Madagascar's Protected Area network is being co-managed effectively and sustainably by local communities ensuring protection of threatened biodiversity, improving the wellbeing of communities within the surrounding landscape and acting as long-term carbon storage mitigating effects of climate change

IMPACT

Effective management of 9 Protected Areas (PAs) ensuring protection of threatened biodiversity, improving the wellbeing of communities within the surrounding landscape, acting as long-term carbon storage, mitigating effects of climate change and providing a model for the rest of Madagascar's PA network

OUTCOME

Deforestation in PA and landscape reduced => increased carbon storage, biodiversity gains, stabilisation/increase of key threatened species pop. **(OI 1,2)**. KPI6, KPI8, Aichi 7, SDG 13,15

Local populations wellbeing enhanced => more resilient to future challenges **(OI 3-5).** KPI1, KPI3, KPI4, SDG 1-3, 5

A holistic stakeholder informed model for community management of PAs across Madagascar in place **(O4)**

Outcome indicators

Improved management of PA and natural resources by local communities enabling local resource needs to be met **(O2)**

Reduction in need for extensification of agriculture

Improved food security **(O3)**

Family have desired number of children => can feed family sustainably

Improved knowledge on reproductive health **(O3)**

Improved and diversified income from sustainable livelihoods **(O3)**

Improved financial independence / resilience **(O3)**

Model adapted and informed by learning and sharing knowledge

OUTPUTS

Participatory community management plans in place **(O1)**

(P1; WP7) If provide knowledge, skills and tools in sustainable farming practices

(P5; WP9) If provide access to family planning services

(P7; WP7) If provide access to markets for local livelihood products

(P6; WP8) If provide knowledge, skills and tools for financial management

Knowledge will be shared with wider stakeholders to receive feedback, evaluate and revise

Work Package interventions **(WP)**

Additional logic chains

(P4; WP2,3,5) If local communities provided with skills, knowledge and tools to plan and implement strategies to manage PA and natural resources => improved long-term management => less habitat and biodiversity loss

(P4,5; WP4) Improved gender balance in community activities => higher proportion of community involved in management and decision making processes

(P3; WP6) If people have a higher connection to natural heritage => increase in pro-environmental behaviour => reduction in negative environmental practices

(P2; WP3) If community patrols are more efficient => improved identification and reporting of infractions. If local Dina committees operate more effectively and have good relations with regional authorities => more effective implementation of environmental laws => increased deterrent and reduced law breaking

(P1; WP4) If sustainable timber use plans and plots for peoples construction and fuel needs made available => reduced need to clear forest from core zones

Core problems project will address. Linked to work package interventions by P1 etc.

P1: Unsustainable slash-and-burn agriculture, charcoal production, timber extraction to meet local livelihood, food and resource needs causing deforestation

P2: Ineffective enforcement of PA and natural resource use rules and regulations means low deterrent to law breaking

P3: A decreasing connection to nature and natural heritage within communities results in less desire to protect it

P4: Local communities lack full knowledge, skills and capacity to plan, adapt, and manage natural resources and PA effectively

P5: Women less able to make informed choices on family size which can increase pressures on food and financial security and lead to greater inequality

P6: Rural people less able to plan for or respond to future events due to lack of access to formal financial systems and knowledge

P7: Lack of access to markets limits income for local sustainable livelihood products

P8: Lack of understanding and consensus on how community based management can be effectively applied across Madagascar's PA network

Problems

(P8; WP10,12) If build consortium knowledge and understanding on what can impact effective PA management inc. sustainable financing => able to develop a more effective model

(P8; WP11) If effectively engage Government in process from start => higher chance of buy-in and later adoption

Logframe

PROJECT TITLE							
IMPACT	**Impact Indicator 1**		**Baseline**	**Milestone 1**	**Milestone 2**	**Target (date)**	
Madagascar's Protected Area network is being co-managed effectively and sustainably by local communities ensuring protection of threatened biodiversity, improving the wellbeing of communities at local and landscape levels, and contibuting to mitgating he effects of climate change at global level	(KPI6) Reduction in GHG emissions as a result of avoided deforestation	**Planned**				National REDD+ strategy Madagascar (MEEF, 2018) of 14% reduction in GHG emissions from the forest sector by 2030, through an increase in forest cover, and control of deforestation and forest degradation.	
		Achieved					
			Source				
	Impact Indicator 2		**Baseline**	**Milestone 1**	**Milestone 2**	**Target (date)**	
		Planned					
		Achieved					
			Source				

OUTCOME	**Outcome Indicator 1**		**Baseline**	**Milestone 1**	**Milestone 2**	**Target (date)**	**Assumptions**
The wellbeing of c.70,000 people across 54 communities is enhanced and negative impacts on the natural environment decreased at 9 Protected Areas providing a model for community-led management across Madagascar's Protected Area network	Rate of deforestation slows and total forest cover increases across all 9 PAs (disaggregated by site (links to KPI8))	**Planned**	Menabe 3%; Ambondrobe 2%; Bemanevika 1.3%; Mahimborondro 0.5%; Itremo 0.7-1%. Analava 0.14Ha/yr; Analabe 0.76Ha/yr. Annual deforestation rates calculated in Yr1			By end Yr6 annual deforestation rates are reduced by at least 50% at each PA with no loss within core conservation zones	No critical unforseen or uncontrollable external threats, such as a renewed period of political instability, that lead to a dramatic increase in deforestation rates at PAs. Our project sites are distributed across Madagascar which will reduce the impact and associated risk of local unrest, instability, or extreme climatic events Combined activities when employed by local communities will lead to expectd livelihood, biodiversity and habitat protection benefits
		Achieved	Analava 0.14Ha/year				
			Source				
			Remote sensing - MODIS, Global forest watch, Drones				
	Outcome Indicator 2		**Baseline**	**Milestone 1**	**Milestone 2**	**Target (date)**	
	Populations and distributions of at least six key globally threatened forest-dependent species at the intervention protected areas remain stable or are increasing (Bemenevika-Mahimborondro = B-M; Makirovana-Tsihomanaomby = M-T; Analava-Analabe = A-A)	**Planned**	Hypogeomys antimena EN (Menabe), c.9,000 ind.; Lepilemur randrianasoloi EN (Amb.) baseline to be set 20/21; Rhodolana macrocarpa CR (M-T), 100 ind.; Dypsis ambositrae CR (Itremo), 40 ind. 3 locations; Podocarpus capuronii EN (Itremo) 4-5 locations; Eutriorchis astur VU (B-M) 0.02 ind/km2. Pteropus rufus VU (A-A) c.4,000 ind	Y3 population thrat parameters (inc. population, AOO, EOO) are stable or inceasing cf. baselines		2027 population thrat parameters (inc. population, AOO, EOO) are stable or inceasing cf. baselines	
		Achieved					
			Source				
			Species surveys carried out by partners at sites				
	Outcome Indicator 3		**Baseline**	**Milestone 1**	**Milestone 2**	**Target (date)**	
	Changes in Multi-dimensional Poverty Index across intervention communties (disaggregated by gender(links to KPI1, KPI3))	**Planned**	Menabe 0.43 (2013). Menabe and Ambondrobe data collected 2020/21. Rest to be set Yr1	MPI to be set for intervention communities by end of Yr1	Household surveys in Yr3 show improvement cf. baselines	Household surveys in Yr6 show improvement cf. baselines	
		Achieved					
			Source				

I

II

OC1

				Household surveys Yr1, Yr3, Yr6				
		Outcome Indicator 4		**Baseline**	**Milestone 1**	**Milestone 2**	**Target (date)**	
OC1		Measures of food insecurity (assessed via Household Food Insecurity Access; Months of Adequate Household Food Provisioning and the Food Consumption Score Nutritional Quality Analysis scales) in intervention communities (links to KPI1, KPI3, KPI4)	**Planned**	Menabe and Ambondrobe data collected 2020/21. Rest to be set Year 1	Baselines set by end of Yr1	Household surveys in Yr3 show improvement cf. baselines	Household surveys in Yr6 show improvement cf. baselines	
			Achieved					
				Source				
				Household surveys Yr1, Yr3, Yr6				
OC1		**Outcome Indicator 5**		**Baseline**	**Milestone 1**	**Milestone 2**	**Target (date)**	**RISK RATING**
		The proportion of households (disaggregated by gender inc. number of female members, female headed houshods) participating in formal and informal decision making associations	**Planned**	Menabe and Ambondrobe data collected 2020/21. Rest to be set Year 1	Baselines set by end of Yr1	Household surveys in Yr3 show improvement cf. baselines	Household surveys in Yr6 show improvement cf. baselines	Low
			Achieved					
				Source				
				Household surveys Yr1, Yr3, Yr6				
	INPUTS (£)	**Defra (£)**		**Govt (£)**	**Other (£)**	**Total (£)**	**Defr SHARE (%)**	
	INPUTS (HR)	**Defra (FTEs)**						

	OUTPUT 1	**Output Indicator 1.1**		**Baseline**	**Milestone 1**	**Milestone 2**	**Target (date)**	**Assumptions**
OP	Inclusive, consensual policies, strategies and activities plans for the sustainable management of natural resources within the broader landscape area are being implemented at 9 Protected Areas	Knowledge on local community resource use needs, the socio-economic context of a community and identification of under-represented/vulnerable groups within communities at all 9 PAs developed and fully understood by all stakeholders	**Planned**	Current knowledge base fractured, partial, generalised and not formalised	Natural resource use mapped; socio-economic and vulnerable groups assessed in communities across all 9 PAs by end Yr1		Information compiled in appropriate documentation and shared with all stakeholders by mid-Yr2	Communites are receptive and willing to engage to develop plans and strategies to improve management of natural resources
			Achieved					
				Source				
				Natural resource use maps; reports for each community				
		Output Indicator 1.2		**Baseline**	**Milestone 1**	**Milestone 2**	**Target (date)**	
OPI		Gender balance within key local associations and community decision making groups	**Planned**	None currently in place	Gender strategy developed for communites at 9 Pas by mid Yr2	Actions to identified address gender issues are implemented from mid Yr2 onwards	Identified gender issues addressed and improved gender balance within community groups and association improved by end Yr 6 cf. Yr1	
			Achieved					
				Source				
				Strategy reports for each community; ongonig reviews (links to Output 2.1)				
		Output Indicator 1.3		**Baseline**	**Milestone 1**	**Milestone 2**	**Target (date)**	
OPI		Risks relating to community management are reduced or mitigated	**Planned**	None currently in place	Plans to address identified community management risks at 9 PAs developed by mid Yr2	Actions to address identified risks are implemnted from mid Yr2 onwards	Measures to reduce and mitigate community management risks still effective/inplace at end Yr 6	
			Achieved					
			Source					
				Reports for each community; ongonig reviews (links to Output 2.1)				
		Output Indicator 1.4		**Baseline**	**Milestone 1**	**Milestone 2**	**Target (date)**	
OPI		Sustainable natural resource use management plans developed with input from all key stakeholders and validated by the community for all 9 Protected Areas	**Planned**	Existing PA management plans do not account for capacity of sustainable use zones or surounding landscape	Paticipatory planning (disaggregated by gender, households) sessions held within communities at all 9 PAs by end Yr1	Sustainable natural resouce management plans developed for 9 PAs by end Yr2	Natural resource managment plans ratified by local communities and appropriate local authorities (fokontany) by end Yr3	
			Achieved					
			Source					

		Participation records, photos, draft, plans, final plans; foraml ratification					
IMPACT WEIGHTING (%)	**Output Indicator 1.5**		**Baseline**	**Milestone 1**	**Milestone 2**	**Target (date)**	**RISK RATING**
	Disaster risk identification, mitigation and response plans developed and implemented in communities at 9 PAs	**Planned**	None currently in place	Identification of community specific dissater risks identified by end Yr2	Response plans, mitigation measures being implemented by end Yr3	Response plans updated and measures still being implemented by end of project	Low
OPI		**Achieved**					
		Source					
		Participation records, photos, draft, plans, final plans					
INPUTS (£)	**Defra (£)**		**Govt (£)**	**Other (£)**	**Total (£)**	**Defra SHARE (%)**	
INPUTS (HR)	**Defra (FTEs)**						

OUTPUT 2	**Output Indicator 2.1**		**Baseline**	**Milestone 1**	**Milestone 2**	**Target (date)**	**Assumptions**
54 local communities are managing 9 Protected Areas and their broader landscapes more effectively and sustainably due to improved knowledge, skills and conenction to natural heritage	Skills capacity, governance efficiency of communities and membership of local associations (disaggregated by gender)	**Planned**	Capacity and training needs identified by the end of Y1 for each community	c.500 people (>30% women) across 54 communities at 9 PAs trained in accodance to capacty needs by end of Yr3	Each community is applying manual of procedures correctly on 90% of occasions from Yr3 onwards	90% of community associations are conducting effective PA management by end of project. Membership (inc. % women) cf. Yr1	No significant change in regional or local political stability or security that directly impacts on the ability to manage Protected Areas safely and securely Local and regional law enforcemnt agencies will work with local associations and Dina committees to apply the law Issues of corruption are mitgated against by our approach and do not significantly impact the ability of local associations, DIna committees to govern and operate effectively Continued community willingness to engage Seed survival in nurseries is not compromised by external uncontrollable event e.g. disease, extreme weather events Provision of timber and fuel wood plantations will provid an attractive alternative to cutting trees from protected areas The number of uncontrolled fires due to natural events such as lightening stikes does not increase There is the political will to enable trials of fire management strategies that involve deliberate burning An increase in peoples connection with their environment and natural heritage will lead to and increase in pro-environmental behaviours
OP		**Achieved**					
		Source					
		Training needs reports; workshop attendance records; community association meeting minutes' Annual Protected Area Management Effectiveness evaluations; IUCN Management Effectiveness Tracking Tool; Dina incident records					
	Output Indicator 2.2		**Baseline**	**Milestone 1**	**Milestone 2**	**Target (date)**	
	Efficiency and membership of community patrols in covering protected area and reporting infractions (disaggregated by PA)	**Planned**	Area covered monthly differs between sites (5% at M-T to c.90% at Menabe of target area). Methods used at each site - some use SMART others basic data collection	Increase in patrol coverage and efficinecy (distance covered, time on patrol, infractions reported) at each site cf. Yr1 baselines	At least 75% of target PA coverage is patrolled each month with recording and reporting of infractions using SMART by end of Yr 3	At least 90% of target PA coverage is patrolled each month with recording and reporting of infractions using SMART from Yr5 onwards	
OPI		**Achieved**					
		Source					
		Community patrol data and reports detailing distance, time covered					
	Output Indicator 2.3		**Baseline**	**Milestone 1**	**Milestone 2**	**Target (date)**	
	Area of land planted for timber and fuel wood resources and being well maintained	**Planned**	Less than 20Ha of new plantations for all sites combined	At least 30 new nurseries established and 100 (50% women) local people trained as nursery technicians by end Yr2	At least 100Ha of established by end Yr4 (diaggregated by site)	At least 500Ha of new plantations established by end Yr6 across all 9 PAs.	
OPI		**Achieved**					
		Source					
		Planting records, monitoring, photographs					
	Output Indicator 2.4		**Baseline**	**Milestone 1**	**Milestone 2**	**Target (date)**	
	Fire management plans in place and being actively implemented reducing number of uncontrolled fires	**Planned**	Basic plans in place at Menabe, Ambondrobe and Itremo	Fire management plans reviewed in place and being actively implemented at 9 PAs by end Yr2	Number of uncontrolled fires and Ha burnt by uncontrolled fires annually by end Yr4 decreased cf. baseline	Number of uncontrolled fires and Ha burnt by uncontrolled fires annually by end Yr6 decreased cf. baseline	
OPI		**Achieved**					
		Source					
		Plans, community feedback, Global Forest Watch , MODIS data					
IMPACT WEIGHTING (%)	**Output Indicator 2.5**		**Baseline**	**Milestone 1**	**Milestone 2**	**Target (date)**	**RISK RATING**
	Nature connectedness and pro-environmental behaviours of target communities	**Planned**	Nature connectedness baseline will be set in Yr1	Increase in overall nature connectedness cf. Yr1 baseline at Yr3/4		Increase in overall nature connectedness cf. Yr1 and Y3/4 result at Yr6	Low
OPI		**Achieved**					
		Source					
		Bespoke surveys					
INPUTS (£)	**Defra (£)**		**Govt (£)**	**Other (£)**	**Total (£)**	**Defra SHARE (%)**	

INPUTS (HR)	**Defra (FTEs)**						

OUTPUT 3	**Output Indicator 3.1**		**Baseline**	**Milestone 1**	**Milestone 2**	**Target (date)**	**Assumptions**
Approximately 12,000 households across 54 communities at 9 Protected Areas are supported to improve household wellbeing and climate resiliance whilst utilising natural resources more sustainably	Area of cropland under sustainable agriculture and associated crop diversity, yields and incomes	**Planned**	5,000 people (>30% female participation) provided training (e.g.Farmer Field Schools) and resources to apply climate smart agriculture techniques (inc.	At least 150Ha under sustainable agriuclture with increased crop diversity, yields and income by end Yr2 cf. baseline (land disaggreagted by	At least 300Ha under sustainable agriuclture with increased crop diversity, yields and income by end Yr4 cf. baseline (land disaggreagted by	At least 500Ha under sustainable agriuclture with increased crop diversity, yields and income by end Yr6 cf. baseline (land disaggreagted by	Continued community willingness to engage and are receptive to new agricultural crops and techniques Environmental conditions change dramtically to negatively impact growing seasons and crop productivity e.g. increased cyclone activity, lack of rains/prolonged drought
		Achieved					
		Source					
		Farmer training reports; agricultural suveys: crop diversity, crop yield/Ha, income generated					
	Output Indicator 3.2		**Baseline**	**Milestone 1**	**Milestone 2**	**Target (date)**	VSLA group members do not default on their repayments and that there is no theft of savings Viable markets locally, regionally or nationally exist for locally produced sustainable products and communities can provide products in sufficient quantity and quality required When provided women will access family planning and reproductive health facilities
	Number and makeup of VSLA groups established, participation rates and value of savings	**Planned**	Initial VSLAs will be established in Ambondrobe in 2020/21	Feasibiltiy of establishing VSLA groups in each target community by end Y1	A least 20 VSLA groups (60% women membership) across at least 4 PAs completed one full cycle by Y3	By end Yr 6 VSLAs established and producing savings returns in all feasible target communities with at least 10% of housholds participating (60% women membership)	
		Achieved					
		Source					
		Results of workshop; household savings survey; villager's testimony; final report					
	Output Indicator 3.3		**Baseline**	**Milestone 1**	**Milestone 2**	**Target (date)**	
	Number of viable (assessed by net income received)value chains and access to markets for local products and income-generating activities implemented	**Planned**	Vanilla market exists in Makirovana-Tsihomanomby; work beginning for basketry products at Ambondrobe	Value chains and access to markets for local livelihood products assessed for 9 PAs by end of Yr2	At least 2 viable local livelihood products facilitated to market by end Yr4 assessed by net income received	At least 4 viable local products facilitated to market by end Yr6 assessed by net income received	
		Achieved					
		Source					
		Value chain and access to market analysis reports; number of new markets established					
IMPACT WEIGHTING (%)	**Output Indicator 3.4**		**Baseline**	**Milestone 1**	**Milestone 2**	**Target (date)**	**RISK RATING**
	Number of women being able to access regular reproductive health clinics and are aware of contraceptive choices and where to access them	**Planned**	CHVs will start being established in Ambondobe in 2020/21	Community Health Volunteer Training Program (CHV) has been launched in at least 4 PAs, with the first volunteers promoted by communities in Yr2	Active reproductive health progrmames with CHV in place at all PAs by end Y4	100% of females aged 15-49 in all target communities have access to regular (quarterly) reproductive health clinics by end Yr4. Report on % accessing	Low
		Achieved					
		Source					
		Reproductive health indicators e.g. Contraceptive Prevelence Rate, ASC training records, household survey results, MSM visit records.					
INPUTS (£)	**Defra (£)**		**Govt (£)**	**Other (£)**	**Total (£)**	**Defra SHARE (%)**	
INPUTS (HR)	**Defra (FTEs)**						

OUTPUT 4	**Output Indicator 4.1**		**Baseline**	**Milestone 1**	**Milestone 2**	**Target (date)**	**Assumptions**
Model for improved Protected Area management across Madagascar informed through building and sharing knowledge key stakeholders, conservation practitioners and communities outside the consortium	Review of relevant policies and legislation (e.g. land tenure, Protected Area legislation) that can impact the management of Protected Areas	**Planned**	Consortium members have some knowledge but needs to developed and assessed in a strucutred way	All relevant policies and legislation identified within first year		All relevant policies and legislation reviewdd by end Yr2	Relevant policy and legislation will be made available for review by consortium members Investment opportunities in standing forests, reforestation and avoided deforesation that are sustainable and socially responsible and that meet or outperform (in terms of risk return profile) alternative land use options will attract
		Achieved					
		Source					
		Review documents					
	Output Indicator 4.2		**Baseline**	**Milestone 1**	**Milestone 2**	**Target (date)**	

	Number sustainable finance mechanisms developed for supporting PA management and amount of funds received through these	**Planned**	The feasibility and practicality of many sustainbale financing mechanisms to a Madagascar context have not been assessed	Feasibility of application at least 2 sustainable financing mechanisms in Madagascar including carbon credits fully assessed by end Yr3	If feasible, sustainable finance package developed and marketed for at least 2 PA by end of Yr 4	If feasible, finance through a sustainable mechanism in progress for at least 1 PA by project end	private investment. There is no shortage of private commercial funds to invest in sustainable forest and land use projects Private investment via carbon credits in Protected Areas would be acceptable to th Madagascar Government The political climate in Madagascar will enable policy makers to continue to engage with us, and our outputs External stakeholders are willing to engage with the consortium in sharing knowledge and lessons learned
		Achieved					
		Source					
		Review documents; sustainable fiancing plan; finances secured as a result					
	Output Indicator 4.3		**Baseline**	**Milestone 1**	**Milestone 2**	**Target (date)**	
	Madagascar government engagement with consortium throughout the project	**Planned**	None	Key Government stakeholders invited to sit on advisory panel at project inception	Bi-annual advisory board meetings including Government officials from Yr1	Government officials engaged in at least 12 official advisory meetings by end of project	
		Achieved					
		Source					
		Madagascar advisory group meeting minutes and attendance records; documented feedbackl on model					
IMPACT WEIGHTING (%)	**Output Indicator 4.4**		**Baseline**	**Milestone 1**	**Milestone 2**	**Target (date)**	**RISK RATING**
	Evidence base for effective communtiy managment of Protected Areas in Madagascar shared with and made available wider practitioners and stakeholders	**Planned**	None	Annual workshops to share knowledge with non-consortium members from Yr2	At least 5 media-packages (inc. reports, reference guides, videos) showcasing information on practices, lessons learned are developed and made available to stakeholders by end of project (number of people shared with, access online depository)	By project end consortium approached independantly for expert advice on PA management and knowledge developed through project actively shared with at least 20 non-consortium stakeholder groups in Madagascar	Low
		Achieved					
		Source					
		Documents, videos produced and shared; workshops held and atendees; hits to online repositories; number of requests for advice					
INPUTS (£)	**Defra (£)**		**Govt (£)**	**Other (£)**	**Total (£)**	**Defra SHARE (%)**	
INPUTS (HR)	**Defra (FTEs)**						

OPI

Consolidated Budget Estimate

Type	Where relevant, insert amount of secured match funding £	Year 1 Total estimated cost £	Year 2 Total estimated cost £	Year 3 Total estimated cost £	Year 4 Total estimated cost £	Year 5 Total estimated cost £	Year 6 Total estimated cost £	Year 7 Total estimated cost £	Estimated Cost total
Direct Costs									
Programme leadership (staff salaries/costs, including taxes and benefits)	£ 136,967.00	£ 31,436.65	£ 60,630.82	£ 52,627.48	£ 48,025.68	£ 46,179.03	£ 51,803.52	£ 24,678.37	£ 315,381.54
Programme management (staff salaries/costs, including taxes and benefits)	£ 85,507.00	£ 86,888.37	£ 278,966.79	£ 226,535.38	£ 179,034.44	£ 205,384.71	£ 234,718.37	£ 113,859.95	£ 1,325,388.01
Technical advisor (staff costs (staff salaries/costs, including taxes and benefits)	£ 97,893.00	£ 72,483.01	£ 184,850.76	£ 182,124.56	£ 188,018.10	£ 179,250.10	£ 191,331.08	£ 79,238.60	£ 1,077,296.21
Programme support and administration staff costs (staff salaries/costs, including taxes and benefits)	£ 19,669.34	£ 21,316.31	£ 51,084.19	£ 49,341.89	£ 49,386.89	£ 49,431.89	£ 49,478.89	£ 26,463.76	£ 296,503.80
Total staff costs	£ 340,036.34	£ 212,124.33	£ 575,532.55	£ 510,629.31	£ 464,465.11	£ 480,245.73	£ 527,331.86	£ 244,240.67	£ 3,014,569.57
Capital costs (material, equipment and machinery)	£ -	£ 119,189.34	£ 143,115.23	£ 43,193.43	£ 53,159.43	£ 20,687.93	£ 15,979.56	£ 3,575.62	£ 398,900.54
Travel, accommodation and subsistence	£ 19,482.00	£ 96,026.22	£ 147,852.90	£ 145,121.84	£ 152,566.52	£ 147,122.23	£ 145,746.27	£ 67,469.76	£ 901,905.73
Monitoring and Evaluation costs	£ -	£ 91,278.22	£ 146,311.47	£ 32,408.89	£ 159,275.56	£ 32,408.89	£ 24,097.78	£ 149,684.44	£ 635,465.25
PA Based Monitoring	£ 3,500.00	£ 1,139.15	£ 4,287.02	£ 787.02	£ 9,072.69	£ 1,374.82	£ 7,767.84	£ 499.08	£ 24,927.62
Meetings and conferences (staff learning)	£ -	£ 11,382.90	£ 28,004.76	£ 26,547.35	£ 22,400.87	£ 24,050.09	£ 16,730.08	£ 259.46	£ 129,375.51
Output 1 project costs	£ -	£ 43,502.07	£ 49,191.61	£ 24,483.61	£ 16,247.61	£ 13,885.61	£ 17,650.00	£ 19,906.25	£ 184,866.76
Output 2 project costs	£ 206,773.72	£ 46,157.48	£ 242,975.00	£ 277,920.00	£ 240,255.00	£ 211,245.00	£ 208,845.00	£ 41,393.26	£ 1,268,790.74
Output 3 project costs	£ 80,927.77	£ 17,419.75	£ 200,244.51	£ 201,101.11	£ 170,784.11	£ 170,588.11	£ 161,192.52	£ 44,417.38	£ 965,747.49
Output 4 project costs	£ -	£ 14,647.92	£ 32,350.00	£ 35,150.00	£ 35,150.00	£ 33,300.00	£ 33,300.00	£ 15,442.08	£ 199,340.00
Species monitoring costs	£ 2,000.00	£ 7,943.64	£ 8,446.46	£ 11,746.46	£ 11,746.46	£ 11,746.46	£ 11,746.46	£ -	£ 63,375.94
Others, Production of advocacy materia	£ -	£ -	£ 2,793.82	£ 1,388.64	£ 1,388.64	£ 1,388.64	£ 1,388.64	£ 578.60	£ 8,927.00
Others, Visibility	£ -	£ -	£ 5,025.46	£ 1,869.18	£ 1,869.18	£ 1,869.18	£ 1,869.18	£ 778.82	£ 13,281.00
Others, Training budget	£ -	£ 1,420.39	£ 1,373.43	£ 1,388.64	£ 1,388.64	£ 1,388.64	£ 1,388.64	£ 578.60	£ 8,927.00
Others, Feedback mechanism	£ -	£ 461.02	£ 1,286.66	£ 1,103.80	£ 1,103.80	£ 1,103.80	£ 1,103.80	£ 459.92	£ 6,622.79
Others, Gender Activities flexible fund	£ -	£ -	£ 7,333.33	£ 4,000.00	£ 4,000.00	£ 4,000.00	£ 4,000.00	£ 1,666.67	£ 25,000.00
Others, FAM sites	£ -	£ -	£ 950.00	£ 600.00	£ 600.00	£ 600.00	£ 600.00	£ 250.00	£ 3,600.00
Communications	£ -	£ -	£ 6,666.67	£ 6,666.67	£ 6,666.67	£ 6,666.67	£ 6,666.67	£ 6,666.67	£ 40,000.00
Others, Country Office security, rent utilities and direct support cost	£ -	£ 17,853.01	£ 34,299.60	£ 22,661.14	£ 22,661.14	£ 21,559.22	£ 20,772.14	£ 10,346.72	£ 150,152.97
Total direct costs	£ 652,719.83	£ 680,545.43	£ 1,638,040.50	£ 1,348,767.09	£ 1,374,801.43	£ 1,185,231.02	£ 1,208,176.44	£ 608,213.99	£ 8,043,775.90
Indirect costs									
Administration costs (rent, facilities, insurance, maintenance)	£ 7,475.00	£ 31,014.62	£ 68,762.77	£ 69,595.32	£ 66,559.97	£ 65,155.63	£ 63,021.12	£ 32,366.47	£ 396,475.90
Support staff costs (salaries, benefits, HR)	£ -	£ 737.85	£ 2,335.16	£ 2,335.16	£ 2,335.16	£ 2,335.16	£ 2,335.16	£ 1,597.31	£ 14,010.96
Governance costs (external services)	£ -	£ 11,409.78	£ 18,288.93	£ 4,051.11	£ 19,909.45	£ 4,051.11	£ 3,012.22	£ 18,710.56	£ 79,433.16
% allocation of total costs	£ 61,626.17	£ 61,437.51	£ 139,950.09	£ 120,016.41	£ 110,897.81	£ 101,222.71	£ 106,843.67	£ 33,481.14	£ 673,849.33
Total indirect costs	£ 69,101.17	£ 104,599.76	£ 229,336.95	£ 195,998.00	£ 199,702.39	£ 172,764.60	£ 175,212.17	£ 86,155.48	£ 1,163,769.35
Others Costs									
External Consultancy	£ -	£ 16,304.23	£ 35,654.89	£ 29,232.25	£ 35,882.40	£ 12,844.62	£ 7,891.62	£ 4,184.76	£ 141,994.77
Irrecoverable VAT	£ -	£ 734.56	£ 590.96	£ 498.36	£ 207.65	£ -	£ -	£ -	£ 2,031.53
Inflation	£ -	£ -	£ 17,018.76	£ 51,588.48	£ 80,019.89	£ 107,710.99	£ 146,863.15	£ 68,844.90	£ 472,046.17
Total	£ -	£ 17,038.80	£ 53,264.61	£ 81,319.09	£ 116,109.94	£ 120,555.61	£ 154,754.77	£ 73,029.66	£ 616,072.47
Total	£ 721,821.00	£ 802,183.99	£ 1,920,642.06	£ 1,626,084.18	£ 1,690,613.75	£ 1,478,551.23	£ 1,538,143.38	£ 767,399.12	£ 9,823,617.72

Annex T: MoA

Department
for Environment
Food & Rural Affairs

Memorandum of Agreement

Biodiverse Landscapes Fund

January 2022

This publication is available at www.gov.uk/government/publications
Any enquiries regarding this publication should be sent to us at Defra.Procurement@defra.gov.uk
www.gov.uk/defra

Contents

THIS AGREEMENT is made on xx day of January 2022

BETWEEN

The Secretary of State for Environment, Food and Rural Affairs whose principal offices are at Marsham Street, London, SW1P 4DF address (the "**Authority**");

AND

[name of **Fund Manager**] of [address] registered in England with company number xx (the "**Fund Manager**").

AND

[name of **Independent Evaluator**] of [address] registered in England with company number xx (the "I**ndependent Evaluator**").

BACKGROUND

This Agreement sets out how the Fund Manager and Independent Evaluator (collectively referred to as the "**Partners**") will work together to meet the Authority's objectives. This Agreement describes the roles and responsibilities of the Partners.

This Agreement shall be subordinate to the Overarching Contracts in place between the Authority and the Fund Manager and the Independent Evaluators. The Overarching Contracts shall in all cases take precedence.

This Agreement sets out the principles which shall govern the relationship between the Authority and the Partners including their respective obligations and rights.

IT IS AGREED as follows:

DEFINITIONS AND INTERPRETATION

In this Agreement, unless the context otherwise requires, a reference to:

"**Agreement**" means this document, including all schedules and appendices hereto. Any schedule or appendix is an integral part of this Agreement and shall be interpreted accordingly;.

"**Authority Data**" means the data text drawings diagrams images or sounds (together with any database made up of any of these) which are embodied in any electronic, magnetic, optical or tangible media and which are:
a) supplied to the Partner by or on behalf of the Authority; or
b) which the Partner is required to generate, process, store or transmit pursuant to the Agreement; or

c) any Personal Data for which the Authority is the Controller;

"**BLF**" means the Biodiverse Landscapes Fund

"**CEDR**" means Centre for Effective Dispute Resolution

"**Confidential Information**" means any information which has been designated as confidential by either Party in writing or that ought reasonably to be considered as confidential (however it is conveyed or on whatever media it is stored) including information which relates to the business, affairs, properties, assets, trading practices, services, developments, trade secrets, intellectual property rights, know-how, personnel, Authorities and suppliers of either Party and all Personal Data;

"Controller, **Processor**, **processing**, **Data Subject**, **Personal Data**, **Data Protection Officer"** take the meaning given in the UK GDPR or, in respect of processing of personal data for a law enforcement purpose to which Part 3 of the DPA 2018 applies, the meaning in that Part if different;

"**Data Protection Legislation**" means (i) the UK GDPR; (ii) the DPA 2018 to the extent that it relates to processing of personal data and privacy; and (iii) all applicable Law about the processing of personal data and privacy;

"**Delivery Profile**" means the detailed timetable for outputs in Appendix 1;

"DPA 2018" means the Data Protection Act 2018;

"EIR" means the Environmental Information Regulations 2004;

"FOIA" means the Freedom of Information Act 2000;

The "**Landscapes**" means the collection of countries that the Biodiverse Landscapes Funds shall work in;

"Law" means any law, subordinate legislation within the meaning of Section 21(1) of the Interpretation Act 1978, bye-law, enforceable right within the meaning of Section 2 of the European Communities Act 1972, regulation, order, regulatory policy, mandatory guidance or code of practice, judgment of a relevant court of law, or directives or requirements with which the relevant Party is bound to comply;

"**Overarching Contracts**" means the agreements between the Authority and the Fund Manager dated xxx and Independent Evaluator dated xxx for the provision of services;

The "**Partners**" means the Fund Manager AND the Independent Evaluator;

A "**Party**" means any party to this Agreement individually and "**Parties**" refers to all of the parties to this Agreement collectively. A Party shall include all permitted assigns of the Party in question;

"**Personal Data**" has the same meaning as that, which is given in Article 4(1) of the UK GDPR;

"Project" means the project which this Agreement is intended to deliver;

"**UK GDPR**" means Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data (United Kingdom General Data Protection Regulation), as it forms part of the law of England and Wales, Scotland and Northern Ireland by virtue of section 3 of the European Union (Withdrawal) Act 2018 (and see section 205(4) of the DPA 2018); and

"**Working Day**" means a day (other than a Saturday or Sunday or a public holiday in the UK).

PRINCIPLES OF THE RELATIONSHIP

2.1 The Parties shall work together in delivering the Project and in particular shall perform their respective obligations to the timetables set out in the Project Schedule.

2.2 The Parties shall each be responsible for meeting their own obligations within the Overarching Contracts.

2.3 None of the Parties shall be entitled to impose any duties or responsibilities on other Parties beyond those set out in this Agreement.

DURATION

3.1 This Agreement shall be effective from the date of its execution and shall continue until termination in accordance with clause 19.

RESOURCES

4.1 The Parties shall provide the resources identified in the schedule as being their responsibility to provide.

4.2 If any of the individuals named as a resource being provided by a Party is unavailable for whatsoever reason, that Party shall offer an alternative member of staff with equivalent skill sets to the reasonable satisfaction of the other Party.

FUNDING ARRANGEMENTS

5.1 This Agreement does not give rise to any financial obligations.

FUTURE SERVICES

8.1 On or before completion of the Project, the Parties shall act reasonably in agreeing any ongoing service delivery and support or, if applicable, co-operate to arrange a third party to so deliver any ongoing service and/or support.

FURTHER ASSURANCE

9.1 The Authority and the Partners shall promptly execute and deliver all such documents and do all such things as may from time to time be reasonably required for the purpose of giving full effect to the provisions of this Agreement.

VARIATION AND WAIVER

10.1 No variation of this Agreement shall be valid unless it is in writing and signed by or on behalf of each of the Parties.

10.2 No delay by the Authority in exercising any provision of this Agreement constitutes a waiver of such provision or shall prevent any future exercise in whole or in part.

SUCCESSORS AND ASSIGNS

11.1 The agreements reached between the Parties pursuant to this Agreement shall continue for the benefit of the Authority's successors and assigns.

11.2 The Partners cannot assign, sub-contract or in any other way dispose of the Agreement or any part of it to any person, firm or company without the prior written consent of the Authority.

NOTICES

12.1 Any notice or other communication required to be given under this Agreement, shall be in writing and shall be delivered personally, or sent by pre-paid first-class post or recorded delivery or by commercial courier, to each Party required to receive the notice or communication as set out below:

Authority (Contract Manager):	Hannah Boyne, Foss House, Peasholme Green, York,
Authority (Procurement Manager):	Tom Redfearn, Lateral House, 8 City Walk, Leeds, LS11 9AT
Fund Manager:	[CONTACT NAME AND ADDRESS]
Independent Evaluator:	[CONTACT NAME AND ADDRESS]

or as otherwise specified by the relevant Party by notice in writing to the other Parties.

12.2 Any notice or other communication shall be deemed to have been duly received:

12.2.1 if delivered personally, when left at the address and for the attention of the contact referred to in clause 12.1; or

12.2.2 if sent by pre-paid first-class post or recorded delivery, at 11.00 am on the second Working Day after posting; or

12.2.3 if delivered by commercial courier, on the date and at the time that the courier's delivery receipt is signed.

12.3 A notice or other communication required to be given under this Agreement shall be validly given if sent by email. Notice sent via email must clearly state the email is a notice pertinent to this Agreement.

12.4 The provisions of this clause shall not apply to the service of any proceedings or other documents in any legal action.

AUTHORITY Data

13.1 N/A

RIGHT TO PUBLISH

14.1 The Partners acknowledge that, except for any information which is exempt from disclosure in accordance with the provisions of the EIR or FOIA, the content of this Agreement is not Confidential Information for purposes of this Agreement except as set out below in clause 15. The Authority shall be responsible for determining in its absolute discretion whether any of the content of the Agreement is exempt from disclosure in accordance with the provisions of the EIR or FOIA. Notwithstanding any other term of this Agreement, the Partners hereby give their consent for the Authority to publish the Agreement in its entirety (but with the redaction of any information exempt

from disclosure in accordance with the provisions of the EIR or FOIA), including from time to time agreed changes to the Agreement, to the general public.

14.2 The Authority may consult with the Partners to inform its decision regarding any right to publish or exemptions, but the Authority shall have the final decision in its absolute discretion.

CONFIDENTIALITY

15.1 The Parties acknowledge that pursuant to this Agreement, Confidential Information may be disclosed between the Parties but that only the Authority in its absolute discretion has the right to publish such information to the wider public. In consideration of the provision of such Confidential Information, each Party undertakes to the other:

15.1.1 to keep secret and confidential all Confidential Information disclosed to it, (including its employees, agents or advisers) by or on behalf of another in relation to the agreement or the business of the other Party which is of a confidential nature and not to use such Confidential Information for any purpose other than for the purposes of this Agreement; and

15.1.2 not to disclose to any third party (other than its professional advisers or as required by law or any competent regulatory authority) any such Confidential Information other than that which comes into the public domain other than by breach of the undertakings contained in this clause 15.

15.2 These confidentiality undertakings shall subsist indefinitely so far as permissible by law.

15.3 The obligations of confidentiality set out in this clause 15 shall not apply to information already known to either Party or information in the public domain (in each case other than through a breach of a confidentiality undertaking) or information required to be disclosed by law.

INTELLECTUAL PROPERTY RIGHTS

16.1 All intellectual property rights in any information or material introduced by a pursuant to this Agreement shall remain the property of the Party that owned such intellectual property rights prior to such introduction. The Partners shall grant the Authority a non-exclusive licence to use, publish and enable others to use all such pre-existing information and materials supplied under this Agreement, including any intellectual property rights in the same, in perpetuity.

16.2 The Partners grant the Authority an irrevocable non-exclusive licence to any of its existing intellectual property rights as are necessary for the Authority to make use of the Project's deliverables including any arising intellectual property rights and for the Authority to allow others to make use of the Project's deliverables including any arising intellectual property rights.

16.3 Any new or future intellectual property rights arising from or as a result of the Project shall be owned by the Authority.

16.4 The Authority grants the Partners an irrevocable non-exclusive licence to the arising intellectual property rights for Non-Commercial purposes.

16.5 The Partners shall do, or procure to be done, all such further acts and things and the execution of all such other documents as may from time to time be required for the purpose of ensuring all new and future intellectual property rights arising from the Project vested in the Authority.

16.6 The Partners agree to waive any moral rights in the intellectual property pursuant to this clause 16, and agree not to institute, support or maintain or permit any action or claim to the effect that any treatment, exploitation or use of such intellectual property rights or other materials, infringes its moral rights.

INFORMATION

EIR AND FOIA

17.1 The Partners acknowledge that the Authority is subject to the requirements of the EIR and FOIA and the Partners shall assist and co-operate with the Authority as necessary to comply with these requirements. Once a request from the Authority to a Partner is made, the Partner shall comply by searching and supplying the required information within the time the Authority specifies.

17.2 In responding to a request for information, including information in connection with the Project, the Authority shall use reasonable endeavours to consult with the relevant Party. Notwithstanding this, the Partners acknowledge that the Authority may disclose information without consultation, or following consultation with the relevant Party having taken its views into account.

17.3 The Partners shall ensure that all information produced in the course of the Project or relating to the Agreement is regularly documented and maintained for programme accountability and audit purposes and shall provide all necessary assistance as reasonably requested to enable the Authority to respond to a request for information within the time for compliance and shall permit the Authority to inspect such records as requested from time to time.

DATA PROTECTION

17.4 The Parties agree to comply with the Data Protection Legislation. In particular the Parties agree to comply with the requirements of [the Data Processing Terms at 0 in respect of Personal Data of which one Party is the Controller and the other is the Processor (as identified in Appendix 2)

LIABILITY

18.1 The Authority's total liability arising under, or in connection with, this Agreement, whether in tort (including negligence or breach of statutory duty), contract, misrepresentation, restitution or otherwise, shall be limited to £5 (FIVE POUNDS).

18.2 The Partners' total liability arising under, or in connection with, this Agreement, whether in tort (including negligence or breach of statutory duty), contract, misrepresentation, restitution or otherwise, shall be limited to £5 (FIVE) pounds.

18.3 No Party excludes or limits liability to the other for:

- death or personal injury caused by its negligence;
- fraud or fraudulent misrepresentation;
- any breach of any obligations implied by section 12 of the Sale of Goods Act 1979 or section 2 of the Supply of Goods and Services Act 1982; or
- any other matter which, by law, may not be excluded or limited.

Subject to clause 18.3, no Party shall be liable to another Party for:

- any indirect, special or consequential loss or damage; or
- any loss of profits, turnover, business opportunities, savings or damage to goodwill (whether direct or indirect).

TERMINATION

19.1 This Agreement shall terminate when either of the Overarching Contracts held between the Authority and the Fund Manager or Independent Evaluator terminates.

CONSEQUENCES OF TERMINATION

20.1 On termination of the Agreement each Party shall comply with the requirements set forth in the Overarching Contracts.

RECONCILIATION OF DISAGREEMENT

21.1 Disputes between the Authority and a Party shall be resolved in line with the Overarching Contract.

21.2 Disputes between the Partners in connection with this Agreement shall normally be resolved amicably at a working level. In the event of failure to reach consensus between the Partners, such failure shall be handled in the following manner:

21.2.1 the dispute shall, in the first instance, be referred to the Authority's Contract Manager or manager in the organisation of similar standing and the Partners' contract manager for resolution at a meeting to be arranged as soon as practicable after the failure to reach consensus arises, but in any event within ten (10) Working Days;

21.2.2 if the dispute cannot be resolved in accordance with clauses 21.2 and 21.2.1 above within ten (10) Working Days after such referral, or within any other period agreed between the Parties, the dispute shall be referred to the Authority's Procurement Manager for resolution at a meeting to be arranged as soon as practicable after such referral, but in any event within ten (10) Working Days;

21.2.3 if the dispute has not been resolved following a referral in accordance with clause 21.2.2 then the Parties shall settle the dispute by mediation in accordance with the CEDR Model Mediation Procedure. Unless otherwise agreed between the Parties, the mediator will be nominated by CEDR.

ANNOUNCEMENTS

22.1 The Parties shall not make, or permit any person to make, any public announcement concerning the Project (whether before, at or after completion) except as required by law or with the prior written consent of the Authority.

22.2 In accordance with government restrictions on marketing and advertising expenditure by public bodies, no part of this Project may be used for such activities.

GENERAL

23.1 The Parties do not intend that any term of the Agreement shall be enforceable by virtue of the Contracts (Rights of Third Parties) Act 1999 by any person that is not a party to it.

23.2 Each of the Parties represents and warrants to the other that it has full capacity and authority, and all necessary consents, licences and permissions to enter into and perform its obligations under the Agreement, and that the Agreement is executed by its duly authorised representative.

23.3 No Party shall have any liability under or be deemed to be in breach of the Agreement for any delays or failures in performance of the Agreement which result from

circumstances beyond the reasonable control of the Party affected. Each Party shall promptly notify the other Parties in writing when such circumstances cause a delay or failure in performance and when they cease to do so.

23.4 The Parties confirm that they have not entered into the Agreement on the basis of any representation that is not expressly incorporated into the Agreement. Nothing in this clause shall exclude liability for fraud or fraudulent misrepresentation.

23.5 The Agreement shall not constitute or imply any partnership, joint venture, agency, fiduciary relationship or other relationship between the Parties other than the contractual relationship expressly provided for in the Agreement. Neither Party shall have, nor represent that it has, any authority to make any commitments on the other Party's behalf.

23.6 Except as otherwise expressly provided by the Agreement, all remedies available to either Party for breach of the Agreement (whether under the Agreement, statute or common law) are cumulative and may be exercised concurrently or separately, and the exercise of one remedy shall not be deemed an election of such remedy to the exclusion of other remedies.

23.7 If any provision of the Agreement is prohibited by law or judged by a court to be unlawful, void or unenforceable, the provision shall, to the extent required, be severed from the Agreement and rendered ineffective as far as possible without modifying the remaining provisions of the Agreement, and shall not in any way affect any other circumstances of or the validity or enforcement of the Agreement.

GOVERNING LAW

24.1 The validity, construction and performance of the Agreement, and all contractual and non-contractual matters arising out of it, shall be governed by English law and shall be subject to the exclusive jurisdiction of the English courts to which the Parties submit.

Each Party hereby confirms its agreement to the terms contained in this Agreement.

Signed on behalf of the **AUTHORITY**:	Signed on behalf of the **FUND MANAGER:**
Print Name:	Print Name:
Job Title:	Job Title
Date:	Date:
Signed on behalf of the	

INDEPENDENT EVALUATOR:

Print Name:

Job Title:

Date:

PROJECT SCHEDULE

This Agreement sets out the relationships between the Partners in order to ensure both the Fund Manager and the Independent Evaluator can effectively fulfil their obligations of the Overarching Contracts.

1. PROJECT DESCRIPTION

1.1. The purpose of this Agreement is to support the Partners in fulfilment of their obligations of the Overarching Contracts.

1.2. This Agreement describes how the Partners shall collaboratively work together. This Agreement details what and how products, information and resources will be shared between the Partners.

1.3. Principles underlying the working of the partnership are transparency and collaboration.

1.4. The Biodiverse Landscapes Fund (BLF) shall deliver three overarching outcomes relating to: (i) reducing poverty levels for the people living in, and dependent upon the landscapes, (ii) the management and governance of specified areas of land (the landscape), both within and across national borders, and (iii) the ecosystems, biodiversity and natural resources therein.

2. OBJECTIVES OF THE COLLABORATION BETWEEN THE PARTIES

2.1. The objectives of the collaboration between the Partners are set out below, with specific outputs and outcomes identified in the Delivery Profile in Appendix 1.

2.2. Ensure effective and collaborative working between the Fund Manager (inclusive of all Lead Delivery Partners appointed by the Fund Manager) and the Independent Evaluator;

2.3. Ensure the Authority's expectations for how the Partners shall work together is clearly communicated;

2.4. Ensure the Partners share Information, products and resources in a timely manner. This will enable both the Fund Manager and Independent Evaluator to meet their obligations of the Overarching Contracts. These include but are not limited to:

a. The transfer of data to allow for project and programme accountability.

b. The connection of knowledge and skills.

c. Effective communication for the development and betterment of the programme delivery and wider impacts.

3. RESOURCES

3.1. The Fund Manager is to ensure that all monitoring data from Lead Delivery Partners is submitted to the Fund Manager's project management e-platform, and that the data is in line with the requirements of the UK International Development Assistance Act 2015.

3.2. The Fund Manager is to ensure the Independent Evaluator has access to the relevant information held on the e-platform to ensure the Independent Evaluator can effectively fulfil their obligations of the Overarching Contracts such as the evaluation activities.

4. TIMETABLES AND REPORTING

4.1. Specific outputs for the agreement and timescales for their delivery are set out in the Delivery Profile in Appendix 1. The Delivery profile identifies the Partner organisation who are responsible for reporting progress towards delivery. The Delivery profile also sets out the anticipated products that will be shared between the Parties.

4.2. As both Parties shall collaborate through the learning cycles, the scope and inputs are set out in Appendix 2.

4.3. The Independent Evaluator shall use a traditional evaluation approach to independently assess impact, process and Value for Money across the programme at the mid and final time points of the programme. However, throughout the programme the Independent Evaluator shall also use a developmental evaluation approach to produce evidence to help inform decisions within the learning cycles. More information is provided in Appendix 3.

4.4. Quarterly meetings between the Fund Manager and Independent Evaluator shall be documented in the form of minutes, to be submitted to the Authority no later than 5 (FIVE) working days after the meeting. The meeting agenda shall include progress, challenges and risks. Minutes must be maintained and submitted by the Fund Manager. Each party must provide their own assessment.

4.5. An assessment of the working relationship must be submitted to the Authority on the annual anniversary of this MoA.

5. DISTINCTIVE RESPONSIBILITIES OF THE AUTHORITY

5.1. The Authority shall:

a. decide which recommendations from the Independent Evaluator that the Fund Manager shall implement;

b. approve the developmental evaluation products that the Independent Evaluator shall develop;

c. settle any arising disputes from the Partners as a result of this Agreement in accordance with clause **xx**; and

d. review progress of contracts and meeting minutes.

6. DISTINCTIVE RESPONSIBILITIES OF THE PARTNERS

6.1. The Partners shall:

a. Meet on a quarterly basis to discuss the following:
    a. updated monitoring data and progress of logframes and Key Performance Indicators;
    b. real-time review of the developmental evaluation products; and
    c. recommended adaptive changes that shall be submitted to the Authority's annual learning Programme Board.

b. The Partners shall take alternate turns in minuting this meeting. Minutes must be provided to the Authority's Contract Manager within ten (10) Working Days of the quarterly meeting.

7. DISTINCTIVE RESPONSIBILITIES OF THE FUND MANAGER

7.1. The Fund Manager shall:

a. provide a named representative to act as a single point of contact for the Parties;

b. ensure appropriate records are kept and that these records are available for audit purposes if necessary;

c. organise and set the agenda of the quarterly meeting between themselves and the Independent Evaluator and facilitate discussion between the Partners;

d. represent Lead Delivery Partners as and when needed;

e. Invite the Independent Evaluator to any quarterly meeting between themselves and the Lead Delivery Partner as necessary;

f. develop a robust framework for communication and reporting between the Independent Evaluator, the Fund Manager, in-country landscape coordinators, and the Lead Delivery Partners;

g. develop the rhythm and structure of the learning cycles;

h. provide the Independent Evaluator with the following information and products in a timely manner, this shall include:

    i. the Fund Manager shall implement standardised methods set by the Independent Evaluator for aggregating and reporting data across landscapes;

    ii. ensuring data is clean and available to the Independent Evaluator to ensure progress can be mapped and aggregated against the logframe(s) milestones and KPIs;

    iii. the Fund Manager shall make the Independent Evaluator aware of any changes, risks at the landscape level that would impact on relevant indicators that the Independent Evaluator would be investigating at both landscape and programme level;

    iv. provide additional evidence collected through the Lead Delivery Partners that would enhance the ability of the Independent Evaluator to fulfil contractual obligations (such as monitoring progress against the logframes / Key Performance Indicators at the landscape level);

    v. provide justification (data and/or evidence or lack of) on an ongoing basis to substantiate the development and implementation of the Independent Evaluator's developmental evaluation products;

    vi. The Fund Manager shall set up the BLF website. The Fund Manager is responsible for maintaining the BLF website and uploading accessible learning products including lessons learnt and best practice. The Independent Evaluator shall be able to submit appropriate evaluation products to the Fund Manager, who shall upload them on the Independent Evaluator's behalf. The Authority has ultimate right of approval regarding the scope of products uploaded onto the BLF website;

i. make adaptive programming recommendations to the Authority at the annual Learning Programme Board; and

j. ensure the implementation of adaptive changes across the relevant landscapes, and ensure the implementation of adaptive changes are communicated clearly to the Independent Evaluator.

8. DISTINCTIVE RESPONSIBILITIES OF THE INDEPENDENT EVALUATOR

8.1. The Independent Evaluator shall:

a. Provide the Fund Manager with the following information and products in a timely manner:

   i. meet with the Fund Manager on a quarterly basis to collaboratively agree on the scope and objectives of the evidence required to make informed adaptive decisions;
   ii. deliver developmental evidence and data. This shall include, where possible, gathering and interpreting data, framing issues, surfacing and testing model developments to offer feedback and evidence to the Fund Manager as the programme unfolds. This may be rapid, real-time feedback but the time span / feedback timescale must be discussed and agreed by each Party and put forward to the Authority by the Independent Evaluator. The products must be user friendly and nurture learning. These products may then be submitted to the Fund Manager to be uploaded onto the BLF website, at the approval of the Authority;

b. present, if required, at the annual learning meetings and the Authority's annual Learning Programme Boards. This may include:

   i. Key lessons learnt especially looking at the landscape level aggregation of data and impact to the programme;
   ii. Results and knowledge from the Suppliers evidence on cross cutting themes;
   iii. Synthesis of evidence and data gathered; and
   iv. Inclusion of key stakeholder and experts' input.

c. ensure data established during baselining, is clean and submitted to the Fund Manager and Lead Delivery Partners to ensure progress can be mapped and aggregated against the logframe milestones and Key Performance Indicators;

d. make decisions on which data shall be collected at the programme level with the Authority during the BLF's inception phase. Any adjustments shall be discussed in partnership with the Fund Manager and decided at the annual learning cycle points thereafter, for which the Authority has ultimate decision-making authority;

e. decisions on which data shall be collected at the landscape level will be initially proposed by the Lead Delivery Partner and refined with the Independent Evaluator during the landscape projects' inception phases. Any adjustments shall be discussed in partnership between the Fund Manager and the Independent Evaluator and decided at the annual learning cycle points thereafter for which the Authority has ultimate decision-making authority;

f. the IE shall test the assumptions of the programme and landscape level Theory of Change (ToC), programme level logframe and report these to the Authority. This information shall be made available to the Fund Manager within the annual learning cycle;

g. the Independent Evaluator's annual progress report detailing progress update on the programme level ToC, logframe milestones and KPIs and issues regarding landscape data aggregation or additional primary/secondary data collection. This report will be submitted to the Authority and made available to the Fund Manager;

h. refine landscape level ToC on an annual basis, in partnership with the Fund Manager and the Authority. This shall be based on the evidence presented within the evaluation reports and products, research studies, monitoring activities and lessons learned across the programme;

i. the Mid-term and final evaluation products shall be made available to the Fund Manager after submission to the Authority;

j. provide a named representative to act as a single point of contract for the Parties;

k. ensure appropriate records are kept and make these records available for audit purposes if necessary;

l. submit adaptive programming recommendations ahead of the Authority's annual Learning Programme Board. An adaptive programming meeting per landscape shall be organised by the Fund Manager and held one month prior to the Authority's annual Learning Programme Board. The meeting will be a forum in which the Partners and other key stakeholders will discuss and collate recommendations The Fund Manager must submit two sets of recommendations per landscape: first shall be the agreed recommendations from the meeting, and second shall be the recommendations that have been discounted during the meeting.

APPENDIX 1

DELIVERY PROFILE FOR November 2021 – December 2029

Deliverable	Delivering Partner Responsible	Date for completion / rate of recurrence *	Receiving Partner
Introductions of Lead Delivery Partners to IEs	Fund Manager	Inception	Independent Evaluator / Lead Delivery Partners
Inception & Baseline Reports	Independent Evaluator	Inception	Lead Delivery Partners / Fund Manager / the Authority
Monitoring e-platform	Fund Manager	Inception	Lead Delivery Partners / Independent Evaluator
Monitoring data	Fund Manager	Quarterly	Independent Evaluator
Learning Cycle(s) Scope	Fund Manager	Inception	Lead Delivery Partners / Independent Evaluator / the Authority
Stakeholder Learning Event	Fund Manager	Inception, Annual (in each landscape),	Lead Delivery Partner / Independent Evaluator / the Authority
BLF website	Fund Manager	Regular uploads	The Authority / wider stakeholders
Learning / knowledge product(s)	Independent Evaluator	Annually	Fund Manager / Lead Delivery Partner
Adaptive programming recommendations	Fund Manager (input from Independent Evaluator)	Quarterly - Annually	The Authority
Mid-term evaluation	Independent Evaluator	*Ca.* June 2025	The Authority
Midterm learning event	Fund Manager	2025	Lead Delivery Partners / Independent Evaluator / the Authority

* With regards to rates of recurrence which are listed as annually or quarterly the deliverable must be provided within 10 working follow the end of the period. Annually and quarterly shall run in line the Authority's financial year (1 April – 31 March).

Appendix 2

Learning cycles

There shall be two learning cycles:

1) Quarterly cycle which shall be focussed on accountability and assess progress on the activities and outputs of the ToC and logframes
2) Annual cycle which shall be focussed on progress made on outcomes, synthesised learning across the programme, reviewing ToC assumptions and broader programmatic questions.

The indicative inputs for both learning cycles are shown below. The delivering Partner responsible for each input in indicated within the [square brackets]:

Cycle	Scope	Inputs [Delivering Partner*]
Quarterly	Accountability of progress against landscape level logframes and ToC Proposition to scale up/down areas identified (risks/ opportunities) Discuss potential adaptive changes to present to Programme Board	Updated monitoring data / monitoring reports [Fund Manager] Updated progress reports [Fund Manager & Independent Evaluator] Update / review the developmental evaluation product(s) [Independent Evaluator]
Annual	Wider programmatic learning and identify possible unexpected results Progress on programme level ToC and logframes Identify and review what is enough evidence for key decision points and changes to the ToC, logframe and KPIs at both programme and landscape levels. Review management and governance arrangements	Annual monitoring reports [Fund Manager] Synthesised developmental evidence and products [Independent Evaluator] Political, Economic Analysis [Landscape Coordinator – in country staff member] Testing ToC assumptions [Independent Evaluator] Feedback from stakeholders / communities [Fund Manager & Independent Evaluator]

Mid-term learning event (one-off event)	Landscape-landscape learning Stakeholder feedback and participation Showcase BLF progress	Mid-term evaluation [Independent Evaluator] Synthesised developmental evidence and products [Independent Evaluator] Stakeholder and community inputs [Fund Manager & Independent Evaluator] Lead Delivery Partners learning [Fund Manager]

LC = Landscape Co-ordinator (in-country staff)

Appendix 3

Developmental Evaluation Products

The Independent Evaluator shall generate evidence and learning products (developmental evaluation) to shape and adapt the programme to reflect implementation experience, developing innovative approaches and activities as needed. The purpose of these products is to provide feedback and generate learning in complex and emergent situations. The real-time feedback through quarterly meetings with the Fund Manager shall enable adaptive learning to take place and inform development. The approach is flexible as the methodology and scope will evolve as understanding of the situation deepens and progress can be monitored.

To develop these products the Independent Evaluator shall use the quarterly meetings to discuss the opportunities and gaps in knowledge identified and develop methodologies in consultation with the Fund Manager and/or Lead Delivery Partners. These products will feed directly back into the learning cycles to help provide the basis for strategic programming decisions and adapt the programme accordingly.

We expect at a minimum of one product per landscape per year, however the scope and timeframe may run over multiple years depending upon the needs of the programme as determined by the Independent Evaluator. The approach shall be approved by the Authority.

Appendix B Data Processing Terms

DEFINITIONS
Terms defined in this Agreement have the same meaning for the purposes of this Appendix and, in addition, the following terms have the following meanings:

Controller, **Processor**, **processing**, **Data Subject**, **Personal Data**, **Data Protection Officer** take the meaning given in the UK GDPR or, in respect of processing of personal data for a law enforcement purpose to which Part 3 of the DPA 2018 applies, the meaning in that Part if different;

Data Protection Impact Assessment: an assessment by the Controller of the impact of the envisaged processing on the protection of Personal Data;

Data Subject Rights Request: a request made by, or on behalf of, a Data Subject in accordance with rights granted pursuant to the Data Protection Legislation in respect of their Personal Data;

Personal Data Security Breach: a breach of security leading to the accidental or unlawful destruction, loss, alteration, unauthorised disclosure of, or access to, Personal Data transmitted, stored or otherwise processed;

Processor Personnel: means all directors, officers, employees, agents, consultants and contractors of the Processor and/or of any Sub-processor engaged in the performance of its obligations under this Agreement;

Protective Measures: appropriate technical and organisational measures which may include: pseudonymising and encrypting Personal Data, ensuring confidentiality, integrity, availability and resilience of systems and services, ensuring that availability of and access to Personal Data can be restored in a timely manner after an incident, and regularly assessing and evaluating the effectiveness of the such measures adopted by it;

Sub-processor: any third party appointed to process Personal Data on behalf of that Processor related to this Agreement;

8.2. REQUIREMENTS OF PARTIES TO THIS AGREEMENT

Where there is a Controller-Processer relationship, each Party shall co-operate with the other Party to complete Schedule 1 to this Appendix prior to entering into the relationship.

8.3. DATA PROTECTION – WHEN ONE PARTY IS CONTROLLER AND THE OTHER PARTY IS THE PROCESSOR

Schedule 1 identifies the Party acting as Controller and the Party acting as Processor for Personal Data processed under this Agreement. Subject to paragraph 3.4 (a), the only processing that the Processor is authorised to do is listed in Schedule 1 by the Controller and may not be determined by the Processor.

The Processor shall notify the Controller immediately if it considers that any of the Controller's instructions infringe the Data Protection Legislation.
The Processor shall provide all reasonable assistance to the Controller in the preparation of any Data Protection Impact Assessment in respect of any processing. Such assistance may, at the discretion of the Controller, include:

- a systematic description of the envisaged processing operations;
- an assessment of the necessity and proportionality of the processing operations in relation to the Project;
- an assessment of the risks to the rights and freedoms of Data Subjects; and
- the measures envisaged to address the risks, including safeguards, security measures and mechanisms to ensure the protection of Personal Data.

The Processor shall, in relation to any Personal Data processed in connection with its obligations under this Agreement:

- process that Personal Data only in accordance with Schedule 1, unless the Processor is required to do otherwise by Law. If it is so required the Processor shall promptly notify the Controller before processing the Personal Data unless prohibited by Law;
- ensure that it has in place Protective Measures, which are appropriate to protect against a Personal Data Breach, which the Controller may reasonably reject (but failure to reject shall not amount to approval by the Controller of the adequacy of the Protective Measures), having taken account of the:
    - nature of the data to be protected;
    - harm that might result from a Personal Data Breach;
    - state of technological development; and
    - cost of implementing any measures;
    - ensure that :
    - the Processor Personnel do not process Personal Data except in accordance with this Agreement (and in particular Schedule 1);
- it takes all reasonable steps to ensure the reliability and integrity of any Processor Personnel who have access to the Personal Data and ensure that they:
    - are aware of and comply with the Processor’s duties under this paragraph;
    - are subject to appropriate confidentiality undertakings with the Processor or any Sub-processor;
    - are informed of the confidential nature of the Personal Data and do not publish, disclose or divulge any of the Personal Data to any third Party unless directed in writing to do so by the Controller or as otherwise permitted by this Agreement; and
    - have undergone adequate training in the use, care, protection and handling of Personal Data

- not transfer Personal Data outside the UK or the EEA, including by cloud computing, unless the prior written consent of the Controller has been obtained and the following conditions are fulfilled:
    - the Controller or the Processor has provided appropriate safeguards in relation to the transfer (whether in accordance with UK GDPR Article 46 or Chapter 5 of the DPA 2018) as determined by the Controller;
    - the Data Subject has enforceable rights and effective legal remedies;
    - the Processor complies with its obligations under the Data Protection Legislation by providing an adequate level of protection to any Personal Data that is transferred (or, if it is not so bound, uses its best endeavours to assist the Controller in meeting its obligations); and
    - the Processor complies with any reasonable instructions notified to it in advance by the Controller with respect to the processing of the Personal Data;
- at the written direction of the Controller, delete or return Personal Data (and any copies of it) to the Controller on termination of the Agreement unless the Processor is required by Law to retain the Personal Data.
- Subject to paragraph 3.6, the Processor shall notify the other Party without delay if it, in connection with Personal Data processed under this Agreement:
    - receives a Subject Request (or purported Subject Request);
    - receives a request to rectify, block or erase any Personal Data;
    - receives any other request, complaint or communication relating to either Party's obligations under the Data Protection Legislation;
    - receives any communication from the Information Commissioner or any other regulatory authority;
    - receives a request from any third party for disclosure of Personal Data where compliance with such request is required or purported to be required by Law; or
    - becomes aware of a Personal Data Breach, such notification in any event to be within 24 hours of becoming aware of the Personal Data Breach.

The Processor's obligation to notify under paragraph 3.5 shall include the provision of further information to the Controller in phases, as details become available.

Taking into account the nature of the processing, the Processor shall provide the Controller with full assistance in relation to either Party's obligations under Data Protection Legislation in connection with Personal Data processed under this Agreement and any complaint, communication or request made under paragraph 3.5 (and insofar as possible within the timescales reasonably required by the Controller) including by promptly providing:

- the Controller with full details and copies of the complaint, communication or request;
- such assistance as is reasonably requested by the Controller to enable the Controller to comply with a Data Subject Rights Request within the relevant timescales set out in the Data Protection Legislation;

- the Controller, at its request, with any Personal Data it holds in relation to a Data Subject;
- assistance as requested by the Controller following any Personal Data Breach;
- assistance as requested by the Controller with respect to any request from the Information Commissioner's Office, or any consultation by the Controller with the Information Commissioner's Office.

The Processor shall maintain complete and accurate records and information to demonstrate its compliance with this Appendix B. This requirement does not apply where the Processor employs fewer than 250 staff, unless:

- the Controller determines that the processing is not occasional;
- the Controller determines the processing includes special categories of data as referred to in Article 9(1) of the UK GDPR or Personal Data relating to criminal convictions and offences referred to in Article 10 of the UK GDPR
- the Controller determines that the processing is likely to result in a risk to the rights and freedoms of Data Subjects; or
- the processing is processing to which Part 3 of the DPA 2018 applies

The Processor shall allow for audits of its Personal Data processing activity by the Controller or the Controller's designated auditor.

The Parties shall designate a Data Protection Officer if required by the Data Protection Legislation.

Before allowing any Sub-processor to process any Personal Data related to this Agreement, the Processor must:

- notify the Controller in writing of the intended Sub-processor and processing;
- obtain the written consent of the Controller;
- enter into a written agreement with the Sub-processor which give effect to the terms set out in this Appendix B such that they apply to the Sub-processor; and
- provide the Controller with such information regarding the Sub-processor as the Controller may reasonably require.

The Processor shall remain fully liable for all acts or omissions of any of its Sub-processors.

The Controller may, at any time on not less than 30 Working Days' notice, revise this clause by replacing it with any applicable Controller to Processor standard clauses or similar terms forming part of an applicable certification scheme (which shall apply when incorporated by attachment to this Agreement).

The Parties agree to take account of any guidance issued by the Information Commissioner's Office. The Controller may on not less than 30 Working Days' notice to the Processor amend this Agreement to ensure that it complies with any guidance issued by the Information Commissioner's Office.

8.4. RECORDS

Each Party shall maintain complete and accurate records and information to demonstrate its compliance with this Agreement and the Data Protection Legislation.

Each Party shall provide the other full access to the other Party’s data security and privacy procedures relating to Personal Data.

Schedule 1 **- Details of Personal Data Exchange**

The contact details of the Controller Data Protection Officer are:

data.protection@defra.gov.uk

The contact details of the Processor Data Protection Officer are:

For the Fund Manager: [xxxx]

For the Independent Evaluator: [xxxx]

The Processor shall comply with any further written instructions with respect to processing by the Controller.

Any such further instructions shall be incorporated into this Schedule.

Description	**Details**
Identity of the Controller and Processor	The Parties acknowledge that for the purposes of the Data Protection Legislation the Controller and Processor are: Controller: The Authority Processor(s): The Fund Manager and Independent Evaluator
Project Name and Subject Matter of the Processing	The processing of personal data is to evaluate the effectiveness of the Authority's Official Development Assistance with the regards to the Biodiverse Landscapes Fund. This shall enable the Authority to take any required adaptive programming decision and capture any lessons learnt for future Official Development Assistance programmes.
Duration of the processing	9 years, with options for a 36 month extension.
Nature and purposes of the processing	*To be determined once the Lead Delivery Partners are in place, and once the Independent Evaluator has their methodology and evaluation approach and questions approved by the Authority.*

Type of Personal Data (including identifying any special category data or data relating to criminal convictions and offences)	*To be determined once the Lead Delivery Partners are in place, and once the Independent Evaluator has their methodology and evaluation approach and questions approved by the Authority.*
Categories of Data Subject	*To be determined once the Lead Delivery Partners are in place, and once the Independent Evaluator has their methodology and evaluation approach and questions approved by the Authority.*
Plan for return and destruction of the data once the processing is complete UNLESS requirement under union or member state law to preserve that type of data	To be determined once the Lead Delivery Partners are in place, and once the Independent Evaluator has their methodology and evaluation approach and questions approved by the Authority.
Transfers to third countries or international organisations	Data shall be gathered in approximately 19 foreign nations. Data will be transferred to the UK once gathered and remain in the UK until destroyed.
Legal Basis for Processing	Consent: the individual has given clear consent for the Parties to process their personal data for a specific purpose. OR Contract: the processing is necessary for a contract the Controller has with the individual, or because they have asked you to take specific steps before entering into a contract. OR

	Public task: the processing is necessary for you to perform a task in the public interest or for your official functions (i.e. official authority vested in you), and the task or function has a clear basis in law.
Special Terms	N/A

Annex U: K4D Report on Biodiversity Conservation and Restoration and Poverty Reduction

Biodiversity conservation and restoration and Poverty Reduction

Rachel Cooper
University of Birmingham
18 March 2020

Question

How can landscape approaches to biodiversity conservation and restoration contribute to poverty reduction? Please provide some examples of specific interventions and their impact. What are the challenges related to transboundary approaches?

Contents

1. Summary

Reconciling the twin goals of biodiversity conservation and restoration, and poverty reduction is difficult. A number of factors seem to influence effectiveness across intervention types including context, intervention design, governance and management quality, community engagement and participation, and intervention or programme length. This report largely focuses on outcomes from protected areas, payments for ecosystem services and community-based strategies. Protected areas can range from strictly protected to sustainable use PAs and from government-managed to community-managed areas (Woodhouse & Bedelian, 2018).

There is mixed evidence about the biodiversity and poverty reduction outcomes of PAs, but a general sense that PES can lead to positive outcomes in both spheres. There is evidence that PAs have reduced deforestation, but biodiversity outcomes appear to vary by species. One robust study demonstrates that habitat corridors can increase conservation and decrease rates of extinction (Damschen et al., 2019). There is some evidence that PAs have produced negative outcomes for poverty reduction and human well-being, and some evidence that PAs have contributed to poverty alleviation. Positive outcomes across the two spheres from PES programmes include reducing deforestation, improving water quality, increasing food security and improving poverty status (Clements & Milner-Gullard, 2014; Bottazzi et al., 2018).

Key findings

There is some evidence that outcomes are context dependent and related to the length or age of the intervention. Positive poverty reduction outcomes in Nepal's PAs are partly linked to the length of time the PA in question has been established. Wildlife repopulation, the benefits generated by ecosystem conservation, the development of new models of resource use and the adoption of a new legal framework all take time to establish, as do creating and strengthening human capacities for management and governance (AFD, 2016). Lee (2018) argues that the positive conservation outcomes in the Burunge WMA are linked to its age, its location close to two national parks, Tanzania's large ecotourism industry, and capacity building for village game scouts and management of the WMA.

Protected areas

Restricting access to natural resources can have negative poverty impacts for affected households, especially for communities living in PAs, who may be more dependent on non-timber forest products and other resources. Losing access to natural resources can lead to affected communities not supporting conservation (AFD, 2016). A small number of studies suggest that maintaining community access to resources or living within a PA can result in better human well-being outcomes.

Creation and management of PAs can undermine customary land rights (Pyhala et al., 2016). Evidence from India shows that forest tenure reform marginalised indigenous women from rights to forest land and resources in village forest reserves (Woodhouse & Bedelian, 2018). Customary rules were replaced by new legal institutions that benefited men (Woodhouse & Bedelian, 2018).

Compensation for loss of resources or livelihoods often includes payments or alternative livelihood schemes. However, there have been mixed, often negative, outcomes for poverty reduction and human well-being. Alternative livelihood schemes are not always accessible to all

groups in a community or address community needs, or they are are short-lived (Woodhouse & Bedelian, 2018).

Tourism is often an alternative livelihood strategy in PAs or a compensation mechanism through arrangements for affected communities to receive a share of the PA's tourism income. However, it is important to remember that tourism takes a while to establish, needs a range of supporting infrastructure, and, communities may not be able to access tourism-related livelihood opportunities for a number of reasons including capacity and education (Wodhouse & Bedelian, 2018; AFD, 2016).

Two robust studies suggest that capacity is the key governance and management aspect related to positive biodiversity outcomes in PAs. Other factors are also likely to be important, but, very few studies examine the quality of PA governance and management.

Many landscapes such as the Great Limpopo Transfrontier Park, the Congo Basin and Mount Elgon include a number of different protected areas and national parks in different countries. These areas and parks often have different governance arrangements and there is evidence that outcomes vary by area. For example, Integra (2017) reported positive biodiversity outcomes from the Congo Basin, whilst Pyhala et al. (2016) found largely negative outcomes in 34 areas sampled. Petrrusson et al. (2013) suggests that issues that are truly transboundary in nature should be identified and governance structures created that directly address those issues. Due to the time constraints of this report, it was not possible to undertake a thorough review of the literature related to transfrontier park governance, which is small but growing.

Understanding people's motivation

Understanding motivation for participating in PES programmes and barriers to participation is important. The design of some PES programmes means that the poorest households are not able to participate.

Interventions to reduce wildlife crime are most effective when addressing the underlying motivations of people involved, delivered through community engagement strategies. There is some evidence from Uganda that wildlife crime, such as illegal wildlife trade, is linked to households that do not receive any benefits from PAs tourism revenue sharing, or experience human wildlife conflict.

Community engagement

The nature and quality of community engagement and participation in PA planning and management partly conditions outcomes. A lack of community participation in managing wildlife in the Limpopo National Park, Mozambique, and in the PA's governance and management partly contributed to limited socio-economic benefits for communities. In the case of Mount Elgon, establishment and governance of protected areas in both Uganda and Kenya has sparked conflict related to rights to land, access to park resources, relocations, and resettlements (Petrusson et al., 2013).

There is mixed evidence for the effectiveness of community based natural resources management for biodiversity and poverty reduction. This suggests that other factors such as how the intervention is implemented and the context may be important. Although, there is positive evidence that community engagement and participation leads to positive outcomes

including increased food security, increased animal density inside PAs, reduced deforestation, and reduced wildlife crime.

Complementary strategies

PA and PES can be complementary strategies. For example, Clements & Milner-Gullard (2014) found that implementation of PES programmes in northern Cambodia would not have been possible without the protective effect of the PAs.

There is a small body of evidence that suggests positive outcomes require a range of complementary strategies. For example, community engagement strategies to combat illegal wildlife trade and poaching often employ more than one strategy. In the Greater Kilimanjaro Landscape (Kenya and Tanzania) strategies include involvement in law enforcement, incentives for wildlife stewardship and human-wildlife conflict mitigation (Roe & Booker, 2019).

The evidence base

There is a limited evidence base for the efficacy of a number of interventions in terms of both biodiversity and poverty reduction outcomes. For example, Clements & Milner-Gullard (2014) argue that there are few rigorous evaluations of the environmental and social impacts of protected areas (PAs) and payments for ecosystem services (PES). Whilst Roe & Booker (2019) highlight the dearth of evidence on effectiveness of community-based strategies to tackle international wildlife crime (IWT).

This report reviews a mix of impact evaluations, randomised control trials, peer reviewed academic literature and grey literature. Within this, studies use different measures for poverty reduction and human well-being outcomes including income, food security, and access to resources. Consequently, this report understands poverty reduction outcomes quite broadly.

Due to the time constraints of this review, it was not possible to review the literature related to carbon mitigation and sequestration outcomes. However, biodiversity conservation interventions, particularly those that avert deforestation are likely to have positive outcomes for carbon mitigation as illustrated by Jayachandran et al., (2017). The consideration of alternative livelihood strategies, aside from tourism, which was a common strategy in the evidence base, is also limited due to time constraints.

2. Increasing biodiversity (habitats and species)

Protected areas

The evidence base suggests protected areas have mixed biodiversity outcomes. Protected areas can reduce deforestation in forest habitats (Geldman et al 2013, Coad et al 2015), and contain higher abundance and diversity of species (Coetzee 2014). Clements & Milner-Gullard's (2014) impact evaluation found that deforestation rates were reduced by approximately 60% in two PAs in northern Cambodia compared to control areas. A global meta-analysis on the effectiveness of protected areas has shown that the positive effects on biodiversity are primarily due to land use differences (Gray et al 2016). PAs have, compared to the counterfactual of no protection, protected biodiversity (Eklund & Cabeza, 2017).

Geldmann et al. (2017) argue that the **paucity of direct data on changes in biodiversity constrains our understanding of the performance of protected areas globally** and the

extent to which they safeguard biodiversity is debated. Burivalova et al. (2019) identified two studies that found biodiversity is better inside a PA than outside, however, they also identified one study that found 80% of reserves experienced a decline in biodiversity value over time, suggesting low effectiveness.

There is also mixed evidence from the same landscape, for example, the Congo Basin. A 2016 report by the Rainforest Foundation UK, based on a sample of 34 protected areas across Cameroon, Central African Republic, DRC, Gabon and Republic of Congo concluded that conservation efforts are failing to protect biodiversity (Pyhala et al., 2016). Pyhala et al. (2016) argue that biodiversity is declining, with large mammal populations in particular declining at alarming rates. There is some evidence that protected areas are doing better than extractive land use areas (e.g. logging concessions) in protecting fauna, but this is not necessarily a consistent outcome (Pyhala et al., 2016).

In contrast, a 2017 evaluation of USAID's Central Africa Regional Programme for the Environment (CARPE) found that activities to protect rainforests in the Congo Basin had contributed to biodiversity conservation with vulnerable species within protected areas in CARPE landscapes (including protected areas and community managed land units) being in a better condition compared to those in non-CARPE areas (Integra, 2017).

Habitat corridors

Habitat connectivity can increase rates of colonisation and decrease rates of extinction (Damschen et al., 2019). A habitat fragmentation experiment in South Carolina, USA manipulated connectivity through the creation of habitat corridors connecting otherwise isolated habitat fragments (Damschen et al., 2019). Both fragments and corridors are being restored to longleaf pine savannah and are surrounded by dense pine plantations that limit herbaceous plant growth (Damschen et al., 2019). Results include (Damschen et al., 2019):

- Annual colonisation rates for 239 plant species in connected fragments are 5% higher and annual extinction rates 2% lower than in unconnected fragments;
- This has resulted in a steady, non-asymptotic increase in diversity, with nearly 14% more species in connected fragments after 18 years.
- Connecting fragments with corridors results in a 1- to 6-year reduction in the time it takes an individual species to colonise new habitat fragments, relative to the time needed for colonisation of unconnected fragments

Damschen et al. (2019) argue that their results suggest the full biodiversity value of connectivity cannot be effectively evaluated over short time scales, and can be maximised by connecting habitat sooner rather than later. Landscape connectivity offers substantial, complementary and persistent gains in biodiversity (Damschen et al., 2019).

Tropical forests

The evidence base for different interventions is mixed (Burivalova et al., 2019). Burivalova et al. (2019) evaluated four mainstream strategies (forest certification and reduced impact logging; payments for ecosystem services; protected areas, and community forest management) for tropical forest conservation in terms of 35 environmental, social, and economic metrics. A total of 161 studies with 570 data points (with each point corresponding to one of the four conservation

strategies) were included in the database (Burivalova et al., 2019)[1]. Key findings include (Burivalova et al., 2019):

- The scientific literature on the effectiveness of conservation strategies in tropical forests is still vastly inadequate, due to poor design, lack of scope, and too few examples; and a lack of rigorous studies assessing a wide range of real-world conservation example;
- The effects of conservation on biodiversity and the economic outcomes of conservation are particularly understudied. Many studies and conservation projects assume forest cover is a good proxy for biodiversity. This is not always a valid assumption as hunting, climate change and forest degradation are major threats to species survival. Biodiversity is also more difficult and expensive to measure than deforestation, which can be relatively reliably estimated from satellite imagery.

Land-use

Land sparing logging is a more promising strategy for maximising the biological value of logging operations than land sharing (Edwards et al., 2013). Edwards et al. (2013) evaluate the impacts of land sharing (combines timber extraction with biodiversity protection across the concession) and land sparing logging (higher intensity logging is combined with the protection of intact primary forest reserves). The two strategies were evaluated by comparing the abundances and species richness of birds, dung beetles and ants in Borneo (Edwards et al., 2019). Within each taxonomic group, more species had higher abundances with land sparing than land sharing, which translated into significantly higher species richness with land sparing concessions (Edwards et al., 2013). The results were similar when focusing only on species found in primary forest (Edwards et al., 2013). There is also some evidence that animal species may fare better under reduced impact logging, however, once logging intensity is taken into account, the improvement in terms of species richness and abundance becomes smaller (Burivalova et al., 2019).

3. Protected areas: biodiversity and poverty reduction outcomes

A 2018 policy and practice brief by Ecosystems Services for Poverty Alleviation argues that **protected areas have often failed to achieve both improving the wellbeing of local people and ecological goals** (Woodhouse & Bedelian). Peturrsson et al. (2013) argue that the man versus nature perspective, still implicit in most PA strategies, has contributed to severe social impacts and to a situation in which management failures and park-people conflicts are more the rule than the exception. Simultaneously, environmental degradation has not been avoided, with key issues in the Mount Elgon PAs being forest degradation and wildlife depletion (Peturrsson et al., 2018).

Evidence from Nepal suggests that PAs have had poverty reduction impacts. den Braber et al.'s (2018) study assesses how PAs in Nepal have influenced poverty, extreme poverty and inequality with a particular focus on tourism. Key findings include: PAs have reduced overall

[1] Burivalova et al. (2019) created an interactive, nontechnical visualisation of the available evidence on the effectiveness of the four strategies. This platform can be accessed here: https://www.conservationeffectiveness.org/.

poverty and extreme poverty, and have not exacerbated inequality; benefits occurred in both lowland and highland regions and were often greater when a larger proportion of the area was protected; the spread of benefits to areas outside the PAs was negligible; and, older PAs performed better than more recently established ones (den Braber et al., 2018). In terms of tourism, whilst this was a key driver of poverty reduction, PAs also reduced extreme poverty in areas that received fewer tourists (den Braber et al., 2018).

The socio-economic outcomes of PAs are in need of further, rigorous study (Burivalova et al., 2019). Burivalova et al. (2019) found very few rigorous studies on social outcomes of PAs, including community wellbeing and livelihoods, but these did show mostly positive outcomes. However, PAs had mostly negative outcomes in terms of community access to forest land and they tended to exacerbate human-wildlife conflict (Burivalova et al., 2019). Within this small evidence base there were almost no studies that quantified the economic losses or gains from PAs (Burivalova et al., 2019).

Access to resources and compensation

It is difficult to reconcile the twin goals of biodiversity conservation and poverty reduction (AFD, 2016; Woodhouse & Bedelian, 2018; Peturrsson et al., 2013). Key areas include community access to natural resources, compensation for loss of land or access to resources, and alternative livelihoods strategies, which in the context of PAs often include tourism.

Protected areas are only likely to help poor people in the local area if they can still access natural resources within the park (Woodhouse & Bedelian, 2018). Restricting access to ecosystem services (e.g. food, fibre, medicinal plants) may push poor people deeper into poverty (Woodhouse & Bedelian, 2018). For example, approximately 2 million people live in administrative districts bordering protected areas in Mount Elgon in Uganda and Kenya, with high dependence on mountain natural resources (Petrusson et al., 2013). The establishment and governance of the protected area has sparked conflict in both countries related to rights to land, access to park resources, relocations, and resettlements (Petrusson et al., 2013).

Common strategies in PA conservation to compensate for household losses, such as access to resources, include cash payments, alternative livelihoods, payments for ecosystem services (PES), and compensation for wildlife damage/human-wildlife conflict (Woodhouse & Bedelian, 2018). The establishment of the Derma forest corridor in Tanzania from the 1990s onwards involved the appropriation of 960 hectares of land, with monetary compensation to over 1,100 claimants (Hall et al., 2014). Whilst data suggests the forest corridor enhanced forest connectivity and conditions, the compensation payment failed to mitigate livelihood losses, especially amongst the poorest (Hall et al., 2014). Affected people often view compensation as insufficient, for example, material compensation is not commensurate for loss of life or a cultural loss (Woodhouse & Bedelian, 2018). PES are considered in section 4 of this report.

Compensation schemes can be viewed as positive if they are reinforced with greater engagement and commitment beyond the provision of one-off compensatory payments (Woodhouse & Bedelian, 2018). For example, swift compensation for the predation of livestock in India, facilitated by mobile phone technology, has improved tolerance of wildlife (Woodhouse & Bedelian, 2018). The compensation programme was combined with other methods to mitigate conflict, including protecting livestock corrals and locating conflict hotspots, which showed authorities' commitment and recognition of the problem (Woodhouse & Bedelian, 2018).

Alternative livelihood schemes are also not always accessible to all groups in a community due to biases associated with knowledge, age, gender or wealth (Woodhouse & Bedelian, 2018). They also do not necessarily address communities' needs, interests or culture, making them short-lived and likely to fail (Woodhouse & Bedelian, 2018). Benefits can be small, giving communities no incentive to support conservation (Woodhouse & Bedelian, 2018). Dependence on ecosystem services can limit poor people's livelihood options and capacity to engage in alternative livelihood schemes (Woodhouse & Bedelian, 2018). For example, community members who are reliant on fishing as their dominant livelihood strategy will have limited flexibility to engage in tourism schemes (Wodhouse & Bedelian, 2018).

A number of measures can support more equitable conservation including (Woodhouse & Bedelian, 2018):

- Protected area managers should recognise that conservation activities can affect many aspects of local people's wellbeing, including non-material aspects
- PA management should ensure that the **poor have long-term access to ecosystem** services that support human wellbeing, either within the PA or, as a last resort, by creating opportunities outside of the PA.
- In developing long-lasting and cost-effective alternative livelihoods programmes, there should be **early dialogue with communities** so particular activities or schemes introduced match the needs, values, and culture of a particular community.
- It is important that PA programmes and interventions do not just focus on the poor, but also recognise the role of the wealthy in resource extraction/creating pressure on PA resources.
- **Compensation is rarely sufficient to offset the negative impacts** that local people may suffer when their access to and use of natural resources is restricted. There should be a shift from one-off compensation to ongoing and adaptive engagement with affected communities
- **Governance of protected areas must be more equitable**, allowing for full and effective participation by and partnership between protected area managers and local communities during the designation, planning and implementation stages. Barriers preventing participation can include costs for communities in terms of time and resources, so partnerships that share costs and benefits may be the best approach. Participation also needs to be inclusive, with care taken to engage all groups.
- **Tenure rights** can play a vital role in securing local people's rights and incentives to conserve the environment but must be approached sensitively, to ensure that formal tenure processes do not marginalise poor people further. There is evidence from India that forest tenure reform marginalised indigenous women from rights to forest land and resources in village forest reserves as their customary rules were replaced by new legal institutions that benefited men.

Protected areas case studies

The Congo Basin

Evidence from the Congo Basin includes mixed outcomes. Endamana et al.'s (2010) study found that there was little change in either livelihood or conservation indicators over the period 2006 to 2008 in the Tri-National de la Sangha, shared by Cameroon, the Central African Republic and the Republic of Congo. The activities of conservation organisations had only modest impacts on either (Endamana et al., 2010). Weak institutions and corruption were the

major obstacles to achieving either conservation or development objectives (Endamana et al., 2010). In contrast, as mentioned above, a 2017 USAID impact evaluation found positive biodiversity outcomes (Integra, 2017). However, the same evaluation states that livelihood alternative initiatives are too limited in scope, under-conceptualised, and too poorly executed to be effective in reducing deforestation and forest degradation, as well as de-faunation driven by high levels of bush-meat consumption and trade (Integra, 2017)[2].

A 2016 Rainforest Foundation UK report concludes that "Conservation efforts in the Congo Basin are mostly failing to protect forests and biodiversity, having serious negative impacts on local populations, and for these reasons are probably unsustainable" (Pyhala et al., 2016). Key findings from a sample of 34 protected areas in the basin include (Pyhala et al., 2016):

- Creation and management of protected areas undermine customary land rights. In at least 26/34 areas sampled there was partial or complete relocation or displacement of local indigenous and farming communities, without compensation. No examples were found of customary land tenure mapping or other documenting processes taking place prior to PA creation.
- PAs diminish already strained local livelihoods through restrictions on livelihood activities and access to resources including food and food products (which often provide an income). There was evidence of revenues for local people from park activities (mainly local people acting as rangers or tourists guides) in only 8/34 areas.
- Indigenous people suffer disproportionately: areas targeted for conservation often coincide with traditional lands, and indigenous peoples' nomadic or semi-nomadic lifestyles depend on use of extensive areas of forests, which often overlap with PAs.
- The relationship between forest peoples and conservationists is largely conflictual
- While local communities face severe restrictions on their livelihoods, extractive industries and large scale habitat destruction are encouraged by national governments: 62% of areas sampled for the study have mining concessions inside (a further 12% have mining concessions just on the border of the park); 39% have oil concessions inside; , and 68% have logging concessions directly bordering the park. The impacts that these extractive industries are having on both biodiversity and on local communities' health and wellbeing in the region remains unaddressed and understudied.

The Great Limpopo Transfrontier Park (GLTP)

Evidence from the GLTP suggests that whilst there have been some biodiversity benefits, there have not been poverty reduction benefits in Mozambique and Zimbabwe (AFD, 2016; Zanamwe et al., 2018). A 2016 impact evaluation of Agence Française de Développement (AFD) support for the Limpopo National Park (LNP) in Mozambique found limited impact on socio-economic development and improving living conditions, but some contribution to preserving the ecological integrity of the park (AFD, 2016). The LNP had generated few benefits for residents since its establishment in 2001 and residents' did not necessarily support the park's conservation objectives (AFD, 2016). Reasons for this include: minimal development of tourism in the park;

[2] USAID funded activities focus on sustainably managing targeted forest landscapes, mitigating threats to biodiversity in those landscapes, establishing policy and regulatory environments supporting sustainable forest and biodiversity conservation, and strengthening capacity to monitor forest cover change, greenhouse gas emissions, and biodiversity (Integra, 2017).

poor understanding by the LNP authorities of how residents use natural resources; residents experienced negative impacts of biodiversity conservation including loss of access to productive resources, and more human-wildlife conflict (AFD, 2016). The impact evaluation argues that this is partly because residents are not involved in managing wildlife in the park (AFD, 2016).

Poverty reduction outcomes in both Mozambique and Zimbabwe are assumed to be delivered through tourism development. However, in both countries, local communities have limited capacity to benefit from tourism (AFD, 2016; Zanamwe et al., 2018). Zanamwe et al.'s (2018) case study on ecotourism and wildlife conservation-related enterprise development by local communities in south-eastern Lowveld, Zimbabwe, argues that transfrontier conservation has not led to poverty reduction, improved cross- border ecotourism, or wildlife conservation-related enterprise development (Zanamwe et al., 2018).

4. Payments for ecosystem services: biodiversity and poverty reduction outcomes

PES can deliver both biodiversity conservation and human well-being outcomes. However, there is a relatively small evidence base studying both sets of outcomes (for examples PES are not well-studied from a biodiversity perspective in South and Central America) and there is some evidence suggesting negative biodiversity impacts (Burivalova et al., 2019). For example, a small body (approximately 2 studies) of evidence from China, which has the world's largest PES programme, is negative as results show a decline in animal and tree diversity (Burivalova et al., 2019).

However, overall there is a sense in the literature reviewed for this report that PES can have positive outcomes for both biodiversity and human well-being. Burivalova et al.'s (2019) review found 17 data points across 161 studies evaluating the impact of PES on deforestation and forest degradation, all of which showed either a decline or no significant change in deforestation, with more cases of positive change than no change. Positive outcomes for human well-being include several studies that found that land tenure security improved with the implementation of PES projects (Burivalova et al., 2019). Sometimes secure land tenure was an important reason for participants to re-enrol their land in the programme, even if they did not perceive financial benefits from the programme (Burivalova et al., 2019).

Evidence from northern Cambodia illustrates that PES can deliver positive biodiversity and human well-being outcomes. Clements & Milner-Gullard's (2014) impact evaluation measured the impacts on forest conservation (in terms of deforestation) and human well-being (in terms of poverty (using the Basic Necessities Survey), rice harvests, food security, and education level of each household member) from three different PES programmes instituted within two PAs in northern Cambodia. The three PES programmes were: direct payments for protection of nests of globally threated birds in six villages; community-managed ecotourism conditional upon wildlife and habitat protection in two villages; and, payment of premium prices for agricultural goods to households that kept to the land-use plans in four villages (Ibis Rice), which included those with ecotourism and the birds nest protection programme (Clements & Milner-Gullard, 2014).

Key findings include (Clements & Milner-Gullard, 2014):

- Both PES and PAs delivered additional environment outcomes relative to the counterfactual: reducing deforestation rates significantly relative to controls (approximately 60%) and protection of globally threatened wildlife species.
- The impacts of PES on household well-being were related to the magnitude of the payments provided. The two higher paying market-linked PES programmes (ecotourism and Ibis Rice) had significant positive impacts, whereas a lower paying programme (bird nest protection) that targeted biodiversity protection had no detectable effect on livelihoods, despite its positive environmental outcomes.
- The PES programmes had significant positive impacts on livelihoods for those that could afford to participate. Households that signed up to the Ibis Rice and ecotourism programmes improved their poverty status at a greater rate than non-PES households from the same villages. Ibis Rice households also increased their rice harvests and improved their food security at a faster rate than other comparable households. Households that received high payments from the ecotourism and Ibis Rice programs were able to afford to keep their children in school for longer and to pay for them to attend secondary and high schools away from their home villages. The Bird Nests programme had no additional impact on household wellbeing, perhaps because the payments were significantly lower than the other schemes

PES can lead to additional conservation, but there is some evidence that some people were given payments who would not have deforested their land anyway (Bottazzi et al, 2018; Burivalova et al., 2019; Clements & Milner-Gullard, 2014)**.** Evidence from the Rio Grande catchment in the Bolivan Andes suggests that PES can lead to additional conservation (i.e. conservation that would not have happened without the programme) (Bottazzi et al., 2018). The Watershared programme aims to conserve biodiversity and improve water quality by incentivising farmers to prevent forest conversion and exclude cattle from riparian forest (Bottazzi et al., 2018). Results from Bottazzi et al.'s (2018) study include that up to 39% of contracts to exclude cattle and 14% to prevent deforestation appear to be additional conservation (Bottazzi et al., 2018).

Carbon mitigation

PES transfers to reduce deforestation can have both biodiversity and climate change mitigation benefits (Jayachandran et al., 2017). A PES programme in Uganda included annual payments of 70,000 Ugandan shillings per hectare to forest-owning households if they preserved their forest (Jayachandran et al., 2017). A randomised control trial of the programme found that tree cover declined by 4.2% in villages receiving the transfer as opposed to 9.1% in control villages (Jayachandran et al., 2017). There was no evidence that participants shifted their deforestation to nearby land (Jayachandran et al., 2017). The programme averted/delayed 183.5 metric tonnes of CO_2 emissions per eligible private forest owner (Jayachandran et al., 2017). A cost-benefit analysis of the delayed CO_2 emissions found that the programme benefit was 2.4 times as large as the programme cost (Jayachandran et al., 2017).

Programme design

Understanding motivation for participating in PES programmes and barriers to participation is important (Bottazzi et al., 2018; Clements & Milner-Gullard, 2014). Bottazzi et al. (2018) argue that there is some evidence that additional conservation occurs if people are motivated by something in addition to or as well as financial incentives (Bottazzi et al., 2018).

Targeting programmes can also be difficult as it may be hard or not socially desirable to enrol only those participants who would deforest their patch of land with high certainty in the absence of payments (Burivalova et al., 2019).

The impacts of PES programmes on human well-being depend on programme design and entry barriers can stop the poorest households from participating (Clements & Milner-Gullard, 2014). Two of the three PES programmes evaluated by Clements & Milner-Gullard (2014) had entry constraints. For example, to participate in the Ibis Rice programme, participants needed to have sufficient land to produce agricultural surplus to sell to the programme. In contrast, the Bird Nests programme provided a proportion of the direct payment up front and required no capital assets to join, meaning any household could participate (Clements & Milner-Gullard, 2014). The ecotourism programme targeted poor female-headed household through participation in a women's group that sold supplies to tourists, whereas all Ibis Rice households were headed by men (Clements & Milner-Gullard, 2014).

Protected areas and payments for ecosystem services can be complementary strategies. For example, Clements & Milner-Gullard (2014) found that implementation of PES programmes in northern Cambodia would not have been possible without the protective effect of the PAs. The PAs mitigated external drivers of ecosystem loss including in-migration to existing villages, formation of new settlements, and the gazettement of large-scale concessions for agro-industrial development within PAs (Clements & Milner-Gullard, 2014). PAs also increased security of access to land and forest resources for local households, benefiting forest resource users but restricting households' ability to expand and diversify their agriculture (Clements & Milner-Gullard, 2014). However, the impacts of PAs on household well-being were limited overall and varied between livelihood strategies (Clements & Milner-Gullard, 2014).

Unconditional transfers

Unconditional transfers are less well understood from a theoretical perspective than PES transfers. However, their use is particularly attractive in the sector for areas outside of PAs where the scope for using conditionality on land use is more limited (Wilebore et al., 2019).

Wilebore et al. (2019) used a randomised control trial to evaluate the impact of unconditional livelihood payments (through vouchers) to local communities on land use outside the Gola Rainforest National Park, Sierra Leone. The one-off, unconditional payment, resulted in increased land clearance for agriculture (Wilebore et al., 2019). This is potentially because the payment relieved constraints on land clearing, which is usually undertaken by male agricultural labour early in the season, as opposed to post-land clearance activities, which are undertaken by women (Wilebore et al., 2019). Although, results do show that increased land clearing was predominately carried out on land with young vegetation regrowth: the rate of clearing mature forests, including within the Gola Rainforest National Park, remained low and unchanged (Wilebore et al., 2019).

Unconditional transfers may be less effective at achieving positive biodiversity outcomes. Unconditional transfers rely on indirect mechanisms to alter local community or household behaviour including income effects, goodwill or reciprocity, the purchase of land-saving technology, or general equilibrium effects discouraging local deforestation (Wilebore et al., 2019). In contrast, conditional PES transfers, are linked to the altered behaviour (Wilebore et al., 2019).

5. Governance and management

Biodiversity outcomes

There is some evidence that governance and management processes can affect biodiversity outcomes. However, understanding of the relationship between management inputs and biodiversity outcomes in protected areas remains weak (Geldmann et al., 2017). This is partly because assessing the effectiveness of PAs is difficult and requires a multifaceted approach and an understanding of their contextual setting (Eklund & Cabeza, 2017). A deeper understanding of the causal role of quality of governance is needed (Eklund & Cabeza, 2017).

This reviewed identified two robust studies, both of which suggest capacity is a key factor. Brenes et al. (2018) impact evaluation of 12 protected areas in three Central American countries assesses how governance processes and management structures (restrictions, capacity, and decentralisation) affect changes in the Normalised Difference Vegetation Index (NDVI). Findings include that on average (Brenes et al. (2018):

- strict and multiple-use PAs have a significant and positive effect on NDVI compared to non-protected land uses;
- both high and low decentralised PAs also positively affect NDVI;
- high capacity PAs have a positive and significant effect on NDVI, while low capacity PAs have a negative effect on NDVI;
- Finding suggest that capacity may be more important than governance type or management restrictions in maintaining and enhancing NDVI.

Geldmann et al. (2017) examine whether protected areas management quality impacts biodiversity outcomes using data on changes in native species populations (vertebrates) across 73 terrestrial protected areas in 29 countries outside of North America, Western Europe and Australia (Geldmann et al., 2017). Management quality includes factors such as staffing, management plans, and stakeholder engagement (Geldmann et al., 2017). Data is derived from the Management Effectiveness Tracking Tool (METT) and the Living Planet Database (LPD): the largest global quantitative data sets on management inputs and time-series of animal populations, respectively (Geldmann et al., 2017). Findings include that capacity and resources (including adequacy of staff, budgets and available equipment) was the only dimension of management associated with positive changes in populations (Geldmann et al., 2017). Geldmann et al. (2017) do not take their results to imply that local stakeholder engagement, monitoring and enforcement, or planning are not important in ensuring effective PAs, but rather that their relative importance may be related to other performance measures (e.g., equity and economic benefits, or species and ecological representation).

A number of other factors have been suggested that could influence PA effectiveness in achieving biodiversity outcomes. These include adequate resourcing. However, funding for managing protected areas has not kept pace with increases in protected areas coverage (Geldmann et al., 2017). A 2016 assessment of the current state of the knowledge of the drivers of biodiversity outcomes in PAs finds that elements of PA design, management, and local and national governance challenges, species and system ecology, and socio-political context can all influence outcomes (Barnes et al., 2016). These elements also interact (Barnes et al., 2016).

Community participation and engagement

Community consultation and participation can be weak in PA establishment, administration and management. Pyhala et al. (2016) found that local communities were (reportedly) involved in management decisions in only 4 out of 34 sampled PAs in the Congo Basin; and, in only two cases were communities consulted before the establishment of a PA. The predominant approach has involved imposing strict top-down restrictions in terms of access to and use of forest resources, without tapping into customary conservation practices or traditional knowledge (Pyhala et al., 2016).

There are some examples of best practices in the Congo Basin, including establishment of dialogue mechanisms, community-based natural resource management initiatives in the periphery of protected areas, as well as attempts at involving local populations in management activities (Pyhala et al., 2016). However, these cases appear to be mostly symbolic, are clearly not part of a consistent policy and are certainly not representative of the typical situation in the region.

In the Limpopo National Park, Mozambique, the LNP's strategy did not include mechanisms for consultation about the way protected areas would be governed, which should have been negotiated as part of a territorial project (AFD, 2016). This partly stems from the LNP lacking the skills and capacity to undertake participatory planning and development (AFD, 2016).

There is some evidence that allowing people within PAs results in better livelihood outcomes. Clements & Milner-Gullard's (2014) study of PAs in northern Cambodia found that excluding outsiders from the PAs allowed local people to continue to use forest and land resources for their livelihoods based upon their legal rights under Cambodian law, including use of forest resources (especially resin) and farming within agreed land-use plans. No resettlement occurred (Clements & Milner-Gullard, 2014). Whilst livelihood opportunities were restricted in terms of limiting crop types and some land clearance, there were notable benefits for forest resource users (Clements & Milner-Gullard, 2014).

The two PAs were in remote forest areas and contained 16 long-established villages comprising mainly subsistence farmers practicing either rain-fed paddy rice cultivation or shifting cultivation, and dependent on forest resources both as a safety net and for cash income, mainly from sales of liquid resins from dipterocarp trees (Clements & Milner-Gullard, 2014). Cambodian law allows local uses of natural resources in PAs, but forest clearance, commercial logging and hunting or trade in threatened species are illegal (Clements & Milner-Gullard, 2014). PA authorities allowed villagers to expand agriculture to a limited extent within agreed land use plans (Clements & Milner-Gullard, 2014).

Community based natural resources management

There is mixed evidence related to community based natural resource management regimes leading to positive human well-being outcomes. There is some evidence from Tanzania that areas under community-based natural resource management (CBNRM) do not improve household wealth compared to areas not under CBNRM, but they do improve food security (Woodhouse & Bedelian, 2018). Studies of community managed forestry (CFM) suggest that it either brings improvements or no change to community wellbeing; the empowerment and participation of communities in decision-making either improved or remained the same; whilst, several systematic reviews found that overall CFM did not improve families' economic situation

(Burivalova et al., 2019). Outcomes are context-dependent: one study found that as a result of CFM, wealth inequality decreased in Mexico, did not change in Bolivia and Kenya, and grew worse in Uganda (Burivalova et al., 2019).

Community based natural resource management of wildlife can be effective for conservation. Lee (2018) evaluated the conservation effectiveness of the Burunge wildlife management area (WMAs) in Tanzania. WMAs in Tanzania involve multiple villages designating land and managing it for wildlife conservation in return for a portion of subsequent tourism revenues (Lee, 2018). Key findings from Lee's (2018) evaluation include:

- Burunge WMA contained significantly higher densities of wild ungulates relative to adjacent village lands outside the WMA and lower densities of livestock;
- Densities of wild ungulates increased and livestock densities decreased within the hunting block area after changes in management that increased resource protections were enacted there;
- Apparent survival and population growth rate of giraffes in the hunting block area increased after the changes in management there, relative to a control site in Tarangire National Park.

Factors contributing to ecological effectiveness include: the age of the WMA (it was established in 2006); the large ecotourism industry in Tanzania; the Burunge WMA's location close to two popular national parks on the main tourism circuit; and, the village game scouts and management of the WMA were supported by training, technical assistance, and capacity building (Lee, 2018).

Time lags

Creating and strengthening human capacities, and changing legal and institutional frameworks are fundamental aspects of establishing national parks that require time and very targeted development strategies (AFD, 2016). One of the key challenges faced by the Limpopo National Park in Mozambique is developing national competencies in conservation and development (AFD, 2016). When the park was established in 2001, Mozambique had to put in place an administration from scratch, and the legal framework was not adapted to the reality of national parks in Mozambique as it made no provision for the presence of human populations, even though they live in nearly every national park in Mozambique (AFD, 2016). The legal framework was also not conducive to management models based on the development of tourism activities (AFD, 2016).

Assumptions underpinning PAs contribution to biodiversity and poverty reduction, may need a long time to come to fruition. For example, wildlife repopulation, the benefits generated by ecosystem conservation, the development of new models of resource use and the adoption of a new legal framework all take time to establish (AFD, 2016).

Transboundary challenges

Issues that are truly transboundary in nature should be identified and governance structures created that directly address those issues (Petursson et al., 2013). Examining the case of Mount Elgon in Uganda and Kenya, Petursson et al. (2013) argue that establishing a transboundary management regime as one, fully integrated regional regime whereby there is joint governance of adjacent protected areas across boundaries between sovereign countries,

would be seriously constrained by the interplay of complex institutional factors. It also runs the risk of reintroducing old top-down conservation paradigms, counteracting community conservation attempts and alienating local communities.

There are a range of governance regimes in place for the one protected area in Uganda and the four in Kenya that comprise the Mount Elgon area (Petrusson et al., 2013). Protected park areas on both the Ugandan and Kenyan side had been administered under a 'fortress' style approach, whereby local communities were not allowed access to the parks, but were supposed to benefit from the parks through a share of tourism-gate entry fees (Petrusson et al., 20130. However, tourism numbers were low on both sides (Petrusson et al., 2013). The two forest reserves on the Kenyan side were governed for extractive use of forest resources (including local community extraction for a fee), although like the park areas, they prohibit permanent settlement and hunting (Petrusson et al., 2013).

6. Wildlife trade

Focusing solely on regulation is an inadequate response as it fails to address the real drivers of international wildlife trade (IWT) (Challender, Harrop & MacMillan, 2015). Drivers include rural poverty, growing relative poverty nationally and internationally, and consumer demand (Challender, Harrop & MacMillan, 2015). A focus on regulation also reduces the complex nature of IWT, which is linked to poverty alleviation, tenure rights, rural livelihoods and cultural traditions, to a law enforcement problem (Challender, Harrop & MacMillan, 2015). A regulatory approach can dis-incentivise conservation by restricting the direct use of wildlife on which rural communities depend socio-economically and culturally (Challender, Harrop & MacMillan, 2015). There is some evidence that demand for highly-threatened and high-value species in growing in East Asia and may be price-elastic, consequently, trade controls may not be effective (Challender, Harrop & MacMillan, 2015).

Interventions to reduce wildlife crime are most effective when addressing the underlying motivations of people involved in those crimes (Travers et al., 2019). Poverty is often assumed to be the key driver to wildlife crime (Travers et al., 2019). However, evidence from communities surrounding two national parks in Uganda includes that better-off households, those subject to human–wildlife conflict and those that do not receive any benefits from the parks' tourism revenue sharing were more likely to be involved in certain types of wildlife crime, especially illegal hunting (Travers et al., 2019). Findings from Travers et al.'s (2019) combined scenario interviews and a choice experiment predict that the interventions likely to have the greatest impact on reducing local participation in wildlife crime include mitigating damage caused by wildlife and generating financial benefits for park-adjacent households.

Community engagement strategies to combat the IWT include: involvement in law enforcement; increasing incentives for wildlife stewardship; human-wildlife conflict mitigation; support for non-wildlife-based livelihoods; and, education and awareness raising (Roe & Booker, 2019). Interventions often employ more than one engagement strategy. For example, in the Greater Kilimanjaro Landscape (Kenya and Tanzania) strategies include involvement in law enforcement, incentives for wildlife stewardship and human-wildlife conflict mitigation (Roe & Booker, 2019). Lee (2018) found that training and support of village rangers to conduct anti-poaching activities and prevent livestock encroachment resulted in greater wildlife densities and lower livestock densities in the Burunge WMA. There is some evidence that PES do not change

the levels of illegal hunting, which would have direct consequences for biodiversity (Burivalova et al., 2019).

Roe & Booker's (2019) evidence review on community engagement strategies identified 50 case studies, however, only 19 of these include data on effectiveness. Of this sample 14 case studies reported that they were effective, although in four cases this effectiveness was partial (Roe & Booker, 2019). Overall, the review argues that there are examples of community engagement initiatives reducing poaching and/or improving wildlife numbers (Roe & Booker, 2019). **Common lessons from this body of evidence to inform best practice include** (Roe & Booker, 2019: 8):

- Initiatives should be locally driven and responsive to the local context: Involving communities in actually defining solutions, not just engendering a culture of passive reliance on externally provided benefits, was reported to be key.
- Community ownership and a voice in decision-making.
- A need to understand the root causes of poaching and developing proactive, rather than reactive, strategies to address it.
- Where poaching is driven by poverty, functioning, sustainable benefits flows need to be put in place and benefits need to be realised early on. These benefits do not necessarily need to be financial.
- A long-term relationship between project implementers and local people based on shared objectives, trust and reciprocity is important.
- Multi-stakeholder partnerships were often central to successful initiatives, not just to get the necessary support for community engagement (e.g., through government endorsement) but also to generate the necessary mix of skills, science, technical and financial support, transparency, and accountability.
- Identifying and building on cultural norms.

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Sugested citation

Cooper, R. (2020). *Biodiversity conservation and restoration, and poverty reduction.* K4D Helpdesk Report 773. Brighton, UK: Institute of Development Studies.

About this report

This report is based on 9 days of desk-based research. The K4D research helpdesk provides rapid syntheses of a selection of recent relevant literature and international expert thinking in response to specific questions relating to international development. For any enquiries, contact helpdesk@k4d.info.

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Annex V: K4D Report on Thinking and Working Politically on Transboundary Issues

Thinking and Working Politically on transboundary issues

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18 January 2021

Question

What are the key challenges to Thinking and Working Politically (TWP) when designing and delivering development interventions around transboundary issues? How have tools and concepts, including Political Economy Analysis, been adapted to overcome these challenges and what lessons have been learned?

Contents

1. Summary

There is growing consensus that political factors are a key determinant of development impact. The practice of Thinking and Working Politically (TWP) is built around three inter-connected principles: (i) strong political analysis, insight and understanding; (ii) detailed appreciation of, and response to, the local context; and (iii) flexibility and adaptability in program design and implementation. From the limited experience thus far of applying TWP on transboundary issues, the following challenges are apparent:

1. **The process becomes more complex** as both the number of actors and the diversity of interests and incentives increase.
2. **There are variations in the political traction** attached to different policy areas and the institutions responsible for them.
3. **Geo-political sensitivities** shape the space for transboundary cooperation, which is therefore vulnerable to opening and closing unpredictably.
4. **There are differing interpretations of what is 'regional'.** Further, transboundary interventions are not always a response to a failure of collective action at that level.
5. **The governance of transboundary issues is likely to involve the interplay of multiple institutions operating at different levels.** Practitioners must then navigate this complexity.

Some of the lessons learned are as follows:

1. **While TWP emphasises the centrality of politics and power, technical knowledge is still important and can reinforce the political agenda,** for example by increasing the confidence of smaller states or by strengthening collective understanding**.**
2. **Improving the quality of domestic cooperation** can be a step towards regional cooperation.
3. **Flexible engagement with the diverse range of actors** that populate transboundary settings has been shown to be an effective strategy.
4. **Transboundary cooperation can be built from the bottom up,** either by focusing spatially or by working incrementally in modest steps.
5. **For development partners, pre-existing bilateral partnerships** may facilitate their engagement at a transboundary level, particularly on sensitive issues.

Given the relatively isolated experience of TWP in transboundary settings, the evidence base for this report is also limited. The two areas where most examples were found concern regional integration and transboundary water management.

While there has been some work to advance TWP and gender, neither gender nor disability were features of the literature under review.

2. Thinking and Working Politically

There is growing consensus that the critical success factor in achieving developmental change is a deep understanding of, and active engagement with, local political and power relations (Laws & Marquette, 2018).[1] The practice of Thinking and Working Politically (TWP) reflects this consensus and is guided by three core principles (Table 1).

See: Table 1: Thinking and Working Politically: Principles and Characteristics, Source: TWP Community of Practice (nd), p. 2, https://twpcommunity.org/wp-content/uploads/2018/02/the-case-for-thinking-and-working-politically.pdf

Political economy analysis (PEA) underpins TWP by exploring the distribution and contestation of political and economic power and the implications of this for development (McGregor et al, 2020). PEA may be applied in different ways and at different levels of operation (Harris & Booth, 2013). Practitioners with the right skill-set can incorporate the insights from PEA into their ongoing work, thus connecting the two complementary elements ('thinking' and 'working') of TWP (McGregor et al, 2020).

A recent evidence review of TWP (Dasandi et al, 2019; Laws & Marquette, 2018) finds that its literature has certain limitations, including in rigour and robustness, and in its capacity to demonstrate that TWP can deliver better development outcomes; the authors also note the lack of journal articles. The same evidence review indicates that most of the contexts in which TWP has been applied are country-based, even if programmes are designed or managed regionally. In 2017, the TWP Community of Practice discussed how TWP might extend its scope to address 'larger and messier' development challenges that cross national boundaries (TWP Community of Practice, 2017, p. 2). The two case studies presented at that meeting were on transboundary water management and regional integration, and these two issues provide most of the material in this report. The searches for this report, reinforced by consultation with members of the TWP Community of Practice, suggest that the application of TWP in transboundary settings is still limited.

3. Challenges of TWP on transboundary issues

1. **The larger number of actors, each with their differing interests and incentives, makes the process of TWP more complex.** Transboundary analysis is multi-layered: it needs to explore the political dynamics within each country, as well as those between countries, and the interaction between the two (Byiers & Vanheukelom, 2016). Transboundary dynamics also play out within countries, particularly over shared natural resources (Tincani et al, 2018). The multi-dimensional nature of transboundary issues brings in a wide range of actors and presents challenges for PEA, which risks being

[1] In their discussion of TWP and biodiversity, Schuttenberg et al (2020) note that 'local', when used in the context of TWP, does not imply working at a small geographical scale but rather distinguishes between local actors and outsiders. It does not rule out working on the larger scale that an ecosystem approach may require.

overly general or unfocused unless the research question is tailored to the specific needs of the team at that time (World Bank, 2017).

2. **The political traction attached to different policy areas varies.** In their synthesis of the findings from the Political Economy Dynamics of Regional Organisations (PEDRO) programme, Byiers et al (2019) show that different cross-border issues, such as trade, security, energy, or ecosystem management, have different political imperatives that alter the incentives to engage across borders. For example, immediate threats carry greater political urgency than aspirational agendas focused on the creation of future benefits. Those sectors where country priorities are largely national or local in nature, such as water in Southern Africa, are unlikely to generate strong incentives for regional cooperation (Woolfrey & Muller, 2017).[2] The power of sector ministries also varies: Wells-Dang et al (2016), reviewing the political economy of environmental impact assessments in the Mekong region, note the limited influence and authority of environment ministries, and the risk that generous donor support may isolate them still further from the more influential parts of government.
3. **The space for transboundary cooperation is politically sensitive, shaped by geopolitical priorities, and can open and close unpredictably.** 'Resource nationalism', in which cross-border cooperation over natural resources is determined by wider geo-political considerations, is a particular challenge; Stanbury-Davis (2018) discusses how governments in Asia regard rivers as both national assets and tools for managing their external affairs. Unrelated political events can stall progress on collective action (Tincani et al, 2018).
4. **There are differing interpretations of what is 'regional', or transboundary.** Regions exist on a variety of spatial scales and levels which may be understood differently by different actors, and which may overlap with each other or function in parallel. The range of a regional or transboundary issue and the mechanism intended to manage it may not coincide; an eco-region and a political region, for example, may in practice occupy separate geographical spaces (Söderbaum & Granit, 2014).[3]

   Further, the added value of transboundary action is not always apparent; nor does it necessarily drive regional cooperation. Byiers et al (2019) find that not all activities carried out by regional organisations are responses to a failure of collective action at the regional level; many appear to be projects that happen to be implemented by a regional organisation in more than one country.
5. **The governance of transboundary issues is likely to involve the complex interplay of multiple institutions operating at different levels.** This may be a consequence of asymmetries in governance at the national level. For example, since water governance in India is a state-level function, transboundary discussions are influenced by the political dynamics within India's basin states, which are themselves also key actors in those

[2] Woolfrey & Muller (2017) also attribute the lack of regional traction to a divergence between the priorities of national governments and development partners. The water priorities of member states of the Southern African Development Community (SADC) are largely driven by their national development concerns, such as energy generation and economic development, rather than the conservation and environmental agenda favoured by development partners.

[3] The authors list six types of region: (i) eco-region, (ii) cultural region, (iii) economic region, (iv) administrative region, (v) political region, and (vi) security region.

interactions, thus complicating the process of international negotiation (Stanbury-Davis, 2018).

There may be multiple overlapping frameworks of decision-making and cooperation with responsibility for the same resource. These are two examples:

i. Jensen & Lange (2013) categorise the various forms of water governance in the Mekong and Zambezi river basins: (i) unilateral water development interventions by a single country that affect the basin; (ii) bilateral cooperation agreements governing specific projects in the basin; (iii) bilateral water agreements between riparian countries and basin water commissions; (iv) multilateral water agreements between three or more countries; and (v) regional cooperative frameworks, such as the Association of Southeast Asian Nations (ASEAN) or the Southern African Development Community (SADC).

ii. Knaepen & Byiers (2017) explore the institutional arrangements in the Nile Basin. The Nile Basin Initiative (NBI) is an intergovernmental partnership of ten Nile Basin countries to promote collaboration and benefit-sharing. Most are also members of the Intergovernmental Authority on Development, which is also developing a regional water strategy. Other actors involved in managing Nile waters include the Lake Victoria Basin Commission under the East African Community (EAC), and the East Africa Power Pool under the Community of East and Southern Africa.

It should also be noted that authority is exercised, and regional cooperation may be pursued, through informal as well as formal mechanisms such as those listed above, and by private as well as public actors, further adding to the institutional complexity (Byiers et al, 2019; Söderbaum & Granit, 2014).

4. Tools and concepts adapted for transboundary settings

Given the limited body of literature on transboundary TWP, it was not possible to identify a wide number of tools and concepts adapted to this context. However, two are summarised here: the first from the literature on regional integration and the second from the literature on transboundary water management.

Five-lens tool

The PEDRO research programme sampled and adapted PEA frameworks and tools commonly used at country and sector level to inform the development of a ‘five lens’ framework for analysing the political economy of regional cooperation (Byiers & Vanheukelom, 2016). The five lenses interact with each other and are as follows:

1. Structural or foundational factors
2. Formal and informal institutions / rules of the game
3. Actors, agency and incentives
4. (Sub)-sector-specific technical and political characteristics
5. External or exogenous factors.

The authors note that this approach is broadly in line with the TWP agenda, in that political analysis and contextual understanding should inform programming that is flexible and adaptable in design. To that end, Byiers & Vanheukelom (2016) present five options that can guide decisions about a programme's level of ambition, which reflect what is politically feasible and will work 'with the grain', rather than from a normative template. The five options, with their key guiding questions, are:

1. **Alter:** Given the context laid out using the five lenses, what are the chances of being able to alter the interests of key stakeholder groups and actors?
2. **Adapt:** To what degree can objectives be met, or can 'the problem' be addressed building on existing incentives and informal practices?
3. **Avoid:** What are the prospects, but also the potential costs and benefits of working through alternative and/or parallel processes and institutional forms?
4. **Await:** Are there some potentially important political or other game changers on the horizon that might offer better opportunities for reform?
5. **Abandon:** Assuming none of the other 4 A's apply, is abandoning the intervention or reform politically feasible or desirable, and might any negative effects otherwise be offset?

Perceived risks to cooperation

The Cooperation in International Waters in Africa (CIWA) initiative has published guidance on PEA for transboundary water management (World Bank, 2017). This takes a problem-driven approach to PEA, the five steps in the analysis being (i) problem definition, (ii) context, (iii) institutional arrangements, (iv) underlying drivers, and (v) 'what can be done?'

In exploring steps 3 and 4 (institutions and drivers) the guidance recommends a tool that analyses countries' perceived risks to cooperation and helps draw out underlying concerns and priorities. The risks are clustered in five areas and defined as follows (World Bank, 2017, p. 9):

1. **Capacity and knowledge:** Confidence in the ability to negotiate a fair deal; having adequate and correct information and knowledge to negotiate a deal.
2. **Accountability and voice:** Deliverability of benefits by the regional entity and co-riparians, often related to trust; having a say in decision making in the governing structures of the regional entity.
3. **Sovereignty and autonomy:** Ability to act in the best interest of the country without constraints; making decisions independently.
4. **Equity and access:** Fairness of (relative) benefits to a country, including timing of benefits and costs and obtaining/retaining fair access to the river.
5. **Stability and support:** Potential longevity of the agreement; in-country support of the agreement, including likelihood of ratification.

Other frameworks

The searches for this report identified a number of other frameworks and analytical lenses which, while they may not be explicitly associated with TWP, nevertheless recognise the centrality of politics and power, the limitations of technocratic approaches, and the need to adapt to

complexity and uncertainty. There was insufficient time to explore these in any depth given the size of the literature, but two may be relevant:

1. **Water Diplomacy Framework:** this is presented as an alternative to technically focused water management approaches (Islam & Repella, 2015). It starts by exploring the values and interests of stakeholders, acknowledging the need to incorporate diverse viewpoints. It then seeks 'politically legitimate and tentative prescriptions' given the high levels of both complexity and uncertainty. The authors comment: 'Our challenge is how to translate solutions that emerge from science and technology into the messy context of the economy and politics' (Islam & Repella, 2015, p. 1).
2. **Political ecology analysis:** this is an interdisciplinary approach to understanding environmental processes that incorporates some aspects of political economy. Nash (2020) argues that it can reinforce efforts to think and work politically in the area of conservation and natural resource management, for example by understanding how uneven power relations influence corruption.

5. Lessons learned

1. **While TWP emphasises the centrality of politics and power, technical knowledge is still important and can reinforce the political agenda.** For example:
    a. **Strengthening technical competence can help to level the transboundary playing field.** An evaluation of the South Asia Water Initiative found that smaller countries in the region felt more confident negotiating with their larger and more powerful neighbours once they had a clearer technical understanding of the issues (Tincani et al, 2018).
    b. **Technical collaboration and trust-building can build shared understanding of the regional challenges faced.** The Nile Basin Initiative (NBI) enhanced its legitimacy with member states by positioning itself as a knowledge broker, developing an analytical and modelling tool that facilitates shared understanding of river behaviour and the likely impact of different intervention scenarios (Medinilla, 2018). The NBI works in an adaptive manner in a complex political environment, using its technical services to strengthen political relations (Knaepen & Byiers, 2017). Empowering a regional institution to provide technical knowledge services may in some cases be less politically sensitive than starting from more ambitious regional agendas (Medinilla, 2018).
2. **Improving the quality of domestic cooperation can be a step towards regional cooperation.** The South Asia Water Initiative evaluation found that reducing the communication gaps between national ministries (such as those responsible for finance, external affairs, energy, and water) was an important first step towards achieving the cohesive approach necessary for regional cooperation to work (Tincani et al, 2018).
3. **Flexible engagement with a diverse range of actors is an effective strategy.** Many different actors may be trying to influence decision-making on transboundary issues, such as civil society organisations, the private sector, the media, and researchers, as well as various public bodies. In such a crowded space, experience from the Mekong region suggests that the organisations and networks which are particularly effective in

facilitating dialogue on politically sensitive issues are those that have invested in their relationships with many of these different players (TWP Community of Practice, 2017).

4. **Transboundary cooperation can be built from the bottom up.** Sub-regional cooperation may be more politically feasible, since the smaller number of countries involved increases the chance that their interests may align. There are several examples of this:
    a. **The corridor approach** to trade and industrialisation adopted by some regional bodies such as SADC and the EAC (Byiers et al, 2019).
    b. **A spatial approach based around specific natural resources**, such as the different sub-groups and investment programmes associated with different parts of the Nile waters (Medinilla, 2018).
    c. **The Transfrontier Conservation Areas in Southern Africa**, where strong cross-border collaboration at the local level is identified as being key to their successful implementation. Moreover, the political stakes were kept relatively low (Bertelsmann-Scott, 2013). The process of developing these areas proceeded in small steps which did not significantly challenge national sovereignty (Vanheukelom & Bertelsmann-Scott, 2016).
5. **Transboundary cooperation can also be politically sensitive and take time.** In these circumstances, building the necessary trust is a slow process that is vulnerable to being reversed. It is therefore important to identify what each programme has achieved, as well as what remains to be done, so that the wider sector can sustain momentum over the longer term (Tincani et al, 2018).
6. **For development partners, pre-existing bilateral partnerships may facilitate their engagement at a transboundary level.** An evaluation of the approach to policy dialogue used in the Greater Mekong Water Resources Program by Australia's Department of Foreign Affairs and Trade (DFAT) noted that DFAT's involvement in difficult transboundary issues was made relatively easier by it being already recognised as a partner in each country (Pech & Mather, 2017).

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Acknowledgements

We thank the following experts who voluntarily provided suggestions for relevant literature or other advice to the author to support the preparation of this report. The content of the report does not necessarily reflect the opinions of any of the experts consulted.

- David Booth, Overseas Development Institute
- Bruce Byiers, European Centre for Development Policy Management
- Duncan Green, London School of Economics
- Ed Laws, Overseas Development Institute
- Neil McCulloch, The Policy Practice
- Graham Teskey, Abt Associates

Key websites

- Thinking and Working Politically Community of Practice: https://twpcommunity.org/
- European Centre for Development Policy Management: https://ecdpm.org/dossiers/political-institutional-dynamics-regional-organisations-africa/

Suggested citation

Birch, A. (2021). *Thinking and Working Politically on transboundary issues.* K4D Helpdesk Report 949. Brighton, UK: Institute of Development Studies. DOI: 10.19088/K4D.2021.010

About this report

This report is based on six days of desk-based research. The K4D research helpdesk provides rapid syntheses of a selection of recent relevant literature and international expert thinking in response to specific questions relating to international development. For any enquiries, contact helpdesk@k4d.info.

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Annex W: ICF KPIs

<table>
<tr><td>Short title</td><td>ICF KPI 1: Number of people supported by DFID programmes to cope with the effects of climate change

Please note that this methodology had substantial changes made to it in March of 2013. Please re-read, especially the technical definition/methodological summary and data disaggregation sections.</td></tr>
<tr><td>Type of Indicator</td><td>Cumulative (individual years summed to total): report annual in-year totals only against each milestone. These annual in-year totals should then be summed at the end of the results template to give a cumulative total for the current spending review period (2011/15), the life of the programme and where results will occur outside the life of the programme for total programme benefits.</td></tr>
<tr><td>Key reporting requirements</td><td>Below is a list of key reporting requirements to keep in mind when making your returns. Further details are available in the text below:

<table>
<tr><th>Requirement</th><th>Summary</th></tr>
<tr><td>Is this a DRF indicator?</td><td>Yes</td></tr>
<tr><td>Available for reporting?</td><td>Yes</td></tr>
<tr><td>Methodology changes?</td><td>Yes - substantial</td></tr>
<tr><td>Units</td><td>Absolute number of people</td></tr>
<tr><td>Attribution</td><td>Pro-rata share of public funding</td></tr>
<tr><td>Disaggregation to be reported in results templates</td><td>• Direct vs. Indirect
• Gender</td></tr>
</table>
</td></tr>
<tr><td>Technical definition/ Methodological summary</td><td>Identifying the target number of beneficiaries is now an essential step in the business planning process, and will be a key output/outcome indicator for any programme DFID supports.

<u>Definitions</u>

‘Support’ is defined as direct assistance from the programme in question, with the explicit intention of helping people deal with climate change impacts. It could include for example financial resources, assets, agricultural inputs, training, communications (e.g. early warning systems) or information (e.g. weather forecasting). Whilst almost any development intervention that has the outcome of reducing poverty and therefore vulnerability could be described as supporting people to cope with the effects of climate change, the definition here requires the effects of climate change to be explicitly recognised and targeted by the programme in question[1].

‘People supported’ should relate to populations or households[2] identified by the programme in question with a direct relationship to it.

‘Effects of climate change’ are defined here as the effects of both existing climate variability and the magnified impacts of future climate change. Normally resulting from the primary consequences of climate change of: changes to precipitation, temperature and sea level rise, these may be sudden onset or gradual, and can include floods, droughts, storms, landslides, salination, coastal inundation, heat or cold waves and biodiversity loss.</td></tr>
</table>

[1] At a minimum all programmes with a ‘Departmental Strategic Objective’ (DSO) on climate change and/or a primary or secondary component Input Sector Code on climate change should be included in this indicator, though others may also be eligible.
[2] If the data collected is by household then this figure should be converted into a number of people indicator – see data calculation section

	Application This indicator relates to the UK International Climate Fund (ICF) impact statement from the theory of change[3] for adaptation to climate change: *'Vulnerable people in poor countries are prepared and equipped to respond effectively to existing climate variability and the magnified impacts of climate change'.* This indicator seeks to measure the numbers of people who have received an input of support as a proxy for preparing and equipping them, but does not seek to measure the output of whether this support was successful in reducing the impacts of climate change events or effects on these people, or the outcome of increasing their resilience or reducing their vulnerability to climate change. For the ICF we will seek to capture this outcome of improved resilience to climate change through evaluation and other indicators where possible. It is desirable to distinguish between numbers of poor people and numbers of vulnerable people, as not all vulnerable people are poor, and it is not always the poorest that are vulnerable, but this methodology does not encompass this definition yet. Future methodological work is planned to provide a more robust and multi-dimensional definition, and to deepen our understanding of who is vulnerable to climate change. Neither does this methodology specify that people supported should be located in poor countries or define which are poor, although it is expected that all interventions will be in developing countries. This indicator should only cover bilateral spend at this stage. Multilateral and other support (e.g. direct to NGOs), will be collected and calculated separately, to ensure the same individuals aren't double counted, e.g. if supported in different ways (or even the same way) by geographically overlapping programmes. There are two dimensions of 'support': 1) *Targeted:* defined as whether people (or households) can be identified by the programme as receiving direct support, can be counted individually and are aware they are receiving support in some form. This implies a high degree of attribution to the programme. 2) *Intensity*: defined as the level of support/effort provided per person, on a continuum but broad levels may be defined as: a. Low: e.g. people falling within an administrative area of an institution (e.g. Ministry or local authority) receiving capacity building support or people within a catchment area of a river basin subject to a water resources management plan. b. Medium :e.g. people receiving information services such as a flood warning or weather forecast by text, people within catchment area of structural flood defences, people living in a community where other members have been trained in emergency flood response. c. High: e.g. houses raised on plinths, cash transfers, agricultural extension services, training of individuals in communities to develop emergency plans These dimensions are not completely exclusive, medium intensity support may be either targeted (e.g. early warning text messages) or not targeted (catchment

[3] See ICF thematic paper on adaptation May 2011 for details on the TOC (Quest number 3721477)

area of a flood defence system). **However high intensity support should always be targeted, and low intensity support cannot normally be considered targeted. Low intensity support *should <u>not</u> be reported* for this indicator**

<u>Categories</u>

There are therefore **<u>2 categories for reporting:</u>**

A) **Direct:** Targeted & High intensity. Must fulfil both criteria e.g. people receiving social protection cash transfers, houses raised on plinths, agricultural extension services, training of individuals in communities to develop emergency plans and use early warning systems.

B) **Indirect:** which covers:
   i) Targeted & Medium intensity: e.g. people receiving weather information and text message early warnings.
   ii) Not targeted & Medium intensity: e.g. people within the coverage of an early warning system, or catchment area of a large infrastructure project (e.g. flood defences), or living in a discrete community in which others have been trained in emergency response

Programmes are **only** required to distinguish direct and indirect support (and not the sub-categories of 'indirect' above – e.g. whether targeted or not)

A third category does not need to be reported at all:

C) **Not Reported:** Indirect and Low intensity: e.g. people benefiting from falling within an administrative area of an institution receiving capacity building support, or catchment area of a Water Resources Management plan or strategy (these numbers can be captured through the programme's own monitoring, and for the ICF the interventions under the 'institutional development' scorecard KPIs).

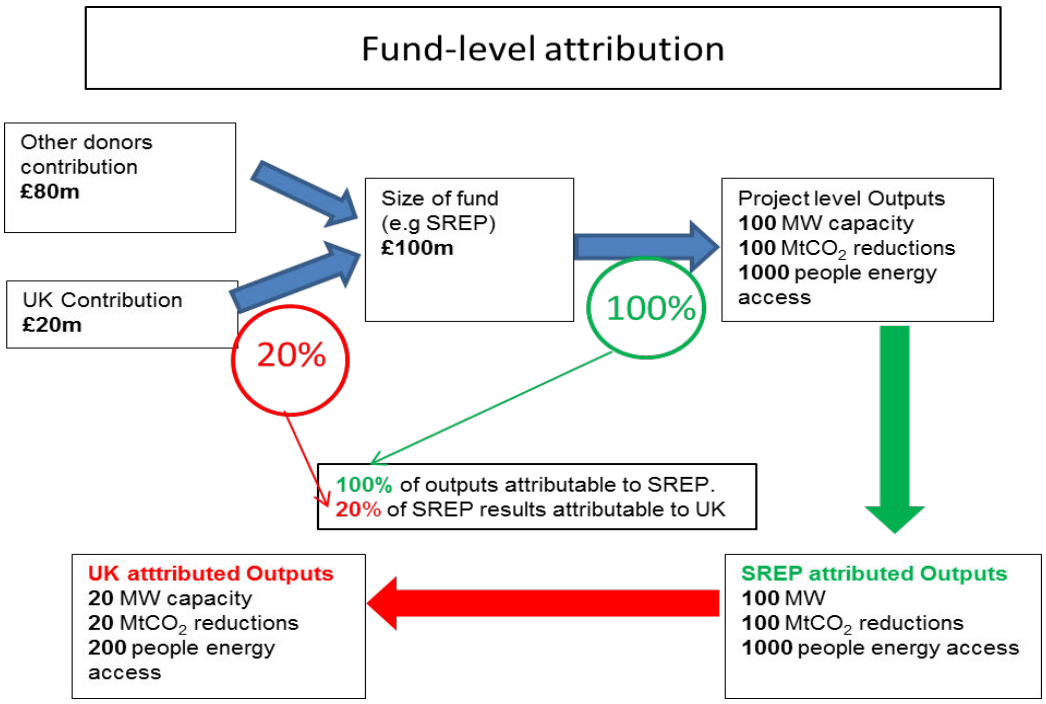
If you are unsure how to break down the number of people your programme supports into these categories please contact the adaptation and water resource management team leads as listed at the end of this document.

Gender:
Reporting by gender has been marked as mandatory. If you are unable to disaggregate by gender please see the additional guidance in the data disaggregation section below.

A single programme may include interventions which are direct and indirect (e.g. a programme which has activities including social protection and early warning

	systems). A single *intervention* may also include people supported directly and people supported indirectly, e.g. individuals trained to develop community emergency plans and use early warning systems would be supported directly, whereas people living in the same community and benefiting from those plans would be supported indirectly *Further information* 2 further optional labels can then be applied within the above categories: 1. The first label is simply: Does this programme fit under any of the sectors prioritised in the ICF adaptation thematic paper? That is: (a) access to social protection (if the programme is defined as an 'adaptation' intervention) including micro-finance and broader social protection/insurance mechanisms; (b) support to water shed and water basin management (both the construction of small-scale infrastructure at household or community level and large-scale support for watershed and water basin management activities; (c) support with urban resilience including resilient infrastructure; (d) support to any community and/or national level disaster risk reduction activities; (e) support for resilient agriculture programmes; (f) support for eco-systems development and coastal zone management programmes; and (g) support for health programmes which are primarily tackling climate change risks. 2. The second label considers the proportion that are poor: What proportion of the beneficiaries are poor? Numbers of poor people could be determined by numbers below a country specific poverty line rather than the international $1.25/day definition. For programmes which have indirect beneficiaries, proportions of poor could be estimated from social vulnerability analyses commissioned as part of the programme preparation or any prior Climate Change Strategic Programme Reviews. *Methodological points to note:* 1. Numbers of people supported through multilateral multi-sector adaptation programmes where UK is major funder will also be included in this indicator. We will be working with the multilateral partners to ensure this headline indicator can be gathered in future. 2. With multi-sectoral support there is scope for double-counting of results, we will therefore ensure that targeted interventions are tagged against one or another sector. 3. Finally, both household and individual data can be collected as part of this exercise. Data on household size should be determined from the most recent national census data or from a nationally representative household survey. If data is collected at the household level, the country office will need to multiply the number of households by the average household size.
Rationale	This is a new area of programming. At a minimum, an overall numbers of people

	supported by climate change support will help demonstrate our impact statement in the Theory of Change for adaptation. Although we are not envisaging all programmes to be able to gather all of the disaggregated levels of data, what is collected will strengthen the story on our adaptation portfolio and strengthen our evidence base. This indicator links clearly to policy priorities around climate adaptation as articulated by the International Climate Fund Board. With limited international consensus on measuring successful adaptation, HMG's development of these and other indicators will be leading the way in the international community.
Country office role	Country offices will be required to report on target beneficiaries, and numbers reached throughout implementation of each programme. This and other ICF indicators should be built into Annual Review progress reports. Progress has already been made with multilateral partners in making their M&E systems more focused on aggregating results. The Pilot Programme for Climate Resilience (one of the CIFs) Adaptation Fund and Least Developed Countries Fund for example have their own results frameworks, will generate results information on a regular basis, there may be a role for country offices in quality assuring the information when it is collected.
Data source	The indicator will be measured through the monitoring and, to some extent, evaluation of DFID bilateral climate adaptation programmes and multilateral programmes, particularly those financed by the UK's International Climate Fund (ICF). In some cases (e.g. on-going programmes in Bangladesh) the data will be generated through project-specific surveys. Where DFID programmes are operated through government (e.g. the Ethiopia PSNP), the data will come from separate commissions. Similarly, data on proportions of poor will be undertaken through individual surveys at project level and then attributed to the programme. Perhaps at a later stage, household level surveys will begin to gather this data more readily. The aggregation for this indicator will be undertaken by CED across all projects/programmes.
Data included	**DRF:** At a minimum all DFID programmes with an explicit climate change purpose are should report on this indicator (primary or secondary input sector code on ARIES).
Formula/Data calculation (including attribution rule)	The indicator is expressed in absolute numbers, so not relevant. However, the data will be aggregated by CED using the numbers provided against sector interventions summed across to arrive at a total figure. It is possible that some of the disaggregated levels of data are provided as percentages. These will then be converted as appropriate into absolute numbers. Where HMG are only funding part of the project, benefits (number of people) should be calculated as a pro-rata share of public funding. For example, if we are funding 10% of a project with 100 beneficiaries, we should claim that 10 of these beneficiaries are attributable to DFID. It is possible for a single programme to reach both direct (targeted and high intensity) and indirect (targeted or not targeted and medium intensity) beneficiaries in which case these should be reported separately. **Fund-level attribution** (i.e. at point of UK investment) should be applied for reporting expected and actual results and headline results/figures used in

	Business Cases (to ensure all projects can report on a consistent basis). This method involves sharing results across all donors that contribute to a fund. All results are attributable to the relevant fund (e.g. CIFs, CP3, GAP) regardless of whether these funds blend with other sources of finance in implementing projects at levels below the point of UK investment. For example, if the UK invests £25m into a fund that totals £100m of public money, the UK would claim 25% of the results from that investment. This applies to all results. The long term ambition is to develop the data availability to enable all projects to use the lowest/most direct level of attribution possible in the future (i.e. project level). Therefore, advisers should be working to develop sufficient data to calculate project level results reports, and where possible, provide this information now alongside headline Fund level results. To note, the distinction between attribution at the project level and at the Fund level (or at point of UK investment) is only an issue where the UK is investing in funds where there are multiple investment levels. 
Most recent baseline	By nature of the indicator the baseline for the programme in question will normally be zero for number of people supported *by DFID*. The possible exception being where the programme is an extension of an existing DFID programme that preceded the current Comprehensive Spending Review. *[For the aggregated total for DFID overall the baseline will be zero at the start of the Comprehensive Spending Review period]*.
Good performanc	The public should be looking for an increase in the absolute numbers receiving support. Through a complimentary ICF evaluation an assessment will also be made of how far people's resilience to climate change has been improved.
Return format	Absolute numbers of beneficiaries only, disaggregated by direct/indirect and gender. Please see Data dis-aggregation section below.
Data dis-aggregation	Data to be disaggregated and reported in the ICF results template:

	- Number of direct or indirect beneficiaries - Gender: • Reporting by gender has been marked as mandatory. If you are unable to report by gender please explain why in the metadata columns of the results template. • We would expect gender disaggregation to be possible for all programmes in the direct category. Where possible gender disaggregation should also be given for the indirect category. • We acknowledge that gender disaggregation will not be possible if household level data are used. If local gender disaggregation data is not available but you have target population data that allows you to give an estimated number then please report this. If an estimate is used then please state this clearly in the metadata column. • It is not intended to present gender disaggregated figures by country/programme but as an aggregated total across programmes. <u>Data to be disaggregated as part of workings and Quest number provided:</u> Disaggregation of the following variables will not be collected as part of the ICF results template. Please include disaggregated data in your working documents and record the Quest number for these documents in the ICF results template. - Thematic sector of programme - Proportion of beneficiaries who are poor
Data availability	It should be possible for country offices (and eventually multilateral partners) to report on beneficiary numbers at least annually (to inform Annual Reviews). CED will collate this information annually. Robust data from programmes already in implementation may be difficult to gather as baselines are unlikely to have been developed in all cases. Therefore we expect the routine M&E of these programmes to be able to generate this information.
Time period/ lag	This will have to be worked through with country offices and multilateral partners, but a 6-9 month lag may be necessary.
Quality assurance measures	We will identify mechanisms for data QA with multilateral partners (possibly using the OECD as an independent arbiter) by June 2013. In DFID, we anticipate that there will be 3 layers of QA: country offices, CED and FCPD. Country offices will need to estimate country-level aggregation, where separate programmes may support the same people in different ways. COs will be in the best position to do this analysis on geographic overlap. CED will need to centrally estimate aggregation between bilateral country programmes and multilateral support, to identify where this overlaps in terms of i) same people in different ways or ii) same people in the same ways e.g. through core support to two multilateral agencies co-financing the same programme. If reporting officers have any concerns about the quality of data or any points that they think CED should be made aware of, then please note this in the ICF (and DRF) results templates. Any comments can usually be added into the free text columns on the far right of each template. Further guidance should be available in the commissioning note.
Data issues	Quality of data will vary, particularly where it is necessary to rely on

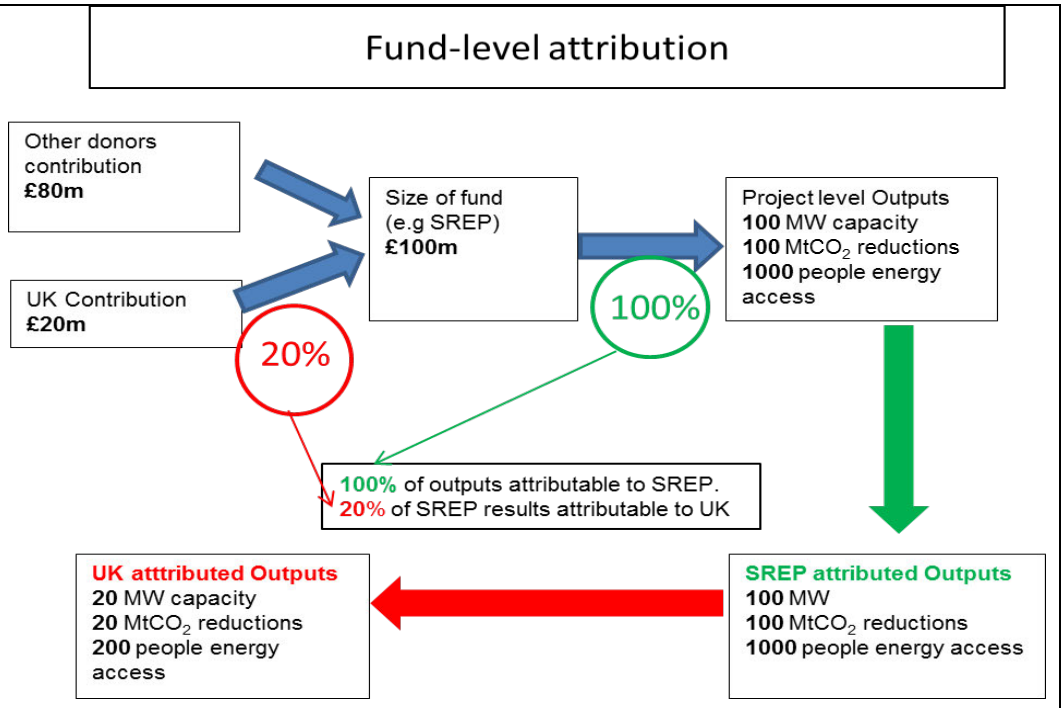
	implementing partners collection of government data systems. We might be able to use different sources of data to triangulate results and strengthen our interpretation of the data. A further assumption is made that the data collected on the 'indirect' category (targeted or not targeted and medium intensity) can still be attributable. As there is no guidance on acceptable attribution proportions for indirect beneficiaries, we are proposing that these are captured in full and no discounting is made. FCPD guidance only exists on targeted attribution.
Additional comments	CED also plans to undertake more methodological work on definitions of vulnerability and will aim to do an evaluation on the impact of the ICF programmes on resilience. At some future date, these indicators can be used in conjunction with the indicator above to strengthen its impact focus. The number of people supported to cope with climate change indicator is new and attempts to measure a new area in development of common international interest. We have shared this methodology with a number of international partners including the MDBs and other donors and a number of these partners have chosen to replicate this methodology in their own reporting.
Lead	Statistical advisor: Alex Feuchtwanger (DFID) a-feuchtwanger@dfid.gsx.gov.uk Subject matter lead: Juliet Field (DFID) j-field@dfid.gov.uk

<table>
<tr><td>Short title</td><td>ICF KPI 2: Number of people with improved access to clean energy as a result of ICF projects</td></tr>
<tr><td>Type of indicator</td><td>Cumulative (individual years summed to total): report annual in-year totals only against each milestone. These annual in-year totals should then be summed at the end of the results template to give a cumulative total for the current spending review period (2011/16), the life of the programme and where results will occur outside the life of the programme for total programme benefits.</td></tr>
<tr><td>Key reporting requirements</td><td>Below is a list of key reporting requirements to keep in mind when making your returns. Further details are available in the text below:

<table>
<tr><th>Requirement</th><th>Summary</th></tr>
<tr><td>Is this a DRF indicator?</td><td>Yes</td></tr>
<tr><td>Available for reporting?</td><td>Yes</td></tr>
<tr><td>Methodology changes?</td><td>No – however clarification on attribution</td></tr>
<tr><td>Units</td><td>Absolute number of people</td></tr>
<tr><td>Attribution</td><td>Pro-rata share of public funding</td></tr>
<tr><td>Disaggregation to be reported in results templates</td><td>• Gender</td></tr>
<tr><td>Key point</td><td>Only include results from off-grid connections, <u>do not</u> include results from on-grid access.</td></tr>
</table>
</td></tr>
<tr><td>Technical Definition / Methodological summary</td><td>Clean energy access refers to:
- New household connections to off-grid renewable energy sources. (To note, on-grid access cannot be included in these figures because once on-grid, it is impossible to determine the energy source).
- Households with more efficient cook stoves, solar lanterns or other clean technologies which generate energy.

Clean energy is generated from both combustible and non-combustible renewables. Non-combustible renewables include geothermal, solar, wind, hydro, tide and wave energy. Combustible renewables and waste include biofuels (biogas, ethanol, biodiesel); biomass products (fuelwood, vegetal waste, pulp and paper waste, animal waste, bagasse), municipal waste (waste produced by the residential, commercial and public service sectors that are collected by the local authorities for disposal) and industrial waste; all for the production of power.</td></tr>
<tr><td>Rationale</td><td>Energy access is crucial to development; other services such as education, communication, refrigeration and better access to information are contingent on, or enhanced by, energy access. More efficient cook stoves etc also have health and time co-benefits. This is particularly the case for women/children who often suffer more from the negative impact of indoor air pollution and have to spend time collecting fuel wood. Clean energy should also partly displace fossil fuels resulting in lower carbon emissions.</td></tr>
<tr><td>Country office role</td><td>For each of their climate change programmes, country offices will need to assess the number of additional people given access to clean energy as a result of their projects and supply this information to FCPD. Collated data will be quality assured and finalised by DFID’s Climate and Environment Department and FCPD.</td></tr>
<tr><td>Data sources</td><td>Use of project level M&E (e.g. household surveys, project reporting) enables the tracking of clean energy access for ICF funded projects.</td></tr>
</table>

	Data on household size should be determined from the most recent national census data or from a nationally representative household survey.
Reporting organisation	DFID internal
Data included	Number of households with improved access to clean energy, based on average number of people in a household.
Formula/Data calculation (including attribution rule)	If data is collected at the household level, the country office will need to convert the number of households into the number of people. The country office will need to multiply by the average household size. Where HMG are only funding part of the project, benefits (number of people) should be calculated as a pro-rata share of public funding. For example, if we are funding 10% of a project with 100 beneficiaries, we should claim that 10 of these beneficiaries are attributable to DFID. If several donors are active in the same region only those beneficiaries which are directly and closely linked to the ICF activities should be counted. If this is difficult to determine, all beneficiaries should be counted and the numbers proportioned according to the contribution by different donors. **Fund-level attribution** (i.e. at point of UK investment) should be applied for reporting expected and actual results and headline results/figures used in Business Cases (to ensure all projects can report on a consistent basis). This method involves sharing results across all donors that contribute to a fund. All results are attributable to the relevant fund (e.g. CIFs, CP3, GAP) regardless of whether these funds blend with other sources of finance in implementing projects at levels below the point of UK investment. For example, if the UK invests £25m into a fund that totals £100m of public money, the UK would claim 25% of the results from that investment. This applies to all results. The long term ambition is to develop the data availability to enable all projects to use the lowest/most direct level of attribution possible in the future (i.e. project level). Therefore, advisers should be working to develop sufficient data to calculate project level results reports, and where possible, provide this information now alongside headline Fund level results. To note, the distinction between attribution at the project level and at the Fund level (or at point of UK investment) is only an issue where the UK is investing in funds where there are multiple investment levels.

	
Worked example	DFID provides X number of households with solar lanterns. Household surveys through project M&E will identify the number of new households who have access to clean energy due to the ICF project compared to the initial baseline and forecast of those who would have bought solar lanterns anyway. Ideally the project level data will also be disaggregated by income level. X is then multiplied by the average household size as set out in the census or national household survey. Results are attributed at the point of UK investment (Fund level) and shared across all donors that contribute to a fund.
Most recent baseline	The baseline should reflect the situation prior to ICF funding being provided and anticipated projections of what would happen without the ICF. For long running programmes the baseline should be taken as 2010 unless otherwise stated. The baseline should align with the economic appraisal in the project design.
Good performance	An increase in the number of people with improved access to clean energy.
Return format	Number of people with improved access to clean energy due to the ICF project. Where the data exists, number of poor people with improved access to energy due to the ICF project should be reported. This could be determined by numbers below a country level poverty line rather than the international $1.25/day definition. This can be done using country level data or more subnational level data. See data dis-aggregation section below for where these figures should be reported.
Data dis-aggregation	<u>Data to be disaggregated and reported in the ICF results template:</u> - Gender: • Reporting by gender has been marked as mandatory. If you are unable to report by gender please explain why in the metadata columns of the results template.

	• We acknowledge that gender disaggregation will not be possible if household level data are used. If local gender disaggregation data is not available but you have target population data that allows you to give an estimated number then please report this. If an estimate is used then please state this clearly in the metadata column. • It is not intended to present gender disaggregated figures by country/programme but as an aggregated total across programmes. <u>Data to be disaggregated as part of workings and Quest number provided:</u> Disaggregation of the following variables will not be collected as part of the ICF results template. Please include disaggregated data in your working documents and record the Quest number for these documents in the ICF results template. - Income levels - urban/rural - source of improved energy access (e.g. off-grid connection; more efficient cook stove; solar lantern; etc)
Data availability	Will vary by source. Likely to be a few months if using routine project reporting data, longer if using household surveys.
Time period/ lag	Annual review and project completion reports should be aligned with data availability.
Quality assurance measures	It is recommended that, where possible, data collection is undertaken by a third party that is not directly involved with implementing the project. If reporting officers have any concerns about the quality of data or any points that they think CED should be made aware of, then please note this in the ICF (and DRF) results templates. Any comments can usually be added into the free text columns on the far right of each results template. Further guidance should be available in the commissioning note.
Data issues	**Poor people** Ideally, the indicator 'number of poor people with improved access to clean energy as a result of ICF projects' should be reported. Where viable, this should be incorporated into the M&E design of the project. However, this data may not be available for all projects. Where poverty data is available, numbers of poor people should be determined by a poverty metric relevant to that country (e.g. numbers below a country's national poverty line, community poverty assessment, first quintile income levels) rather than necessarily the international $1.25/day definition. This could be gathered using country level data or more sub-national level data. Whichever metric is used in the project should be stated in the return. Given all ICF projects happen in developing countries, this is used as a proxy that we are reaching the poor. There are limitations to this proxy as many countries in which the ICF works are unequal. **Children** The total number of individuals as calculated includes children. Children benefit from clean energy access at the household level as it enables them to e.g. do their homework. The other benefit from clean energy is in terms of health - indoor air pollution from cook stoves using dirty fuel is responsible for the

	deaths of 2 million women, girls and children under 5 (WHO/UNDP methodology, 2009). Women and children often suffer disproportionately from the effects of indoor air pollution and spend more time collecting fire wood. **On-grid** It is not possible to disaggregate grid electricity by source (clean vs. fossil). Furthermore, providing energy to the grid does not necessarily translate into access as new connections would need to be established simultaneously. This indicator therefore excludes on-grid energy. Any measurements of energy access are likely to be conservative and be a subset of results as improved access to the grid cannot be measured. Instead, the indicator to be examined should be 'installed capacity of clean energy' which is also a priority indicator for the ICF.
Additional comments	N/A
Lead official	Statistical advisor: Alex Feuchtwanger (DFID) a-feuchtwanger@dfid.gsx.gov.uk Subject matter lead: Steven Hunt (DFID) s-hunt@dfid.gov.uk

Methodology for reporting against KPI4 – Number of people whose resilience has been improved as a result of project support

Background

KPI4 is a Key Performance Indicator (KPI) in the DFID-funded International Climate Fund (ICF). However, the indicator can be used for any project for which increased resilience is an objective. It is an outcome indicator in DFID's **Building Resilience and Adaptation to Climate Extremes and Disasters** (BRACED) portfolio log-frame.

KPI4 measures the number of people with **improved resilience due to a project intervention.** This means:

(a) KPI4 measures number of people with a **change** in resilience;
(b) KPI4 focuses on change in **those attributes of resilience affected by the project** in question;
(c) KPI4 is **not** a measure of absolute resilience.

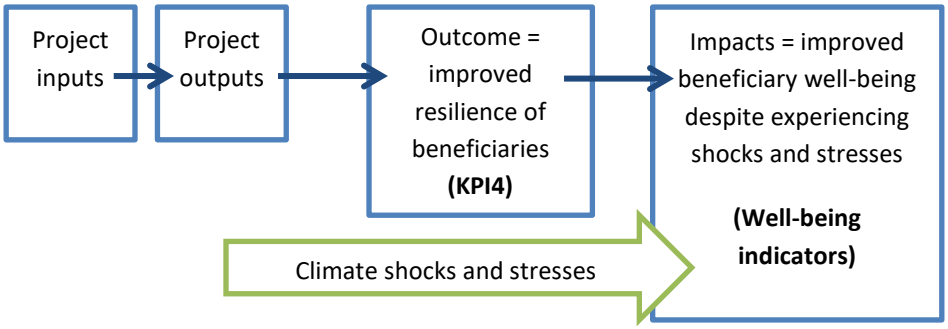
This guidance outlines a step-by-step methodology to help ICF and BRACED projects (i) identify context-specific resilience indicators, (ii) use these indicators to track changes in resilience resulting from project activities, and (iii) use the indicators to report against ICF KPI4. Some of these steps are associated with a range of methods and approaches that involve varying levels of complexity and rigour. For each of these steps, a table is provided illustrating what is required for three different standards: bronze, silver and gold. The bronze standard describes minimum standards for measurement, analysis and reporting as required by DFID. The silver and gold standards describe optional additional measures that may enhance the rigour of resilience monitoring and evaluation (M&E), that can be taken where circumstances allow and where this will add value to a project M&E system in terms of reporting and learning. Where a step is not associated with a table of criteria for bronze, silver and gold standards, a project is expected to follow the recommendations in that step.

Here, resilience to climate shocks and stresses (that may be intensifying as a result of climate change) is considered to be a composite attribute possessed by each individual that represents their **ability to anticipate, avoid, plan for, cope with, recover from and adapt to (climate related) shocks and stresses**. Improved resilience means that an individual is better able to maintain or improve their well-being despite being exposed to shocks and stresses. KPI4 measures how many people have experienced improvements in this attribute as a result of the project that is being monitored.

KPI4 is applicable to projects that target (directly or indirectly) individuals and households. In these contexts KPI4 will be derived from context-specific indicators of resilience at the individual or household level. However, it is also possible to apply KPI4 to resilience projects aimed at institutional capacity building or policy change. This means answering the question 'How many people have had their resilience improved through this increased institutional capacity' or 'how many people have had their resilience improved through this change in policy?'.

At what level in the log-frame/theory of change should KPI4 be measured?

KPI4 will normally be an **Outcome Indicator.** This is because project related change in resilience to climate shocks and stresses is usually an outcome of one or more project activities and outputs. Increased resilience should mean that people are less likely to suffer losses, damages, and declines in their well-being when they encounter a shock or stress. Improved human well-being and a reduction in losses and damages resulting from climate shocks and stresses is the ultimate purpose of climate change adaptation programmes, as measured by the programme impact indicators and shown in Figure 1.



Theory of change (ToC): without the project, beneficiaries would have been less resilient to climate related shocks and stresses and therefore performance of well-being indicators (e.g. income, deaths) would be worse than in the 'with project' scenario

Figure 1. General theory of change for resilience.

Normally, at the start of a project, the indicators from which KPI4 is to be derived represent certain attributes that the project's Theory of Change **predicts** will make individuals less vulnerable to climate related shocks and stresses. Later, if the project monitoring system is sufficiently robust, it should be possible, after the project's outputs have affected a sufficient number of people and if climate related shocks and stresses have occurred, to correlate KPI4 components with actual well-being impacts. At this stage KPI4 can be adjusted to be closer to a proven indicator of resilience. This is an important learning process. Good resilience indicators – measured before a shock or stress occurs - should be significantly correlated with indicators that capture losses, damages and changes in well-being associated with that shock or stress, measured after it has occurred. In other words, resilience indicators should be **predictive** of future changes in well-being resulting from shocks and stresses.

KPI4 measures the resilience of INDIVIDUALS

Resilience as a concept can apply to individuals, households, communities, systems, ecosystems, etc. **KPI4 is concerned specifically with the change in resilience of individuals.** However, it is recognised that the resilience of an individual also depends on the resilience of the household, community, systems and ecosystems in which they live – therefore the context in which the individual lives is very much part of the resilience story we are trying to understand and to measure.

This means that if a project improves the resilience of all members of a household – then all members of the household would be counted. KPI4 counts the resilience of individuals because

there can be large differences, even within the same household, in how individuals are affected by either a project intervention or by a climate related shock or a stress.[1] We are very interested in these differences, and also in the differential outcomes of any project intervention on different categories of individual. As a result of these intra-household differences in resilience and project impacts, KPI4 should always be disaggregated by gender. Disaggregation based on other categories of beneficiary may also be desirable.

KPI4 units, attribution, and dealing with a changing context

There are no agreed units in which 'resilience' is measured. This is because resilience is extremely context specific. Therefore resilience is dealt with as a relative attribute in each specific local context. Individuals can be considered 'more' or 'less' resilient to climate related shocks and stresses as a result of the context in which they live, and of their gender, age, poverty level, type of livelihood, geographical location etc.

A project intervention may make individuals more or less resilient to shocks and stresses. KPI4 is defined in such a way as to take into account the change specifically due to a project intervention:

KPI4 - Number of people whose resilience has been improved as a result of project support

Therefore, we are not measuring the absolute level of resilience – but rather the relative change in resilience due to the project intervention – and specifically the number for whom this change is positive. This means that KPI4 may not necessarily show the trend in overall resilience[2] (whether it is getting better or worse) – because it focuses on the change that can reasonably be attributed to the project.[3] This focus is achieved by choosing to measure specific aspects of resilience that the project targets or is expected to affect (see example in Table 1).

Table 1. Example – choosing aspects of resilience that reflect the project intervention

Project intervention	Possible aspect of resilience to measure[4]
Improved flood early warning systems	Number of men/women using improved flood early warning systems to reduce risks to their lives and/or property
Labour based safety net	Number of men/women accessing the safety net system (or planning to access it if the measurement takes place in advance of the shock)
Drought resistant agricultural techniques	Number of men/women with sustained adoption of the crops/techniques promoted by the project (e.g. exhibiting a sustained behaviour change)

[1] In Bangladesh, for example, of the 140,000 people who died from the flood-related effects of Cyclone Gorky in 1991, women outnumbered men by 14:1.
[2] By overall resilience we mean resilience due to all possible factors – whether they are relevant to the project intervention or not.
[3] Of course the overall trend is very important in the overall project design, and is an important part of the context against which KPI4 should be reported.
[4] In each case the aspect of resilience being measured would be based on the project theory of change backed-up by evidence as described in Steps 2 and 3.

STEP BY STEP GUIDE TO DEFINING AND MEASURING KPI4

1. Identify beneficiaries, shocks and stresses, and their consequences

Describe the resilience context using the DFID Resilience Framework (Figure 2). This is usually done as part of the project design, and should involve a combination of methods including participatory assessments.

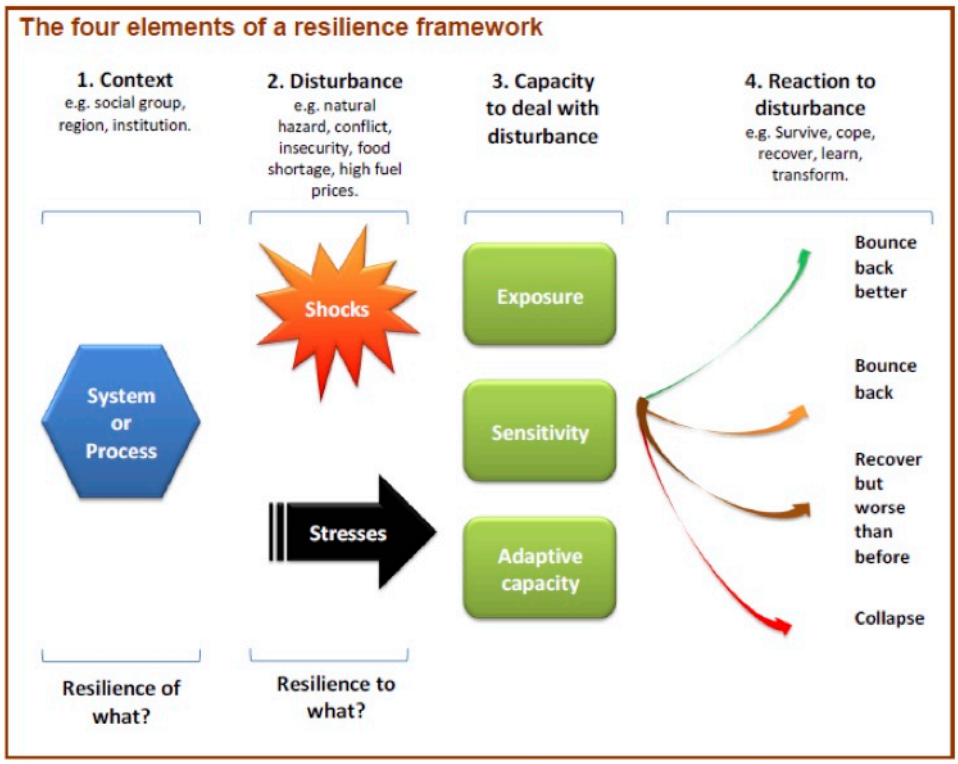


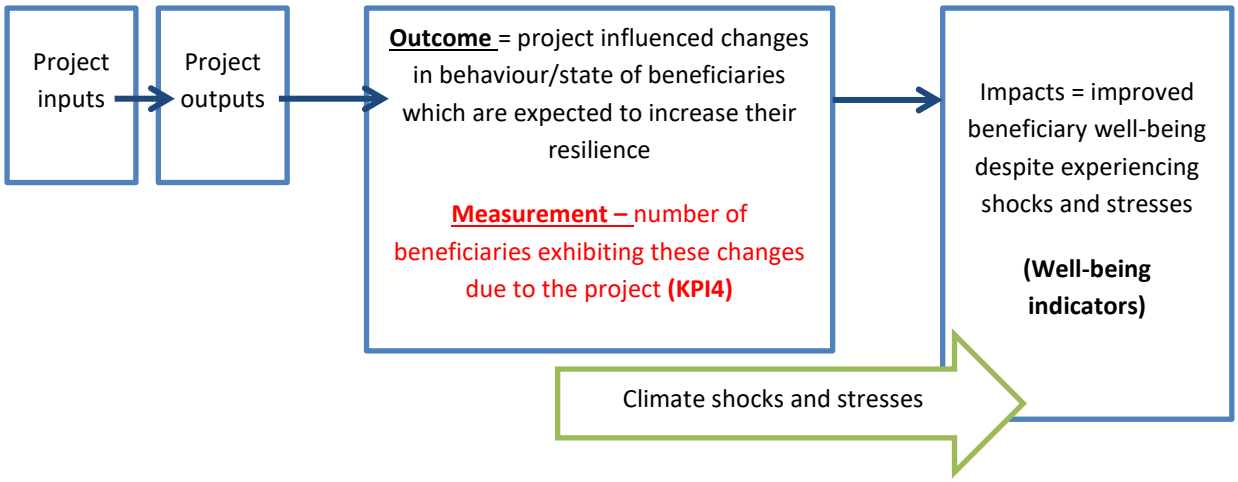
Figure 2. The DFID Resilience Framework.

a. Identify key climate shocks and stresses to which people need to be more resilient (Element 2). This should include existing shocks and stresses and potential future shocks and stresses over timescales relevant to the project. A project may develop indicators to track changes and variations in shocks and stresses, to provide a context for the interpretation of project results. However, such indicators are outside the scope of this guidance on KPI4.
b. Identify key consequences of climate shocks and stresses such as losses, damages and negative effects on human well-being (e.g. increased poverty, worse health outcomes, etc.) (Element 4). The long-term impacts to which the project contributes will be the amelioration of these consequences, represented by indicators that measure changes in human well-being and changes in losses from shocks and stresses. These indicators will be developed and measured as part of the wider project M&E system and are outside the scope of this guidance on KPI4.
c. Identify the key systems and processes (Element 1) on which individuals and households depend, and that influence their resilience to climate related shocks and stresses.

2. Develop a project theory of change

A theory of change should have been developed during the project design phase. If your project doesn't have a ToC you will need to develop one.[5] The theory of change describes the links between project outputs and outcomes, and between outcomes and impacts. It makes explicit the assumptions behind project design. The theory of change should articulate how project outputs will improve resilience, and with what changes (e.g. in behaviour, assets, access to certain resources, etc.). These are the changes that will need to be measured so that a project can report against KPI4, as in Figure 3.

Figure 3 – Illustration of where KPI4 fits in the ToC



A theory of change may be revised throughout the lifetime of a project as new information and learning about resilience becomes available. The theory of change developed during the project design phase therefore might be updated based on the results of any participatory assessments conducted to identify factors important for resilience that will be measured in order to report against KPI4 (see Steps 3 and 4 below).

The next five steps explain how we identify and measure the changes expected to increase resilience. Step 8 explains how we assess the attribution of any change to our project, and Step 9 addresses how to report the results for KPI4.

3. Identify factors affecting resilience that the project is expected to influence

A project's theory of change and/or log-frame should describe the factors that affect the resilience of beneficiaries, and how the project will influence these factors to improve resilience. These will be factors that affect people's ability to anticipate, avoid, plan for, cope with, recover from, and adapt to climate shocks and stresses. These factors, and the actions required to improve resilience, can be identified using a combination of methods, including surveys, questionnaires, interviews, and

[5] Guidance on developing Theories of Change is available here:
http://r4d.dfid.gov.uk/pdf/outputs/mis_spc/DFID_ToC_Review_VogelV7.pdf
http://zunia.org/post/sea-change-cop-ukcip-guidance-note-3-theory-of-change-approach-to-climate-change-adaptation-pro

participatory assessment (Box 1). This should be done during the project design phase. However, this may result in a quite superficial characterisation of resilience (for example based on the understanding of project staff rather than beneficiaries), in which case a more detailed assessment of the factors affecting resilience might be appropriate as part of the development of an M&E system. For example, this might be appropriate where a project indicates that specific outputs will enhance 'coping capacity' or 'adaptive capacity' (see Box 2 for an exploration of the difference between coping capacity and adaptive capacity). In such cases, further participatory assessment of the factors that help people to cope or adapt might be required early during project implementation, so that these factors can be represented by indicators (Step 4) that tell us whether coping or adaptive capacity has improved as a result of the project's intervention.

Participatory assessments might provide information that can be used to refine a project's theory of change, by identifying previously neglected factors influencing resilience, by providing more nuanced narratives about how different aspects of resilience interact, and by providing further detail about the mechanisms that determine who is least/most affected by climate shocks and stresses, and why.

When considering the factors that are important for resilience, that a project will seek to influence, it may be helpful to consider the **dimensions** of resilience (Box 2).This is a way of checking whether all the relevant aspects of resilience that might link project outputs to intended project impacts have been considered. Not all of these dimensions will be relevant in a specific project context, and this procedure is intended to provide some light-touch quality assurance rather than to be prescriptive.

At the end of this step, project M&E staff should have identified a set of factors that are important for resilience, and that are expected to be influenced by the project.

It is also useful to list any factors affecting resilience that the project is unlikely to influence. Changes in these factors might act to increase or reduce resilience in general, and such changes need to be understood to provide context for the interpretation of project results. A discussion of how to interpret project results in the light of wider trends towards reduced or increased resilience is outside the scope of this guidance. However, it is important to identify such trends where possible.

Box 1. Using participatory methods to identify determinants of resilience

Participatory assessment can be used to identify factors that influence resilience, and to prioritise these factors in order of importance. Focus groups, consultations using H-forms (see below) and participatory resilience rankings can be used to understand the 'resilience context' of a project, to identify factors and processes to be targeted by a project, to identify factors and processes that can be measured to determine whether resilience has increased or decreased, and to prioritise these factors in order of importance.

1. Characterisation of Resilience using Focus Groups

(a) Organise a representative series of focus groups covering different respondent types (women, men, youth etc.), livelihood types and geographical spread.
(b) Discuss emerging climate shocks and stresses, and what elements makes some people or households more 'able to cope' than others? While the group should lead the discussion with people making their own suggestions, some prompting may be required to ensure all elements are covered here, it might be useful to use a checklist based on the 'dimensions' of resilience detailed in Step 2.
(c) Discuss the capacity of local institutions to provide support in times of emergency.
(d) Prioritise the elements of resilience (this can be done by drawing each 'element' on a card – and getting

the group to arrange the cards in order of priority on the ground).

(e) For each 'element', get the group to characterise what different levels of 'ability to cope' look like (e.g. use a three point scale of high, medium and low ability). Where different 'dimensions' of resilience are defined, this process might be repeated for each dimension, for example: ability to cope in the short term, ability to adapt in the longer term, ability to access a key resource, etc.

(f) Get the group to consider what the key things that individuals, the community and outside organisations can do to enhance 'the ability to cope/adapt' for each element – this should provide the link between interventions and elements of resilience (it is also an important reality check to ensure the proposed project interventions are relevant to the resilience elements prioritised by the community).

(g) Across a number of such FGs, the results from step (d), combined with information from key informants and past locally relevant experience, and knowledge of the proposed intervention, should be used to identify the elements of resilience to be used to measure KPI4, and to construct appropriate context-specific indicators (Step 3).

(h) Baseline and monitoring data might be collected by getting focus groups to identify how many people in their community are in each level of 'ability to cope'. Alternatively, beneficiaries might be sampled by getting individuals to estimate which level they are in.

2. Use of scale or H-forms

Another way of approaching the gathering of baseline and monitoring data, without the need to define levels in advance, is to use an scale or H-form. This is a form with a horizontal axis running between two extremes (e.g. very low ability to cope and very high ability to cope), which forms the 'H'. Respondents place a cross at a position along the horizontal axis to indicate their own situation. Responses can be converted into categories or scores based on the position of the cross along the horizontal axis. Changes in positions along the axis over time can be assessed to monitor how resilience is changing. Reasons for a low or high score for a particular individual, or general factors that determine whether a score is low or high, can be noted at the appropriate extremes of the 'H', e.g. using cards or post-it notes. These can provide similar information to that generated in activities (b) and (c) above (the latter if people are asked to arrange answers in order of importance). Information similar to that in activity (g) might also be recorded as part of an H-form exercise.

3. Participatory resilience rankings

Well-being ranking is an established technique for enabling a group of key informants to rank the 'well-being' of households in a specific community. It should be possible to use a similar methodology to rank households according to 'ability to cope with climate change'. Such an approach can be used:

(i) To monitor change over time, and interrogate reasons for changes in resilience, thus also providing information on attribution/contribution.

(j) As a starting point for discussion of components of resilience and associated indicators (why are these households at the bottom? What are their key characteristics?, etc.), and thus as an aid to the definition of resilience indicators.

Improved resilience is viewed as an outcome, and improved well-being as an impact, in the resilience theory of change (as shown in Figure 1 above). Participatory well-being rankings are also useful for tracking changes in well-being over time that can be linked (or not) with changes in resilience over time. Well-being rankings therefore complement resilience rankings by allowing us to test (i) a project's theory of change (ii) the appropriateness of the resilience indicators selected, and (iii) the extent to which improved resilience results in improved well-being in the longer term.

Box 2. Dimensions of resilience

A number of studies define 'dimensions' of resilience, which have similarities to the five dimensions or 'capitals' defined in earlier livelihood frameworks. For example, a study by Oxfam GB defines five dimensions of resilience which were applied to a study of disaster risk reduction in Ethiopia's Somali region[6]. A study commissioned by DFID and undertaken by the authors of this guidance reviewed a number of methodologies for measuring resilience, and identified nine, very broadly defined, 'dimensions' of resilience based on these methodologies[7]. These are listed below. Dimensions 1-5 were common to all the methodologies reviewed that defined dimensions of resilience. Dimensions 6-9 represent factors that were identified by a subset of the methodologies reviewed. It is not recommended that these dimensions are used in a prescriptive manner. However, they may be useful as a loose framework for guiding the process of identifying contextual factors that are important in influencing resilience.

1. **Assets,** including physical and financial assets, food and seed reserves, and other assets that can be deployed or realised during times of hardship to help people absorb losses, and recover from stresses and shocks. Debt could be considered as a negative asset.
2. **Access to services**, including water, electricity, early warning systems, public transport, and knowledge and information that helps people plan for, cope with and recover from stresses and shocks, and how vulnerable these services are themselves to shocks and stresses.
3. **Adaptive capacity**, including factors that specifically enable people to anticipate, plan for and respond to changes (for example by modifying or changing current practices and investing in new livelihood strategies). The ability to adapt to changes in any of the other dimensions listed here might also be included.
4. **Income and food access**, including the vulnerability to shocks and stresses of income sources and food supplies (including food prices/ability to purchase or otherwise access food, and the vulnerability of food supply chains to local and remote shocks and stresses).
5. **Safety nets**, including access to formal and informal support networks, emergency relief, and financial mechanisms such as insurance.
6. **Livelihood viability**, in terms of the extent to which an individual's livelihood can be sustained in the face of a shock or stress, or the magnitude of shock or stress that can be accommodated before a livelihood ceases to be viable.
7. **Institutional and governance contexts**, including extent to which governance processes, institutional mechanisms, policy environments, conflict, and insecurity constrain or enable coping and adaptation. It can include community level capacity to cope with and adapt to shocks and stresses and to support those living within it.
8. **Natural and built infrastructural contexts**, including extent to which coping and adaptation is facilitated or constrained by the quality of built infrastructure (e.g. roads), the quality/functioning of environmental systems/natural resources (e.g. health of ecosystems providing livelihoods), and geographical factors (e.g. remoteness) and the vulnerability of the infrastructure to shocks and stresses.
9. **Personal circumstances**, including any factors not covered by other dimensions that might make an individual more or less able to anticipate, plan for, cope with, recover from, or adapt to changes in stresses and shocks. These might include psychological resilience, past experience of coping, personal connections (social capital), health, socio-economic status, etc.

Coping capacity versus adaptive capacity

A commonly used dimension of resilience is 'adaptive capacity', which addresses people's ability to modify their behaviour and (e.g. livelihood) practices to respond to longer-term changes in climate and other phenomena. It is important to consider the relative importance of factors that affect people's ability to cope in the short term, and factors that affect their ability to adapt in the longer term. This will depend on the nature

[6] Hughes, K. 2013. A Multidimensional Approach for Measuring Resilience. Oxfam GB Working Paper. Paper presented at the Expert Consultation on Resilience Measurement Related to Food Security sponsored by the Food and Agricultural Organization and World Food Program, Rome, Italy, February 19-21, 2013

[7] Brooks, N., Aure, E. and Whiteside, M. 2014. Assessing the impact of ICF programmes on household and community resilience to climate variability and climate change. Evidence on Demand for DFID.

of the stresses and shocks faced, and the timescales with which a project is concerned. Coping capacity should not be built at the expense of adaptive capacity where this risks locking people into systems or behaviour that may be more resilient to some shocks (e.g. those faced in the near term) but at greater risk of catastrophic collapse from others (e.g. those to which populations might be exposed in the medium to long term). While participatory assessments may be very effective at identifying factors important for coping capacity (based on recent historical experience), they may be less useful in identifying factors that can help people adapt, due to a lack of historical precedent on which to base such identification. Nonetheless, where climate trends are already well established, factors that have enabled people to adapt to recent changes might be identified.

4. Develop indicators of resilience

Develop indicators that capture the aspects of resilience identified in Step 3 **that the project seeks to address or is likely to influence**. These indicators need to link project outputs with intended project impacts in a way consistent with a project's theory of change and with the overall resilience theory of change (Figure 1). Resilience indicators track the changes that are expected to occur at the outcome level, as a result of project interventions.

Beneficiaries should have a role in the selection and verification of indicators, which will be highly context-specific, and this can be via an extension of the participatory processes associated with Step 3 above. Resilience indicators should clearly link project outputs (the mechanisms through which the project seeks to increase resilience/reduce vulnerability) with the factors that make people resilient, based on the findings of participatory surveys and other methods as detailed in Step 3.

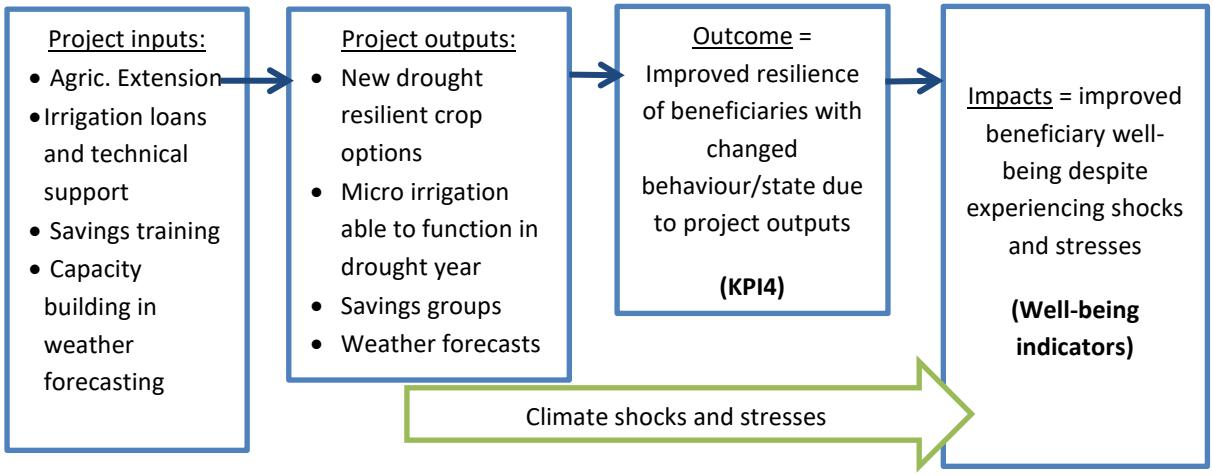
Resilience indicators and their relation to project outputs

Resilience indicators should seek to capture changes in people's behaviour or circumstances that will make them better able to anticipate, avoid, plan for, cope with, recover from, and adapt to the shocks and stresses that they are likely to face in the foreseeable future. As projects will be designed to deliver outputs that (it is assumed) will deliver such changes, measures of resilience might be based on the uptake of project outputs. Such indicators would seek to measure how many beneficiaries (i.e. people receiving support from a project) actually translate that support into the changes in practices or circumstances in which it is intended to result. These indicators might also seek to measure the sustainability of such changes (e.g. will they persist after the project ends?). Box 3 provides an example of the measurement of resilience attributes for a project that promotes the adoption of drought resistance crops and the use of micro-irrigation, and supports the development and dissemination of seasonal or shorter-term forecasts and savings schemes. These measurements are combined into a single indicator of resilience (see also discussion below).

In the example in Box 3, indicators 1-4 effectively measure changes in behaviour to which project outputs are thought to have contributed, and which the research conducted as part of the project design process has indicated should increase the resilience of beneficiaries to climate shocks and stresses. Indicator 5 (current savings) measures a change in circumstances that may be due to a number of project outputs (i.e. participation in the savings groups and income from the micro-irrigation), and which is also expected to contribute to increased resilience in its own right.

Box 3. Example: Project X develops project related resilience measure

Project X has used existing experience and a series of structured qualitative enquiries to identify a Theory of Change. They have identified increasing unpredictability of rain as a major cause of shock and stress. A combination of project inputs have been designed to address this :



Theory of change (ToC): a combination of adopting a drought resilient crop, using micro-irrigation, family membership of a saving group and making use of weather forecasting for deciding when to plant constitutes improved resilience due to the project, which will enable well-being to be maintained in a drought year.

Building on focus group discussions and pilot experience with the project activities, Project X decides to use five resilience indicators that are closely linked to the outputs of the project and can be easily surveyed by asking 'yes/no' questions of beneficiaries. It can therefore count the number of beneficiaries that are:

1. Growing one or more drought resistant crop on > ¼ ha for > 2 years
2. Using micro-irrigation on > 1/10 ha
3. Have used a weather forecast in last 2 years to decide when to plant
4. A family member in a savings group
5. Current savings > $20

Focus group discussions by Project X suggest that the combination of indicators may be important in conferring resilience. It also wants to avoid the possibility of double counting if the same beneficiary fulfils more than one indicator. Project X therefore decides to create a project specific composite resilience index, and as it doesn't have information on which is most important in conferring resilience it decides to weight each equally. It therefore assigns a score of one to each indicator satisfied and zero to any not satisfied and adds these together:

Indicator	Yes	No
1. Adopted one drought resistant crop on > ¼ ha	1	0
2. Using micro-irrigation > 1/10 ha	1	0
3. Have used a weather forecast in last 2 years to decide when to plant	1	0
4. A family member in a savings group	1	0
5. Current savings > $20	1	0
Total project attributable[8] resilience score	**0-5**	

Project X has therefore produced a single measure of predicted resilience, with a range of 0-5, that is closely

[8] Assigning the degree of attribution is discussed in section 8

linked to the changes it is promoting as a project. How this resilience score is used to calculate KPI 4 will be explained in following sections.

Different types of indicators

Indicators are often considered to be either qualitative or quantitative. However, in practice this distinction may be somewhat artificial. Household surveys or focus groups may ask questions that seek to elicit perceptions/opinions from beneficiaries. These are usually considered as generating qualitative data/information. However, a project might convert the qualitative responses to such questions into quantitative data for analysis. For example, beneficiaries may be asked whether they think their new crop combination is significantly more, slightly more, the same, slightly less or significantly less drought resistant than the traditional combination. These answers can be used to assign scores (e.g. from 1-5) to beneficiaries, which can be manipulated quantitatively.

Quantitative indicators, whether measured directly or derived from qualitative information, can be of three types:

1. **Binary,** usually where the answer is yes or no, and a score of 0 or 1 is assigned according to whether or not a beneficiary meets a particular criterion.
2. **Categorical or score based**, based on assigning a beneficiary a score (e.g. 0-3 or 0-5) representing a category or level of resilience (e.g. low, moderate, high). Score-based indicators are discussed in more detail below.
3. **Continuous**, based on measurement of a continuous variable such as household income, time to recover from a previous shock, etc.

All of the above types of indicator can be used to track changes in resilience. In practice, a project may use a diverse mixture of these indicators, all of which can be used to indicate whether an individual has become more or less resilient over time. However, if a project seeks to combine different indicators into one or more composite indices, there are a number of issues that need to be considered, as discussed below.

Individual indicators versus composite indices

A project will need to decide whether it will use composite indices, constructed by aggregating individual indicators, or use individual, disaggregated indicators. The options with respect to aggregation are as follows:

A. **Do not aggregate, and use a number of individual indicators**, each representing a different aspect of resilience that is relevant to the project, which are measured and recorded separately for each individual sampled.

B. **Develop several composite indices**, each perhaps representing a different ***dimension*** of resilience that is relevant to the project, e.g. income & food access, safety nets, access to services, adaptive capacity, etc. (Box 3). See Box 4 for a discussion of the construction of composite indices.

C. **Develop a single composite index**, combining all the elements of resilience that are relevant to the project. This may involve combining individual indicators or a number of already composite indicators. See Box 4 for a discussion of the construction of composite indices.

Where a project employs one or more composite indices, it is strongly recommended that the disaggregated data representing the individual constituent indicators are preserved. This enables the relative importance of individual indicators and the factors they represent to be interrogated, which is important for understanding how and why resilience has changed. This is vital both for learning and for assessing the contribution of the project to individual measured changes in resilience.

Box 4. Constructing and using composite indices

Where a project uses one or more composite indices it may be necessary to aggregate a number of different types of indicator (e.g. qualitative, quantitative, continuous, binary, etc.). This will require the conversion of all the indicators to be aggregated into a common format. This may be achieved in either of the following ways:

1. Convert to scores, e.g. 1-3 or 1-5

Conversion of indicators into discreet scores means that a composite index can be constructed by adding or averaging scores across its constituent indicators. Conversion to scores can be carried out as follows for different types of indicators:

- **Categorical indicators** can be created from qualitative information by associating different answers to survey questions with different scores. For example, a survey might ask beneficiaries how well they think they would cope with a drought of a particular severity if it occurred within the next few months, and score them from 1-5 based on which of 5 options they gave as an answer. The horizontal axis on an H-form can be divided into a number of equal divisions, and scores assigned based on the division into which a beneficiary's answer falls.
- **Binary indicators** can be given a score of 1 or 0 and combined into composite indices as in the Project X example in Box 3 above.
- **Continuous variables** can be converted into scores by dividing the actual or possible range of a variable into a number of divisions (e.g. 5). A beneficiary will then be assigned a score (e.g. 1-5) based on the value of the variable they report (e.g. household or individual income, value of certain assets, time spent collecting water etc.). The divisions used for a continuous variable should be the same for baseline and subsequent sampling.

The above techniques mean that qualitative, binary and continuous indicators can all be converted into scores (essentially becoming categorical indicators) that can be summed or averaged to create the composite index. Depending on the nature of the individual indicators used to construct the index, the resulting scores might be associated with levels of resilience (e.g. very low, low, moderate, high, very high). **However if all the indicators that make up the composite indicator are considered to have the same weight – then they should be converted to the same range before they are added or averaged (i.e all with range 0-1, or all with range 1-3 or all with range 1-5).**

2. Convert into a value within a continuous range, e.g. 0-1

Another way of harmonizing different indicators is to standardize them so that they all represent a range of values from, for example, 0-1 or 0-100. This can be done by dividing indicator values (as associated with different beneficiaries) by the maximum value in the range (to yield a range from 0-1). This maximum value might be a maximum possible value (e.g. number of days in a year or season when a beneficiary had two meals), or a subjective reference value (e.g. income of wealthiest household). This technique works well for continuous variables and can also be applied to categorical or score based indicators or composite indices constructed from these categorical indicators.

Once all the relevant indicators have been standardized to the same range, they can be summed or averaged. Depending on the nature of the individual indicators, thresholds might be defined above or below which beneficiaries are assessed as resilient.

Weighting indicators within a composite index

If composite indices are to be used, project staff will need to determine how their constituent indicators should be weighted, based on their relative importance. This identification of weights might involve statistical assessment, based on the strength of the correlation between individual resilience indicators and the impact indicators that are relevant to the project. However, weights are more usually assigned on a subjective basis according to the perceptions of beneficiaries, project staff, or other stakeholders or experts. No/equal weighting might be applied where there are no strong grounds for judging some indicators to be more important than others. Multiple indicators that are strongly related to each other will represent a de facto weighting in favour of the factor(s) they measure: in the example in Box 3 all five indicators are given equal weights, but there are two indicators related to savings, meaning that savings will be weighted as more important than the factors represented by the other indicators.

General considerations when developing indicators

The following general points should be kept in mind when developing indicators:

a. For the purposes of reporting against KPI4 the indicators need to focus on those aspects of resilience **influenced by the project**, and not all the possible factors that might affect resilience. However, monitoring other aspects or dimensions of resilience not directly targeted by the project might be useful for understanding unexpected results (Step 5), and for understanding changes to the wider resilience context.

b. For formal reporting, KPI4 only requires that indicators measure whether resilience has improved. Normally projects will have to decide what change in indicator score constitutes sufficient improvement to report against KPI4 (i.e. to say that resilience has increased) for a given indicator in a given context. This may involve estimating the change in numbers exceeding a specific threshold before and after the project. However, while collecting data for reporting against KPI4, projects may collect data that can be analysed in a range of ways for additional learning. For example, Project X counts the numbers crossing different resilience thresholds, but could also calculate average resilience scores before and after the project, and the (different) percentage improvements for males and females or for other types of beneficiary (see Box 6 below). All this information can be helpful for learning about project outcomes, in addition to reporting against KPI4.

c. Different indicators might be appropriate for measuring changes in resilience for different groups of beneficiaries (e.g. differentiated by gender, livelihood, etc.). This does not preclude later aggregation to calculate overall numbers with improved resilience, or aggregation of numbers moving from one resilience category to another (e.g. medium to high).

d. When aggregating numbers with improved resilience due to different overlapping components of a project, some thought is needed to avoid double counting.

e. In the case of indicators based on continuous variables or categories, the crossing of a particular threshold may be required in order to say that resilience has actually improved. For example, a small increase in water availability may be insufficient to improve the resilience of cropping systems if it means that critical deficits are still experienced during critical periods. In this example, resilience might be said to have improved only if water availability exceeds a certain threshold, which might be measured in terms of quantity (e.g. if water is stored locally for irrigation) or duration (e.g. where water is made available during certain periods of deficit by releasing it from regional storage facilities such as dams).

Table 2 sets out the criteria for meeting Bronze, Silver and Gold standards in indicator development.

Table 2. Different standards for the identification and construction of indicators.

	Bronze	Silver	Gold
Type of indicator and evidence base	Indicators based on ToC informed by key informants with limited empirical evidence or participatory information from a representative sample of potential beneficiaries. Indicators may measure direction of travel only (e.g. subjective indicators that ask beneficiaries whether they are more or less vulnerable with respect to different factors).	Indicators based on a ToC informed by either empirical evidence (e.g. previous experience in a similar context of the resilience outcome indicators being correlated with well-being impact) **OR** informed by robust participatory inquiry with representative samples of future beneficiaries.	As Silver, with indicators informed by a combination of empirical and participatory evidence.
Weighting of indicators	All indicators given equal weights (composite indices) or treated as equally important (individual, disaggregated indicators).	Relative importance of indicators considered, with weights or importance assigned based on subjective criteria.	More quantitative approach to assigning of weights, e.g. through statistical assessment of proportion of impacts (reduced losses, improved well-being) predicted by each indicator and/or robust evidence from participatory enquiry.
Thresh-olds and relation-ships between indicators	Indicators are assumed to be independent and incremental (i.e. higher score means more resilience; improvement in larger number of indicators means bigger improvement in resilience).	Evidence that project has considered importance of thresholds and coupling between indicators (e.g. improvement required in multiple related indicators for resilience to be said to have improved).	As Silver, with empirical evidence used to identify thresholds and sets of coupled indicators.

5. Establish how to identify unexpected consequences

Project M&E systems should include mechanisms for identifying and tracking potential 'unintended consequences' of the project on resilience (Box 5). At the very least these should include provision for open-ended qualitative questioning of beneficiaries at regular intervals, e.g. using key informants to ask if any unintended consequences have been noticed.

Unintended consequences are often discovered at the evaluation stage. However it is far preferable to identify, mitigate and monitor any unintended consequences from early on.

If some **potential unintended consequences** are identified in advance these might be tracked using additional indicators. For a project to demonstrate increased resilience as required by KPI4, improvements in indicators associated with targeted aspects of resilience would need to be accompanied by evidence that the project had not resulted in a deterioration in other aspects of resilience due to 'unintended consequences'. This might be achieved by using 'unintended consequences' indicators or by obtaining beneficiary feedback on the presence or absence, nature and extent of any unintended consequences (or a combination of both).

Box 5. Example – potential unintended consequence of Project X

Project X is promoting both more resilient food crop production and participation in savings groups. A potential unintended consequence was identified in project planning, namely that households might sell small amounts of stored crops on a fortnightly basis in order to meet the savings requirements of the savings groups, leading to a reduction in level of crop stored, and therefore undermine resilience.

Therefore Project X introduced an additional factor into its monitoring – the amount of crop remaining in storage at the start of the hungry period. This enables Project X to track whether saving groups participants end up with less grain in store and factor in this potential unintended consequence into its programming.

Treatment of unintended consequences for bronze, silver and gold standards is summarised in Table 3.

Table 3. Different standards for addressing unexpected consequences and confounding factors

	Bronze	Silver	Gold
Unintended consequences	Evidence that unintended consequences have been considered, e.g. at start of project with follow up qualitative assessments	Clear mechanism for tracking unintended consequences with regular review	Tracking unintended consequences using indicators developed for this purpose

6. Develop a sampling methodology

Most projects have identified beneficiaries – these may be people living in the geographical area covered by the project, particular types of individual or household, or people involved in one or specific project activities. Projects need to know the number of their target beneficiaries and they will need to identify a sample of their beneficiaries at intervals in order to measure changes in resilience indicators over time.

Projects do not need to survey every individual, but need to make sure the sample chosen is representative and of sufficient size that results may be scaled up to the beneficiary population as a whole with the required level of confidence. Projects should seek statistical advice on sample frames and sample numbers, as well as on the use of different sampling techniques used for large-scale household or individual surveys, panel surveys that track the same individuals over time, and/or focus group approaches that collect more qualitative data. The sampling approach selected,

including the sample size calculation will have implications for how the number of people with improved resilience is counted, as discussed below in Step 8.

Projects will need to identify how frequently they will sample beneficiaries to measure changes in resilience using the indicators developed under Step 4. At the very least, projects will need to gather baseline data before or very close to the start of the project, and a further set of data at the end of the project for comparison with the baseline data. However, more frequent sampling during a project's lifetime may be desirable, where resilience indicators are expected to exhibit changes on sufficiently rapid timescales. Such sampling might be done annually.

Continuing to monitor beneficiaries after the project has ended (ex-post) is useful to test whether any improvements in resilience have been sustained, and to examine the longer-term influence of a project. It is conceivable that some changes in resilience may not be apparent until after a project has ended, making ex-post monitoring and evaluation essential.

Where resilience indicators are to be compared with impact indicators (an issue that is outside the scope of this guidance), the latter might need to be measured after a project has ended because of the timescales associated with the evolution and impact periods of some climate stresses and shocks. Table 3 provides guidance on sampling intervals for different measurement standards.

Quantitative measurement of KPI4 should be complemented by some qualitative explanatory inquiry on stakeholder perceptions - to understand the reasons why changes in the predicted elements of resilience did or did not actually contribute to improved well-being and why.

Measurement of resilience indicators should ensure that data can be disaggregated so that results may be examined for different beneficiary categories. At the very least data should be disaggregated by gender. However, there may be systematic differences in resilience, and in the extent to which a project improves resilience, between other categories of beneficiary. These categories might be based on age, location, livelihood, or other social, economic or cultural differences (Table 4). However projects should note that if they wish to analyse and present data disaggregated beyond gender, this is likely to require significantly larger sample sizes. Statistical advice should be sought on sample sizes.

Table 4. Different standards for sampling

	Bronze	Silver	Gold
Timing	Baseline and end	Include an ex-post measurement	Include one or more ex-post measurements
Disaggregation[9]	Gender	Gender + other pre-determined classes	A range treated as independent 'explanatory' variables

[9] With a greater level of disaggregation the survey sample size will need to be larger – statistical advice should be sought.

Counter-factual	Before/after	Use of some mechanism to compare 'with/without' such as a phased intervention approach (e.g. where some beneficiaries start receiving project inputs at an earlier stage than others)	Some experimental or quasi-experimental design.

7. Calculate numbers of individuals with improved resilience as measured by indicators relevant to project activities and outputs

This step describes a number of approaches for calculating the numbers of people with improved resilience as measured by project-relevant indicators. These indicators measure changes in aspects of resilience targeted by or potentially influenced by the project (these aspects of resilience may also be influenced by factors outside the project). They will include indicators intended to capture unexpected consequences as described in Step 5. The resilience of some individuals may increase, while that of others decreases. What is being reported in KPI4 is the net change (i.e. numbers with improved resilience minus numbers with worsened resilience).

The approach selected for calculating the numbers of people with improved resilience will depend on the sampling methods and types of indicators used. Different ways of calculating numbers with improved resilience will be needed depending on whether data are collected using panel/ longitudinal studies that sample the same individuals over time, or random sampling that involves different individuals for each sampling time. The method of calculation will need to be modified further depending on whether the project employs multiple indicators, multiple composite indices, or a single composite index. The calculation of numbers with improved resilience for different sampling methods, and different approaches to aggregation, is discussed below.

This step does not address the extent to which the measured changes can be attributed to the project; this issue is addressed below in Step 9.

1. Panel data / longitudinal studies that sample the same individuals

Where the same individuals are sampled over time, it is possible to look at how the resilience of these 'representative' individuals changes between two sampling period. Given a sufficient sample size, the proportion of sampled individuals with improved resilience can be assumed to represent the proportion of beneficiaries with improved resilience, allowing absolute numbers with improved resilience to be estimated. This process can be repeated for different groups of beneficiaries such as men, women, different livelihood groups or age cohorts, etc. As indicated in Step 7 above, statistical advice should be sought on appropriate sample sizes, with larger samples being required where data are to be disaggregated.

Different approaches will be required for the analysis of panel data depending on the nature of the indicators used, as discussed below.

A. Single indicator or composite index

Where a single composite index is used to measure resilience, KPI4 is calculated from the number or people in the sample showing a sufficient change in indicator value or index score in the desired direction, minus the number showing a change in score in the opposite direction.

B. Multiple composite indices or small number of individual indicators

Where more than one composite index or a small number (e.g. <5) of individual indicators is used, the number of people in the sample with improved resilience might be the number showing an improvement in one or more index/indicator and no deterioration in the others, minus the number showing a deterioration in one or more index/indicator and no improvement in the others. Individuals who show a mixture of improvement in some indices/indicators and deterioration in others should be viewed as having neither improved or reduced their resilience, and should not be included in the calculation. However, their numbers should be recorded.

This methodology might be refined where there are grounds for arguing that deterioration in some indicators/indices is outweighed by an improvement in others. This might be based on the numbers of indicators showing improvement/deterioration, or on the relative importance of different indices/indicators. These grounds will depend strongly on context and the nature of the indicators used.

C. Multiple disaggregated indicators (large number)

Where a large number (e.g. ≥5) of individual indicators is used, a practical approach to establishing whether resilience has improved for a beneficiary is to examine whether improvements are seen in a minimum number of indicators X, with deterioration in a maximum number of indicators Y. The values of X and Y should be set by project staff, based on their understanding of the aspects of resilience represented by the indicators. If the factors represented by the indicators are such that resilience improves incrementally for each indicator that shows an improvement, then (project-relevant) resilience may be said to have improved as long as X is greater than Y.

However, the different factors that contribute to resilience might interact in a non-linear manner, meaning that indicators do not represent incremental improvements in resilience. In such cases, X might be significantly greater than Y, and a necessary condition for improved resilience might be that a set of 'core' indicators show an improvement or remain stable. These core indicators might be related to each other in such a way that an improvement in one indicator only translates into improved resilience if it is paired with improvement or stability in one or more other indicators. For example, an improvement in a beneficiary's access to a certain resource (e.g. grazing land) might only improve their resilience if the quality of that resource is maintained (e.g. sufficient pasture is available) and their access does not bring them into conflict with other users (e.g. conflicts over access/use are rare).

Whether indicators can be treated as demonstrating incremental improvements in resilience, or whether more complex relationships between indicators mean that improvements must be seen in a core group of indicators, must be judged by project M&E staff. Once staff have considered these context-specific factors to determine how to define improvements and deteriorations in resilience,

they can calculate the net number of beneficiaries with improved resilience in a similar manner to A and B.

2. Periodic surveys

A succession of random representative surveys, collecting resilience indicator information from different people/households at different points in the project cycle, can tell us how many people are at a certain level of resilience or within a certain resilience category (e.g. low, moderate, high) at a given point in time, and therefore how overall numbers in these categories change over time. However, they do not allow us to track changes in the resilience of particular individuals over time as we would in a longitudinal study. Neither can we add changes in the numbers of people in different categories to calculate numbers with increased or decreased resilience across the entire range of categories, due to uncertainties about the way people move between categories. For example, if the number of people in the low resilience category decreases by 100 and the number of people in the high resilience category increases by 100, is this the result of 100 people moving directly from the low to high category, or of 100 people moving from the low to moderate category, and a further 100 moving from the moderate to high category? Numbers with increased resilience would be twice as great in the latter case.

The most practical way of measuring numbers with improved resilience through the use of periodic random sampling is to define a single threshold and estimate the net change in numbers above this threshold between two sampling periods. This will be the number with improved resilience that can be used for reporting against KPI4. This approach is illustrated for Project X in Box 6.

This 'net change' in resilience may mask significant changes in individual resilience:

- If some beneficiaries fall below the threshold as others rise above it, project staff may want to estimate how many beneficiaries have crossed the threshold in each direction – not just the 'net' number;
- Project staff may want to know by how much individual beneficiaries have improved (or reduced) their resilience, not just whether, and many, beneficiaries have crossed a single, fixed threshold.[10]

Beneficiaries may experience improvement or deterioration in resilience without crossing the threshold, meaning that the use of a single threshold is likely to underestimate changes in resilience. Longitudinal studies are much better at revealing nuances of change over time for different categories of beneficiary.

3. Measuring 'direction of travel' in a sample survey

Within a survey, in addition to collecting data representing the values of resilience indicators in a particular point in time, it is possible to ask supplementary questions regarding whether a particular indicator is increasing, staying the same or decreasing (e.g. has the amount of money you have saved increased, decreased or stayed the same since this time last year?). This type of question is particularly useful for KPI4, as it provides direct information on the numbers who report

[10] There may also be a danger of concentrating on the 'quick wins' just below the threshold, which are easy to get above it, rather than the more intractable vulnerable categorise.

improvements in resilience and in resilience indicators. This 'direction of travel' information can be used to show perceived changes in resilience in a single survey, or to triangulate resilience indicator data from a series of surveys at different times – perhaps providing an indication of how many beneficiaries are becoming more resilient, staying the same, or becoming less resilient, to help explain the net number crossing a threshold as described above.

Results from 'direction of travel' questions can also be used to estimate KPI4 directly. However, project staff will have greater confidence in their measurement of resilience where questions on the 'direction of travel' are used to complement quantitative indicators such as those described above. Used in isolation, 'direction of travel' information would qualify a project for the bronze rating in terms of calculating changes in resilience. If used in isolation, a context specific decision would need to be made on how many indicators would need to move in the 'right' direction to indicate an improvement in resilience as relevant to the project, and thus be counted for KPI4.

Box 6. Example - Project X calculates numbers of individuals with improved resilience as measured by indicators relevant to project activities and outputs, represented by a scoring system

We saw in Box 3 how Project X had constructed an individual's resilience score ranging from 0-5. Project X, following statistical advice, conducted a representative sample survey at the beginning and end of the project of its 10,000 beneficiaries. From these surveys it was able to estimate the number of its beneficiaries in each resilience score category at the baseline and end of the project:

Resilience score	Number of individuals			
	Baseline		End line	
	Female	Male	Female	Male
0	2,000	1,000	500	500
1	2,000	1,000	500	500
2	1,000	1,000	1,000	1,000
3	250	750	2,000	1,000
4	250	750	1,000	1,000
5			500	500
Total	**5,500**	**4,500**	**5,500**	**4,500**

Project X decides that to be considered significantly resilient an individual should have a resilience score of three or more. It therefore calculates that at the baseline only 500 females and 1,500 males of its 10,000 beneficiaries were above this threshold. However by the end of the project 3,500 females and 2,500 males are above the threshold. Therefore Project X estimates that 3,000 females and 1,000 males had improved resilience from below to above the threshold measured by its resilience score. Estimates of attribution of this change to Project X are discussed in the next section.

Note: In addition to just counting the numbers crossing a resilience threshold, the figures can tell us much other interesting information. For instance the average scores at the baseline and end line can be calculated and the percentage increase for females and males calculated.

4. Estimating number of individuals from household surveys

An issue for many projects will be how to calculate KPI4 resilience data for individuals using data from surveys conducted at the level of the household.

There will usually need to be a number of context specific assumptions made when estimating individual numbers from household survey data. Some of these assumptions can be informed by questions in the household survey – such as the numbers in the family, ages, sexes etc. Some other assumptions will require qualitative enquiry and perhaps some detailed intra-household investigation.

At the most basic (bronze) level, if a household reports a change in resilience, information on household size and composition can be used to estimate numbers with improved resilience. It is important to estimate numbers and sexes from the actual sample households showing improved resilience – rather than multiplying up from the average household composition across the whole area – as households with increased resilience could be bigger or smaller, or with more or fewer beneficiaries of a particular type (e.g. female) than the average.

At the next level (silver), the calculations for bronze would be complemented with qualitative information on how different resilience indicators affect different household members. For example, it might be found that only women are involved in savings groups, and the resilience benefits from their participation only benefit the woman involved and their pre-school aged children. Therefore only these would be counted in relation to this indicator. In another example, a safety net might comprise a school feeding programme for children at primary school in times of shock. Qualitative inquiry might be required to assess whether the benefits from this also extended to other family members (more family food for everyone else) or not – and the calculation done accordingly. In yet another context it might be found that improved household level resilience indicators affect all household members more or less equally, and therefore the estimates made at the bronze level still hold true – but with stronger supporting evidence).

At the gold level some additional intra-household individual quantitative data collection and analysis would be used to track actual expression of resilience indicators at the individual level – preferably in relation to actual shocks and stresses.

Table 5. Different standards for calculation of numbers with improved resilience

	Bronze	Silver	Gold
Survey type	Simple direction of travel survey showing numbers with resilience indicators improving, staying the same, deteriorating	Combination of change in numbers exceeding a threshold and direction of travel survey information Or, panel/longitudinal tracking of resilience indicator change.	As silver but within an experimental or quasi-experimental design
Calculation of individual numbers from	Simple multiplication from numbers and sexes in households exhibiting	As bronze, but numbers adjusted or ratified by qualitative intra-household	Intra-household data either tracked individually (e.g. in panel survey) or overall

household survey data	increased resilience indicators	information	numbers adjusted through quantitative intra-household data collection and analysis.

8. Attribution - estimate numbers with improved resilience as a result of the project

Once the number of people[11] with improved resilience based on project-relevant indicators has been calculated (Step 7), the extent to which such improvements can be attributed to the project – directly or indirectly - needs to be addressed. At the very least this should consist of a convincing narrative that links measured changes in resilience to a project's theory of change. This should be based at least in part on participatory methods using beneficiary perceptions and feedback that address why measured changes in resilience as represented by the indicators developed under Step 3 did or did not occur.

A (hypothetical) **counterfactual scenario** could be presented describing the situation that would be expected to pertain if the project had not been implemented. This might simply compare the situation before and after project intervention(s), with the situation before the project representing the counterfactual. However, this needs very careful interpretation – as so many other elements are likely to be changing (including the presence or absence of climate shocks over a particular period), and so it is difficult to attribute differences in resilience as represented by relevant indicators purely to project interventions. In such a case, an argument should be presented as to why resilience would not have improved anyway, for example due to other factors or processes outside of the project context (e.g. government investment, changes in the wide economic context, and improvement in climatic conditions, etc.).

When a project is introduced in stages across an area it may be possible to compare the situation (and the resilience as represented by relevant indicators) of beneficiaries at different stages of intervention. Comparisons can be made between beneficiaries at earlier stages and those at later stages, with the former representing a type of counterfactual.

Some projects might employ a more experimental approach such as that of a randomised control trial (RCT). Control groups should have similar characteristics to beneficiaries and be exposed to the same stresses and shocks. Assessment of the resilience of control groups might involve qualitative narratives bolstered by secondary data/evidence, or the tracking of resilience among control groups using similar indicators to those applied to the beneficiaries (although this might present practical and ethical challenges). Panel surveys might also be employed, but specialised advice should be sought on how to conduct these for such a purpose. The instances in which rigorous comparisons based on randomised control trial methodologies are applicable are expected to be rare. Stern et al. (2012) conclude that only some 5% of development programmes are suitable for RCTs, although such approaches are increasingly popular in the field of development (see Box 7 for some key references on the use of control groups and RCTs). It should be stressed that most projects are not expected to use control groups. Rather, this is an option whose feasibility can be explored if it is viewed by project staff as potentially realistic and useful.

[11] Disaggregated by gender and possibly other categories

Box 7. Key references on the use of control groups and randomised control trials

Barahona, C. 2010. *Randomised Control Trials for the Impact Evaluation of Development Initiatives: A Statistician's Point of View*. ILAC Working Paper 13.

Gilbert, N. 2013. International aid projects come under the microscope: Clinical-research techniques deployed to assess effectiveness of aid initiatives. *Nature* 493, 462-463.

Humphreys, M., de la Sierra, R. S. and van der Windt, P. 2012. *Social and Economic Impacts of Tuungane: Final Report on the Effects of a Community Driven Reconstruction Program in Eastern Democratic Republic of Congo*. Columbia University.

Stern, E., Stame, N., Mayne, J., Forss, K., Davies, R. and Befani, B. 2012. *Broadening the Range of Designs and Methods for Impact Evaluations: Report of a study commissioned by the Department for International Monitoring & Evaluation.* DFID Working Paper 38.

Using some or all of the above methods, project staff should estimate what proportion of the people with improved resilience (as measured by the project-relevant indicators) can be said to have experienced improved resilience ***as a result of the project*.** For example, what is the difference in the percentage of people with improved resilience based on these indicators in target and comparison groups? What proportion of people providing feedback attribute improved resilience (partly or wholly) to assistance provided by the project? Some projects might choose to survey beneficiaries to calculate the level of contribution from a project. This might be done by asking beneficiaries whether the project contributed 'not at all', 'a little', 'somewhat', 'a lot', or 'exclusively' to any measured improvements in resilience. Other projects might seek to express the contribution of a project in percentage terms, as illustrated in the example Box 8 below.

Attribution-related questions such as those identified above should be built into any relevant questionnaires, survey forms and reporting templates. There may need to be some intra-household adjustment (or verification) of household survey data as described in the preceding section and illustrated in the example in Box 8.

Of course, any deterioration in resilience resulting from the project should also be addressed in a similar manner, based on the main project-relevant indicators and any indicators designed to capture unintended outcomes.

The information derived from such questions, or from comparisons with control groups, can be used to adjust the overall number with increased resilience as calculated in Step 7, to provide a figure for numbers with increased resilience that can be attributed in whole or in part to the project.

Box 8. Example – Project X looks at attribution

Project X has already calculated that a net figure of 3,000 females and 1,000 males have increased resilience as measured by its project specific index. However it is aware that other NGOs and the government are also working on similar activities in the same area (introducing drought resistant crops, savings groups etc.). Project X estimates that it is the biggest intervention in these sectors and that about 50% of the change might be attributable to them, and 50% to interventions by other organisations. To check this it also organises a number of focus groups in the area to discuss the changes (e.g. crop adoption, saving group participation etc.) and what has motivated individuals to change their behaviour. The focus groups confirm that in about 50% of cases, Project X was the main or only instigator of change, whereas in the remaining 50% other organisations could claim the credit. The focus groups also concluded that, although female resilience had generally benefitted more from the interventions, this hadn't been disproportionately due to the activities of Project X than the other actors, and therefore the same attribution % should apply to both males and females.

Therefore project X decided that it could claim 50% of the credit for increased resilience for both the females and males. It therefore reported that while 3,000 females and 1,000 males had increased measured resilience, of these, 1,500 of the females and 500 of the males were estimated to be mainly due to its project activities.

Table 6 details the different standards for addressing project contribution to improved resilience.

Table 6. Different standards for addressing attribution.

	Bronze	Silver	Gold
Attribution narrative	Simple explanation of how & why resilience has changed by project staff	Participatory enquiry based explanation of how and why resilience has changed. Include those who failed to benefit.	Participatory enquiry based explanation complemented by other evidence, e.g. timing of changes in factors/processes represented by indicators in relation to project activities/ outputs. Include those who failed to benefit
Assessment of contribution	Project 'contributed to' improved resilience of X number of people	Qualitative description of extent to which project contributed, e.g. significantly contribution, one of several factors, resilience would not have been improved without project; describe for different groups of beneficiaries	Quantitative characterisation that indicates the % of the total numbers with improved resilience that can be attributed to the project and/or the degree of change that can be attributed to the project.
Counter-factual	Before/after	Use of phased intervention approach to examine differences in resilience (and if possible impacts) across groups at different levels of intervention for different sampling periods.	Some experimental or quasi-experimental design (e.g. use of control groups, areas or populations).

9. Report numbers with improved resilience as a result of project support (KPI4)

To report against KPI4 a project needs to provide a figure for the **number of people whose resilience has been improved as a result of project support (disaggregated by gender).**

The number reported is the number with improved resilience linked to the project (numbers calculated in Step 7 and adjusted as described in Step 8) minus the number with reduced resilience linked to the project as a result of unintended consequences (Step 5).

Along with this headline number, it may be useful (for evaluation and learning at both the project and programme level) to report other information. Some projects might disaggregate their numbers based on categories other than gender (e.g. age, livelihood, location, etc.[12]), and add comparative information on which categories have changed most or least. This could be backed-up by explanatory information from qualitative methods.

Where a project has developed methods for measuring the degree of change in resilience (e.g. based on a simple or more complex scale), numbers of people moving from one category of resilience to another, or whose resilience has changed by more than X points, might be reported. It may also be interesting to look at the individual indicators that make up any composite indices. For example, which indicators have contributed most and least to the measured changes in resilience? This may yield information on which component of a complex project has been most effective in building resilience.

A description might also be given of those in the target area who failed to benefit from the project, with an explanation as to why this was the case.

Reporting of KPI4 should also be accompanied by some contextual information detailing how factors driving resilience that are not related to the project are changing.

Table 7 summarises the KPI4 reporting requirements for bronze, silver and gold standards.

Table 7. Different standards for reporting against KPI4

	Bronze	Silver	Gold
Headline indicator	Number	Number	Number
Categories of resilience	Improved, same, deteriorated	A simple scale	A more complex scale with the ability to divide into explanatory variables
Disaggregation	Gender	Gender + number of pre-determined categories	Gender + other categories that have been found to be associated with, systematic, statistically significant differences in indicators/ scores, based on quantitative

[12] However it should be noted that this may require increased sample size.

			assessment of indicator data
Those failing to benefit	Not required	Identify those unable to benefit from the project in area housing target population.	Quantify those unable to benefit from the project (i.e. how many people); how has their resilience changed (qualitative description or tracking using equivalent/ comparable indicators to those used for beneficiaries)
Characterisation of wider resilience context	Simple description by project staff of process and trends influencing resilience at large (i.e. outside of project context)	Estimate direction of change for processes and trends influencing resilience at large (i.e. outside project context)	Quantitative description of processes and trends influencing resilience at large (i.e. outside project context) with narrative of how beneficiaries' experiences differ from wider context

Contacts

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<table>
<tr><td>Short title</td><td>ICF KPI 5: Number of direct jobs created as a result of ICF support</td></tr>
<tr><td>Type of indicator</td><td>Cumulative (individual years summed to total): report annual in-year totals only against each milestone. These annual in-year totals should then be summed across milestones to give a cumulative total for the current spending review period (2011/16).</td></tr>
<tr><td>Key reporting requirements</td><td>Below is a list of key reporting requirements to keep in mind when making your returns. Further details are available in the text below:

<table>
<tr><th>Requirement</th><th>Summary</th></tr>
<tr><td>Is this a DRF indicator?</td><td>No</td></tr>
<tr><td>Available for reporting?</td><td>Yes</td></tr>
<tr><td>Methodology changes?</td><td>No – however clarification on attribution</td></tr>
<tr><td>Units</td><td>Absolute number of direct jobs</td></tr>
<tr><td>Attribution</td><td>Pro-rata share of public funding</td></tr>
<tr><td>Disaggregation to be reported in Knowledge Platform</td><td>• Gender</td></tr>
<tr><td>Disaggregation not reported in Knowledge Platform</td><td>• Skill level (skilled unskilled)
• Contracts (have contract/don’t have contract)</td></tr>
</table></td></tr>
<tr><td>Technical Definition / Methodological summary</td><td>This indicator aims to measure jobs created directly by ICF funded projects and programmes, disaggregated by men/women, skill level and whether employees have contracts.

The creation of unskilled jobs will be used as a proxy for employment which is accessible to the poor, who by definition have less access to education and opportunities. This will be distinguished by level of education of the employee (i.e. jobs which do not require graduation from primary school will be classified as unskilled employment, those jobs which require graduation from secondary school, or some on the job apprenticeship will be regarded as skilled). Contractual as well as non-contractual employment will be counted as a measure of formal/informal employment, and to ensure situations such as self-employment by women in the solar industry are included.

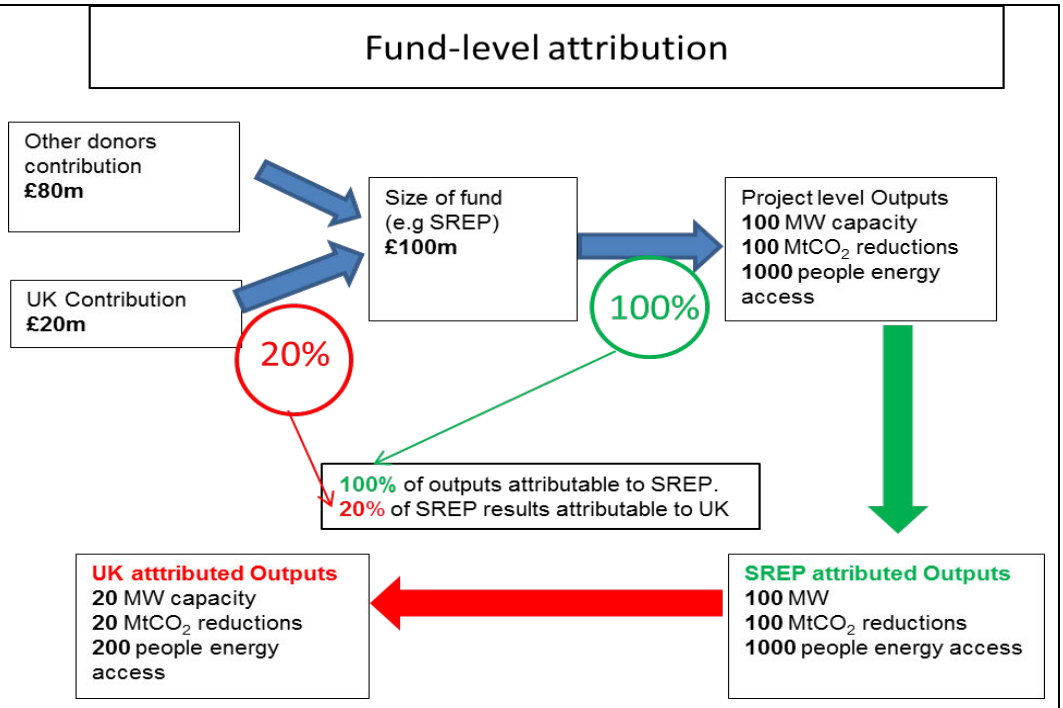
The number of new jobs created as a direct result of ICF support will be reported as annual totals and summed to give a cumulative total for the life of ICF funding.

The International Labour Organisation (ILO) and United Nations Energy Programme (UNEP) define green jobs as ‘any decent job that contributes to preserving or restoring the quality of the environment, including employment in green industries, in green occupations, and in environmental jobs.

1. Employment in green industries: Jobs in low carbon development focus on employment in green industries, defined as all jobs in green sector enterprises, or all persons who were employed in at least one green enterprise, whether it was their main or secondary job. Green industries are those enterprises where all or the majority of goods and services produced are green, as well as those industries handling and selling green goods and services. (This would include India’s barefoot female engineers who have new jobs and training to maintain small scale solar installations). For Low Carbon Development (LCD) goods or services supported for implementing or maintaining a low carbon pathway, and jobs arising through improving access to energy would be</td></tr>
</table>

	included. The indicator *will not measure jobs in agriculture for LCD* unless the programme is explicitly involved in the supply and use of clean fuels or resource efficiency processes. As many developing economies are agriculture-based, the penetration of LCD risks over exaggeration if the definition is expanded to include agriculture. 2. **Green occupations** are defined as those in green or non-green enterprises associated with greening production processes, in their own place of employment. This might best cover the definitions of green jobs associated with agriculture – and could potentially be used by the adaptation and forestry themes. 3. **Environmental jobs** are defined as those which have a direct link to protecting or enhancing environmental quality. These activities typically provide public goods where no private markets exist eg in national parks. The ICF will also measure the proportion of the workforce in the environmental goods and services sector at the country level. Environmental goods and services (EGS) refers to those involved in the 'deployment of clean energy, and in the support of environmental and emerging low carbon activities', as defined (in the UK context) by a report for BIS (Innovas solutions, 2009). This excludes agriculture.
Rationale	An intended outcome of greater investment in LCD, adaptation and forestry is the increased prosperity of people in developing countries, and increased resilience of the poor. Jobs and employment are a critical co-benefit of low carbon development, and vital in creating a supportive political economy environment, not least amongst domestic constituencies, in persuading low and middle income countries to adopt low carbon pathways. Research by ILO and UNEP indicates that green investment can contribute positively to job creation. This indicator will provide data which contributes to and deepens that analysis. Jobs created through forest plantations, smallholder agricultural schemes, and outgrower schemes are also highly significant for the broader rural economy. However, the distinction between adaptation, agriculture and low carbon themes is not entirely mutually exclusive. The creation of green jobs in the low carbon sector will contribute to resilience, through offering alternative or additional livelihoods strategies. And the use of agricultural products such as *bagasse* for energy production, for example, has positive impacts on employment at the farm level, in terms of creating new jobs and distribution networks. The ILO have provided comments on the use and definition of this indicator, and aim to use all relevant data and research at the 2013 International Conference of Labour Statisticians to further develop statistical standards and internationally harmonised statistical indicators for the employment impacts of greening the economy. We are working closely with the ILO, and with colleagues in the CIF admin unit and the multilateral development banks, who have committed to using a jobs indicator in response to requests from bilateral donors. There will also be scope for programmes to coordinate with representatives in country offices.
Country office role	Indicator (i) for each of their climate change programmes country offices will need to work with partners and other stakeholders to track this indicator. We envisage that where possible, staff will coordinate with local ILO offices; (ii) no

	role – will be calculated by desk based research at central level, supported by staff in country offices as and when appropriate. This has already been budgeted for in the concept approved under ICF financing.
Data sources	(i) Project level M&E. Discussions with partners in the Climate Investment Funds suggest that many private sector investment programmes are already beginning to measure this indicator (eg Asian Development Bank CTF programmes). (ii) Country level data available from business/commerce Ministries (where possible). The overall proportion should be a weighted average (by population) of the individual proportions in each country. Data from labour force surveys and on Small and Medium Enterprises (SMEs) will be used to triangulate data, where available.
Reporting organisation	DFID internal
Data included	
Formula/Data calculation (including attribution rule)	(i) Direct jobs created by ICF funded projects. (ii) The proportion of the workforce working in the environmental goods and services sector (i.e. number of people in the environmental goods and services industry/ total number of people in the workforce). Where HMG are only funding part of the project, benefits (number of people) should be calculated as a pro-rata share of public funding. For example, if we are funding 10% of a project that creates 100 jobs, we should claim that 10 of these jobs are attributable to DFID. **Fund-level attribution** (i.e. at point of UK investment) should be applied for reporting expected and actual results and headline results/figures used in Business Cases (to ensure all projects can report on a consistent basis). This method involves sharing results across all donors that contribute to a fund. All results are attributable to the relevant fund (e.g. CIFs, CP3, GAP) regardless of whether these funds blend with other sources of finance in implementing projects at levels below the point of UK investment. For example, if the UK invests £25m into a fund that totals £100m of public money, the UK would claim 25% of the results from that investment. This applies to all results. The long term ambition is to develop the data availability to enable all projects to use the lowest/most direct level of attribution possible in the future (i.e. project level). Therefore, advisers should be working to develop sufficient data to calculate project level results reports, and where possible, provide this information now alongside headline Fund level results. To note, the distinction between attribution at the project level and at the Fund level (or at point of UK investment) is only an issue where the UK is investing in funds where there are multiple investment levels.

	
Worked example	a. Project works in urban areas to use waste for energy. Waste pickers are included in the programme design, and x will be engaged in collecting and sorting waste for power generation, of which x% will have formal contracts. Currently y% of z waste pickers are women, and that will be equalled or exceeded as employment becomes available. b. Solar installation projects train x women as engineers, resulting in a new livelihoods stream available to women who previously had no access to skilled employment. Results are attributed at the point of UK investment (Fund level) and shared across all donors that contribute to a fund.
Most recent baseline	(i) Assuming the investments are new, the baseline will be zero; (ii) Needs to be calculated. The baseline should reflect the situation prior to ICF funding being provided and anticipated projections of what would happen without the ICF. For long running programmes the baseline should be taken as 2010 unless otherwise stated. The baseline should align with the economic appraisal in the project design.
Good performance	Increased net jobs will result in more prosperity, and greater **security** of employment. It will help create new jobs in rural areas as eg decentralised power products are rolled out. It will also create a new potential work-stream for **women**, as the sector will be less bound by traditional concepts of male/female roles. Such jobs will also improve resilience, as **poor people** have access to alternative forms of livelihoods.
Return format	Absolute number of direct jobs created.
Data dis-aggregation	<u>Data to be disaggregated and reported in the ICF results template:</u> - Gender: • Reporting by gender has been marked as mandatory. If you are unable to

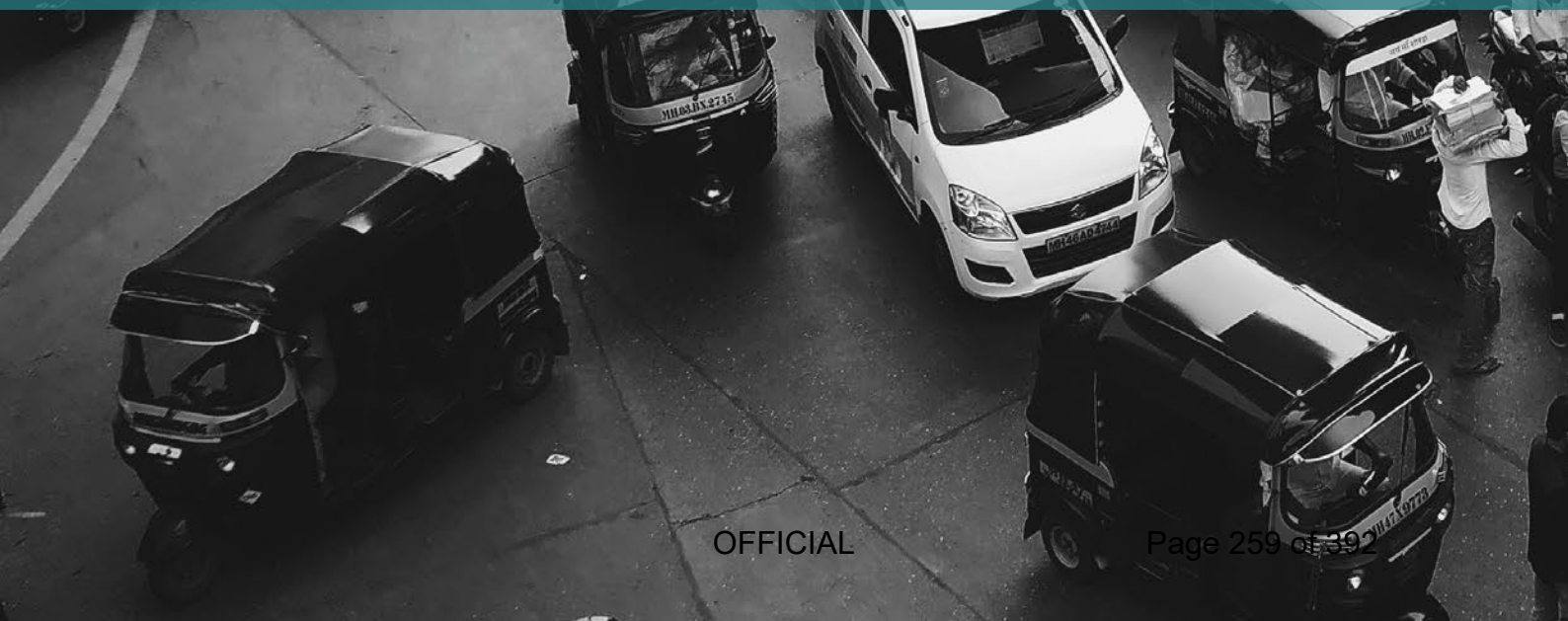
	report by gender please explain why in the metadata columns of the results template. • We acknowledge that gender disaggregation will not be possible if household level data are used. If local gender disaggregation data is not available but you have target population data that allows you to give an estimated number then please report this. If an estimate is used then please state this clearly in the metadata column. • It is not intended to present gender disaggregated figures by country/programme but as an aggregated total across programmes <u>Data to be disaggregated as part of workings and Quest number provided:</u> Disaggregation of the following variables will not be collected as part of the ICF results template. Please include disaggregated data in your working documents and record the Quest number for these documents in the ICF results template. - Skill level - Contracted or not
Data availability	Annually
Time period/ lag	Data should be available annually after programme reviews.
Quality assurance measures	If reporting officers have any concerns about the quality of data or any points that they think CED should be made aware of, then please note this in the ICF results template. Any comments can usually be added into the free text columns on the far right of each ICF results template. Further guidance should be available in the commissioning note. Labour and employment statistics are complex yet essential. The choice of two indicators will help us to triangulate data in-country, and provide a greater depth of analysis of changes and their impact. This work will be linked to and influence a broader international process on the defining and measurement of green jobs. It will also be included in evaluations and reviews, where more scope will exist to link with economy-wide analyses and input-output tables defining green economy issues (led by and currently being piloted by ILO), as well as used alongside case studies which will investigate the extent to which employment is 'decent' i.e. constitutes an improvement in standard and quality of living. Triangulation could also take place using national labour and SME surveys.
Data issues/ risks and challenges	The distinction between adaptation, agriculture and low carbon themes is not mutually exclusive. The creation of green jobs in the low carbon sector will contribute to resilience, through offering alternative or additional livelihoods strategies. The use of agricultural products such as *bagasse* for energy production, also has positive impacts on employment at the farm level, in terms of creating new jobs and distribution networks. These are all issues which would be analysed and assessed as part of a good social impact analysis for new programmes anyway, and the impact and implications of such programmes could be regularly monitored to ensure positive impacts were supported, and the risk of negative impacts minimised. The indicator will also measure only the creation of direct gross jobs, rather than consider whether jobs are additional or displaced from other industries. This will be an area for analysis during evaluations of ICF investments. The ILO is developing input-output tables to measure net job creation in pilot countries,

	with the aim of rolling out the methodology with partner countries. Some basic methodologies and analyses have already been piloted, which indicate that net job creation is positive for green investments. Direct creation of jobs is also a first order indicator, measurement of related jobs which, for example, depend on forest resources could also be assessed as part of a more in-depth evaluation exercise. Likewise for 'decent' employment. Contracted work is measured as a proxy for this, though we do not want to exclude informal or self-employment, which can still have a significant impact on key issues such as women's empowerment, or household incomes. The extent to which work is 'decent' could also be the subject of a more in-depth evaluation exercise.
Additional comments	
Lead	Statistical advisor: Alex Feuchtwanger (DFID) a-feuchtwanger@dfid.gsx.gov.uk

Net Change in Greenhouse Gas Emissions (tCO2e) – tonnes of GHG emissions reduced or avoided as a result of ICF

KPI 6 Methodology Note

November 2018



*Click on page numbers above to navigate direct to specific sections

About Climate Change Compass
The UK government has committed to provide at least £5.8 billion of International Climate Finance between 2016 and 2020 to help developing countries respond to the challenges and opportunities of climate change.

Visit **www.gov.uk/guidance/international-climate-finance** to learn more about UK International Climate Finance, its results and read case studies. Visit **www.climatechangecompass.org** to learn more about how Climate Change Compass is supporting the UK Government to monitor, evaluate, and learn from the UK International Climate Finance portfolio.

Acronyms

BAU	Business as Usual
BM	Build Margin
CDM	Clean Development Mechanism
CO_2	Carbon Dioxide
CH_4	Methane
CM	Combined Margin
CNG	Compressed Natural Gas
CSP	Concentrated Solar Power
DFID	Department for International Development
EF	Emissions Factor
EU	European Union
gCO_2e/km	Grams of Carbon Dioxide Equivalent per Kilometre
GHG	Greenhouse Gas
HAC	High Activity Clay (soil)
HFCs	Hydrofluorocarbons
ICF	International Climate Finance
IGES	Institute of Global Environmental Strategies
IPCC	Intergovernmental Panel on Climate Change
IRENA	International Renewable Energy Association
KPI	Key Performance Indicator
kWh	Kilowatt Hour
LCD	Low Carbon Development
LED	Light Emitting Diode
LUC	Land Use Change
LULUCF	Land-Use, Land-Use Change and Forestry
MDB	Multilateral Development Banks
MWh	Megawatt Hour
N2O	Nitrous Oxide
ODA	Official Development Assistance
OM	Operating Margin
PFCs	Perfluorinated Compounds
PV	Photovoltaic
QA	Quality Assurance
RE	Renewable Energy
REDD+	Reduced Emissions from Deforestation and Degradation
MSME	Micro, Small & Medium Enterprises
SF_6	Sulphur hexafluoride
SREP	Scaling Up Renewable Energy Program
tCO_2e	Tonnes of Carbon Dioxide Equivalent
UK	United Kingdom
UN	United Nations
UNFCCC	United Nations Framework Convention on Climate Change
W	Watt

***PLEASE NOTE: This document provides a simplified but reasonable estimate of emissions reductions to report against KPI 6. It also provides links to more complex and more accurate approaches. The more complex approaches are expected in a small number of ICF projects where additional resources may be required for KPI 6 reporting.*

Net Change in Greenhouse Gas Emissions (tCO2e) – tonnes of GHG emissions reduced or avoided as a result of ICF

Rationale

A key priority of International Climate Finance (ICF) is to demonstrate low carbon development is feasible and to achieve emission reductions. Monitoring the level of emissions abated from ICF projects is a key indicator of progress and results of direct action on the ground.

Summary table

Table 1: KPI 6 Summary Table

Units	Tonnes of Carbon Dioxide Equivalent (tCO_2e)
Disaggregation Summary (click for more info)	Results will be disaggregated by each sector, allocated by source and defined by the United Nations Framework Convention on Climate Change (UNFCCC) Inventory Categories. Please report if carbon credits have been obtained or not, and if these have been sold.
Headline Data To Be Reported	Absolute mass of greenhouse gas emissions reduced or avoided (tCO_2e)
Latest revision	September 2018. The main revisions to this Methodology Note are: • Guidance on converting KPI 7 into KPI 6 • List of appropriate Clean Development Mechanism (CDM) Methodologies • Step-by-step methodological guidance for GHG reductions from electricity generation, electricity energy efficiency savings, energy efficiency from other sources, forestry and transport.
Timing issues	*When to report:* ICF programmes will be required to report ICF results once each year in March. Please bear in mind how much time is needed to collect data required to report ICF results and plan accordingly. *Reporting lags*: Your programme may have produced results estimates earlier in the year, for example during your programme's Annual Review. It is acceptable to provide these results as long as they were produced in the 12 months preceding the March results commission. In some cases data required for producing results estimates will be available after the results were achieved – if it is the case that because of this, results estimates are only available more than a year away from when a results estimate is produced it should be noted in the results return that this is the case.
Links across the KPI portfolio	The LCD indicators, KPIs 2 (no. of people with improved access to clean energy), 7 (clean energy installed), 9 (number of domestic low carbon technology units delivered), 16 (net change in energy consumption), and forestry

	indicator KPI 8 (hectares of deforestation avoided), are all output/outcome precedents to KPI 6 (impact). Each is a potential contributor to KPI6 by means of a conversion factor or other methodology. Some programmes reporting on KPI 6 may have been instrumental in driving markets, leverage and driving down technology costs for renewable and low carbon technologies. There is transformational potential through these effects, and hence a link to KPI 15.

Technical Definition

This indicator will report on the net change in greenhouse gas (GHG) emissions measured in tCO_2e, estimated relative to the assumed *business as usual* emissions trajectory, and will reflect abatement results directly attributable to ICF mitigation and forestry projects over the lifetime of the projects.

GHG emissions refers to the 'Kyoto basket' of GHGs which includes:

- Carbon Dioxide (CO_2)
- Methane (CH_4)
- Nitrous Oxide (N_2O)
- Hydrofluorocarbons (HFCs)
- Perfluorocarbons (PFCs)
- Sulphur Hexafluoride (SF_6)

This indicator will report on GHG emission impacts from all activities within an ICF project or programme area. This is consistent with the methodology used by the Intergovernmental Panel on Climate Change (IPCC) to estimate national GHG emissions.

This will not capture life-cycle impacts or consumption emissions that fall outside the individual country. In this regard, we recognise that this indicator may not comprehensively capture the full emissions impact.

This indicator will cover all sectors of the economy, including changes in net emissions from Land-Use, Land-Use Change and Forestry (LULUCF) – and results will be disaggregated by each sector, allocated by source and defined by the UNFCCC Inventory Categories:

- Energy supply
- Industrial processes
- Business
- Public
- Residential
- Transport
- Agriculture
- Waste Management
- Land Use, Land Use Change and Forestry (LULUCF)

For the Low Carbon Development (LCD) theme, results will predominately be reported under the energy supply sector from: changes in power generation and electrical energy efficiency improvements; or emission savings from energy efficiency measures in the industrial, business, residential or transport sectors.

For the Forestry theme, results will be reported under the LULUCF and Agriculture sector and will estimate changes in emissions from deforestation and forest degradation, forest conservation, sustainable management of forests and enhancement of forest carbon stocks (REDD+).

Methodological Summary

The net change in GHG emissions is estimated through a simple calculation – it is not a directly observable result. This calculation varies by project type, with the main project types being:

1) Electricity generation
2) Electricity energy efficiency savings
3) Energy efficiency savings from other sources
4) Forestry
5) Transport

The calculation steps are similar for each project type (detailed in worked examples), and are set out as follows:

This indicator will report realised net changes in GHG emissions from the project, reporting progress by each year of the project and providing an estimate for the total expected emissions reductions over the installation's lifetime.

For example:

- Project year 1 results = tCO_2e avoided in year 1 from clean capacity or energy efficient technologies installed in first year of project
- Project year 2 results = tCO_2e avoided in year 2 from clean capacity or energy efficient technologies installed in first and second year of project.
- Project year 5 results = tCO_2e avoided in year 5 from clean capacity or energy efficient technologies installed in first and second year of project.
- Total lifetime expected results = expected tCO_2e avoided from clean capacity or energy efficient technologies installed over lifetime of project.

Similarly, for forestry projects, this indicator will report on annual reductions and the total expected lifetime tCO_2e avoided, including through GHG sequestration. The lifetime for a forestry project is more difficult to establish than for some LCD projects, as there is a greater risk of non-permanence. For example, a forest preserved through an HMG intervention in year 1 may be cut down in year 3.

The lifetime of a project should be estimated in the business case appraisal and, if necessary, be re-assessed during project implementation. Any increases in emissions (e.g. reversals), should be recorded in the evaluation, whether they are natural (e.g. forest fire) or anthropogenic (e.g. poor forest management, or abandonment of project commitments).

The target results for the indicator will be based on the business case project appraisal, developed in consultation with the delivery partner, but may then be subsequently updated. The business case is likely an early estimate, and they might be updated when we have a fixed pipeline of projects.

Net change takes into account the emissions increases, as well as reductions owing to an intervention - capturing direct rebound effects (which may occur when people use some of the financial savings they have gained from improved energy efficiency to purchase more energy, or when people increase forest clearance because of an increase in the return to alternative land uses, for example). Indirect rebound effects from an intervention may also arise – however the ability for individual projects to capture this impact will be limited. Thus, this indicator will not aim to capture these indirect rebound impacts.