ANNEX 7 Results Framework Analysis

Objective Indicators, baselines and targets

At the objective level, the project has three key indicators, two of which have 'sub-indicators' as follows and as in the original Results Framework (Table A7.1).

Indicators 1 and 3 and their associated baselines and end of project targets on change in PA coverage and financial sustainability of the national PA system, respectively, are straightforward and measurable, although the wording of Indicator 1 could be simplified by removing repetition of the targets. The 'sub-indicator' on increased coverage of under-represented eco-regions under Indicator 1 and associated targets are also sufficiently specific, clear and measurable, with targets planned for six out of 14 ecoregions. At the time of project development and approval, these targets, which were developed together with the Forest Department, may well have seemed realistic.

Table A7.1 Objective Indicators, Baselines & Targets

<table>
<tr><th>Objective Indicators</th><th>Baseline</th><th>End of Project Target</th></tr>
<tr><td>1. Increased coverage of Myanmar's terrestrial and aquatic PA network managed by the Forest Department to 10% (6,765,530 ha) of the country's land-area from the current 5.6% (3,788,697 ha) with increased coverage of under-represented ecoregions and essential corridors (see inset table)
<table>
<tr><th>Ecoregion</th><th>Current % Protected</th><th>Target % Protected</th></tr>
<tr><td>Chin Hills-Arakan Yoma montane forest</td><td>3.60%</td><td>3.60%</td></tr>
<tr><td>Eastern Himalayan alpine shrub and meadow</td><td>96.46%</td><td>96.46%</td></tr>
<tr><td>Irrawaddy dry Forest</td><td>0.45%</td><td>3.0%</td></tr>
<tr><td>Irrawaddy fresh water swamp forest</td><td>0.04%</td><td>Potential to increase limited</td></tr>
<tr><td>Irrawaddy moist deciduous forest</td><td>1.82%</td><td>3.0%</td></tr>
<tr><td>Kayah-Karen montane rain forest</td><td>0.60%</td><td>1.5%</td></tr>
<tr><td>Mizoram-Manipur- Kachin Rain forest</td><td>7.26%</td><td>7.26%</td></tr>
<tr><td>Myanmar Coast mangrove</td><td>0.92%</td><td>3.0%</td></tr>
<tr><td>Myanmar coastal rain forest</td><td>0.69%</td><td>Potential to increase limited</td></tr>
</table>
</td><td>5.6% coverage (3,788,697 ha) of Myanmar's terrestrial and aquatic ecosystems. See inset table for baseline representation of ecoregions.</td><td>10% coverage (6,765,530 ha) of Myanmar's terrestrial and aquatic ecosystems, with increased coverage of under-represented ecoregions (see rows marked in red in inset table)</td></tr>
</table>

Northern Indochina subtropical forest	0.90%	Potential to increase limited		
Northern Triangle subtropical forest	35.56%	35.56%		
Nujiang Langcang Gorge alpine conifer and mixed forest	0.00%	3.0%		
Tenasserim-south Thailand semi-evergreen rain forest	5.16%	25.00%		
Tropical and subtropical moist broadleaf forests	6.04%	6.04%		

2. Improved habitat conditions at local level indicated by percentage change in forest cover caused by encroachment in Core Areas of PAs measured through remote sensing three times during the project			See inset table for baseline annual rate of change in forest cover and encroachment by PA	See inset table for baseline annual rate of change in forest cover and encroachment by PA
Protected Area	**Baseline forest cover (% change / year)**	**Target forest cover (% change / year)**		
Hukaung Valley Wildlife Sanctuary	0.95%	0.5%		
Hkakaborazi National Park	0.95%	0.5%		
Hponkanrazi Wildlife Sanctuary	0.95%	0.5%		
Htamanthi Wildlife Sanctuary	0.95%	0.5%		
3. Financial Sustainability of PA System			Baseline Financial Sustainability Scorecard score (October 2013) 15%	Target Financial Sustainability Scorecard score 25%

Indicator 2, which seeks to measure changes in forest cover as a proxy for **change in habitat conditions**, is more problematic. Indicator 2 is intended as a measure of project impact, specifically of the 'enhanced management effectiveness, monitoring and enforcement' of the national PA system brought about through project interventions at its four demonstration sites.

The wording of the indicator specifies that it will measure '*percentage change in forest cover caused by encroachment in Core Areas of PAs*'. Yet, as detailed in the threats section of the project document, forest loss and degradation in Myanmar, including in PAs, are caused by a number of factors of which encroachment is but one. In this context, 'encroachment' mainly results from either illegal clear-felling for timber or

[1]Baseline rates of change in forest cover are not available for the four protected areas. The national average rate of 0.95% has therefore been used as a proxy, although local rates will vary. The baseline rates for the demonstration PAs will be updated based on the official 2013 forest cover map due for publication by 2015.

customary shifting cultivation practices. Furthermore, while standard remote sensing can capture loss of forest cover, it is less likely to be able to detect forest degradation or impacts on wild plant populations as a result of overharvesting, which can be equally damaging over time.

The RF includes a footnote to explain that a national average deforestation rate of 0.95% was used for all four project demonstration protected areas as local baseline rates were not available for these areas. Baseline rates for individual demonstration PAs were to be updated based on the official 2013 forest cover map which was due for publication in 2015. Baseline figures, however, had not been updated up to the time of the MTR, although changes in forest cover were reported for each site in the 2016 and 2017 PIRs. An added complication, is that different methods were used to assess forest cover change in 2016 and 2017. The large variation in forest cover change between years at each site strongly suggests the methodology used in each year generates very different results. The question is which methodology is most accurate and reliable? Other considerations include cost-efficiency and whether a trend can be reliably detected over a relatively short project timeframe - in this case annually and in total over five years. Additionally, where figures suggest a change, it would add value if the analysis can also pinpoint where forest loss is occurring geographically in each of the demonstration sites.

WCS has proposed a new cost-effective approach to correct deforestation rates retroactively for the baseline, and annual measurements for the 2016 and 2017 PIRs and to use in the rest of project period. This involves using web-based google earth engine and the University Maryland dataset for deforestation. WCS's regional GIS/RS technicians provided technical supports to develop this method. This method uses annual composites that combine multiple dates into a single annual product, generating deforestation rates that are more accurate and consistent. In addition, this method is more sustainable as it can be applied by Forest Department after the GEF5 project period. Baseline deforestation rate was generated by averaging the deforestation rates from 2001 to 2014. Deforestation rates will continue to be reported using this same method from the 2018 PIR onwards.

Table A7.2 Forest cover change indicator: original baseline, target and progress reported in the 2016 & 2017 PIRs

Demonstration PA	Baseline (%) FAO[1]	End of Project Target (%)	2016 PIR – Method 1 (%)	2017 PIR – Method 2 (%)
Hukaung Valley WS	0.95	0.5	3.11	0.69
Hkakaborazi NP	0.95	0.5	6.47	0.02
Hponkanrazi WS	0.95	0.5	1.45	0.15
Htamanthi WS	0.95	0.5	0.49	0.05

Source: Project Team

Notes:

1) 2013 national average from Forest Department
2) Method 1: Maximum likelihood method using cloud-free satellite images from Landsat7 and conventional Remote Sensing analysis and conducted by WCS Myanmar regional GIS team. Time period of measurement was dependent on cloud free image availability. This method was very time consuming and deforestation rate analysis of each PA took from four weeks to six weeks. This method overestimated deforestation, as it could not represent the whole year but only selected months which were cloud free.
3) Method 2: Forest cover change was calculated by using google earth engine, which provides a very good representation of deforestation. However, as the analysis is based on programming and script writing, it demands a lot of technical expertise and time and as a result is also highly sensitive to user errors.

Table A7.3 Re-calculated forest cover baseline and change in 2016 & 2017 and end of project targets

Protected Areas	Base-line	PIR 2016	PIR 2017	EoP Target
Hkakaborazi NP	0.021	0.024	0.012	0.010
Hponkanrazi WS	0.019	0.010	0.015	0.010
Hukaung Valley WS	0.108	0.106	0.137	0.100
Htamanthi WS	0.018	0.003	0.011	0.010

Indicator 3 assesses progress in strengthening financing for the national PA system through the Financial Sustainability Scorecard. It is clear with hindsight that the end of project target is not sufficiently ambitious.

Outcome Indicators, baselines and targets

Each of the two outcomes has four main indicators, but as can be seen from Table A7.4, many of these are not SMART. While all are relevant and time-bound, a significant number are not sufficiently specific, clearly measurable or likely to be achieved by the end of the project. In two cases (Indicators 1.4 and 2.4, the wording of both indicator and target are identical. Vaguely worded indicators are highlighted in Table below. Additionally, Indicator 1.1 is actually divided into a further five indicators and targets, some of which are very broad and all of which would require significant work as they involve complex changes in national policy and legislation.

It is not always possible to clearly specify indicators or establish their baselines and realistic targets at the project design stage. However, in such cases, the GEF - in line with good project management practice - would expect these to be clarified and pinned down during the first year's project inception phase. Indeed that this will be done is generally a pre-condition for project approval and usually stated in the project document and in the later project inception report. However, projects as large and

complex as this one, often get diverted by the challenges of day-to-day project implementation.

Although not strictly necessary, most of the outcome indicators are linked to specific outputs, with the following exceptions. Outputs 1.4, 1.6, 2.1 and 2.4 which have no related indicator at the outcome-level, presumably because it is assumed these are covered by Objective-level Indicators 1 and 3. This is reasonable for Output 1.6 as the related Indicator 1 specifies area and ecoregion baselines and targets. However, the absence of specific indicators related to the other outputs makes it more difficult to track progress – for example during the annual PIR process which only report against indicators - and adapt project strategy, particularly for two critical outputs relating to PA financing, i.e. Output 1.4 on developing and piloting a financial strategy for the expanded national PA system and Output 2.1 on strengthening management by developing business plans for the four demonstration PAs. An indicator relating Output 2.4 on analysing the drivers of threats to forests and wildlife in Kachin State and developing a plan for law enforcement would also have been advisable to track progress at the subnational level in this area.

Table A7.4 Outcome Indicators, Baselines and Targets

Outcome Indicator	Baseline	End of Project Target
Outcome 1: 1.1.Strengthened national policies and legislation address the following key issues for the PA system: a) enabling PAs to have access to funds raised through sustainable financing; b) integrating valuation of ecosystem services (ES) into national land use planning; c) clarifying the legal status of PA buffer zones and rationalization of approaches toward them; d) clarifying the governance arrangements for coastal PAs; and e) enabling local people to use and benefit from sites within Protected Areas.	a) PAs currently only access government funding; b) values of ES not considered in national land use planning; c) PA buffer zones vary in location and legal status; d) governance responsibilities for coastal PAs are complex and unclear; e) local people have no legal use rights within PAs.	a) PAs can access diverse sources of funding for management; b) national land use planning policy incorporates valuation of ES; c) PA buffer zones are given specific and consistent legal recognition; d) governance of coastal PAs is clarified in national policy and law; e) legislation passed to enable local use of land within PAs with appropriate safeguards.

<table>
<tr>
<td>1.2.Improved institutional capacity of the Forest Department for the PA system planning and management as indicated by the Capacity Development Scorecard*

*Combined average for NWCD, Sagaing region, Kachin state, the Training and Research Development Division and the Planning and Statistics Division</td>
<td>Capacity Development Scorecard baseline:

45%</td>
<td>Capacity Development Scorecard target:

67%</td>
</tr>
<tr>
<td>1.3.Certificate-level PA management modules are established for the use of the Forest Department and incorporated into their regular curricula at Yezin University of Forestry and Central Forestry Development Training Centers as appropriate</td>
<td>No formal training courses on PA management are available in Myanmar</td>
<td>Certificate-level PA management modules are incorporated into regular curricula at Yezin UoF and CFDTCs.

At least 150 FD field staff trained and certified in Conservation Management and Community Outreach for PAs.</td>
</tr>
<tr>
<td>1.4.100% increase in total budget allocated to the protected areas in real terms compared to the baseline as indicated by the financial sustainability scorecard</td>
<td>US$ 750,000[2] per year as indicated by the financial sustainability scorecard.</td>
<td>100% increase in budget allocated to the protected areas in real terms compared to baseline as indicated by the financial sustainability scorecard.</td>
</tr>
<tr>
<td>2.1.Reduction of threats at the local level indicated by an eventual reduction in the number of individuals stopped inside the PA for illegal activities as shown in SMART monthly patrolling reports. See Annex 9 for baseline.
<table>
<tr><th></th><th></th><th colspan="5">SMART Target*</th></tr>
<tr><th>Protected Area</th><th>SMART Baseline *</th><th>Y1</th><th>Y2</th><th>Y3</th><th>Y4</th><th>Y5</th></tr>
<tr><td>Hukaung Valley</td><td>20</td><td>30</td><td>40</td><td>30</td><td>15</td><td>10</td></tr>
</table>
</td>
<td>See inset table for baseline rate of individuals stopped per year for illegal activities for every 100km patrolled in each PA</td>
<td>See inset table for predicted annual target rates of individuals stopped per year for illegal activities for every 100km patrolled in each PA</td>
</tr>
</table>

[2]Based on the exchange rate of 800 kyat = 1 US$.

Wildlife Sanctuary						
Hkakaborazi National Park	20	30	40	30	15	10
Hponkanrazi Wildlife Sanctuary	0	10	20	15	8	5
Htamanthi Wildlife Sanctuary	20	30	40	30	15	10

*Catch effort /100km patrol distance

2.2. Stable or increased encounter rates for key indicator species in each demonstration PA based on annual summaries of SMART patrolling data and focused auditory surveys for gibbons.	Encounter rate of 2 Hoolock Gibbon groups/ km^2 for Hukaung valley WS, Hponkanrazi WS and Htamanthi WS. 2.5 ungulate sign observations/ 100 km patrolled for Htamanthi WS. Baselines for other sites to be completed during Year 1.	Encounter rate of 2 Hoolock Gibbon groups/ km^2 and 2.5 ungulate sign observations/ 100 km patrolled for all four demonstration sites
2.3. Improved management effectiveness of individual PAs covering 2,604,000 ha, indicated by the % increase in the METT assessment (see Annex 3):	See inset table for METT Baseline scores	See inset table for METT Target scores

Protected Area	METT Baseline Score	METT Target Score
Hukaung Valley Wildlife Sanctuary (1,737,300 ha)	52%	82%
Hkakaborazi National Park (381,200 ha)	51%	83%
Hponkanrazi Wildlife Sanctuary (270,400 ha)	12%	69%
Htamanthi Wildlife Sanctuary (215,100)	49%	82%

2.4. Community participation systems piloted at demonstration PAs and incorporated into management plans	No existing systematic measures for community participation at demonstration PAs	Community participation systems piloted at demonstration PAs and incorporated into management plans