

Terminal Evaluation of the UNEP/GF Project “Development and Application of Decision-Support Tools to Conserve & Sustainably Use

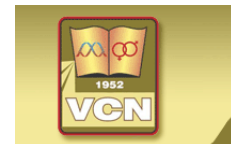
Genetic Diversity in Indigenous Livestock and Wild Relatives”

GEF ID 1902

(2009 – 2020)



The
University of
Faisalabad



Indigenous goats of Pakistan: Photo: Courtesy of Prof. M. Sajjad Khan

Evaluation Office of the United Nations Environment Programme

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Terminal Evaluation Mission (2023)

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(Development and Application of Decision-Support Tools to Conserve & Sustainably Use
Genetic Diversity in Indigenous Livestock and Wild Relatives)
Establishing National Land Use and Land Degradation Profile toward mainstreaming
(GEF ID 1902)
(11/2023)
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The consultant hopes that the findings, conclusions and recommendations of this evaluation will inform design and management of current and future GEF/UNEP projects.

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Short Biography of Consultant

Josephine Mugambi is an experienced animal scientist with over 17 year's project management experience in the agriculture sector. Josephine has held senior project management and leadership positions for international NGOs including FARM Africa, SNV Kenya and Heifer Project International, Kenya. She has also in the past worked for the Government of Kenya in the Ministry of Agriculture, Livestock and Fisheries as Chief Livestock Production Officer and also as a local consultant for Food and Agriculture Organization (FAO) of the United Nations.

As a consultant, Josephine has accumulated a wealth of experience in project design, Monitoring and Evaluation, Market Systems Development, value chain and market studies including labor market studies as well as provision of business development services for agribusinesses. She has provided consulting, services to different types of projects such as market systems projects, poverty reduction projects, climate change resilience projects as well as emergency projects. She has directly or with teams conducted over 20 baseline surveys and project evaluations in diverse areas such as dairy, beef, poultry, aquaculture, small ruminants, horticulture, refugee livelihoods; skills development among others. She has together with teams conducted over 25 value chain and market studies. She has led in review and development of over 15 strategic plans for development organizations and private businesses.

Josephine, directly or with teams has provided consulting services to a wide range of International agencies including Food and Agriculture Organization (FAO) of the United Nations, Embassy of the Kingdom of the Netherlands (EKN), Heifer Netherlands, Technical Centre for Agricultural and Rural Cooperation (CTA); GIZ, Heifer International Kenya (HPI-K), Financial Sector Deepening Trust (FSD) Netherlands Development organization (SNV), EURECNA, Mercy Corps, Self Help Africa, International Fertilizer development Corporation (IFDC), WYG, Kenya Market Trust (KMT), Mastercard Foundation among others. She has experience in delivering assignments in Africa and Asia.

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About the Evaluation

Joint Evaluation: No

Report Language(s): English

Evaluation Type: Terminal Evaluation

Brief Description: This report is a Terminal Evaluation of the UNEP/GEF *Development and Application of Decision-Support Tools to Conserve & Sustainably Use Genetic Diversity in Indigenous Livestock and Wild Relatives* project implemented between 2009 and 2020. The project's overall development goal was to "conserve indigenous livestock for future generations and their increased contribution to livelihoods through enhanced use". The evaluation sought to assess project performance (in terms of relevance, effectiveness, and efficiency), and determine outcomes and impacts (actual and potential) stemming from the project, including their sustainability. The evaluation has two primary purposes: (i) to provide evidence of results to meet accountability requirements, and (ii) to promote learning, feedback, and knowledge sharing through results and lessons learned among UNEP, and the relevant agencies of the project participating countries.

Source(s) of Funding by Country: *(list countries who have provided project funds and/or co-finance)*

Source(s) of Funding by Institution Type: *(indicate all that apply)*

Foundation/NGO	Yes/No
Private Sector	Yes/No
UN Body	Yes/No
Multilateral Fund	Yes/No
Environment Fund	Yes/No

Key words: Small Island Developing States; SIDS; Small Islands; Sustainable Forest Management; Forest management; Forest financing; Marine; Marine environments; Marine Ecosystem; Coast; Coastal Ecosystem; Governance; Climate Change; Ecosystem Management;¹

Primary data collection period: January to April 2023

Field mission dates: 11th -26th March 2023

¹ This data is used to aid the internet search of this report on the Evaluation Office of UNEP Website
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Abbreviations

AI	Artificial Insemination
AIP	Agricultural Innovation Program for Pakistan
ASARECA	Association for Strengthening Agricultural Research in Eastern & Central Africa
BAU	Bangladesh Agricultural University
BD-SP	Biodiversity – Sub Program
BLRI	Bangladesh Livestock research Institute
BSP	Bali Strategic Plan for Technology Support and Capacity Building
CAAS	Chinese Academy for Agriculture and Science
CBD	Convention on Biological Diversity
CEO	Chief Executive Office
CLBGG	National Centre for Livestock Breeding, Genetics and Genome
COVID 19	Corona Virus Disease of 2019
CRA	Collaborative Research Agreements
CUVAS	Cholistan University of Veterinary and Animal Sciences
DAD-IS	Domestic Animal Diversity Information System
DAGRIS	Domestic Animal Genetic Resources Information System
DoC	Day Old Chicks
DSTs	Decision Support Tools
EU	European Union
FAO	Food and Agriculture Organization of the United Nations
FAnGR	Farm Animal Genetic Resources
GBAP	Goat Breeders Associations of Punjab
GDP	Gross Domestic Product
GEF	Global Environment Funds
GIS	Geographic Information Systems
IAEA	International Atomic Energy Agency
ID	Identity
ILRI	International Livestock Research Institute
IUCN	International Union for Conservation of Nature
M&E	Monitoring and Evaluation
MoV	Means of Verification
MTE	Mid Term Evaluation
MTS	Medium Term Strategy
N/A	Not Applicable
NES	National Executing Agencies
NGOs	Non-Governmental Organizations
NIAH	National Institute of Animal Husbandry
NLDB	National Livestock Development Board
NSC	National Steering Committee
NTRC	National Technical Regulatory Committee
ONBS	Open Nucleus Breeding Scheme
PARC	Pakistani Agricultural Research Council

PCA	Project Cooperation agreement
PDF-B	Project Development Funding
PMU	Project Management Unit
POW	Program of Work
PRA	Participatory Rural Appraisal
PSTU	Patuakhali Science and Technology University
RCC	Red Chittagong Cattle
RPC	Regional Project Coordinator
RPD	Regional Project Director
SDG	Sustainable Development Goals
SMART	Specific Measurable Achievable Realistic Time bound
SOPs	Standard Operating Procedures
TE	Terminal Evaluation
ToC	Theory of Change
UAF	University of Agriculture Faisalabad
UN	United Nations
UNEP	United Nations Environment Programme
UoP	University of Peradeniya
USAID	United States Agency for International Development
USD	United States Dollar
WVB	World Vision Bangladesh

Project Identification Table

GEF Project ID:	1902	Development and Application of Decision-support tools to conserve and sustainably use genetic diversity in indigenous livestock and wild relatives	
Implementing Agency:	United Nations Environment Programme (UNEP)	Executing Agency:	<ol style="list-style-type: none"> 1. International Livestock Research Institute (ILRI), Kenya; 2. Bangladesh: Bangladesh Agricultural University (BAU), Department of Animal Breeding and Genetics; and World Vision-Bangladesh 3. Pakistan: Pakistan Agricultural Research Council (PARC) and later in 2011 it was changed to University of Agriculture Faisalabad (UAF). 4. Sri Lanka: University of Peradeniya (UoP), Faculty of Agriculture, Department of Animal Science. 5. Vietnam: National Institute of Animal Husbandry (NIAH). 6. Food & Agriculture Organization (FAO)
Relevant SDG(s) and indicator(s):	SDG 15		
Sub-Programme:	Biodiversity Strategic Objective 2 and its Strategic Programs 4 and 5	Expected Accomplishment(s):	BD-SP 4, 5
UNEP approval date:	23rd Feb 2009	Programme of Work Output(s):	Agrobiodiversity (OP 13)
GEF approval date:	26 th Nov 2008	Project type:	Full Size Project
GEF Operational Programme #:	BD-SP 4,5	Focal Area(s):	Biodiversity

		GEF Strategic Priority:	BD 2	
Expected start date:	10 th March 2009	Actual start date:	26 th March 2009	
Planned operational completion date:	31 st Dec 2020	Actual operational completion date:	31 st Dec 2020	
Planned project budget at approval:	\$5,6763,770	Actual total expenditures reported as of [30 th June 2018]:	\$1,759,223	
GEF grant allocation:	\$1,982,770	GEF grant expenditures reported as of [date]: 30 th June 2018]:	\$1,979,640	
Project Preparation Grant - GEF financing:	\$190,000	Project Preparation Grant - co-financing:	\$3,971,000	
Expected Medium-Size Project/Full-Size Project co-financing:	Full Size Project	Secured Medium-Size Project/Full-Size Project co-financing:	\$8,418,591	
Date of first disbursement:	26 th March 2009	Planned date of financial closure:	31 st March 2022	
No. of formal project revisions:	2	Date of last approved project revision:	- June 2015	
No. of Steering Committee meetings:	6	Date of last/next Steering Committee meeting:	Last: November 2014. A final wrap up meeting was held in 2020.	Next: N/A
Mid-term Review/ Evaluation (<i>planned date</i>):	Sept 2011	Mid-term Review/ Evaluation (<i>actual date</i>):	March 2012	
Terminal Evaluation (<i>planned date</i>):	June 2021	Terminal Evaluation (<i>actual date</i>):	The Terminal Evaluation process is underway	
Coverage - countries:	Bangladesh, , Pakistan, Sri Lanka & Vietnam	Coverage - Region(s):	Asia	

Dates of previous project phases:	N/A	Status of future project phases:	N/A
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Executive Summary

1. This report presents findings of the Terminal Evaluation (TE) of UNEP/GEF project titled *'Development and Application of Decision-Support tools to conserve and sustainably use genetic diversity in indigenous livestock and wild relatives'* GEF Project ID: 1902. The project, which started in 2009, came to its operational completion in December 2020 and was due for Terminal Evaluation (TE) in line with UNEP evaluation policy and the UNEP Programme and project management manual. The total funding at the time of project approval was US \$ 6,403,770 which included US \$1,982,770 GEF/UNEP; partners and leveraged resources of US\$ 3,781,000 (US \$1,260,000 in cash and in US \$2,521,000 in kind); GEF funding and partner co-financing of the Project Development Funding (PDF) phase was US \$ 450,000 and US \$ 190,000 respectively.

2. The purpose of this evaluation was to provide evidence of results to meet accountability requirements and to promote operational improvement, learning and knowledge sharing through results and lessons learned among UNEP and main project partners. The evaluation further addressed the strategic questions of the Terms of Reference (ToR) and provided input to questions for the GEF Portal based on findings in relevant sections of the evaluation report. It identified lessons of operational relevance for future project formulation and implementation to enable knowledge sharing and learning. The TE assessed the project performance (in terms of relevance, effectiveness and efficiency), and determined outcomes and impacts (actual and potential) stemming from the project, including their sustainability. Annex 2 presents the Performance rating criteria used in this TE.

3. The project was funded by GEF and managed by UNEP's Ecosystems Division, under the GEF Strategic Priority Biodiversity (BD) 2. It was addressing Biodiversity Strategic Objective 2 and its sub programmes 4 and 5. It was a multi-country (Sri Lanka, Pakistan, Bangladesh, and Vietnam) and multiregional (South and South-East Asia) project. The International Livestock Research Institute (ILRI) was the global executing agency for the project. The National Executing Agencies (NEA) at the country level, were Bangladesh Agricultural University (BAU) in Bangladesh, University of Agriculture Faisalabad (UAF) in Pakistan; University of Peradeniya (UoP) in Sri Lanka and the National Institute of Animal Husbandry (NIAH) in Vietnam. The project was approved on 26th November 2008 by GEF and 23rd February 2009 by UNEP. The actual start date was 26th March 2009 with a planned end date of April 2014, which constituted a planned duration of 63 months. There were two main extensions, culminating in an actual operational completion by December 2020.

4. This project was designed to address challenges of loss of breed diversity among indigenous Farm Animal Genetic Resources (FAnGR) by supporting the mainstreaming of biodiversity in production landscapes of the agricultural sector through strengthening the policy and regulatory framework for FAnGR and their wild relatives, removing critical knowledge barriers about the market value of FAnGR, and developing institutional capacities. The immediate objective of the project was to develop and make available effective tools to support decision making for the conservation and sustainable use of indigenous FAnGR and their wild relatives in developing countries, while the developmental objective was "to conserve indigenous livestock for future generations and their increased contribution to livelihoods through enhanced use".

5 (a). The evaluation applied a mixed methods approach to collect information for answering evaluation questions. Factors that determined selection of the evaluation methodology included the context and background of the terminal evaluation especially the seven year lapse after project exited from the field sites, types of indicators and the available respondents to sample from. Based on these factors, the main evaluation method selected involved collection of qualitative data, through desk review and in-depth interviews with different stakeholder groups. In addition, there were two Focus Group Discussions with farmers who had benefited from the project in Sri Lanka and a site management committee at Faisalabad (Site II) in Pakistan. Use of these mixed methods for data collection helped in triangulation of information as well as inclusion of as many stakeholders as possible. Primary data was collected through both face to face and virtual interviews. A field mission was conducted in Sri Lanka and Pakistan for two weeks.

5(b). In line with the UNEP Evaluation Policy, the UNEP Programme Manual and the Guidelines for GEF Agencies in conducting Terminal Evaluations (TE), this TE was carried out using a set of 9 commonly applied evaluation criteria which include: (1) Strategic Relevance², (2) Quality of Project Design, (3) Nature of External Context, (4) Effectiveness (incl. availability of outputs; achievement of outcomes and likelihood of impact), (5) Financial Management, (6) Efficiency, (7) Monitoring and Reporting, (8) Sustainability and (9) Factors Affecting Project Performance and Cross-Cutting Issues. Theory of Change analysis was used to articulate the intervention's causal logic and to assess its effectiveness and likelihood of impact. The ToC was further used to assess the performance of the project through the evaluation criteria.

6. Respondents were selected purposively based on their role in the project, how they were influenced or influenced the project. There were three categories of respondents namely: (a) project executors and implementers; (b) target beneficiaries who included the representatives from governments as beneficiaries of Decision Support Tools (DSTs); students who benefited through learning and opportunity to pursue their postgraduate programs, farmers and the representatives of farmer associations that were formed by the project; (c) current office bearers (but were not involved in the project) in the NEAs and government departments.

Key Evaluation Findings:

7. Strategic relevance: The project was fully aligned to the donor and UNEP strategic priorities. It was addressing the GEF's Biodiversity Strategic Objective 2 and its sub programmes 4 and 5 by supporting the mainstreaming of biodiversity in production landscapes of the agricultural sector. It was aligned to UNEP Medium Term Strategies (MTS) 2010-2013; 2014-2017 and 2018-2021 and all the Programs of Work derived from these MTs, Bali Strategic Plan for Technology Support and Capacity Building (BSP) and South-South Cooperation (S-SC). The project was relevant to global, regional, sub-regional and national environmental priorities including Sustainable Development Goals (SDGs) and Convention on Biological Diversity (CBD). The rating for Strategic Relevance was: **Highly Satisfactory** (see Annex 2 for detailed rating criteria).

² This criterion includes a sub-category on Complementarity, which closely reflects the OECD-DAC criterion of 'Coherence', introduced in 2019. Complementarity with other initiatives is assessed with respect to the project's *design*. In addition, complementarity with other initiatives during the project's *implementation* is assessed under the criterion of Efficiency.

8. Quality of Project design: The project was designed based on a comprehensive problem analysis with extensive stakeholder consultations during the two-year Project Development Funding (PDF-B) phase. This conferred significant strength on the design as it ensured alignment with the needs of participating countries, informed selection of species, project sites as well as building essential partnerships. There was a logical relationship and coherence between outputs, outcomes and objectives, depicting a clear theory of change. The project design had an in-built mechanism for gender inclusion by focusing on short cycle livestock species like goats, chicken and pigs which were known to be of economic importance to the 'poor' farmer communities while enhancing women's inclusion. This gender perspective could also be urged as a reinforcement of gender inequality because most negative social norms allocate ownership/stewardship of lower value livestock to women while higher value livestock such as cattle and camels are owned by men. Nevertheless, the TE upholds the gender perspective of using small stock for empowerment of women because the project interventions were designed to improve their livelihoods through incomes from sale of products. Furthermore, because of the market incentives, rearing of these species was attracting all gender groups, equally. Additionally, the evaluation established that the goat program in Pakistan had grown to commercial level driven by the demand for high producing indigenous goats further validating that with appropriate models, small stock production is attractive to all gender groups.

9. There was a clear governance structure in place at the design stage. The project risks were identified, and mitigation measures mainstreamed in the design. The TE established that the project applied the mitigation strategies whenever need arose. The design had put in place effective mechanisms for learning, communication and outreach which were embedded in the project management structure as well as within project outputs under outcome 2. Measures to achieve efficiency, sustainability and catalytic effects of the project were fully articulated in the project design. The TE established that these measures were applied including co-financing, use of short cycle livestock; working with research institutions whose mandate was in line with ILRI's mandate; building on the work by ILRI among others. The TE observed some weaknesses on the design including unrealistic project period for some deliverable such as establishment of Open Nucleus Programme. Other weaknesses included the shortcomings in the M&E system including lack of alignment of some indicators with their respective outputs, framing of some outputs as activities as well as limited budget for M&E activities. The rating for quality of project design was **Satisfactory**.

Effectiveness: Rating for overall effectiveness was Satisfactory:

10. Availability of Outputs: The project was effective in delivering the expected outputs having fully delivered 82% of the planned outputs. Of these 70% had exceeded targets. Nearly all the delivered outputs, including the most important to achieve outcomes were deemed to be of very good quality and of use by the target beneficiaries. As a result, there was demand for some of the tools by the industry which led to replication to other species and geographical areas, beyond the project sites. Rating for Availability of Inputs was **Satisfactory**.

11. Achievement of Outcomes: The project had two outcomes with a total of eight indicators. The two outcomes were complementary in the achievement of the immediate objective. The elements

that were important in the achievement of intermediaries were fully achieved including forming associations, designing, and rolling out breed improvement programs based on the needs identified during the studies, policy changes as well as integration of conservation of indigenous livestock in the curriculum of four universities. Additionally, assumptions for progress from project outputs to project outcome(s) were held. Rating for Achievement of Project Outcomes was **Satisfactory**.

12. Likelihood of impact: There was evidence of application of certain tools driven by the demand from the industry. Examples include breed improvement of local Beetal goats resulting to improved live body weights averaging 140 Kg with some going for over 200Kg live weights; high milk production by Beetal goats due to selection with an average milk yield of 3 Kg per day with some achieving 5-6 litres per day. The use of Buck Parks in Bangladesh contributed to reduced kidding interval and increasing litter size. The genetic characterization protocols were replicated in Red Chittagong Cattle (RCC) in Bangladesh resulting to registration of the breed in the country. In Sri Lanka Farmers' Association of village chicken production in Thewanuwara got into a formal agreement with a government project for a supply of one month old village chicks. There were policy changes in the four countries to support conservation of FAnGR. There was emergence of private enterprises like semen production units in Pakistan. Rating for Likelihood of Impact – **Highly Likely**

13. Financial Management: There was timely approval and disbursement of cash advances to partners, regular analysis of actual expenditure against budget and work plan, timely report submission and approval of budgets. All the financial documents were available for the TE. The Project Manager and the Fund Management Officer had an effective and responsive communication which facilitated an efficient project delivery process. Rating for Financial Management was **Highly Satisfactory**.

14. Efficiency: The project has had two justified 'no cost extensions'. The first extension was a recommendation from the MTE. While field activities were closed at the expiry of this date, operational completion was however effected in 2020 after a second extension. As such this extension did not directly affect the project but necessitated ILRI to retain the Regional Project Director hence increasing its contribution to the co-financing. The rating for efficiency was **Moderately Satisfactory**.

15. Monitoring and Reporting: The project had a results framework and an M&E plan. The plan however was focused on activity monitoring and not at results level. Some of the baseline data was collected during the PDF-B Phase and therefore made available in the results framework. Baseline data for some indicators was however to be collected during farm surveys as part of project implementation. The information from farm and market surveys was however not used to develop an indicator tracking system. As a result, the monitoring process was limited to tracking implementation of activities. The reporting, though activity based, was complete with high-quality documentation of project activities. There was evidence of highly effective collaboration and communication between ILRI and UNEP colleagues. No donor reporting issues were noted. Rating for Monitoring and Reporting was **Satisfactory**.

16. Sustainability: The sustainability of project outcomes had a moderate degree of dependency on social/political factors. There was a high level of ownership, interest and commitment among government and other stakeholders for some of the outcomes. The TE established that the outcomes from the project are likely to be sustained because of their alignment with the mandates of these institutions and government priorities. Some project outcomes had a high dependency on future funding to persist. Some of these however had their sustainability mechanisms. These include breeder associations implementing models that created incomes for sustaining breed improvement, involvement of private sector in Artificial Insemination (AI) service delivery; revenue generation models for the Buck Parks to sustain the farmer associations among others. The outcomes that had no mechanisms for sustainability included the document repository system especially project websites and the National Domestic Animal Genetic Resources Information System (DAGRIS) system.

17. Sustainability of project outcomes had a high dependency on institutional support. There were however strong mechanisms in place to sustain the institutionalization of some project outcomes. These included establishment of National Centre for Livestock Breeding, Genetics and Genome (CLBGG) in Pakistan fully funded by the government and working with six universities to continue with genetic characterization of indigenous livestock, formulation of breeding act and Standard Operating procedures in Pakistan for the implementation of the breeding policy in Pakistan; establishment of National Technical Regulatory Committee (NTRC) by the government in Bangladesh to guide the implementation of the breeding policy; self-sustaining Punjab Goat Breeder society; inclusion of conservation of animal genetic resources in the university curriculum in the four universities among others. Sustainability was rated **moderately likely**.

18. The project was rated satisfactory with a rating of 4.8. The project was implemented across four countries and covered three different species, hence the results were variable, with some countries having higher scores in some areas and less in others, and vice versa. Key strengths of the project included effective stakeholder consultations and governance structures, strong alignment with implementing institutions hence enhanced ownership and sustainability. The project leveraged partnerships to achieve effectiveness. Communication and outreach strategies were implemented which created significant momentum on sustainable utilization and conservation of animal genetic resources. Areas of improvement included the M&E system and prolonged extension post field closeout.

Conclusions:

19. The evaluation established that the project had achieved its expected outcome of making available DSTs to support the conservation of indigenous farm animal genetic diversity in developing countries. The countries developed customized tools based on their needs and not project prescription. Studies conducted by the project using the DSTs generated new information and evidence that was used to create awareness and triggered positive attention and enthusiasm around the sustainable utilization and conservation of FAnGR. These tools were made available for future use through dissemination both nationally and to global audience. Additionally, the project created awareness among the livestock producers on the value of their indigenous livestock as well as how they could improve and maintain them. The four countries developed policies that recognized conservation and sustainable utilization of FAnGR. The project

contributed to increasing knowledge and a pool of researchers in the field of conservation genetics by providing opportunity for 28 students to acquire masters and PhD degrees and now holding senior positions in the respective universities. Moreover, the conservation and sustainable utilization of indigenous livestock was incorporated in the curriculum of the participating Universities in the four countries.

20. This evaluation established that the impacts created by the project were sustainable because of their relevance to the countries and the livestock keepers. Due to this, the impacts were scaled up through application of the DSTs to non-project livestock species, driven by industry demands. These included development of breed standards and judging protocols for Buffaloes and Sahiwal cattle in Pakistan; application of molecular characterization protocols to other livestock species including cattle, sheep and buffaloes by the NCLBGG in Pakistan as well as full characterization and registration of the Red Chittagong Cattle (RCC) in Bangladesh. In addition, the industry demands led to spill over of impact to non-project provinces in Pakistan where the project supported establishment and operationalization of Artificial Insemination (AI) technology in goats using frozen semen. Tools, protocols, and institutional support systems were further developed to support sustainability of this technology in the KP province, marking the first time AI with frozen semen was used in goats in Pakistan.

21. Lessons Learnt

- 1) Adequate preparation was a key success factor for the project. Implementation of the PDF-B³ was a very important phase for refining the project approaches while allowing for extensive stakeholder consultations and enhancing their ownership of the project.
- 2) Adequate time was required for projects implementing breeding schemes: Projects involving setting up of breeding schemes require about six to seven years of implementation to allow for consistent results, developing and strengthening of sustainability structures, follow ups, documentation of best practices and dissemination for replication.
- 3) Inclusive project management: projects where management structures include all relevant stakeholders at national and grassroots levels have a high likelihood of receiving full support by the local stakeholders. This is more so if decision makers are represented in the project management structures.
- 4) It is important to have the right partners on board for projects to achieve impacts:
 - a. There is a greater chance of leveraging resources from partners when the mandate of implementing or executing institutions and the project goals are aligned.

3 PDF phase was a project preparatory phase which was funded by GEF to conduct background assessments (of FAnGR, production systems, human capacities, etc.) in all the participating countries, facilitate participatory meetings for stakeholders, preparation of the project proposal and related documentation.

- b. Partnering with universities and research institutions to execute the project introduced efficiency because of the opportunity to engage students as a resource while providing them with learning and mentorship opportunities.
 - c. Partnership with NGOs with grassroots presence (World Vision, Bangladesh) was a success factor because of the opportunity to leverage resources as well as scaling the project beyond the project sites.
- 5) Farmer associations are likely to disperse if they do not have internal mechanisms for raising funds to sustain their operations. Furthermore, their ability to withstand external shocks was quite low, hence the need to ensure they have established their own revenue streams to support their operations whenever shocks prevail.
- 6) Exploring green technologies: the effects of electricity rationing in Sri Lanka that affected one of the mini hatcheries established by the projects reveals the need to promote green energy, as both long term cost cutting measures as well as cushioning the enterprises from impacts of power outages for operations that require constant supply of power.
- 7) Extended no cost extensions: if projects are extended for a prolonged period of time, though not at cost, they become quite costly and renders project unattractive to some stakeholders. For instance, this project started when the NPDs were departmental heads and in the course of extensions, majority had rose to professors; project assistants were PhD holders and some ILRI staff rose from senior to principle scientists, rendering the value of their time to be quite high. Furthermore, their availability became quite limited as they climbed up the ranks of responsibility.
- 8) A number of important elements of wrap up are missed when there is a time lapse between TE and project closure. These include:
 - a. The opportunity to capture information from fresh minds among the former project teams during the TE.
 - b. The opportunity to use the recommendations and lessons from the project in co-designing of follow-on projects.
 - c. The opportunity to capture the enthusiasm of stakeholders around the project's achievement on sustainable utilization and conservation of FAnGR at the time of project closure as well as to facilitate integration of all those involved in project implementation going forward.

22. Recommendations

- 1) Climate change mitigation as cross cutting theme: over years, climate change has become a big challenge to biodiversity conservation. At the time of conceiving this project two decades ago, there were conversations on climate change, but only limited impacts were felt. By then the main threats were cross breeding and breed replacements. At the time of this evaluation, climate change has become another force affecting ecosystems and significantly threatening biodiversity through loss of habitats, death of animals (both wild and FAnGR) due to droughts, floods and extreme weather patterns and unpredictable

rainfall patterns among others. Since this threat was observed at the time of TE, the evaluation recommends that going forward, it is important for donors and project implementers to integrate climate change as a cross cutting theme in all biodiversity conservation projects for sustainable change.

- 2) Promoting Business Cases for Conservation Enterprises: Future projects by UNEP / GEF should facilitate development of business cases on biodiversity conservation. These should be designed in a manner to de-risk the private sector through providing blended financing. For sustainability, communities should be involved as actors so as to benefit from such conservation enterprises which also serves as an incentive for their cooperation and participation in conservation of biodiversity and indigenous FAnGR.
- 3) Documentation of models: The project had developed models that could be packaged and disseminated for replication and scale up by other partners. There is need for UNEP together with executing agencies to document and package these models for replication in similar contexts.
- 4) Holistic approach to conservation of FAnGR: projects intervening on conservation of FAnGR should integrate the animal and its ecology so as to address all the causes of biodiversity loss. For instance, in goats (both domestic and wild relatives) the project should consider the conservation of goats as an animal species as well as its forage in the wild.
- 5) Extra Support on Research: While development projects have a start and end date, the research projects usually take longer and can potentially continue beyond the development project. In the case of molecular characterization, the project was closed but a lot of samples were left behind for analysis. Some could be used to compare trends over time. It is therefore important for donors to consider putting aside some grant to continue supporting the research part since the information will remain relevant.
- 6) Improvement of M&E System: It is recommended that the UNEP adopt a result-based monitoring system to enable continuous monitoring of project at results level. The M&E system should have an indicator tracking system, which should be developed immediately after baseline surveys. At MTR, UNEP could incorporate a review of the M&E system and allows for its reconstruction, if need be.

1. Introduction

23. This report presents the findings of Terminal Evaluation (TE) of the UNEP/GEF project titled 'Development and Application of Decision-Support tools to Conserve and Sustainably Use Genetic Diversity In Indigenous Livestock and Wild Relatives' GEF Project ID: 1902. The project was approved on the 26th of November 2008 by the GEF and 23rd February 2009 by UNEP. The actual start date was 26th March 2009 with a planned end date of April 2014, which constituted a planned duration of 63 months. There were two main extensions, culminating to an actual operational completion of December 2020. The total funding at the time of project approval was US \$ 6,403,770 which included US \$1,982,770 GEF/UNEP; partners and leveraged resources of US\$ 3,781,000 (US \$1,260,000 in cash and in US \$2,521,000 in kind); GEF funding to the PDF phase (US \$ 450,000) and partner co-financing of the PDF Phase (US \$ 190,000). The project was approved under UNEP's Medium-Term Strategy (MTS) 2010–2013. However, due to its extended operational period, the project was also implemented under MTS 2014-2017 and 2018 and 2021 and their respective Program of Work (POW). The project was addressing the GEF's Biodiversity Strategic Objective 2 and its Strategic Programs 4 and 54

24. The project was implemented in four countries in South and Southeast Asia which included Bangladesh, Pakistan, and Sri Lanka in South Asia and, Vietnam in Southeast Asia. It was managed by UNEP's Ecosystem Division as the Implementing Agency, under the GEF Strategic Priority BD 2. The project addressed Biodiversity Strategic Objective 2 and its Strategic Programs 4 and 5. The International Livestock Research Institute (ILRI) was the global executing agency for the project. The National Executing Agencies (NEA) at the country level included the Bangladesh Agricultural University (BAU) in Bangladesh, University of Agriculture Faisalabad (UAF) in Pakistan; University of Peradeniya (UoP) in Sri Lanka and the National Institute of Animal Husbandry (NIAH) in Vietnam.

25. A Mid Term Evaluation (MTE) was conducted in the year 2012 by an external evaluator. The project, having completed its operational completion was due for Terminal Evaluation (TE) in line with UNEP Evaluation Policy and the UNEP Project and Programme Management Manual. The primary purpose of this Terminal Evaluation was to provide evidence of results to meet accountability requirements as well as promote operational improvement, learning and knowledge sharing through results and lessons learned among UNEP and main project

4 GEF-4 (2006-2010): Strategic Objective Two of GEF 4 was to, "to Mainstream Biodiversity Conservation in Production Landscapes/Seascapes and Sectors,". The two sub programs under this objectives were: Sub program 4: "Strengthening the Policy and Regulatory Framework for Mainstreaming Biodiversity," which was to support the development of the policy and regulatory frameworks that promoted and rewarded mainstreaming and building the necessary institutional capacity. The fifth sub program under this Strategic Objective was "Fostering Markets for Biodiversity Goods and Services," which sought to catalyze markets for biodiversity goods and services and promote voluntary environmental certification to generate biodiversity gains through market mechanisms.

The Strategic Objective for GEF 5 (2010-2014) remained the same. The two Subprograms under this Strategic Objective were: Sub program 4: "Strengthening the Policy and Regulatory Framework for Mainstreaming Biodiversity," and Sub Program 5 'Strengthen Capacities to Produce Biodiversity-friendly goods and Services' as Sub program five.

The Strategic Objective for GEF 6 (2014-2018): Strategic Objective 2: Reduce Threats To Globally Significant Biodiversity; Subprogram 3 - Program 3: Preventing the Extinction of Known Threatened Species; Sub Programme 4:

GEF 7 (2018-2022): Strategic Objective 1: Mainstream biodiversity across sectors as well as landscapes and seascapes;

partners. The evaluation was based on a set of evaluation criteria grouped in nine categories: (A) Strategic Relevance; (B) Quality of Project Design; (C) Nature of External Context; (D) Effectiveness, which comprises assessments of the availability of outputs, achievement of outcomes and likelihood of impact; (E) Financial Management; (F) Efficiency; (G) Monitoring and Reporting; (H) Sustainability; and (I) Factors Affecting Project Performance.

26. The target audience for the evaluation findings are all the stakeholders who were directly or indirectly involved in the project funding and implementation. Below is a list of the direct stakeholders who constitute the main audience for the evaluation findings.

- The project funding institutions – GEF, FAO.
- Project implementing agency – UNEP.
- Project executing agency – ILRI.
- National executing institutions; National Executing Institutions (UAF, BAU, UoP, NIAH).
- Other members of Project Steering Committee (PSC) from respective countries: including FAO, World Vision Bangladesh, and IUCN, respective government ministries or departments.

2 Evaluation Methods

2.1 Evaluation Approach

27. This TE was carried out using a set of 9 commonly applied evaluation criteria in line with the Terms of Reference, UNEP Evaluation Policy, the UNEP Programme Manual and the Guidelines for GEF Agencies in Conducting Terminal Evaluations (TE). These criteria include: (1) Strategic Relevance⁵, (2) Quality of Project Design, (3) Nature of External Context, (4) Effectiveness (incl. availability of outputs; achievement of outcomes and likelihood of impact), (5) Financial Management, (6) Efficiency, (7) Monitoring and Reporting, (8) Sustainability and (9) Factors Affecting Project Performance and Cross-Cutting Issues (see Evaluation Criteria in Annex 2).

28. Most evaluation criteria were rated on a six-point scale as follows: Highly Satisfactory (HS); Satisfactory (S); Moderately Satisfactory (MS); Moderately Unsatisfactory (MU); Unsatisfactory (U); Highly Unsatisfactory (HU). Sustainability and Likelihood of Impact are rated from Highly Likely (HL) down to Highly Unlikely (HU) and Nature of External Context is rated from Highly Favourable (HF) to Highly Unfavourable (HU). The ratings against each criterion were 'weighted' to derive the Overall Project Performance Rating. The greatest weight was placed on the achievement of outcomes, followed by dimensions of sustainability.

Matrix of ratings levels for each criterion

29. The UNEP Evaluation Office has developed detailed descriptions of the main elements required to be demonstrated at each level (i.e. Highly Satisfactory to Highly Unsatisfactory) for each evaluation criterion. The evaluator considered all the evidence gathered during the

⁵ This criterion includes a sub-category on Complementarity, which closely reflects the OECD-DAC criterion of 'Coherence', introduced in 2019. Complementarity with other initiatives is assessed with respect to the project's design. In addition, complementarity with other initiatives during the project's implementation is assessed under the criterion of Efficiency.

evaluation in relation to this matrix in order to generate the evaluation criteria performance ratings of the report.

Strategic evaluation questions

30. In addition to the 9 evaluation criteria outlined above, the TE addressed a number of strategic questions that were formulated in the Terms of Reference. These questions were posed by the UNEP Evaluation Office in conjunction with members of the Project Team. For projects funded by the GEF, findings from the evaluation are uploaded in the GEF Portal. To support this process, evaluation findings related to the 5 topics of interest to the GEF are summarized in Annex 1. The intended action/results on the 5 topics were described in the GEF CEO Endorsement and Approval documents. The 5 topics were i) performance against GEF's Core Indicator Targets; ii) engagement of stakeholders; iii) gender-responsive measures and gender result areas; iv) implementation of management measures taken against the Safeguards Plan and v) challenges and outcomes regarding the project's completed Knowledge Management Approach. The evaluation used the Theory of Change to establish the contribution by the project which relied heavily on prior intentionality through approved project design documentation and results framework with clear articulation of causality.

31. The evaluation applied a mixed method approach to collect information for answering the evaluation questions. By and large the data collection approach was qualitative using desk review and in-depth interviews with different stakeholder groups. In addition, the evaluation managed to conduct two Focus Group Discussions (FGD) with farmers who had benefited from the project in Sri Lanka (site I and II with a participation of 13 female and 4 male) and a site management committee from Faisalabad (Site II) in Pakistan where all the 17 participants were males.

A. Desk Review

32. This was the first step in the data collection process. The project had documented its progress and achievements in activity, progress as well as end of project reports from each country and consolidated regional reports. This documentation immensely contributed to understanding the project because of the high level of details covered in the reports. The information from this review was analysed and compiled into an inception report. Gaps were identified from secondary information and integrated into the primary data collection questions. Tools were thereafter developed to collect primary data to fill the gaps from desk review as well as to validate the information collected from desk review. Annex 6 presents a list of documents that were reviewed during this TE.

Primary Data Collection

33. Primary data was collected using in-depth interviews and to a very limited extent, Focus Group Discussions. The evaluation managed to get representation from all the critical respondent categories as shown in in list of respondents (annex 5). There were three categories of respondents in the interviews, namely:

- (1) Those who were involved in the project as executors and implementers: these included representatives from the NEAs who included the former National Project Directors (NPDs) from four countries; Regional Project Director (RPD), Regional Project Coordinator (RPC)

members of the NSC, Regional Project Director, representative from the project implementing agency (UNEP), site managers and technical resource persons.

- (2) Target beneficiaries; there were three categories of beneficiaries from an evaluation point of view. First were the governments who benefitted from the DSTs and information generated from the project. These included the representatives from the ministries of livestock and environment; the second category of beneficiaries were students who benefitted through learning and also had an opportunity to pursue their postgraduate programs through the project. The last category were farmers who participated in the project directly or through project spin offs. These included 12 poultry farmers (9 female and 3 male) where by 3 were from Pakistan and 9 from Sri Lanka. Goat farmers (16 farms in in Pakistan where all the respondents were male) indigenous cattle fattening farmers (2 farms) and one buffalo farm in Pakistan all with male respondents. The latter were replications of project outcomes.
- (3) Current office bearers in the beneficiary institutions. This category mainly included the government officials from livestock and environment ministries as well as staffs from the participating universities. This category of respondents was very useful in providing information on impact and sustainability of the project, since they had not participated in the project during its life time.

34. All respondents were selected purposively based on the role they played in the project, how they were influenced or their influence on the project outcomes. Given the time lapse of about seven years since the field activities were closed, former Regional Project Coordinator had to be located to support in tracing and mobilizing the National Project Directors who further supported in tracing other project participants in their respective countries. As such only respondents who could be traced at the time of evaluation were interviewed. Primary data as collected through both face to face and virtual interviews. The evaluation upheld gender inclusion in the data collection process. However, this was only limited to the interviews with farmers (see paragraph 31) since other respondents were from institutions, where the evaluator had no control of the gender of the office bearers.

Justification for the Selected Evaluation Methods

35 (a). The selection of the evaluation methodology was justified by the following factors:

- The context and background of the terminal evaluation: field implementation activities ended in the year 2015 as per the project schedule and all the reports submitted by the year 2016. There had been no further contacts between the beneficiaries, the National Steering Committee (NSC) members during the seven-year period before the TE. In addition, some of the National Project Directors and also members of the NSC had since moved to other institutions or taken up other responsibilities in the same organization. This context significantly influenced the selection of the evaluation methodology.
- Available respondents to sample: given the operating context described above, the sample size was extremely small given that some of the people in the implementation especially the members of NSC, staffs from NEA and other stakeholders could not be traced. Hence some of the respondents were current position holders who were not involved in the project

implementation. The latter group was very relevant as far as sustainability is concerned but there was need to conduct in depth interviews with the remnants of the project participants in order to collect detailed information related to project implementation.

- The type of indicators: the indicators for outputs, outcomes and immediate objectives were mainly qualitative in nature. Some of the outputs could be easily extracted from the reports and more information about the resulting outcomes could only be collected through in-depth discussions with the project participants.

Field Mission

35 (b). A field mission was conducted in Sri Lanka and Pakistan. Criteria used for selecting the field sites is presented in table 1 and included:

- Level of implementation of activities/information Rich countries
- Opportunity to cover all the species (pigs, chicken and goats)
- Regional coverage South Asia and Southeast Asia
- To cover the two types of NEA (Research only versus Research and Academic)
- Opportunity to cover countries where there were major issues to learn important lessons.

This criterial was fulfilled in Pakistan. While Vietnam stood better chance of fulfilling criteria for regional coverage (southeast Asia) and species diversity, it was not practically possible to conduct the field visits. This was because of significant language barrier and challenges of tracing NPC at the time of TE. The NPD was later traced long after field visits and provided insightful virtual interview.

Table 1: Criteria for selection of country for field visits

Description	Vietnam	Sri-Lanka	Pakistan	Bangladesh
Region	Southeast Asia	South Asia	South Asia	South Asia
Species	Chicken	Chicken	Chicken	Chicken
	Pigs	Pigs	Goats	Goats
Level of implementation of activities/information Rich countries	Project was implemented as planned. There was additional information on Wild relatives of FAnGR (pigs and Jungle Fowl)	Project was implemented as planned.	Project was implemented as planned. Pakistan had experienced delay in the first year but turned around within the first one year after change national of executing agency; Additional information on AI in goats	Project was implemented as planned. Additional information on Buck Parks and Cock exchange program

Type of NEA	Research Only	Academic Institution/Research	Academic Institution/Research	Academic Institution/Research
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Conclusion

- Vietnam was originally selected to represent Southeast Asia and implementation by a research-only institutions. However, the NPD for Vietnam could not be traced and there was significant language barriers.
- Sri-Lanka originally not selected since Vietnam was targeting pigs as well; this was to allow another Southeast Asia country that had interventions targeting goats to be visited for on-site visits. However, after unsuccessful efforts get the NPD for Vietnam, Sri Lanka was selected to represent a country where there were interventions on pigs.
- Pakistan was selected for field visits to allow for learning of lessons after changing the executive agency. Furthermore, it represented Southeast Asia and allowed for visit to a country intervening on goats.
- Bangladesh was not selected because it had the same achievement with Pakistan and also intervened on the same species within the same region.

For Bangladesh and Vietnam where the evaluator did not make physical visits data was collected through virtual interviews, in-depth study of project reports and KII with overall project management (Regional Project Director, Regional Project Coordinator and the expert from ILRI's Chinese Academy for Agriculture and Science CAAS laboratory at Beijing.

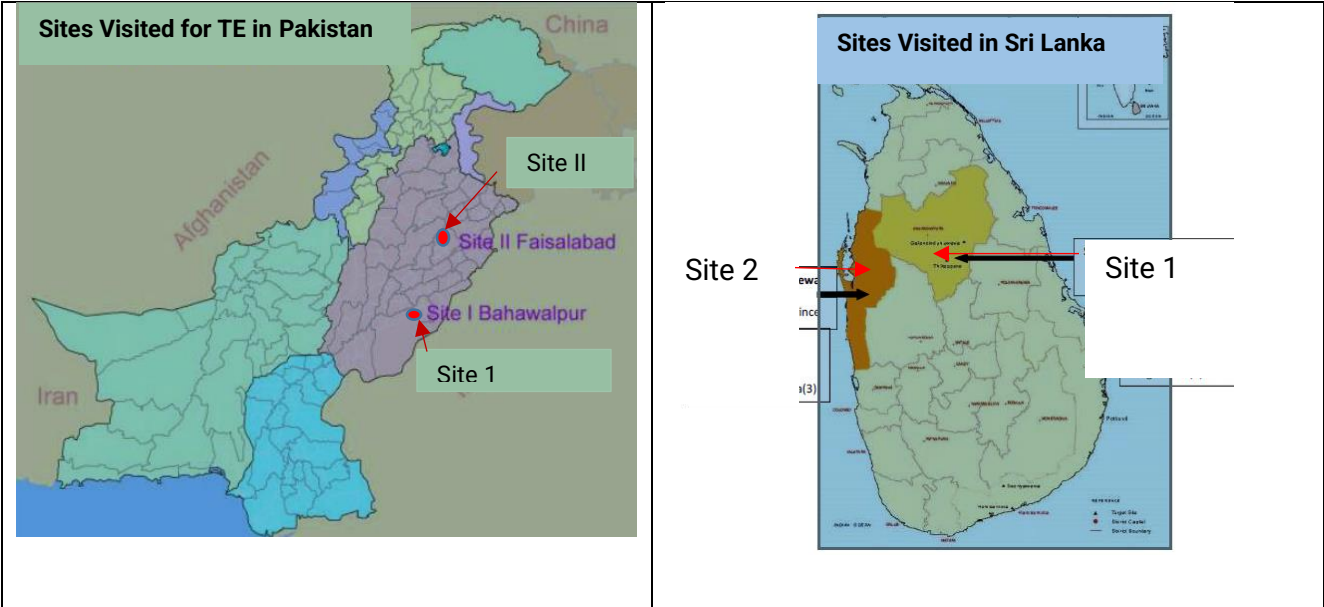


Fig 1: Project Sites visited For TE

2.2 Data Analysis:

36. The analysis applied methodology that was appropriate for qualitative data. This involved categorizing and grouping information according to key thematic areas in the evaluation

criteria. Thereafter responses in each thematic area were analysed to determine common patterns and trends relating to the evaluation questions. Throughout the analysis, efforts were made to consistently triangulate information/evidence derived from different sources. The analysis was done at three levels:

- To determine the status of each of the project indicators through thematic analysis.
- Assessment of the project performance: this involved comparisons of the status of project indicators at TE with the project targets. This revealed the extent to which the project achieved its targets. Other performance criteria (efficiency, effectiveness, relevance, impacts and sustainability) were analysed according to evaluation criteria provided by UNEP (annex 2).
- Assessment of attribution: this involved comparison of the project indicators at TE with baseline status for some indicators. Where there were no baseline indicators, the evaluation undertook further analysis of the evidence generated to determine the causal relationships that supported the observed changes. In addition, the evaluation posed questions using on 'before and after' or probing on the time lines' to determine the attribution.

2.3 Limitations to the Evaluation

37. The entire terminal evaluation was successful. However, citing some of the limitations experienced would help mitigate such in future:

- 1) The major limitation experienced was the impact of the seven-year lapse between the time of TE and closure of field activities. This presented a number of challenges because some key project personnel could not be traced as well as weak recall among the respondents; this limitation was mitigated by the consultant first undertaking in-depth review of all the reports and publications before going for the field mission. Additionally, information was thoroughly triangulated by interviewing different levels where gaps existed for instance the field site personnel, the NSC members, NPDs, RPD, ILRI and UNEP. On the flip side, the seven-year lapse provided an opportunity to assess impact and sustainability of the project.
- 2) Availability of the respondents. It was taking quite some time to get appointments. This is because all the project staff and stakeholders had shifted to other responsibilities and had to find time to prepare for the interviews. This did not affect the quality of work, but rather created delays in completing the work.
- 3) Initially there was delay in getting some project documentation and data sources due to factors such as by staff movements. The missing information was later made available after on boarding the former RPD and NPDs.
- 4) There was no ToC at the design of this project. This raised the question whether it is appropriate to evaluate the project with a criteria that was not applicable at the design stage. The evaluator overcame this challenge by constructive a ToC based on the results chain framework.

38. The main impact of these limitations was on the significant amount of time required to organize and participate in the field missions. This however did not affect the overall assignment delivery time because the contract period was long enough to accommodate these dynamics. UNEP further facilitated the former NPDS and former project site personal to organize the field missions.

39. Throughout this evaluation process and in the compilation of the terminal evaluation report, efforts were made to represent the views of both mainstream and more marginalised groups who included resource poor farmers especially women with limited livelihood options. Data were collected with respect for ethics and human rights issues. All pictures were taken, and other information gathered after prior informed consent from people, all discussions remained anonymous, and all information was collected according to the UN Standards of Conduct'. Efforts were made to have the data collection as inclusive as possible, ensuring that the respondents were representative from institutions that had been involved in the project (Annex 5 presents the list of respondents).

3 The Project

3.1 The Context

40. Agriculture contributes a large proportion of the Gross Domestic Product (GDP) in most developing countries. At the time of conceiving this project, the contribution of agriculture to the GDP of the developing countries was estimated at 8% to 51% in South and Southeast Asia¹. During this time, the demand for livestock products (food, hides/skins and other products) to meet human needs in the developing countries was projected to increase to more than double in the preceding 25 years⁶. Loss of genetic diversity was identified as one of the leading threats to the livestock subsector which ultimately undermined the potential of the agriculture sector to meeting the rising human needs for livestock products, globally. At the time of project inception, 'the global databank for Farm Animal Genetic Resources (FAnGR) of the Food and Agriculture Organization of the United Nations (FAO) reported that around 20% of FAnGR breeds were classified as at risk with about 62 breeds) reported as extinct in the six years preceding this project. This was estimated to a loss of almost one breed per month. The most significant causes of loss of the diversity of FAnGR were crossbreeding and breed replacement which contributed to increased use of exotic breeds. This was among the main causes of extinction or severe erosion of genetic diversity in traditional breeds, despite their adaptation to local environments was.

41. Lack of awareness about the importance of maintaining indigenous diversity, and the production potential of the traditional breeds, were the principal reasons behind these trends. Often, the negative effects on genetic diversity was exacerbated by national policies that did not adequately identify the need for or addressed the conservation of FAnGR. The perception persisted that specialized exotic breeds mainly of European origin were the best option for increased production and incomes. In developing countries on the other hand, the roles of indigenous livestock often included the provision of traction and manure, and as sources of savings, insurance, cyclical buffering, accumulation and diversification, and serving socio-cultural roles (e.g. dowry payments and/or slaughter during special ceremonies). These important services were rarely valued in livestock assessments, leading to distorted government policies and interventions that failed to properly consider the impact of 'new' agricultural practices (e.g. crossbreeding or breed replacement) on farmer livelihoods and indigenous FAnGR.

42. This project was designed to address the challenges of loss of breed diversity among the FAnGR by supporting the mainstreaming of biodiversity in production landscapes of the agricultural sector through strengthening the policy and regulatory framework for FAnGR and their wild relatives, removing critical knowledge barriers about the market value of FAnGR, and developing institutional capacities. This was to be achieved by developing and applying mutually strengthening decision-support tools for: analysing policy and marketing options affecting livestock genetic resources and their wild relatives; setting priorities for conservation; and analysing the cost-benefits of breeding programs incorporating (non-)market values.

⁶ Delgado et al (1999): *Livestock to 2020: the next food revolution. A 2020 vision for food, agriculture, and the environment. IFPRI - 2020 Vision Brief. No. 61. IFPRI. Washington, D.C. (USA). 2p*

3.2 Results Framework

Summary of the project's results hierarchy

43. The immediate objective of the project was to develop and make available effective tools to support decision making for the conservation and sustainable use of indigenous FAnGR and their wild relatives in developing countries, while the development objective of the project was: “to conserve indigenous livestock for future generations and their increased contribution to livelihoods through enhanced use”. The project was structured around two main outcome areas as summarized below (annex 4 presents the full results framework for the project).

Outcome 1: Enhanced conservation & management of FAnGR diversity using the DSTs.

44. Outputs under outcome 1:

1.1 Appropriate breeding tools for low input, smallholder production systems, including animal recording developed and made available for use.

1.2 A tool for cost-benefit analysis of breeding programmes incorporating market and non-market values of FAnGR evaluated and made available.

1.3 Analytical frameworks for assessment of policy and marketing options (existing and alternatives) for FAnGR developed, evaluated and made available.

1.4 Tools for diversity assessment and for setting cost effective conservation priorities developed and made available.

Outcome 2: Increased capacity and enhanced knowledge to use DSTs for conservation of livestock diversity at national and global levels.

45. Outputs under outcome 2:

2.1 Capacity of stakeholders to apply the developed Decision Support Tools for conservation and sustainable management/use of FAnGR and their wild relatives enhanced.

2.2 Knowledge and understanding of value of FAnGR and wild relatives increased, and replication strategies made available.

Project Structure and its delivery against the project's results framework

46. The project structure was designed with capability to effectively deliver the results framework as summarized below.

1) The Project Management Unit (PMU): ILRI was the executing agency for the project at the global level. The global Project Management Unit (PMU) was located at ILRI headquarters in Nairobi. This provided the project management structure with the following capabilities to deliver the results framework:

- a) Institutionalization: Institutionally, the project was anchored by ILRI, being part of ILRI project BT02 “Characterization of Animal Genetic Resources”. The project leader of the ILRI project (BT102) was the director of this GEF project, providing technical and management leadership.

- b) The GEF drew on eight years of work already carried out by ILRI and its partners, and by collaborating with advanced research institutes in developed countries, on assessment of genetic diversity in farm animals. These included methodologies developed concerning the assessment of genetic diversity in livestock populations and its economic valuation.
- 2) The Project Advisory Technical Panel: the panel was made up of technical advisers who included different experts from ILRI including animal breeder, economists, policy analysis, Geographic Information Systems (GIS) and database experts, international consultants), and other global staff as international consultants contracted as required for the different activities of the project e.g. the molecular biologist, modelling, economist, market and policy experts. This membership was expected to change throughout the time frame of the project as needed for different aspects of the project. The aim of forming the Panel was to provide expertise and guidance that was not otherwise available through the project partners. This provided the project management structure with the following capabilities to deliver the results framework:
 - a. The panel was a key structure in the project management that ensured technical and scientific soundness of the project protocols, outputs and outcomes in order to deliver the desired results/change.
- 3) Project Implementation Unit: each of the four participating countries had an appropriate National Executing Agency (NEA) who were mainly drawn from the National Agricultural Research Systems for each country (NARS). This provided the project management structure with the following capabilities to deliver the results framework:
 - a) Being local institutions, the national executing agencies champion the interpretation and utilization of the project outputs to avoid the risk of stakeholder perception that the analytical frameworks used to assess policy and marketing options as too academic and technical to be useful.
- 4) The National Steering Committee (NSC); the membership included a range of stakeholder groups including farmers and farmer communities, researchers and academics, extension workers, Non-Governmental Organizations (NGOs), community leaders, development agencies/ organizations as well as all the relevant government agencies and ministries. This provided the project management structure with the following capabilities to deliver the results framework:
 - a) Inclusion of the relevant government ministries and policy making institutions in the national steering committee enhanced the buy-in of the government in the adoption of the DSTs to achieve the desired change. This was achieved in all countries particular on influencing policy changes to support sustainable utilization and conservation of FANGR. Furthermore, the inclusion of farmer organizations was designed to contribute to buy in by the project beneficiaries as well as building local capacities in implementing and monitoring of the project outcomes. Specifically,

- involvement of farmer organization was very critical in the development and implementation of the community based Open Nucleus Breeding Scheme (ONBS) and related outcomes which required active interest and participation of the targeted farmers. Sustainable results at farmer level were realized in Bangladesh and Pakistan as a result of this mechanism.
- b) Inclusion of development partners and agencies like IUCN, FAO GEF and NGOs like World Vision in the NSCs provided the project with opportunity for leveraging efforts and resources. For example, involvement of FAO was very instrumental in achievement of output 2.1 (development of Domestic Animal Genetic Resources Information System, interlinked to global DAGRIS). Furthermore, these organization provided an effective dissemination pathway for the project results as envisaged in the outcome 2 of the project. The evaluation further established that these organizations offered sustainability and scale up mechanisms through spin offs and also funding of similar projects across the countries.
 - c) Three of the four national executing agencies (Sri Lanka, Bangladesh and Pakistan) had both the research and training mandates. This provided the structure with buy-in for achievement of output 2.1 (At least one University curriculum in each country include specific courses on indigenous FAnGR management and conservation using examples provided by the DSTs and with course material being applied in practical training).
- 5) The Site Coordinating Committees: the site level coordinating committees were the grass-roots implementation units of the project. This provided the project management structure with the following capabilities to deliver the results framework.
- a. Coordinating community participation to ensure all activities at the grassroots were implemented effectively.
 - b. Provided a structure for monitoring site level activities to ensure the project was on track as far as the intended results were concerned.
 - c. Was a link between the NSC and farmers, hence enhanced information sharing which was critical for project efficiency and effectiveness.

3.3 Stakeholders

47. The project had all four categories of stakeholders as summarized below:

- 1) **Implementing and executing partners;** UNEP was the GEF Implementing Partner while ILRI was the Executing Partner.
- 2) **Government officials:** these were officials from relevant ministries in each of the four countries who included:

- a) Bangladesh: Ministry of Environment & Forest (GEF focal point); Ministry of Education; Ministry of Fisheries and Livestock; Directorate of Livestock Services; Bangladesh Livestock Research Institute;
 - b) Pakistan: Ministry of Food, Agriculture and Livestock; Ministry of Environment and Local government (GEF Focal point); Provincial Livestock Departments;
 - c) Sri Lanka: Ministry of Medium and Small scale Plantation Industries, Rural Human Resource; Development and Livestock Development; Ministry of Environment & Natural Resource (GEF Focal point); Department of Agriculture; National Livestock Development Board (NLDB); Department of Wildlife Conservation; Department of National Planning;
 - d) Vietnam: Ministry of Agriculture Rural and Development (Department of Agriculture); Ministry of Environment & Natural Resource (GEF focal point); Provincial Agricultural Departments & local communities (one for each site);
- 3) **Duty bearers:** these included (a) National Executing Agencies (Bangladesh Agricultural University (BAU), University of Agriculture, Faisalabad (UAF) in Pakistan; University of Peradeniya (UoP); (NIAH) in Vietnam; (b) FAO Offices in the four countries, (c) IUCN-(all four countries); (d) CIRAD-BIODIVA (Vietnam); (e) Network for Smallholder Poultry Development (Vietnam and Bangladesh) (f) World Vision (Bangladesh); (g) research institutions (Bangladesh Agricultural Research Council; National Agricultural Research System of Pakistan; Pakistan Agricultural Research Council; Hanoi Agricultural University of Sri-Lanka; (h) Regional bodies (FAO Regional Office for Asia and the Pacific, APHA, and Association for Strengthening Agricultural Research in Eastern and Central Africa (ASARECA) Livestock Network)
- 4) **End Beneficiaries:** these included farmer associations and breeder societies from each of the four countries. Farmers were end beneficiaries of the project interventions through increased contribution to livelihoods as a result of enhanced use, favorable policy and market environments.

48. The project was designed to demonstrate the often traditional distinct role and responsibility that different gender groups play in the management of the livestock resources of the households through selection of species-focus for the project. In this regard, selection of poultry, goats and pigs allowed the difference in gender responsibility be brought to the fore. The project expected to have women deeply involved and benefiting from the project given their “ownership” on the breeding of rural poultry chicken, a priority species for the four countries. Annex 6 presents a stakeholder analysis, focusing on the high power/high interest categories.

3.4 Project Implementation Structure and Partners

A. Implementation and Management Structure

49. Fig 1 summarizes the management and implementation structure of the project. ILRI was the executing agency for the project at global level, overseeing the Regional Project Management Unit (PMU) which was located at its headquarter in Nairobi, Kenya. The project was part of ILRI project BT02 "Improving Characterization of Animal Genetic Resources" whose project leader, a senior scientist, provided overall supervision of the project, as the Regional Project Director (RPD)/technical lead. The PMU included a full time Regional Project Coordinator and RPD.

50. A Regional Project Steering Committee (PSC) was established to oversee project implementation. PSC members included representation from project implementing agency (UNEP-GEF Project Management Officer), project executing agency (ILRI, Regional Project Director and Regional Project Coordinator), National Executing Agencies (the four National Project Directors), the Country GEF focal points, and a representative from FAO. The PSC was supported as required by a Project Advisory Technical Panel, providing expertise and guidance that was not otherwise available through the project partners. The Panel included different experts from ILRI (e.g. animal breeder, economists, policy analysis, GIS and database experts, international consultants), and other global staff as international consultants contracted as required for the different activities of the project. Hence the composition of the Panel was changing throughout the time frame of the project as required by its activities.

51. National level coordination was overseen by National Steering Committees (NSCs). NSCs included the National Project Directors and Coordinators, national GEF-Focal points, representation from related ministries (Environment, Agriculture, Livestock, Wildlife, Policy Planning, Education), Heads of Livestock Departments/services – National and Provincial, Representation from principal livestock research institutes/boards, representation from associated Universities, IUCN Country representatives, farmer groups representation from NGOs associated with the project. The project implementation in each of the four countries was adapted to meet local customs and needs, while NSCs provided the structures needed to ensure ease of regional coordination, synthesis of results, and capacity to share and transfer experiences and knowledge between countries.

52. At the grassroots in each country were the site level coordinating committees. Community participation was an integral element of the site coordinating committee which was responsible for:

- Developing annual work plan and budget for the respective sites.
- Preparing quarterly progress reports and annual summary report and forward to NSC.
- Coordinating activities of the different teams at the sites and providing technical backstopping to the sites.

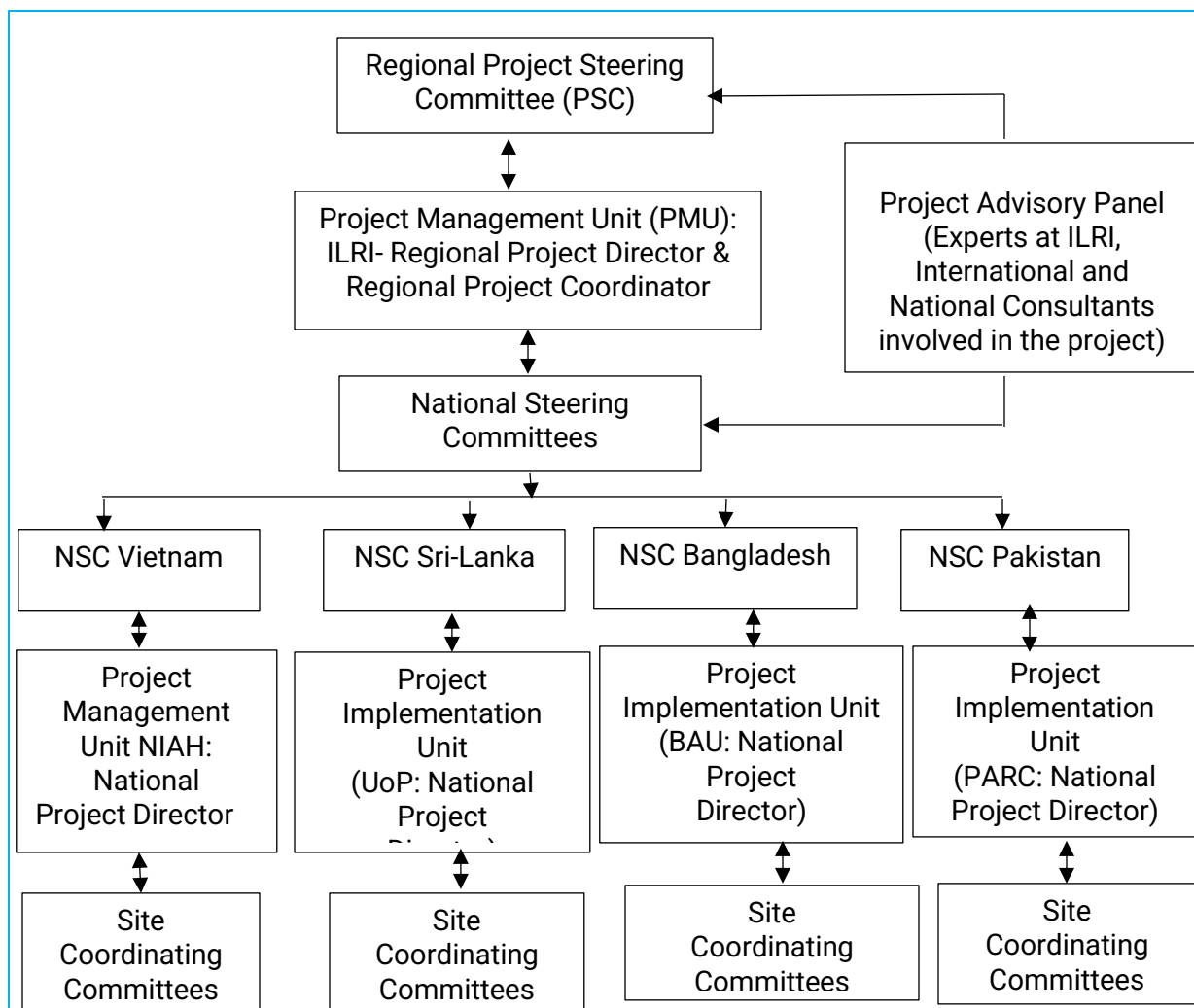


Fig 2: Project Management Structure:

3.5 Changes in design during implementation

53. There were some modifications effected on both project design of the project and its implementation structure since its approval by UNEP. Below is a summary of these modification both before and after Mid Tern Evaluation (MTE):

54. Modification before the MTE

- The NEA in Pakistan was changed, whereby Pakistani Agricultural Research Council (PARC) was replaced with the University of Agriculture Faisalabad (UAF). This modification was as a result of changes of senior staff at Pakistani Agricultural Research Council (PARC) and changes of policy within PARC that led to a substantial lack of support to the project. Following extensive consultations, a “Collaborative Research Agreement” between UAF and ILRI was signed in January 2011, marking the beginning of the project activities in Pakistan, 21 months after the beginning of the implementation in the other countries.

- One of the project activities was dropped, (activities 1.2.8, output 1.2) because it was deemed irrelevant for the development of the decision support tools.
- In Sri Lanka following the Participatory Rural Appraisal (PRA) exercises at Sooriyawewa, it was revealed observed that the area had undergone drastic industrialization/urbanization activities which had resulted in farming of indigenous breeds becoming minor activities at the household level. It was therefore decided and approved by the Sri Lanka NSC and regional PMU to replace this site with 3 villages (Thabbowa, Thewanuwara, Kudamedawachchiya) from the Karuwalagaswewa veterinary division. The PRA exercises conducted in 21st - 22nd July 2010 confirmed the suitability of the new sites for the delivery of the project outcomes.
- PRA results in Sri Lanka revealed that farmers were keen on fattening for the market and not producing piglets where choice of breeds would have been relevant. As a result, the project removed the work on pigs from Sri Lanka. This left Sri Lanka with poultry and Vietnam as the only country where interventions on pigs were implemented.

55. Modifications after MTE

- There was a no-cost extension of the project from March 31st 2014 to December 2020. This modification of the project lifetime was effected through a CPA signed on November 2019 by ILRI and UNEP. This extension, according to the CPA was necessitated by unforeseen delays on the side of UNEP due to computerization of the technical and financial reporting system. As a result of this amendment, the project period was extended from 2015 to December 2020.
- The CPA had stipulated that the technical closure of the project to be six months before its end. There was a request for a no-cost extension from June 2020 to October 2020 to allow ILRI and partners to prepare comprehensive country reports by 15th August and final report by 30th October 2022. This request was necessitated by the COVID 19 lockdowns. On the basis of this revision, the CPA was effective till 30th April 2021 and technical completion date modified to the 31st October 2020.

3.6 Project Financing

A. Budget at design and expenditure by components

56. Table 2 presents a summary of budget at design and actual expenditure, for each of the project components. These results indicate the expenditure ratio was more than 100%. This was attributed to an increase of 22% in co-financing resources raised by project (paragraph 57). ILRI put more resources as co-financing during the prolonged extension period, which resulted to an over achievement of the co-financing targets.

Table 2. Expenditure by Outcome/Output

Component/sub-component/output	Estimated cost at design (US \$)			Actual Cost/ expenditure (US \$)			Expenditure ratio (actual/planned)
	GEF Funds	Co-financing	Total	GEF Funds	Co-financing	Total	
Outcome1: Enhanced conservation & management of FAnGR diversity using Decision- Support Tools.	894,936	2,199,500	3,094,436	893,609	4,040,924	4,934,533	1.59
Outcome 2: Increased capacity and enhanced knowledge to use Decision Support Tools for conservation of livestock diversity at national and global levels	714,500	1,143,500	1,858,000	713,462	3,451,622	4,165,085	2.24
Project management.	151,334	284,000	435,334	151,047	589,301	740,348	1.70
Monitoring and Evaluation	222,000	154,000	376,000	221,720	336,744	558,463	1.49
Total	1,982,770	3,781,000	5,763,770	1,979,838	8,418,591	10,398,429	1.8

Table 3: Expenditure by Component

Description	Amount
Total Project Budget (GEF)	1,982,769.00
Actual Expenditure as at 31st Dec 2020	1,909,351.00
Balance	73,418.00
Variance	4%

Planned and Actual Source of Financing

57. The project raised and additional USD \$ 4,637,490 above the planned target of US \$ 3,781,000 at design stage. This constituted a 122% achievement of its co-financing commitments which was estimated at USD \$ 8,418,490 by the time of its technical completion, in 2020. The governments, through the National Executive Agencies provided a higher co financing than planned through greater involvement of government officials in project activities, funding of activities like goat shows and establishing institutions to replicate the project outcomes. Table 4 summarizes these findings.

Table 4: Co-financing at the Approval and Completion Stages

Co-financing (Type/Source)	GEF/UNEP own Financing (US\$)		Government (US\$)		Other Sources*(US\$)		Total Financing (US\$)		Total Disbursement (US\$)	
	Planned	Actual	Planned	Actual	Planned	Actual	Planned	Actual	Planned	Actual
Grant	1,982,770	1,982,770	260,000	1,875,438	1,000,000	2,575,008	3,242,770	6,433,216	3,242,770	6,433,216
Credits										
Loans										
Equity										
In-kind			807,000	2,579,245	1,714,000	1,388,799	2,521,000	3,968,044	2,521,000	3,968,044
Other Non-grant Instrument										
Other Types										
TOTAL	1,982,770	1,982,770	1,067,000	4,454,683	2,714,000	3,963,807	5,763,770	10,401,260	5,763,770	10,401,260

Sources: Synthesized from Project Annual Report, 2020

4 Theory of Change at Evaluation

Problem Analysis of Causal Relationships for Formulation of the Theory of Change (ToC)

58. According to the project design, the core problem that was addressed by the project was loss of genetic diversity of FAnGR. The long-term effect of this core problem was extinction of some species of the FAnGR. At the time of the project design, FAO's Global Databank for FAnGR had reported that around 20% of FAnGR breeds were classified as at risk and, and during the six years before the design of this project, 62 breeds had become extinct – amounting to the loss of almost one breed per month. According to the design, the most significant root causes of loss of the diversity of FAnGR were crossbreeding and breed replacement which contributed to increased use of exotic breeds.

59. The underlying causes of crossbreeding and breed replacements were national policies that did not adequately identify the need for or addressed the conservation of FAnGR. There were persistent perceptions that specialized exotic, mainly European origin, breeds were the best option for increased production and income. These perceptions were based on market analyses that were distorted by, e.g., government and donor subsidies, maintenance costs tied to exotic breeds without adaptive capabilities and lack of recognition of the often-multi-functional roles of indigenous FAnGR. Lack of awareness about the importance of maintaining indigenous diversity, and the production potential of the traditional breeds, were other principal reasons behind these trends. Figure 3 presents a summary of this causal relationship used to formulate the ToC.

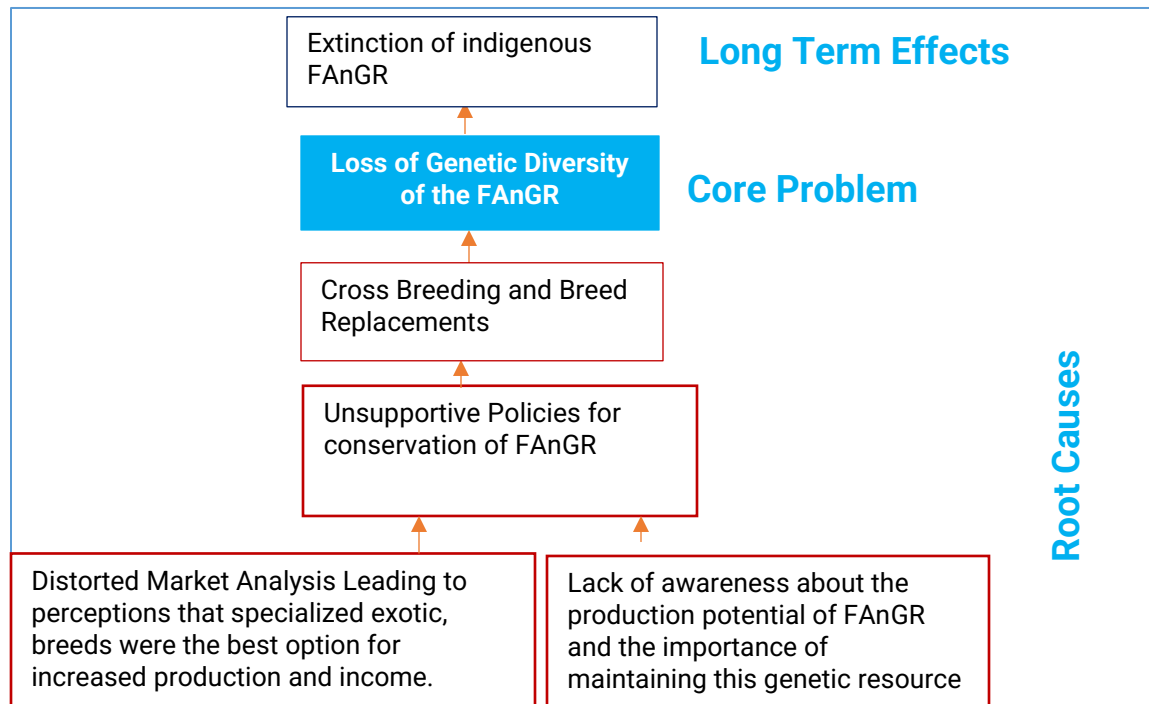


Fig 3: Summary of causal relationships used to formulate the ToC

Theory of Change

60. The analysis of casual relationships (paragraph 59) used to construct the ToC clearly reveal a strong causal pathway for delivering desired change by translating the cause and effects into intervention components. In this regard, the project's interventions were designed to address these root causes through a systematic, participatory process of developing and, making available mutually strengthening decision-support tools for: analysing policy and marketing options affecting livestock genetic resources and their wild relatives; setting priorities for conservation; and analysing the cost-benefits of breeding programs incorporating both market and non-market values. Awareness-raising and capacity-building for each of the stakeholder groups would emphasize the value of FAnGR to human livelihoods and ensure that the tools were embedded in and used efficiently by institutional programmes, the private sector, rural communities and individual livestock keepers.

61. The desired change, i.e. reversing the loss of FanGR diversity was to be realized by supporting the mainstreaming of biodiversity in production landscapes of the agricultural sector through strengthening the policy and regulatory framework for FAnGR and their wild relatives, removing critical knowledge barriers about the market value of FAnGR, and developing institutional capacities.. Figure 4 presents the pathway from the problem analysis to the desired change.

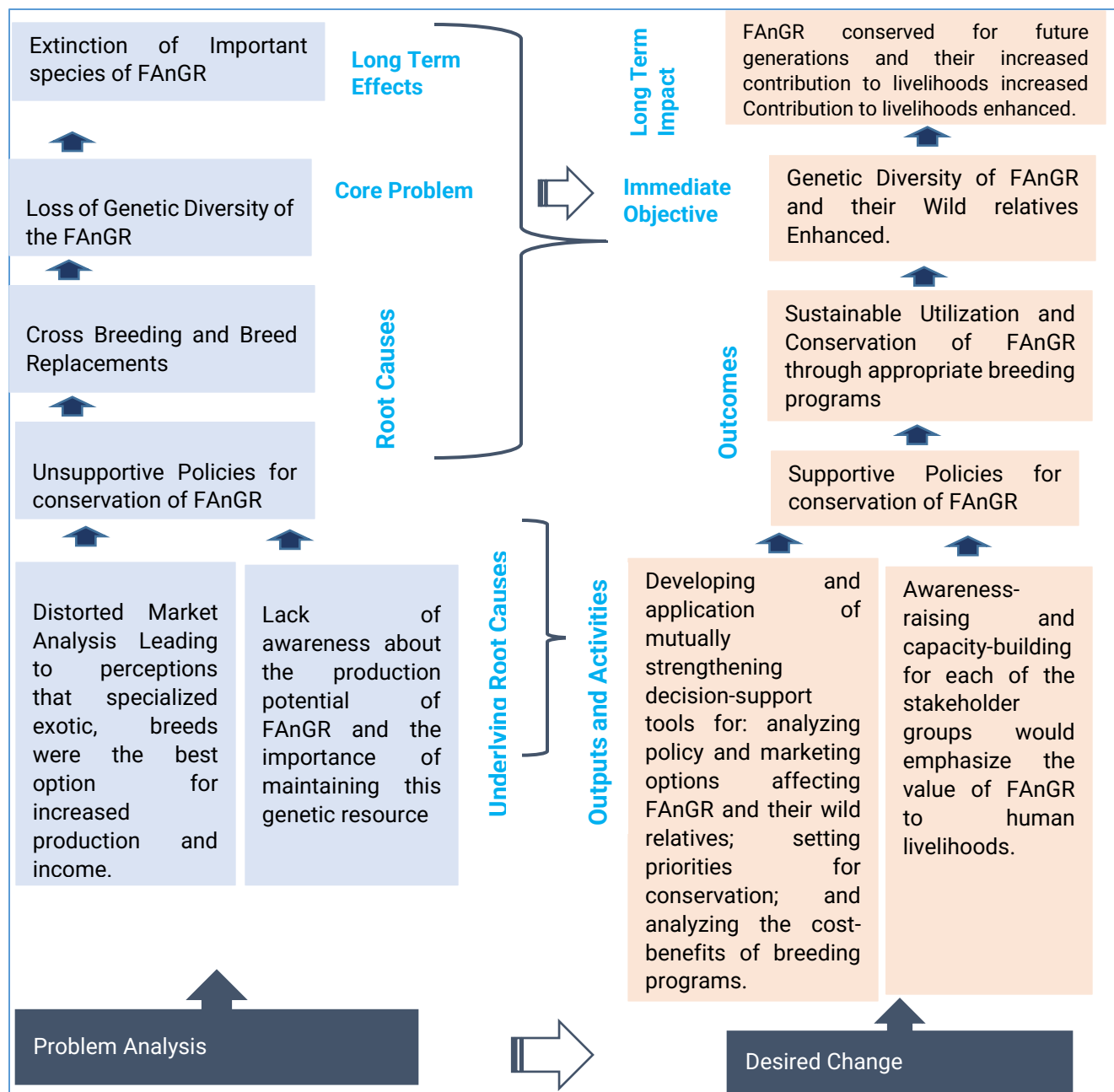


Fig 4: Pathway for Delivering the Desired Change

Reformulation of Results Hierarchy in Line with the ToC

62 (a). The ToC was constructed based on the logical framework and no major changes were deemed necessary by the Evaluator for this evaluation. The evaluation however some few areas where the results hierarchy could be reformulated based on the analysis of the cost and effects. The evaluation found the project outputs as appropriate for the achievement of the desired

change by the project. Analysis of the causal relationships (**fig 3**) shows that the outcomes and immediate objectives were not in alignments. As a result, the evaluation has reformulated the immediate objectives and the outcome 1. This reformulation however did not change the project's goal post. Reformulation of ToC at evaluation involved in-depth consultation with the National Project Directors, Regional Project Coordinator as well as in-depth review of the project document. Thereafter the evaluator analysed the information provided by these stakeholders to develop the ToC at evaluation. Table 5 presents areas where the results hierarchy were reformulated while figure 5 presents the ToC at TE.

Table 5: Results Hierarchy after Reformulation

Result Hierarchy	Formulation in the approved Project Document	Formulation at TE
Long Term Impact - Developmental Objective	Conservation of indigenous livestock for future generations and their increased contribution to livelihoods through enhanced use	Indigenous livestock Conserved for future generations and their contribution to livelihoods increased
Immediate Objective	Effective tools to support decision making for the conservation and sustainable use of indigenous FAnGR and their wild relatives in developing countries developed and made available	Enhanced conservation and management of FAnGR diversity
Outcome 1:	Enhanced conservation and management of FAnGR diversity using Decision Support Tools (DST)	Supportive Policies and appropriate Breeding programs developed using the DSTs and implemented.
Outputs Under Outcome 1	<ol style="list-style-type: none"> 1) Appropriate breeding tools for low input production systems are developed and evaluated. 2) An effective tool for cost-benefit analysis of breeding programs for alternative breeds evaluated and made available. 3) Analytical frameworks for assessment of policy and marketing options (existing and alternatives) for FAnGR developed, evaluated and made available. 	<ol style="list-style-type: none"> 1) Appropriate breeding tools for low input production systems developed and made available. 2) An effective tool for cost-benefit analysis of breeding programs for alternative breeds evaluated and made available. 3) Analytical frameworks for assessment of policy and marketing options (existing and alternatives) for FAnGR developed, evaluated and made available. 4) Tools for diversity assessment and for setting cost effectiveness

	4) Tools for diversity assessment and for setting cost effectiveness conservation priorities developed and made available.	conservation priorities developed and made available.
Outcome 2:	Increased capacity and enhanced knowledge to use decision support tools for conservation of livestock diversity at national and global levels	Increased capacity and enhanced knowledge to use decision support tools for conservation of livestock diversity at national and global levels
Outputs under Outcome 2	<p>1) Capacity of stakeholders to apply the developed Decision Support Tools for conservation and sustainable management/ use of FAnGR and their wild relatives enhanced.</p> <p>1) Knowledge and understanding of value of FAnGR and wild relatives increased and replication strategies made available.</p>	<p>1) Capacity of stakeholders to apply the developed Decision Support Tools for conservation and sustainable management/ use of FAnGR and their wild relatives enhanced.</p> <p>2) Knowledge and understanding of value of FAnGR and wild relatives increased and replication strategies made available.</p>

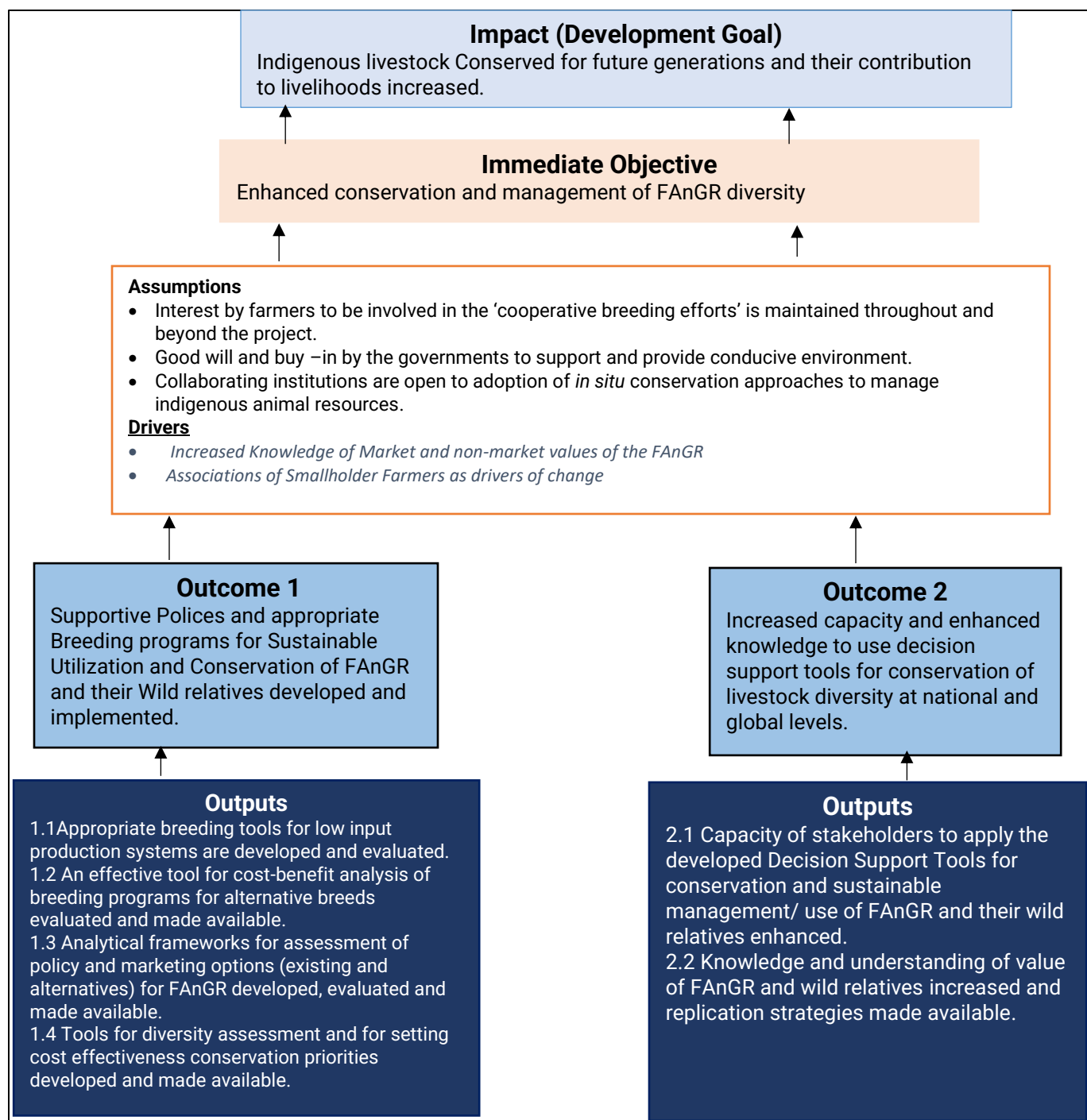


Fig 5: Theory of Change at TE

Assumptions:

It is assumed that smallholder farmers will be willing to form associations and work together in the implementation of programs for sustainable utilization and conservation of FAnGR. This

includes overcoming the pressure from the intensive production systems for quick gains but rather seek long term gains from sustainable utilization of FANGR. It is also assumed that there will be good will from government to use the DSTs in order to make conducive policies in support of sustainable utilization and conservation of FAnGR. From a sustainability point of view, it is expected that the government will invest resources in scaling up the projects gains and also supporting stakeholders especially livestock keepers to implement breeding programs for conservation on sustainable utilization of FANGR. It is also assumed that the learning institutions will be willing to institutionalize the knowledge generated on FAnGR in order to grow in-country capacity to design and manage breeding programs for sustainable utilization of FAnGR.

Drivers of Change:

One of the main drivers of change is the knowledge of both market and non-market value of FAnGR. Sustainable impact will be created once stakeholders including livestock keepers are aware of the value in conserving FAnGR. This will trigger greater investment from government, market actors in the breeding programs as well as development of technologies in support of sustainable utilization and conservation of FAnGR. Association of smallholder farmers into breed societies, after awareness of the value of FAnGR will be a key sustainability structure for breeding programs.

Key Stakeholders for driving change

62. (B) Below is a list of stakeholder categories who would drive the desired change, according to the constructed ToC:

- 1) Policy Makers were critical in the development and implementation of policies supportive to sustainable utilization of FAnGR. Further the government had a critical role of designing and supporting breeding schemes for sustainable utilization and conservation of FAnGR.
- 2) National Research Systems in the participating countries: were critical in the development of appropriate tools to support policy analysis and breeding options. The institutions had a crucial role of informing the industry on appropriate breeding schemes which could support sustainable utilization and conservation of FAnGR.
- 3) Livestock Keepers: Their role in driving change was mainly as implementers of the breeding schemes.
- 4) Other development Organizations like NGOs: these would play a critical role of scaling up impact beyond the project sites within and outside of the participating countries.
- 5) International agencies: these included FAO and IUCN whose expertise in designing of sustainable breeding schemes for sustainable utilization and conservation of FAnGR and their wild relatives. Further these agencies had a critical role of influencing policies beyond participating countries, disseminating DSTs as well as funding scale up programs.

5 Evaluation Findings

5.1 Strategic Relevance

63. These criteria assessed the extent to which the project was suited to the priorities and policies of the donors, implementing regions/countries and the target beneficiaries. The section below presents a narrative on analysis of strategic relevance of this project based on the evidence generated by the evaluation.

5.1.1 Alignment to the UNEP Medium Term Strategy⁷ (MTS), Programme of Work (POW) and Strategic Priorities

64. At the time of the project approval UNEP was implementing the Medium-Term Strategy (MTS) 2010–2013. However, the project was also implemented under MTS 2014-2017 and 2018 and 2021. Out of each MTS, UNEP formulates two sets of biennial plans referred to as Program of Work (POW) from each MTS. The project was designed to strengthen the national capacities of the participating countries as well as increasing the awareness of policy-makers regarding the potential of indigenous breeds for enhanced contribution to the livelihoods of poor, smallholder farmers; providing information on the genetic diversity in selected populations and developing tools for setting priorities for both conservation and utilization; documenting the range of FAnGR as a basis for public awareness, monitoring of their status and as a source of information for the planning of livestock research and development programmes at national and regional levels, and enacting plans to conserve and sustainably use specific species/breeds Table 6 presents a review of the MTS under which the project operated from 2009 to 2020 and how the project contributed to these strategies as well as the Bali Strategic Plan for Technology Support and Capacity Building⁸ (BSP) and South-South Cooperation (S-SC).

⁷ UNEP's Medium Term Strategy (MTS) is a document that guides UNEP's programme planning over a four-year period. It identifies UNEP's thematic priorities, known as Sub-programmes (SP), and sets out the desired outcomes, known as Expected Accomplishments (EAs), of the Sub-programmes. <https://www.unenvironment.org/about-un-environment/evaluation-office/our-evaluation-approach/un-environment-documents>

⁸ <http://www.unep.fr/ozonaction/about/bsp.htm>

Table 6: Alignment and Contribution of the Project to UNEP’s MTS and Associated POW during the Project Period

MTS	Objective of Ecosystem management Subprogram	Expected Accomplishments by the MTS	How the Project Contributed to the Strategic Objectives
<p>MTS 2010 to 2013</p> <p>Ecosystem management</p>	<p>The UNEP objective is that countries utilize the ecosystem approach to enhance human well-being.</p>	<p>The ecosystem Management thematic area sought to integrate approaches for assessment and management of biodiversity at multiple scales and across sectors while also strengthening linkages between the states of ecosystem and human wellbeing including aspects of poverty and health.</p>	<p>The project contributed to this MTS by providing tools for assessment and management of biodiversity targeting the FAnGR and their wild relatives. It was envisaged that use of these tool to formulate supportive policies and appropriate breeding programs would improve the states of ecosystem services and enhance human wellbeing including aspects of poverty and health.</p>

<p>MTS 2014-2017</p> <p>Ecosystem management</p>	<p>The objective of the ecosystem management for development sub programme was to promote a transition to integrating the management of land, water and living resources, with a view to maintaining biodiversity and</p> <p>Providing ecosystem services sustainably and equitably among countries.</p>	<p>This was driven by the need to meet the challenge of feeding and clothing a growing population while supporting efforts by countries to develop greener economies in the context of sustainable development and poverty eradication. This involved enlisting worldwide expertise and partners in supporting countries efforts to promote an integrated management of land and water for provision of ecosystem services including freshwater efficiency and food systems. The aim is to help ensure the conservation and sustainable use of biodiversity and strengthen the resilience and productivity of ecosystems, in particular for food security and water.</p>	<p>The project facilitated partnerships and development of expertise in the Conservation of FAnGR to promote sustainable Utilization and Conservation of FAnGR. The project was to make available DSTs for policy and market analysis as well as tools for Cost benefit analyses of different breeding programs. This would contribute to the MTS i.e. to ensure the conservation and sustainable use of biodiversity and strengthen the resilience and productivity of ecosystems, in particular for food security and water.</p>
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<p>MTS 2018-2022</p> <p>Ecosystem management</p>	<p>Marine, freshwater and terrestrial ecosystems are increasingly managed through an integrated approach that enables them to maintain and restore biodiversity, ecosystems' long-term functioning and supply of ecosystem goods and services.</p>	<p>This subprogram aimed at addressing the causes of ecosystem degradation, and to promote the safeguarding and restoration of the ecosystem by providing countries with tools, best practices, and support in cross sector collaborations around ecosystem management.</p> <p>The health and productivity of marine, freshwater and terrestrial ecosystems are institutionalized in education, monitoring and cross-sector and transboundary collaboration frameworks at national and international levels.</p> <p>Policymakers in the public and private sector test the inclusion of the health and productivity of ecosystems in economic decision-making.</p>	<p>The project main objective was to address the causes of loss of breed diversity among the FANGR which was in line with the objective of this MTS. Additionally, the project institutionalized the conservation of FAnGR in university curriculum in the four participating countries in line with the aspirations of this MTS. Furthermore, the project supported development of supportive policies and action plans to enable sustainable utilization and conservation of FAnGR.</p>
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Rating for Alignment to UNEP's MTS, POW and strategic priorities: **Highly Satisfactory**

5.1.2 Alignment to Donor/Partner Strategic Priorities

65. Alignment with donor priorities in this project was a fundamental part of project design and grant approval processes. The project was addressing the GEF's Biodiversity Strategic Objective 2 and its Strategic Programs 4 and 5⁹ by supporting the mainstreaming of biodiversity in

⁹ GEF-4 (2006-2010): Strategic Objective Two of GEF 4 was to, "to Mainstream Biodiversity Conservation in Production Landscapes/Seascapes and Sectors,": The two sub programs under this objectives were: Sub program 4: "Strengthening the Policy and Regulatory Framework for Mainstreaming Biodiversity," which was to support the development of the policy and regulatory frameworks that promoted and rewarded mainstreaming and building the necessary institutional capacity. The fifth sub program under this Strategic Objective was "Fostering Markets for Biodiversity Goods and Services," which sought to catalyze markets for biodiversity goods and services and promote voluntary environmental certification to generate biodiversity gains through market mechanisms. The Strategic Objective for GEF 5 (2010-2014) remained the same. The two Subprograms under this Strategic Objective were: Sub program 4: "Strengthening the Policy and Regulatory Framework for Mainstreaming Biodiversity," and Su Program 5 'Strengthen Capacities to Produce Biodiversity-friendly goods and Services' as Sub program five.

The Strategic Objective for GEF 6 (2014-2018): Strategic Objective 2: Reduce Threats To Globally Significant Biodiversity; Subprogram 3 - Program 3: Preventing the Extinction of Known Threatened Species; Sub Programme 4:

production landscapes of the agricultural sector through strengthening the policy and regulatory framework for FAnGR and their wild relatives, removing critical knowledge barriers including about the market value of FAnGR, and developing institutional capacities.

Rating for Alignment to Donor/Partner strategic priorities: **Highly Satisfactory**

5.1.3 Relevance to Global, Regional, Sub-regional and National Environmental Priorities

66. The project was aligned with Millennium Development Goals (MDGs) which were the global development blueprint throughout the life of this project from Planning to field closure. Specifically, it was aligned with Goal 1 (Eradicate Extreme Poverty and Hunger); Goal 8 (Develop a Global Partnership for Development); Goal 7 (Ensure Environmental Sustainability). Consistently it remained in alignment with the Sustainable development Goals as presented in table 7 (a).

Table 7 (a): Alignment of the Project with SDGS

Relevant SDG	Alignment of the Project with SDG
SDG 1 – End poverty in all its forms everywhere	FAnGR are important source of livelihoods of livestock keepers globally. In developing countries, their role often include the provision of traction and manure, and as sources of savings, insurance, cyclical buffering, accumulation and diversification, and serving socio-cultural roles (e.g. dowry payments and/or slaughter during special ceremonies). This was especially relevant for poor farmers in remote villages, where the majority of indigenous FAnGR were kept. Sustainable utilization and conservation of these FAnGR would therefore contribute to enhancing livelihoods as well as food security especially for poor livestock keepers.
SDG 2 – End hunger, achieve food security and improved nutrition; promote sustainable agriculture	FAnGR are a key element of food security and a means of improving nutrition especially in rural areas. Many of the most vulnerable people depend on food gathered from indigenous livestock such as chicken, eggs and milk. Additionally these FAnGR contribute to sustainable agriculture through provision of manure. Sustainable utilization and conservation of these FAnGR would therefore contribute to enhancing food and nutritional security, healthy lives as well as sustainable agriculture.
SDG 3 – Ensure healthy lives and promote well-being for all at all ages	
SDG 5 – Achieve gender equality and empower all women and girls.	The project design was intentional at inclusion of women in the project activities by working with short cycle livestock where women have traditional ownership rights.
Women play a vital role in agriculture, nutrition and	

GEF 7 (2018-2022): Strategic Objective 1: Mainstream biodiversity across sectors as well as landscapes and seascapes;

the well-being of families and communities.	
SDG 15 – Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification and halt and reverse land degradation and halt biodiversity loss	<p>The conservation, restoration and sustainable use of terrestrial ecosystems is essential for sustainable Development. Targets under this goal include a call to integrate ecosystem and biodiversity values into National and local development planning, poverty reduction strategies and accounts.</p> <p>The project aimed at conserving the Biodiversity of FAnGR so as to continue supporting the human wellbeing. The project supported institutionalization of conservation of FAnGR through policy frameworks, action plans as well as university curriculum.</p>

67. All the four partner countries had endorsed the Convention on Biological Diversity (CBD) and had made livestock development a national priority. More specifically, in Bangladesh the Fifth National Development Plan had articulated specific strategies to address livestock issues, including increasing the supply of livestock through their increased productivity, while the Bangladesh Livestock Research Institute had conservation and improvement indigenous FAnGR among its priorities. The Pakistan National Conservation Strategy was addressing the need to preserve and improve genetic quality of livestock breeds, while the national breeding policy focused on buffalo, cattle, sheep and goats. The Pakistan Agricultural Research Council (PARC) was managing research and other aspects of FAnGR with the relevant national, regional, and international agencies. Sri Lanka’s National Environmental Action Plan called for the conservation and sustainable use of crop and livestock diversity in traditional farming systems, and with the Department of Animal Production and Health, a biodiversity action plan for the livestock sector had been developed. Vietnam’s National Conservation Strategy (NCS) included agricultural biodiversity where a 2004 law regulated the management and preservation of FAnGR. The project was in alignment with and contributed to these national goals in the four countries, which incentivized the government to support project implementation through co-financing.

108. The project interventions and approaches were aligned to the mandates of the executing institutions at the regional and national level especially in research, training and knowledge sharing through publishing of research outputs. This further underscored, their investments to the project as co-financiers. The project immensely contributed to the mandate of these institutions by providing opportunities for research and outreach in the field of conservation genetics.

Rating for Relevance to regional, sub-regional and national environmental priorities: **Highly Satisfactory**

5.1.4 Complementarity with Relevant Existing Interventions/Coherence¹⁰

68. At the design stage, the project had identified linkage and potential synergies with a number of GEF/UNEP projects intervening on sustainable utilization and conservation of biodiversity for sustainable ecosystem products. These projects included:

- 1) Management of indigenous vegetation for rehabilitation of degraded rangelands in the arid zone of Africa;
- 2) Desert margins Programme.
- 3) In situ conservation of endemic ruminant livestock of West Africa.
- 4) GEF/UNEP project "In situ Conservation of Crop Wild Relatives through Enhanced Information Management and Field Application" which focused on the conservation of crop wild relatives and their increased availability for crop improvement in Armenia, Bolivia, Madagascar, Sri Lanka and Uzbekistan. Links to this project were to occur at two levels: a) at the full project level to capitalize on the complementary objectives related to values of indigenous species/breeds and their wild relatives; b) in Sri Lanka where awareness-raising activities could be linked.
- 5) Linking of the DAGRIS database (project outcome) with the Domestic Animal Diversity Information System (DAD-IS) of FAO, resulting in the continuous exchange of information, and the ILRI technical leadership of the FAO-IAEA Coordinated Research Programme "Characterization of small ruminant genetic resources in seven Asian countries", in which all the four partner countries were participants.
- 6) The project was anchored on an ongoing project by ILRI BT02 "Improving Characterization of Animal Genetic Resources".
- 7) The project had envisaged to link with national projects especially paying attention in coordinating activities with the Strengthening of Livestock Services project in Pakistan (funded by the EU and govt. of Pakistan); the Livestock Development Planning Project in Sri Lanka; and, the project Making Markets Work Better for the Poor (funded by ADB) in Vietnam.

69. The TE established that the project had put in place institutional linkages, information-sharing and capacity-building mechanisms with these initiatives. At the time of implementation, the main mechanism for linkages with the above initiatives was the NSC and the national workshops organized by the project on sustainable utilization and conservation of FAnGR. These platforms allowed participation of representatives from organizations involved in these initiatives, to facilitate information sharing and collaborations. Notable collaboration during project implementation included the World Vision Bangladesh, FAO, IUCN, CAAS-ILRI joint laboratory in Beijing and the USAID funded Agricultural Innovation Program for Pakistan (AIP).

Rating for Complementarity with relevant existing interventions: **Highly Satisfactory**

Overall Rating for Strategic Relevance: Highly Satisfactory

¹⁰ This sub-category is consistent with the new criterion of 'Coherence' introduced by the OECD-DAC in 2019.

5.2 Quality of Project Design

70. Operating Context: The project document had identified four main risk categories and thereafter mainstreamed strategies for mitigating each of the identified risk. By and large, the project endeavoured to implement these risk mitigation strategies as described in section 5.3:

71. Project Preparation: The project preparation and planning was elaborate, with a fully funded PDF-B phase which enhanced participation of stakeholders from the four countries in the project preparation. There was a comprehensive situational analysis to reveal the problem, its root causes and effects. The analysis was supported by data from authoritative sources such as FAO and national governments among others revealing both global and national trends. There was a comprehensive stakeholder analysis whose outcome was a list of all stakeholders to be involved in project implementation and execution. The project document had clearly expressed how different gender groups would be included in the project, mainly through representation in committees as well as use of livestock species like poultry and goats where women play a greater role.

72. The project document had elaborated how policies related to utilization of FAnGR were based on distorted market analysis and could therefore not adequately identify the need for, or address the conservation of FAnGR, but instead were exacerbating the negative effects on genetic diversity. The document had clearly brought out the concerns of how poor farmers in remote villages in development countries (where the majority of indigenous FAnGR are kept) were impacted by such policies and new agricultural practices.

73. Strategic Relevance The project design revealed a clear alignment of the project with the donor strategic priorities, the UNEP Medium-Term Strategy and Programme of Work; Regional, sub-regional and national environmental priorities as well as complementarity with other interventions. Countries that participated in the project were identified following broad consultations in such a manner to provide a range of scenarios that ensured conservation tools were developed and tested in contexts that represented the broadest possible set of circumstances, especially in terms of species coverage, extent of within-species genetic diversity (of, at least, a subset of species) and documented threats to genetic diversity. In addition to working in countries with many species and breeds, and those in which there was evidence of significant threats to genetic diversity, other important considerations in designing the project were evidence of domestication events having taken place in the geographical area or of (pre-) historic trade routes and human migration having passed through the area.

74. Intended Results and Causality: The project design shows a very clear causal relationship and coherence between outputs, outcomes and objectives depicting a clear Theory of Change (ToC). The project planning had clearly determined the core problem i.e. the loss of diversity of FAnGR. Chapter f of this report has presented this cause and effects analysis as well as Theory of Change.

75. Logical Framework and Monitoring: The project had a complete results framework (annex 4). A number of weaknesses on the results framework were noted as described in section 5.7. The TE further established that achievement of the expected outcomes required the project to

use its time efficiently so as to allow learning to be captured from application of the tools once rolled out. There were a number of outputs that were out of control by the project for instance establishment of sustainable Open Nucleus Breeding programs (ONBP) was quite ambitious, but achievable if project was efficient with time from the very beginning. Sections 5.7.1 and 5.7.2. have provided more details on the strengths and weaknesses of the results framework and the monitoring plan.

76. Governance and Supervision Arrangements: There was a clear governance structure in place at the design stage. The project document had defined the roles of all partners regarding execution of performance, achievements of project objectives and tracking project progress and financial accountability. The project implemented the governance structure as was proposed in the project document. Sections 3.2 and 3.3 has described how this structure facilitated achievement of project results. This was in addition to the standard mid-term and final evaluations of the project as per UNEP procedures, as well as supervision missions conducted by the UNEP task manager and/or Programme Management Officer.

77. Stakeholder Participation and Cooperation: the roles and responsibilities of external partners were properly specified in project document and appropriate to their capacities. In addition to availability of FAnGR which were at risk, security situation and availability of technical expertise to provide strong partnership in the project were important considerations while selecting partners. These partnerships contributed to successful implementation and achievement of project results as follows:

- Contribution of expertise through the NSCs especially FAO on conservation of FAnGR, IUCN on the conservation of wild relatives
- Scale up or the project interventions through their projects for instance IUCN, World Vision Bangladesh
- Co-financing both cash and non-cash for instance USAID funded Agricultural Innovation Program for Pakistan (AIP), World Vision Bangladesh, FAO and IUCN

78. Learning, Communication and Outreach: The learning and knowledge management was embedded in the periodic project management meetings i.e. The PMU, NSCs, Site Management Committee. Workshops and conferences were also used for learning. The communication with key stakeholders was embedded in the project management structure. Output 2.2 focused on tool dissemination and training on tool application to non-target countries and stakeholders. The learning and communication triggered interest and enthusiasms among stakeholders on utilization and conservation of FAnGR. This led to some of the replication and scale up of project interventions for instance livestock shows in the four countries, demand for development of some of the tools for other livestock species.

79. Financial Planning / Budgeting: The budget was structured around project components (result areas), project management and result areas. This enabled the project coordinator to allocate funds objectively and also in tracking the extent to which spending was in tandem with delivery of project results. A resource mobilization strategy was in place and had clearly defined the source of funds (GEF and Co-financing). The strategy was based on extensive consultations among partners. The project document had factored in the amount of expected co-financing in

the budget at the project approval stage which was a good strategy for ensuring that the respective partners (ILRI, governments and NEAs) were fully committed to their co-financing obligation from the very beginning. The evaluation has established this co-financing obligation was fully met and exceeded.

80 (a). Leveraging Past work by ILRI and Species Selection: Development of DSTs was building on work that had been carried out by ILRI, including methodologies developed concerning the assessment of genetic diversity in livestock populations and its economic valuation; hence giving the project a head start. There were built-in mechanisms for inclusion and project efficiency. For instance the project focused on short-livestock species like goats, chicken and pigs. The criteria for selection of target livestock species are: species of economic importance to the 'poor' farmer communities; high genetic diversity in the country; "short-generation" times species; Species/breed threatened by crossing or breed replacement, but not yet on the verge of extinction; presence of wild relatives in the country; and species common and of economic importance in large number of Asian countries and more particularly in several of the project countries. This would allow substantial results to be achieved during the life of a project.

80 (b). Responsiveness to Human Rights and Gender Equality: while the project was working with institutions and government as the first beneficiaries of the project, the end beneficiaries of the project were the livestock keepers. The design was quite clear that the interventions would impact on poor livestock keepers. The project was quite intentional in inclusion of women in the project by working with species that are usually managed by women. To impact on this target group the project provided direct support such as incubators and breeding animals to ensure this group realized material benefits from the project. This was an incentive to ensure their continued participation in the project from the very beginning. The evaluation established that these interventions directly translated to income generation and enhanced organizational capacity.

81 (a). Risk identification and Social Safeguards: The risk was identified and mitigated. As a result, the identified risks did not materialize. Section 5.3 presents the risk analysis.

81 (b). Environmental and Social Safeguards: The project was pro-environmental safeguards considering that biodiversity is ensuring environmental integrity. There were no specific environmental risk from this project and therefore active monitoring was not implemented.

81 (c): Country Ownership and Driven-ness: the project directly worked with government institutions (Universities and research institutions) as well as the relevant ministries. Officials from the government ministries were members of the NSC and therefore fully participated in the governance and implementation of the project. Outcomes like policy changes were realized in the four countries because of this involvement of the government in the project. The evaluation has established that the reported sustainability of project outcomes was based on this ownership of the project by the government.

81. (D). The project's completed Knowledge Management Approach, The project had Knowledge and Learning Deliverables including websites, databases, workshops, livestock shows and publishing of papers among others. These were quite effective in creating awareness, sharing knowledge and new information. The evaluation however established that except the livestock shows in Bangladesh, Pakistan and Vietnam, the knowledge storage and sharing platforms were not sustained by the countries after project funding.

82. Sustainability / Replication and Catalytic Effects: Sustainability was addressed in the design through the following strategies:

- a) Building awareness about FAnGR's potential livelihood and biodiversity.
- b) Demonstrating real improvements in regard to the stability and levels of income of those raising FAnGR.

83. The project design had envisaged that these two strategies would justify financial investments by the benefiting governments for maintaining the overall system structures developed by the project (e.g. policy and markets, prioritization of FAnGR conservation and production at federal and provincial levels). Practical capacity building of the key stakeholders, developing technical expertise among researchers, as well as incorporation of key products from the project in the University curriculum were some of the interventions to enhance sustainability. The design had proposed development of action plans for the conservation and utilization of FAnGR and wild relatives as a strategy for promotion of favorable policies.

84. The project design presented strategies to promote/support scaling up, replication and/or catalytic action. Through outcome 2, the design had proposed to have stakeholder groups gain sufficient capacity for application of the tools. Further training materials (modules and manuals) were to be developed and made available, within the framework of the project and beyond to support replication efforts. Project findings from studies as well as key outputs/results were disseminated to wider stakeholders through workshops/conferences and scientific papers, as well as electronic access to the decision tools and accompanying tutorials for replication and scale-up. The TE has established that these provisions were implemented. However there was no institutionalization of platforms for storage and updating of the tools, databases and new information by the countries. As a result, these platforms were not functional at the time of this TE.

85. Identified strength and weaknesses of the Project Design: Key strengths of the project included effective stakeholder consultations and governance structures, strong alignment with implementing institutions hence enhanced ownership and sustainability. The project leveraged partnerships to achieve effectiveness. Communication and outreach strategies were implemented which created significant momentum on sustainable utilization and conservation of animal genetic resources. Areas showing some weaknesses on the design was lack of quantitative measure of project results disaggregated by gender, social groups, countries and species. Quantitative measures and data disaggregation was most appropriate to monitor progress and ultimately to determine the number of final beneficiaries e.g. livestock keepers who were impacted by the project interventions. The M&E system had a number of weaknesses as presented in section 5.7.1 and 5.7.2. Time allocated for implementation was a key constraint for the project considering that the project had proposed to set up breeding schemes and observe the results while strengthening institutions and other sustainability mechanisms.

Overall Rating for Project Design = 5.2= Highly Satisfactory

5.3 Nature of the External Context

The evaluation established that the operating environment was quite supportive as far as political. Economic and social factors were concerned. Some of the factors in the operating environment that had potential to affect the project were identified at the design stage. An analysis on the extent to which these factors materialized and mitigation strategies employed by the project is as follows:

86. National and local governments demonstrating sufficient political will and committing adequate human and financial resources: This was rated as a low risk factor. The mitigation measure put in place was to engage key policy-makers in the design and budgeting of the project and serve as members of National Steering Committees which, in turn, were based on each country's national policies and organizational set-up. The evaluation has established that the project worked in close collaboration with the relevant government agencies as members of the NSC. As such the project enjoyed good will and support from the government which included human (participation by government staff in the delivery of the project as in kind contribution and financial resources (for instance financing of replication projects in Pakistan and Bangladesh)), buy-in of project interventions which led to achievement of some key strategic outputs such as policy changes in three countries to mainstream conservation of indigenous FAnGR, providing the required institutional framework and investments required for sustainability for instance the establishment of Pakistan Centre for Livestock Breeding, Genetics and Genomic among others. Indeed, the governments in Pakistan and Bangladesh, at the time of TE had initiated other donor funded programs, basing on the models developed by this project.

87. Field-level stakeholders (farmers, producer associations, NGOs, extension officers and project staff) working together effectively and relating to national policies: this was identified as a medium risk to the project. To mitigate this risk, the project proposed to have representative stakeholders in the pilot-site areas serve on Site Coordinating Committees and have one participate in the NSC. This was meant to facilitate discussion, information exchange, decision making and more effective implementation of project activities. The evaluation has established those farmers, were represented in the Site Management Committees through their associations. There was representative from Site Management Committees to the NSC which facilitated information exchange with grass root actors.

88. Occurrence of natural disasters like floods, droughts (climate changes risks), earthquake, and tsunami at project sites. This risk was rated as unpredictable at the time of project design. However, the designers proposed to mitigate the impacts of such occurrences on the project by establishing close linkages between project and relevant government departments. The evaluation noted that this risk materialized and was mitigated as follows:

- a) In Sri Lanka, the government recovery interventions around Sooriyawewa project sites after the 2004 Tsunami had led to drastic industrialization/urbanization activities which rendered farming of indigenous breeds minor activities at the household level. The project mitigated this by changing the project site to Karuwalagaswewa which is in the North West. In Pakistan the security situation had deteriorated in one of the project sites (the Samar Bagh in the Dir District) which posed unfavourable environment to the project. This was mitigated by shifting the project site to three

villages Waseeran, Dalowal and Balochwala at Faisalabad district. The two changes of project sites took place at the project inception hence did not affect the project outcomes.

- b) There were post-project disruptions that impacted on the sustainability of project benefits for instance, movement restrictions during the COVID 19 pandemic hampered the meetings by farmer associations which ultimately weakened their participation in collective activities. In addition, the final closure face to face workshop could not be convened in 2019 and 2020 which led to use of a virtual close out webinar. A virtual close out meeting limited participation of certain stakeholder categories such representatives of livestock keepers who had no access to internet connectivity or stakeholders who could not keep up with time differences.
- c) The economic recession in Sri Lanka in the year 2020/2021 led to near collapse of livestock feed industry as well as electricity rationings which grounded the poultry hatching activities at the project sites to a halt. This impact of the economic recession on the commercial poultry drew greater attention to the indigenous chicken by the government and other stakeholders in order to meet the supply gap which was in line with the aspirations of this project.
- d) In Sri Lanka, pigs were selected as one of the project species at the initial screening. However, the in-depth analysis at the project inception phase revealed that farmers had shifted to fattening and less on production, given that there were producers of piglets. As such the project objectives could not be achieved with regard to this species In Sri Lanka. The project therefore opted to focus activities related to pigs in Vietnam.

89. Disease outbreaks (e.g. avian flu) at project sites: this was rated as low risk to the project. To mitigate the impacts of this risk on the project, the project, at design stage proposed to establish close linkages between project and local veterinary personnel. The evaluation has established that there were incidences of Newcastle Disease in Sri Lanka which affected the flocks. The project through the site management committee managed to bring these outbreaks under control, without any negative impacts to the project. Field visits to Pakistan and Sri Lanka at TE revealed after the project exit, most of the farmer associations (indigenous chicken and goats) did not maintain linkage with the veterinary officials for continued support with vaccinations. As a result the challenge of diseases was quite persistent at the time of TE.

Rating for Nature of the External Context -Favourable

5.4 Effectiveness:

5.4.1 Availability of Outputs

90. This section describes the extent to which the project generated the expected outputs, as part of the ToC pathway. The section is structured as follows:

- 1) Availability of Output.
- 2) Indicators for the output.

- 3) Status of outputs based on the indicators as at the time of TE. A narrative on achievement has been presented to qualify the availability of each output.

Output 1.1 Appropriate breeding tools for low input production systems are developed and evaluated;

91. Indicator 1.1.1: Practical manuals on breeding schemes (at least 2 manuals) per partner country

Baseline Status:

- In all four countries, there were no breeding schemes and practical manuals for target species at Baseline.

92. Status at TE – Achieved

A total of 11 Breeding and management protocols for pigs, indigenous chicken and goats were produced by the project as follows:

- a) Poultry Diseases manual (Sri Lanka)
- b) Training manual on Village poultry (Sri Lanka)
- c) Monographs of Indigenous Chicken.
- d) Indigenous Chicken Production Manual in English and Urdu (Pakistan)
- e) Judging and Selection in Beetal Goats (Pakistan).
- f) Artificial Insemination in Goats (Pakistan)
- g) Indigenous Goat Rearing Manual (in English and Bengali)
- h) Indigenous Chicken Rearing Manual (in English and Bengali)
- i) Three manuals on chicken and pig husbandry (Vietnam)

93. Spin Offs:

Due to demand from farmers, breeder associations and extension officers, other manuals were developed to build on the project work. These were as follows:

- a) Judging and selection of Sahiwal Cattle (Pakistan) developed in 2016 by the project in partnership with the USAID funded Agricultural Innovation Program for Pakistan (AIP)
- b) Judging and selection in Buffaloes developed in 2022 by former NDP through a Sub Centre of the National Livestock Breeding, Genetics and Genomics at Cholistan University of Veterinary (project offshoot) and Animal Sciences (CUVAS) and UAF
- c) Selection and Judging guide for Nachi goat developed by the project in collaboration with the USAID funded Agricultural Innovation Program for Pakistan (AIP)
- d) A handbook of Artificial Insemination in large and small ruminants developed by former NDP through the Sub Centre of the National Livestock Breeding, Genetics and Genomics at Cholistan University of Veterinary and Animal Sciences (CUVAS) and UAF.

94. Indicator 1.1.2: At least one breeding schemes established by the project functional and sustainable at the end of the project for each species by year 5.

Baseline Status

Studies and field visits undertaken during the PDF B phase indicated that there were no indigenous breed improvement programs at the community level for the targeted species in all four countries.

Status at TE- Achieved

95. The project managed to develop breeding schemes in each country informed by the needs presented during baseline survey. The schemes were as follows:

- a) **Indigenous goat improvement program in Bangladesh:** This involved setting up Four “Buck Parks” in three villages of Site 1 to improve goat breeding in the project area. Good quality mature Black Bengal bucks for use in the buck parks were selected from the government Department of Livestock Services (DLS), Bangladesh Livestock Research Institute (BLRI) as well as those screened from local areas. The project developed record cards separately for each of the breeding buck. Farmers brought their does to these Buck Parks for breeding at a fee (initially it was Taka 10 per service later it was raised to Taka 50 per service; the charges at the time of TE was 100 Taka). To support this program a total of 93 Superior Indigenous does and 18 bucks were distributed among 71 households in Gangatia, Borachala and Pachpai village (Site 1) with the support of World Vision Bangladesh (WVB), Bhaluka ADP and UNEP-GEF-ILRI FAnGR Asia Project.
- b) **Indigenous Chicken Improvement Program in Bangladesh:** The trainings delivered by the project raised awareness among farmers in Site 2 of the need to use quality cocks and change their household mature cocks after at certain intervals to stop inbreeding. As a result, a “Cock Exchange” program was designed to improve performance of local chicken as well as control inbreeding. This involved farmers’ exchanging and rotating their cocks with others in the same village. In Site 2 villages, some chick production farms emerged to supply chicks to other farmers in the villages. Farms for producing improved cocks also emerged in the Site 2 villages to produce superior indigenous breeding cocks and making them locally available to the Indigenous chicken farmers. The project supported this program by distributing a total of 1,895 selected hens and 474 cocks to 285 farmers. Of these farmers, two were indigenous cock farms which received 50 cocks each to scale up cock production capacity in the project area. Additionally, the chick producing farms were also provided with Day Old Chicks (DoC) from project supported society incubators. The donations were from the project together with partners including BLRI and BAU.

96. Other Support activities to the goat and chicken breed improvement programs included:

- Introduction of bio-secured and environment friendly goat and chicken housing in the project area by the project and World Vision Bangladesh the buck park owners.
- Routine vaccination and de-worming programs for both goats and chicken were run in the project area (both sites) since inception of the project with joint initiatives of farmers, UNEP-GEF-ILRI FAnGR Asia Project, WVB, Bhaluka ADP, Jhenaigati ADP and Upazila Livestock Offices.
- Foster Milking of the Kids: This involved provision of milk replacers to combat insufficiency of mother’s milk for the new-born kids,

- Training and backstopping activities: the project provided capacity building to the farmers in the program through regular field visits, village committee meetings, site committee meetings, yard meetings, refreshers training and knowledge/view exchange meetings with farmers, BAU teachers, researchers and international visitors took place during the whole project period as well as whenever need arose.
- c) **Indigenous goat breed improvement program in Pakistan:** This involved selection and improvement of the indigenous goats mainly the Beetal goat. Goat selection and breeding in Pakistan had been going on before the project but with limited knowledge, instruments and tools. The country has a large market for well finished indigenous goats especially during festive seasons like Eid al-Adha. The project organized all interested goat farmers in Punjab province to form a goat breeding association called Punjab Goat Breeders Association. Thereafter, the project built capacity of this association to develop and implement a goat breeding program in Punjab.
97. The project further provided the breeders with tools to guide breed improvement namely:
- Breeding standards for Beetal and Nanchi goats
 - Guidelines for judging Beetal and Nanchi goats
 - Goat shows were organized by the project as important platforms for learning and also competing on performance since farmers who had best performing goats for different traits according to the breed standards were awarded trophies and certificates along with cash prizes.
 - Further farmers who had small land holding requested the project to support in establishing AI in goats as a strategy to reduce the costs of keeping breeding bucks. As a result, the project initiated the AI services in goats using frozen semen in indigenous goats. This was the first time the country used frozen semen.
 - Other interventions to support the indigenous goat breeding program included:
 - Training of farmers on goat farmers on breeding, vaccination and hay making.
 - Field days (along with goat shows) were arranged for goats' farmers to demonstrate management practices such as tattooing, vaccination, deworming and record keeping.
 - Design and dissemination of elevated housing.
- d) **Indigenous Chicken Breeding Program in Pakistan:** Indigenous chicken program mainly focused on distribution of improved chicken to households to improve performance. A total of 766 indigenous chicken, mainly UniGold (cocks, cockerels, pullets and hens) were distributed farmers while 110 households received chicken cages. An indigenous chicken production manual (in Urdu) was published for capacity building of farmers.
- e) **The indigenous chicken breed improvement program in Sri Lanka:** this involved building capacity of farmers to select and improve performance of their indigenous chicken through adoption of appropriate management practices. Project studies had revealed that there were market opportunities for indigenous chicken which could be incentives for farmers to improve management of their flocks. The aim of the project intervention was therefore to promote conservation the indigenous chicken through sustainable utilization. To meet the market demands, the project supported farmers, through their societies to acquire incubators. A total of 5 incubators (2 in small size capacity of 140 eggs and 3 medium size of 280 eggs) were donated according to the different production capacities of the farmer societies. Each society

had one member who was charged with the responsibility of keeping and operating the incubator. Members of the society brought eggs from indigenous chicken to the incubator for hatching and pay a small fee to meet the electricity costs. Other support included:

- Training of farmers in the two project sites on general management, feeding, breeding management and disease control. A total of 186 participated from the above five villages.
 - Provision of poultry houses, waterers and feeders to improve poultry houses in order to overcome the challenge of predators. A total of 106 houses were constructed and 150 waters/feed troughs given to project farmers.
- f) **Indigenous chicken improvement program in Vietnam:** The program was established based on the findings from the household survey which revealed that there was inbreeding among flocks of indigenous chicken as a result of re-using a single cock for breeding in one flock over a long period of time. The project introduced cock exchange program using superior cocks from indigenous chicken. With time farmers observed the improvement in growth and other performance parameters which created demand for improved cocks. The project brought one incubator to accelerate access to improved chicks of quality indigenous chicken. Demand from farmers motivated four farmers to invest in private incubators to meet the demand for the improved chicks from farmers. The project, in some areas, introduced mating of domestic chicken with jungle fowl to improve performance of the local chicken. The project provided training on chicken husbandry through a 6-course program.
- g) **Pig improvement program in Vietnam:** this was motivated by low performance of the indigenous Ban Pig which an average litter size of 5-6 piglets. This was associated with poor selection and inbreeding. The project introduced an improvement program that involved introduction of selected boars of the Ban pig. To sustain the program a boar exchange program was established. The project provided training on pig husbandry through a 6-course program. In addition, 30 people were trained on management of insemination of pigs. The project had established the positive attributes of wild pigs such as disease resistance, adaptation to harsh climatic conditions as well as high quality pork compared to the local Ban pigs. As a result the introduced crossing of the domestic Ban pig with wild boars to exploit these superior genetics in the wild pigs. This resulted to high meat quality and increased litter size. This helped the farmers to meet the demand for good quality pork in the increasing high end markets like Hanoi.

Output 1.2: An effective tool for cost-benefit analysis of breeding programs for alternative breeds evaluated and made available.

98. Indicator 1.2.1: *Documentation of comparative market and non-market advantages of at least one indigenous breed, crossbreed and exotic breed for each species documented by end of year 4.*

Baseline Status

- Reviews undertaken during PDF B phase revealed that cost-benefit analysis of breeding programs was not used as a criteria in designing breeding options.

Status at TE: Achieved

99. Each of the four countries undertook a market agents' survey for the species they were working with. This provided information about who were the actors in the market as well as provision of goods and services. Molecular characterization further provided information on comparative advantages of wild species like wild pigs and jungle fowls which informed cross breeding initiatives in Vietnam to provide tangible evidence. This information was used to determine the interventions that would enhance sustainable utilization and conservation of each of these indigenous breeds. The projects recognized the advantages of the indigenous breeds. The training manuals developed for each of the species included the advantages of keeping the indigenous breeds.

Output 1.3: Analytical frameworks for assessment of policy and marketing options (existing and alternatives) for FAnGR developed, evaluated and made available.

100. Indicator 1.3.1: *Analytical frameworks for assessment of policy and marketing options or FAnGR.*

Status at Baseline

- In all four countries analytical framework for market and policy options were not available.

101. Status at TE – Partly Achieved

The project developed analytical frameworks which were used to assess the policy and marketing options. The frameworks were published along with the reports and papers generated in the analysis. Therefore, these frameworks are available as published literature to both participating countries as well other audiences, globally. Annex 7 presents a list of these publications. The project websites were not functional at the time of this TE.

102. Indicator 1.3.2: *Market strategies and options for at least one commodity from indigenous FAnGR products (meat in goat and pigs, meat and eggs in chicken) for at least one production system in each country – 4 strategies in all.*

Baseline Status:

In all four countries analytical framework for market and policy options are not available.

103. Status at TE – Partly Achieved

The market studies informed the project teams on the opportunities of commodities produced by each of the project supported indigenous livestock species. These were used to determine what to target in the breed improvement programs. In Vietnam, the lucrative market pork in cities like Hanoi were the drivers for improving the Ban Pig. Pakistan focused on the market opportunities provided during the festive seasons to breed the Beetal goat for meat; the same approaches were implemented in Bangladesh and Sri Lanka.

104. Output 1.4. Tools for diversity assessment and for setting cost effectiveness conservation priorities developed and made available.

Indicator 1.4.1: Breed diversity index developed for each project species by end of year 4.

Baseline Status

- No breed diversity index available for any of the species in any of the countries

105. Status at TE – Partly Achieved

- The breed diversity index was integrated in the DAGRIS data base developed for the project countries. This was however not available with the NEA since the DAGRIS was not functional at the country level at the time of this TE.

106. Indicator 1.4.2: Breeds and populations for each species ranked in each country for the implementation of conservation strategies at country level by end of year 5.)

Baseline Status

- Models for optimal allocation of conservation resources not available.

107. Status at TE – Partly Achieved

The project undertook studies on target species in each of the four countries. The information was used to determine the species and thereafter breeds to be covered by the project. Additionally, the findings were documented in form of reports and papers on status of the indigenous Farm Animal Genetic Resources. The evaluation observed that the studies determined the species of focus during the project but there was no database where breeds were ranked for purposes of conservation.

Output 2.1: Capacity of stakeholders to apply the developed Decision Support Tools for conservation and sustainable management / use of FAnGR and their wild relatives enhanced.

108. Indicator 2.1.1 : Four training programs conducted in each country, tailored to each specific stakeholder needs (policy makers, extension officers, researchers and academics, farmers' organization) on the use of DST for conservation and management of FAnGR and their wild relatives held by year 4.

Baseline Status

- Policy makers, extension officers, researchers and academics, farmers' organization do not have access to training related to indigenous FAnGR issues and their wild relatives.

Status at TE- Achieved

109. The project implemented a range of trainings, which have been clustered as follows

- a) Training of researchers/academics: There were two categories of training beneficiaries as follows:
- i. Students who participated and helped the project field activities and programs gained much practical knowledge and skills due to their engagements which immensely enriched their career. A total of 125 postgraduate and undergraduate students benefited from these opportunities. These included 114 students who were trained by ILRI Scientists on data collection for Household and market studies as well as PRA Procedures. Six students were trained on longitudinal data analysis at ILRI Campus in Nairobi while five were trained in the CAAS-ILRI joint Laboratory in Beijing – China on molecular characterization of the indigenous breeds using samples collected from their respective project sites.
 - ii. Post graduate students conducted their research within the framework of the project. A total of 39 post graduate students conducted their research as follows: Pakistan and Bangladesh had 10 postgraduate students each; while Vietnam and Sri-Lanka had 12 and seven postgraduate students respectively.
- b) Training of Farmers
- i. Farmers were trained directly on management practices (housing, feeding, disease control, breeding among others using manuals produced by the project. A total of 1,331 farmers were trained according to available data in the reports. The number of farmers trained is underreported because some countries did not record number of participants for most of their training activities.
 - ii. Training of breeder societies/farmer associations: Except for the Vietnam Ho Chicken association, all the associations spearheading sustainable utilization and conservation of FAnGR were all formed by the project. Hence there was initial capacity building to support formation of these societies. Thereafter all the societies (including Ho Chicken association from Vietnam) received training focusing on institutional strengthening as well as breeding improvement programs they were spearheading.
- c) Training of Extension service providers, project personnel and Private AI Service providers
- i. Project staff and extension workers who worked with project as well as service providers who were involved in the project activity were trained on different topics. A total of 345 people under this category were trained, distributed as follows: 32 project staff from the tree countries who attended various training opportunities organized by the project plus 313 service providers trained under Goat AI program in Pakistan.
- d) Training of Stakeholders on DAGRIS: This was done after setting up the DAGRIS system for each country. Training was facilitated by ILRI scientists and targeted stakeholders including research institutions, other universities, relevant government ministries, participating NGOS for instance World Vision Bangladesh among others. A total of 99 were trained as follows: Sri Lanka (no 20); Pakistan -47; Bangladesh -15 and 17 from Vietnam.

110. Indicator 2.1.2: *At least one University curriculum in each country include specific courses on indigenous FAnGR management and conservation using examples provided by the DSTs and with course material being applied in practical training by year 5.*

Baseline Status

- Current University curricula did not include specific issues related to management and conservation of FAnGR.

111 Status at TE - Achieved

- a) At BAU, a master's course called Farm Animal Genetics Conservation was introduced. Conservation and improvement of FAnGR was taken up as chapter called genetic diversity and breeding practices in the Animal breeding and genetics courses for both undergraduate and post graduate courses in two Universities in Bangladesh i.e. (1) Bangladesh Agricultural University (BAU) B.Sc. A.H. (Hons) Level 3 Semester 2 Course name Genetic Diversity and Breeding Practices a separate chapter on FAnGR; (2) Patuakhali Science and Technology University (PSTU) in B.Sc. A.H. (Hons) curricula.
- b) Pakistan: two new credits course on conservation of indigenous chicken resources was added to the "Poultry Science" degree program as UAF, Pakistan.
- c) Sri Lanka: at UoP, the curriculum was revised and incorporated courses on Conservation of Indigenous Animal Genetic resources.

112 Indicator 2.1.3: *At least 2 researchers in each country with disciplinary expertise on in situ conservation and management of FAnGR available by the end of the project.*

Baseline Status

- PDF-studies had identified the presence of only 1-2 scientific expertise (per country) on FAnGR conservation and management.

113 Status at TE - Achieved

The project supported training of researchers on breeding and genetics at masters and PhD levels. After graduating all the masters' students went ahead and undertook PhD in the same field. All the PhD graduates continued to teach in the same institutions or other universities in their respective countries with some becoming associate professors in the same field. A total of 39 researchers were trained in the four countries distributed as follows: Bangladesh -10; Pakistan -10; Vietnam -12 and Sri Lanka -7.

114. Indicator 2.1.4: *At least one farmers association in each country participates in national Programme/committees on FAnGR conservation as a result of the project by end of year 5.*

Baseline Status

- PDF studies indicate that there are no farmers associations involved in FAnGR conservation and management issues in any of the countries.

115. Status at TE

A total of 8 Associations were formed across the four countries as follows:

- The Goat Breeders Associations of Punjab (GBAP) in Pakistan
- Indigenous Goat Rearing Women Cooperative Society Ltd in Bangladesh, Site 1
- Indigenous Chicken Rearing Women Cooperative Society Ltd, Site 2
- Five livestock producer associations in Sri Lanka

In addition, the old indigenous Ho-Chicken association in Vietnam was strengthened by the project through training and provision of equipment to enhance its performance.

Output 2.2. Knowledge and understanding of value of FAnGR and wild relatives increased and replication strategies made available.

116. Indicator 2.2.1: *Awareness workshops held every year during project life to increase knowledge and understanding of value of FAnGR and wild relatives.*

Baseline Status

- Organized activities (workshops, seminars, media coverage, etc.) on FAnGR and wild relatives' conservation issues were limited in all the project countries.

117. Status at TE - Achieved

A total of 32 awareness events were organized in the four countries to generate interest among stakeholders on the value of indigenous animal genetic resources in order to promote sustainable conservation and utilization. The events were distributed as follows Bangladesh -4; Sri Lanka -6; Pakistan; 12 and Vietnam – 10 (Including the annual Ho Chicken festivals).

118. Indicator 2.2.2: *At least 1 TV/radio Programme, 1 exhibition, 2 open days and 4 newspaper articles/advertisement to increase knowledge and understanding of value of FAnGR and wild relative published in each country by year 3.*

Baseline Status

- Organized activities (workshops, seminars, media coverage, etc.) on FAnGR and wild relative's conservation issues were limited in all the project countries.

119. Status at TE - Achieved

- d) Events (Exhibition, open days): A total of 28 awareness creation events were held in the four countries during the life of the project. The events were distributed as follows: Pakistan -12; Bangladesh -3; Vietnam -10 and Sri Lanka 3.
- e) Different media were used to increase knowledge and understanding of value of FAnGR and wild relative published in each country. These included Pamphlets (in English and local languages), posters, video clips, video documentaries, radio documentaries among others. At least 23 different categories of information communication materials were developed and used across the four countries.
- f) A total of 192 publications were made and disseminated in the four countries. These included thesis, training manuals, abstracts, conference proceedings, published research papers,

books and other promotional materials. Most of these were published to reach global audience.

120. Indicator 2.2.3: *One National Domestic Animal Genetic Resources Information System (DAGRIS) developed and was made available on the web for use by end of year 4, interlinked to global DAGRIS by end of year 5.*

Baseline Status: No livestock database currently available in any of the four countries.

121. Status at TE: - Achieved

Country based indigenous Domestic Animal Genetic Resource Information system (DAGRIS) for all four project countries was developed by ILRI:

- Bangladesh-http://172.27.1.33/dagris_ba/ ;
- Vietnam-http://172.27.1.33/dagris_vt/;
- Pakistan- http://172.27.1.33/dagris_pk/
- Sri Lanka- http://172.27.1.33/dagris_sk/ .

The total number of people trained on DAGRIS is reported under output 2.1. This database was however not available at TE.

122. Indicator 2.2.4: *Project findings disseminated in four national workshops involving other partners by year 3 - 4, and one international workshop involving other countries held by year 5.*

Baseline Status:

- Websites focused on FAnGR and wild relatives at country level were not available.
- International seminars mainly addressing issues related to indigenous livestock had not been organized in the recent past at baseline.

123. Status at TE: - Achieved

- g) A national seminar was organized by the University of Peradeniya titled 'Conservation and Sustainable use of Indigenous Genetic Diversity in Poultry, Goats and Pigs. At this seminar the NPDs also made presentations on the status of chicken, goats/pigs in their countries and highlighted the impact of GEF activities addressing some of the constraints. This was held in Kandy Sri Lanka in September 2011.
- h) National seminar on 'Phenotypic and Molecular Characterization of Indigenous Chicken, Goats and their wild relatives', where the NPDs graduate students and ILRI scientist presented project data. held in Pakistan in September 2012
- i) National workshop on Country DAGRIS (Domestic Animal Genetic Resource Information system), where ILRI scientists presented the C-DAGRIS prepared for the four project countries. This was held in Pakistan in September 2012
- j) Wrap-up Webinar workshop hosted ILRI Nairobi, Held on 18/19 November 2020
- k) International Workshop -The project co-sponsored the 26th Annual PGIA Congress (University of Peradeniya, Sri Lanka) held in November 2014, where a special session was devoted to 'animal biodiversity'. Twenty-two project staff from all 4 countries and invited speakers from India, the Philippines and Nepal participated and made valuable presentations at this session.

The congress was followed by a panel discussion organized by the project to discuss the issues related to the regional conservation of indigenous animal genetic resources.

Rating for Availability of Outputs: **Satisfactory**

5.4.2 Achievement of project outcomes

124. This section describes the extent to which the project generated the expected outcomes, as part of the ToC pathway. The section is structured as follows:

- l) Outcomes.
- m) Indicators for the outcome.
- n) Status of outcome based on the indicators as at the time of TE. A narrative on achievement has been presented to qualify the availability of each outcome. This further includes the changes among the target beneficiaries as a result of the project interventions.

125. Outcome 1: Enhanced conservation and management of FAnGR diversity using Decision Support Tools (DST)

126. Indicator 1.1: *Conservation and/or use action taken in at least one project site and involving at least one target species, using one or more of the DSTs developed by this project (by end of year 5).*

Baseline Status

- Studies and field visits undertaken during the PDF B phase indicated that the indigenous population sizes were not well documented.
- PDF-B studies report indicated that there was no quantification of marketed product.

127. Status at TE – Achieved

Achievement of this outcome was dependent on the extent to which the project would apply the DSTs to develop breeding programs in the utilization and conservation of FAnGR. The evaluation established that the countries identified specific tools that were relevant to their and used to them to develop breed improvement programs. At least each country managed to set up a program for one of the livestock species as described below:

- o) **Indigenous goat improvement program in Pakistan:** The indigenous goat breed improvement was established and actively promoting sustainable utilization and conservation of different breeds of indigenous goats in Punjab province. The program is anchored by an active breeder society formed by the project, shows and competitions, market pull as well as an active stakeholder support mainly government of Punjab province and UAF. Tools (breed standards, judging, AI) were made available by the project for breeders and breeder societies to run and scale the breed improvement program. At the time of TE, this program has contributed to improvement of milk production for the Beetal goat to an average of 3 litres and live body weights exceeding 140Kg among other traits.

- p) **Indigenous chicken Improvement in Sri Lanka:** A chicken improvement program was established and made operational in the two project sites. The program was running successfully anchored by the farmer associations and the market pull for products from indigenous chicken. Through this program, farmers had a regular supply of chicks for rearing to meet the market demand for indigenous chicken. This continued till the years 2020/21 where maintenance challenges for incubators as well as impacts of the economic recession in the country brought the activities to a halt.
- q) **Indigenous chicken improvement program in Bangladesh and Vietnam:** Cock exchange program in Bangladesh: This program was established to control inbreeding, improve performance and rapidly multiply the indigenous chicken. This would ensure that overtime there was improvement in the performance of Indigenous chicken. As with Sri Lanka the associations equipped with incubators and was anchored by a strong chicken association.
- r) **Indigenous goats' improvement in Bangladesh:** This program was established to improve performance of indigenous goats through selection and breeding with high performing bucks which had been selected for certain performance traits. Buck stations were established to provide farmers with high quality bucks. Farmers and buck keepers were trained on selection, record keeping, and breeding and general management practices.
- s) **Pig Improvement Program in Vietnam:** The Boar exchange program was established to control inbreeding and therefore improve performance of the local Ban pig. Use of wild pigs was incorporated to exploit the superior genetics in the wild pigs which included resistance to diseases, quality of pork and adaptation to harsh weather conditions. An association was established to manage the program for sustainability.

Outcome 2: Increased capacity and enhanced knowledge to use decision support tools for conservation of livestock diversity at national and global levels.

Achievement of this outcome was based on assumption that collaborating institutions would be open to adopting *in situ* conservation approaches to manage indigenous animal resources and a positive political climate and support. The evaluation has established that these assumptions materialized leading to progression of the outputs to the expected outcomes, as presented below.

128. Indicator 2.1: Action plans for the conservation and utilization of FAnGR and wild relatives developed using information provided by the DSTs in at least two of the project countries by end of year 5.

Baseline Status

- National action plans addressing FAnGR and wild relatives' conservation through utilization are not available.

129. Status at TE - Achieved

The evaluation has established that the project created awareness on the need for conservation of FAnGR which led to the governments developing legal and policy frameworks for conservation

of indigenous animal genetic resources. In Pakistan, the project supported the government of Punjab province to develop livestock breeding act which was published in 2015 and the standard operating procedures for the act were published in 2015 by the project. In Sri Lanka the animal breeding policy was developed recognizing and providing for conservation of indigenous animal genetic resources. The information generated from the project immensely contributed to the policy document as most of the members of the NSC were involved in the development of this policy.

130. Indicator 2.2: *10-20% of staff from all stakeholder groups involved in the project (farmers of both gender, and farmer groups, research and extension staff of NARs, NGO staff, policy makers) are applying the DSTs developed by the project for management of FAnGR by end of year 5.*

Baseline Status

- Only an estimate of the number farmers at project site was available. Also numbers of male and female households were not available.

131. Status at TE- Achieved

The evaluation established that there is continued application of information generated by the project especially molecular and phenotypic characterization of indigenous breeds. Among the government departments, research and academic institutions the understanding of the status of FAnGR in respective countries informed the development of breed improvement programs and also enriched breeders with new knowledge. Since most of the NPDs were from Universities, the new knowledge acquired has been integrated in their teaching notes. For instance, lecturers at UoP where the project was housed reported that after the studies, they developed evolution tree for indigenous chicken which they now use as teaching aid. The protocols and tools learnt by post graduate students especially in phenotypic and molecular characterization of indigenous livestock have been adapted by the beneficiaries (PhD students) who are currently teaching in the local agricultural Universities. As indicated earlier, the breeder societies in Pakistan are actively using the breed standards and guidelines for judging indigenous goats to inform selection at farm level as well as judging during goat shows.

Rating for Achievement of Project Outcomes- **Satisfactory**

5.4.3 Likelihood of impact

Overview

132. The envisaged long lasting effects of the project were to support conservation of indigenous livestock for future generations and their increased contribution to livelihoods through enhanced use. The main pathway for achieving this impact was to develop and make available effective tools to support decision making for the conservation and sustainable use of indigenous FAnGR and their wild relatives in developing countries. Each of the participating countries selected two livestock species to intervene on, informed by the studies undertaken during the PDF-B phase. Similarly, the kind of tools developed and other interventions were prioritized based on the needs raised by farmers and stakeholders.

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133. On the basis of this criteria, the project developed and made available the following tools to support decision making at different levels:

- Selection and breeding tools mainly the breed standards and guidelines for judging indigenous livestock in Pakistan (two goat breeds, Sahiwal cattle and buffaloes).
- Manuals and guidelines that were developed to inform planning and implementation of training programs for indigenous livestock (chicken, pigs, and goats) in the four countries.
- Protocols for implementing AI in goats in order to disseminate superior genes of FAnGR were developed in Pakistan.
- Protocols and procedures for collecting and analyzing data on FAnGR especially in Molecular and Phenotypic characterization of FAnGR to inform interventions and selection of the best breeding strategies were developed in the four countries.
- Research tools for social economic studies, cost benefit analysis and market studies that were used for the studies and available for use in the future.

Status of Impact Indicators at the time of TE

134. Immediate Objective: Effective tools to support decision making for the conservation and sustainable use of indigenous FAnGR and their wild relatives in developing countries developed and made available.

135. Indicators 1: *DSTs and management packages or recommendations made by the project are in use in at least one project site (e.g. community) supporting conservation and/or increased use of at least one indigenous breed by end of year 5.*

136. Status at TE: Achieved

By the time of this TE, the goat breeder societies in Pakistan were using the breed standards, goat judging tools and AI protocols in their goat improvement program. Manuals were used in the four countries to train farmers on management of indigenous animal genetic resources for sustainable utilization. The tools were scaled to other species like sheep, cattle and Buffaloes. All the research tools developed by the project were used within the project areas as well as other provinces within the countries.

137. Indicator 2: *National Livestock Development Plan (NLDP) and strategies in each country revised to include the use of the DSTs and implementation initiated at least in one country by end of year 5;*

138. Status at TE: Achieved

All the four countries used the evidence generated by the project to develop policies to recognize the indigenous livestock and promoting their conservation. In Pakistan a breeding act was formulated to enable implementation of the policy. A total of nine Standard Operating Procedures (SOPs) were developed by the project to enable implementation of the Pakistan's animal breeding act of 2014. Tribunals were also set up to enforce these SOPs. In Bangladesh. The National Technical Regulatory Committee (NTRC) was formed by the government in 2016 to guide the

implementation of the breeding policy, a move that was initiated by this project. In Sri Lanka and Vietnam breeding policies were developed with inputs from this project.

139. Indicator 3: *At least three livestock institutions/farmers organizations per country raising target species participate in decision making fora or workshops for using developed DSTs to increase the productivity of indigenous FAnGR by end of year 5;*

140: Status at TE: Achieved

All the eight farmer associations formed /supported by the project were involved in workshops on DSTs and conservation of FAnGR. The farmers associations were active members of the site management committees and which was a member of NSC.

141. Indicator 4: *All the four countries establish national FAnGR databases and these are institutionalized and functioning by end of year 5.*

142. Status at TE- Partly Achieved:

All the four countries were supported by ILRI to establish a country specific DAGRIS system during the project lifetime. Thereafter LRI trained key staff on the use of DAGRIS system. The TE established that there was no mechanism for continued hosting, maintenance and updating of this system after project close out. As such the system was not functional by the time of TE. However, ILRI had maintained the database and would make it available to the countries whenever needed.

Observed changes attributable to the project:

143. The project supported the formation of Breeder Societies or Farmer Associations for each of the breeds, as entry points for interventions and most importantly to champion the implementation of specific breed improvement programs promoted by the project. In addition, the awareness creation about the importance of FAnGR resulted to market demand for the FAnGR, which necessitated interventions to scale up production. Such interventions included provision of incubators for chicken (Sri Lanka, Vietnam, and Bangladesh), introduction of AI services in goats (Pakistan), buck stations for goats (Bangladesh) as well as Boar exchange program (Vietnam). These interventions ultimately created significant changes which can be considered as project impacts. Below is a brief explanation of the impact created by the project.

- 1) Income generation: The project interventions triggered creation of income generating opportunities among farmers who were involved in the project. These opportunities included
 - a. Service providers directly developed by the project who included: farmers who owned the buck parks in Bangladesh received a an insemination fee from local farmers who used the bucks of about 100 Tak (US \$ 1) per service; producers of day old chicks or cockerels for breed improvement (Bangladesh and Sri Lanka), about 273 goat AI technicians (Pakistan) and private suppliers of chicks (Vietnam). A case in point is in Sri Lanka where the project facilitated the Association of Village Chicken Production in Thewanuwara got into a formal agreement with Divineguma for a supply of one month old village chicks.

- b. 212. Improved performance of indigenous livestock: farmers involved in breeding activities also realized improvement of performance of their chicken, pigs, or goat flocks resulting from selection and breeding activities as well as other interventions like disease control, improved housing and other management practices. Considering that the programs focused on short lifecycle species, the impact of breed improvement and resulting outcomes were experienced during the life of the project. A case in point is in Pakistan where the improved weights of local Beetal Goats are currently averaging 140 Kg with some going for over 200Kg live weights; high milk production of Beetal goats due to selection with an average milk yield of 3 Kg per day with some achieving 5-6 liters per day. As a result of this improvement, many goat breeders and fattening farmers have emerged to meet the market demands for high performing goats.

213. Superior bucks contributed to reduced kidding interval and increasing liter size. Kidding interval was lower (209.73 + 19 days) in G1 than G0 (270.78 + 4.65 days); higher litter sizes in G1 (1.81 + 0.25) than G0 (1.6 + 0.06);

Quoted from: S. C. Sarker, et al, 2014. Impact of Buck Parks on Improvement of Black Bengal Goats in Rural Bangladesh. Paper poster presented in the PGIA, Kandy, Sri Lanka on 20-22 November, 2014.

- c. The new income generation activities had increased business opportunities for existing service providers like veterinarians and input suppliers, semen production units, hence contributing to local economic development.
- d. There was a direct impact of the project on economic empowerment of women through the poultry projects, since most of the beneficiaries were women. Though the households depend on crop farming, farmers who were interviewed during this evaluation reported that the incomes generated from livestock was more regular than crops, since the latter income is seasonal and highly affected by weather patterns. The livestock –based incomes, therefore helped to stabilize the household cash flows.
- 2) Availability of improved indigenous animals for breeding purposes: The buck parks, hatcheries, AI services and cockerel exchange programs all contributed to farmers accessing better performing breeding animals, which was not the case before. Due the demand triggered by awareness creation, there was high demand for such breeding animals beyond the project sites. One of the main enablers was the formation of breed societies which began to champion improvement programs for FAnGR as strategies for conservation through utilization. In Pakistan, there is an active goat breeders association with 43 members and at least 2300 goats in Punjab Province. In Sri Lanka, four farmer associations established by the project were involved in the multiplication of indigenous chicken for smallholder farmers to meet the demand for indigenous chicken products (especially eggs) in the country. These associations were active for about five years after project closure. The market demand as well as institutional arrangement indicate that there is potential for these outcomes of the project to influence the genotypes at country level, hence resonating with the objective of the project.
- 3) Enhanced capacities at the participating institutions and in the field of animal breeding and genetics at large: The project supported a total of 28 students (Males = 12, Female = 16) to acquire post graduate degree in this field (Annex 9). This evaluation established that most of these students are holding senior positions at the universities as associate professors, heads of departments as well as senior researchers. The finding from the studies conducted in this

project further generated new knowledge especially development of evolution trees after molecular characterization findings, which were essential tools for training students. This impact is further magnified by the fact that the project influenced four universities to revise their curriculum in order to create courses on FAnGR conservation. The impact of these capacities includes more integration of FAnGR in the training, more research project in the same field and more students specializing in the field of FAnGR.

- 4) The evaluation did not find any likelihood of any unintended negative impacts of this project.

Scaling up of Impact

144: The project promoted scaling up and/or replication of its impact as part of its Theory of Change in a number of ways as described below:

- 1) More impact was created through some spin off activities as follows:

- a) In Pakistan the project team won a competitive grant to set up a National Center for Livestock Breeding, Genetic and Genomics with six sub centers across six universities in Punjab province. At the time of TE, the centre and sub-centres were continuously evaluating indigenous breeds through molecular characterization to determine the breeding values and therefore inform the government on the best bulls or buck to select for breeding in the province. The team won this grant after demonstrating achievement from this GEF funded FAnGR project. By the time of this evaluation, at least 50-70 students were performing molecular and phenotypic characterization of different species of FAnGR including cattle, sheep, goats, buffaloes and camels every year from these centres.
- b) At the time of this TE, the livestock shows in Pakistan and Bangladesh were actively creating awareness and promote genetic improvement of FAnGR through competitions. These events were promoted by the government and the breeder associations.
- c) At the time of this TE, new semen production units had emerged in Pakistan, some private sector owned, to meet the growing demand for frozen semen from indigenous goats.
- d) The pioneering work of this project created an impetus on the sustainable utilization and conservation of FAnGR which resulted into more investments in this field. For instance, the biggest NGOs in Bangladesh the BRAC and PKSf developed big projects on sustainable utilization and conservation of indigenous FAnGR in the country building on this project. The governments in Sri Lanka, Bangladesh and Pakistan were also implementing projects that promote FAnGR in the respective countries.
- e) At the time of this TE, conservation efforts had gone beyond the project species because of the impetus created by this project. In Bangladesh, the Red Chittagong Cattle (RCC) was fully characterized and registered as a breed with all standards in place. At the time of this ETE, Association guidelines were in the process of development while goat characterization was ongoing. In Pakistan the project team developed breed standards for other species like cattle and buffaloes and a lot was ongoing through the CLBGG to characterize different species and breeds of FAnGR.

- 2) The project laid a foundation for other follow up projects, providing partial co-financing and creating potential for increasing the impact: These projects include:

Enhancing growth and productive performance in native Aseel chickens employing integrated selective breeding and identification of growth markers for poverty alleviation in rural areas (2015-2018) sponsored by Punjab Agriculture Research Board (Government of Punjab) at a cost of Pakistan Rs 26.2 million (US \$ 91,000)– Pakistan.

- a) Development of Egg-type Naked- Neck Chicken Lines for Backyard Poultry (2011-2016) sponsored by Punjab Agriculture Research Board (Government of Punjab) at a cost of Pakistan Rs 20.3 million (US \$ 71,000)

Studies on Cattle and Goat Value Chain (2015-2016) sponsored by Agricultural Innovation Program.

Collaborative Research for Genetic Conservation and Improvement of Pakistani Goats (2014-2017) Sponsored by 1PMAS Arid Agriculture Univ. Rawalpindi; 2. University of Agriculture Faisalabad and Iowa state University Ames, Iowa.

Improvement of Indigenous Goats and Chicken Through Availability of Superior Males (2014-2017) Sponsored by EFS of University of Agriculture Faisalabad at a Total cost of Pakistan Rs 5.8 million (US \$ 20,000).

World Vision in Bangladesh continued to scale the project in other parts of the country.

Rating for Likelihood of Impact – **Highly Likely**

Table 7 (b): Summary of Level of Achievement of Outputs and Outcome

Output/Outcome	Indicator	Level of Achievement
Output 1.1 Appropriate breeding tools for low input production systems are developed and evaluated	Indicator 1.1.1: Practical manuals on breeding schemes (at least 2 manuals) per partner country	Achieved
	Indicator 1.1.2: At least one breeding schemes established by the project functional and sustainable at the end of the project for each species by year 5.	Achieved
Output 1.2: An effective tool for cost-benefit analysis of breeding programs for alternative breeds evaluated and made available	Indicator 1.2.1: Documentation of comparative market and non–market advantages of at least one indigenous breed, crossbreed and exotic breed for each species documented by end of year 4.	Achieved
Output 1.3: Analytical frameworks for assessment of policy and marketing options (existing and alternatives) for FAnGR	Indicator 1.3.1: Analytical frameworks for assessment of policy and marketing options or FAnGR.	Partly achieved
	Indicator 1.3.2: Market strategies and options for at least one commodity from indigenous FAnGR products (meat in goat and pigs, meat and eggs in	Partly achieved

developed, evaluated and made available	chicken) for at least one production system in each country – 4 strategies in all	
Output 1.4. Tools for diversity assessment and for setting cost effectiveness conservation priorities developed and made available.	Indicator 1.4.1: Breed diversity index developed for each project species by end of year 4.	Partly Achieved
	Indicator 1.4.2: Breeds and populations for each species ranked in each country for the implementation of conservation strategies at country level by end of year 5.)	Partly achieved
Output 2.1: Capacity of stakeholders to apply the developed Decision Support Tools for conservation and sustainable management / use of FAnGR and their wild relatives enhanced.	Indicator 2.1.1 : Four training programs conducted in each country, tailored to each specific stakeholder needs (policy makers, extension officers, researchers and academics, farmers' organization) on the use of DST for conservation and management of FAnGR and their wild relatives held by year 4.	Achieved
	Indicator 2.1.2: At least one University curriculum in each country include specific courses on indigenous FAnGR management and conservation using examples provided by the DSTs and with course material being applied in practical training by year 5.	Achieved
	Indicator 2.1.3: At least 2 researchers in each country with disciplinary expertise on in situ conservation and management of FAnGR available by the end of the project.	Achieved
	Indicator 2.1.4: At least one farmers association in each country participates in national Programme/committees on FAnGR conservation as a result of the project by end of year 5.	Achieved
Output 2.2. Knowledge and understanding of value of FAnGR and wild relatives increased and replication strategies made available.	Indicator 2.2.1: Awareness workshops held every year during project life to increase knowledge and understanding of value of FAnGR and wild relatives.	Achieved
	Indicator 2.2.2: At least 1 TV/radio Programme, 1 exhibition, 2 open days and 4 newspaper articles/advertisement to increase knowledge and understanding of value of FAnGR and wild relative published in each country by year 3.	Achieved
	Indicator 2.2.3: One National Domestic Animal Genetic Resources Information System (DAGRIS) developed and was made available on the web for use by end of year 4, interlinked to global DAGRIS by end of year 5.	Partly Achieved

	Indicator 2.2.4: Project findings disseminated in four national workshops involving other partners by year 3 - 4, and one international workshop involving other countries held by year 5.	Achieved
Outcome 1: Enhanced conservation and management of FAnGR diversity using Decision Support Tools (DST)	Indicator 1.1: Conservation and/or use action taken in at least one project site and involving at least one target species, using one or more of the DSTs developed by this project (by end of year 5).	Achieved
Outcome 2: Increased capacity and enhanced knowledge to use decision support tools for conservation of livestock diversity at national and global levels.	Indicator 2.1: Action plans for the conservation and utilization of FAnGR and wild relatives developed using information provided by the DSTs in at least two of the project countries by end of year 5.	Achieved
	Indicator 2.2: 10-20% of staff from all stakeholder groups involved in the project (farmers of both gender, and farmer groups, research and extension staff of NARs, NGO staff, policy makers) are applying the DSTs developed by the project for management of FAnGR by end of year 5.	Achieved

Overall Rating for Effectiveness - Satisfactory

5.5 Financial Management

Table 8 presents the rating of project financial management.

Table 8: Financial Management Table

NON-GEF AND GEF PROJECTS		
Financial management components:	Rating	Evidence/ Comments
1. Adherence to UNEP's/GEF's policies and procedures:	HS	The evaluation, using evidence of documents provided, established that ILRI was in complete compliance with reporting requirement.
Any evidence that indicates shortcomings in the project's adherence ¹¹ to UNEP or donor policies, procedures or rules	No	
2. Completeness of project financial information:		The project had documented all the financial information. ILRI provided most of the documents

¹¹ If the evaluation raises concerns over adherence with policies or standard procedures, a recommendation maybe given to cover the topic in an upcoming audit, or similar financial oversight exercise.

			required for evaluation for most of the years.
Provision of key documents to the evaluator (based on the responses to A-H below)		S	All reports provided by the Regional Project Coordinator
A.	Co-financing and Project Cost's tables at design (by budget lines)	Yes	All documents were supplied
B.	Revisions to the budget	Yes	All documents were supplied
C.	All relevant project legal agreements (e.g. SSFA, PCA, ICA)	Yes	All documents were supplied
D.	Proof of fund transfers	Yes	All documents were supplied
E.	Proof of co-financing (cash and in-kind)	Yes	All documents were supplied
F.	A summary report on the project's expenditures during the life of the project (by budget lines, project components and/or annual level)	Yes	All reports provided
G.	Copies of any completed audits and management responses (where applicable)	Yes	ILRI's Audited reports
H.	Any other financial information that was required for this project (list):		
3. Communication between finance and project management staff		HS:HU	Interviews with the Regional Project Coordinator indicated that ILRI and the UNEP project lead worked in consultation. ILRI provided the countries with guidelines for financial reporting. Financial reports and planning were shared with stakeholders during the NSC meetings.
Project Manager and/or Task Manager's level of awareness of the project's financial status.		HS	The regional project coordinator (ILRI) and UNEP project demonstrated awareness on the project financial status
Fund Management Officer's knowledge of project progress/status when disbursements are done.		HS	Interviews with UNEP project team lead and ILRI project management revealed that there was transparency on projects financial status and the disbursement plans.

Level of addressing and resolving financial management issues among Fund Management Officer and Project Manager/Task Manager.	HS	Interviews with teams indicated that there were no major financial management issues. The teams from NEA, ILRI and UNEP were open to consultations whenever it was necessary.
Contact/communication between by Fund Management Officer, Project Manager/Task Manager during the preparation of financial and progress reports.	HS	The NEAs were compliant in preparation and submission of project progress reports (technical and financial. The same was applicable between ILRI and UNEP
Project Manager, Task Manager and Fund Management Officer responsiveness to financial requests during the evaluation process	HS	The Regional project coordinator was available and supportive to the evaluator on matters relating to project finances.
Overall Rating	HS	There was evidence that the project had complete documentation which were required for this evaluation. Interviews with the project manager/regional coordinator revealed that communication was effective and there was transparency in sharing project financial information with stakeholders at the NEA Level

5.6 Efficiency

145. The project employed cost effective strategies throughout its implementation phase as follows:

- Selection of Executing Partners – the project partnered with executing partners (national and regionally) whose mandates were in alignment with the project objectives. The mandate of the National Executing Agencies was teaching, research and outreach. As a result the governments of these countries made investments towards the project over and above what was expected at the inception. This explained the reason for lean staffing by the project which reduced the administrative costs. Partnership with Universities enabled the project to engage students as resource during data collection which on the other hand was contributing to learning and mentorship of students through exposure to senior scientists. Furthermore, being learning institutions, the project provided an opportunity to train post graduate students at Masters or PhD levels. This provided an opportunity for continued application of tools, generation of knowledge and scale the impact. Most of the trained students, at the time of evaluation have progressed in their teaching and research career, specializing in genetics and breeding, just because of the foundation gained from the project.

- Partnerships: Since UNEP is not a technical agency for Farm Animal Genetic Resources, it partnered with ILRI and leveraged its expertise in Animal Genetics and Breeding. This partnership enabled UNEP to leverage ILRI's existing projects and partnerships on FAnGR instead of starting from the scratch. This contributed to efficiency of the project.
- Selection of species: The project used short generation species (chicken, goats, and pigs) which allowed the results of the interventions to be realized within the life of the project. This was a cost effective strategy because the DSTs and other interventions developed for short cycle animals could be applied to animals with longer generational cycles during scale up.
- Project Management Structure – The project management structure allowed inclusion of all the relevant stakeholders in the management of the project. At the country level, all the relevant government departments and institutions were members of NSC. This not only ensured inclusion, but it also gave an opportunity for all stakeholders to contribute to the project during the NSC meetings. This was a cost effective strategy to harness stakeholder participation which was considered important for project effectiveness, ownership and sustainability. Since most of the NSC members were decision makers in their institutions, this inclusion created an opportunity for leveraging of resources mainly in-kind from other stakeholders, further contributing to the project efficiency.
- Timelines: The field activities were implemented and closed on schedule i.e. by the year 2015 according to the recommendations of the Mid Term Evaluation (MTE). This allowed the NEAs to implement all the project activities and organize field level close out activities. There was however a delay in project closure from 2015 to 2020. During this period, the Regional Project Coordinator was still working for the project (though paid by ILRI) till the closing Webinar in 2020. The National executing agencies had left the project after submission of reports in 2016 till 2020 when the virtual closure workshop was held. This delay affected the project in a number of ways, as described under lesson learnt, section 6.2
- Dissemination pathways: The project applied mixed methods in the dissemination of knowledge generated by the project. It involved complementing the more resource consuming methods like workshops with publishing papers and books.
- Efficient planning: the project teams were guided by work plans to ensure activities were implemented on schedule. In addition, the project in certain instances utilized every opportunity to combine activities, as a cost saving strategy. For instance, often, the national dissemination conferences were held immediately after the RSC meeting in the hosting country so as to be efficient with travel costs incurred by NPDs while traveling to partner countries.
- Fund disbursement mechanisms by the NEA: there was potential delay in funds disbursement associated with long government bureaucracy. The project negotiated with the three universities and NIAH for establishment of a separate project bank account to allow speedy flow of project funds to the NEA accounts. This was accepted by the universities and the ministry in Vietnam, leading to an efficient funds flow. In Sri Lanka the UoP had established a unit called Agriculture Education Unit where all donor funds are deposited to facilitate speedy flow of funds for project activities.

- In Bangladesh, the NEA partnered with World Vision as a field level partners, Bangladesh which provided s strong facilitative force at the grassroots. This brought efficiency not only in leveraging resources from the partners but also saving time and finances that could have been used by the project teams on the ground.

National Level Collaboration:

146. Collaborative Research Agreements (CRA) between ILRI and the National Executing agencies of the 4 countries were drafted and signed by October 2009. The project inception workshop was held in Dhaka, Bangladesh in June 2009. There was however delays in Pakistan after changes of senior staff at Pakistani Agricultural Research Council (PARC) and changes of policy within PARC which led to a substantial lack of support to the project. Consequently, the NEA in Pakistan was changed, where PARC was replaced with the University of Agriculture, Faisalabad (UAF). Research Agreement” between UAF and ILRI was signed in January 2011. Hence, project activities in Pakistan effectively started 21 months after the beginning of the implementation in the other countries. This contributed to some inefficiency on the first year for Pakistan. However by end of the second year, Pakistan was at par with other countries.

147. Use of CRAs and PCAs ensured that each of the partners’ roles were fully clarified from the very beginning. In addition, UNEP had clearly provided guidelines for different processes such as financial, procurement, reporting among others. All these ensured efficiency of operations.

Rating for Efficiency –Moderately Satisfactory

5.7 Monitoring and Reporting

5.7.1 Monitoring Design and Budgeting

148. The project had a monitoring and evaluation plan whose objective was to assist all project participants in assessing project performance and impact, with a view to maximizing both. This M&E plan (general and specific objectives of the project, and the list of its planned outputs) provided the basis for a fully budgeted monitoring and evaluation plan. The project M&E, at the approval stage, had a budget of USD 376,000 out of which GEF funding was USD 222,000 (59%) while USD 154,000 (41%) was to be raised as co-finance. Project monitoring was implemented at three levels, as envisaged in the project document, as follows:

- 1) Monitoring project activities, such as field surveys to collect data on socioeconomic factors, traditional knowledge, marketing statistics, household consumption patterns and the development of participatory methods for evaluation. This was financed as ongoing project activities.
- 2) International and national steering committee meetings with a budget of US\$ 132,000 of GEF funds.
- 3) Mid- and end-term evaluations by external consultants which was budgeted at US\$ 90,000 of GEF funds.

The TE observed that the first two levels of monitoring were basically used foe reporting progress to project stakeholders and not necessarily structured around performance

monitoring based on the M&E plan. The project implemented MTR in 2012 (on schedule). The evaluation has established that the recommendations of the MTR were largely implemented as presented in table 9.

Table 9: Implementation of MTR Recommendations

MTE Recommendation	Implementation as at the TE
Recommendation 1: To revise and to reschedule project activities to increase impact and sustainability.	This recommendation was implemented. There was a revision and rescheduling of the project activities to improve project efficiency. To achieve this, each country submitted its revised work plan in line with this recommendation. This brought greater focus by the project teams as was envisaged by this recommendation. The revisions had sustainability implied, however there was no explicit sustainability and exit strategy in place
Recommendation 2: Increase synergies of project activities with relevant international partners	The project implemented this recommendation by involving some of the international partners especially in the NSC as well as dissemination workshops. These partners included IUCN, FAO, CAAS-ILRI joint laboratory in Beijing; World Vision Bangladesh;
Recommendation 3: The project needs to include and to catalyze direct intervention leading to immediate improvement of productivity.	The project implemented this recommendation by supporting new activities such as provision of incubators to help farmers increase their flocks, cock exchange programs, buck parks and AI in goats.
Recommendation 4: Update, open access and institutional based project information and dissemination tools (websites, country DAGRIS, publications).	The project information was published in the project websites (each country had a website). However, the websites and DAGRIS were not institutionalized, hence not functional at the time of TE. The project findings were published in peer reviewed journals as shown in annex 7.
Recommendation 5: A one year project extension.	12 months no cost extension was approved in line with this recommendation.

149. M&E Budget: There were 4 levels of indicators namely outputs, outcomes, intermediate objective and impact level (development objective). The design of the M&E plan had not provided budget for tracking each result area which, may have led to under-budgeting of the M&E Activities. A case example would be table 3 of annex F in the CEO Endorsement 2008, which presents methods of measurement of different indicators. Method suggested for measuring some of the outcome, development and overall objectives included household surveys which would require more resources for the four countries than the budget provision for the TE and MTE. In the view of the evaluator, this could have been mitigated if the M&E system had integrated monitoring activities with implementation.

150. Design of M&E Plan: At the design stage, the project had developed an M&E Plan which clearly defined what to be measured (indicators), Means of Verification (MoV) and baseline status. Additionally, the project had clearly defined the milestones for each output and their means of verification. Further there was clarity on when key monitoring activities would be performed and by who. This system could easily allow the implementers and those involved in project management to plan and track the status of each of the milestones. The TE has identified the following areas that could have been improved as far as the design of the M&E plan was concerned:

- The M&E plan adopted by the project was activity-based which limited the scope of measuring results. As a result, the evaluation established that the project reports focused on the activities and limited information on outcomes. At the field site level, there were no systems for capturing the outcomes and impacts of the interventions on regular basis. For instance, how much incomes were farmers earning after selling the eggs every month; how did the certain traits improve over time as a result of the selection and breeding activities, among others? This would have provided evaluations with quantitative data on impacts especially for the indicators of the developmental objective¹²
- The studies undertaken at the start of the project served as both project activities and baseline studies. The TE has established that there was no indicator tracking plan developed after the studies, showing the baseline values for all indicators and periodically populated with data coming from regular monitoring activities. This could have been used in tracking the performance against targets as well as provide information for evaluations especially in this project where there is a significant time lapse between the end of project operations and TE. Section 5.7.2 has shed more light on this finding.

Appropriateness of Project Indicators and Methods of tracking:

The Results Framework had specific outputs and outcomes which contributed to the immediate project objective. A number weaknesses were noted in the indicators especially the output level indicators, as summarized in table 10.

Table 10: Weaknesses noted in Some of Output Indicators

Outputs	Areas of weaknesses
Output 1.1: Appropriate breeding tools for low input production systems are developed and evaluated.	Framed as an activity. Indicators were not in alignment for instance indicator 1.1.1 was tracking manuals for breeding g schemes to monitor development of breeding tools. Indicator 1.1.2 is framed as an output on establishment of breeding schemes

¹² Key Performance Indicator for the developmental Objective: ‘Population of indigenous livestock of the targeted species remain stable or increase in size (5-10%), with concurrent 5-10% average increase of Farmer income from indigenous FAnGR’.

<p>Output 1.2: An effective tool for cost-benefit analysis of breeding programs for alternative breeds evaluated and made available</p>	<p>Indicator: 1.2.1 Comparative market and non–market advantages of at least one indigenous breed, crossbreed and exotic breed for each species documented by end of year 4.</p> <p>This indicator was not adequately tracking whether the project developed and made available a tool for cost benefit analysis of breeding programs; rather it is tracking an activity ‘documentation of comparative market and non-market advantages’</p>
<p>Output 1.3: Analytical frameworks for assessment of policy and marketing options (existing and alternatives) for FAnGR developed, evaluated and made available</p>	<p>Indicator 1.3.1: Market strategies and options for at least one commodity from indigenous FAnGR products (meat in goat and pigs, meat and eggs in chicken) identified for at least one production system in each country by year 5.</p> <p>The indicator was tracking an activity on identification of marketing strategies and options of commodities from FAnGR. This is not linked with the expected output 1.3 which a longer term product.</p>
<p>Tools for diversity assessment and for setting cost effectiveness conservation priorities developed and made available</p>	<p>This output had envisages two main categories of products namely; (1) diversity assessment tools and (2) tools setting cost effective conservation priorities</p> <p>Indicator 1.4.1 ‘Breed diversity index developed for Each project species by end of year 4’ is directly linked to the diversity assessment tool. however, indicator 1.4.2. ‘Breeds and populations for each species ranked in each country for the implementation of conservation strategies at country level by end of year 5’ could not adequately track whether the project developed ‘tools for setting cost effective conservation priorities’ which is more long term than raking of breeds.</p>
<p>Output 2.1 Capacity of stakeholders to apply the developed Decision Support Tools for conservation and sustainable management/ use of FAnGR and their wild relatives enhanced</p>	<p>Framed as an outcome.</p> <p>All indicators were aligned to outputs related to capacity building of different stakeholder groups.</p>
<p>Output 2.2. Knowledge and understanding of value of FAnGR and wild relatives increased and replication strategies made available</p>	<p>Indicator 2.2.1 Awareness workshops involving both genders held every year during project life to increase knowledge and understanding of value of FAnGR and wild relative.</p> <p>Indicator 2.2.2 At least 1 TV/radio programme, 1 exhibition, 2 open days and 4 newspaper articles/advertisement to increase knowledge and understanding of value of FAnGR and wild relative published in each country by year 3.</p>

	<p>These two indicators do not show the causal relationship between awareness creation activities with increasing knowledge and understanding.</p> <p>There is no indicator to track whether replication strategies were made available.</p> <p>This output could have been split into two i.e., (1) awareness creation and (2) making replication strategies available.</p> <p>Indicator 2.2.3: One National Domestic Animal Genetic Resources Information System (DAGRIS) developed and freely available on the web for use by end of year 4, interlinked to global DAGRIS by end of year 5;</p> <p>This indicator seems misplaced – there should have been a separate output that was to be tracked by indicator 2.2.3</p>
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Rating for Monitoring Design and Budgeting - **Satisfactory**

5.7.2 Monitoring of Project Implementation

151. The project collected baseline data during the initial studies conducted to show status of FAnGR in different countries. This data was captured and documented in reports and scientific papers to show the status of FAnGR in the respective countries and also to inform interventions by the project for the selected species in each partner countries. The information generated from these studies were not transferred into the monitoring system to facilitate continuous tracking and performance monitoring. For instance, the baseline status/values for the outcome and impact indicators in table 11 were to be determined after the farmer and farm surveys conducted in year one. The evaluation has established that the surveys were conducted but the indicators were neither extracted from reports nor used to update the M&E Plans or the indicator tracking system.

Table 11: Samples of Indicators without Baseline Values

Area of Measurement	Baseline status
Immediate Objective:	<ul style="list-style-type: none"> • Baseline on animal numbers by breed and site to be collected at start of the project. • No quantitative information regarding wild relative importance for breeding purpose at the project sites. Farm surveys and farmer

	interviews during year 1 will assess quantitatively the baseline importance of wild relative for breeding purpose at the project site
Outcome 1	<ul style="list-style-type: none"> • Studies and field visits undertaken during the PDF B phase indicate that the indigenous population sizes are not well documented. Breed survey will be carried out during the first year of the project to provide the baseline. • 1.2 PDF-B studies report indicate no quantification of marketed product; farmers involving both gender groups will be interviewed at project sites at year 1 to establish the baseline
Outcome 2	<ul style="list-style-type: none"> • 2.2 Only an estimate of the number farmers at project site is available. Also, numbers of male and female households are or available. Information regarding the number of staff of each stakeholder group present in the sites will be collected during year one. In all four countries DSTs are not available

Rating for Monitoring of Project Implementation – **Moderately Satisfactory**

5.7.3 Project Reporting

152. The monitoring, Evaluation and Reporting responsibilities for all partners involved in project implementation were clearly defined and communicated. The partners with reporting responsibilities were: UNEP Regional level; Project Management Unit (PMU); National level Project Implementation Unit (PIU); Project Steering Committee (PSC); National Steering Committees (NSCs) and Site Coordination Committees.

153. The project had reporting plans that guided the teams on when different reports were due as well as formats for presenting the reports. In this regard, the project had the following reports:

- Progress reports: Document the completion of planned activities and described progress in relation to the annual operating work plan. It provided a review of any implementation problems that impacted on performance while summarizing problems and proposed solutions. The progress reports were meant to provide adequate substantive data outcomes for inclusion in consolidated project quarterly and annual progress reports. Key project achievements were highlighted in the project progress reports. The progress reports were submitted by Regional Project Coordinator half -yearly, within 30 days of end of each reporting.
- Project Implementation Review (PIR) reports: These were submitted on yearly basis (after project has been under implementation for one year) by UNEP Project management officer.
- Consolidated Annual Summary Progress Reports: these were submitted annually by the Regional Project Coordinator, within 45 days of the end of the reporting period.
- Co-Financial reports: submitted annually by Regional Project Coordinator
- Financial reports: submitted quarterly by ILRI Finance assisted by Regional Project Coordinator.
- Financial Audit: submitted annually by ILRI Finance assisted by Regional Project

- Coordinator.

The evaluation has established that the reporting was done on schedule using the formats provided.

Rating for Project Reporting – **Highly Satisfactory**

Overall Rating for Monitoring and Reporting – Satisfactory

5.8 Sustainability

154. The Terminal evaluation was conducted about seven years after the project close out at the country implementation level. The close out workshops at field sites were held in the year 2015/2016. As such the evaluation has assessed the extent to which the benefits derived from the project outcomes were maintained seven years after the close of the intervention and projecting the probability of continuity. Using the guidelines from UNEP, sustainability is discussed below structured as Socio-political Sustainability, Financial Sustainability and Institutional Sustainability.

5.8.1 Socio political Sustainability:

155. The project was executed by local institutions which enhanced ownership and socio-political support by the governments. There was goodwill and political support from the institutions and governments which was very critical in the sustainability of project outcomes. This support included financing scale up activities the four countries which included new research projects funded by the governments as well as willing ness by the governments in the four countries to make policy changes using the information collected from the projects. The evaluation established that all the three Universities) Bangladesh, Sri-Lanka, Pakistan) and NIAH (Vietnam) were carrying on with research on FAnGR to inform breeding programs for sustainable utilization and conservation long after project closure. The research work and development projects on FAnGR as triggered by this project will be sustained because of their alignment with the mandates of these institutions and government priorities. There is goodwill for government to empower women economically through livelihood projects targeting indigenous chicken. This was seen in Sri Lanka in response to the prevailing economic recession where the government was supporting indigenous chicken production by availing incubators and improved indigenous chicken birds to farmers.

Rating for Social political Sustainability – **Moderately Likely**

5.8.2 Financial Sustainability

156. The following project outcomes were dependent on a continuous flow of action that needed to be resourced for them to be maintained.

- 1) Community based mini hatcheries using artificial incubators for multiplication of indigenous chicken in Sri Lanka: A review of documents from the utilization of the incubators by farmers revealed that all the incubators were operational from 2013 to 2020/2021 after which four out of the five incubators stopped working. This implies that the farmers continued to enjoy the

services of artificial incubators for at least five years after the project closure. Farmers indicated that the main reason why the incubators stopped functioning was lack of service providers for repair and maintenance as well as finances to pay for such services. One group which had managed to maintain their incubators through member members' contributions continued with services till the time of this evaluation. It was however reported that though this particular incubator was functional, operations had been halted due to long power outages after government instituted power rationing during the current economic recession period. While the technology was appropriate for the site, the project did not offer farmers a range of options including availability of solar powered incubators since any interference with electricity would potentially affect a full hatching cycle. Furthermore this new technology to the project site was presented to farmers without linkages to maintenance services which affected the sustainability

The current economic recession in Sri Lanka has led to near collapse of the commercial poultry industry because of the challenges of production and importation of chicks and feeds. As a result, production of poultry products from commercial sector went down to 40% leading to very high demand for indigenous chicken in the country. Consequently, at the time of this TE, the government had rolled out a project called Rural Development program which was promoting the indigenous chicken production in the country so as to fill the supply gap of poultry products. To achieve required growth, the government was in the process of providing incubators to farmer groups with potential to use some of those installed by the project. Because of this, the government would support in creating linkages with service providers for repair and maintenance of the existing project incubators. If implemented, this will ultimately lead to long term sustainability.

- 2) Promotion of sustainable utilization and conservation of FAnGR: The evaluation has established that the government, University of Agriculture Faisalabad (UAF) and breeders association in Pakistan had been sponsoring livestock Shows and Awareness events after project close out. The TE established that the Shows are becoming an important event for improving breed standards because of competition for prizes among breeders for certain traits for instance milk yield, weight, beauty etc. This had attracted breeders for other species to organize their shows as well. In Bangladesh, the livestock Shows were sustained through support from the government, donors and the association of goat breeders. As such, this outcome was sustainable and highly likely to continue in the long term;
- 3) Artificial Insemination of goats using frozen semen in Pakistan: This was started based on the demand from farmers in the KP province, outside of project area. The service delivery was fully privatized which enabled the Semen Production Units to continue operating without any external funding. The market demand for improved local goats will further lead to creation of more self-sustaining Semen Production Units.
- 4) The World Vision, Bangladesh continued to support grassroots activities in Bangladesh i.e. cock exchanges and buck Parks. Moreover, the organization continued to scale these activities in other parts of the country.

- 5) DAGRIS: The project supported each country to develop its customized DAGRIS to help countries manage their FAnGR as well as build their capacity to report to FAO on state of FAnGR for their countries. ILRI supported the countries to develop this database but it was the responsibility of the countries to allocate resources for updating and maintenance. The system was live till end of the project, but the governments did not put resources to sustain the database live after project close out. However, the evaluation established that ILRI had the template for the database and would make it available for countries to re-establish their database when ready. It was reported during the TE that in Sri Lanka, UoP has acquired a service which eventually could be used to host the database going forward.

Rating for Financial Sustainability – **Moderately likely**

5.8.3 Institutional Sustainability

a) *Strengthened research capacities:*

157. The enhanced capacity in the research institutions has been sustained in the last seven years after the project close out at the country level. There is a high likelihood that this will continue and even scale up further. The four countries had institutionalized the knowledge generated by updating their curriculum to include conservation of FAnGR. In Pakistan and Bangladesh there were chapters introduced in the curriculum on conservation of FAnGR. In addition, the MSc students who had been sponsored by the project have undertaken PhD and a teaching in the Universities. In Pakistan the National Center for Livestock Breeding, Genetics and Genomics and its six sub centers, being offshoots of this project and being government supported institution will continue with the work of genotypic characterization to inform selection and breeding of the FAnGR. In Sri Lanka, the findings from Molecular and phenotypic characterization of goats were used to develop poultry posters and training materials which was disseminated to all the Veterinary divisions in the country. The evolutionary tree that was developed from the information generated by this project is currently being used as a teaching aid in Sri Lanka. The project supported the Ho Chicken from Vietnam which remained active after project close out.

b) *Policies*

158. All the four countries used the evidence generated by the project to develop policies to recognize the indigenous livestock and promoting their conservation. The policy development process was managed by the relevant government, line ministries hence fostering ownership and political will to use these policies. In Pakistan, the government and stakeholders went ahead and requested for formulation of a breeding act to enable implementation of the policy. A total of nine Standard Operating Procedures (SOPs) were developed by the project to enable implementation of the Pakistan's animal breeding act of 2014. Tribunals were also set up to enforce these SOPs. In Bangladesh, The National Technical Regulatory Committee (NTRC) was formed by the government in 2016 to guide the implementation of the breeding policy, a move that was initiated by this project. On this basis there is a likelihood that the government and stakeholders will continue to implement the policies

c) Farmer Associations

159. In Sri Lanka, interviews with farmers who were members of the associations revealed that member were active for a period of about five years after the project was closed, which coincided with the period the incubators were functional. Their activities were revolving round hatching eggs from the association's incubators. Two factors affected the stability of these associations namely movement restrictions during the COVID 19 Pandemic and the breakdown of incubators.

160. In Pakistan, the Punjab Goat Breeders Association for *Beetal* breed which was formed by the project in the year 2013 was active and growing at the time of this evaluation. The association had about 43 members across the province with 2,300 goats by the time of this evaluation. The association is highly likely to be sustainable in the long term, because of the market incentive arising from the demand of the improved indigenous goats in the country. The association has been equipped with breed standards as a tool to sustain the breed improvement programs. Further there was an offshoot in the form of another breeders association for *Nanchi* goat breed was in the process of establishment at the time of this evaluation. In Bangladesh, the farmer associations were functional at the time of this evaluation. These associations are financed by commissions earned after selling breeding bucks to buck park owners as well as member registration fees. In Sri Lanka the farmer associations were dispersed after the COVID and all the incubation services were halted either due to lack of repair and maintenance services or power outages following the ongoing economic recession. The Ho Chicken association of Vietnam was functional at the time of this evaluation.

161. The breeder farms in Pakistan were members of the Punjab Goat Breeders Association from where they will continue to derive support. The UAF, Livestock Department of Punjab Province and the Breeders association have been organizing livestock shows for learning and awareness creation. Furthermore, the shows offer the required competition among farms, which incentivize breeder farms to continue with breed improvement programs. In Bangladesh, all the buck park owners are members of an Association. Their work is fully privatized hence sustainable. As in the case of Pakistan, the society together with other stakeholders were organizing shows as incentive to buck park owners to continue with breed improvement.

d) Collaborations

162. The evaluation has established that the universities and NIAH have been continuing with collaborative efforts started by the project and even establishing new collaborations. A case in point is the collaboration with CAAS-ILRI joint laboratory in Beijing for molecular characterization which has been going on at the time of this evaluation. UoP had established other collaborations with International Atomic Energy Agency (IAEA) in Austria as well as FAO; while UAF, and the CLBGG were partnering with other six labs globally. All the NEA were linked to ILRI for continued support. The research on FAnGR and collaborations on the same will be sustained because of their alignment with the mandates of these institutions.

Rating of Institutional Sustainability – **Likely**

Overall Rating of Sustainability: Moderately Likely

Factors affecting project Performance have been analysed under assessment of the quality of project design (section 5.2)

6) Conclusions and Recommendations

6.1 Conclusions

Summary of Project Rating

Criterion	Rating	Comments
A. Strategic Relevance	Highly Satisfactory	The project was in alignment and contributed to the donor (GEF) priorities, UNEP's MTS and PoW (from 2010-2021). The project was fully aligned and contributed to the Regional, sub-regional and national environmental priorities for the four countries and contributed to global development blueprints like CBD and SDGs. The project was complementary to other projects addressing biodiversity including projects by FAO, UNEP/GEF and ILRI.
1. Alignment to UNEP's MTS, POW and strategic priorities	Highly Satisfactory	
2. Alignment to Donor/Partner strategic priorities	Highly Satisfactory	
3. Relevance to regional, sub-regional and national environmental priorities	Highly Satisfactory	
4. Complementarity with relevant existing interventions	Highly Satisfactory	
B. Quality of Project Design	Highly Satisfactory	All aspects of the project design were fully met. The project implemented most of the strategies relevant to the design for instance risk mitigation. The project preparation and planning was elaborate, with a fully funded PDF-B phase which enhanced participation of stakeholders from the four countries in the project preparation. The problem was well articulated and causal relationship was quite clear and presented in a narrative and results frameworks. The roles and responsibilities of internal and external partners and stakeholders were properly specified in project document. Areas showing some weaknesses on the design was lack of quantitative measure of project results disaggregated by gender, social groups, countries and species The M&E system had a number of weaknesses which may have affected the tracking of project indicators throughout the project. . Time allocated for implementation was a key constraint for the project considering that the project had proposed to set up breeding schemes and observe the results while strengthening institutions and other sustainability mechanisms
C. Nature of External Context[1]	Favourable	The project had identified four main risks and their mitigation strategies. The strategy were implemented hence the risks did affect the project.
D. Effectiveness	Satisfactory	

[1] Where a project is rated as facing either an Unfavourable or Highly Unfavourable external operating context, ratings for Effectiveness, Efficiency and/or Sustainability may be increased at the discretion of the Evaluation Consultant and Project Manager together. Any adjustments must be fully justified.

Criterion	Rating	Comments
1. Availability of outputs	Satisfactory	The project was effective in delivering the expected outputs having fully delivered 82% of the planned outputs. Of these 70% had exceeded targets. Nearly all the delivered outputs, including the most important to achieve outcomes were deemed to be of very good quality and of use by the target beneficiaries. The project had two outcomes with a total of eight indicators. The two outcomes were complementary in the achievement of the immediate objective. The elements that were important in the achievement of intermediaries were fully achieved. There was evidence of application of most of the DSTs which was driven by the demand from the industry, hence increasing likelihood of impact.
2. Achievement of project outcomes	Satisfactory	
3. Likelihood of impact	Highly Likely	
E. Financial Management	Highly Satisfactory	There was timely approval and disbursement of cash advances to partners, regular analysis of actual expenditure against budget and work plan, timely report submission and approval of budgets. All the financial documents were available for the TE. The Project Manager and the Fund Management Officer had an effective and responsive communication which facilitated an efficient project delivery process
1. Adherence to UNEP's policies and procedures	Highly Satisfactory	
2. Completeness of project financial information	Satisfactory	
3. Communication between finance and project management staff	Highly Satisfactory	
F. Efficiency	Moderately Satisfactory	The project has had two justified 'no cost extensions'. Field activities were implemented on schedule, operational completion was however effected in 2020 after a second extension. As such this extension did not directly affect the project
G. Monitoring and Reporting	Satisfactory	The project had a results framework and an M&E Plan. The plan however had areas of improvement including the results monitoring and having indicator tracking system. The reporting was complete with high-quality documentation of project activities. There was evidence of highly-effective collaboration and communication between ILRI and UNEP colleagues. No donor reporting issues were noted.
1. Monitoring design and budgeting	Satisfactory	
2. Monitoring of project implementation	Moderately Satisfactory	
3. Project reporting	Highly Satisfactory	
H. Sustainability.	Moderately Likely	The sustainability of project outcomes had a moderate degree of dependency on social/political factors. There was a high level of ownership, interest and commitment among government and other stakeholders for some of the outcomes. The TE established that the outcomes from the project are likely to be sustained because of their alignment with the mandates of these institutions and government priorities. The outcomes that had no mechanisms for sustainability included the document repository system especially project websites and the National Domestic Animal Genetic Resources Information System (DAGRIS) system. Sustainability of project outcomes had a high dependency on institutional support. There were however strong mechanisms in place to sustain the institutionalization of some project outcomes.
1. Socio-political sustainability	Moderately Likely	
2. Financial sustainability	Likely	
3. Institutional sustainability	Likely	
Overall Project Rating	Satisfactory	The project was implemented across four countries and covered three different species, hence the results were variable, with some

Criterion	Rating	Comments
		countries having higher scores in some areas and less in others, and vice versa.

163. The evaluation has established that the project had achieved its expected outcome of making available DSTs to support the conservation of indigenous farm animal genetic diversity in developing countries. GEF had invested in the design phase through the PDF-B Phase which allowed extensive stakeholder consultations and sequential planning. This fostered buy-in and ownership by stakeholders in the participating countries. The country implementing teams, chose specific DSTs in line with the needs established during farm surveys and stakeholder consultations, to generate outputs that to project outcomes.

164. The design allowed the project to exercise flexibility during implementation considering that the project was multi regional and multi country that required joint planning and implementation. Through this flexibility the tools were co-created by ILRI and participating countries, to align with realities on the ground. Studies conducted by the project using some of the DSTs generated new information and evidence that was used to create awareness and triggered interests and enthusiasm around the sustainable utilization and conservation of FAnGR. The project made producers aware of the value of their indigenous livestock as well as how they could improve and maintain them.

165. Using information generated by the project, the four countries developed policies that recognized conservation and sustainable utilization of FAnGR. The project contributed to increasing researchers by providing opportunities for 28 students to acquire masters and PhD degrees and now holding senior positions in the respective universities. Moreover, the conservation and sustainable utilization of indigenous was incorporated in the curriculum of the participating Universities.

This evaluation has established that the impacts created by the project were sustainable because of their relevance to the countries and the livestock keepers. Due to this, the impacts were scaled up through application of the DSTs to non-project livestock species, driven by industry demands. These included development of breed standards and judging protocols for Buffaloes and Sahiwal cattle in Pakistan; application of molecular characterization protocols to other livestock species including cattle, sheep and buffaloes by The NCLBGG in Pakistan as well as full characterization and registration of the Red Chittagong Cattle (RCC) in Bangladesh. In addition, the industry demands led to spill over of impact to non-project provinces in Pakistan where the project supported establishment and operationalization of AI technology in goats using frozen semen. Tools, protocols and institutional support systems were further developed to support sustainability of this technology in the KP province, marking the first time AI was used in goats in Pakistan.

166. The project has generated a number of lessons for scaling uptake of Indigenous livestock breeding by farmers globally. Sustainable scaling uptake requires project to create market incentives to drive the utilization by conservation approach. Hence market studies before implementing interventions are very important as they inform strategies for linking

producers/breeders to sustainable markets. Shows, exhibitions and breed competitions are useful tools to promote breed improvement for indigenous livestock because of motivations to receive rewards. Private sector has an important role is sustaining breeding schemes through provision of inputs and services such as semen, chicks, veterinary services, markets to producers.

167. Farmer organizations and breeder associations are important sustainability structures for driving conservation of indigenous livestock through utilization. They play a key role of upholding breed standards through shows/exhibitions, engage with markets on behalf of farmers and are the voice of farmers to policy makers. Income generating activities such as commission from selling breeding animals, member subscriptions should be provided for while forming these associations to ensure sustainability beyond project funding. Village Savings and loaning schemes could be tried for village-based associations so as to generate resources for sustaining operations such as repairs of equipment as well as mechanisms for resilience in case of shocks.

6.2 Lessons Learnt

1. Adequate preparation was a key success factor for the project. Implementation of the PDF-B13 was a very important phase for refining the project approaches while allowing for extensive stakeholder consultations and enhancing their ownership of the project.
2. Projects involving setting up of breeding schemes require about six to seven years of implementation to allow for consistent results, developing and strengthening of sustainability structures, follow ups, documentation of best practices and dissemination for replication.
3. Inclusive project management: projects where management structures include all relevant stakeholders at national and grassroots levels have a high likelihood of receiving full support by the local stakeholders. This is more so if decision makers are represented in the project management structures.
4. It is important to have the right partners on board for projects to achieve impacts:
 - There is a greater chance of leveraging resources from partners when the mandate of implementing or executing institutions and the project goals are aligned.
 - Partnering with universities and research institutions to execute the project introduced efficiency because of the opportunity to engage students as a resource while providing them with learning and mentorship opportunities.
 - Partnership with NGOs who have grassroots presence (World Vision, Bangladesh) was a success factor because of the opportunity to leverage resources as well as scaling the project beyond the project sites.
5. Farmer associations are likely to disperse if they do not have internal mechanisms for raising funds to sustain their operations. Furthermore, their ability to withstand external shocks is

13 PDF phase was a project preparatory phase which was funded by GEF to conduct background assessments (of FAnGR, production systems, human capacities, etc.) in all the participating countries, facilitate participatory meetings for stakeholders, preparation of the project proposal and related documentation.

quite low, hence the need to ensure they have established their own revenue streams to support their operations whenever shocks prevail.

6. Exploring green technologies: the effects of electricity rationing in Sri Lanka that affected one of the mini hatcheries established by the projects reveals the need to promote green energy, as both long term cost cutting measures as well as cushioning the enterprises from impacts of power outages for operations that require constant supply of power.
7. Extended no cost extensions: if projects are extended for a prolonged period of time, though not at cost, they become quite costly and renders project unattractive to some stakeholders. For instance this project started when the CPD were departmental heads and in the course of extensions, majority had rose to professors; project assistants were PhD holders and some ILRI staff rose from senior to principle scientists, rendering the value of their time to be quite high. Furthermore, their availability become quite limited as they climb up the ranks of responsibility.
8. Smallholder farmers would like to experience the short-term tangible benefits. Sharing knowledge with them is not adequate, because of the need for short term economic benefits to get buy-in from farmers, such projects should have a component of giving smallholder farmers some material support while waiting for the actual long term project benefit. For instance, donation of incubators assisted smallholder farmers to quickly multiply their flocks while planning longer term intervention.
9. A number of important elements of wrap up are missed when there is a time lapse between TE and project closure. These include:
 - The opportunity to capture information from fresh minds among the former project teams during the TE.
 - The opportunity to use the recommendations and lessons from the project in co-designing of follow-on projects.
- The opportunity to capture the enthusiasm of stakeholders around the project's achievement on sustainable utilization and conservation of FAnGR at the time of project closure as to facilitate integration of all those involved in project implementation going forward.

9.1 Recommendations

169. Promoting Business cases for Conservation Enterprises: Future projects by UNEP / GEF to facilitate development of business cases on biodiversity conservation. These should be designed in a manner to de-risk the private sector by providing blended financing so as to invest in business cases.

170. Documentation of models: UNEP together with executing agencies to document and package models developed by the project for replication in similar contexts.

171. Holistic approach to conservation of FAnGR: future projects intervening on conservation of FAnGR should integrate the animal and its ecology so as to address all the causes of biodiversity loss. For instance, in goats (both domestic and wild relatives) the project should consider the conservation of goats as an animal species as well as its forage in the wild.

172. Extra Support on Research: Future projects to consider putting aside some grant to continue supporting the research after project closure. This would allow important trends to be studied in the future.

173. Improvement of M&E System: UNEP to adopt a result-based monitoring system to enable continuous monitoring of project at results level. The M&E system should have an indicator tracking system, which should be developed immediately after baseline surveys. At MTR, UNEP could incorporate a review of the M&E system and allows for its reconstruction, if need be.

7) Annexes

7.1 Annex 1: GEF Portal Inputs

The following table contains text to be uploaded to the GEF Portal. It will be drawn from the Evaluation Report, either as copied or summarized text. In each case, references should be provided for the paragraphs and pages of the report from which the responses have been copied or summarized.

Table 12: GEF portal inputs

<p>Question: What was the performance at the project's completion against Core Indicator Targets? (For projects approved prior to GEF-714, these indicators will be identified retrospectively and comments on performance provided¹⁵).</p>
<p>Response: <i>(Might be drawn from Monitoring and Reporting section)</i></p> <p>The project M&E Plan had a total of six outputs with a total of 14 indicators. The project was effective in delivering the expected outputs having fully delivered 82% of the planned outputs. Of these 70% had exceeded targets. Nearly all the delivered outputs, including the most important to achieve outcomes were deemed to be of very good quality and of use by the target beneficiaries. As a result there was demand for some of the tools by the industry which created to spin offs to other species and geographical areas, beyond the project sites. There was enhanced ownership as demonstrated by investment by the government, private sector as well as farmers sustain the outputs.</p> <p>The project had two outcomes with a total of eight indicators. All the outcome indicators were achieved in the lifetime of the project. The two project outcomes were complementary in the achievement of the intermediaries. The elements that were important in the achievement of intermediaries were fully achieved including forming associations, designing and rolling out breed improvement programs based on the needs identified during the studies, policy changes as integration conservation of indigenous livestock in the university curriculum. Additionally assumptions for progress from project outputs to project outcome(s) were held.</p> <p>There were four indicators for immediate objective. These were all achieved translating to impacts among the target beneficiaries. There was application of certain tools driven by the demand from the industry. Examples include breed improvement of local Beetal goats resulting to improved live body weights averaging 140 Kg with some going for over 200Kg live weights; high milk production of Beetal goats due to selection with an average milk yield of 3 Kg per day with some achieving 5-6 liters per day. The use of Buck Parks in Bangladesh contributed to reduced kidding interval and increasing liter size. The genetic characterization protocols were replicated in Red Chittagong Cattle (RCC) in Bangladesh resulting to registration</p>

¹⁴ The GEF is currently operating under the seventh replenishment period of the GEF Trust Fund covering the period July 1, 2018 to June 30, 2022. The GEF Portal Reporting Guide for FY20 Reporting Process indicates that GEF-6 projects that have yet to map existing indicators to GEF-7 Core Indicators need to do so at MTR stage or (if already there) at the time of the TE. (i.e. not GEF projects approved before GEF-6)

¹⁵ This is not applicable for Enabling Activities

of the breed in the country. In Sri Lanka farmers the Association of Village Chicken Production in Thewanuwara got into a formal agreement with a government project for a supply of one month old village chicks.

Question: What were the progress, challenges and outcomes regarding engagement of stakeholders in the project/program as evolved from the time of the MTR? *(This should be based on the description included in the Stakeholder Engagement Plan or equivalent documentation submitted at CEO Endorsement/Approval)*

Response: *(Might be drawn from Factors Affecting Performance section)*

The investment by GEF in funding the PDF-B phase has a major contributor to effective partnerships and stakeholder buy in of the project. From the very beginning the project managed to engage the right partners who effectively delivered the project as National Executing Agencies and continued to sustain most of the project activities after closure. All relevant stakeholders were engaged in the projected management as members of the National Steering Committees at the Country levels. This enabled the project to leverage resources as co-financing, easily influence policy changes as well as institutionalization of conservation of indigenous animals genetic resources in the university curriculum. Engagement of grassroots partners like World Vision, Bangladesh was a success factor as because of effectiveness in implementing grassroots activities as well as scaling the same beyond the project sites.

Question: What were the completed gender-responsive measures and, if applicable, actual gender result areas? *(This should be based on the documentation at CEO Endorsement/Approval, including gender-sensitive indicators contained in the project results framework or gender action plan or equivalent)*

Response:

The overall objective of the project was to trigger institutional changes which ultimately would cascade to the farmers, where gender mainstreaming would be applicable. The project design had clearly expressed how different gender groups would be included in the project, mainly through representation in committees as well as use of livestock species like poultry and goats where women play a greater role.

Question: What was the progress made in the implementation of the management measures against the Safeguards Plan submitted at CEO Approval? The risk classifications reported in the latest PIR report should be verified and the findings of the effectiveness of any measures or lessons learned taken to address identified risks assessed. *(Any supporting documents gathered by the Consultant during this review should be shared with the Task Manager for uploading in the GEF Portal)*

Response:

The list below provides the validated results of risk classifications in the 2018 PIR. Generally, the safeguard plan was effectively implemented. All potential risks were low throughout the project period as presented below:

Project Management

- Management risks: Management structure was established as per the project document and remained functional in all 4 project countries till project closure.

- Governance risks: The RPSC meetings, and at country level the NSC meetings and Site Coordination meetings were held as per the project plan. These were used to provide direction to the project teams.
- Internal Communications: Communication within the country project teams in all four project countries, and their relationship with the RPC and his regional office was cordial and fruitful throughout the project period.
- Workflow: All activities were completed in line with the 2014 revised work plan.
- Co-financing: The co-financing pledged by the collaborating organizations is realized and exceeded.
- Budget: All activities were implemented within the budgetary allocations.
- Financial management: Funds provided as advances to NEA were properly managed and fully accounted for. Submission of quarterly statements to UNEP by ILRI was timely.
- Reporting: Reporting to UNEP was done on time throughout the project period; publications were sent to conferences and journals were all approved by UNEP.
- Stakeholder Involvement: Stakeholders were actively participating in project activities at field level. They assisted with the dissemination of project outcomes.
- External Communication: Stakeholders consultations at country level and regional level was satisfactory throughout the project period.
- Short term/long term balance: Project was addressing both short/long term needs of the livestock keepers, especially the constraints related to conservation of Farm Animal Genetic resources through utilization.
- Science and technological issues: Activities in all 4 project countries were scientifically based, and the technologies developed were proven to suit the rural farming communities.
- Political influences: Project implementation in all 4 countries was not influenced by any political will or decisions.

Project Context

- Political Stability: Political stability/ security situation in all project sites was stable throughout the project period. The political and security was also favourable for dissemination of project findings to farming communities in all countries.
- Environmental Conditions: all the project sites were implemented in stable environmental conditions, there were no stressful environmental conditions during the project period.
- Social Cultural and Economic factors: In all countries there is no evidence of social, cultural and/or economic issues affecting project implementation.
- Capacity issues: there was evidence that all partners, at different levels, had adequate technical and managerial capacities.

Question: What were the challenges and outcomes regarding the project's completed Knowledge Management Approach, including: Knowledge and Learning Deliverables (e.g. website/platform development); Knowledge Products/Events; Communication Strategy; Lessons Learned and Good Practice; Adaptive Management Actions? (This should be based on the documentation approved at CEO Endorsement/Approval).

Response: (Might be drawn from Factors Affecting Performance section)

The learning and knowledge management for internal stakeholders were embedded in the periodic project management meetings i.e. the PMU, NSCs, Site Management Committee. The meetings were useful for review, sharing of lessons and experiences, hence promoting adaptive learning. The Regional Project Steering Committees meetings (RPSC) were rotating around the four countries. The RPC meeting organized alongside a national dissemination workshop involving external stakeholders. In addition to the meetings, each of the county had a project website, where project information was posted regularly. These platforms facilitated south to south learning and information sharing the project had a specific output (Output 2.2) only focused on dissemination of project outcomes to both internal and external stakeholders. Under this output area, the project organized workshops and conferences for disseminating the knowledge generated by the project to external audience. Further about 192 publications were made by the project. Some of the papers were published in international journal, which enabled the project to reach global audience with information to promote sustainable utilization and conservation of FAnGR. All the published papers were approved by UNEP before going public. The project produced printed materials like posters, pamphlets, videos and documentaries which were all disseminated to wide audiences with the countries. Some of the events were graced by senior government officials which attracted media coverage. The project had a specific output.

Question: What are the main findings of the evaluation? (Draw from the Conclusions of the report, with a strong focus on findings related to effectiveness and sustainability).

Response:

The evaluation established that the project achieved its immediate objective of making available DSTs to support the conservation of indigenous farm animal genetic diversity in developing countries. Studies conducted by the project using some of the DSTs generated new information and evidence that was used to create awareness and triggered positive vibes around the sustainable utilization and conservation of FAnGR. Additionally, the project made producers aware of the value of their indigenous livestock as well as how they could improve and maintain them. The four countries developed policies that recognized conservation and sustainable utilization of FAnGR. The project contributed to increasing the number of researchers in the field of conservation genetics by providing opportunities for 39 students to acquire masters and PhD degrees and now holding senior positions in the respective universities. By the time of this TE, this number had more than tripled through the scale up activities. Moreover, the conservation and sustainable utilization of indigenous was incorporated in the curriculum of the participating Universities.

This evaluation has established that the impacts created by the project were sustainable because of their relevance to the countries and the livestock keepers. Due to this, the impacts were scaled up through application of the DSTs to non-project livestock species, driven by industry demands. These included development of breed standards and judging protocols for Buffaloes and Sahiwal cattle in Pakistan; application of molecular characterization protocols to other livestock species including cattle, sheep and buffaloes by The NCLBGG in Pakistan as well as full characterization and registration of the Red Chittagong Cattle (RCC) in Bangladesh. In addition, the industry demands led to spill over of impact to non-project provinces in Pakistan where the project supported establishment and operationalization of AI technology in goats using frozen semen. Tools, protocols and institutional support systems were further developed to support sustainability of this technology in the KP province, marking the first time AI was used in goats in Pakistan.

7.2 Annex 2: Stakeholder Comments

Organization/ Position	Report section	Comment	Responses by Consultant
FAO-Pakistan Office, Islamabad FMD Management Specialist		Brief on the scientific achievements of the project is added as a chapter or even as an annexure, it will add value to the report. This should only highlight scientific achievements as publications, workshops, student research, etc. have already been described.	Annex 7 (section 7.7 has a list of all publications made by the project. The consultant has enhanced the title to read 'Scientific Achievement/Publications ' Made by The Project'.
Professor, Bangladesh Agricultural University	Page 1	Should include representative photos from all 4 countries and ILRI involved in the project	Done
	9, 16,18	Chittagong	All these Typos have been corrected
	14	Summary of Evaluation Findings: ??	
	17	Delete "The project", repetition...	
	17	??	
	18	universities and relevant industries	
	19	World Vision Bangladesh	
126	Prof. A K Fazlul Haque Bhuiyan		
Associate Professor, Depart ment of Animal Breeding and Genetics Central Project Director, National Center for Livestock Breeding, Genetics and Genomics (NCLBG&G) PMAS-Arid Agriculture University Rawalpindi Punjab 46300 Pakistan	Consultant	The interaction with Josephine Mugambi remained very productive. It was really great to interact and answer queries related to NCLBG&G project which may be considered an impact of GEF project.	Appreciated!
	Introduction	It seems well written in style and informative	
	Evaluation methods	Methods seem appropriate	
	Project	This section provides useful information about the project under review.	
	Theory of change	ToC is very well explained	
	Evaluation Findings	Very good	

	Conclusions and Recommendations	Very good	
Former Site Manager, Site II Faisalabad/ Currently, Lecturer, CMS, UAF, Pakistan	Annex 7: Publications Page # 112	This research paper is from my PhD Under this project and pl add in Publication section as M.I. Saleem , M. Saqib, M. S. Khan, G. Muhammad and S. U. Rehman 2019. Epidemiological Study of Mastitis in Three Different Strains of Beetal Goat in Selected Districts of Punjab, Pakistan. Pak Vet J, 2019, 39(3): 389-394. Pak Vet J, 39(3): 389-394. http://dx.doi.org/10.29261/pakvetj/2018.118	Corrected
	Page # 112 H. Zhang, A.K.F.H. Bhuiyan, M.S. Khan, G.L.L.P. Silva, L.T. Thuy, O.A. Mwai, M.N.M. Ibrahim, B. Shapiro, O. Hanotte, G. Zhang, G. Larson, J.L. Han, D. Wu and Y. Zhang. 2020. 863 genomes reveal the origin and domestication of chicken. Cell	Sr. No. is missing for this paper so allot Sr. No. to this Paper too	

	Research (2020) 0:1–10; https://doi.org/10.1038/s41422-020-0349-y		
		I have completed my PhD on “MASTITIS IN INDIGENOUS DAIRY BREEDS OF GOAT IN SELECTED DISTRICTS OF PUNJAB PAKISTAN: I. EPIDEMIOLOGY, AND II. EVALUATION OF A POLYVALENT MASTITIS VACCINE” under this project and it can be added in concern category	Done
President goat breeder association of Pakistan	Recommendation	We are happy to be the part of the project. We got incepted by the project and we are trying to continue as an association. Project was quite helpful to bringing us together as an association. We expected that conclusion would include some capacity building of our association and some assistance in development of herdbook to maintain international norms. thanks	The establishment of Goat Breeders Association of Pakistan has been extensively reported as a project result. The Handbook has also been mentioned in the report as a project output. However, I did not single out this association in the conclusion because the project had supported other entities as well.

7.3 Annex 3: Project performance Rating Table

Evaluation criteria	Rating	Score	Weight	Weighted Score
Strategic Relevance	Highly Satisfactory	6.00	6	0.4
Alignment to UNEP's MTS, POW and strategic priorities	Highly Satisfactory	6	0.5	
Alignment to Donor/Partner strategic priorities	Highly Satisfactory	6	0.5	
Relevance to regional, sub-regional and national issues and needs	Highly Satisfactory	6	2.5	
Complementarity with existing interventions	Highly Satisfactory	6	2.5	
Quality of Project Design	Satisfactory	5	4	0.2
Nature of External Context	Favorable	2		
Effectiveness	Satisfactory	5.00	45	2.3
Availability of outputs	Satisfactory	5	5	
Achievement of project outcomes	Satisfactory	5	30	
Likelihood of impact	Likely	5	10	
Financial Management	Highly Satisfactory	5.67	5	0.3
Adherence to UNEP's policies and procedures	Highly Satisfactory	6		
Completeness of project financial information	Satisfactory	5		
Communication between finance and project management staff	Highly Satisfactory	6		
Efficiency	Moderately Satisfactory	4	10	0.4
Monitoring and Reporting	Satisfactory	4.67	5	0.2
Monitoring design and budgeting	Satisfactory	5		
Monitoring of project implementation	Moderately Satisfactory	4		
Project reporting	Satisfactory	5		
Sustainability	Moderately Likely	4.00	20	0.8
Socio-political sustainability	Moderately Likely	4		
Financial sustainability	Likely	5		
Institutional sustainability	Likely	5		
Factors Affecting Performance	Highly Satisfactory	5.44	5	0.3
Preparation and readiness	Satisfactory	5		
Quality of project management and supervision	Satisfactory	5.00		
UNEP/Implementing Agency:	Satisfactory	5		
Partner/Executing Agency:	Satisfactory	5		
Stakeholder participation and cooperation	Highly Satisfactory	6		

Responsiveness to human rights and gender equity	Satisfactory	5		
Environmental and social safeguards	Highly Satisfactory	6		
Country ownership and driven-ness	Highly Satisfactory	6		
Communication and public awareness	Highly Satisfactory	6		
			100	4.80 (Satisfactory)

7.4 Annex 4: Project Results Framework

Project Planning Matrix (PPM)	Project title: “Development & Application of Decision-Support Tools to Conserve & Sustainably Use Genetic Diversity in Indigenous Livestock & Wild Relatives”	Date: 1.08. 2008
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Objectives and Outcomes/Outputs	Objectively Verifiable Indicators	Means of Verification	Important Assumptions
<p>Development Objective:</p> <p>Conservation of indigenous livestock for future generations and their increased contribution to livelihoods through enhanced use</p>	<p>Population of indigenous livestock of the targeted species remain stable or increase in size (5-10%), with concurrent 5-10% average increase of farmer income from indigenous FAnGR</p>	<ul style="list-style-type: none"> • Project study and independent evaluation reports, that quantify indigenous animal genetic diversity and enhanced off-take 	<ul style="list-style-type: none"> • Stable and favorable economic and political environment, and commitment from policy makers’ and partners’, and project goal consistent with policies and priorities on poverty alleviation
<p>Immediate Objective:</p> <p>Effective tools to support decision making for the conservation and sustainable use of indigenous FAnGR and their wild relatives in developing countries developed and made available.</p>	<p>DSTs and management packages or recommendations made by the project are in use in at least one project site (e.g. community) supporting conservation and/or increased use of at least one indigenous breed by end of year 5</p> <p>National Livestock Development Plan (NLDP) and strategies in each country revised to include the use of the DSTs and implementation initiated at least in one country by end of year 5;</p> <p>At least three livestock institutions/farmers organizations per country raising target species participate in decision making fora or workshops for using developed DSTs to increase the productivity of</p>	<ul style="list-style-type: none"> • Project reports and independent evaluation reports • Documentation on tools available and distributed. • Independent technical evaluation of the decision support tools. 	<ul style="list-style-type: none"> • National and local governments provide adequate support and resources and an appropriate enabling environment (extension, policies, incentives, etc.) for the conservation and sustainable use of AnGR

Objectives and Outcomes/Outputs	Objectively Verifiable Indicators	Means of Verification	Important Assumptions
	<p>indigenous FAnGR by end of year 5;</p> <p>All the four countries establish national FAnGR databases and these are institutionalized and functioning by end of year 5.</p>		
<p>Outcome 1: Enhanced conservation and management of FAnGR diversity using Decision Support Tools (DST)</p>	<p>Conservation and/or use action taken in at least one project site and involving at least one target species, using one or more of the DSTs developed by this project (by end of year 5)</p>	<ul style="list-style-type: none"> • Project reports and independent evaluation reports, including breed survey information. • Official national policies laws and regulations 	<ul style="list-style-type: none"> • Active interest, involvement and support by governmental officer, extension services, and livestock keepers
<p>Output 1.1. Appropriate breeding tools for low input production systems are developed and evaluated.</p>	<p>Working draft of practical manuals on breeding schemes (at least 2 manuals per partner country; in English and in national/local languages), including options and processes for various species and wild relatives (where applicable) available by end of year 1, revised throughout project, with final version published and publicly available by year 5</p> <p>At least one breeding scheme established by the project functional and sustainable at the end of the project for each species by year 5.</p>	<ul style="list-style-type: none"> • Breeding and animal management protocols, data on animal procurement and performance records on procured animals, and training reports. • Progress and research reports, minutes of committee meetings workshop reports, annual reports, and scientific publications (conference proceedings, journal articles) 	<ul style="list-style-type: none"> • Local communities and farmers participate and are supportive, current interest by farmers to be involved in the 'cooperative breeding efforts' is maintained throughout and beyond the project. • No livestock disease outbreak to necessitate quarantine that would prevent farms visits and animal movements. Supportive political environment is maintained to ensure

Objectives and Outcomes/Outputs	Objectively Verifiable Indicators	Means of Verification	Important Assumptions
			continued enabling socio-political environment, including support by extension service personnel.
<p>Output 1.2. An effective tool for cost-benefit analysis of breeding programs for alternative breeds evaluated and made available</p>	Comparative market and non-market advantages of at least one indigenous breed, crossbreed and exotic breed for each species documented by end of year 4;	<ul style="list-style-type: none"> • Survey guidelines, protocols, and computer based analytical tools available. • Periodic project and workshop reports, and scientific publications 	<ul style="list-style-type: none"> • Field activities not disrupted by livestock disease outbreaks or catastrophes of other kinds. • Appropriate candidates for training identified. • Active interest and participation of farmers
<p>Output 1.3. Analytical frameworks for assessment of policy and marketing options (existing and alternatives) for FAnGR developed, evaluated and made available.</p>	Market strategies and options for at least one commodity from indigenous FAnGR products (meat in goat and pigs, meat and eggs in chicken) identified for at least one production system in each country by year 5.	<ul style="list-style-type: none"> • Policy and market briefs, national and international workshop proceedings, and national supervisors/international consultants reports • Training materials for farmers, extension workers and research groups 	<ul style="list-style-type: none"> • Active interest, involvement and support by governmental officer, extension services, and livestock keepers
<p>Output 1.4. Tools for diversity assessment and for setting cost effectiveness conservation priorities developed and made available.</p>	<p>Breed diversity index developed for each project species by end of year 4</p> <p>Breeds and populations for each species ranked in each country for the implementation of conservation strategies at country level by end of year 5.</p>	<ul style="list-style-type: none"> • Published manual, reports and scientific papers technical reports of assessments of diversity for both AnGR and wild relatives. 	<ul style="list-style-type: none"> • Farmers on-site are cooperative. • Farmers have understanding and awareness about the use of animal diversity.
<p>Outcome 2:</p>	Action plans for the conservation and utilization	<ul style="list-style-type: none"> • Participant lists of community workshops 	<ul style="list-style-type: none"> • Collaborating institutions

Objectives and Outcomes/Outputs	Objectively Verifiable Indicators	Means of Verification	Important Assumptions
Increased capacity and enhanced knowledge to use decision support tools for conservation of livestock diversity at national and global levels	<p>of FAnGR and wild relatives developed using information provided by the DSTs in at least two of the project countries by end of year 5.</p> <p>10-20% of staff from all stakeholder groups involved in the project (farmers of both gender, and farmer groups, research and extension staff of NARs, NGO staff, policy makers) are applying the DSTs developed by the project for management of FAnGR by end of year 5</p>	and national meetings, training workshop Documents from institutional governmental organisation emphasizing use of DSTs, application of their finding and conservation and utilisation of FAnGR and their wild relatives.	<p>are open to adoption of <i>in situ</i> conservation approaches to manage indigenous animal resources.</p> <ul style="list-style-type: none"> • Ongoing positive political climate and support
<p>Output 2.1.</p> <p>Capacity of stakeholders to apply the developed Decision Support Tools for conservation and sustainable management/ use of FAnGR and their wild relatives enhanced</p>	<ul style="list-style-type: none"> • Four training programs conducted in each country, tailored to each specific stakeholder needs (policy makers, extension officers, researchers and academics, farmers' organization) on the use of DST for conservation and management of FAnGR and their wild relatives held by year 4. • At least one University curriculum in each country include specific courses on indigenous FAnGR management and conservation using examples provided by the DSTs and with course material being applied in practical training by year 5. • At least 2 researchers in each country with disciplinary expertise on <i>in situ</i> conservation and management of FAnGR are available by the end of the project. <p>At least one farmer's association in each country participates in national</p>	<ul style="list-style-type: none"> • Participant lists of community workshops and meetings. • Project reports including analysis of the responses from national workshops and NSC meetings. • Training course evaluation and reports • Training database, manuals, lecture notes and presentations 	<ul style="list-style-type: none"> • Decision makers are open to adoption of <i>in situ</i> conservation approaches to manage indigenous animal resources.

Objectives and Outcomes/Outputs	Objectively Verifiable Indicators	Means of Verification	Important Assumptions
	programmes/committees on FAnGR conservation as a result of the project by end of year 5.		
<p>Output 2.2. Knowledge and understanding of value of FAnGR and wild relatives increased, and replication strategies made available</p>	<ul style="list-style-type: none"> • Awareness workshops are held every year during project life to increase knowledge and understanding of value of FAnGR and wild relative. • At least 1 TV/radio programme, 1 exhibition, 2 open days and 4 newspaper articles/advertisement to increase knowledge and understanding of the value of FAnGR and wild relative published in each country by year 3. • One National Domestic Animal Genetic Resources Information System (DAGRIS) developed and freely available on the web for use by end of year 4, interlinked to global DAGRIS by end of year 5; • Project findings disseminated in four national workshops involving other partners by year 3 - 4, and one international workshop involving other countries held by year 5. 	<ul style="list-style-type: none"> • Increase use of animal diversity on-farm (site visits) • Breed associations (indigenous animals) • Project documents, newsletters, audio visuals, websites, workshop proceedings, scientific and popular articles 	<ul style="list-style-type: none"> • Public awareness information reaches appropriate stakeholders. • Commitment of the project partners is ensured. • National media are receptive.

7.5 Annex 5: List of Respondents

Name	Designation
Prof. Dr. Muhammad Sajjad Khan	Vice Chancellor, Cholistan University of Veterinary and Animal Sciences, Bahawalpur - Pakistan Former National Project Director, Pakistan
Mohmood Ahktar Cheema	Country Representative IUCN Pakistan Member of National Steering Committee (NSC) of the project
Fauzia Bliqis Malik	Program Coordinator - IUCN Pakistan Represented IUCN in some of the NSC meetings
Dr Mohammad Afzal	Project Coordinator and FAO – Pakistan The first NPD of the project and Chairman Pakistan Agriculture Research Council
Dr Sultan Habubullah Khan	Director, Centre for Advanced Studies (CAS) in Agriculture and Food Security, University of Agriculture Faisalabad
Dr Abdi Hussain	Manager Industrial Linkage and Technology ORIC, MNS University of Agriculture , Multan
Dr. Muhammad Ijaz Saleem	Former Site Manager of site II (Faisalabad) and, M. Phil student, Dept. Clinical Medicine & surgery, University of Agriculture, Faisalabad Lecturer Department of Clinical Medicine and Surgery at UAF
Faisal Ramzan	Benefited as M.Phil student (Defining breeding objectives and selection criteria for Beetal goats through participatory approach) Assistant Professor Department of Animal Breeding and Genetics UAF
Dr. Ghulam Bilal	National Director of Centre for Livestock Breeding, Genetics and Genomics (Centre was developed based on the outcome and awareness of the project) Assistant Professor Department of Animal Breeding and Genetics, PMAS Arid Agriculture University Rawalpindi
Dr. M. Moaeen ud Din	The founder of the National Center for Livestock Breeding, Genetics & Genomics (NCLBG&G) Associate Professor Department of Animal Breeding and Genetics PMAS Arid Agriculture University Rawalpindi
Dr. Muqarrab Ali Khan	Ex-Director General Livestock and Dairy Development Department Helped establish AI in KP province by training 250+ AI technicians
Dr. Sohail Ahmad	Chief master trainer for AI at KP province Professor of Genetics, KP Agriculture University Peshawar
Dr. Muhammad Bilal	Dean Faculty of Animal Science, UAF Member of NSC
Dr. M. Saif ur Rehman	Chairman of Department, Animal Breeding and Genetics, UAF Director Sub Centre NCLBG&G
Mr. Muhammad Ali Shah	President, Goat Breeders Association of Pakistan GBAP was erected by the project
Mr. Bashir Ahmad	Former project community worker and Site II
Dr. Asif Ali	Vice Chancellor, MNS University of Agriculture, Multan Former Director Research at UAF at the time of the project implementation
Farm Visits	A total of 16 Farms Visited

	<p>11 Goat farms consisting of breeders and fattening farms); 3 poultry farms; 2 cattle breeding and fattening farms and one buffalo breeding farm</p> <p>1. Dilber Jani 2. Malik Saadi 3. Munir Kamoka 4. Asif Ali 5. M. Khan 6. Malik Zeeshan 7. Haseeb Ahmad 8. Bashir Ahmad Basra 9. M. Ali Shah 10. Jamat Ali 11. Haji Rafiq</p> <p>1. Imran Waseer 2. Malik Shan 3. Amin Waseer</p> <p>1. Sardar Aftab Wattoo 2. Zia ud Din 1. Haji Shaukat Dogar</p>
Sri Lanka	
Prof Pradeepa Silva	Professor in Animal Science Department of Animal Science Faculty of Agriculture University of Peradeniya Former National Project Director, Sri Lanka
Prof Sarath Kodithuwakku	Dean, Faculty of Agriculture and Coordinator for MBA program, University of Peradeniya
Prof C.M.B Dematawewa	Director, Postgraduate Institute of Agriculture, University of Peradeniya
Dr. (Mrs) K.C.H.A Kothalawala	Director General, Department of Animal Production and Health, Sri Lanka
Dr Anil Jasinghe	Secretary, Ministry of Environment
Dr. Nimal Samaranyake	Additional Secretary/ State Ministry of Livestock
Dr Shamen Vidanage	IUCN Country representative, Sri Lanka
Kulani H.W. Karunarathne	GEF focal point, Ministry of Environment
Prof. M.D. Lamwansa	Vice Chancellor, University of Peradeniya
Prof. Buddhi Marambe	Former Dean who was at the Office while the implementation of the project
Prof. Jeevika Weerahewa	Collaborator for Policy analysis done through the project
Mr. Sunil Gamage	Poultry Training Resource person, During the project implementation -Sri Lanka
Dr. Wasantha Pritadarshani	Vet Surgeon Thirappane (Site 1)
Mr. Madhawa	LDI from the field (Thirappane)
Mr. Suranga Sampath	Former Field Manager from the field Karuwalagaswewa (Site 2)
Dr. L.S. Atapattu	Vet Surgeon Site Karuwalagaswewa
Farm Visits	9 Poultry farms visits in Thirappane and Karuwalagaswewa; held discussions with one group in Karuwalagaswewa
Others	
Prof. Mohamed Ibrahim	ILRI country representative Pakistan Regional Project Coordinator
Dr. Han Jianlin	ILRI, Beijing

Prof. Bhuiyan Fazlul Haque	Professor, Department of Animal Breeding & Genetics, Bangladesh Agricultural University, Mymensingh 2202, Bangladesh Former National Project Director, Bangladesh
Dr. Marieta Sakalian	UNEP Former Project Manager, UNEP
Dr. Mwai Okeyo	Deputy Program Leader - Livestock Genetics International Livestock Research Institute Former Regional Project Director/ Technical Lead
Prof. Le Thi Thuy	Director-VNASTI Animal Husbandry Association (AHAV) Expert in animal production Former National Project Director, Vietnam

7.6 Annex 6: List of Reviewed Documents

LIST OF REVIEWED DOCUMENTS

#	DOCUMENT
1.	UNEP Glossary of results definitions April 2021
2.	Evaluation Criteria and Rating Table 12.08.21
3.	Evaluation Criteria and Ratings Matrix 12.09.22
4.	Second Project Cooperation Agreement between UNEP and ILRI
5.	Inception Report Structure and Contents 10.11.21
6.	Main Evaluation Report Structure and Contents 10.05.22
7.	Stakeholder Analysis Guidance Note 12.08.21
8.	CEO Endorsement request 10-14-08
9.	Gender Methods Note for Consultants 28.01.21
10.	Use of Theory of Change in Project Evaluation 12.08.21
11.	Recommendations Quality Guidance Note 23.06.21
12.	Quality of Evaluation Report Assess Final Only 12.08.21
13.	Evaluation Methodology Structure 09.11.21
14.	Project document UNEP GEF PDF B Livestock Genetic Diversity Nov 1 2002
15.	MTR UNEP REGIONAL BD FSP DECISION SUPPORT
16.	Activity Work plans
17.	Final Report. GEF Asia FAnGR Project.ILRI. 24 May 2021
18.	Bangladesh Final Report- GEF-UNEP-ILRI Asia Project
19.	Expenditure Reports
20.	GEF Biodiversity Strategies
21.	GEF Policy Focal Area Strategies GEF4
22.	GEF-5 FOCAL AREA STRATEGIES

23.	GEF-6-BD-strategy
24.	GEF007 Expenditure Reports
25.	GEF-7 Programming Directions – GEF R.7 19
26.	ILRI Financial Reports
27.	Letter of Request for Extension of Technical Reporting
28.	Original Project completion agreement
29.	Pakistan Final Report GEF-UNEP-ILRI Asia Project
30.	PIR - 2010
31.	PIR - 2011
32.	PIR - 2012
33.	PIR - 2013
34.	PIR - 2014
35.	PIR - 2015
36.	PIR - 2018 and 2017
37.	PIR - 2016
38.	Project Publications: Manuals and Policy Documents
39.	Revised Budget 28.11.2019.20 May 2020.8.06.2020
40.	Sri Lanka Final Report- GEF-UNEP-ILRI Asia Project
41.	UNEP MTS 2010-2013
42.	UNEP Overview and MTS for CPR
43.	UNEP Medium Term Strategy 2014-2017-2015 MTS_2014-2017
44.	UNEP medium-term strategy 2018-2021-2016MTS 2018-2021
45.	Vietnam Final report-GEF-ILRI-FAnGR Asian Project

7.7 Annex 7: Scientific Achievements /Publications Made by the Project

Pakistan

Research Papers

1. F. Ramzan, M. S. Khan, S. A. Bhatti, M. G. Ultas and A. O. Schmitt. 2020. Breeding objectives and selection criteria for four strains of Pakistani Beetal goats identified in a participatory approach. *Small Ruminant Research*. 190. <https://doi.org/10.1016/j.smallrumres.2020.106163>.
2. F. Ramzan, M. S. Khan, S. A. Bhatti, M. Gültas and A. O. Schmitt. 2020. Survey data to identify the selection criteria used by breeders of four strains of Pakistani Beetal goats. *Data in Brief* 32. <https://doi.org/10.1016/j.dib.2020.106051>
3. M. Wang, M. Li, L.A.F. Frantz, M. Thakur, S. Wang, M. Peng, Y. Jiang, J. Peters, N.O. Otecko, C. Suwannapoom, X. Guo, L. Zeng, M. Yang, T. Yin, Y. Liu, A. Esmailzadeh, N.Y. Hirimuthugoda, H. Ashari, S. Suladari, M.S.A. Zein, S. Kusza,

- S.S. Sohrabi, H. Kharrati-Koopae, M. Li, A.C. Adeola, X. Lv, X. Jia, Q. Nie, S.J. Lamont, E. Lasagna,
4. H. Zhang, A.K.F.H. Bhuiyan, M.S. Khan, G.L.L.P. Silva, L.T. Thuy, O.A. Mwai, M.N.M. Ibrahim, B. Shapiro, O. Hanotte, G. Zhang, G. Larson, J.L. Han, D. Wu and Y. Zhang. 2020. 863 genomes reveal the origin and domestication of chicken. *Cell Research* (2020) 0:1–10; <https://doi.org/10.1038/s41422-020-0349-y>
 5. S. Sadeef, M. S. Khan and M.S. Rehman. 2015. Indigenous chicken production in Punjab: a detailed survey through participatory rural appraisals. *J. Anim. Plant Sci.* 25(5):1273:1282. <http://www.thejaps.org.pk/docs/v-25-05/11.pdf>
 6. S. Sadeef, M. S. Khan, M.S. Rehman, M.N.M. Ibrahim and A.M. Okeyo. 2015. Flock composition and pattern of entry and exit of village chickens in Punjab (Pakistan). *Trop. Agri. Res.* 26(3):448–455. http://www.pgia.ac.lk/files/Annual_congress/journal/v26/Journal-No%203/Papers/3-24.%20Mr.%20S.%20Sadeef%20K.pdf
 6. M. S. Muhammad, M. Abdullah, K. Javed, M. S. Khan, and M. A. Jabbar. 2015. Goat production systems in Punjab, Pakistan. *J. Anim. Plant Sci.* 25(3). 618-624. <http://www.thejaps.org.pk/docs/v-25-03/03.pdf>
 7. M. S. Muhammad, M. Abdullah, M. S. Khan, K. Javed and M.A. Jabbar. 2015. Farmers preferences for goat breeds in Punjab, Pakistan. *J. Anim. Plant Sci.* 25(2). 380-386. <http://www.thejaps.org.pk/docs/v-25-2/09.pdf>
 8. R.C. Bett, A. K. F. H. Bhuiyan, M.S. Khan, G.L.L.P Silva, Le Thi Thuy, F. Islam, M.N.D. Abeykoon, T.H. Nguyen, Sumara Sadeef, A.M. Okeyo and M.N.M. Ibrahim. 2014. Phenotypic variation of native chicken populations in the South and South East Asia. *Int. J. Poult. Sci.* 13(8):449-460. <http://www.pjbs.org/ijps/fin2602.pdf>
 9. M. S. Muhammad, M. S. Khan, A. Waheed and M. M. Tariq. 2014. Assessment of feeding types, practices, and cost for raising goats in Punjab, Pakistan. *J. Anim. Plant Sci.* 24(Suppl. 1):77-79. <http://www.thejaps.org.pk/docs/Supplementary/Vol-24-sup-1/20.pdf>
 10. R.C. Bett, A. K. F. H. Bhuiyan, M.S. Khan, G.L.L.P Silva, Le Thi Thuy, S. C. Sarke, M.N.D. Abeykoon, Thi T.H. Nguyen, S. Sadeef, E. Kariuki¹, I. Baltenweck¹, J. Poole¹, O. Mwai and M.N.M. Ibrahim. 2014. Indigenous chicken production in the South and South East Asia. *Livest. Res. Rural Dev.* 26(12) #229: <http://www.lrrd.org/lrrd26/12/bett26229.html>
 11. M. S. Khan, M. S. Muhammad, M. Abdullah, F. Hassan, A. Waheed, M. Ashfaq, R.C. Bett, I. Baltenweck, J. Poole, M.N.M. Ibrahim and A.M. Okeyo. 2013.
 12. Livestock keepers' perception of indigenous goat breeds and their contribution to livelihoods in Pakistan. *Egypt. J. Sheep Goat Sci.* 8(1): 17-27. <http://www.easg.eg.net/pdf/8-1-2013/conf/7.pdf>

Research Abstracts

1. M. I. Saleem, M. Saqib, M. S. Khan, G. Muhammad and S. U. Rehman. 2018. Epidemiological investigations of mastitis in three different strains of Beetal goat in selected districts of Punjab, Pakistan. *Proc. International Conference on Dairy Animal Health Challenges. Faculty of Vet. Sci. Univ. Agri. Faisalabad* (January 17-18, 2018) p-4.
2. **M.I. Saleem**, M. Saqib, M. S. Khan, G. Muhammad and S. U. Rehman 2019. Epidemiological Study of Mastitis in Three Different Strains of Beetal Goat in Selected Districts of Punjab, Pakistan. *Pak Vet J*, 2019, 39(3): 389-394. *Pak Vet J*, 39(3): 389-394. <http://dx.doi.org/10.29261/pakvetj/2018.118>
3. M. Hasnain, M. I. Saleem, T. Ahmad, A. Mahfooz, M. S. Khan, F. Deeba, M. Saqib, M. Rashid, S. Ullah and H. Ihtisham. 2018. Occurrence of caprine mastitis in Nagri and Faisalabadi strains of Beetal goat in two districts of Punjab, Pakistan. *Proc.*

- International Conference on Dairy Animal Health Challenges. Faculty of Vet. Sci. Univ. Agri. Faisalabad (January 17-18, 2018) p-30.
4. F. Hassan and M. S. Khan. 2018. Genome-wide diversity and population structure of indigenous goat breeds. At International seminar on opportunities for PAK-CHINA collaboration in animal and dairy sciences. University of Agriculture Faisalabad (March 22, 2018).
 5. M. S. Khan. 2016. Artificial Insemination technology for sheep and goats. In 101 Innovations catalogue – Technologies for commercialization (eds: I.A. Khan, Z. A. Zahir, M. Naveed, A Rashid). Office of Research, Innovation & Commercialization, University of Agriculture Faisalabad p-272. [http://uaf.edu.pk/Catalouge/101/files/C-%20\(74\).pdf](http://uaf.edu.pk/Catalouge/101/files/C-%20(74).pdf)
 6. M. S. Khan. 2016. Documenting indigenous genetic resources – the Beetal goats. In 101 Innovations catalogue – Technologies for commercialization (eds: I.A. Khan, Z. A. Zahir, M. Naveed, A Rashid). Office of Research, Innovation & Commercialization, University of Agriculture Faisalabad p-276. [http://uaf.edu.pk/Catalouge/101/files/C-%20\(75\).pdf](http://uaf.edu.pk/Catalouge/101/files/C-%20(75).pdf)
 7. Sumara Sadeef and M. Sajjad Khan and M. Saif ur Rehman. 2016. Indigenous chicken production – documenting the production system. Proc. Dissemination Colloquium on “Studies on Indigenous Chicken and Goat Production in Pakistan – Outcomes and way forward” Univ. Agri. Faisalabad (May 28, 2016). P-1.
 8. Muhammad Saif ur Rehman, Anum Iqbal, Iqra Safdar and M. Sajjad Khan. 2016. Documenting diversity in egg white, eggshell pigmentation and ultra-structures in indigenous chicken populations. Proc. Dissemination Colloquium on “Studies on Indigenous Chicken and Goat Production in Pakistan – Outcomes and way forward” Univ. Agri. Faisalabad (May 28, 2016). P-2.
 9. Muhammad Ashraf, Muhammad Saif ur Rehman and M. Sajjad Khan. 2016. Comparative growth performance of three indigenous chicken genotypes and their crosses. In Proc. Dissemination Colloquium on “Studies on Indigenous Chicken and Goat Production Pakistan – Outcomes and way forward” Univ. Agri. Faisalabad (May 28, 2016). P-3.
 10. Maqsood Shah Muhammad and M. Sajjad Khan. 2016. Documenting indigenous goat production system Punjab. Proc. Dissemination Colloquium on “Studies on Indigenous Chicken and Goat Production in Pakistan – Outcomes and way forward” Univ. Agri. Faisalabad (May 28, 2016). P-4.
 11. M. Ijaz Saleem, M. Rashid, M. Hasnain and M. Sajjad Khan. 2016. Mastitis in indigenous dairy breeds of goat in selected districts of Punjab-Pakistan. Proc. Dissemination Colloquium on “Studies on Indigenous Chicken and Goat Production in Pakistan – Outcomes and way forward” Univ. Agri. Faisalabad (May 28, 2016). P-5.
 12. Safdar Imran, M. Sajjad Khan, Asad ullah Hyder and Shaukat Ali Bhatti. 2016. Semen cryopreservation and artificial insemination in goats. Proc. Dissemination Colloquium on “Studies on Indigenous Chicken and Goat Production in Pakistan – Outcomes and way forward” Univ. Agri. Faisalabad (May 28, 2016). P-6.
 12. Faiz-ul-Hassan, M. Sajjad Khan, H. Jianlin and A.M Okeyo. 2016. Molecular and phenotypic variation among indigenous goat breeds. Proc. Dissemination Colloquium on “Studies on Indigenous Chicken and Goat Production in Pakistan – Outcomes and way forward” Univ. Agri. Faisalabad (May 28, 2016). P-7.
 13. Faisal Ramzan, M. Sajjad Khan, Shaukat Ali Bhatti and Pervez Akhtar. 2016. Breeding objectives and selection criteria in Beetal goats using participatory approach. Proc. Dissemination Colloquium on “Studies on Indigenous Chicken and Goat Production in Pakistan – Outcomes and way forward” Univ. Agri. Faisalabad (May 28, 2016). P-8.
 14. Ghulam Asghar Sajid, Faiz-ul-Hassan and M. Sajjad Khan. 2016. Genetic polymorphism in growth hormone gene among indigenous chicken strains of Pakistan. Proc. Dissemination Colloquium on “Studies on Indigenous Chicken and Goat Production in Pakistan – Outcomes and way forward” Univ. Agri. Faisalabad (May 28, 2016). P-11.

15. Rana Shafqat Bilal, M. Sajjad Khan and M. Saif ur Rehman. 2016. Genetic variation in egg quality traits among different breeds of chicken. Proc. Dissemination Colloquium on "Studies on Indigenous Chicken and Goat Production in Pakistan – Outcomes and way forward" Univ. Agri. Faisalabad (May 28, 2016). P-12.
16. Amina Razzaq, M. Sajjad Khan, Faiz ul Hassan and M. Aslam Mirza. 2016. Progeny testing of barred cocks for inheritance of barring pattern. Proc. Dissemination Colloquium on "Studies on Indigenous Chicken and Goat Production in Pakistan – Outcomes and way forward" Univ. Agri. Faisalabad (May 28, 2016). P-13.
17. M. Sajjad Khan, Fida Hussain, M. Ijaz Saleem. 2014. Goat shows for documentations and conservation of indigenous breeds. 26th Annual Congress of Postgraduate Institute of Agriculture (PGIA), University of Peradeniya, Kandy, Sri Lanka (Nov 20-21, 2014).
18. M. S. Muhammad, M. S. Khan and A. Waheed. 2014. Assessment of Feeding and Watering Practices for Raising Goats in Punjab, Pakistan. 26th Annual Congress of Postgraduate Institute of Agriculture (PGIA), University of Peradeniya, Kandy, Sri Lanka (Nov 20-21, 2014).
19. S. Sadeef, M. S. Khan, M. S. Rehman, M.N.M. Ibrahim and A. M. Okeyo. 2014. Flock diversity and pattern on entry and exit of village chickens in Punjab (Pakistan). 26th Annual Congress of Postgraduate Institute of Agriculture (PGIA), University of Peradeniya, Kandy, Sri Lanka (Nov 20-21, 2014) Abstract#1.
20. M. S. Muhammad, M. Abdullah, M. S. Khan, A. Waheed, A. M. Okeyo and M. N. M. Ibrahim. 2013. Analysis of Goat Raising Activities in Rural Areas of Punjab, Pakistan. Proc. 11th World Congress on Animal Production. Beijing, China (Oct 11-15, 2013) Abstract # WCAP2013-4.2-01-040 P-27.
21. M. S. Khan, F. Hussain, F. Hassan, Z. Rehman, S. Ahmad and M. S. Muhammad. 2013. Conserving dancing goats through goat shows. Proc. 11th World Congress on Animal Production. Beijing, China (Oct 11-15, 2013) Abstract # WCAP2013-4.2-01-039 P-338.
22. M. S. Khan, M. S. Muhammad, M. Abdullah, F. Hassan, A. Waheed, M. Ashfaq, R.C. Bett, I. Baltenweck, J. Poole, M.N.M. Ibrahim and A.M. Okeyo. 2012. Livestock keepers' perception of indigenous goat breeds and their contribution to livelihoods in Pakistan. Proc. 4th International Scientific Conference Small Ruminant Production, Sharm El Shiekh, Egypt. (Sept 3-7, 2012).
23. M. S. Khan and M. Ashfaq. 2011. The status of indigenous chicken and goat farming in Pakistan. Proc. National Seminar on Conservation and Sustainable Use of Indigenous Genetic Diversity in Poultry and Pigs. University of Peradeniya, Kandy Sri Lanka.
24. Mastitis in Indigenous Dairy Breeds of Goat in Selected Districts of Punjab, Pakistan: Evaluation of a Polyvalent Mastitis Vaccine'. PhD thesis by Dr. Muhammad Ijaz Saleem.

Sri Lanka

Reports

The following reports have been produced and submitted during the project period.

1. PRA, Household survey and Market Agent survey report.
2. In-depth monitoring report.
3. Project achievement documentation – University Magazine '*Hanthana vision*'

Training Manuals

The two volumes of training booklets on 'Village Chicken Rearing' and 'Commonly occurring Diseases of village chicken' were published as joint publication of the GEF-UNEP-ILRI- Asia FAnGR project and the DAPH.

Extension materials/leaflets/Videos

1. Chicken Diversity Poster

Chicken diversity poster was prepared and finalised based on village chicken types identified by the project in site 1 & 2. The poster is one of the first poster produced

depicting the diversity of Village chicken in Sri Lanka and was useful to identify and categorize the indigenous chicken in Sri Lanka. The poster was given a wide circulation, especially among government institutes and training centres.

2. Factsheets

Four fact sheets were prepared on poultry housing, feeding, record keeping and village chicken types in order to disseminate the knowledge on village poultry keeping. The fact sheets were prepared based on the project findings and the materials produced in household survey and PRA reports.

3. Project Video

A documentary video titled 'Helping hand for indigenous chicken rearing (in sinhala) was produced covering the success stories at the two project sites to mark the exit point of the project. The video was distributed to all the stakeholders participated at the national workshop. It has been using as a training tool beyond the project period.

4. Policy brief

The outcome of the Policy study conducted by the project team was the preparation of Policy Brief Titled 'Conserving Indigenous FAnGR in Sri Lanka: A Reform Package'. This reform package was handed over to the Secretary of the Government Ministry responsible for livestock development of the country in the year 2017.

Books

MPhil thesis titles

1. Phenotypic and genetic characterization of Sri Lankan indigenous chicken (*Gallus gallus domesticus*) and Ceylon Jungle Fowl (*Gallus lafayetti*)
2. Morphological and Morphometric Characterization of village chicken in Sri Lanka.
3. Economic Analysis of Indigenous Chicken Farming in Sri Lanka.

Books Published

1. Status of Farm Animal genetic resources in Sri Lanka G.L.L.P. Silva and S.M.C. Himali. 2005. Status of Farm Animal Genetic Resources in Sri Lanka. The UNEP-GEF-ILRI Asia project, University of Peradeniya, Sri Lanka. (ISBN 955-99569-0-6).
2. Indigenous Animal Genetic Resources of Sri Lanka – Status, potential and opportunities Silva, P. (2010). Indigenous Animal Genetic Resources of Sri Lanka– Status, potential and opportunities. GEF-UNEP-ILRI –FAnGR Asia Project (ISBN 978-955- 589-120-2).
3. Monographs on indigenous chicken Silva, P., Liyanage, R.P., Senadheera, S. and Dematawewa, C.M.B. 2016. Monograph on indigenous chicken in Sri Lanka. UNEP-GEF-ILRI FAnGR Asia project, University of Peradeniya, Sri Lanka.

Research publications

1. Technical Session on Diversity and Evaluation of Animal Genetic resources at the 26th Annual Congress of the Postgraduate Institute of Agriculture (PGIA), University of Peradeniya

The project hosted one of the technical sessions in the 26th Annual Congress of PGIA which was held on 20-21 November 2014. The technical session 1 on Diversity and Evaluation of Animal Genetic resources was contributed by national and international project teams and made six presentations on scientific findings of the GEF-UNEP-ILRI-FAnGR Asia project. The full papers of those presentations were later published in the Tropical Agriculture Research journal (Vol 26 issues). The event was participated in by more than 250 scientists, academia, policy makers and high ranked government officials all over the country too.

2. Technical Session on Potential & Prospects of Village Chicken Industry in Sri Lanka at the 15th Annual General Meeting of Sri Lanka Association of Animal Production (SLAAP)
 - Presentation 1– Indigenous chicken genetic resources by Ms. Malshani Samaraweera, Uva Wellassa University of Sri Lanka
 - Presentation 2– Market potential for village chicken by Ms. M.N.D.F. Abeykoon, FAnGR Asia project, University of Peradeniya
 - Presentation 3– Conservation of Indigenous FAnGR in Sri Lanka, A Stakeholder Analysis by Ms. Viraji Jayaweera, University of Peradeniya

Scientific communications presented and published in conference proceedings.

1. Thilini, H.W.L., Korala Gedara, P. and Silva G.L.L.P. (2016). Impact of intervention on Socio-economic status of village chicken rearing farmers: a case in Karuwalagaswewa and Thirappane Veterinary Divisions. Proceedings of the Peradeniya University International Research Sessions (iPURSE), Peradeniya, Sri Lanka held on November 4- 5, 2016. Volume 20. P 11.
2. Rajapaksha, R.B.G.S.K., Senarathne, O.D., Silva, G.L.L.P., and Jayasena, D.K.D.D. (2016). Comparison of quality characteristics of leg meat between Sri Lankan indigenous chickens and commercial broilers at retail. Proceedings of the 6th Research Symposium of Uva Wellassa University. pp. 28.
3. Senarathne, O.D., Rajapaksha, R.B.G.S.K., Silva, G.L.L.P., and Jayasena, D.K.D.D. (2016). Comparison of quality characteristics of breast meat between Sri Lankan indigenous chickens and commercial broilers at retail. Proceedings of the 6th Research Symposium of Uva Wellassa University. pp. 38.
4. Rajapaksha, R.R.B., Madushani, L.C., Silva, G.L.L.P. and Himali, S.M.C. (2015). Effect of Ecotypes and Feeding Systems on the quality and functional properties of Backyard chicken eggs. Proceedings of the Peradeniya University International Research Sessions (iPURSE), Peradeniya, Sri Lanka held on November 5-6, 2015. Volume 19. P 164.
5. Abeykoon, N., Wijesena, S., Lahirun Thilini, H.W., Ibrahim, M.N.M. and Silva, P. (2015). Sustainable Livelihood Improvement of Village Chicken Farmers in Sri Lanka. Book of Abstracts of 1st Annual International Conference on Veterinary and Animal Sciences 2015 on Livestock for Sustainable Livelihood Improvement (Eds Umer Farooq). 15 – 16 December. Colombo, Sri Lanka.

6. Silva, P., Abeykone, N.D.F., Samaraweera, A.M., Han, J. L. Ibrahim, M.N.M. and Okeyo, A.M. (2014). Genetic Diversity and Adaptability Exist among Backyard Poultry Populations in Sri Lanka. 10th World Congress on Genetics Applied to Livestock Production (WCGALP) held in Vancouver, Canada 17-23 August, 2014
7. Samaraweera, A.M., Silva, P., Abeykone, N.D.F., Ibrahim, M.N.M, Okeyo and Han, J.L. (2014). Nearly Complete Sampling for Flocks of Sri Lankan Backyard Chickens Revealed a Complex Population Genetic Structure - Implication to Conservation and Genetic Improvement Programs. 10th World Congress on Genetics Applied to Livestock Production (WCGALP) held in Vancouver, Canada 17-23 August 2014.
8. Wijayasena, A.M.P.S.S., De Alwis, D.J. Silva, G.L.L.P. and Abeykoon, M.N.D.F. (2014) Cost benefit Analysis of village chicken production in Puttalam district of Sri Lanka: a case study. Proceedings of the Peradeniya University International research sessions (iPURSE), Peradeniya, Sri Lanka on July 4-5, 2014. Volume 18. P 224.
9. Rajapaksha, T. Abeykoon, M.N.D.F. and Silva, G.L.L.P. (2014). Potential of expanding the capacity of indigenous poultry farmers in Sri Lanka: a case study in Thirappane Area. Proceedings of the Peradeniya University International research sessions (iPURSE), Peradeniya, Sri Lanka on July 4-5, 2014. Volume 18. P 700.
10. Sunil de S. Gamage, Pradeepa Silva, Nirukshika D.F. Abeykoon, Mohomad N.M. Ibrahim, Okeyo Mwai. (2013). Diversity of phenotypic characteristics of different indigenous chicken ecotypes in Sri Lanka. Proceedings of the World Conference of Animal Production held in Beijing, China on October 16-17, 2013. P 175.
11. Suranga Wijayasena, Nirukshika Abeykoon, Pradeepa Silva, Mohamed N.M. Ibrahim, Isabelle Baltenweck, Eunice Kariuki and Okeyo M. Mwai. (2013) Characteristics of indigenous poultry production systems in two selected locations in the dry zone of Sri Lanka. Proceedings of the World Conference of Animal Production held in Beijing, China on October 16-17, 2013. P 101.
12. Sunil de S. Gamage, Pradeepa Silva, Nirukshika D.F. Abeykoon, Mohamed N.M Ibrahim and Okeyo Mwai (2013). Introduction of an improved indigenous chicken to the scavenging poultry sector. Proceedings of the World Conference of Animal Production held in Beijing, China on October 16-17, 2013. P 113.
13. Sanjeewa, M.N., Liyanage R.P. Vidanarachch, J.K. and Silva LP (2011) Association between egg production and body morphology of some village chicken ecotypes in Sri Lanka. Proceedings of University Research Sessions of University of Peradeniya 2011. Vol. 16, P 44 (ISSN: 1391-4111, ISBN: 978-955-589-154-7).

Scientific communications published in Journals

1. Silva, G.L.L.P., Rajapaksha, R.R.B., Madushani, L.C. and Himali, S.M.C. (2017). Effect of different feeding systems on the quality and functional properties of backyard chicken eggs. Sri Lanka Journal of Animal Production 9: 30-46.
2. Silva, G. L. L. P., Thuy, L. T., Abeykoon, N. D., Hanh, N. T. H., Bett, R. C., Okeyo, M. and Ibrahim, M. N. M. (2016). Comparative study of Indigenous pig production in Vietnam and Sri Lanka. International Journal of Livestock Production 7(10), pp. 83-93, October 2016. DOI: 10.5897/IJLP2016.0306.
3. Liyanage, R.P., Dematawewa C.M.B. and GLLP Silva (2015). Comparative Study on Morphological and Morphometric Features of Village Chicken in Sri Lanka. Tropical Agricultural Research 26 (2), pp. 262-273 Abeykoon, MNDF, J. Weerahewa, P. Weligamage and GLLP Silva (2014). Willingness to Pay for Chicks of Different Indigenous Chicken Types: An Application of Experimental Auctions. Tropical Agricultural Research Vol. 26 (1): 162 – 174.
4. Bett R.C., A.K.F.H. Bhuiyan , M.S. Khan , G.L.L.P. Silva , Le Thi Thuy , F. Islam, M.N.D. Abeykoon , T.H. Nguyen, Sumara Sadeh, O. Mwai and M.N.M. Ibrahim (2014) . Phenotypic Variation of Native Chicken Populations in the South and South East Asia, International Journal of Poultry Science 13 (8): 449-460, 2014 ISSN 1682- 8356

5. Bett, R.C., A K F H Bhuiyan, M S Khan, G L L P Silva, Le Thi Thuy, S C Sarker, M N D Abeykoon, Thi T H Nguyen, S Sadeh, E Kariuki, I Baltenweck, J Poole, O Mwai and M N M Ibrahim (2014). Indigenous chicken production in the South and South East Asia. *Livestock Research for Rural Development* 26 (12) 2014. <http://www.lrrd.org/lrrd26/12/bett26229.html>
6. Abeykoon, MNDF, J. Weerahewa and GLLP Silva (2013). Determinants of Market Participation of Indigenous Poultry Farmers: A Case Study in Anuradhapura District in Sri Lanka. *Tropical Agricultural Research* 24(4): 347-361.

Bangladesh

Reports

The full reports of HH Survey, PRA, Genetic Studies, Phenotypic Characterization and In-depth Monitoring Assessment were prepared.

Training manuals

Two Training Manuals were produced from the project viz.

- (1) Indigenous Goat Rearing Manual (in English and Bengali) and
- (2) Indigenous Chicken Rearing Manual (in English and Bengali)

Extension materials/leaflets/videos

The extension materials/leaflets/videos produced in this project are listed below:

1. GEF Asia Project Pamphlet-English
2. GEF Asia Project Pamphlet -Bengali
3. GEF Asia Project Bulletin- English
4. GEF Asia Project Bulletin- Bengali
5. Laws & by-laws Indigenous Goat Rearing Women Cooperative Society Ltd.
6. Laws & by-laws Indigenous Chicken Rearing Women Cooperative Society Ltd.
7. GEF Asia Project Video Clip -Goat- in Bengali with English translation
8. GEF Asia Project Video Clip -Chicken- in Bengali with English translation
9. GEF Asia Project Goat Poster Presented in Kandy, Sri Lanka

Books

MSc and PhD student thesis/dissertations and books published

- 1 Diversity in Performance of Indigenous Chicken in Some Selected Areas of Bangladesh In-Situ. Md. Shahjahan MS Thesis 2010 Bangladesh Agricultural University (BAU)
- 2 Studies on the Morphometry and Performance of Black Bengal Goats at Community Level. Md.Panir Choudhury. MS Thesis 2011 BAU
- 3 A study on egg production, egg weight, hatchability and birth weight of indigenous chicken *ex-situ*. Nipa Rani Sarker. MS Thesis. 2011. BAU
- 4 Morphological & Phenotypic Characterization of Indigenous Chicken in Jhenaigati Upazila in Bangladesh. Farah Tabassum. MS Thesis 2012. BAU
- 5 Production Performance of Indigenous Chicken In-situ in the Jhenaigati Upazila of
- 6 Evaluation of Artificially Incubated Indigenous Chicken under a Community Managed Approach. Nure Hasni Desha. MS Thesis. 2015. BAU
- 7 Selection for Improvement of Economic Traits of Indigenous Shakila Faroque. PhD Thesis. 2015. BAU

- Fertility and Hatchability of Eggs and Growth Performance of Mini- Incubator Hatched Indigenous Chicken in Rural Areas of Bangladesh. Research Paper. Tropical Agricultural Research, 26(3): 528-536. Sri Lanka.
- 9 S. C. Sarker, F. Islam, M. Akteruzzaman, A. M. Okeyo, M. N. M. Ibrahim, I. Baltenweck and A K .F H. Bhuiyan (2014). Impact of Buck Parks on Improvement of Black Bengal Goats in Rural Bangladesh. Poster Paper. PGIA, Kandy, Sri Lanka during 20-22 November, 2014
 - 10 Shahjahan, M., M. R. Amin and A. K. F. H. Bhuiyan, 2011. Diversity in performance of indigenous chicken in some selected areas of Bangladesh in-situ. Proceedings of 9th Asia Pacific Poultry Conference, the World's Poultry Science Association, Taiwan Branch, 20-23 March, Taipei, Taiwan: Mon-S4- 08.
 - 11 A.K.F.H. Bhuiyan, F. Islam, S. Faruque (2014). Breeding for Improvement of Indigenous Chicken in Bangladesh. (2014) Oral presentation in the Asia Pacific Poultry Conference Proceeding. Proc. of the 10th Asia Pacific Poultry Conference held in ICC JEJU, Jeju, Korea, 19-23 October 2014, pp 107.
 - 12 A. K. F.H. Bhuiyan, F. Islam and S. C. Sarker (2010) Development and application of decision-support tools to conserve and sustainably use genetic diversity in indigenous livestock and wild relatives. Annual Progress Report of the Bangladesh Agricultural University Research Progress (BAURES), vol: 21; pages 43.
 - 13 A. K. F. H. Bhuiyan, S. C. Sarker, F. Islam, M. Akteruzzaman, R.C. Bett, I. Baltenweck, J. Poole, M.N.M. Ibrahim and A. M. Okeyo (2011). Development and Application of decision-support tools to conserve and sustainably use genetic diversity in indigenous livestock and wild relatives. Annual Progress Report the Bangladesh Agricultural University Research Progress (BAURES), vol: 22 pages 37-38.
 - 14 Islam, F., Sarker, S. C., Bhuiyan, A. K. F. H., Akteruzzaman, M., Bett, R.C., Baltenweck, I., Poole, J., Ibrahim, M.N.M. and Okeyo, A. M. (2012). The status of indigenous chicken farming & options for improvement in Bangladesh. Proc. Awareness Building Seminar on Indigenous Poultry: Need for Policy Intervention and Sustainable Approaches to Higher Productivity, held on 28 January 2012, Animal Husbandry Faculty Gallery, Bangladesh Agricultural University, Mymensingh. p. 21.
 - 15 A. K. F. H. Bhuiyan, S. C. Sarker, F. Islam, M. Akteruzzaman, H. Jianlin, M.N.M. Ibrahim and A. M. Okeyo. Development and application of decision-support tools to conserve and sustainably use genetic diversity in indigenous livestock and wild relatives. Proceeding 2012. Annual Progress Report the Bangladesh Agricultural University Research Progress (BAURES), vol: 23, pages 49.
 - 16 A. K. F. H. Bhuiyan, S. C. Sarker, F. Islam, I. Baltenweck, J. Poole. M.N.M. Ibrahim and A. M. Okeyo. (2013). Performance of indigenous chicken in the rural villages of Bangladesh studied through in-depth monitoring survey. Proceeding 2013. Annual Progress Report the Bangladesh Agricultural University Research Progress (BAURES), vol: 24 pages 42.
 - 17 A. K. F. H. Bhuiyan, S. C. Sarker, F. Islam, I. Baltenweck, J. Poole M.N.M. Ibrahim and A. M. Okeyo. (2014). Effect of alternative breeding strategies on performance of indigenous chicken in generation zero. Proceeding 2014. Annual Progress Report the Bangladesh Agricultural University Research Progress (BAURES).
 - 18 S Jahan, F Islam, MSA Bhuiyan and AKFH Bhuiyan (2017). Productive and reproductive performances of Indigenous chicken in the rural condition of Bangladesh. Research Paper .2017. Bangladesh J. Anim. Sci. 2017. 46 (2): 121-127
 - 19 Md. Ahsan Habib, Ambia Akhtar, A. K. Fazlul Haque Bhuiyan, Md. Panir Choudhury and Most Farhana Afroz. (2019). Biometrical Relationship between Body Weight and Body

- Measurements of Black Bengal Goat (BBG). Research Paper. 2019. Current Journal of Applied Science and Technology 35(2): 1-7, 2019; Article no.CJAST.48413
- 20 Md Ahsan Habib, Ambia Akhtar, Abul Kashem Fazlul Haque Bhuiyan and Most Farhana Afroz. (2019). Genetic Expression of Different Coat Colour Variants of Black Bengal Goat (BBG) in Bangladesh. Research Paper 2019. Current Journal of Applied Science and Technology 35(2): 1-7, 2019; Article no.CJAST.48432

Vietnam

Reports

Following Participatory Rural Assessment (PRAs), Household Survey (HHs), Market Agent Survey (MA), Policy; Blood Sampling and Intensive Monitoring were carried out following the guidance from ILRI.

Training manuals

There are three brochures on chicken and pig husbandry to train farmers, agricultural extension workers, women's unions, farmers' associations: chicken-farming techniques, pig raising animal husbandry, nutrition, feeding techniques, management, housing, veterinary services.

Extension materials/leaflets/Videos;

Some leaflets, advertisements, posters, panels, videos distributed and displayed in seminars, exhibitions and contests

- Poster Vietnam Women Conference.
- Video: Duong Vuong King -Ho Chicken Festival 3.2015.
- Vietnam broadcasting agencies, newspapers & tivi published and shown regarding project work during implementation time.
- 02 proceedings papers and 02 Posters at the Symposium on Indigenous FAnGR conservation through Utilization, Kandy, Sri-Lanka 22 Nov 2014): Poster policy Thuy Rev_11.2014 b (1).ppt and Policy & intervention works.
- The project activities on the Vietnam Media web-side, electronic articles as:
 - <http://thuanthanh.gov.vn/lich-su-van-hoa/lang-nghe/ga-ho-hut-khach-hoi-lang-lac-tho-12-1982.html>.
 - <http://www.baomoi.com> has title "Lạc Thổ vang tiếng gà Hồ".
 - <http://www.baomoi.com/Lac-tho-vang-tieng-ga-ho/54/12072449.epi>.
 - 02 articles on Viet Nam agriculture paper:
 - <http://www.nongnghiep.vn/nongnghiepv/vi-vn/25/117669/ky-thuat-nghe-nong/ap-trung-ga-ho-bang-may.html>
 - <http://www.nongnghiep.vn/nongnghiepv/vi-vn/25/103659/khuyen-nong/mo-hinh-giam-sat-du-bao-chan-nuoi.html>
 - <http://thuanthanh.gov.vn/nguoi-thuan-thanh/may-ap-trung-den-voi-ga-ho-4-1712.html>
- Radio and documentary on wild animal and Jungle
- The objective of GEF was presented at the Government meeting on: Rural development in the mountainous area in June, 2011,
- Project website was maintained at the: www.fangr.org.vn

Books

The 12 master's and post-graduate theses published are valuable documents serving research and training in universities, research institutes on agriculture and animal husbandry, on conservation, promotion and sustainable use to sustain genetic resources of indigenous cattle and poultry.

Master's Thesis:

No.	Name of the student	Gender	University registered	Title of thesis	Time frame
1	Tran Thi	F	Hanoi agriculture university	Productivity, meat quality and identify the mutations of IGF-1 gene of Ri and H'mong chicken.	2011-2012
2	Vu Huong Giang	F	Thai Nguyen University of Agriculture and Forestry	Research on biological characteristics, distribution, usage, and origins of three Vietnamese domestic chicken breeds: Ho and Ri.	2011-2012
3	Phung Thi Thu Ha	F	Thai Nguyen University of Agriculture and Forestry	Research on biological characteristics and productivity of Ban pigs in Son La and the development potential and conservation direction for this pig breed in Vietnam.	2011-2012
4	Nguyen Hong Hanh	F	Hanoi agriculture university	Determination genetic diversity of three pig breeds: Ban, Wild pig and F1 (Wild pig cross local Ban pig) in Vietnam using Microsatelites marker.	2013-2014
5	Tran Thi Thuy Nhien	F	Hanoi agriculture university-HZAU,China	Characterization of genetic diversity of Vietnamese and Chinese pig breeds based on mitochondrial genome variation	2014-2015

Undergraduate Thesis:

No.	Name of the student	Gender	Universities	Title of thesis	Time frame
1	Nguyen Canh Thuan	M	Thai Nguyen University of Agriculture and Forestry.	Comparison of biological characteristics and the growth of F1 (Jungle fowl x H'mong) and F1 (Jungle fowl x Fayoumi)	2012

2	Do Van Ha	M	Hanoi agriculture university	Some characteristics of appearance and the growth of F1 (Jungle fowl x Fayoumi)	2012
3	Ng. Van Hung	M	Hanoi agriculture university	Some characteristics of appearance and the growth of F1 (Jungle fowl x H'mong	2012
4	Tran Thuy Nhien	F	Hanoi agriculture university	Study on performances and productivity of local Ban breed and F1 (wild pig x local Ban pig breeds) raising in Son La households condition.	2013
5	Ung Van Toan	M	Hanoi agriculture university	Efficient comparison between three formulations: Local Ban pig, wild pig breeds and F1(wild pig x local Ban pig) in Son La households condition and their market potentials	2013
6	Nguyen Thi Hang	F	Hanoi agriculture university	Comparison of biological characteristics and the growth of F1 (wild pig x local Ban pig breeds)raising in Son La households condition.	2013
7	Dang Van Ngu	M	Hanoi agriculture university	Application of technology, marketing, in promoting the values of Pig genetic resources, and their wild relatives	2014

Research publications (in seminar proceedings, Journal)

A total of 29 publications on research, theses training and transfer are published in national and international journals, in seminars and dissertations by students.

##	Title of Publication	Authors	Type/year	Journal/University
1	Productivity, meat quality and identifying the mutations of IGF-1 gene of Ri and H'mong chicken.	T.T.Kim Anh.	Master thesis 2012	Ha Noi University of Agriculture
2	Research on biological characteristics & productivity of local Ban pigs in son La and the potential development and conservation direction for Local Ban pig breeds in Vietnam.	P.T.Thu Ha	Master thesis, 2012	Thai Nguyen University of Agriculture and Forestry
3	Research on biological characteristics distribution, usage	V.T.Huong Giang	Master thesis, 2012	Thai Nguyen University of

	and origins of two Vietnamese domestic chicken breed: Ho and Ri			Agriculture and Forestry
4	Determination genetic diversity of three pig breeds: Ban, Wild pig and F1 (Wild pig cross local Ban pig) in Vietnam using Microsatelites marker	N.T.H. Hanh	Master thesis 2014.	Ha Noi University of Agriculture
5	Characterization of genetic diversity of Vietnamese and Chinese pig breeds based on mitochondrial genome variation	T.T.T. Nhien	Master thesis 2015.	Hanoi agriculture university- HZAU, China
6	Some characteristics of appearance and the growth of F1 (Jungle fowl x H'mong)	N.Van Hung	Graduation thesis, 2012,	Ha Noi University of Agriculture.
7	Some characteristics of appearance and the growth of F1 (Jungle fowl x Fayoumi)	D.Van Ha	Graduation thesis, 2012,	Ha Noi University of Agriculture
8	Comparison of biological characteristics and the growth of F1 (Jungle fowl x H'mong) and F1 (Jungle fowl x Fayoumi)	N.Canh Thuan	Graduation thesis, 2012,	Thai Nguyen University of Agriculture and Forestry
9	Study on performances and productivity of local Ban breed and F1 (wild pig x local Ban pig breeds) raising in Son La households condition	T.T.Thuy Nhien	Graduation thesis, 2013,	Ha Noi University of Agriculture
10	Efficient comparison between three formulations: Local Ban pig, wild pig breeds and F1(wild pig x local Ban pig) in Son La households condition and their	U.Van Toan	Graduation thesis, 2013	Ha Noi University of Agriculture
11	Comparison of biological characteristics and the growth of F1 (wild pig x local Ban pig breeds) raising in Son La households condition.	N.Thi Hang	Graduation thesis, 2013	Ha Noi University of Agriculture
12	Application of technology, , in promoting the market values of Pig genetic resources, and their wild relatives	D.Van Ngu	Graduation thesis, 2014,	Ha Noi University of Agriculture.
13	Farm AnGR their conservation and sustainable use in Vietnam	L.Thi Thuy	Proceeding, 2014	Vietnam National workshop
14	Study on Wild relative of chickens in Viet Nam	N.T.H. Hanh, L.T. Thuy, Han Jianlin, H. Ashari.	Proceeding , 2014	Vietnam National workshop

15	Indigenous chicken production in the South and South East Asia	R.C. Bett, A. K. F. H. Bhuiyan, M.S. Khan, G.L.L.P Silva, Li Thi Thuy, Kariuki, S. C. Sarker, M.N.D. Abeykoon, T.H. Nguyen, S. Sadeef, J. Poole, O. Mwai and M.N.M. Ibrahim,	Research paper, 2014	Manuscript No :14162, Asian-Australasian Journal of Animal Sciences, 2014 Livestock Research for Rural Development
16	Morphological characteristics and growth performance of F1 hybrids of Red Junglefowl cocks × Fayoumi or H'mong hens	N.T.H. Hanh, L.T. Thuy, J.L. Han, P. Silva, M.N.M. Ibrahim and A.M. Okeyo	Research paper, 2014	PGIA Annual Congress (2014), Srilanka
17	Wild relatives studies on pigs in Vietnam and its relevance.	HAN, Jianlin; HANH, Nguyen; L.T. Thuy	Proceeding, 2013	International Seminar, Hanoi, Vietnam
18	Impact of quality attributes and marketing factors on prices for indigenous pork in Vietnam to promote sustainable utilization of local	T.H.Cuong; N.T.T.Nhung; D.K. Hoa.	Proceeding, 2014	Vietnam National workshop
19	Some characteristics of Ban pig.	N.T.T.Nhung; D.K. Hoa; T.H.Cuong	Proceeding, 2014	Vietnam National workshop
19	Some characteristics of Ban pig.	N.T.T.Nhung; D.K. Hoa; T.H.Cuong	Proceeding, 2014	Vietnam National workshop
20	Analysis of market for Ban pig in the North of Viet Nam.	D.K. Hoa; T.H.Cuong; N.T.T.Nhung	Proceeding, 2014	Vietnam National workshop
21	Wild relatives study in Vietnam.	THUY. Le Thi; HAN, Jianlin; HANH, Nguyen; Hidayat. A	Proceeding, 2012	International Seminar, Faisalabad Pakistan
22	Genetic diversity of some chicken breeds in Vietnam	Thuy, L.T; Jianlin, Han; Hanh, N.T.H	Proceeding, 2012	International Seminar,
23	Policy analysis pertaining to conservation and sustainable management of Farm Animal Genetic Resources (FAnGR).	P.T.K Dung, L.T.Thuy, N.T.H.Hanh, K.Steve, M.N.M.Ibrahim and A.M.	Poster paper, 2014	Symposium-Kandy, Sri Lanka

		Okeyo		
24	Intervention on Ho chicken in Vietnam	L.T.Thuy, N.T.H.Hanh, M.N.M.Ibrahim	Poster paper, 2014	Symposium- Kandy, Sri Lanka
25	FAnGR Project activities in Vietnam: Results and implications	L.T. Thuy	Proceeding, 2014	Symposium- Kandy, Sri Lanka
26	Analysis of market value chain for indigenous pig in Vietnam	T. H. Cuong, L.T. Thuy, M.N.M. Ibrahim, N.T.T. Nhung, D.T.K. Hoa	Proceeding, 2014	Symposium- Kandy, Sri Lanka
27	Studies on Red Junglefowl in Vietnam	L.T. Thuy; N.T.H. Hạng; H. Jianlin; A.M. Okeyo	Research Paper, 2015	Vietnam Journal of Animal Science.
28	Morphological & Phenotypic Characteristics and Growth performances of F1 hybrids of Red Junglefowl cocks × Fayoumi or H'mong hens.	N.T.H.Hạng; L.T. Thuy; Đ.H.V.Minh; H. Jianlin;	Research Paper,2015	Vietnam Journal of Animal Science.
29	Studies on the meat and egg quality of F1 hybrids of Red Junglefowl cocks × Fayoumi or H'mong hens raising at NIAS.	N.T.H.Hạng; L.T. Thuy, ;T.T.T.Nhiên,; Đ.H.V.Minh and M.N.M. Ibrahim	Research Paper, 2015	Vietnam Journal of Animal Science

7.8 Annex 8: Stakeholder Analysis

Stakeholders	Explain the power they hold over the project results/implementation and the level of interest	Did they participate in the project design, and how.	Potential roles and responsibilities in project implementation	Changes in their behaviour expected through implementation of the project
International Livestock Research Institute (ILRI)	Hosting the coordination office, providing all the technical expertise and overseeing the project management Unit.	Yes, led in the development of project design, Stakeholder consultations and implementation of PDF-B	<ul style="list-style-type: none"> • The executing agency for the project; supporting project implementation at the regional level; hosting the coordination team and provide appropriate financial and management services to support the smooth execution of project activities. • Allocate substantial professional and supportive staff time and other resources (office space, computing equipment, communication facilities, and other office operating facilities, etc.) • Setting up Project Implementation Unit in each country and appointing, in consultation with respective national executive agency, a National Project Coordinator. • Coordination of International Steering Committee meetings, organization of thematic meetings/trainings/workshops, compilation of country reports for submission to UNEP/GEF and other 	The project would provide ILRI with an opportunity to draw lessons from executing the project which would be useful in refinement of their research agenda in the field of animal breeding. Further ILRI would refine the models for further dissemination to non-project countries.

			donors, global publications, financial reports to UNEP/GEF and other donors, etc.	
Ministry of Fisheries & Livestock Bangladesh, Ministry of Food, Agriculture and Livestock (MINFAL) – Bangladesh	Project Beneficiary: The Ministry was responsible for state policy in the field of fisheries and livestock. Develops policy / legislative recommendations on conservation and expansion of fisheries and livestock;	Yes, they were consulted during the design and PDF-phases of the project.	<ul style="list-style-type: none"> • A member of the NSC. • Co-Chair of the Project NSC. • Responsible for implementing field management of pilot activities through the extension officers. • Provide Livestock Services through its grassroots (Upazilla, Union and Village) level branches in the Pilot Sites of the selected Districts. • Would play a key role in work of Site Committees. 	<p>Improve their service delivery and support to farmers in conservation and sustainable utilization of FAnGR.</p> <p>Use the DSTs to develop policies and legal frameworks that support sustainable conservation and utilization of FAnGR.</p>
Bangladesh Agricultural University	Technical leadership of the project at the national level, Project management agency	Yes; Participated in the PDF-B Phase, consultations in providing key information needed in project planning	<ul style="list-style-type: none"> • Executing agency of the project and host to the project implementation unit • Member of the NSC. • Providing technical leadership of the project at the national level. • Provide assistance in national training program; improving skills of project team; holding workshops, conferences and undertaking other project activities 	<p>Build on the project outputs to continue refining the DSTs and disseminating the same to farmers in Bangladesh</p> <p>Be source of information and actively support government, farmers and other stakeholders in implementing activities related to sustainable conservation and utilization of FAnGR in Bangladesh</p>

			<p>in relevant areas of expertise.</p> <ul style="list-style-type: none"> • Establishing and maintaining ONBS at the field and data bases on indigenous FAnGR and farmers maintaining in situ / on farm indigenous FAnGR; • Assessing biodiversity levels using molecular characterization • Collaboration with BLRI and DLS scientists /professionals. 	
World Vision- <u>Bangladesh</u> - NGO	A key partner in the project co-funding and in the field implementation through its grassroots structures	Provided Kind and cash Contribution to / Proposal Writing	<ul style="list-style-type: none"> • Strengthening field management of pilot activity through its • Grass-roots level branches in the pilot sites and play a key role in the work of Site. • Committees. • Community mobilization, training of farmers, animal recording, enhancing farmers/local communities in maintenance of indigenous FAnGR diversity and its use in ONBS programs and for nonbreeding purposes. • Assisting in establishment of demonstration plots; developing and 	Apply lessons learnt and develop follow on projects as a way of scaling up or replicating the project activities in non-project areas, in Bangladesh and beyond.

			<p>disseminating public awareness materials,</p> <ul style="list-style-type: none"> Organizing farmers' fairs; organizing workshops for farmers. 	
<p>Network for Smallholder Poultry Development (NSPD) – Bangladesh</p>	<p>Has a strong grassroots network, w experience in community development and village poultry production; largely funded by DANIDA hence works in close collaboration with DANIDA program in Bangladesh</p>	<p>Yes, were consulted to provide inputs at the design stage</p>	<ul style="list-style-type: none"> Was to strengthen field management of pilot activity through its network staff at the 'project sites. Play a role in work of Site Committees, Community mobilization, training of farmers, animal recording, enhancing farmers/local communities in maintenance of indigenous FAnGR diversity and its use in ONBS programs and for non-breeding purposes. 	<p>Apply lessons learnt and develop follow on projects as a way of scaling up or replicating the project activities in non-project areas, in Bangladesh and beyond.</p>
<p>Food and Agriculture Organization of the United Nations (All four Countries)</p>	<p>A specialized UN organization for food and agriculture, mandated to provide an important forum for the exchange of knowledge needed for the policy advice of member states and other UN agencies. FAO was one of the donors of the project and a source of information. FAO was a source of critical data used in the project design.</p>	<p>Yes, provided important data on status of FAnGR during the project design stage, hence helping to justify the project.</p>	<ul style="list-style-type: none"> Member of the PSC. Advising project on Monitoring and Evaluation 	<p>Use the information collected from the project to update relevant databases.</p> <p>Disseminate the project outputs and DSTs in non-participating developing countries</p>
<p>University of Agriculture, Faisalabad - Pakistan</p>	<p>Executing agency of the project, host to project implementation unit.</p>	<p>UAF was brought in year 2 to</p>	<ul style="list-style-type: none"> National execution partner in Pakistan and 	<p>Build on the project outputs to continue refining the</p>

		replace the PARC.	<p>member of the NSC.</p> <ul style="list-style-type: none"> • Providing technical leadership of the project at the national level. • Provide assistance in national training program; improving skills of project team; holding workshops, conferences and undertaking other project activities in relevant areas of expertise. • Establishing and maintaining ONBS at the field and data bases on indigenous FAnGR and farmers maintaining in situ / on farm indigenous FAnGR; • Assessing biodiversity levels using molecular characterization • Collaboration with BLRI and DLS scientists /professionals. • 	<p>DSTs and disseminating the same to farmers in Bangladesh.</p> <p>Be source of information and actively support government, farmers and other stakeholders in implementing activities related to sustainable conservation and utilization of FAnGR in Bangladesh</p>
IUNC (All the four Countries)		Yes, provided information regarding in situ management of FAnGR	<ul style="list-style-type: none"> • Member of the NSC. • Play advisory role in project execution. Organize 	<p>Use the information collected from the project to update relevant databases.</p> <p>Disseminate the project</p>

			<p>seminars and workshops.</p> <ul style="list-style-type: none"> • Shares experience in in situ management and conservation programs at the community level of wildlife. 	<p>outputs and DSTs in non-participating developing countries</p>
<p>University of Peradeniya (UoP) – Sri Lanka</p>	<p>Executing agency, technical expertise and housing the Project Management Unit and project financing</p>	<p>Yes; Participated in the PDF-B Phase, consultations in providing key information needed in project planning</p>	<ul style="list-style-type: none"> • Executing agency of the project and host to the project implementation unit • Member of the NSC • Provide technical leadership at the national level in collaboration with the Department of Animal Production and Health (DAPH), • General oversight of: the project implementation unit, including • accounting and activity reporting, technical • Administration, implementation of activities in relevant areas of expertise. 	<p>Build on the project outputs to continue refining the DSTs and disseminating the same to farmers in Sri-Lanka</p> <p>Be source of information and actively support government, farmers and other stakeholders in implementing activities related to sustainable conservation and utilization of FAnGR in Sri-Lanka</p>
<p>Ministry of Medium and Small scale Plantation Industries, Rural Human Resource Development and Livestock Development (MPIHRD&LD) - Sri-Lanka</p>	<p>Executes government agricultural policy. Coordinates all the intuitions charged with livestock development in the country.</p>	<p>Yes, they were consulted during the design and PDF-phases of the project</p>	<ul style="list-style-type: none"> • Member of the NSC and possibly Chair (see • Above entry). • Facilitating national coordination strengthens linkages and coordination between relevant stakeholders in the livestock sector. 	<p>Improve their service delivery and support to farmers in conservation and sustainable utilization of FAnGR.</p> <p>Use the DSTs to develop policies and legal frameworks</p>

			<ul style="list-style-type: none"> • Other institutions/departments within the ministry (Department of Animal Production and Health; Provincial Departments of Animal Production • and Health; National Livestock Development Board) which were to play important roles such as operation of ONBS and in farmer organization and extension activities, providing technical assistance to the project; developing and maintaining databases on indigenous FAnGR, promotion of public awareness, in situ conservation of farm indigenous FAnGR. 	that support sustainable conservation and utilization of FAnGR
National Institute of Animal Husbandry	Executing agency, technical expertise and housing the Project Management Unit and project financing	Yes; Participated in the PDF-B Phase, consultations in providing key information needed in project planning	Executing agency of the project and host to the the project implementation unit Member of the NSC.	<p>Improve their service delivery and support to farmers in conservation and sustainable utilization of FAnGR.</p> <p>to continue refining the DSTs and disseminating the same to farmers in Vietnam</p> <p>Be source of information and actively support government, farmers and other stakeholders in</p>

				implementing activities related to sustainable conservation and utilization of FAnGR in Vietnam
Hanoi Agricultural University- HAU	A Premier agriculture university in Vietnam with expertise in Agriculture and rural development of Vietnam. It offers a well-established program of M.Sc. and Ph.D. in Animal Breeding and Genetics and Agricultural Economics.	Yes, they were consulted during the design and PDF-phases of the project	<ul style="list-style-type: none"> • Member of the NSC. • Providing technical backstopping during the course of the project period. • Graduate students of the • University would work in the project particularly for their thesis/ dissertation research. 	Build on the project outputs to continue refining the DSTs and disseminating the same to farmers in Vietnam. Be source of information and actively support government, farmers and other stakeholders in implementing activities related to sustainable conservation and utilization of FAnGR in Vietnam
Department of Agriculture(D A) –MARD - <u>Vietnam</u>	Responsible for state policy in agriculture, economic and legislative documents on financial and credit systems and pricing	Yes, they were consulted during the design and PDF-phases of the project	<ul style="list-style-type: none"> • Member of the NSC. • Supervise project implementation, provide technical consultancies, elaborate and submit recommendations on developing and enhancing farm households. • Maintain relations among different stakeholders and coordinates among various international, 	<ul style="list-style-type: none"> • Improve their service delivery and support to farmers in conservation and sustainable utilization of FAnGR. • Use the DSTs to develop policies and legal

			regional and national projects in the area.	frameworks that support sustainable conservation and utilization of FAnGR <ul style="list-style-type: none"> • Continue to train more farmers
Farmers & Farmer Associations	Unite farmers and other rural commodity producers. Farmers are the key-players and beneficiaries in the Project, hence all project activities would involve the farmers.	There was no direct involvement during the design. The project heavily depended on the documented information as well as consultation with other stakeholders such as government and NGOs	<ul style="list-style-type: none"> • Member of the NSC. • Managing demonstration plots and nurseries • Participates in field surveys, • Document data; • establish and maintain strong partnerships and collaboration between farmers, communities and other project partners. 	To continue applying the tools provided by the project for sustainable conservation and utilization of FAnGR. <p>Managing the ONBS for sustainable conservation and utilization of FAnGR.</p> <p>Sharing information with other farmers who were not project participants to increase the impact of the project</p>
Site Coordination Committees	Grass-roots implementation units of the project which ensured community participation in the project activities.	No	<ul style="list-style-type: none"> • Developing annual work plan and budget for the respective sites • Prepare quarterly progress reports and annual summary reports and forward to NSC • Coordinate activities of the different task teams at the sites 	To continue supporting farmers post project period.

			and provide technical backstopping to the sites	
National Project Committees	Comprised of high level personalities representing key sector and institutions; ensuring the project fitted within national, regional and local needs and also in the global frameworks	No	<ul style="list-style-type: none"> • Approval of project planning and monitoring at national level • Review quarterly progress and financial reports. • Review annual summary reports. • Advice PMU on implementation problems at national level and suitable modification to the subsequent work plan. 	<p>To use the lessons learnt to improve practices within their respective organizations.</p> <p>To promote use of DSTs in their respective organizations, after project closure</p>

7.9 Annex 9: List of Students supported by the Project

VIETNAM		
Name of Student	Gender	Degree Awarded
Tran Thi Kim Anh	Female	MS
Vu Huong Giang	Female	MS
Phung Thi Thu Ha	Female	MS
Nguyen Hong Hanh	Female	MS
Tran Thi Thuy Nhien	Female	MS
Nguyen Canh Thuan	Male	Undergraduate
Do Van Ha	Male	Undergraduate
Ng. Van Hung	Male	Undergraduate
Tran Thuy Nhien	Female	Undergraduate
Ung Van Toan	Male	Undergraduate
Nguyen Thi Hang	Female	Undergraduate
Dang Van Ngu	Male	Undergraduate
PAKISTAN		
M. Ijaz Saleem	Male	PhD
Sumara Sadeef	Female	PhD
Maqsood Shah Muhammad	Male	PhD
Abdul Waheed	Male	PhD
Faisal Ramzan	Male	MS
Iqra Safdar	Female	MS
Safdar Imran	Male	MS
Muhammad Ashraf	Male	MS
Amina Razzaq	Female	MS
Rana Shafqat Bilal	Male	MS
SRI LANKA		
P.B.A.I.K. Bulumulla	Female	Postgraduate
R.P. Liyanage	Male	Postgraduate
M.N.D.F.Abeykoon	Female	Postgraduate
M.N. Sanjeewa	Male	Undergraduate
L.C. Madushani	Female	Undergraduate
R.R.B. Rajapaksha	Male	Undergraduate
H.W.L. Thilini	Female	Undergraduate
P.M.M. Sulfikan	Male	Undergraduate
R.B.G.S.K. Rajapaksha	Male	Undergraduate
BANGLADESH		
Shakila Faroque	Female	PhD
Faruqul Islam	Male	PhD
Subhash Chandra	Male	PhD
Ambia Akhtar	Female	PhD
Md. Shahjahan	Male	MS

Nipa Rani Sarker	Female	MS
Md. Ponir Choudhury	Male	MS
Farah Tabassum	Female	MS
Shakila Jahan	Female	MS
Nure Hasni Desha	Female	MS

7.10 Annex 10: Evaluation Criteria

Criteria and Key Evaluation Questions	Source of Information	Method of Data Collection
<i>Strategic Relevance</i>		
<i>i.</i> Alignment to the UNEP Medium Term Strategy ¹⁶ (MTS), Programme of Work (POW) and Strategic Priorities		
<ul style="list-style-type: none"> To what extent was the project aligned to the UNEP Mid Term Strategy (MTS) To what extent was the project aligned to the UNEP Programme of Work (POW) and Strategic Priorities 	<ul style="list-style-type: none"> Review of Project Documents Interview with ILRI – Regional Project Director. Interview with UNEP - UNEP-GEF Project Management Officer 	<ul style="list-style-type: none"> Desk research Key Informants Interviews – mainly virtual interviews
<i>i.</i> Alignment to Donor/Partner Strategic Priorities		
<ul style="list-style-type: none"> To what extent was the project aligned to the Strategic Priorities of GEF? 	<ul style="list-style-type: none"> Review of Project Documents Interview with ILRI – Regional Project Director. Interview with UNEP - UNEP-GEF Project Management Officer Interview with Country GEF focal points 	<ul style="list-style-type: none"> Desk research Key Informants Interviews – mainly virtual interviews
<i>i.</i> Relevance to Global, Regional, Sub-regional and National Environmental Priorities		
<ul style="list-style-type: none"> To what extent is the project aligned to the global priorities (SDGs and Biodiversity conservation strategies). 	<ul style="list-style-type: none"> Review of Project Document and other Global strategic documents on Biodiversity Interview with ILRI – Regional Project Director. Interview with UNEP - UNEP-GEF Project Management Officer Interview with the International Organizations (e.g. FAO, IUCN) and I NGOs e.g. World Vision 	<ul style="list-style-type: none"> Desk research Key Informants Interviews – mainly virtual interviews

¹⁶ UNEP's Medium Term Strategy (MTS) is a document that guides UNEP's programme planning over a four-year period. It identifies UNEP's thematic priorities, known as Sub-programmes (SP), and sets out the desired outcomes, known as Expected Accomplishments (EAs), of the Sub-programmes. <https://www.unenvironment.org/about-un-environment/evaluation-office/our-evaluation-approach/un-environment-documents>

/.	Complementarity with Relevant Existing Interventions/Coherence ¹⁷	
	<ul style="list-style-type: none"> To what extent did the project, at design stage take into account ongoing and planned initiatives in FAnGR and biodiversity management and conservations? 	<ul style="list-style-type: none"> Review of Project Document and other Global strategic documents on Biodiversity Interview with ILRI – Regional Project Director. Interview with UNEP - UNEP-GEF Project Management Officer Interview with Country GEF focal points Interview with the International Organizations (e.g. FAO, IUCN) and I NGOs e.g. World Vision
	<ul style="list-style-type: none"> Desk research Key Informants Interviews – mainly virtual interviews 	
	<i>Quality of Project Design : Refer to evaluation of quality of design template</i>	
	<i>Nature of External Context</i>	
	<ul style="list-style-type: none"> Did the project identify the key challenges in the external contest at the design stage? Which operating contextual issues did the project identify at the design stage and how were they mitigated against?? What other contextual issues arose during the project implementation and how did the project mitigate? What were the impacts of challenges from the external context to the project 	<ul style="list-style-type: none"> Review of Technical/M&E Reports Review of MTE Report Review of Project document Interviews with: <ul style="list-style-type: none"> ILRI – Regional Project Director. National Project Directors Regional Project Coordinator - ILRI Project M&E Officer UNEP - UNEP-GEF Project Management Officer Interview with Country GEF focal points
	<ul style="list-style-type: none"> Desk research Key Informants Interviews – mainly virtual interviews 	
	<i>Effectiveness</i>	
i.	Availability of Outputs ¹⁸	
	<ul style="list-style-type: none"> What is the level of the project’s success in producing the programmed outputs and making them 	<ul style="list-style-type: none"> Review of technical Progress and M&E reports Review of MTE Report Interviews with:
		<ul style="list-style-type: none"> Desk research Key Informants Interviews –

17 This sub-category is consistent with the new criterion of ‘Coherence’ introduced by the OECD-DAC in 2019.

18 Outputs are the availability (for intended beneficiaries/users) of new products and services and/or gains in knowledge, abilities and awareness of individuals or within institutions (UNEP, 2019)

<p>available to the intended beneficiaries (both quality and quantity)</p> <ul style="list-style-type: none"> • What is the of project's success in achieving milestones as per the project design document (ProDoc). • What is the level of ownership of the outputs by the intended beneficiaries? • How usefulness were the project outputs to intended beneficiaries • To what extent were the outputs delivered within the planned timeliness? • What factors contributed to the observed success or shortcomings of the project in delivering its programmed outputs and meeting expected quality standards. 	<ul style="list-style-type: none"> • ILRI – Regional Project Director. • National Project Directors • Regional Project Coordinator - ILRI • Relevant ministries (Agriculture/livestock and Natural Resource Management)in the four countries • Livestock keepers associations who were involved in the project • Project M&E Officer 	<p>mainly virtual interviews</p> <ul style="list-style-type: none"> • Face to face meetings
<p>i. Achievement of Project Outcomes¹⁹</p>		
<ul style="list-style-type: none"> • What is the evidence of attribution between UNEP's intervention and the project outcomes? 	<ul style="list-style-type: none"> • Review of Baseline Reports • Review of Technical and M&E Report • Review of M&E Plan • Interviews with: <ul style="list-style-type: none"> ○ ILRI – Regional Project Director. ○ National Project Directors ○ Regional Project Coordinator - ILRI ○ Relevant ministries (Agriculture/Livestock and Natural Resource Management)in the four countries ○ Livestock keepers associations who 	<ul style="list-style-type: none"> • Desk research • Key Informants Interviews – mainly virtual interviews

¹⁹ Outcomes are the use (i.e. uptake, adoption, application) of an output by intended beneficiaries, observed as changes in institutions or behavior, attitude or condition (UNEP, 2019)

	<ul style="list-style-type: none"> ○ were involved in the project ○ Project M&E Officer 	
<i>i. Likelihood of Impact</i>		
<ul style="list-style-type: none"> • What is the likelihood of the intended, positive impacts from the project becoming a reality? • What is the likelihood that the project interventions may have led or contributed to, unintended negative effects? • To what extent has project has played a catalytic role²⁰ or has promoted scaling up and/or replication as part of its Theory of Change (• What factors are likely to contribute to greater or long-lasting impact? • What is the likelihood of the project to make a substantive contribution to the long-lasting changes represented by the Sustainable Development Goals, and/or the intermediate-level results reflected in UNEP’s Expected Accomplishments and the strategic priorities of funding partner(s)? 	<ul style="list-style-type: none"> • Review of Baseline Reports • Review of Technical and M&E Reports • Review of M&E Plan • Interviews with: <ul style="list-style-type: none"> ○ ILRI – Regional Project Director. ○ National Project Directors ○ Regional Project Coordinator - ILRI ○ Relevant Ministries (Agriculture/Livestock and Natural Resource Management)in the four countries ○ Livestock keepers associations who were involved in the project 	<ul style="list-style-type: none"> • Desk research • Key Informants Interviews – mainly virtual interviews • FGDs with livestock keepers associations
<i>Financial Management</i>		
<ul style="list-style-type: none"> • To what extent did the project management 	<ul style="list-style-type: none"> • Review of Project Document • Review of Financial Reports 	<ul style="list-style-type: none"> • Desk research

²⁰ The terms catalytic effect, scaling up and replication are inter-related and generally refer to extending the coverage or magnitude of the effects of a project. *Catalytic effect* is associated with triggering additional actions that are not directly funded by the project – these effects can be both concrete or less tangible, can be intentionally caused by the project or implied in the design and reflected in the TOC drivers, or can be unintentional and can rely on funding from another source or have no financial requirements. Scaling up and Replication require more intentionality for projects, or individual components and approaches, to be reproduced in other similar contexts. *Scaling up* suggests a substantive increase in the number of new beneficiaries reached/involved and may require adapted delivery mechanisms while *Replication* suggests the repetition of an approach or component at a similar scale but among different beneficiaries. Even with highly technical work, where scaling up or replication involves working with a new community, some consideration of the new context should take place and adjustments made as necessary.

<p>adhere to UNEP's financial policies and procedures,</p> <ul style="list-style-type: none"> • What is the level of completeness of financial information? • How was the communication between financial and project management staff. • What is the actual spend across the life of the project of funds (at output/component level) secured from all donors compared to the approved budget? • What are the financial management issues that may have affected the timely delivery of the project or the quality of its performance will be highlighted. • What was the level of communication between the Project Manager and the Fund Management Officer as it relates to the effective delivery of the planned project and the needs of a responsive, adaptive management approach? 	<ul style="list-style-type: none"> • Interview with: <ul style="list-style-type: none"> ○ Project Finance Managers and accountants ○ National Project Directors ○ Regional Project Coordinator - ILRI 	<ul style="list-style-type: none"> • Key Informants Interviews – mainly virtual interviews
<p><i>Efficiency</i></p>		
<ul style="list-style-type: none"> • To what extent did the project deliverer maximum results from the given resources • How did the project apply the cost-effectiveness strategies (the extent to which an intervention has achieved, or is expected to achieve, its results at the lowest possible cost) 	<ul style="list-style-type: none"> • Review of Project Document • Review of Financial Reports • Interview with: <ul style="list-style-type: none"> ○ Project Finance Managers and accountants ○ National Project Directors ○ Regional Project Coordinator - ILRI 	<ul style="list-style-type: none"> • Desk research • Key Informants Interviews – mainly virtual interviews and face to face

<ul style="list-style-type: none"> • Did the project achieve the expected timeliness of project execution? (Were planned activities were delivered according to expected timeframes as well as whether events were sequenced efficiently). • To what extent project extension could have been avoided through stronger project management • Were there any negative impacts caused by project delays or extensions. • Were there any cost or time-saving measures put in place to maximise results within the secured budget and agreed project timeframe • Was the project implemented in the most efficient way compared to alternative interventions or approaches? • To what extent did the project make use of/build upon pre-existing institutions, agreements and partnerships, data sources, synergies and complementarities²¹ with other initiatives, programmes and projects etc. to increase project efficiency? • What factors were underpinning the need for any project extensions? 		
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21 Complementarity with other interventions during project design, inception or mobilization is considered under Strategic Relevance above.

<i>Monitoring and Reporting</i>		
7.	Monitoring Design and Budgeting	
	<ul style="list-style-type: none"> • What is the relevance and appropriateness of the project indicators as well as the methods used for tracking progress against them as part of conscious results-based management? • What was the level of quality of the design of the monitoring plan as well as the funds allocated for its implementation? How adequate were the resources for Mid-Term and Terminal Evaluation/Review 	<ul style="list-style-type: none"> • Review of Project document • Review of Technical and M&E Reports • Review of M&E Plan • Interviews with: <ul style="list-style-type: none"> ○ ILRI – Regional Project Director. ○ National Project Directors ○ Regional Project Coordinator - ILRI ○ Project M&E Officer
		<ul style="list-style-type: none"> • Desk research • Key Informants Interviews – mainly virtual interviews
7.	Monitoring of Project Implementation	
	<ul style="list-style-type: none"> • Was the monitoring system operational and facilitated the timely tracking of results and progress towards projects objectives throughout the project implementation period. • Did the project gather relevant and good quality baseline data that is accurately and appropriately documented? • Did the project include monitoring of the representation and participation of disaggregated groups, including gendered, marginalised or vulnerable groups, such as those living with disabilities, in project activities? • What was the level of quality of the information generated by the monitoring 	<ul style="list-style-type: none"> • Review of the Project Document • Review of Baseline Report • Review the MTE Report • Review of Technical/M&E Reports • Interviews with: <ul style="list-style-type: none"> ○ ILRI – Regional Project Director. ○ National Project Directors ○ Regional Project Coordinator - ILRI ○ Project M&E Officer
		<ul style="list-style-type: none"> • Desk research • Key Informants Interviews – mainly virtual interviews

<p>system during project implementation and how it was it used to adapt and improve project execution, achievement of outcomes and ensure sustainability?</p> <ul style="list-style-type: none"> • Were the funds allocated for monitoring used to support this activity? 		
<ul style="list-style-type: none"> • Project Reporting 	<ul style="list-style-type: none"> • 	<ul style="list-style-type: none"> •
<ul style="list-style-type: none"> • To what extent were both UNEP and donor reporting commitments have been fulfilled? • Was reporting carried out with respect to the effects of the interventions on disaggregated groups? 	<ul style="list-style-type: none"> • Review of Technical/M&E Reports • Interviews with: <ul style="list-style-type: none"> ○ ILRI – Regional Project Director. ○ National Project Directors ○ Regional Project Coordinator - ILRI ○ Project M&E Officer ○ Interview with UNEP - UNEP-GEF Project Management Officer 	<ul style="list-style-type: none"> • Desk research • Key Informants Interviews – mainly virtual interviews
<ul style="list-style-type: none"> • Sustainability 	<ul style="list-style-type: none"> • 	<ul style="list-style-type: none"> •
<ul style="list-style-type: none"> • What were the key conditions or factors that are likely to undermine or contribute to the endurance of achieved project outcomes (i.e. ‘assumptions’ and ‘drivers’ 	<ul style="list-style-type: none"> • Review of Project Document • Review of technical/M&E Reports • Interviews with: <ul style="list-style-type: none"> ○ ILRI – Regional Project Director. ○ National Project Directors ○ Representatives of members of the National Steering Committees in each of the countries ○ Regional Project Coordinator - ILRI ○ Relevant Ministries (Agriculture/Livestock and Natural Resource Management)in the four countries 	<ul style="list-style-type: none"> • Desk research • Key Informants Interviews – mainly virtual interviews • FGDs with livestock keepers associations
<p>i. Socio-political Sustainability</p>		
<ul style="list-style-type: none"> • To what extent do social or political factors support the continuation and further development of the benefits derived from project outcomes? • What is the level of ownership, interest and commitment among 		

<p>government and other stakeholders to take the project achievements forwards</p> <ul style="list-style-type: none"> • Are the individual capacity development efforts likely to be sustained? 		
<p>i. Financial Sustainability</p>		
<ul style="list-style-type: none"> • To what extent were the project outcomes are dependent on future funding for the benefits they bring to be sustained? • Are the project outcomes are financially sustainable even if the financing is secured? 	<ul style="list-style-type: none"> ○ Representative of Universities involved in the project ○ Representatives of the NARS involved in the project from the four countries ○ Livestock keepers associations who were involved in the project ○ Representatives of Site Coordinating Sub committees ○ Trinity College Dublin (Department of Genetics) ○ Network for Smallholder Poultry Development 	
<p>i. Institutional Sustainability</p>		
<ul style="list-style-type: none"> • To what extent is the sustainability of project outcomes (especially those relating to policies and laws) is dependent on issues relating to institutional frameworks and governance. • Are the institutional achievements such as governance structures and processes, policies, sub-regional agreements, legal and accountability frameworks etc. robust enough to continue delivering the benefits associated with the project outcomes after project closure? • Will the institutional capacity development efforts are likely to be sustained. 		
<p><i>Factors Affecting Project Performance and Cross-Cutting Issues</i></p>		
<p>k. Preparation and Readiness</p>		
<ul style="list-style-type: none"> • Were appropriate measures taken to 	<ul style="list-style-type: none"> • Review of MTE Report 	<ul style="list-style-type: none"> •

<p>either address weaknesses in the project design or respond to changes that took place between project approval, the securing of funds and project mobilisation?</p> <ul style="list-style-type: none"> • What was the nature and quality of engagement with stakeholder groups by the project team, the confirmation of partner capacity and development of partnership agreements as well as initial staffing and financing arrangements? 	<ul style="list-style-type: none"> • Review of technical Progress/MTE Reports • Interviews with: <ul style="list-style-type: none"> ○ ILRI – Regional Project Director. ○ National Project Directors ○ Representatives from the National Steering Committees ○ Regional Project Coordinator - ILRI ○ Project M&E Officer ○ Interview with UNEP - UNEP-GEF Project Management Officer ○ Representatives from the Site Management Committees 	
<p>k. Quality of Project Management and Supervision</p>		
<ul style="list-style-type: none"> • What was the level of effectiveness of project management with regard to: <ul style="list-style-type: none"> ○ Providing leadership towards achieving the planned outcomes; ○ Managing team structures; ○ Maintaining productive partner relationships (including Steering Groups etc.); ○ Maintaining project relevance within changing external and strategic contexts; 	<ul style="list-style-type: none"> • Interviews with: <ul style="list-style-type: none"> ○ ILRI – Regional Project Director. ○ National Project Directors ○ Representatives from the National Steering Committees ○ Regional Project Coordinator - ILRI ○ Project M&E Officer ○ Interview with UNEP - UNEP-GEF Project Management Officer ○ Representatives from the Site Management Committees • 	<ul style="list-style-type: none"> • Desk research • Key Informants Interviews – mainly virtual interviews

<ul style="list-style-type: none"> ○ Communication and collaboration with UNEP colleagues; ○ Risk management; ○ Use of problem-solving; ○ Project adaptation ○ Overall project execution. ○ What evidence is there for adaptive management 		
<p>i. Stakeholder Participation and Cooperation</p>		
<ul style="list-style-type: none"> • What was the quality and effectiveness of all forms of communication and consultation with stakeholders throughout the project life and the support given to maximise collaboration and coherence between various stakeholders, including sharing plans, pooling resources and exchanging learning and expertise. • How does the project demonstrate inclusion and participation of all differentiated groups, including gender groups? 	<ul style="list-style-type: none"> • Review of Project document • Review of MTE Report • Interviews with: <ul style="list-style-type: none"> ○ ILRI – Regional Project Director. ○ National Project Directors ○ Representatives from the National Steering Committees ○ Regional Project Coordinator - ILRI ○ Project M&E Officer ○ Interview with UNEP - UNEP-GEF Project Management Officer ○ Representatives from the Site Management Committees 	<ul style="list-style-type: none"> • Desk research • Key Informants Interviews – mainly virtual interviews
<p>i. Responsiveness to Human Rights and Gender Equality</p>		
<ul style="list-style-type: none"> • To what extent did the project apply the UN Common Understanding on the human rights-based approach (HRBA) and the UN Declaration on the Rights of Indigenous People? 	<ul style="list-style-type: none"> • Review of Project document • Review of MTE Report • Interviews with: <ul style="list-style-type: none"> ○ ILRI – Regional Project Director. ○ National Project Directors 	<ul style="list-style-type: none"> • Desk research • Key Informants Interviews – mainly virtual interviews

	<ul style="list-style-type: none"> ○ Representatives from the National Steering Committees ○ Regional Project Coordinator - ILRI ○ Project M&E Officer ○ Interview with UNEP - UNEP-GEF Project Management Officer ○ Representatives from the Site Management Committees 	<ul style="list-style-type: none"> ● FGDs with community
<ul style="list-style-type: none"> ● To what extent did the project adhere to UNEP’s Policy and Strategy for Gender Equality and the Environment²². ● To what extent project implementation and monitoring have taken into consideration: <ul style="list-style-type: none"> (i) Possible inequalities (especially those related to gender) in access to, and the control over, natural resources; ● Specific vulnerabilities of disadvantaged groups (especially women, youth and children and those living with disabilities) to environmental degradation or disasters; and ● The role of disadvantaged groups (especially those related to gender) in mitigating or adapting to environmental changes and engaging in environmental protection and rehabilitation. 		
i. Environmental and Social Safeguards		

²² The Evaluation Office notes that Gender Equality was first introduced in the Project Review Committee Checklist in 2010 and, therefore, provides a criterion rating on gender for projects approved from 2010 onwards. Equally, it is noted that policy documents, operational guidelines and other capacity building efforts have only been developed since then and have evolved over time. https://wedocs.unep.org/bitstream/handle/20.500.11822/7655/-Gender_equality_and_the_environment_Policy_and_strategy-2015Gender_equality_and_the_environment_policy_and_strategy.pdf.pdf?sequence=3&isAllowed=y

<ul style="list-style-type: none"> • To what extent did the project meet the UNEP environmental and social safeguards requirements²³ at the inception phase; • To what extent did the project review risk ratings of the environmental and social safeguards; • To what extent did the project monitor possible safeguard issues during the project implementation? • How did the project respond (where relevant) to safeguard issues through risk avoidance, minimization, mitigation or offsetting and report on the implementation of safeguard management measures taken. • To what extent did the management of the project minimise UNEP’s environmental footprint. 	<ul style="list-style-type: none"> • Review of Project document • Review of MTE Report • Review of project progress /MTE reports • Interviews with: <ul style="list-style-type: none"> ○ ILRI – Regional Project Director. ○ National Project Directors ○ Representatives from the National Steering Committees ○ Regional Project Coordinator - ILRI ○ Project M&E Officer ○ Interview with UNEP - UNEP-GEF Project Management Officer ○ Representatives from the Site Management Committees 	<ul style="list-style-type: none"> • Desk research • Key Informants Interviews – mainly virtual interviews • FGDs with community
<p>Country Ownership and Driven-ness</p>	<ul style="list-style-type: none"> • 	<ul style="list-style-type: none"> •
<ul style="list-style-type: none"> • How did the project involve the government / public sector agencies in the project execution? • How did the project involve the government/private sector to facilitate ownership generated by the project over outputs and outcomes? 	<ul style="list-style-type: none"> • Review of Project document • Review of MTE Report • Review of project progress /MTE reports • Interviews with: <ul style="list-style-type: none"> ○ ILRI – Regional Project Director. ○ National Project Directors 	<ul style="list-style-type: none"> • Desk research • Key Informants Interviews – mainly virtual interviews

²³ For the review of project concepts and proposals, the Safeguard Risk Identification Form (SRIF) was introduced in 2019 and replaced the Environmental, Social and Economic Review note (ESERN), which had been in place since 2016. In GEF projects safeguards have been considered in project design since 2011.

<ul style="list-style-type: none"> • What measure has the project put in place to ensure sustainability of the ownership and driven-ness of the outcomes and impacts of the project by the public sector? 	<ul style="list-style-type: none"> ○ Representatives from the National Steering Committees ○ Regional Project Coordinator - ILRI ○ Project M&E Officer ○ Representatives from the Site Management Committees 	
<p>7. Communication and Public Awareness</p>	<ul style="list-style-type: none"> • 	<ul style="list-style-type: none"> •
<ul style="list-style-type: none"> • How effective were communication of learning and experience sharing between project partners and interested groups arising from the project during its life • How effective were the public awareness activities that were undertaken during the implementation of the project to influence attitudes or shape behaviour among wider communities and civil society at large. • Were the existing communication channels and networks used effectively, including meeting the differentiated needs of gendered or marginalised groups? • What feedback channels did the project establish and how effective were they? • What are the sustainability mechanisms for the knowledge sharing platforms which were established by the project (socio-political, institutional or financial sustainability)? How effective are the 	<ul style="list-style-type: none"> • Review of Project document • Review of MTE Report • Review of project progress /MTE reports • Interviews with: <ul style="list-style-type: none"> ▪ ILRI – Regional Project Director. ▪ National Project Directors ▪ Representatives from the National Steering Committees ▪ Regional Project Coordinator - ILRI ▪ Project M&E Officer ▪ Representatives from the Site Management Committees 	<ul style="list-style-type: none"> • Desk research • Key Informants Interviews – mainly virtual interviews •

sustainability mechanisms?		
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7.11 Annex 11: Summary CV of the Consultant

CV for Josephine Nguta Mugambi

P.O Box 11133-00400, Nairobi, Kenya; +254 (0)722 436 311; josephine@spardafrica.com
/jossyfne@gmail.com; Skype: jossyfne

Project Management, Market Systems and Agriculture Development Professional

Synopsis: Josephine is an experienced development consultant over 20 years of experience in project management, business and market system development in Kenya, Uganda, Tanzania, Ethiopia and Somalia. She has worked mainly in the agricultural sector managing, implementing and consulting for projects related to food security and livelihoods for the government and Non-Governmental Organizations. She has excellent facilitation skills utilizing several approaches in designing training programmes and engaging stakeholders, which she ably uses to lead in delivery of assignments including development of implementation strategies, presenting and discussing challenges and opportunities of business enterprises.

Areas of expertise: Market Systems Development; Project Cycle Management including M&E; institutional development and Governance, capacity building and policy engagement; livestock development

Program Management, Monitoring and Evaluation: Josephine has held senior program management positions, where she supported in design and management of livelihood and market systems programs. She has been trained on project management by Strathmore University, Project management for Professionals by Heifer International as well as result Based Monitoring and Evaluation by Farm Africa. Josephine is the immediate former Director of Programs for Heifer international Kenya and has served as the Africa Galvmed Partnership Manager. She has also served as regional project manager for FARM Africa covering Kenya, Uganda, Tanzania and Ethiopia. In these capacities, she led in designing of new projects, initiating project start-ups commissioning and supervising baseline, midterm and end term evaluations for the various projects in the Country Program as well as supervision of the entire M&E component by supporting in the development of M&E systems and plans among other activities. As a senior consultant at SPARD Africa, Josephine has been leading or participated in many assignments on project evaluation, impact assessment and baseline surveys for livelihood projects. Some of the clients include Heifer International Kenya, Welthungerhilfe (WHH), DanChurchAid, CTA, and Farm Africa among others (see the list in this CV for details). Josephine is a trainer in result-based monitoring and evaluation, one of the upcoming programs at SPARD Africa.

Livestock Development: Josephine is a trained livestock expert in animal production, majoring in genetics and breeding. She has worked in livestock development throughout her working life of over 20 years. She started her career as a government livestock production officer coordinating livestock extension activities in the field before moving to the development sector to work with livestock projects. She has been involved in the design and management of livestock projects in the course of her employment for development organizations like FAO (Kenya), SNV Kenya, Farm Africa and Heifer International Kenya. In these organizations, she was directly engaged either as a livestock expert, project or program manager. As a consultant, she conducted many evaluations of livestock projects, livestock value chain and market studies and designed many livestock value chain upgrading strategies for livestock projects including the USAID-funded Feed the Future

REGAL IR in Turkana, Wajr and Garissa; others include value chain and market studies for SNV Kenya, Africa Wildlife Foundation, Kenya Market Trust, Heifer International Kenya, IDEAS Programme managed by EURECNA SpA, Film Aid International, Food and Agriculture Organization of the United Nations (FAO Kenya), WYG among others, She has worked in a number of value chains including fish, horticulture, beef, dairy, poultry, pork and indigenous vegetables.

Business Development: Josephine has been providing business development services to agribusiness institutions in Kenya for the last 10 years. As the Director of Programs at Heifer International Kenya, Josephine was behind the design of the market systems projects supporting development of agribusiness institutions in Kenya. At SNV Kenya she served as the Livestock Value Chain and Inclusive Business Advisor, leading in the implementation of the KRDP II. At FARM Africa, she led in the business planning and the design of FARM Africa's social enterprise, the SIDAI, which is now a successful franchisor in the animal health industry. She has been involved in all the Business Development Support services offered by SPARD Africa either as lead consultant or team member. She is currently leading SPARD Africa team in providing business support services to the giant Meru Dairy Union, which works with over 50 cooperatives and over 60,000 active smallholder farmers. The actions with Meru Dairy Union (MDU) involves supporting in the restructuring and capacity building of the milk procurement and extension department supporting the cooperatives, farmer groups and the Union to access affordable financing and developing innovative platforms for effective service delivery to smallholder dairy farmers.

Business Analysis and Operational Management Modelling: Josephine has the ability to undertake business analysis as she did for 5 Dairy Cooperatives under the Food for All project (Heifer international); financial analysis to determine the economics of modernization of Meat Industry in Kenya, which is now a guiding investment in modernized meat industry by the private sector. At SNV Kenya, she led in analysis of different business opportunities for the local SMEs working with the project and helped in the design of new business strategies and plans. She is currently working for EU through EURECNA and Ministry of evolution and planning to help in setting up operational and management models as well as business planning for the operationalization of Samburu, Baringo, West Pokot County Abattoirs and a milk processing plant for Kisumu County. She has been leading in the development of the business plans and incubation for three organizations who work as first responders in Kenya Disaster response. She is currently leading the team at SPARD Africa in the development of business plans for RACIDA, St John Ambulance Kenya and MID-P.

Market Studies and Value Chain analysis: Josephine has been engaged by numerous organizations to conduct market study and value chain analysis as well as business analysis leading to designing strategies for upgrading value chains for fish, horticulture, beef, dairy, poultry, pork and indigenous vegetables. Some of the clients whom she has provided these services for include Kenya Market Trust, SNV Kenya, Heifer International Kenya, and IDEAS Programme managed by EURECNA SpA, Film Aid International, Kenya Wildlife Foundation, Food and Agriculture Organization of the United Nations, WYG among others.

Institutional Development and Governance: Josephine has been involved in institutional strengthening and organizational development work either as a consultant or in her employment. At As Director of Programs at Heifer International Kenya, Josephine led in the development Heifer International Kenya's 10 year strategic plan which is currently under

implementation. She was the team leader in the development of the, 10 year grazing strategy for the Northern Rangeland Trust Trading Company (NRTT) and strategic plan for Community Animal Health Network among others. She is currently leading SPARD Africa team in the institutional strengthening of Meru Dairy Union to increase its capacity utilization. This by setting up structures that respond to good tenets of governance, operations management and checks and balances.

Capacity Building and Policy Engagement - Josephine has a good knowledge of County operations in Kenya. She facilitated a program for Poultry Platform Boards and Policy Engagement Processes at County levels in 6 counties: The assignments aimed to build capacity of 6 County level poultry and agribusiness platforms in policy formulation and advocacy, facilitating them to analyse their problems and come out with key issues that require lobbying with county environments for a favourable business environment. The assignment involved trainings, simulation sessions and actual policy dialogues with the County Government officials.

Academic Qualifications

MSc, Animal Genetics and Breeding, University of Nairobi, Kenya, 2007
 BSc, Animal Production Egerton University, Kenya, 1995
 Project Management Course by Strathmore University (2009)
 Market Systems Development by MESPT and SNV (2014)

Employment History

Dates	Career Involvement
2013 to Date	<p>Director and Senior Consultant at SPARD Africa Consulting Limited</p> <p>As a senior consultant, she has been leading in the delivery of numerous consulting assignments including business analysis and planning, baseline surveys, project evaluations, impact assessment, value chain studies, and development of strategic plans market assessments among others. She is also in charge of finance and operations for the company. She has recently rolled out a personal leadership program for SPARD Africa, which aims at facilitating inward personal transformation so they can achieve their highest potential</p>
Sept 2014- Dec 2016	<p>Director of Programs, Heifer International Kenya</p> <p>Provided overall leadership and management for all Heifer Kenya Programs including leading the planning, design, development, implementation, monitoring and evaluation of the country programs and ensuring the quality of projects, implementation, donor reporting, and field level management is of the highest standards. She enforced quality assurance with all projects being implemented by Heifer International in Kenya, providing line management support to all Programme Managers and Project Coordinators including overall management of their performance and of all the programme staff in Heifer Kenya. She supported the translating of Heifer International's Global Vision and strategy into project implementation and ensuring project design and implementation are geared towards achieving Scale and impact , fundraising and attracting funding to diversify funding resources and that the project implementation processes respond to Heifer International's need to strengthen global operating systems.</p>

<p>July 2013 to August 2014</p>	<p>Associate advisor, Value Chains and Inclusive Business for SNV Kenya Led the SNV team in the implementation of the EU funded Kenya Rural Development program in Kajiado, West Pokot and Narok. This involved overall coordination of project activities, mentorship of the junior advisors and the Local Capacity Builder (LCB) and providing direction on appropriate value chain development strategies in the fodder milk and livestock marketing value chains, within the ASAL context. Provided primary technical direction to the SNV program components that aimed to improve the competitiveness of livestock extensive production, alleviate constraints to market access, identify new market channels, and establish linkages between pastoralist, producer group/organizations, agribusinesses and end markets. She supported in building capacity of partner organizations to strengthen livestock value chains and market systems development while also spearheading value chain development approach and competitiveness initiatives within the livestock sector; value chain analysis and identify on of strategic value chain interventions for the program.</p>
<p>Nov 2008- Dec 2012</p>	<p>Regional Programme Manager for the Community Animal Health Network (CAHNET), Nairobi Kenya and GALVMed Partnership Manager; Was employed by FARM- Africa as a regional programme manager for a programme called Community Animal Health Network (CAHNET) and the Partnership Manager for FARM-Africa and GALVMed (Global Alliance for Livestock and Veterinary Medicines). CAHNET was a regional forum covering Ethiopia, Kenya, Uganda and Tanzania whose aim was to enable stakeholders in the livestock industry, especially livestock keepers to access information with potential to address their problems related to livestock health, husbandry and marketing and to have their voice heard by policy-makers, researchers and other key facilitators. This was to enable development of better, more responsive policies, products, services and products that meet the needs of poor livestock keepers. To manage FARM-Africa's partnership with GALVmed in implementing the Protecting Livestock Saving Human Lives Project, to ensure the smooth running of the project and to maximize the opportunities for FARM-Africa emerging from the relationship.</p>
<p>October 2008- December 2008</p>	<p>Franchise Business Planning Manager, - FARM Africa/GALVMed: While managing the larger CAHNET programme, Josephine was appointed to manage the franchise business planning project. The project was developing a franchise model for the delivery of accessible, affordable, quality animal health services to livestock keepers in Africa. The model was building on FARM Africa's past success in establishing three tier decentralized animal health delivery system. The planning project was achieved and was funded by Bill and Melinda Gates Foundation which led to the social enterprise called SIDAI Ltd owned by FARM Africa.</p>
<p>January 2007- August 2008</p>	<p>Poultry Production Consultant, United Nations (UN) Food and Agricultural Organisation (FAO) Kenya under the project 'Early detection, Prevention and Control of avian influenza in Kenya': Josephine was hired as an expert for the FAO project called 'Early Detection, Prevention and Control of Avian Influenza in Kenya. She was an active team player in the development of Avian Influenza Contingency plans, response plans in case of an outbreak of Avian Influenza, Training of staff and farmers on improving biosecurity in different production systems, development of the Avian Influenza vaccination strategies,</p>

	<p>development of avian influenza communication strategy. She also developed the biosecurity guidelines for different poultry production systems. She played a critical role in providing information to guide in development of the above mentioned plans and protocols through different studies that she conducted in the poultry industry.</p>
September 2003 - December 2006	<p>Chief Livestock Production Officer, Ministry of livestock and Fisheries Development, Headquarters:</p> <p>Under the general supervision of the Director of Livestock Production and under the direct supervision of the chief of Animal Production, I undertook the following duties and responsibilities:</p> <p>Develop proposals and concept notes for development projects in the department</p> <p>Provide technical guidance to the officers' in-charge of all government - owned livestock farms and stations and support them to develop and implement 5 year strategic plans and breeding programmes.</p> <p>Collect, collate analyze and package the latest technical information and technologies on all aspects of animal production for dissemination to the field extension staff and individual farmers;</p> <p>Participate in national wide technical and administrative backstopping of the field staff, monitoring and evaluation of various projects under implementation, as well as gathering emerging issues required for both policy review and formulation.</p> <p>Organize the database for Animal Breeding and Laboratory Services branch and the sheep and goat farms as well as maintaining their filing systems.</p> <p>Preparation of departmental speeches and briefs for the president, Minister, Permanent Secretary and Director</p>
April 1997- August 2003	<p>Livestock Production Officer, Meru; Ministry of Agriculture and Rural Development</p> <p>Under direct Supervision by the District Agriculture and Livestock Extension Officer, Meru North district Josephine provide was responsible for coordination of extension services in Akithii division, including effective coordination of all partnerships in the county.</p>

7.12 Annex 12: Terms of Reference

Terminal Evaluation of the UNEP/GEF project Development and Application of Decision-support tools to conserve and sustainably use genetic diversity in indigenous livestock and wild relatives and GEF ID 1902

Section 1: PROJECT BACKGROUND AND OVERVIEW

Project General Information

Table 1. Project summary

GEF Project ID:	1902	Development and Application of Decision-support tools to conserve and sustainably use genetic diversity in indigenous livestock and wild relatives	
Implementing Agency:	United Nations Environment Programme (UNEP)	Executing Agency:	7. International Livestock Research Institute (ILRI), Kenya; 8. Chinese Academy of Agricultural Sciences; 9. Bangladesh Agricultural University; Dept of Animal Breeding & Genetics; 10. Pakistan Agricultural Research Council, Animal Sciences Division; 11. University of Peradeniya, Dept of Animal Science, Sri Lanka; 12. Institute of Agricultural Research for Development (Ministry of Scientific & Technical Research), Cameroon; 13. Institute of Agricultural Research for Development (Ministry of Scientific & Technical Research), Cameroon; 14. National Institute of Animal Husbandry, Vietnam
Relevant SDG(s) and indicator(s):	SDG 15		
Sub-programme:	Biodiversity Strategic Objective 2 and its Strategic Programs 4 and 5	Expected Accomplishment(s):	BD-SP 4, 5
UNEP approval date:	23rd Feb 2009	Programme of Work Output(s):	Agrobiodiversity (OP 13)
GEF approval date:	26th Nov 2008	Project type:	Full Size Project

GEF Operational Programme #:	BD-SP 4,5	Focal Area(s):	Biodiversity	
		GEF Strategic Priority:	BD 2	
Expected start date:	10 th March 2009	Actual start date:	26 th March 2009	
Planned operational completion date:	31 st Dec 2020	Actual operational completion date:	31 st Dec 2020	
Planned project budget at approval:	\$5,6763,770	Actual total expenditures reported as of [30 th June 2018]:	\$1,759,223	
GEF grant allocation:	\$1,982,770	GEF grant expenditures reported as of [date]:	\$1,979,640	
Project Preparation Grant - GEF financing:	\$190,000	Project Preparation Grant - co-financing:	\$3,971,000	
Expected Medium-Size Project/Full-Size Project co-financing:	Full Size Project	Secured Medium-Size Project/Full-Size Project co-financing:	\$8,418,591	
Date of first disbursement:	26 th March 2009	Planned date of financial closure:	31 st March 2022	
No. of formal project revisions:	2	Date of last approved project revision:	- June 2015	
No. of Steering Committee meetings:	6	Date of last/next Steering Committee meeting:	Last: November 2014. A final wrap up meeting was held in 2020.	Next: N/A
Mid-term Review/ Evaluation (planned date):	Sept 2011	Mid-term Review/ Evaluation (actual date):	March 2012	
Terminal Evaluation (planned date):	June 2021	Terminal Evaluation (actual date):	The Terminal Evaluation process is underway	
Coverage - Country(ies):	Bangladesh, Cameroon, China, Ethiopia, Pakistan, Sri Lanka & Vietnam	Coverage - Region(s):	Africa & Asia	
Dates of previous project phases:	N/A	Status of future project phases:	N/A	

A. Project Rationale

1. Domestic animals represent an important resource for economic development and livelihood security globally. On average, livestock contributes between 25% to 30% of GDP in most developing countries. This economic contribution is in the form of income, insurance, food (meat, milk, eggs, etc), hides/skins, traction and manure. Their diversity comprises over 40 mammalian and avian species, which together with the few surviving wild relatives is represented by about 7000 populations (breeds or strains). Collectively, these are known as farm animal genetic resources (FAnGR or AnGR). This genetic diversity results in a wide range of different livestock populations and productions/functions in different parts of the world.
2. FAnGR that have evolved in the diverse tropical environments represent unique combinations of genes which define not only productive qualities but also adaptive capability. Indigenous FAnGR possess valuable traits such as disease resistance, adaptation to harsh environments, including heat tolerance, and ability to utilize poor quality feeds. These attributes are essential for achieving sustainable agriculture in low-input production systems.
3. Unfortunately, many uniquely adapted breeds have become extinct since the turn of the last century, while a further 32% are at risk of becoming extinct as the rate of extinction continues to accelerate. The highest risk of loss is in the developing countries. Yet, out of the global farm animal breeds that exist today, 70% are in these developing countries. For instance, it is estimated that 13% of the cattle breeds which existed at the beginning of the 20th century have become extinct.
4. This threat to indigenous AnGR is exacerbated by crossbreeding with and/or replacement by, exotic breeds in programs designed to improve animal productivity; neglect arising from shifts in social settings; production systems and/or market demand of certain animal products; urbanization and its impact on traditional animal agriculture; droughts; civil strife/conflicts; and famines.
5. This risk of loss is against an increase of human needs for livestock products that is projected to more than double in the next 25 years in developing countries. The increase in demand is precipitated by a rapid increase in human population, rising incomes and rapid urbanization with accompanying changes in dietary preferences for foods of animal origin.
6. Undoubtedly, these trends require urgent Government responses on livestock development programs that can rapidly respond to these changes and pressures. Inevitably, some of the national responses include importation of exotic animal breeds for crossbreeding, and breed replacement programs to increase production. In the case of livestock loss from civil and natural disasters, the default response is restocking based on availability of animals rather than the appropriateness of the genetic material being restocked. This leads to breeding with the surviving native breeds thereby further eroding, or even wiping out particular breeds, and creating ill-adapted and more vulnerable livestock populations.
7. While it is not in dispute that crossbreeding and breed replacement are effective means of increasing production, their potential in the tropics is limited to the benign temperate environments of highland areas, and where resources are available to ameliorate the environmental stresses of the tropical climate. Unfortunately, the introduction of exotic germplasm into tropical countries, often times through Government and donor subsidies

that make it easy for farmers to acquire it, has been and continues to be seen as the panacea of low animal productivity, even in areas where the exotic genotypes are ill adapted. Often, this trend has resulted in the extinction, or severe erosion of the genetic diversity in traditional breeds. This could be attributed in part to lack of, or erroneous cost benefit analysis of these interventions. These losses are occurring when it is still largely unknown which breeds harbor significant genetic diversity or specific genes that ought to be targeted for conservation and/or incorporation into breeding programs for global benefit.

8. Many developing countries have not taken any action to conserve or improve the management of their FAnGR. The perception that the specialized livestock products and high producing European breeds are also best for tropical developing countries is still highly prevalent.
9. The project Development and Application of Decision-support Tools to Conserve and Sustainably Use Genetic Diversity in Indigenous Livestock and Wild Relatives was designed to respond to the rapid irreversible loss in farm animal genetic diversity. The project, implemented by The International Livestock Research Institute (ILRI) and its national partners working in collaboration with Advanced Research Institutes (ARIs), used a bifurcated approach to prevent and or reduce this FAnGR loss.

B. Project Results Framework

10. The project approach was to, (i) assess the genetic diversity of farm animals in the participating countries in Africa and Asia; and (ii) develop strategies for conservation and sustainable utilization of farm AnGR. The project was implemented in seven countries (Bangladesh, Cameroon, China, Ethiopia, Pakistan, Sri Lanka and Vietnam).
11. The proposed strategies sought to address the following:
12. which populations (breeds/strains of domesticated animals and populations of wild relatives) need to be conserved as a matter of priority?
13. How can limited conservation resources be allocated amongst the populations that need to be conserved?
14. How can the contribution of FAnGR to human livelihood be incorporated into decisions on conservation programs?
15. How can agricultural programs focusing on the utilization of the genetic diversity be designed so as to minimize potential negative impacts on genetic diversity on all components of biological diversity in the production system? And
16. How can the existing policy and market environments be made more supportive of the conservation and sustainable use of FAnGR?

Project Objective: To develop and test tools which can be used in decision-making to support the conservation of indigenous farm animal genetic diversity in developing countries.	
Component 1:	Decision tool for designing breeding programs
	Outcome 1.1: Comparative data on potential positive and negative impacts of alternative breeding programs in developing countries based on analysis of case studies. Based on this, estimates of et benefits/costs of alternative

	breeding approaches at produce and national levels made available.
	Outcome 1.2: Analytical framework and computer models for designing and analyzing breeding programs developed and tested for wider application.
	Outcome 1.3: Conditions under which certain breeding strategies could be beneficial and not threatening to indigenous FAnGR identified and strategies to mitigate potential negative impacts developed.
	Outcome 1.4: Economically and environmentally viable options for improving indigenous livestock breeds identified and assessed.
Component 2:	Domestic Animal Genetic Resources Information System (DAGRIS)
	Outcome 2.1: A prototype computerized data system (DAGRIS) for indigenous FAnGR with comprehensive data (as case studies) on breed statistics, performance data, farmer preferences, other breed characteristics, production systems, etc. of all key FAnGR of selected project countries developed.
	Outcome 2.2: A module in DAGRIS to hold DNA microsatellite data and mitochondrial DNA sequence and other measures of genetic diversity and incorporating an analytical engine to facilitate specific analysis designed.
	Outcome 2.3: Systematic and comprehensive molecular genetic diversity studies of selected species in a set of countries to test applicability of the different analytical tools and application of conservation decisions under a range of scenarios undertaken.
	Outcome 2.4: Data on economic values obtained for selected breeds and traits under a range of production and market scenarios and a module included in DAGRIS to incorporate economic values into a decision-making framework.
	Outcome 2.5: Analytical modules developed linked to DAGRIS and other sub-modules to facilitate choice of breeds (populations) for different purposes (e.g. prioritisation in conservation or breeding programmes), taking into account genetic diversity and net benefits to society
Component 3:	Framework for incorporating cost-effectiveness and human livelihood considerations into decision tools for conservation and utilization of FAnGR.
	Outcome 3.1: <i>Framework</i> for the identification of diversity maximising and livelihood-oriented cost-effective strategies for livestock conservation/sustainable utilisation developed.
	Outcome 3.2: <i>Pilot study on the</i> identification and comparative analysis of diversity-oriented versus livelihood-oriented conservation strategy outcomes for at least two livestock species, in order to provide the basis for the application of the framework to more species and countries conducted.
Component 4:	Decision tool for determining the impact of different policy and market strategies on the conservation and sustainable use of indigenous livestock diversity.

	<p>Outcome 4.1: An analytical <i>framework</i> for determining the impact of different policy and market strategies on the conservation and sustainable use of indigenous livestock diversity developed.</p> <p>Outcome 4.2: Importance of the principal policy and market factors determining trends in indigenous breed numbers and uses of selected <i>pilot study</i> species identified in a number of developing countries, together with potential mitigating measures for reducing negative policy and market impacts on indigenous breeds.</p>
Component 5:	<p>Action Plans for Conservation of FAnGR.</p> <p>Outcome 5.1: Action Plans developed based on decision-support tool results, for specific species/breeds in each participating country, thereby contributing to each country's National Biodiversity Strategy and/or Action Plan and providing a basis for wider application in the future.</p> <p>Outcome 5.2: Community-based nucleus breeding schemes established in order to enhance the conservation and sustainable use of at least one livestock breed in each participating country. Priority breed identification to draw on decision-support tool results, with particular emphasis on "short-generation" species (e.g. poultry, pigs) that will permit the monitoring and evaluation of results within the project time-frame. Work on longer generation species, where identified as priority, will be initiated during the project if the countries concerned leverage the necessary resources to ensure successful completion of such activities.</p>
Component 6:	<p>Training and Capacity Building.</p> <p>Outcome 6.1: Strengthened capacities for actors concerned, enabling them to effectively promote and/or directly contribute to the conservation and sustainable use of FAnGR and their habitats, including through the use of the decision-support tools.</p>
Component 7:	<p>Tool Dissemination and Training on Tool Application to Non-target Countries and Stakeholders.</p> <p>Outcome 7.1: strengthened capacities of stakeholders (<i>inter alia</i>: national policy-makers, NARS scientists, regional/international organisations and farmers organisations) and will be achieved through dissemination of project results through workshops/conferences and scientific papers, as well as electronic access to the decision tools and accompanying tutorials.</p>

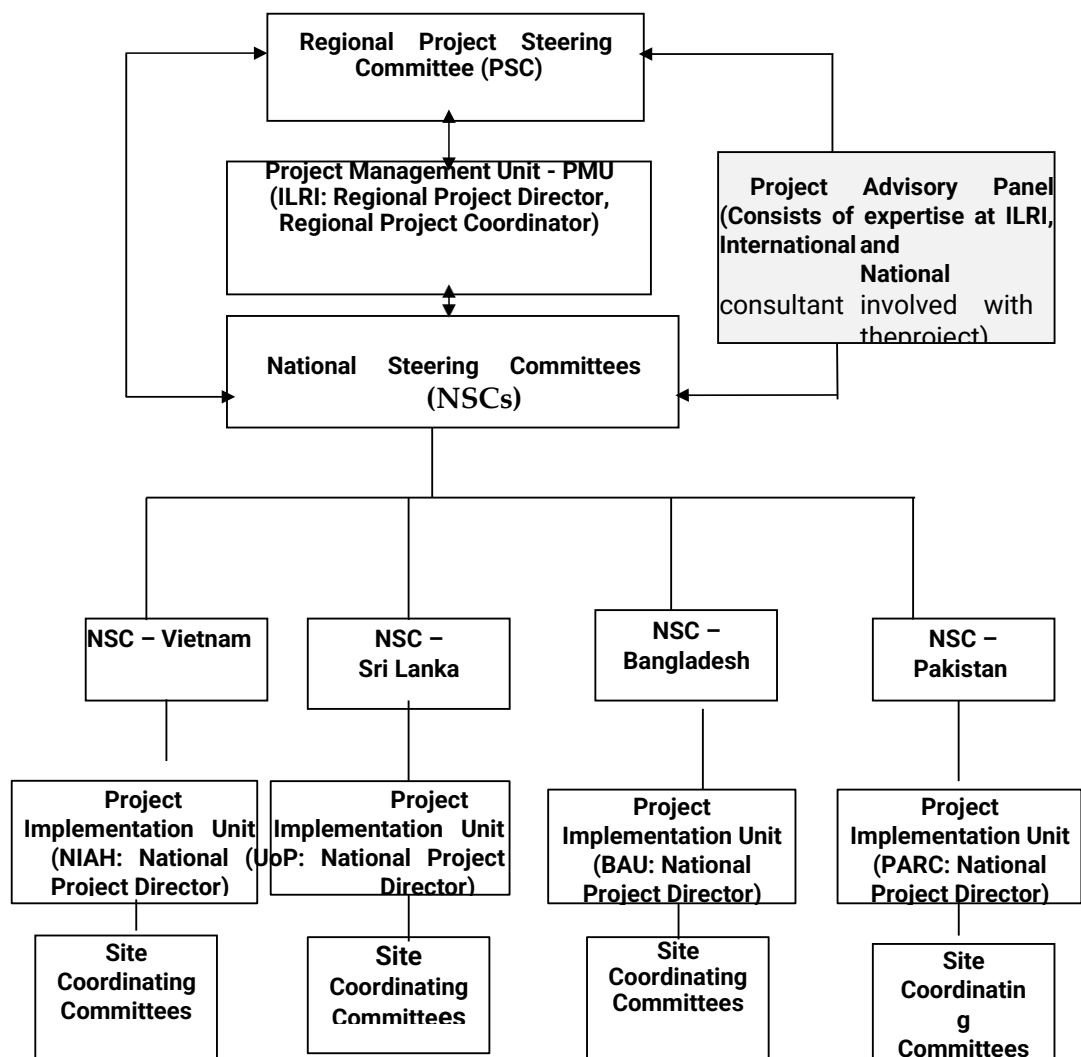
C. Executing Arrangements

17. The project was managed by UNEP's Ecosystem Division as the Implementing Agency and executed by The International Livestock Research Institute (ILRI) and its national partners working in collaboration with Advanced Research Institutes (ARIs).

PROJECT COORDINATION AND IMPLEMENTATION ARRANGEMENTS AT THE GLOBAL LEVEL

18. ILRI served as the executing agency for the project at Regional level. It oversaw the Regional Project Management Unit (PMU) located at its headquarters in Nairobi, Kenya. The project was part of ILRI project BT02 "Improving Characterization of Animal Genetic Resources" whose project leader, a senior scientist, directly supervised the project and acted as the Regional Project Director. The PMU also included a full time Regional Project Coordinator and a Programme Assistant.

19. The **Regional Project Director** provided technical and management leadership to the project team, represented ILRI at the Regional Project Steering Committee Meetings (PSC), and supervised the Regional Project Coordinator.
 20. Under the supervision of, and in close consultation with the **Regional Project Director**, and with overall guidance provided by the PSC (see below), the **Regional Project Coordinator** oversaw implementation of the project across all four participating countries with special emphasis on synthesis and consistency of project approaches and results.
 21. A Regional Project Steering Committee (PSC) was established to oversee project implementation. PSC members included representation from project implementing agency (UNEP-GEF Project Management Officer), project executing agency (ILRI, Regional Project Director and Regional Project Coordinator), national executing agency (the four National Project Directors), the Country GEF focal points, and a representative from FAO. Representatives from Trinity College (regional sub-contractor) and the Network for Smallholder Poultry Development (regional sub-contractor) were invited as observers when required.
 22. The PSC was supported as required by a Project Advisory Technical Panel that provided expertise and guidance that is not otherwise available through the project partners. Panel included different experts from ILRI (e.g. animal breeder, economists, policy analysis, GIS and database experts, international consultants), and other global staff as international consultants contracted as required for the different activities of the project (e.g. ONBS specialist, molecular biologist, modeling, economist, market and policy experts).
- The relationship between the Regional coordinating function and activities of the four national partners was as follows



D. Project Cost and Financing

23. The overall Project budget is US\$ 5,763,770 comprising US \$ 1,982,770 from the GEF and US\$ 3,781,000 from co-financing estimated at the design stage.

24. The breakdown for the total cost (including Project Preparation Grant), as generated from the CEO Endorsement document is as indicated below:

	<i>Project Preparation</i> ²⁴	<i>Project Grant b</i>	<i>Total c = a + b</i>	<i>Agency Fee</i>	<i>For the record: Project Grant at PIF</i>	
GEF	450,000	1,982,770	2,432,770	243,277	1,982,770	
Co-financing	190,000	3,781,000	3,971,000	0	3,781,000	
Total	640,000	5,763,770	6,403,770	243,277	5,763,770	
<i>Name of co-financier (source)</i>	<i>Classification</i>	<i>Type</i>	<i>Project Preparation</i>	<i>Project</i>	<i>Total</i>	<i>%</i>

²⁴ PDF funds approved as part of GEF 3. The status of implementation and use of fund for the project preparation grant is provided in Annex D.

Governments	National Government	In-kind Cash	32,000	807,000 260,000	839,000 260,000	21.12 6.55
FAO	International Partner	In-kind	-	96,000	96,000	2.42
World Vision	NGO	In-kind Cash	-	160,000 220,000	160,000 220,000	4.03 5.54
ILRI and collaborating Institutions	Exec. Agency	In-kind Cash	158,000 -	1,458,000 780,000	1,616,000 780,000	40.70 19.64
Total Co-financing			190,000	3,781,000	3,971,000	100%

Section 2. OBJECTIVE AND SCOPE OF THE EVALUATION

E. Objective of the Evaluation

25. In line with the UNEP Evaluation Policy²⁵ and the UNEP Programme Manual²⁶, the Terminal Evaluation is undertaken at operational completion of the project to assess project performance (in terms of relevance, effectiveness and efficiency), and determine outcomes and impacts (actual and potential) stemming from the project, including their sustainability. The Evaluation has two primary purposes: (i) to provide evidence of results to meet accountability requirements, and (ii) to promote operational improvement, learning and knowledge sharing through results and lessons learned among UNEP and main project partners, namely Bangladesh Agricultural University (BAU), Department of Animal Breeding and Genetics - University of Agriculture, Faisalabad (UAF), Department of Animal Breeding and Genetics - University of Peradeniya (Department of Animal Science), Sri Lanka - National Institute of Animal Husbandry (NIAH), Vietnam.

26. Therefore, the Evaluation will identify lessons of operational relevance for future project formulation and implementation, especially where a second phase of the project is being considered. Recommendations relevant to the whole house may also be identified during the evaluation process.

F. Key Evaluation Principles

27. Evaluation findings and judgements will be based on **sound evidence and analysis**, clearly documented in the Evaluation Report. Information will be triangulated (i.e. verified from different sources) as far as possible, and when verification is not possible, the single source will be mentioned (whilst anonymity is still protected). Analysis leading to evaluative judgements should always be clearly spelled out.

28. **The “Why?” Question.** As this is a Terminal Evaluation and a follow-up project is likely [or similar interventions are envisaged for the future], particular attention will be given to learning from the experience. Therefore, the “why?” question should be at the front of the consultants’ minds all through the evaluation exercise and is supported by the use of a theory of change approach. This means that the consultant(s) needs to go beyond the assessment of “what” the project performance was and make a serious effort to provide a deeper understanding of “why” the performance was as it was (i.e. what contributed to the achievement of the project’s results). This should provide the basis for the lessons that can be drawn from the project.

²⁵ <https://www.unenvironment.org/about-un-environment/evaluation-office/policies-and-strategies>

²⁶ <https://wecollaborate.unep.org>

29. **Attribution, Contribution and Credible Association:** In order to *attribute* any outcomes and impacts to a project intervention, one needs to consider the difference between what has happened with, and what would have happened without, the project (i.e. take account of changes over time and between contexts in order to isolate the effects of an intervention). This requires appropriate baseline data and the identification of a relevant counterfactual, both of which are frequently not available for evaluations. Establishing the *contribution* made by a project in a complex change process relies heavily on prior intentionality (e.g. approved project design documentation, logical framework) and the articulation of causality (e.g. narrative and/or illustration of the Theory of Change). Robust evidence that a project was delivered as designed and that the expected causal pathways developed supports claims of contribution and this is strengthened where an alternative theory of change can be excluded. A *credible association* between the implementation of a project and observed positive effects can be made where a strong causal narrative, although not explicitly articulated, can be inferred by the chronological sequence of events, active involvement of key actors and engagement in critical processes.
30. **Communicating evaluation results.** A key aim of the Evaluation is to encourage reflection and learning by UNEP staff and key project stakeholders. The consultant(s) should consider how reflection and learning can be promoted, both through the evaluation process and in the communication of evaluation findings and key lessons. Clear and concise writing is required on all evaluation deliverables. Draft and final versions of the Main Evaluation Report will be shared with key stakeholders by the Evaluation Manager. There may, however, be several intended audiences, each with different interests and needs regarding the report. The consultant(s) will plan with the Evaluation Manager which audiences to target and the easiest and clearest way to communicate the key evaluation findings and lessons to them. This may include some, or all, of the following; a webinar, conference calls with relevant stakeholders, the preparation of an Evaluation Brief or interactive presentation.

G. Key Strategic Questions

31. In addition to the evaluation criteria outlined in Section 10 below, the Evaluation will address the **strategic questions** listed below. These are questions of interest to UNEP and to which the project is believed to be able to make a substantive contribution. Also included are five questions that are required when reporting in the GEF Portal and these must be addressed in the TE.

Q1: In what other areas/sectors/countries were the computer models for designing and analyzing breeding programs tested for wider application? What were the results of the uptake?

Q2: Which non-participating countries adopted the decision support tools? What was the most important driver that led to the uptake by these non-participating countries?

Q3: What lessons can be learnt from this project regarding scaling the uptake of indigenous livestock farming/breeding by farmers globally and in particular how can indigenous livestock breeding be made profitable/more profitable to farmers so that approach is sustainable?

Q4: What adjustments, if any, were made to the project to adapt to the effects of COVID-19 situation, and to what extent did the adjustments enable the project to effectively respond to the new priorities that emerged in relation to COVID-19? How did the adjustments affect the achievement of the project's expected results, as stated in its results framework?

32. Also included below are five questions that are required when reporting in the GEF Portal and these must be addressed in the TE. Address the questions required for the GEF Portal in the appropriate parts of the report and provide a **summary of the findings in the Conclusions section of the report**:
33. Under Monitoring and Reporting/Monitoring of Project Implementation:
 What was the performance at the project's completion against Core Indicator Targets? (For projects approved prior to GEF-7, these indicators will be identified retrospectively and comments on performance provided²⁷).
- a. *Under Factors Affecting Performance/Stakeholder Participation and Cooperation:*
 What were the progress, challenges and outcomes regarding engagement of stakeholders in the project/program as evolved from the time of the MTR? *(This should be based on the description included in the Stakeholder Engagement Plan or equivalent documentation submitted at CEO Endorsement/Approval)*
34. Under Factors Affecting Performance/Responsiveness to Human Rights and Gender Equality:
 What were the completed gender-responsive measures and, if applicable, actual gender result areas? *(This should be based on the documentation at CEO Endorsement/Approval, including gender-sensitive indicators contained in the project results framework or gender action plan or equivalent)*
35. Under Factors Affecting Performance/Environmental and Social Safeguards:
 What was the progress made in the implementation of the management measures against the Safeguards Plan submitted at CEO Approval? The risk classifications reported in the latest PIR report should be verified and the findings of the effectiveness of any measures or lessons learned taken to address identified risks assessed. *(Any supporting documents gathered by the Consultant during this review should be shared with the Task Manager for uploading in the GEF Portal)*
36. Under Factors Affecting Performance/Communication and Public Awareness:
 What were the challenges and outcomes regarding the project's completed Knowledge Management Approach, including: Knowledge and Learning Deliverables (e.g. website/platform development); Knowledge Products/Events; Communication Strategy; Lessons Learned and Good Practice; Adaptive Management Actions? *(This should be based on the documentation approved at CEO Endorsement/Approval)*

H. Evaluation Criteria

37. All evaluation criteria will be rated on a six-point scale. Sections A-I below, outline the scope of the criteria. A weightings table in excel format will be provided by the Evaluation Manager to support the determination of an overall project rating. The set of evaluation criteria are grouped in nine categories: (A) Strategic Relevance; (B) Quality of Project Design; (C) Nature of External Context; (D) Effectiveness, which comprises assessments of the availability of outputs, achievement of outcomes and likelihood of impact; (E) Financial Management; (F) Efficiency; (G) Monitoring and Reporting; (H) Sustainability; and (I) Factors Affecting Project Performance. The Evaluation Consultant(s) can propose other evaluation criteria as deemed appropriate.
- a. Strategic Relevance
38. The Evaluation will assess the extent to which the activity is suited to the priorities and policies of the donors, implementing regions/countries and the target beneficiaries. The Evaluation will include an assessment of the project's relevance in relation to UNEP's mandate and its alignment with UNEP's policies and strategies at the time of project approval. Under strategic relevance an assessment of the complementarity of the project

²⁷ This is not applicable for Enabling Activities

with other interventions addressing the needs of the same target groups will be made. This criterion comprises four elements:

- i. Alignment to the UNEP Medium Term Strategy²⁸ (MTS), Programme of Work (POW) and Strategic Priorities
39. The Evaluation should assess the project's alignment with the MTS and POW under which the project was approved and include, in its narrative, reflections on the scale and scope of any contributions made to the planned results reflected in the relevant MTS and POW. UNEP strategic priorities include the Bali Strategic Plan for Technology Support and Capacity Building²⁹ (BSP) and South-South Cooperation (S-SC). The BSP relates to the capacity of governments to: comply with international agreements and obligations at the national level; promote, facilitate and finance environmentally sound technologies and to strengthen frameworks for developing coherent international environmental policies. S-SC is regarded as the exchange of resources, technology and knowledge between developing countries.
- ii. Alignment to Donor/GEF/Partner Strategic Priorities
40. Donor, including GEF, strategic priorities will vary across interventions. GEF priorities are specified in published programming priorities and focal area strategies. The Evaluation will assess the extent to which the project is suited to, or responding to, donor priorities. In some cases, alignment with donor priorities may be a fundamental part of project design and grant approval processes while in others, for example, instances of 'softly-earmarked' funding, such alignment may be more of an assumption that should be assessed.
- iii. Relevance to Global, Regional, Sub-regional and National Environmental Priorities
41. The Evaluation will assess the alignment of the project with global priorities such as the SDGs and Agenda 2030. The extent to which the intervention is suited, or responding to, the stated environmental concerns and needs of the countries, sub-regions or regions where it is being implemented will be considered. Examples may include: UN Development Assistance Frameworks (UNDAF), national or sub-national development plans, poverty reduction strategies or Nationally Appropriate Mitigation Action (NAMA) plans or regional agreements etc. Within this section consideration will be given to whether the needs of all beneficiary groups are being met and reflects the current policy priority to leave no one behind.
- iv. Complementarity with Relevant Existing Interventions/Coherence³⁰
42. An assessment will be made of how well the project, either at design stage or during the project inception or mobilization³¹, took account of ongoing and planned initiatives (under the same sub-programme, other UNEP sub-programmes, or being implemented by other agencies within the same country, sector or institution) that address similar needs of the same target groups. The Evaluation will consider if the project team, in collaboration with Regional Offices and Sub-Programme Coordinators, made efforts to ensure their own intervention was complementary to other interventions, optimized any synergies and avoided duplication of effort. Examples may include UNDAFs or One UN programming.

28 UNEP's Medium Term Strategy (MTS) is a document that guides UNEP's programme planning over a four-year period. It identifies UNEP's thematic priorities, known as Sub-programmes (SP), and sets out the desired outcomes, known as Expected Accomplishments (EAs), of the Sub-programmes. <https://www.unenvironment.org/about-un-environment/evaluation-office/our-evaluation-approach/un-environment-documents>

29 <http://www.unep.fr/ozonaction/about/bsp.htm>

30 This sub-category is consistent with the new criterion of 'Coherence' introduced by the OECD-DAC in 2019.

31 A project's inception or mobilization period is understood as the time between project approval and first disbursement. Complementarity during project implementation is considered under Efficiency, see below.

Linkages with other interventions should be described and instances where UNEP's comparative advantage has been particularly well applied should be highlighted.

Factors affecting this criterion may include:

Stakeholders' participation and cooperation
Responsiveness to human rights and gender equality
Country ownership and driven-ness

b. Quality of Project Design

43. The quality of project design is assessed using an agreed template during the evaluation inception phase, ratings are attributed to identified criteria and an overall Project Design Quality rating is established. The complete Project Design Quality template should be annexed in the Evaluation Inception Report. Later, the overall Project Design Quality rating³² should be entered in the final evaluation ratings table (as item B) in the Main Evaluation Report and a summary of the project's strengths and weaknesses at design stage should be included within the body of the

Factors affecting this criterion may include (at the design stage):

Stakeholders participation and cooperation Responsiveness to human rights and gender equality

c. Nature of External Context

44. At evaluation inception stage a rating is established for the project's external operating context (considering the prevalence of conflict, natural disasters and political upheaval³³). This rating is entered in the final evaluation ratings table as item C. Where a project has been rated as facing either an Unfavourable or Highly Unfavourable external operating context, and/or a negative external event has occurred during project implementation, the ratings for Effectiveness, Efficiency and/or Sustainability may be increased at the discretion of the Evaluation Consultant and Evaluation Manager together. A justification for such an increase must be given.

d. Effectiveness

i. Availability of Outputs³⁴

45. The Evaluation will assess the project's success in producing the programmed outputs and making them available to the intended beneficiaries as well as its success in achieving milestones as per the project design document (ProDoc). Any *formal* modifications/revisions made during project implementation will be considered part of the project design. Where the project outputs are inappropriately or inaccurately stated in the ProDoc, reformulations may be necessary in the reconstruction of the Theory of Change (TOC). In such cases a table should be provided showing the original and the reformulation of the outputs for transparency. The availability of outputs will be assessed in terms of both quantity and quality, and the assessment will consider their ownership by, and usefulness to, intended beneficiaries and the timeliness of their provision. It is noted that emphasis is placed on the performance of those outputs that are most important to achieve outcomes.

³² In some instances, based on data collected during the evaluation process, the assessment of the project's design quality may change from Inception Report to Main Evaluation Report.

³³ Note that 'political upheaval' does not include regular national election cycles, but unanticipated unrest or prolonged disruption. The potential delays or changes in political support that are often associated with the regular national election cycle should be part of the project's design and addressed through adaptive management by the project team. From March 2020 this should include the effects of COVID-19.

³⁴ Outputs are the availability (for intended beneficiaries/users) of new products and services and/or gains in knowledge, abilities and awareness of individuals or within institutions (UNEP, 2019)

The Evaluation will briefly explain the reasons behind the success or shortcomings of the project in delivering its programmed outputs and meeting expected quality standards.

Factors affecting this criterion may include:

Preparation and readiness

Quality of project management and supervision³⁵

ii. Achievement of Project Outcomes³⁶

46. The achievement of project outcomes is assessed as performance against the project outcomes as defined in the reconstructed³⁷ Theory of Change. These are outcomes that are intended to be achieved by the end of the project timeframe and within the project's resource envelope. Emphasis is placed on the achievement of project outcomes that are most important for attaining intermediate states. As with outputs, a table can be used where substantive amendments to the formulation of project outcomes is necessary to allow for an assessment of performance. The Evaluation should report evidence of attribution between UNEP's intervention and the project outcomes. In cases of normative work or where several actors are collaborating to achieve common outcomes, evidence of the nature and magnitude of UNEP's 'substantive contribution' should be included and/or 'credible association' established between project efforts and the project outcomes realised.

Factors affecting this criterion may include:

Quality of project management and supervision

Stakeholders' participation and cooperation

Responsiveness to human rights and gender equality

Communication and public awareness

iii. Likelihood of Impact

47. Based on the articulation of long-lasting effects in the reconstructed TOC (*i.e. from project outcomes, via intermediate states, to impact*), the Evaluation will assess the likelihood of the intended, positive impacts becoming a reality. Project objectives or goals should be incorporated in the TOC, possibly as intermediate states or long-lasting impacts. The Evaluation Office's approach to the use of TOC in project evaluations is outlined in a guidance note available and is supported by an excel-based flow chart, 'Likelihood of Impact Assessment Decision Tree'. Essentially the approach follows a 'likelihood tree' from project outcomes to impacts, taking account of whether the assumptions and drivers identified in the reconstructed TOC held. Any unintended positive effects should also be identified and their causal linkages to the intended impact described.
48. The Evaluation will also consider the likelihood that the intervention may lead, or contribute to, unintended negative effects (e.g. will vulnerable groups such as those living with disabilities and/or women and children, be disproportionately affected by the project?). Some

35 In some cases 'project management and supervision' will refer to the supervision and guidance provided by UNEP to implementing partners and national governments while in others, specifically for GEF funded projects, it will refer to the project management performance of the executing agency and the technical backstopping provided by UNEP.

36 Outcomes are the use (*i.e. uptake, adoption, application*) of an output by intended beneficiaries, observed as changes in institutions or behavior, attitude or condition (UNEP, 2019)

37 All submitted UNEP project documents are required to present a Theory of Change with all submitted project designs. The level of 'reconstruction' needed during an evaluation will depend on the quality of this initial TOC, the time that has lapsed between project design and implementation (which may be related to securing and disbursing funds) and the level of any formal changes made to the project design.

of these potential negative effects may have been identified in the project design as risks or as part of the analysis of Environmental and Social Safeguards.

49. The Evaluation will consider the extent to which the project has played a catalytic role³⁸ or has promoted scaling up and/or replication as part of its Theory of Change (either explicitly as in a project with a demonstration component or implicitly as expressed in the drivers required to move to outcome levels) and as factors that are likely to contribute to greater or long-lasting impact.
50. Ultimately UNEP and all its partners aim to bring about benefits to the environment and human well-being. Few projects are likely to have impact statements that reflect such long-lasting or broad-based changes. However, the Evaluation will assess the likelihood of the project to make a substantive contribution to the long-lasting changes represented by the Sustainable Development Goals and/or the intermediate-level results reflected in UNEP's Expected Accomplishments and the strategic priorities of funding partner(s).

Factors affecting this criterion may include:

Quality of Project Management and Supervision (including adaptive management)
Stakeholders participation and cooperation
Responsiveness to human rights and gender equality
Country ownership and driven-ness
Communication and public awareness

e. Financial Management

51. Financial management will be assessed under three themes: *adherence* to UNEP's financial policies and procedures, *completeness* of financial information and *communication* between financial and project management staff. The Evaluation will establish the actual spend across the life of the project of funds secured from all donors. This expenditure will be reported, where possible, at output/component level and will be compared with the approved budget. The Evaluation will verify the application of proper financial management standards and adherence to UNEP's financial management policies. Any financial management issues that have affected the timely delivery of the project or the quality of its performance will be highlighted. The Evaluation will record where standard financial documentation is missing, inaccurate, incomplete or unavailable in a timely manner. The Evaluation will assess the level of communication between the Project/Task Manager and the Fund Management Officer as it relates to the effective delivery of the planned project and the needs of a responsive, adaptive management approach.

Factors affecting this criterion may include:

Preparation and readiness
Quality of project management and supervision

f. Efficiency

52. Under the efficiency criterion the Evaluation will assess the extent to which the project delivered maximum results from the given resources. This will include an assessment of the cost-effectiveness and timeliness of project execution.

³⁸ The terms catalytic effect, scaling up and replication are inter-related and generally refer to extending the coverage or magnitude of the effects of a project. *Catalytic effect* is associated with triggering additional actions that are not directly funded by the project – these effects can be both concrete or less tangible, can be intentionally caused by the project or implied in the design and reflected in the TOC drivers, or can be unintentional and can rely on funding from another source or have no financial requirements. *Scaling up and Replication* require more intentionality for projects, or individual components and approaches, to be reproduced in other similar contexts. *Scaling up* suggests a substantive increase in the number of new beneficiaries reached/involved and may require adapted delivery mechanisms while *Replication* suggests the repetition of an approach or component at a similar scale but among different beneficiaries. Even with highly technical work, where scaling up or replication involves working with a new community, some consideration of the new context should take place and adjustments made as necessary.

53. Focusing on the translation of inputs into outputs, cost-effectiveness is the extent to which an intervention has achieved, or is expected to achieve, its results at the lowest possible cost. Timeliness refers to whether planned activities were delivered according to expected timeframes as well as whether events were sequenced efficiently. The Evaluation will also assess to what extent any project extension could have been avoided through stronger project management and identify any negative impacts caused by project delays or extensions. The Evaluation will describe any cost or time-saving measures put in place to maximise results within the secured budget and agreed project timeframe and consider whether the project was implemented in the most efficient way compared to alternative interventions or approaches.
54. The Evaluation will give special attention to efforts made by the project teams during project implementation to make use of/build upon pre-existing institutions, agreements and partnerships, data sources, synergies and complementarities³⁹ with other initiatives, programmes and projects etc. to increase project efficiency.
55. The factors underpinning the need for any project extensions will also be explored and discussed. As management or project support costs cannot be increased in cases of 'no cost extensions', such extensions represent an increase in unstated costs to implementing parties.

Factors affecting this criterion may include:

- Preparation and readiness (e.g. timeliness)
- Quality of project management and supervision
- Stakeholders participation and cooperation

g. Monitoring and Reporting

56. The Evaluation will assess monitoring and reporting across three sub-categories: monitoring design and budgeting, monitoring implementation and project reporting.
 - i. Monitoring Design and Budgeting
57. Each project should be supported by a sound monitoring plan that is designed to track progress against SMART⁴⁰ results towards the provision of the project's outputs and achievement of project outcomes, including at a level disaggregated by gender, marginalisation or vulnerability, including those living with disabilities.. In particular, the Evaluation will assess the relevance and appropriateness of the project indicators as well as the methods used for tracking progress against them as part of conscious results-based management. The Evaluation will assess the quality of the design of the monitoring plan as well as the funds allocated for its implementation. The adequacy of resources for Mid-Term and Terminal Evaluation/Review should be discussed if applicable.
 - ii. Monitoring of Project Implementation
58. The Evaluation will assess whether the monitoring system was operational and facilitated the timely tracking of results and progress towards projects objectives throughout the project implementation period. This assessment will include consideration of whether the project gathered relevant and good quality baseline data that is accurately and appropriately documented. This should include monitoring the representation and participation of

³⁹ Complementarity with other interventions during project design, inception or mobilization is considered under Strategic Relevance above.

⁴⁰ SMART refers to results that are specific, measurable, achievable, relevant and time-oriented. Indicators help to make results measurable.

disaggregated groups (including gendered, marginalised or vulnerable groups, such as those living with disabilities) in project activities. It will also consider the quality of the information generated by the monitoring system during project implementation and how it was used to adapt and improve project execution, achievement of outcomes and ensure sustainability. The Evaluation should confirm that funds allocated for monitoring were used to support this activity.

59. The performance at project completion against Core Indicator Targets should be reviewed. For projects approved prior to GEF-7, these indicators will be identified retrospectively and comments on performance provided.

iii. Project Reporting

60. UNEP has a centralised project information management system (Anubis) in which project managers upload six-monthly progress reports against agreed project milestones. This information will be provided to the Evaluation Consultant(s) by the Evaluation Manager. Some projects have additional requirements to report regularly to funding partners, which will be supplied by the project team (e.g. the Project Implementation Reviews and Tracking Tool for GEF-funded projects). The Evaluation will assess the extent to which both UNEP and donor reporting commitments have been fulfilled. Consideration will be given as to whether reporting has been carried out with respect to the effects of the initiative on disaggregated groups.

Factors affecting this criterion may include:

Quality of project management and supervision

Responsiveness to human rights and gender equality (e.g disaggregated indicators and data)

h. Sustainability

61. Sustainability⁴¹ is understood as the probability of the benefits derived from the achievement of project outcomes being maintained and developed after the close of the intervention. The Evaluation will identify and assess the key conditions or factors that are likely to undermine or contribute to the endurance of achieved project outcomes (i.e. 'assumptions' and 'drivers'). Some factors of sustainability may be embedded in the project design and implementation approaches while others may be contextual circumstances or conditions that evolve over the life of the intervention. Where applicable an assessment of bio-physical factors that may affect the sustainability of project outcomes may also be included.

i. Socio-political Sustainability

62. The Evaluation will assess the extent to which social or political factors support the continuation and further development of the benefits derived from project outcomes. It will consider the level of ownership, interest and commitment among government and other stakeholders to take the project achievements forwards. In particular the Evaluation will consider whether individual capacity development efforts are likely to be sustained.

ii. Financial Sustainability

63. Some project outcomes, once achieved, do not require further financial inputs, e.g. the adoption of a revised policy. However, in order to derive a benefit from this outcome further

⁴¹ As used here, 'sustainability' means the long-lasting maintenance of outcomes and consequent impacts, whether environmental or not. This is distinct from the concept of sustainability in the terms 'environmental sustainability' or 'sustainable development', which imply 'not living beyond our means' or 'not diminishing global environmental benefits' (GEF STAP Paper, 2019, Achieving More Enduring Outcomes from GEF Investment)

management action may still be needed e.g. to undertake actions to enforce the policy. Other project outcomes may be dependent on a continuous flow of action that needs to be resourced for them to be maintained, e.g. continuation of a new natural resource management approach. The Evaluation will assess the extent to which project outcomes are dependent on future funding for the benefits they bring to be sustained. Secured future funding is only relevant to financial sustainability where a project's outcomes have been extended into a future project phase. Even where future funding has been secured, the question still remains as to whether the project outcomes are financially sustainable.

iii. Institutional Sustainability

64. The Evaluation will assess the extent to which the sustainability of project outcomes (especially those relating to policies and laws) is dependent on issues relating to institutional frameworks and governance. It will consider whether institutional achievements such as governance structures and processes, policies, sub-regional agreements, legal and accountability frameworks etc. are robust enough to continue delivering the benefits associated with the project outcomes after project closure. In particular, the Evaluation will consider whether institutional capacity development efforts are likely to be sustained.

Factors affecting this criterion may include:

Stakeholders participation and cooperation

Responsiveness to human rights and gender equality (e.g. where interventions are not inclusive, their sustainability may be undermined)

Communication and public awareness

Country ownership and driven-ness

i. Factors Affecting Project Performance and Cross-Cutting Issues

(These factors are rated in the ratings table but are discussed within the Main Evaluation Report as cross-cutting themes as appropriate under the other evaluation criteria, above. If these issues have not been addressed under the evaluation criteria above, then independent summaries of their status within the evaluated project should be given.)

i. Preparation and Readiness

65. This criterion focuses on the inception or mobilisation stage of the project (i.e. the time between project approval and first disbursement). The Evaluation will assess whether appropriate measures were taken to either address weaknesses in the project design or respond to changes that took place between project approval, the securing of funds and project mobilisation. In particular the Evaluation will consider the nature and quality of engagement with stakeholder groups by the project team, the confirmation of partner capacity and development of partnership agreements as well as initial staffing and financing arrangements. *(Project preparation is included in the template for the assessment of Project Design Quality).*

ii. Quality of Project Management and Supervision

66. In some cases 'project management and supervision' may refer to the supervision and guidance provided by UNEP to implementing partners and national governments while in others, specifically for GEF funded projects⁴², it may refer to the project management performance of the executing agency and the technical backstopping and supervision provided by UNEP. The performance of parties playing different roles should be discussed

⁴² For GEF funded projects, a rating will be provided for the Project Management and Supervision of each of the Implementing and Executing Agencies. The two ratings will be aggregated to provide an overall rating for Quality of Project Management and Supervision

and a rating provided for both types of supervision (UNEP/Partner/Executing Agency) and the overall rating for this sub-category established as a simple average of the two.

67. The Evaluation will assess the effectiveness of project management with regard to: providing leadership towards achieving the planned outcomes; managing team structures; maintaining productive partner relationships (including Steering Groups etc.); maintaining project relevance within changing external and strategic contexts; communication and collaboration with UNEP colleagues; risk management; use of problem-solving; project adaptation and overall project execution. Evidence of adaptive management should be highlighted.

iii. Stakeholder Participation and Cooperation

68. Here the term 'stakeholder' should be considered in a broad sense, encompassing all project partners, duty bearers with a role in delivering project outputs and target users of project outputs and any other collaborating agents external to UNEP and the Executing Agency. The assessment will consider the quality and effectiveness of all forms of communication and consultation with stakeholders throughout the project life and the support given to maximise collaboration and coherence between various stakeholders, including sharing plans, pooling resources and exchanging learning and expertise. The inclusion and participation of all differentiated groups, including gender groups should be considered.

69. The progress, challenges and outcomes regarding engagement of stakeholders in the project/program occurring since the MTR should be reviewed. *(This should be based on the description included in the Stakeholder Engagement Plan or equivalent documentation submitted at CEO Endorsement/Approval).*

iv. Responsiveness to Human Rights and Gender Equality

70. The Evaluation will ascertain to what extent the project has applied the UN Common Understanding on the human rights-based approach (HRBA) and the UN Declaration on the Rights of Indigenous People. Within this human rights context the Evaluation will assess to what extent the intervention adheres to UNEP's Policy and Strategy for Gender Equality and the Environment⁴³.

71. In particular the Evaluation will consider to what extent project-implementation and monitoring have taken into consideration: (i) possible inequalities (especially those related to gender) in access to, and the control over, natural resources; (ii) specific vulnerabilities of disadvantaged groups (especially women, youth and children and those living with disabilities) to environmental degradation or disasters; and (iii) the role of disadvantaged groups (especially those related to gender) in mitigating or adapting to environmental changes and engaging in environmental protection and rehabilitation.

72. The completed gender-responsive measures and, if applicable, actual gender result areas should be reviewed. *(This should be based on the documentation at CEO Endorsement/Approval, including gender-sensitive indicators contained in the project results framework or gender action plan or equivalent).*

v. Environmental and Social Safeguards

73. UNEP projects address environmental and social safeguards primarily through the process of environmental and social screening at the project approval stage, risk assessment and management (avoidance, minimization, mitigation or, in exceptional cases, offsetting) of

⁴³The Evaluation Office notes that Gender Equality was first introduced in the UNEP Project Review Committee Checklist in 2010 and, therefore, provides a criterion rating on gender for projects approved from 2010 onwards. Equally, it is noted that policy documents, operational guidelines and other capacity building efforts have only been developed since then and have evolved over time. https://wedocs.unep.org/bitstream/handle/20.500.11822/7655/-Gender_equality_and_the_environment_Policy_and_strategy-2015Gender_equality_and_the_environment_policy_and_strategy.pdf.pdf?sequence=3&isAllowed=y

potential environmental and social risks and impacts associated with project and programme activities. The Evaluation will confirm whether UNEP requirements⁴⁴ were met to: *review* risk ratings on a regular basis; *monitor* project implementation for possible safeguard issues; *respond* (where relevant) to safeguard issues through risk avoidance, minimization, mitigation or offsetting and *report* on the implementation of safeguard management measures taken. UNEP requirements for proposed projects to be screened for any safeguarding issues; for sound environmental and social risk assessments to be conducted and initial risk ratings to be assigned are evaluated above under Quality of Project Design).

74. The Evaluation will also consider the extent to which the management of the project minimised UNEP's environmental footprint.
75. Implementation of the management measures against the Safeguards Plan submitted at CEO Approval should be reviewed, the risk classifications verified and the findings of the effectiveness of any measures or lessons learned taken to address identified risks assessed. Any supporting documents gathered by the Consultant should be shared with the Task Manager.

vi. Country Ownership and Driven-ness

76. The Evaluation will assess the quality and degree of engagement of government / public sector agencies in the project. While there is some overlap between Country Ownership and Institutional Sustainability, this criterion focuses primarily on the forward momentum of the intended projects results, i.e. either a) moving forwards from outputs to project outcomes or b) moving forward from project outcomes towards intermediate states. The Evaluation will consider the engagement not only of those directly involved in project execution and those participating in technical or leadership groups, but also those official representatives whose cooperation is needed for change to be embedded in their respective institutions and offices (e.g. representatives from multiple sectors or relevant ministries beyond Ministry of Environment). This factor is concerned with the level of ownership generated by the project over outputs and outcomes and that is necessary for long-lasting impact to be realised. Ownership should extend to all gendered and marginalised groups.

vii. Communication and Public Awareness

77. The Evaluation will assess the effectiveness of: a) communication of learning and experience sharing between project partners and interested groups arising from the project during its life and b) public awareness activities that were undertaken during the implementation of the project to influence attitudes or shape behaviour among wider communities and civil society at large. The Evaluation should consider whether existing communication channels and networks were used effectively, including meeting the differentiated needs of gendered or marginalised groups, and whether any feedback channels were established. Where knowledge sharing platforms have been established under a project the Evaluation will comment on the sustainability of the communication channel under either socio-political, institutional or financial sustainability, as appropriate.
78. The project's completed Knowledge Management Approach, including: Knowledge and Learning Deliverables (e.g. website/platform development); Knowledge Products/Events; Communication Strategy; Lessons Learned and Good Practice; Adaptive Management

⁴⁴ For the review of project concepts and proposals, the Safeguard Risk Identification Form (SRIF) was introduced in 2019 and replaced the Environmental, Social and Economic Review note (ESERN), which had been in place since 2016. In GEF projects safeguards have been considered in project designs since 2011.

Actions should be reviewed. This should be based on the documentation approved at CEO Endorsement/Approval.

Section 3. EVALUATION APPROACH, METHODS AND DELIVERABLES

79. The Terminal Evaluation will be an in-depth evaluation using a participatory approach whereby key stakeholders are kept informed and consulted throughout the evaluation process. Both quantitative and qualitative evaluation methods will be used as appropriate to determine project achievements against the expected outputs, outcomes and impacts. It is highly recommended that the consultant(s) maintains close communication with the project team and promotes information exchange throughout the Evaluation implementation phase in order to increase their (and other stakeholder) ownership of the evaluation findings. Where applicable, the consultant(s) will provide a geo-referenced map that demarcates the area covered by the project and, where possible, provide geo-reference photographs of key intervention sites (e.g. sites of habitat rehabilitation and protection, pollution treatment infrastructure, etc.)

80. The findings of the Evaluation will be based on the following:

(a) A **desk review** of:

- Relevant background documentation, inter alia [list];
- Project design documents (including minutes of the project design review meeting at approval); Annual Work Plans and Budgets or equivalent, revisions to the project (Project Document Supplement), the logical framework and its budget;
- Project reports such as six-monthly progress and financial reports, progress reports from collaborating partners, meeting minutes, relevant correspondence and including the Project –Implementation Reviews and Tracking Tool etc.;
- Project deliverables: [list];
- Mid-Term Review or Mid-Term Evaluation of the project;
- Evaluations/reviews of similar projects.

(b) **Interviews** (individual or in group) with:

- UNEP Task Manager (TM);
- Project management team, including the Project Manager within the Executing Agency, where appropriate;
- UNEP Fund Management Officer (FMO);
- Portfolio Manager and Sub-Programme Coordinator, where appropriate;
- Project partners, including [list];
- Relevant resource persons;
- Representatives from civil society and specialist groups (such as women's,

farmers and

trade associations etc).

(c) **Surveys** : to be determined

(d) **Field visits** : to be determined in the evaluation inception stage

(e) Other data collection tools: to be determined

I. Evaluation Deliverables and Review Procedures

81. The Evaluation Team will prepare:

Inception Report: (see Annex 1 for a list of all templates, tables and guidance notes) containing an assessment of project design quality, a draft reconstructed Theory of Change of the project, project stakeholder analysis, evaluation framework and a tentative evaluation schedule.

Preliminary Findings Note: typically in the form of a PowerPoint presentation, the sharing of preliminary findings is intended to support the participation of the project team, act as a means to ensure all information sources have been accessed and provide an opportunity to verify emerging findings. In the case of highly strategic project/portfolio evaluations or evaluations with an Evaluation Reference Group, the preliminary findings may be presented as a word document for review and comment.

Draft and Final Evaluation Report: containing an executive summary that can act as a stand-alone document; detailed analysis of the evaluation findings organised by evaluation criteria and supported with evidence; lessons learned and recommendations and an annotated ratings table.

An **Evaluation Brief**, (a 2-page overview of the evaluand and key evaluation findings) for wider dissemination through the UNEP website may be required. This will be discussed with the Evaluation Manager no later than during the finalization of the Inception Report.

Review of the Draft Evaluation Report. The Evaluation Consultant(s) will submit a draft report to the Evaluation Manager and revise the draft in response to their comments and suggestions. Once a draft of adequate quality has been peer-reviewed and accepted, the Evaluation Manager will share the cleared draft report with the Task Manager and Project Manager, who will alert the Evaluation Manager in case the report contains any blatant factual errors. The Evaluation Manager will then forward the revised draft report (corrected by the Evaluation Consultant(s) where necessary) to other project stakeholders, for their review and comments. Stakeholders may provide feedback on any errors of fact and may highlight the significance of such errors in any conclusions as well as providing feedback on the proposed recommendations and lessons. Any comments or responses to draft reports will be sent to the Evaluation Manager for consolidation. The Evaluation Manager will provide all comments to the Evaluation Consultant(s) for consideration in preparing the final report, along with guidance on areas of contradiction or issues requiring an institutional response.

82. Based on a careful review of the evidence collated by the Evaluation Consultants and the internal consistency of the report, the Evaluation Manager will provide an assessment of the ratings in the final evaluation report. Where there are differences of opinion between the evaluator and the Evaluation Manager on project ratings, both viewpoints will be clearly presented in the final report. The Evaluation Office ratings will be considered the final ratings for the project.
83. The Evaluation Manager will prepare a **quality assessment** of the first draft of the Main Evaluation Report, which acts as a tool for providing structured feedback to the Evaluation Consultant(s). The quality of the final report will be assessed and rated against the criteria specified in template listed in Annex 1 and this assessment will be appended to the Final Evaluation Report.

84. At the end of the evaluation process, the Evaluation Office will prepare a **Recommendations Implementation Plan** in the format of a table, to be completed and updated at regular intervals by the Task Manager. The Evaluation Office will track compliance against this plan on a six-monthly basis for a maximum of 12 months.

J. The Evaluation Consultant

85. For this Evaluation, the Evaluation Team will consist of an Evaluation Specialist who will work under the overall responsibility of the Evaluation Office represented by an Evaluation Manager [Susan Mugwe], in consultation with the UNEP Task Manager [Johan Robinson], Fund Management Officer [Joel Mbothu/Martin Okun] and the Sub-programme Coordinators of the Healthy and Productive Ecosystems [Marieta Sakalian].

86. The consultant will liaise with the Evaluation Manager on any procedural and methodological matters related to the Evaluation, including travel. It is, however, the consultant's individual responsibility (where applicable) to arrange for their visas and immunizations as well as to plan meetings with stakeholders, organize online surveys, obtain documentary evidence and any other logistical matters related to the assignment. The UNEP Task Manager and project team will, where possible, provide logistical support (introductions, meetings etc.) allowing the consultants to conduct the Evaluation as efficiently and independently as possible.

87. The Consultant will be hired over a period of 8 months [October 2022 to May 2023] and should have the following:

- a. A university degree in environmental sciences, international development, public policy or other relevant political or social sciences area is required and an advanced degree in the same areas is desirable;
- b. A minimum of 7 years of technical / evaluation experience is required, preferably including evaluating large, regional or global programmes and using a Theory of Change approach; and a good/broad understanding of Animal Genetic Resources and policy formulation is desired.
- c. English and French are the working languages of the United Nations Secretariat. For this consultancy, fluency in oral and written English is a requirement and a working knowledge of French is desirable.
- d. Working knowledge of the UN system and specifically the work of UNEP is an added advantage.

88. The work will be home-based with possible field visits if the Covid19 situation permits.

89. The Consultant will be responsible, in close consultation with the Evaluation Office of UNEP for overall management of the Evaluation and timely provision of its outputs, described above in Section 11 Evaluation Deliverables, above. The Consultant will make substantive and high- quality contributions to the evaluation process and outputs. The evaluation team will ensure together that all evaluation criteria and questions are adequately covered.

90. In close consultation with the Evaluation Manager, the Principal Evaluator will be responsible for the overall management of the Evaluation and timely provision of its outputs, data collection and analysis and report-writing. More specifically:

Inception phase of the Evaluation, including:

- preliminary desk review and introductory interviews with project staff;
- draft the reconstructed Theory of Change of the project;

- prepare the evaluation framework;
- develop the desk review and interview protocols;
- draft the survey protocols (if relevant);
- develop and present criteria for country and/or site selection for the evaluation mission;
- plan the evaluation schedule;
- prepare the Inception Report, incorporating comments until approved by the Evaluation Manager

Data collection and analysis phase of the Evaluation, including:

- conduct further desk review and in-depth interviews with project implementing and executing agencies, project partners and project stakeholders;
- (where appropriate and agreed) conduct an evaluation mission(s) to selected countries, visit the project locations, interview project partners and stakeholders, including a good representation of local communities. Ensure independence of the Evaluation and confidentiality of evaluation interviews.
- regularly report back to the Evaluation Manager on progress and inform of any possible problems or issues encountered and;
- keep the Project/Task Manager informed of the evaluation progress.

Reporting phase, including:

- draft the Main Evaluation Report, ensuring that the evaluation report is complete, coherent and consistent with the Evaluation Manager guidelines both in substance and style;
- liaise with the Evaluation Manager on comments received and finalize the Main Evaluation Report, ensuring that comments are taken into account until approved by the Evaluation Manager
- prepare a Response to Comments annex for the main report, listing those comments not accepted by the Evaluation Consultant and indicating the reason for the rejection; and
- (where agreed with the Evaluation Manager) prepare an Evaluation Brief (2-page summary of the evaluand and the key evaluation findings and lessons)

Managing relations, including:

- maintain a positive relationship with evaluation stakeholders, ensuring that the evaluation process is as participatory as possible but at the same time maintains its independence;
- communicate in a timely manner with the Evaluation Manager on any issues requiring its attention and intervention.

K. Schedule of the Evaluation

91. The table below presents the tentative schedule for the Evaluation.

Table 3. Tentative schedule for the Evaluation

7.13 Annex 13: Quality Assessment

Evaluand Title:

Terminal Evaluation of a UNEP/GEF “Development and Application of Decision-Support Tools to conserve & Sustainably Use of Genetic Diversity in Indigenous Livestock and Wild Relatives”

All UNEP evaluations are subject to a quality assessment by the Evaluation Office. This is an assessment of the quality of the evaluation product (i.e. evaluation report) and is dependent on more than just the consultant’s efforts and skills.

Quality Assessment of the Evaluation Report

Evaluand Title:

Terminal Evaluation:

All UNEP evaluations are subject to a quality assessment by the Evaluation Office. This is an assessment of the quality of the evaluation product (i.e. evaluation report) and is dependent on more than just the consultant’s efforts and skills.

	UNEP Evaluation Office Comments	Final Report Rating
Report Quality Criteria		
<p>Quality of the Executive Summary <u>Purpose:</u> acts as a stand alone and accurate <u>summary</u> of the main evaluation product, especially for senior management. To include:</p> <ul style="list-style-type: none"> • concise overview of the evaluation object • clear summary of the evaluation objectives and scope • overall evaluation rating of the project and key features of performance (strengths and weaknesses) against exceptional criteria • reference to where the evaluation ratings table can be found within the report • summary response to key strategic evaluation questions • summary of the main findings of the exercise/synthesis of main conclusions • summary of lessons learned and recommendations. 	<p>Final report (coverage/omissions): All required elements are addressed except for where to find the ratings table within the report and a summary response to the key strategic evaluation questions.</p> <p>Final report (strengths/weaknesses): Strengths The section meets the requirements of being a stand-alone summary of the evaluation.</p> <p>Weaknesses</p> <ul style="list-style-type: none"> • The executive summary mentions that the project risks were identified and mitigation measures mainstreamed in the design. However, a brief summary further expounding on some of the risks identified and their corresponding mitigation measures would have been helpful. • Check Annex 2 – contradicts content on the Annexures section 	5
<p>Quality of the ‘Introduction’ Section <u>Purpose:</u> introduces/<u>situates</u> the evaluand in its institutional context, establishes its main parameters (time, value, results, geography) and the purpose of the evaluation itself. To include:</p>	<p>Final report (coverage/omissions): The Introduction covers all the required elements save for the results frameworks to which it contributes (e.g. POW Direct Outcome).</p>	5

<ul style="list-style-type: none"> • institutional context of the project (sub-programme, Division, Branch etc) • date of PRC approval, project duration and start/end dates • number of project phases (where appropriate) • results frameworks to which it contributes (e.g. POW Direct Outcome) • coverage of the evaluation (regions/countries where implemented) • implementing and funding partners • total secured budget • whether the project has been evaluated in the past (e.g. mid-term, external agency etc.) • concise statement of the purpose of the evaluation and the key intended audience for the findings. 	<p>Final report (strengths/weaknesses):</p> <p>Strengths The section meets the requirements of introducing the evaluand institutional context, establishing its main parameters (time, value, results, geography) and the purpose of the evaluation itself.</p> <p>Weaknesses The section was not explicit on the results frameworks to which it contributes (e.g. POW Direct Outcome).</p>	
<p>Quality of the 'Evaluation Methods' Section</p> <p><u>Purpose:</u> provides reader with clear and comprehensive description of evaluation methods, demonstrates the <u>credibility</u> of the findings and performance ratings.</p> <p>To include:</p> <ul style="list-style-type: none"> • description of evaluation data collection methods and information sources • justification for methods used (e.g. qualitative/ quantitative; electronic/face-to-face) • number and type of respondents (see <i>table template</i>) • selection criteria used to identify respondents, case studies or sites/countries visited • strategies used to increase stakeholder engagement and consultation • methods to include the voices/experiences of different and potentially excluded groups (e.g. vulnerable, gender, marginalised etc) • details of how data were verified (e.g. triangulation, review by stakeholders etc.) • methods used to analyse data (scoring, coding, thematic analysis etc) • evaluation limitations (e.g. low/ imbalanced response rates across different groups; gaps in documentation; language barriers etc) • ethics and human rights issues should be highlighted including: how anonymity and confidentiality were protected. Is there an ethics statement? E.g. <i>'Throughout the evaluation process and in the compilation of the Final Evaluation Report efforts have been made to represent the views of both mainstream and more marginalised groups. All efforts to provide respondents with anonymity have been made.'</i> 	<p>Final report (coverage/omissions):</p> <p>This section partially gives a clear and comprehensive description of the evaluation methods. It can be improved by providing more information in all the sub-sections. Additionally, a number of aspects were left out as outlined in 'Weaknesses' below.</p> <p>Final report (strengths/weaknesses):</p> <p>Strengths</p> <ul style="list-style-type: none"> • The maps showing the sites visited gives insightful information of the sites under evaluation. • Challenges encountered have been outlined extensively <p>Weaknesses The following aspects are lacking in this section:</p> <ul style="list-style-type: none"> • description of the information sources • strategies used to increase stakeholder engagement and consultation • methods to include the voices/experiences of different and potentially excluded groups (e.g. vulnerable, gender, marginalised etc) • details of how data were verified (e.g. triangulation, review by stakeholders etc.) 	4
<p>Quality of the 'Project' Section</p> <p><u>Purpose:</u> describes and <u>verifies</u> key dimensions of the evaluand relevant to assessing its performance.</p> <p>To include:</p> <ul style="list-style-type: none"> • <i>Context:</i> overview of the main issue that the project is trying to address, its root causes and consequences on the 	<p>Final report (coverage/omissions):</p> <p>All required elements are addressed in this section.</p> <p>Final report (strengths/weaknesses):</p>	6

<p>environment and human well-being (i.e. synopsis of the problem and situational analyses)</p> <ul style="list-style-type: none"> • <i>Results framework</i>: summary of the project's results hierarchy as stated in the ProDoc (or as officially revised) • <i>Stakeholders</i>: description of groups of targeted stakeholders organised according to relevant common characteristics • <i>Project implementation structure and partners</i>: description of the implementation structure with diagram and a list of key project partners • <i>Changes in design during implementation</i>: any key events that affected the project's scope or parameters should be described in brief in chronological order • <i>Project financing</i>: completed tables of: (a) budget at design and expenditure by components (b) planned and actual sources of funding/co-financing 	<p><i>Strengths</i> The information in the sub-sections is elaborate and well understood.</p> <p><i>Weaknesses</i></p> <ul style="list-style-type: none"> • No notable weakness noted 	
<p>Quality of the Theory of Change</p> <p><u>Purpose</u>: to set out the TOC at Evaluation in diagrammatic and narrative forms to support consistent project performance; to articulate the causal pathways with drivers and assumptions and justify any reconstruction necessary to assess the project's performance.</p> <p>To include:</p> <ul style="list-style-type: none"> • description of how the <i>TOC at Evaluation</i>⁴⁵ was designed (who was involved etc) • confirmation/reconstruction of results in accordance with UNEP definitions • articulation of causal pathways • identification of drivers and assumptions • identification of key actors in the change process • summary of the reconstruction/results re-formulation in tabular form. <i>The two results hierarchies (original/formal revision and reconstructed) should be presented as a two-column table to show clearly that, although wording and placement may have changed, the results 'goal posts' have not been 'moved'.</i> This table may have initially been presented in the Inception Report and should appear somewhere in the Main Evaluation report. 	<p><i>Final report (coverage/omissions):</i></p> <p>The section has been extensively covered in the report.</p> <p><i>Final report (strengths/weaknesses):</i></p> <p><i>Strengths</i> The information in the paragraphs outlining the strengths and weaknesses of project design is elaborate and adequate.</p> <p><i>Weaknesses</i></p> <ul style="list-style-type: none"> • No notable weakness noted 	6
<p>Quality of Key Findings within the Report</p> <p><u>Presentation of evidence</u>: nature of evidence should be clear (interview, document, survey, observation, online resources etc) and evidence should be explicitly triangulated unless noted as having a single source.</p> <p><u>Consistency within the report</u>: all parts of the report should form consistent support for findings and performance ratings, which should be in line with UNEP's Criteria Ratings Matrix.</p> <p><u>Findings Statements (where applicable)</u>: The frame of reference for a finding should be an individual evaluation criterion or a strategic question from the TOR. A finding should go beyond description and uses analysis to provide insights that aid learning specific to the evaluand. In some cases a findings statement may articulate a</p>	<p><i>Final report (coverage/omissions):</i></p> <p>The information provided for in the report is adequate.</p> <p><i>Final report (strengths/weaknesses):</i></p> <p><i>Strengths</i> The quality of key findings within the report</p> <p><i>Weaknesses</i></p> <ul style="list-style-type: none"> • No notable weakness noted 	6

⁴⁵ During the Inception Phase of the evaluation process a *TOC at Evaluation Inception* is created based on the information contained in the approved project documents (these may include either logical framework or a TOC or narrative descriptions), formal revisions and annual reports etc. During the evaluation process this TOC is revised based on changes made during project intervention and becomes the *TOC at Evaluation*.

<p>key element that has determined the performance rating of a criterion. Findings will frequently provide insight into 'how' and/or 'why' questions.</p>		
<p>Quality of 'Strategic Relevance' Section</p> <p><u>Purpose:</u> to present evidence and analysis of project strategic relevance with respect to UNEP, partner and geographic policies and strategies at the time of project approval.</p> <p>To include:</p> <p>Assessment of the evaluand's relevance vis-à-vis:</p> <ul style="list-style-type: none"> • Alignment to the UNEP Medium Term Strategy (MTS), Programme of Work (POW) and Strategic Priorities • Alignment to Donor/GEF/Partners Strategic Priorities • Relevance to Regional, Sub-regional and National Environmental Priorities • Complementarity with Existing Interventions: complementarity of the project at design (or during inception/mobilisation⁴⁶), with other interventions addressing the needs of the same target groups. 	<p><i>Final report (coverage/omissions):</i></p> <p>The section has been elaborated by four (4) sub-sections which clearly bring out the strategic relevance of the project.</p> <p><i>Final report (strengths/weaknesses):</i></p> <p><i>Strengths</i></p> <p>The information in the sub-sections is elaborate.</p> <p><i>Weaknesses</i></p> <ul style="list-style-type: none"> • No notable weakness noted 	<p>6</p>
<p>Quality of the 'Quality of Project Design' Section</p> <p><u>Purpose:</u> to present a summary of the strengths and weaknesses of the project design, on the basis that the detailed assessment was presented in the Inception Report.</p>	<p><i>Final report (coverage/omissions):</i></p> <p>The section has been extensively covered in the report.</p> <p><i>Final report (strengths/weaknesses):</i></p> <p><i>Strengths</i></p> <p>The information in the paragraphs outlining the strengths and weaknesses of project design is elaborate and adequate.</p> <p><i>Weaknesses</i></p> <ul style="list-style-type: none"> • No notable weakness noted 	<p>6</p>
<p>Quality of the 'Nature of the External Context' Section</p> <p><u>Purpose:</u> to describe and recognise, when appropriate, key <u>external</u> features of the project's implementing context that limited the project's performance (e.g. conflict, natural disaster, political upheaval⁴⁷), and how they affected performance.</p> <p>While additional details of the implementing context may be informative, this section should clearly record whether or not a major and unexpected disrupting event took place during the project's life in the implementing sites.</p>	<p><i>Final report (coverage/omissions):</i></p> <p>The report extensively covers the section, describing and recognizing the key external features of the project's implementing context that limited the project's performance.</p> <p><i>Final report (strengths/weaknesses):</i></p> <p><i>Strengths</i></p> <p>The information is elaborate while the specific external features provided in</p>	<p>6</p>

⁴⁶ A project's inception or mobilization period is understood as the time between project approval and first disbursement. Complementarity during project implementation is considered under Efficiency, see below.

⁴⁷ Note that 'political upheaval' does not include regular national election cycles, but unanticipated unrest or prolonged disruption. The potential delays or changes in political support that are often associated with the regular national election cycle should be part of the project's design and addressed through adaptive management of the project team.

	<p>this section gives credibility to the report.</p> <p><i>Weaknesses</i></p> <ul style="list-style-type: none"> No notable weakness noted 	
<p>Quality of 'Effectiveness' Section</p> <p>(i) Availability of Outputs:</p> <p><u>Purpose:</u> to present a well-reasoned, complete and evidence-based assessment of the outputs made available to the intended beneficiaries.</p> <p>To include:</p> <ul style="list-style-type: none"> a convincing, evidence-supported and clear presentation of the outputs made available by the project compared to its approved plans and budget assessment of the nature and scale of outputs versus the project indicators and targets assessment of the timeliness, quality and utility of outputs to intended beneficiaries identification of positive or negative effects of the project on disadvantaged groups, including those with specific needs due to gender, vulnerability or marginalisation (e.g. through disability). 	<p><i>Final report (coverage/omissions):</i></p> <p>The report extensively covers the section as it presents a well-reasoned, complete and evidence-based assessment of the outputs made available to the intended beneficiaries. Specific examples have been given in the report.</p> <p><i>Final report (strengths/weaknesses):</i></p> <p><i>Strengths</i></p> <p>The information is elaborate while the specific external features provided in this section gives credibility to the report.</p> <p><i>Weaknesses</i></p> <ul style="list-style-type: none"> No notable weakness noted 	6
<p>(ii) Achievement of Project Outcomes:</p> <p><u>Purpose:</u> to present a well-reasoned, complete and evidence-based assessment of the uptake, adoption and/or implementation of outputs by the intended beneficiaries. This may include behaviour changes at an individual or collective level.</p> <p>To include:</p> <ul style="list-style-type: none"> a convincing and evidence-supported analysis of the uptake of outputs by intended beneficiaries assessment of the nature, depth and scale of outcomes versus the project indicators and targets discussion of the contribution, credible association and/or attribution of outcome level changes to the work of the project itself any constraints to attributing effects to the projects' work identification of positive or negative effects of the project on disadvantaged groups, including those with specific needs due to gender, vulnerability or marginalisation (e.g. through disability). 	<p><i>Final report (coverage/omissions):</i></p> <p>The report presents a well-reasoned, complete and evidence-based assessment of the uptake, adoption and/or implementation of outputs by the intended beneficiaries. This may include behaviour changes at an individual or collective level.</p> <p><i>Final report (strengths/weaknesses):</i></p> <p><i>Strengths</i></p> <p>The report gives adequate information on the section.</p> <p><i>Weaknesses</i></p> <p>No notable weakness noted.</p>	6
<p>(iii) Likelihood of Impact:</p> <p><u>Purpose:</u> to present an integrated analysis, guided by the causal pathways represented by the TOC, of all evidence relating to likelihood of impact, including an assessment of the extent to which drivers and assumptions necessary for change to happen, were seen to be holding.</p> <p>To include:</p> <ul style="list-style-type: none"> an explanation of how causal pathways emerged and change processes can be shown 	<p><i>Final report (coverage/omissions):</i></p> <p>The report presents an integrated analysis, guided by the causal pathways represented by the TOC, of all evidence relating to likelihood of impact, including an assessment of the extent to which drivers and assumptions necessary for change to happen, were seen to be holding.</p> <p><i>Final report (strengths/weaknesses):</i></p>	6

<ul style="list-style-type: none"> • an explanation of the roles played by key actors and change agents • explicit discussion of how drivers and assumptions played out • identification of any unintended negative effects of the project, especially on disadvantaged groups, including those with specific needs due to gender, vulnerability or marginalisation (e.g. through disability). 	<p><i>Strengths</i></p> <p>The report gives adequate information on the section.</p> <p><i>Weaknesses</i></p> <p>No notable weakness noted.</p>	
<p>Quality of 'Financial Management' Section</p> <p><u>Purpose:</u> to present an integrated analysis of all dimensions evaluated under financial management and include a completed 'financial management' table (may be annexed).</p> <p>Consider how well the report addresses the following:</p> <ul style="list-style-type: none"> • <i>adherence</i> to UNEP's financial policies and procedures • <i>completeness</i> of financial information, including the actual project costs (total and per activity) and actual co-financing used • <i>communication</i> between financial and project management staff 	<p><i>Final report (coverage/omissions):</i></p> <p>The report outlines an integrated analysis of all dimensions evaluated under financial management. Tables are evident to support the financial position of the project.</p> <p><i>Final report (strengths/weaknesses):</i></p> <p><i>Strengths</i></p> <p>The report gives adequate information on the section.</p> <p><i>Weaknesses</i></p> <ul style="list-style-type: none"> • Rating against '<i>completeness</i> of financial information, including the actual project costs (total and per activity) and actual co-financing used' is missing 	5
<p>Quality of 'Efficiency' Section</p> <p><u>Purpose:</u> to present an integrated analysis of all dimensions evaluated under efficiency (i.e. the primary categories of cost-effectiveness and timeliness).</p> <p>To include:</p> <ul style="list-style-type: none"> • time-saving measures put in place to maximise results within the secured budget and agreed project timeframe • discussion of making use, during project implementation, of/building on pre-existing institutions, agreements and partnerships, data sources, synergies and complementarities with other initiatives, programmes and projects etc. • implications of any delays and no cost extensions • the extent to which the management of the project minimised UNEP's environmental footprint. 	<p><i>Final report (coverage/omissions):</i></p> <p>A wide range of efficiency dimensions were covered in this section</p> <p><i>Final report (strengths/weaknesses):</i></p> <p><i>Strengths</i></p> <p>The report gives adequate information on the section.</p> <p><i>Weaknesses</i></p> <p>No notable weakness noted.</p>	6
<p>Quality of 'Monitoring and Reporting' Section</p> <p><u>Purpose:</u> to present well-reasoned, complete and evidence-based assessment of the evaluand's monitoring and reporting.</p> <p>Consider how well the report addresses the following:</p> <ul style="list-style-type: none"> • quality of the monitoring design and budgeting (<i>including SMART results with measurable indicators, resources for MTE/R etc.</i>) • quality of monitoring of project implementation (<i>including use of monitoring data for adaptive management</i>) • quality of project reporting (<i>e.g. PIMS and donor reports</i>) \ 	<p><i>Final report (coverage/omissions):</i></p> <p>The report addresses all the required elements in this section – the information is extensive hence adequate.</p> <p><i>Final report (strengths/weaknesses):</i></p> <p><i>Strengths</i></p> <p>The report gives adequate information on the section.</p>	6

	<p><i>Weaknesses</i> No notable weakness noted.</p>	
<p>Quality of 'Sustainability' Section</p> <p><u>Purpose:</u> to present an integrated analysis of all dimensions evaluated under sustainability (i.e. the endurance of benefits achieved at outcome level).</p> <p>Consider how well the report addresses the following:</p> <ul style="list-style-type: none"> • socio-political sustainability • financial sustainability • institutional sustainability 	<p><i>Final report (coverage/omissions):</i></p> <p>All these aspects are covered in this section, that is, Socio -political sustainability, financial sustainability and institutional sustainability in sub-sections 5.8.1, 5.8.2 and 5.8.3.</p> <p><i>Final report (strengths/weaknesses):</i> <i>Strengths</i></p> <p>The report gives adequate information on the section.</p> <p><i>Weaknesses</i> No notable weakness noted.</p>	6
<p>Quality of Factors Affecting Performance Section</p> <p><u>Purpose:</u> These factors are not always discussed in stand-alone sections and may be integrated in the other performance criteria as appropriate. However, if not addressed substantively in this section, a cross reference must be given to where the topic is addressed and that entry must be sufficient to justify the performance rating for these factors.</p> <p>Consider how well the evaluation report, either in this section or in cross-referenced sections, covers the following cross-cutting themes:</p> <ul style="list-style-type: none"> • preparation and readiness • quality of project management and supervision⁴⁸ • stakeholder participation and co-operation • responsiveness to human rights and gender equality • environmental and social safeguards • country ownership and driven-ness • communication and public awareness 	<p><i>Final report (coverage/omissions):</i></p> <p>All these aspects are covered in the report as stand-alone sections. The cross-cutting themes were extensively covered giving a clear glimpse of the Project's Performance section.</p> <p><i>Final report (strengths/weaknesses):</i> <i>Strengths</i></p> <p>The report gives adequate information on the section.</p> <p><i>Weaknesses</i> No notable weakness noted.</p>	6
<p>Quality of the Conclusions Section</p> <p>(i) Conclusions Narrative:</p> <p><u>Purpose:</u> to present summative statements reflecting on prominent aspects of the <u>performance of the evaluand as a whole</u>, they should be derived from the synthesized analysis of evidence gathered during the evaluation process.</p> <p>To include:</p> <ul style="list-style-type: none"> • compelling narrative providing an integrated summary of 	<p><i>Final report (coverage/omissions):</i></p> <p>The conclusions section outlines the prominent aspects of the performance of the evaluation but it can be improved by deriving the statements from the analysis of evidence gathered during the evaluation process.</p>	5

⁴⁸ In some cases 'project management and supervision' will refer to the supervision and guidance provided by UNEP to implementing partners and national governments while in others, specifically for GEF funded projects, it will refer to the project management performance of the executing agency and the technical backstopping provided by UNEP. This includes providing the answers to the questions on Core Indicator Targets, stakeholder engagement, gender responsiveness, safeguards and knowledge management, required for the GEF portal.

<p>the strengths and weakness in overall performance (achievements and limitations) of the project</p> <ul style="list-style-type: none"> • clear and succinct response to the key strategic questions • human rights and gender dimensions of the intervention should be discussed explicitly (e.g. how these dimensions were considered, addressed or impacted on) 	<p><i>Final report (strengths/weaknesses):</i> <i>Strengths</i></p> <p>The conclusions cover a wide range of aspects which will aid in making similar projects better in the future.</p> <p><i>Weaknesses</i> No notable weakness noted</p>	
<p>ii) Utility of the Lessons:</p> <p><u>Purpose:</u> to present both positive and negative lessons that have potential for wider application and use (replication and generalization)</p> <p>Consider how well the lessons achieve the following:</p> <ul style="list-style-type: none"> • are rooted in real project experiences (i.e. derived from explicit evaluation findings or from problems encountered and mistakes made that should be avoided in the future) • briefly describe the context from which they are derived and those contexts in which they may be useful • do not duplicate recommendations 	<p><i>Final report (coverage/omissions):</i></p> <p>The lessons learnt statements are elaborate and well understood. However they could be improved.</p> <p><i>Final report (strengths/weaknesses):</i> <i>Strengths</i></p> <p>The lessons learnt cover a wide range of issues which will aid in making similar projects better in the future.</p> <p><i>Weaknesses</i></p>	6
<p>(iii) Utility and Actionability of the Recommendations:</p> <p><u>Purpose:</u> to present proposals for specific action to be taken by identified people/position-holders to resolve concrete problems affecting the project or the sustainability of its results.</p> <p>Consider how well the lessons achieve the following:</p> <ul style="list-style-type: none"> • are feasible to implement within the timeframe and resources available (including local capacities) and specific in terms of who would do what and when • include at least one recommendation relating to strengthening the human rights and gender dimensions of UNEP interventions • represent a measurable performance target in order that the Evaluation Office can monitor and assess compliance with the recommendations. <p><u>NOTES:</u></p> <p>(i) In cases where the recommendation is addressed to a third party, compliance can only be monitored and assessed where a contractual/legal agreement remains in place. Without such an agreement, the recommendation should be formulated to say that UNEP project staff should pass on the recommendation to the relevant third party in an effective or substantive manner. The effective transmission by UNEP of the recommendation will then be monitored for compliance.</p> <p>(ii) Where a new project phase is already under discussion or in preparation with the same third party, a recommendation can be made to address the issue in the next phase.</p>	<p><i>Final report (coverage/omissions):</i></p> <p>The recommendations made were for future similar projects and did not include strengthening the human rights and dimensions of UNEP interventions provided. Overall this section could be improved.</p> <p><i>Final report (strengths/weaknesses):</i> <i>Strengths</i></p> <p>A number of recommendations have been given touching on a number of stakeholders which will aid in making similar future projects better.</p> <p><i>Weaknesses</i> Make recommendations that consider the quality criteria provided.</p>	3
<p>Quality of Report Structure and Presentation</p> <p>(i) Structure and completeness of the report:</p> <p>To what extent does the report follow the Evaluation Office structure and formatting guidelines? Are all requested Annexes included and complete?</p>	<p><i>Final report (coverage/omissions):</i> The report follows the Evaluation Office structure and formatting guidelines to a large extent.</p> <p><i>Final report (strengths/weaknesses):</i></p>	5

	<p><i>Strengths</i></p> <p>Formatting guidelines have, for the most part, been adhered to.</p> <p><i>Weaknesses</i></p> <ul style="list-style-type: none"> • Check Annex 2 - Annex 2 presents the Performance rating criteria used in this TE but it is different as it outlines the Stakeholder comments 	
<p>(ii) Writing and formatting: Consider whether the report is well written (clear English language and grammar) with language that is adequate in quality and tone for an official document? Do visual aids, such as maps and graphs convey key information?</p>	<p><i>Final report (coverage/omissions):</i></p> <p>The report is considerably well written; the quality and tone of the language used is acceptable for an official document. Visual aids, such as maps and graphs convey key information.</p> <p><i>Final report (strengths/weaknesses):</i></p> <p><i>Strengths</i></p> <ul style="list-style-type: none"> • Formatting guidelines have, for the most part, been adhered to. • The font style and size has been maintained for the better part of the report <p><i>Weaknesses</i></p> <ul style="list-style-type: none"> • Several typos noted all through the report • Columns on tables should be formatted to make the same neater 	5
OVERALL REPORT QUALITY RATING		5.5

A number rating 1-6 is used for each criterion: Highly Satisfactory = 6, Satisfactory = 5, Moderately Satisfactory = 4, Moderately Unsatisfactory = 3, Unsatisfactory = 2, Highly Unsatisfactory = 1. The overall quality of the evaluation report is calculated by taking the mean score of all rated quality criteria.

At the end of the evaluation, compliance of the evaluation process against the agreed standard procedures is assessed, based on the table below. *All questions with negative compliance must be explained further in the table below.*

Evaluation Process Quality Criteria	Compliance	
	Yes	No
Independence:		
1. Were the Terms of Reference drafted and finalised by the Evaluation Office?	X	
2. Were possible conflicts of interest of proposed Evaluation Consultant(s) appraised and addressed in the final selection?	X	
3. Was the final selection of the Evaluation Consultant(s) made by the Evaluation Office?	X	
4. Was the evaluator contracted directly by the Evaluation Office?	X	
5. Was the Evaluation Consultant given direct access to identified external stakeholders in order to adequately present and discuss the findings, as appropriate?	X	
6. Did the Evaluation Consultant raise any concerns about being unable to work freely and without interference or undue pressure from project staff or the Evaluation Office?		X
7. If Yes to Q6: Were these concerns resolved to the mutual satisfaction of both the Evaluation Consultant and the Evaluation Manager?		
Financial Management:		
8. Was the evaluation budget approved at project design available for the evaluation?	X	
9. Was the final evaluation budget agreed and approved by the Evaluation Office?	X	
10. Were the agreed evaluation funds readily available to support the payment of the evaluation contract throughout the payment process?	X	
Timeliness:		
11. If a Terminal Evaluation: Was the evaluation initiated within the period of six months before or after project operational completion? Or, if a Mid Term Evaluation: Was the evaluation initiated within a six-month period prior to the project's mid-point?		X
12. Were all deadlines set in the Terms of Reference respected, as far as unforeseen circumstances allowed?	X	
13. Was the inception report delivered and reviewed/approved prior to commencing any travel?	X	
Project's engagement and support:		
14. Were the project team, Sub-Programme Coordinator and identified project stakeholders given an opportunity to provide comments on the evaluation Terms of Reference?	X	
15. Did the project make available all required/requested documents?	X	
16. Did the project make all financial information (and audit reports if applicable) available in a timely manner and to an acceptable level of completeness?	X	
17. Was adequate support provided by the project to the evaluator(s) in planning and conducting evaluation missions?	X	
18. Was close communication between the Evaluation Consultant, Evaluation Office and project team maintained throughout the evaluation?	X	
19. Were evaluation findings, lessons and recommendations adequately discussed with the project team for ownership to be established?	X	
20. Were the project team, Sub-Programme Coordinator and any identified project stakeholders given an opportunity to provide comments on the draft evaluation report?	X	
Quality assurance:		
21. Were the evaluation Terms of Reference, including the key evaluation questions, peer-reviewed?	X	
22. Was the TOC in the inception report peer-reviewed?	X	
23. Was the quality of the draft/cleared report checked by the Evaluation Manager and Peer Reviewer prior to dissemination to stakeholders for comments?	X	
24. Did the Evaluation Office complete an assessment of the quality of both the draft and final reports?	X	
Transparency:		
25. Was the draft evaluation report sent directly by the Evaluation Consultant to the Evaluation Office?	X	

26. Did the Evaluation Manager disseminate (or authorize dissemination) of the cleared draft report to the project team, Sub-Programme Coordinator and other key internal personnel (including the Reference Group where appropriate) to solicit formal comments?	X	
27. Did the Evaluation Manager disseminate (or authorize dissemination) appropriate drafts of the report to identified external stakeholders, including key partners and funders, to solicit formal comments?	X	
28. Were all stakeholder comments to the draft evaluation report sent directly to the Evaluation Office	X	
29. Did the Evaluation Consultant(s) respond adequately to all factual corrections and comments?	X	
30. Did the Evaluation Office share substantive comments and Evaluation Consultant responses with those who commented, as appropriate?	X	

Provide comments / explanations / mitigating circumstances below for any non-compliant process issues.

<u>Process Criterion Number</u>	<u>Evaluation Office Comments</u>
11	The evaluation commenced 2 years after project completion.

A number rating 1-6 is used for each criterion: Highly Satisfactory = 6, Satisfactory = 5, Moderately Satisfactory = 4, Moderately Unsatisfactory = 3, Unsatisfactory = 2, Highly Unsatisfactory = 1. The overall quality of the evaluation report is calculated by taking the mean score of all rated quality criteria.