the Social and Environmental Safeguards study); land use, land tenure and land reform; demographic trends and projections; and PNG's economic development trends and projections. The assessment of national circumstances will feed into the development of appropriate PAMs for REDD+ implementation (to be set out in the National REDD+ Strategy), and will also inform PNG's FREL/FRL. This work involved analytical, qualitative and quantitative assessments of historical land use and policy changes, and extensive national and subnational stakeholder consultations.

Outcome 4: Monitoring of abatement concepts supported	
☐ Outcome Achieved	☒ Outcome not achieved
Results against the Outcome: [100 words] The drivers of deforestation and forest degradation were identified through the activities under Outcome 2 & 3. Key abatement levers are not determined in the country yet. MRV system developed and the capacity built through UN-REDD NP, will enable the government to monitor REDD+ activities.	

Output 4.1: Capacity for monitoring and implementation of priority abatement levers developed		
Baseline	*Indicator*	*Assessment Against Indicator*
• Priority abatement levers identified: only limited experience in implementation	• Monitoring and implementation concepts for key abatement levers have been refined	Through the activities under Outcome 2 and 3, drivers of deforestation and forest degradation were identified. Capacity to monitor deforestation and forest degradation was built. The REDD+ strategy was endorsed by the government in May 2017. However the specific policies and measures for the national REDD+ strategy, detailing the actions to be taken to reduce emissions from the LULUCF sector, have not yet been determined. Once these policies and measures have been determined, appropriate monitoring methodologies will be determined. The MRV system established through the activities under Outcomes 2 and 3 will enable the government to monitor abatement levers.
Assessment towards Output: Although key abatement levers have not been fully identified yet, the MRV system and capacity built under Outcomes 2 and 3 will enable the government to monitor REDD+ activities implemented in the country. A study of the drivers of deforestation and forest degradation was commissioned through the NP that also detailed a long list of potential policies and measures for REDD+ implementation in PNG. However the work under this outcome did not build specific capacity for monitoring of any policies and measures, because a shortlist and final selection was not carried out. (This work will nevertheless be delivered through the FCPF readiness grant now under implementation.)		

Outcome 5: Stakeholders engaged in PNG's REDD+ readiness process	
☒ Outcome Achieved	☐ Outcome not achieved
Results against the Outcome: [100 words]	

Based on a REDD+ training manual, with a focus on readiness components, the capacities of key national and provincial stakeholders were incrementally built through a combination of awareness raising and consultation workshops: two regional and five provincial events on REDD+ Awareness, FPIC and safeguards. Similarly, a Communications Strategy and BSDS proposal were drafted. Based on the results from the field tests in Manus Island and Eastern New Britain, revisions of the National FPIC Guidelines were undertaken, and a working version ready to inform REDD+ implementation. Through these activities, an engagement framework at the national level, such as the Technical Working Groups, and at the provincial levels, through provincial authorities, line agencies and civil society, has been established and operationalized.

Output 5.1: Framework for stakeholder engagement process in place		
Baseline	*Indicator*	*Assessment Against Indicator*
• Consultation work plan for 2011; 4 provinces consulted in 2010	• Consultation plan and stakeholder engagement guidelines in place • 8 additional provinces consulted and consultation process independently reviewed	• Based on recommendations from the National Consultation Workshop for the National Guidelines on FPIC for REDD+ in July 2014, specific sections of the guidelines were successfully field tested in 2015. Revisions to the national guidelines were completed early 2016. The Guidelines will subsequently be used to design the consultation, participation, and where required, consent process for the development and implementation of the National REDD+ Strategy. • Proposal for PNG's REDD+ BSDS was completed. • Dialogues between national multi-stakeholder groups and development partners were facilitated, and will continue to be strengthened through FCPF during the development of the National REDD+ Strategy. • REDD+ Awareness and Training workshops were delivered to multiple stakeholders. • A draft Communications Strategy was completed.
Assessment towards Output: Based on a REDD+ training manual, with a focus on readiness components, the capacities of key national and provincial stakeholders were incrementally built through a combination of awareness raising and consultation workshops: two regional and five provincial events on REDD+ Awareness, FPIC and safeguards. Similarly a Communications Strategy and BSDS proposal were drafted. However, the training manual, Communications Strategy, BSDS proposal will be reviewed once the options for REDD+, particularly the scale and scope, are clearer. Based on the results from the field tests in Manus Island and Eastern New Britain, in collaboration with WCS and ForCert, revisions of the National FPIC Guidelines were undertaken, and a working version available to inform REDD+ implementation. Through these activities, an		

engagement framework at the national level, including the TWGs, and at the provincial levels, through provincial authorities, line agencies and civil society, has been established and operationalized.

2.7 Revisions to the National Programme Document

Please provide a summary of any key changes made to the National Programme Document relating to the results framework, indicators, outcome, outputs, implementing partners or duration of the (NP).

If the **results framework** was revised following the inception meeting or mid-term review, please provide a short narrative outlining the changes. [100 words]
N.A.

If the **NP outcomes or outputs** were revised following the inception meeting or mid-term review, please provide a short narrative outlining the changes. [100 words]
N.A.

If the **results framework indicators were** revised following the inception meeting or mid-term review, please provide a short narrative outlining the changes. [100 words]
N.A.

If the **NP implementing partners** were changed following the inception meeting or mid-term review, please provide a short narrative outlining the changes. [100 words]
N.A.

If the **duration of the NP** was changed following the inception meeting or mid-term review, please provide a short narrative outlining the changes. [100 words]
The National Programme commenced in June 2011 and the original end date was in December 2013. However limited activities were implemented in 2011 and 2012 due to political instability of the government after the national election in 2012 and delays in hiring staff. Activities of UNDP components started in early 2013 after the international Programme Manager arrived in January, and activities of FAO components started at end of 2013 after the international Technical Advisor was in place in October. A first no-cost extension of the Programme was obtained for two years (till end of 2015). A second extension was agreed in 2015, for the FAO component only, until the end of 2016. A final three-month operational extension was agreed in late 2016, so that the final end date of the Programme was 31 March 2017.

3. Lessons Learned

This section aims to capture the most significant lessons learned in the context of the National Programme, as they relate to the thematic work areas on REDD+ or more generally to the practical aspects of implementation, coordination and communication. The sections below should be completed only as applicable and in case where lessons learned have been identified.

Please provide a narrative of the **most significant lessons** learned during the implementation of the National Programme. Include explanations of what was learnt, why the lesson is important, and what has been done to document or share those lessons. [150 words]

Government ownership is a key to success in PNG. It is necessary to involve the government at every step of decision-making and implementation processes, even if this sometimes comes at the expense of slowing down project implementation.

Please provide a narrative of the most significant lessons learned relating to **inter-sectoral coordination** during implementation of the national programme: (150 words)

The establishment of inter-sectoral coordination mechanisms takes time. However, coordination between CCDA and other government agencies have significantly improved during the implementation of the UN-REDD National Programme. As CCDA implemented the National programme activities together with other government agencies, communication among the involved agencies increased. Working together for achieving common targets created a sense of integration among the involved parties. The NP played a very important role as catalyst for inter-sectoral coordination, which has been built upon by other subsequent REDD+ readiness initiatives such as the FCPF readiness project delivered by UNDP.

Please provide a narrative of the most significant lessons learned relating the **technical dimensions** of the national programme during implementation: [150 words]

The PNG UN-REDD NP aimed to establish a MRV system which meets the minimum required standard for future REDD+ implementation. The NP, however, has supported the development of an advanced system using cutting-edge technologies and providing very accurate Activity Data. PNG was the first country to conduct national forest and land use assessment using the Collect Earth tool (GIS point sampling software) developed by FAO. PNG conducted this national assessment twice during the NP and these exercises significantly contributed to the development and improvement of Collect Earth itself. PNG developed QC/QA systems making Collect Earth data very reliable and the PNG operators are the most experienced and most knowledgeable on Collect Earth assessment globally. PNG is one of only a few countries that have produced forest and land use maps using the Terra tool and the only country that integrates the two systems to establish a REDD+ MRV system. PNG's success is owing to the government's strong ownership of the National Programme and their choice of appropriate tools and approaches according to the country's circumstances. PNG's MRV system can also be introduced to other countries with some modifications and the success of PNG provides good lessons for implementing donor projects.

Please provide a narrative of the most significant lessons learned relating to the **REDD+ readiness process** during implementation of the national programme: [150 words]

The REDD+ readiness process in PNG took longer than anticipated, as can be seen from the NP's lifetime being extended into 2017. One reason for this is the time taken to recruit project staff, and losses of time can also be attributed to political instability and changes of government. It was important that the NP worked at the pace of the country in its implementation, which has resulted in all stakeholders being involved and feeling ownership of the REDD+ readiness process. A key lesson from PNG's readiness process is the need to have broader cross-sectoral government

involvement, to ensure that appropriate actions are implemented to address the drivers of deforestation that originate from outside of the forestry and environment sectors.

Please provide a narrative of the most significant lessons learned relating to **anchoring REDD+** in the national development process: [150 words]

REDD+ readiness activities built the government's capacity for mapping and remote sensing which can be applied for policy and decision-making processes beyond REDD+. The capacities to produce land use information and maps, delivered through the NP, are also required for land use planning and agricultural development, which is directly related to the primary national policy.

Broader cross-sectoral engagement at the start of the implementation of the NP would have benefitted the closer (and earlier) linking of REDD+ with the national development process, plans and goals.

Please provide a narrative of the most significant lessons learned relating to the **implementation and sequencing** of national programme support: [150 words]

The original plan for completing the National Programme in 3 years was simply impossible. Recruiting processes take time and issuing a working visa for the FAO international advisor took 6 months. It took nearly 2 years before all UN agencies had commenced NP activities. The realities of national administrative and legislative processes should be acknowledged in the development of realistic work plans.

As one of the UN-REDD pilot countries, with the NP was designed prior to the Warsaw Framework for REDD+, the structure and sequencing of the programme could be improved upon if done again. In particular, an early activity should have been the assessment of the drivers of deforestation and forest degradation, which did not take place until 2015 (towards the end of the NP).

Please provide a narrative of any **other lessons** learned during implementation of the national programme: [150 words]

Other lessons learnt and areas for ongoing improvement

- Awareness has been raised successfully among a contingent of stakeholders, but broad-based awareness is lacking at the subnational level, and needs to be enhanced with simple language communication products in future,
- As PNG moves towards implementation of its National REDD+ Strategy, cross-sectoral engagement and coordination needs to be strengthened,
- A clearer message regarding how REDD+ can contribute to other sectors and government agencies beyond forestry is needed to enhance cross-sectoral engagement and stronger ownership and commitment,
- A shift is needed from donor-driven to government-driven REDD+ implementation, with stronger ownership and continued high-level commitment of the leading government agencies and ministries,
- The process to develop the National Guidelines on FPIC for REDD+ was widely lauded by government agencies and civil society as inclusive and transparent, while the guidelines were reflective of the challenges faced and strived to provide practicable actions,
- Further work on PNG's Benefit Sharing and Distribution System (BSDS) needs to be carried out in close coordination with the development of PNG's REDD+ policies and measures.

3.1 Unforeseen Benefits or Unintended Consequences

Please provide a summary of any ancillary/unforeseen benefits or unintended consequences that may have become evident during implementation or conclusion of the national programme. [150 words]

Unforeseen Benefits [150 Words]
The Collect Earth GIS point sampling assessment was introduced for forest stratification for NFI design, and the Terra wall-to-wall mapping was introduced for land use monitoring and GHG reporting. However, PNG found that the Collect Earth point sampling produced very detailed information, which was also suitable for GHG inventory. Moreover, integrating the information of the two systems (Collect Earth and Terra) and cross checking with University of Maryland's global tree cover data (Hansen data) produced very accurate forest and land use change information and maps. Such information is very useful not only for GHG reporting and REDD+ implementation but also for land use planning and agricultural development. Towards the end of the NP, PNG began to provide assistance to neighboring countries, including the Solomon Islands, to develop similar MRV systems based on their experience, opening potential avenues for south-south cooperation.

Unintended Consequences [150 words]

3.2 Inter-agency Coordination

This section aims to collect relevant information on how the NP is contributing to inter-agency work and "Delivering as One".

Was the NP in coherence with the UN Country Programme or other donor assistance framework approved by the Government? If not, please explain what measures were put in place to address this. [150 words]
The National Programme was in coherence with the UN Country Programme and other donor assistance frameworks approved by the Government.

Please briefly summarize what types of coordination mechanism and decisions were taken to ensure joint delivery of the NP. [150 words]
Coordination between agencies was ensured at the regional level, between regional technical advisors. Standard coordination mechanisms were adopted such as regular calls and in-country missions by regional advisors.

Was a HACT assessment undertaken? If yes, to what degree was the HACT being taken up and by which agency? [150 words]
HACT assessment not undertaken.

3.3 Risk Narrative

This section aims to capture the key internal and external risks experienced by the programme during implementation.

Please provide a summary of the key internal risks experienced by the NP as well as responses. [250 Words]
Recruitment processes for international advisors took longer than expected and in some cases had to be re-advertised. Once advisors were recruited, visa issues often ensued, further delaying implementation. The National Programme was extended to compensate the time taken for recruitment and posting processes for international advisors.

Please provide a summary of the key external risks experienced by the NP as well as responses. [250 Words]
Political instability (in 2012) and restructuring of the Government partner agency (CCDA) delayed the Programme implementation.

4. Warsaw Framework for REDD+ and Associated UNFCCC Decisions

This section aims to provide insight and to support a thought process into how countries are progressing against the framework of the convention, namely: 5.1) a National REDD+ Strategy or Action Plan; 5.2) a Safeguards and Safeguards Information System; 5.3) a National Forest Reference Emission Level/National Forest Reference Level; and 5.4.) a National Forest Monitoring System. Only complete the sections that apply to the priorities identified for the country and mark as not applicable (N/A) any criteria that do not apply to the context of the country.

4.1 National Strategy or Action Plan

Supported by (select all applicable and provide details of Other Source): ☒ National Programme; ☐ Targeted Support; ☒ Other Source; ☐ Not Applicable
Please provide a brief description of the achievement made in developing a National REDD+ Strategy or Action Plan (NS/AP) as well as the source of the support provided in this regard: [100 words] National REDD+ Strategy (NRS), progress was made in 2015 towards the assessment of national circumstances. A study was commissioned on the assessment of the drivers of deforestation and forest degradation in PNG, with the analytical work completed before the end of 2015 and consultation and presentation of the findings in early 2016. The study was accompanied by a long-list of policies and measures (PAMs) that address the country-specific direct and indirect drivers of deforestation and forest degradation. Consultative process to select priority REDD+ actions was conducted in 2016. Based on the outcomes of the above activities, PNG's NRS was drafted in late 2016. After the consultation process including a number of stakeholder workshops, PNG's NRS was finalized and endorsed by the Government in May 2017.

Indicator	Start[9] (Yes)	End[9] (No)	Qualifier (select all that apply)	Please provide a short narrative describing the reason for selection as well as means/source of verification
Does the country have a National Strategy or Action Plan (NS/AP) to achieve REDD+?			Not yet initiated	PNG's National Redd+ Strategy was endorsed by the Government in May 2017.
			Under design	
			Drafted, under deliberation	
			Adopted	
			Link to the NS/AP provided on the UNFCCC REDD+ Web Platform Info Hub	

[9] Mark with an X, the progress indicated by the qualifiers at the start and end of NP implementation.

			Implementation in early stages	
	X		Full implementation of NS/AP	
Degree of completeness of national REDD+ strategies and/or action plans.	Yes		The NS/AP identifies, assesses and prioritizes the direct and underlying drivers of deforestation and forest degradation , as well as the barriers to the "plus" (+)[10] activities on the basis of robust analyses.	PNG NS Identified that agricultural activities are the major cause of deforestation and logging is the primary driver of forest degradation in PNG. Fast growing population and economic development might accelerate the deforestation and forest degradation rate.
	Yes		The NS/AP proposes a coherent and coordinated set of policies and measures (PAMs) for REDD+ that are proportionate to the drivers & barriers, results-oriented and feasible.	PNG NS proposes a set of policies and measures for REDD+ but does not provide details of actions.
	Yes		The NS/AP relates to the scope and scale of the FREL/FRL, taking into account national circumstances.	PNG NS was prepared in careful consideration of the scope and scale of PNG Forest Reference Level submitted in January 2017.
	Yes		The NS/AP defines the institutional arrangements for REDD+ implementation, including governance measures, participatory oversight and inter-sectoral coordination.	PNG NS defines the institutional arrangements on overall coordination on REDD+ implementation but not in details.
Degree to which the NS/AP incorporates principles of social inclusion and gender equality.	Yes		The NS/AP is developed through a multi-stakeholder, gender-responsive and participatory consultation and dialogue process.	There were a number of stakeholder consultation workshops and a validation workshop held. Stakeholder feedback process to the draft NS was conducted.
	Yes		The proposed policies and measures for REDD+ integrate gender-responsive actions.	Proposed policies and measures in PNG NS integrate gender responsive actions although it is not emphasized very much in the document.
	Yes		The proposed policies and measures for REDD+ consider the realization of land and resource tenure rights (when relevant), as well	Over 90% of land is owned under customary tenure system. The importance of participation of local communities is fully acknowledged in PNG NS.

[10] Plus (+) activities within the context of REDD+ refer to conservation of forest carbon stocks, sustainable management of forests and enhancement of forest carbon stocks

			as the development priorities of indigenous peoples and local communities as well as their development priorities.	
Degree of anchoring of the NS/AP in the national development policy and institutional fabric.	Yes		There is effective inter-ministerial coordination for REDD+ action.	Inter-ministerial coordination for REDD+ action have been significantly improved as REDD+ readiness progressed during last several years.
	Yes		Endorsement of the NS/AP has been obtained at a high political level, beyond the agency or ministry that led the REDD+ readiness process.	PNG NS was endorsed by the National Executive Council in May 2017.
	Yes		REDD+ actions or targets are embedded in the national plan or policy for sustainable development.	REDD+ actions and targets in PNG NS are embedded in the national policy and plans such as Vision 2050 (2009) and Development Strategic plan 2010-2030.
	Yes		There is evidence that ministries/agencies outside the forest and environment sectors are committed to implementing REDD+ policies and measures.	Relevant government ministries such as the Department of Agriculture and Livestock, Department of Lands and Physical Planning, and Department of National Planning and Monitoring were actively participated the PNG NS establishment process.
		X	Financing arrangements to start implementing the NS/AP (or to channel results-based finance) are designed.	Preparation of REDD+ Finance and Investment Plan is currently progressing. Financial arrangement will be defined in the plan.

4.2 Safeguard Information System

Supported by (select all applicable and provide details of Other Source): ☒ National Programme; ☐ Targeted Support; ☒ Other Source; ☐ Not Applicable
The draft National Guidelines on Social and Environmental Safeguards were field tested in Milne Bay province at the end of 2014. The indicators identified in the current guidelines need further detailing to cater for regional or provincial circumstances. The Web portal is the major REDD+ information dissemination tool in PNG. The Web-portal with forest and land use maps and REDD+ information was launched online in 2015.

Indicator	Start (Yes)	End (No)	Descriptor (select all that apply)	Please provide a short narrative describing the reason for selection as well as means/source of verification.
Does the country have a Safeguard Information System (SIS) that provides information on how the Cancun safeguards are being addressed and respected throughout implementation of REDD+ actions?			No	The national Safeguards guidelines were drafted and the web-portal was launched to support the transparency of the PNG REDD+ process. However, levels of understanding on SIS remained limited and further development of safeguards work would be reliant on definition of policies and measures to be implemented as part of the National REDD+ Strategy.
			SIS objectives determined	
			Safeguard information needs and structure determined.	
	X		Existing information systems and sources assessed.	
			The SIS is designed, building on existing, together with any novel, information systems and sources clearly articulated in a national government-endorsed document.	
			The SIS is functional, building on existing, together with any novel, information systems and sources that are clearly articulated in a national government-endorsed document.	
			Summary of information on REDD+ safeguards, informed by the SIS, has been submitted to UNFCCC.	
Degree of completeness of the design of a country approach to address the social and environmental safeguards for REDD+			Aligns with the NS/AP, covering the social and environmental benefits and risks of the policies & measures for REDD+ being considered by the countries.	N/A
			Defines specific policies, laws and regulations (PLRs), as well as other measures, to address the identified benefits and risks.	N/A
			Have institutional arrangements and/or capacities to implement those PLRs and to monitor the REDD+ safeguards.	N/A

			Transparently provides information on how safeguards are respected and addressed.	N/A

4.3 Forest Reference Emission Level / Forest Reference Level

Supported by (select all applicable and provide details of Other Source): ☒ National Programme; ☐ Targeted Support; ☐ Other Source; ☐ Not Applicable
Please provide a brief description of the achievement made in developing a Forest Reference Emission Level / Forest Reference Level (FREL/FRL)as well as the source of the support provided in this regard (100 words): The National Programme supported the development of PNG's Forest Reference Level (FRL). The assessment on annual forest and land use change in 1999-2015 using Collect Earth provided Activity Data for the FRL. Emission Factors were determined through careful reviewing of published studies in PNG and IPCC Guidelines (2006). PNG established the FRL using the data derived through Collect Earth and Terra applications. The FRL was discussed among stakeholders at three national consultation workshops and a validation workshop in 2016 and was finalized and submitted to UNFCCC in January 2017.

Indicator	Start (Yes)	End (No)	Descriptor (select all that apply)	Please provide a short narrative describing the reason for selection as well as means/source of verification
Has the country established a FREL/FRL?			Not yet initiated	Annual GHG emissions and removals between 2000 and 2015 were estimated by the PNG MRV system. PNG FRL submission was drafted and finalized through three national consultation workshops and a validation workshop in 2016. PNG FRL was submitted to UNFCCC in January 2017 (UNFCCC FREL/FRL submission site).
			Capacity building phase	
			Preliminary construction phase	
			Advanced[11] construction phase	
			Submission drafted	
		X	Submitted to the UNFCCC	
Robustness of FREL/FRL submissions	Yes		Submission is transparent, complete, consistent and as much as possible accurate and allows reconstruction of the submitted FREL/FRL.	FRL was established using the data derived from PNG's MRV system, which is accurate and transparent. It allows reconstruction of the submitted FRL.
	Yes		Includes pools and gases, and REDD+ activities (Scope) and justification for omitting significant pools and/or activities.	PNG's FRL explained why REDD+ activities and carbon pools were included and provides justifications for activities and carbon pools that were excluded.

[11] FREL/FRL elements defined or at an advanced stage (scope, scale, forest definition, methodology and data compilation).

	Yes		Justifies where the submission is inconsistent with previous versions of GHG inventory.	PNG's FRL is not consistent with the country's previous reports such as the first and second National Communication. Previous reports were prepared based on literature reviews but the FRL was developed based on actual data derived from the newly-developed MRV system. Such inconsistency with the previous reports is fully explained in the submission.
	Yes		Includes details of the forest definition used and national circumstances.	PNG's national forest definition is endorsed by the National Executive Council and the national circumstances are described well in the FRL submission.
	Yes		Defines the geographic area covered by FREL/FRL (scale).	PNG chose national scale and this is explained in the FRL submission.

4.4 National Forest Monitoring System

Supported by (select all applicable and provide details of Other Source): ☒ National Programme; ☐ Targeted Support; ☐ Other Source; ☐ Not Applicable
Please provide a brief description of the achievement made in developing a National Forest Monitoring System (NFMS) as well as the source of the support provided in this regard (100 words): The National Forest Monitoring System (NFMS) consists of a monitoring function, to assess the implementation and impact of national policies and measures for REDD+, and a MRV function to estimate and report GHG emissions/removals in the LULUCF sector. The Satellite Land Monitoring System (SLMS) produces Activity Data, using Terra PNG (wall to wall mapping) operated by CCDA, and Collect Earth (point sampling) operated by PNGFA. These two systems verify, supplement and improve the data accuracy of each other. These in-house land use spatial information tools, together with extensive information from other national and international sources, are uploaded on to the web-portal, which enables public scrutiny of land use and forest information of PNG and thus enhances the transparency of REDD+ processes in the country. The National Forest Inventory (NFI) is the primary information source for Emission Factors for the MRV system. Methodologies were prepared and tested in the field. Numerous trainings were conducted, necessary capacity was built and the field assessment was initiated. The national MRV system has thus been completed, but the NFMS monitoring function will be designed once national policies and measures on REDD+ have been determined.

Indicator	Start (Yes)	End (No)	Descriptor (select all that apply)	Please provide a short narrative describing the reason for selection as well as means of verification
Has the country established a NFMS?			No	PNG's MRV system was developed and produces information on national GHG emissions in the LULUCF sector. However, REDD+ policies and measures have not yet been determined so the monitoring function will be developed according to the contents of the future REDD+ strategy.
			NFMS capacity building phase	
			Preliminary construction phase	
			Advanced[12] construction phase	
		X	NFMS generating preliminary information for monitoring and MRV	
	X		NFMS institutionalized and generating REDD+ monitoring and MRV (satellite land monitoring system, national forest inventory, greenhouse gas inventory)	
Degree of completeness of the NFMS in UN-	Yes		NFMS includes a Satellite Land Monitoring System (SLMS)	PNG's NFMS includes point sampling and wall-to-wall mapping to monitor Activity Data.

[12] NFMS elements at an advanced stage (satellite land monitoring system, national forest inventory, greenhouse gas inventory).

REDD supported countries	Yes		NFMS includes a National Forest Inventory (NFI)	A multipurpose National Forest Inventory has been implemented.
	Yes		NFMS includes a National GHG Inventory (GHGi)	Annual GHG emissions and removals from 2000 to 2015 were estimated by PNG's MRV system and the information was used for the development of PNG's Forest Reference Level.
	Yes		The NFMS is suitable for estimating anthropogenic forest-related greenhouse gas emissions by sources, and removals by sinks, forest carbon stocks, and forest-area changes resulting from the implementation of REDD+ activities;	PNG's MRV system can monitor forest area change and carbon stack change in the forests owing to anthropogenic activities.
	Yes		The NFMS is consistent with Intergovernmental Panel on Climate Change (IPCC) guidance and guidelines;	It is consistent with IPCC guidance as much as possible.
	Yes		The NFMS enables the assessment of different types of forest in the country, including natural forest.	PNG's MRV system enables assessment of GHG emissions/removals due to anthropogenic activities in 12 natural forest types.

5. Financial Delivery

The table below gathers information on the cumulative financial progress of the National Programme at the end of programme implementation (including all cumulative yearly disbursements). Please add additional rows as needed.

Programme Outcome	UN Organization	Total Funds Transferred[13]	Total Expenditure[14]	Delivery Rate[15] (%)
Outcome 1: Readiness Management Arrangements in Place	FAO			
	UNDP	440,000	333,925.95	
	UNEP			
Sub-total				
Outcome 2: National MRV system developed	FAO	3,950,000	3,939,402	99.73
	UNDP	500,000	1,011,842.48	
	UNEP	150,000	149,999	100
Sub-total				
Outcome 3: Establishment of REL/RL supported	FAO	100,000	185,056	185.06
	UNDP	200,000	26,136.65	
	UNEP			
Sub-total				
Outcome 4: Monitoring of abatement concepts supported	FAO	175,000	111,458	63.69
	UNDP	175,000	142,852.05	
	UNEP			
Sub-total				
Outcome 5: Stakeholders engaged in PNG's REDD+ readiness process	FAO			
	UNDP	280,920	482,200.03	
	UNEP			
Sub-total				
Indirect Support Costs (7% GMS)	FAO	295,750	263,515	89.10
	UNDP	111,714		
	UNEP	10,500	10,500	100
Indirect Support Costs (Total)				
FAO (Total):		4,520,750	4,499,431	99.53
UNDP (Total):		1,595,920	1,986,957	
UNEP (Total):		160,500	160,499	100
Grand TOTAL:				

[13] Amount transferred to the participating UN Organizations from the UN-REDD Multi-Partner Trust Fund as reflected on the MPTF Office Gateway http://mptf.undp.org.

[14] The sum of commitments and disbursements

[15] Total Expenditure / Total Funds Transferred

6. Adaptive management

Referring to the deviations and delays indicated in the results framework above please provide a short narrative of delays encountered, the reasons for them and what actions were considered to alleviate their impact on the Programme. Please indicate if these were discussed at the Programme Executive Board (PEB) or National Steering Committee (NSC) meetings, between the Programme Management Unit (PMU) and national counterparts and what measures have been proposed to overcome them.

6.1 Delays and Corrective Actions

What delays/obstacles were encountered at country level? [100 words]
Political instability and delays in the hiring of staff caused a slow start to implementation. National Programme implementation officially commenced in 2011 but actually became operational early in 2013. FAO components were further delayed due to slow recruitment process and began at the end of 2013.
Were any of the delays/obstacles raised and/or discussed at the Programme Steering Committee meetings? [100 words]
☒ Yes; ☐ No These delays were discussed at PEB meetings and a total of three years of no-cost extensions were recommended.
What are the delays/obstacles anticipated in terms of their impact on the NP? [100 words]
The delays in NP initiation set back the timeline for completion of outputs, but these outputs were nevertheless successfully completed within the extended timeframe.
How were these delays/obstacles addressed? [100 words]
The National Programme was extended for three years in order to complete all the activities and achieve the Programme Outcomes.

6.2 Opportunities and Partnerships

During NP implementation, have any opportunities that were not foreseen in the design of the programme been identified to help advance efforts on REDD+? [100 words]
A project to support the implementation of PNG's NFI has been initiated with funding from the EU and technical support from FAO, building on the NFI design and capacity and institutional development built by the UN-REDD NP. The Forest Carbon Partnership Facility (FCPF) readiness Project proposal was prepared in 2014 and began implementation in 2015, with UNDP as the delivery partner. This project continues support to REDD+ readiness efforts in PNG with a focus on the development of the National REDD+ Strategy, stakeholder consultations and the safeguards infrastructure. Additional FCPF readiness funds were applied for and secured in 2016/17, which will provide PNG with a further USD 5 million to complete its readiness process and begin the process of transitioning PNG from readiness to implementation. The additional FCPF readiness grant includes support on NFMS, which will be implemented with continued support from FAO under the EU/NFI project. The FCPF grant, with UNDP as delivery partner, will enable UN agencies to continue to support REDD+ readiness to further improve the

capacity developed across government through a cross-sectoral approach, and through increasingly close collaboration with the private sector, NGOs and academia. A proposal for GEF Capacity Building Initiative for Transparency (CBIT) "Strengthening capacity in the agriculture and land-use sectors for enhanced transparency in implementation and monitoring of Nationally Determined Contribution (NDC) under the Paris Agreement in Papua New Guinea" was prepared by CCDA and FAO. This will support further the improvement of the MRV system developed by UN-REDD NP.
How were these opportunities being incorporated into the work of the NP? [100 words]
The work of the National Programme will be further built on through the FCPF/UNDP and EU/FAO projects. For example, the study on drivers of deforestation and forest degradation, and national circumstances, will be used as a basis for consultation on nationally-appropriate PAMs for PNG that will be set out in detail in PNG's National REDD+ Strategy. Another example is the national forest inventory that was designed through the NP, which will be implemented through the EU/FAO project. Also, the MRV system developed under the NP will generate necessary data for GHGi reporting to the UNFCCC, which will be supported by the GEF/CBIT Project.

6.3 Measures to Ensure Sustainability of National Programme Results

Please provide a brief overall assessment of any measures taken to ensure the sustainability of the National Programme results during the reporting period. Please provide examples if relevant; these can include the establishment of REDD+ institutions expected to outlive the Programme and regulations, or capacities that will remain in place after the completion of the programme.

Measures taken to ensure the sustainability of the National Programme. [150 words]
There is a strong ownership of the MRV system developed under the National Programme. The capacity to operate the system was built and institutionalised. The Satellite Land Monitoring System uses only open source software and satellite imageries, which make the system cost efficient and transparent. The PNG government is able to operate the MRV system but financial support is still needed for NFI implementation, which is already committed by EU, FCPF and GEF. The NP created the critical foundations of early REDD+ readiness in PNG that other programmes and projects continue to build upon. The management and coordination arrangements for REDD+ are fully under government ownership and continue to operate. Calling upon the studies commissioned on drivers, national circumstances, and benefit distribution, among others, the government has developed a National REDD+ Strategy, endorsed by the government in early 2017, which will serve as a guide for all future REDD+ developments in the country.

The questions below seeks to gather relevant information on how the National Programme is putting into practice the principles of aid effectiveness through strong national ownership, alignment and harmonization of procedures and mutual accountability.

Are the national implementing partners and UN-REDD focal points involved in the planning, budgeting and delivery of the National Programme?
Programme Executive Board Established: ☒ Yes ☐ No

Date of Last Meeting:

Number of meetings annually:

Please explain what measures are in place to ensure national ownership: [150 words]

[input text]

Are the UN-REDD Programme's Guidelines for Stakeholder Engagement applied in the National Programme process?

☒ Fully ☐ Partially ☐ No

Please explain, including if level of consultation varies between non-government stakeholders: [150 words]

Based on recommendations from a National Consultation Workshop for the National Guidelines on FPIC for REDD+ in July 2014, specific sections of the guidelines were successfully field tested in 2015. Revisions to the national guidelines were completed early 2016, and will subsequently be used to design the consultation, participation, and where required, consent process for the development and implementation of the National REDD+ Strategy.

Programme sustainability depends on the extent to which sectoral counterparts, civil society representatives, private sector relevant to the REDD+ dynamic in the country and other relevant stakeholders are involved in the Programme's activities and ownership of strategic matters. In the box below please select applicable options and provide an indication of how these different sets of stakeholders are involved in and appropriate Programme activities.

☒ Member of the steering committee

As mandated by the UN-REDD National Programme Handbook, Eco-Forestry Forum (EFF) sits as a representative of CSO in the PEB. EFF, as a CSO network, regularly disseminates and consults with its network members to provide input into the operations of the NP.

☒ Member of technical or other advisory committees

TWG memberships represented a broad range of national stakeholders, as reflective of the national readiness focus of the NP. The Safeguards TWG, for instance, was co-chaired by OCCD and WCS, and included members from the forest and oil palm industries. This TWG provided significant guidance in the development of the National Guidelines on FPIC for REDD+, as well as the National Guidelines of Social and Environmental Safeguards. For the former, an ad-hoc expert group was specifically formed to provide detailed input. As a result, most stakeholders view both the product and the process of development as inclusive and transparent.

☒ Implementing partner for some activities of the National Programme

Field-testing of the National Guidelines on FPIC for REDD+ was carried out in collaboration with WCS in their Village REDD+ site in Manus, and ForCert in Tavalo Village, trialling PES in East New Britain. Because both partners had on-going activities, results from the testing helped to ensure guidelines were practicable.

Please explain, including if level of consultation varies between non-government stakeholders: [150 words]

[input text]

6.4 National Programme and/or R-PP Co-Financing Information

If additional resources (direct co-financing) were provided to activities supported by the UN-REDD National Programme including new financing mobilized since start of implementation, please fill in the table below:

Sources of Co-Financing[16]	Name of Co-Financer	Type of Co-Financing[17]	Amount (US$)	Supported Outcome in the NPD	Year Mobilized
Bilateral aid agency	**EU**	**cash**	**6.5m**	**Outcome 2**	**2015**
Multilateral	**FCPF Readiness Fund**	**Cash**	**3.8m**	**Outcomes 1, 2, 3 and 4**	**2014 and 2017**

[16] Indicate if the source of co-financing is from: Bilateral aid agency, foundation, local government, national government, civil society organizations, other multilateral agency, private sector, or others.

[17] Indicate if co-financing is in-kind or cash.

7. Annex – UNDG Guidelines: Definitions

The following definitions for results based reporting from the UNDP Guidelines are to be used for the annual report:

- **Results:** A result is a describable or measurable change that is derived from a cause-and-effect relationship. There are three types of such changes – outputs, outcomes and impact – which can be set in motion by a development intervention.
- **Results Based Reporting:** Seeks to shift attention away from activities to communicating important results that the programme has achieved at output and outcome levels. An effective results-based report communicates and demonstrates the effectiveness of the intervention. It makes the case to stakeholders and donors for continued support and resources.
- **Results Matrix:** An important aid in results-based reporting is the results matrix, which clearly articulates the results at output and outcome level and the indicators, baselines and targets. These items, along the review of indicators, assumptions and risks, should serve as guides for reporting on results.
    - **Outcomes:** Outcomes describe the intended changes in development conditions resulting from UNCT cooperation. Outcomes relate to changes in institutional performance or behavior among individuals or groups as viewed through a human rights-based approach lens.
    - **Outputs:** Outputs are changes in skills or abilities, or the availability of new products and services that are achieved with the resources provided within the time period specified. Outputs are the level of result in which the clear comparative advantages of individual agencies emerge and accountability is clearest. Outputs are linked to those accountable from them giving the results chain a much stronger internal logic.
    - **Indicators**: Indicators help measure outcomes and outputs, adding greater precision. Indicators ensure that decision-making is informed by relevant data.