UNEP GEF PIR Fiscal Year 2023

1 July 2022 to 30 June 2023

1- Identification

1.1 Project details

GEF ID	5626	SMA IPMR ID		20453
Project Short Title	Kenya Soda Lakes	Grant ID		S1-32NPL-000005
		Umoja WBS		FL-11207-14AC0003-SB-000689.46
Project Title	Developing the microbial biotechnology industry from Kenya's soda lakes in line with the Nagoya Protocol			
Project Type	Medium Sized Project (MSP)	Duration months	*Planned*	48 months
Parent Programme if child project			*Age*	110.4 months
GEF Focal Area(s)	Biodiversity	Completion Date	*Planned -original PCA*	9 July 2018 for 24 months,
Project Scope	National		*Revised - Current PCA*	3 March 2021 for 36 months
Region	Africa	Date of CEO Endorsement/Approval		13-Dec-13
Countries	Kenya	UNEP Project Approval Date (on Decision Sheet)		
GEF financing amount	USD 913,265	Start of Implementation (PCA entering into force)		20-Aug-14
Co-financing amount	USD 1,751,845	Date of First Disbursement		14-Nov-14
		Date of Inception Workshop, if available		
Total disbursement as of 30 June	USD 600,989	Midterm undertaken?		
Total expenditure as of 30 June	USD 357,033	Actual Mid-term Date, if taken		
		Expected Mid-Term Date, if not taken		Apr-21
		Expected Terminal Evaluation Date		1-Jun-23
		Expected Financial Closure Date		30-Jun-24

1.2 EA: Project description

The Soda Lakes Microbial project on "Developing the microbial biotechnology industry from Kenya's soda lakes in line with the Nagoya Protocol" is a model project funded under the GEF NPIF funds as part of implementation of Aichi target 16 for the ratification and implementation of the Nagoya Protocol.
The Project Objective is "The utilization of microbial genetic resources within the protected Kenyan Soda lakes for research, development and commercialization of industrial enzymes and bio-pesticides for improved resource management and livelihoods in compliance with the Nagoya Protocol on Access and Benefit Sharing". The Main purpose of the soda project is to support the implementation of the Nagoya Protocol on Access and Benefit Sharing through the mainstreaming of the country's ABS legislation while utilizing her microbial genetic resources within the Soda lakes for research, development and commercialization of industrial enzymes and bio-pesticides for improved resource management and livelihoods in compliance with the Nagoya Protocol on Access and Benefit Sharing.
The project is implemented through four components, 9 outcomes and 23 outputs as detailed below:

Component 1: To enhance the legal and regulatory framework on ABS in Kenya
Outcome 1.1. Policy, legal and regulatory frameworks on the country's ABS reviewed in compliance with the provisions of the Nagoya Protocol
Output 1.1.1: Review of existing legislation that govern conservation and sustainable use of genetic resources in light of the implementation of the case study of this project
Output 1.1.2: Reviewed ABS legislation in light of this project presented to County and National governments to facilitate ratification and implementation of the Nagoya Protocol;
Output 1.1.3: At least two joint management plans for the selected soda lakes developed that factor in aspects of benefit sharing from use of genetic resources for research and development;

Outcome 1.2: ABS institutionalized in protected areas as a tool for enhanced conservation and livelihood Improvement
Output 1.2.1. A National bioprospecting steering committee under the National strategy for bioprospecting within and outside protected areas in Kenya established to promote bioprospecting in the soda lakes

1.3 Project Contact

Division(s) Implementing the project	UN Environment Programme Ecosystems Division GEF Biodiversity and Land Degradation Unit Biodiversity and Land Branch	Executing Agency(ies)	UNEP Regional office for Africa
Name of co-implementing Agency	UNEP Ecosystems Division	Names of Other Project Partners	Kenya Wildlife Service (KWS) – lead partner Local communities, University of Nairobi, Jomo Kenyatta University of Agriculture and Technology, Moi University, Kenya Industrial Research and Development Institute, University of Nairobi Science and Technology Park and Jomo Kenyatta University of Agriculture and Technology Enterprises, RIVATEX
TM: UNEP Portfolio Manager(s)	Ersin Esen.	**EA:** Manager/Representative	Erustus Kanga
TM: UNEP Task Manager(s)	Jane Nimpamya	**EA:** Project Manager	Kabaka Watai
TM: UNEP Budget/Finance Officer	George Saddimbah	**EA:** Finance Manager	Joy Hellen Bii
TM: UNEP Support/Assistant	Ruth Igamba	**EA:** Communications lead, if relevant	Priscillar Mumo

2- OVERVIEW OF PROJECT STATUS

2.1 UNEP PoW & UN

TM: UNEP Current Subprogramme(s)	PoW 2014-2015, 2016-2017, 2018-2019 Sub-programme 3: Ecosystems management	**TM:** UNEP previous Subprogramme(s)	PoW 2014-2015, 2016-2017, 2018-2019 Sub-programme 3: Ecosystems management
TM: PoW Indicator(s)	EA (c) Services and benefits derived from ecosystems are integrated with development planning and accounting, particularly in relation to wider landscapes and seascapes and the implementation of biodiversity- and ecosystem related multilateral environmental initiatives Indicator (c) (i) Increase in the number of countries that integrate the ecosystem approach in development planning. POW 2020-21 (a) The health and productivity of marine, freshwater and terrestrial ecosystems are institutionalized in education, monitoring and cross-sectoral and transboundary collaboration frameworks at the national and international levels. (ii) The number of countries and transboundary collaboration frameworks that demonstrate enhanced knowledge of the value and role of ecosystem services with the assistance of UNEP		EA (c) Services and benefits derived from ecosystems are integrated with development planning and accounting, particularly in relation to wider landscapes and seascapes and the implementation of biodiversity- and ecosystem related multilateral environmental initiatives Indicator (c) (i) Increase in the number of countries that integrate the ecosystem approach in development planning. POW 2020-21 (a) The health and productivity of marine, freshwater and terrestrial ecosystems are institutionalized in education, monitoring and cross-sectoral and transboundary collaboration frameworks at the national and international levels. (ii) The number of countries and transboundary collaboration frameworks that demonstrate enhanced knowledge of the value and role of ecosystem services with the assistance of UNEP
EA: UNSDCF/UNDAF linkages	Cuts across the three strategic objectives of UNDAF Kenya 2018 - 2022		
EA: Link to relevant SDG Goals	SDG 1: 1.1; SDG 2:2.4; SDG 11:11.4; SDG 14:14.2, 14c; SDG 15:15.1, 15.5, 15.6, 15.7; SDG 16: 16b; SDG 17:17.6, 17,7, 17.11 and 17.14	**EA:** Link to relevant SDG Targets	SDG 1: 1.1; SDG 2:2.4; SDG 11:11.4; SDG 14:14.2, 14c; SDG 15:15.1, 15.5, 15.6, 15.7; SDG 16: 16b; SDG 17:17.6, 17,7, 17.11 and 17.14

ators

TM: GEF core or sub indicators targeted by the project as defined at CEO Endorsement/Approval, as well as results

2.2. GEF Core or Sub Indic

Indicators	Targets - Expected value			Materialised to date
	Mid-term	End-of-project	Total Target	

Implementation Status 2023 9th PIR

2.3 Implementation status & Risk

	PIR #	Rating towards outcomes (DO) (section 3.1)	Rating towards outputs (IP) (section 3.2)	Risk rating (section 4.2)
FY 2023	9th PIR	MS	MS	L
FY 2022	8th PIR	MS	MS	L
FY 2021	7th PIR	MS	MS	L
FY 2020	6th PIR	S	S	L
FY 2019	5th PIR	S	S	L
FY 2018	4th PIR	S	S	L
FY 2017	3rd PIR	S	S	L
FY 2016	2nd PIR	S	S	L
FY 2015	1st PIR	S	S	L

EA: Summary of status
(will be uploaded to GEF Portal)

Project implementation slowed down during the period 30th July 2020 to 30th June 2021 due to the pandemic. However key activities were undertaken based on the previous commitments that is the implementation of activities under the biodiscovery component , the PSC meeting, Midterm review, monitoring and evaluation and the 10th Nagoya Protocol celebrations including the Launch of the Model ABS management plan . Under the biodiscovery program refining of the potential candidate's products continued including field trials lay out of potential biopesticides in addition to building the capacities of students on the project at various levels ranging from undergraduate, MSC and PhDs. Peer reviewed papers were submitted for publications.

Rating towards outcomes: The rating of outcomes is MS because not much progress has been registered during this period

Rating towards outputs: The rating of outputs is MS because not much progress has been registered during this period.

Overall risk rating: is Low.

nance

EA: Planned Co-finance — Planned Co-finance Total: USD 1,751,845

EA: Actual to date: — Actual to date: 200,494 (11.4%) as of June 2021

2.4 Co-fin

EA: Justify progress in terms of materialization of expected co-finance. State any relevant challenges.	The Partners fulfilled their co-financing obligations in form of in kind and cash. Under the biodiscovery program, the partners bought institution equipment for implementation of the agreed activities including for long term investments. Like Rivatex bought equipment to be used in textile enzyme technology that will utilize those generated from Soda lakes and others. University of Nairobi and KIRDI have bioreactors for enzyme-based upscaling process.

2.5. Stakehc

EA: Date of project steering committee meeting	Aug-20
EA: Stakeholder engagement (will be uploaded to GEF Portal)	The project is implemented on the principals of ABS that is built on stakeholder engagements referred to as Providers and Users partnership /consultative process under the Prior Informed Consent (PIC) and Mutually Agreed Terms (MAT).

2.6. Gender

TM: Does the project have a gender action plan?	No
EA: Gender mainstreaming (will be uploaded to GEF Portal)	Gender mainstreaming has been stated in the Soda lakes project Standard operating procedures (SOP), where it's a priority in all engagements. Women groups as well as women leaders in the County Governments are actively involved in the project. This include recruiting for training where gender balance was achieved for students doing MSc and PhD in pursuit of the project objectives. Women groups were also actively engaged as special interest group in the development of the Lake Bogoria Management plan where community issues were given key consideration including Gender mainstreaming. The Endorois BioCultural Protocol (available here) specifically describes the role of women and the process of their engagement as well as those of people living with disabilities. http://archive.abs-biotrade.info/fileadmin/media/Knowledge_Center/Pulications/BCPs/Endorois-Peoples-Biocultural-Protocol.pdf

2.7. ESSM

TM: Was the project classified as moderate/high risk at CEO Endorsement/Approval Stage?	No	**TM**: Have any new social and/or environmental risks been identified during the reporting period?	No
TM: If yes, what specific safeguard risks were identified in the SRIF/ESERN?		**TM:** If yes, please describe the new risks, or changes	
TM & EA: Has the project received complaints related to social and/or environmental impacts (actual or potential) during the reporting period?	No		
TM & EA: If yes, please describe the complaint(s) or grievance(s) in detail including			

EA: Environmental and social safeguards management (will be uploaded to GEF Portal)	The project is establishing model ABS practical pathways for implementation of Nagoya protocol by utilising local soda lakes microbial resources to develop environmentally friendly products for agriculture and textile industry. The project-built confidence between users and providers through equitable share of benefits and responsibilities on the development pathways thus enhancing the safeguarding

EA: Knowledge activities and products (will be uploaded to GEF Portal)	Knowledge management activities executed through established structures and procedures as defined in the ABS agreements. A culture collection centre forms the backbone for current and future research work. The centre serves as a culture collection for *Please attach a copy of any products*

2.8. KM/Learning

EA: Main learning during the period	Many stories have been attributed to the project with the latest being the successful national celebrations of the 10th Anniversary of the Nagoya Protocol and the launch of the Model Lake Bogoria ABS management plan. The Country used Soda lakes GEF project as a platform to show case its milestones since adoption of Nagoya Protocol. Other projects that are using the model PIC and MAT process developed by the project were also exhibited •https://twitter.com/Kjulybiao/status/1324788033049296897?s=20 •https://mobile.twitter.com/Kjulybiao/status/1324593994228224000 •https://twitter.com/Min_TourismKE/status/1324405165894569991?s=20 •https://www.unep.org/news-and-stories/story/sharing-benefits-kenyas-soda-lakes •https://youtu.be/OFFQZFfLYQU (Nature Justice presentation at ABS Conference) https://www.standardmedia.co.ke/amp/rift-valley/article/2001392414/kenya-to-remember-nagoya-protocol

2.9. Storie

EA: Stories to be shared (section to be shared with communication division/ GEF communication)	During this reporting period, there were no stories generated.

3. RATING PROJECT PERFORMANCE

3.1 Rating of progress towards achieving the project outcomes (Development Objectives)

Project objective and Outcomes	Indicator	Baseline level	Mid-Term Target or Milestones	End of Project Target	Progress as of current period (numeric, percentage, or binary entry only)	EA: Summary by the EA of attainment of the indicator & target as of 30 June	TM: Progress rating
Objective							
The utilization of microbial genetic resources within the protected Kenyan Soda lakes for research, development and commercialization of industrial enzymes and bio-pesticides for improved	Indicators for the objective not available	EA to fill not available	EA to fill not available	EA to fill not available	EA to fill	EA to fill plans are underway to redevelop the project logframe	N/A
Outcome 1							
Outcome 1.1: Policy, legal and regulatory frameworks on ABS upgraded in compliance with the provisions of the Nagoya Protocol	Legal clarity on ABS resulting in increased bioprospecting activities on the Kenyan genetic resources	ABS laws reviewed	Review of ABS legislation fully underway	Reviewed ABS laws		ABS laws reviewed through stakeholders meeting	**MS**
		Stakeholder awareness and development of ABS instruments in progress	PIC, MAT and MTA under development	PIC, MTA and MAT		Partners ABS agreements finalized and being implemented	**MS**
Outcome 1.2: ABS institutionalized in protected areas as a tool for enhanced conservation and livelihood improvement;		Mapping of Kenyan soda lakes	Development of joint management plans that integrate benefit-sharing schemes	Joint management plans that integrate sustainable benefit-sharing schemes for selected soda lakes		Model ABS management plan developed and launched as part of Kenya's milestone products during the 10th Nagoya Protocol Anniversary celebrations.	**S**
	Enhanced benefits and conservation of protected area systems resulting from ABS based projects	No clear structures for local communities to engage on ABS activities	Clear structures for bioprospecting and benefit sharing for protected area systems and local communities linking between users and provider both at National and county level in process	Protected system to be focal points for ABS in the country		Basic structures for ABS transaction established at national, county and community platforms to be actualized within the current legal reviews.	**MS**
				Increased Bioprospecting activities within protected area systems.		Currently we have many bioprospecting activities in the country guided by the existing structures as informed from the number of ABS permits granted. The Government has just funded review of the current Bioprospecting strategy.	**S**
				Trails around two soda lakes.		Nature trails been mapped under the current Lake Bogoria management plan	**MS**

				Benefits from signed ABS agreements in support of		some basic work has been done	**MS**
Outcome 2							
Outcome 2.1: At least 1 potential microbial isolate characterized and deposited at the culture collection center at Jomo Kenyatta University of Agriculture and Technology (JKUAT), the German Collection of Microorganisms and Cell Cultures (Deutsche Sammlung von Mikroorganismen und Zellkulturen – DSMZ) and Verenium Corporation;	Number of potential microorganisms isolated and screened;	Two meetings and one training	Two microorganisms producing bioactive metabolites and enzymes identified	Four microorganisms producing bioactive metabolites and enzymes;		Over 171 microorganisms from soda lakes isolated with potential for biopesticide and industrial enzymes have been collected biut they have not yet been isolated and screened;	**MS**
		Meeting to assess culture collections in the country	Culture collection centre under construction at JKUA	Culture collection Carliz at JKUAT in place;		Pilot Microbial culture collection Centre at JKUAT established and equipped with equipment	**S**
Outcome 2.2: A least 1 enzyme product developed for agro-processing, starch and fuel, textile, food and beverage industries by the participating Kenyan institutions and the private companies (KIRDI, University of Nairobi Science and Technology Park, Rivatex East Africa, and the JKUAT Enterprise Ltd)and Verenium Corporation as the main industrial partner;	Number of microorganisms screened for enzyme production.	Some potential microorganisms already screened and in partner institutions	Pilot production and up scaling of at least potential Microbial candidates and enzyme production underway	One enzyme product;		94 microorganisms isolated and screened for potential enzymes, Probably 5 prioritized for enzyme production	**MS**
	Number of bioactive enzymes characterized;	No bioactive Enzymes have ever been Characterized from Kenya soda lakes;	Pilot production and up scaling of at least potential Microbial candidates and enzyme production underway	One enzyme product;		one industrial textile enzyme under pilot scale testing	**MS**
Outcome 2.3: At least 1 biopesticide for enhanced seed and seedling treatment developed by the participating Kenyan institutions and the private companies (KIRDI, University of Nairobi Science and Technology Park and the JKUAT Enterprise Ltd);	Number of microorganisms screened for secondary metabolite production.	Some potential microorganisms already screened and in partner institutions	Two microbial biopesticides under pilot production by JKUATES and KIRDI enterprises.	One microorganism with potential industrial application;		Over 171 Microbial isolates with potential for biopesticides screened and two under pilot field trials but have not been screened for secondary metabolite production	**MS**
	Number of bioactive compounds characterized	No bioactive compounds have ever been Characterized from Kenya soda lakes	Two bio-pesticide formulations based on isolated compounds under trials and up-scaling	One pure compound		to be done in the coming years	**MS**
Outcome 2.4: A living library of Kenyan Soda lakes microorganisms established at JKUAT;							

	Number of microorganisms isolated.	Database of microbial collections in JKUAT pilot collection available	Personnel for the living library identified and capacities built by DSMZ	A database of Kenya's soda lake microorganisms within JKUAT culture collection		Stock of previous isolates established Database of current isolates in place Training of Microbial culture collection undertaken	S
Outcome 3							
Outcome 3.1: Technology transferred (including equipment, knowhow and training) from DSMZ and Verenium Corporation to local research institutions and protected area systems management	Number of technologies transferred	Training curriculum developed and trainees identified	Negotiations advanced or at least underway on transfer of technology	At least one industrial technology transferred to local institutions		Training for culture collection undertaken IP Audit baseline established Potential technologies in place and negotiations with Industrial partners ,Rivatex and DuDUtech underway but technology transferred to local institutions is not yet well effected	S
Outcome 3.2: An effective bioinformatics system in Kenya at KWS for Soda lakes microbial discovery to act as a system for monitoring andevaluation established;	Functional bioinformatics for protected area system in place;	List of researchers and materials collected	Outlines of a bioinformatics system for bioprospecting in protected areas	A system of monitoring accessed material from protected area for Bioprospecting		A system of monitoring scientific collections established Data base for scientific collections access and utilization in place Protected area system capacities for ABS implementation undertaken .	S
Outcome 4							
Outcome 4.1 ABS agreements developed to build the capacity of the Kenyan authoritiesto engage withusers of genetic resources	Equitable benefit sharing on use of indigenous genetic resources arising from effective partnerships between users and providers	No model ABS agreement Fragmented system on permits for access to genetic resources No clear system for local community engagement in ABS activities	Partnership agreements in place and framework for benefit sharing being actively negotiated	Collaborative framework between the provider and user of soda lakes' genetic resources in place		Model ABS agreement established. Forms basis of the partnership between users and providers Draft guidelines for PIC MAT in place	S

For joint projects and where applicable ratings should also be discussed with the Task Manager of co-implementing agency.

3.2 Rating of progress implementation towards delivery of outputs (Implementation Progress)

Output	Expected completion date	Implementation status as of 30 June 2022 (%) (Towards overall project targets)	Implementation status as of 30 June 2023 (%) (Towards overall project targets)	EA: Progress rating justification, description of challenges faced and explanations for any delay	TM: Progress rating
Under Comp 1					
Outcome 1.1. Policy, legal and regulatory frameworks on the country's ABS reviewed in compliance with the provisions of the Nagoya Protocol					
Output 1.1.1: Review of existing legislation that govern conservation and sustainable use of genetic resources in light of the implementation of the case study of this project					
Activity 1.1.1 Review of existing legislation that governs conservation and sustainable use of genetic resources considering the implementation of the case study of this project	16th February 2015	100	50%	Existing legislations governing ABS and genetic resources were reviewed	S
Output 1.1.2 Undertake a consultative process through workshops between the county, national government and policy makers on reviewed ABS legislation in light of this project, to facilitate ratification and implementation of the Nagoya Protocol	16th August 2015	100	50%	High level consultative workshop was undertaken	S
Output 1.1.3: At least two joint management plans for the selected soda lakes developed that factor in aspects of benefit sharing from use of genetic resources for research and development;					
Activity 1.1.3.1 Identify and map out soda lake areas in the country, select two priority areas and through stakeholder process develop management plans which include aspects of benefit sharing	16th October 2019	95%	50%	The activity been completed, and the Model ABS management plan launched. One management plan for lake Bogoria undertaken in considerations of various factors including the costs and availability of funds .	S
Outcome 1.2: ABS institutionalized in protected areas as a tool for enhanced conservation and livelihood Improvement					
Output 1.2.1. A National bioprospecting steering committee under the National strategy for bioprospecting within and outside protected areas in Kenya established to promote bioprospecting in the soda lakes					
Activity 1.2.1.1 Identify key stakeholders and establish a national bioprospecting steering committee with clear terms of reference	16th April 2020	80%	50%	The PSC recommended the existing PSC platform be reviewed and be adopted as the National Steering committee. This is awaiting the review of the relevant legislations ,policies and guidelines	S
Output 1.2.2 Protected area management capacities on ABS enhanced through education and awareness for sustainable use of soda lakes genetic resources in line with the Nagoya Protocol;					

Activity1.2.2.1 Develop outreach material and disseminate to protected area management through education awareness	16th February 2018	100%	80%	Outreach materials were developed and disseminated	S
Output 1.2.3 Tools for monitoring impact of Bioprospecting projects on conservation and community livelihoods established and operationalized;					
Activity: 1.2.3.1 Together with the national bioprospecting steering committee, through a stakeholder consultative process, develop and launch a bioprospecting toolkit for monitoring the impact of bioprospecting projects on conservation and community livelihoods	16th January 2020	40%	40%	We have a draft manual awaiting inputs informed by ongoing review of relevant legislations.	S
Output 1.2.4 Infrastructure within the soda lakes to enhance research and tourism (e.g Nature trail in Lakes Bogoria, Elementaita and simbi Nyaima) for KWS and adjacent communities improved;	16th August 2019	50%	30%	One management plan for Lake Bogoria has been developed	MS
Activity 1.2.4.1 Map out, procure and construct infrastructure facilities within the soda lakes to enhance research and tourism (e.g Nature trail in Lakes Bogoria, Elementaita and simbi Nyaima) for KWS and adjacent communities;	16th August 2019	50%	50%	This was undertaken alongside the development of the management plan as construction was not allowed under the project. This was reviewed in the budgets revisions to accommodate only one side the Lake Bogoria Management plan	S

Under Comp 2

Component 2: Systematic discovery of natural products for bio-pesticides and industrial enzymes Outcome 2.1: At least 1 potential microbial isolate characterized and deposited at the Culture Collection Centre at Jomo Kenyatta University of Agriculture and Technology (JKUAT) and the German Collection of Microorganisms and Cell Cultures (Deutsche Sammlung von					
Output 2.1.1 At least 500 samples collected at different seasons from the Soda lakes and 20 pure strains isolated with cellulase, protease and Phytase activities for agro-processing, starch and fuel, textile, food and beverage and protein hydrolysis and deposited in culture collection centers at JKUAT and DSMZ;	16th December 2019	85%	50%	171 microorganisms have been isolated Field sampling although continuous as part of ecological monitoring but pure strains with cellulase, protease and Phytase activities for agro-processing, starch and fuel, textile, food and beverage and protein hydrolysis have not been isolated and deposited in culture collection centers.	MS
Activity: 2.1.1.1 Undertake field sampling from the soda lakes at different seasons, isolate microorganisms and screen the microbes for cellulase, protease and phytase activities for agro-processing, starch and fuel, the textile, food and beverage industries, and protein hydrolysis and deposit pure strains in culture collection centers at JKUAT, DSMZ and Verenium Corporation	16th December 2019	85%	50%	Field sampling although continuous as part of ecological monitoring. This activity has been completed and over 171 microorganisms isolated	S
Output 2.1.2 At least 5 isolates producing bioactive secondary metabolites as biopesticides for seed and seedling treatment characterized and deposited in the culture collection centers in JKUAT and DSMZ	14th May 2020	60%	50%	Microbial isolates been characterized and deposited in the culture collection but pesticides have not been produced .	MS

Activity 2.1.2.1 Select, characterize and deposit in the culture collection centres in JKUAT and DSMZ potential isolates producing bioactive secondary metabolites as biopesticides for seed and seedling treatment;	14th May 2020	60%	40%	some microbial isolates been characterized and deposited in the culture collection.	MS
Output 2.1.3 Status of microbial strains in culture collection canters at JKUAT and other partner institutions established and over 200 microbial isolates screened for cellulose degrading and enzyme for detergent and cotton processing	16th February 2018	100%	100%	This activity completed and a stock of previously isolated been identified and screened for potential products.	S
Activity 2.1.3.1 Undertake stock of previously collected microbial strains from the soda lakes held in culture collections at JKUAT and other partner institutions and screen the isolates for cellulose degradation and enzymes for detergent and cotton processing	16th February 2018	100%	100%	This activity completed and a stock of previously isolated been identified and screened for potential products.	S
Outcome 2.2: At least 1 enzyme product developed for agro-processing, starch and fuel, textile, food and beverage industries by the participating Kenyan institutions and the private company (Verenium corporation);					
Output 2.2.1 Optimization of fermentation conditions for large scale production of cellulases, proteases and phytases for industrial production	14th February 2020	45%	45%	Some work has been done but much will be achieved in the subsequent reporting period	MS
Activity 2.2.1.1 Undertake fermentation optimization studies of identified candidates for large-scale production of cellulases, proteases and phytases for industrial production	14th February 2020	45%	65%	Potential candidates been identified and pilot lab optimization taking place	S
Activity; : 2.1.2 Select, characterize and deposit in the culture collection centers in JKUAT and DSMZ potential isolates producing bioactive secondary metabolites as biopesticides for seed and seedling treatment;	14th May 2020	45%	80%	Potential candidates identified and deposited in the pilot culture collection.	S
Output 2.2.2 Formulation and evaluation of the produced enzymes for application in starch and fuel, textile, food and beverage industries together with the local (University of Nairobi Science and Technology Park, KIRDI and Rivatex) and international private company, Verenium Corporation;	16th January 2020	30%	20%	Formulation process on going on candidate's enzymes	MS
Activity 2.2.2 Undertake formulation and evaluation of the produced enzymes for application in starch and fuel, textile, food and beverage industries together with the private companies (KIRDI, Rivatex, University of Nairobi Science and Technology Park, the JKUAT Enterprise Ltd and Verenium corporation	16th January 2020	30%	50%	Formulation process on going on candidate's enzymes	MS
Outcome 2.3: At least 1 biopesticide for enhanced seed and seedling treatment developed by the participating Kenyan institutions and the private companies (University of Nairobi Science and Technology Park and the JKUAT Enterprise Ltd)					
Output 2.3.1 Optimization of fermentation conditions for large scale production of bio pesticides for industrial Production	16th December 2019	45%	35%	Optimization taking place on the candidate biopesticide.	MS

Activity; : 2.3.1.1 Optimize fermentation conditions for large scale production of biopesticides for industrial production;	16th December 2019	45%	65%	Optimization taking place on the candidate biopesticide.	MS
Output 2.3.2 Formulation and evaluation of the produced bio pesticides for application in the seed and horticulture industry together with the private companies (University of Nairobi Science and Technology Park and the JKUAT Enterprise Ltd)	14th May 2020	50%	35%	Formulation and field trials being undertaken	MS
Outcome 2.4: A living library of Kenyan Soda lakes microorganisms established at JKUAT					
Activity; 2.3.2.1 Formulate and evaluate produced biopesticides for application in the seed and horticulture industry together with the private companies (University of Nairobi Science and Technology Park, the JKUAT Enterprise Ltd and KIRDI)	14th May 2020	50%	35%	Formulation and field trials being undertaken	S
Output 2.4.1: Culture Collection Center at Jomo Kenyatta University of Agriculture and Technology (JKUAT) upgraded to a national culture collection to support discovery of potential Soda Lakes microbial products;	16th February 2018	95%	55%	The culture collection established only finish up of systems and link up with national process pending reviews of existing laws.	S
Activity; 2.4.1 Upgrade the culture collection center at Jomo Kenyatta University of Agriculture and Technology (JKUAT) to a national culture collection to support discovery of potential soda lakes microbial products	16th February 2018	95%	95%	The culture collection established only finish up of systems and link up with national process pending reviews of existing laws.	S

Under Comp 3

Component 3: Technology Transfer between resource provider and user operationalized Outcome 3.1: Technology transferred (including equipment, know-how and training) from DSMZ and Verenium Corporation to local research institutions and protected area systems management					
Output 3.1.1 Bioprocess technology for efficient secondary metabolite production from soda lake microorganisms in Place	14th May 2020	15%	50%	The process been initiated as we technologies and potential products identified and on pilot scales.	MS
Activity; 3.1.1.1 Undertake an economic evaluation of the developed bioprocess technologies for efficient secondary metabolite production from the soda lake microorganisms to establish market potential	14th May 2020	15%	50%	The process been initiated as we technologies and potential products identified and on pilot scales.	MS
Output 3.1.2 Improved skills and facilities at the initiated Kenya microbial Strain Depository at JKUAT to serve as a repository for microorganisms and also as a patent deposit	16th November 2017	30%	30%	IP baseline audit been undertaken	

Activity; 3.1.3.1 Assess intellectual property rights (IPR) generated from the project and together with partners seek IPR protection where possible with the Kenya Industrial Property Institute and Patent Corporation Treaty	16th November 2017	30%	30%	IP baseline audit been undertaken	MS
Output 3.1.4 At least 1 product successfully transferred to the private partner and commercialized;	14th May 2020	45%	30%	To be done in the subsequent reporting period	MS
Activity; : 3.1.4 Evaluate and license the developed technologies through appropriate agreements, in compliance with the Nagoya Protocol	14th May 2020	45%	30%	Negotiation with industrial partner on going. Framework ABS agreement in place	MS
Outcome 3.2: An effective bioinformatics system in Kenya at KWS for Soda lakes microbial discovery to act as a system for monitoring and evaluation establish					
Output 3.2.1 Data handling system on collection and transfer of biological specimen within and outside Kenya established;	14th February 2020	45%	45%	Some work has been done but much will be achieved in the subsequent reporting period	MS
Activity; 3.2.1 Identify, install and train personnel on appropriate software systems for monitoring biological specimen collection and movement from Kenya	14th May 2020	90%	90%	Protected area system stakeholder's capacities on ABS compliance enforcement and monitoring in place	MS
Output 3.2.2 A well equipped bioinformatics center established at KWS					
Activity; : 3.2.2 Map out, procure, construct and equip a bioinformatics centre at KWS	16th October 2019	55%	65%	Equipment/computers for bioinformatics and systems for scientific collections in place.	MS
Under Comp 4					
Component 4: ABS agreements developed to build the capacity of the Kenyan authorities to engage with users of genetic resources					
Output 4.1.1. At least 1 ABS agreement between provider (KWS and Soda lakes communities-county government), local Kenyan institutions (KIRDI, Moi University, University of Nairobi Science and Technology Park Ltd and the JKUAT Enterprise Ltd), DSMZ and the industrial partner, Verenium Corporation) resulting from research and development of microbial samples taken from the Soda lakes executed;	16th September 2019	60%	60%	The ABS model agreements in place and being used for ABS activities in licensing and approvals.	S
Activity; 4.1.1.1. Develop, by way of consultation, an ABS agreement in line with Nagoya Protocol on mutually agreed terms between the providers (KWS and the soda lakes' communities' county governments), local Kenyan institutions (KIRDI, Moi University, University of Nairobi Science and Technology Park , JKUAT Enterprise), and DSMZ and the industrial partner, Verenium Corporation	16th September 2019	60%	60%	The ABS model agreements in place and being used for ABS activities in licensing and approvals.	S
Output 4.1.2 Prior Informed Consent (PIC), Mutually Agreed Terms (MAT) and Material Transfer Agreements (MTA) developed and operationalized in line with the Nagoya Protocol;	16th November 2019	55%	55%	Draft Guidelines in place subject to gain from ongoing related legal reviews and stakeholder input.	S

Activity; 4.1.2 Develop key elements of ABS, i.e, Prior Informed Consent (PIC), Mutually Agreed Terms (MAT) and a Material Transfer Agreement (MTA) through stakeholder consultation and operationalize within the project	16th November 2019	55%	55%	Draft Guidelines in place subject to gain from ongoing related legal reviews and stakeholder input	S

Under Comp 5

The Task Manager will decide on the relevant level of disaggregation (i.e. either at the output or activity level).

4 Risk Rating

4.1 Table A. Project management Risk

Please refer to the Risk Help Sheet for more details on rating

	Risk Factor	EA's Rating	TM's Rating
1	Management structure - Roles and responsibilities	Low : Well developed, stable Management Structure and Roles/responsibilities are clearly defined/understood. Low likelihood of potential negative impact on the project delivery.	Low : Well developed, stable Management Structure and Roles/responsibilities are clearly defined/understood. Low likelihood of potential negative impact on the project delivery.
2	Governance structure - Oversight	Low : Steering Committee and/or other project bodies meet at least once a yearand Active membership and participation in decision-making processes. SC provides direction/inputs. Low likelihood of potential negative impact on the project delivery.	Low : Steering Committee and/or other project bodies meet at least once a yearand Active membership and participation in decision-making processes. SC provides direction/inputs. Low likelihood of potential negative impact on the project delivery.
3	Implementation schedule	Low : Project progressing according to original work planand Adaptive management is practiced and regular monitoring. Low likelihood of potential negative impact on the project delivery.	Low : Project progressing according to original work planand Adaptive management is practiced and regular monitoring. Low likelihood of potential negative impact on the project delivery.
4	Budget	Low : Activities are progressing within planned budgetand Balanced budget utilisation including PMC. Low likelihood of potential negative impact on the project delivery.	Low : Activities are progressing within planned budgetand Balanced budget utilisation including PMC. Low likelihood of potential negative impact on the project delivery.
5	Financial Management	Low : Funds are correctly managed and transparently accounted forand Audit reports provided regularly and confirm correct use of funds. Low likelihood of potential negative impact on the project delivery.	Low : Funds are correctly managed and transparently accounted forand Audit reports provided regularly and confirm correct use of funds. Low likelihood of potential negative impact on the project delivery.
6	Reporting	Low : Substantive reports are presented in a timely manner and Reports are complete and accurate with a good analysis of project progress and implementation issues. Low likelihood of potential negative impact on the	Low : Substantive reports are presented in a timely manner and Reports are complete and accurate with a good analysis of project progress and implementation issues. Low likelihood of potential negative impact on the project delivery.
7	Capacity to deliver	Low : Sound technical and managerial capacity of institutions and other project partners and Capacity gaps were addressed before implementation or during early stages. Low likelihood of potential negative impact on the	Low : Sound technical and managerial capacity of institutions and other project partners and Capacity gaps were addressed before implementation or during early stages. Low likelihood of potential negative impact on the project delivery.

If any of the risk factors is rated a Moderate or higher, please include it in Table B below

4.2 Table B. Risk-log

Implementation Status (Current PIR): 9th PIR

Insert ALL the risks identified either at CEO endorsement (inc. safeguards screening), previous/current PIRs, and MTRs. Use the last line to propose a suggested consolidated rating.

Risk	Risk affecting: Outcome / outputs	Risk Rating: CEO ED	PIR 1	PIR 2	PIR 3	PIR 4	PIR 5	PIR 6/MTR	PIR 7	PIR 8	PIR 9/This	Variation respect to last rating: Δ	Justification
Lack of clarity in policy framework on ABS may affect implementation of the project	All outcomes	M	M	M	M	M	M	M	M	M	M	=	
Local communities may not perceive the connection between the project activities and conservation	All outcomes	M	M	M	M	M	M	M	M	M	M	=	
Bioprospecting benefits take time to be realized and, in some cases, it is not clear to determine community beneficiaries	All outcomes	M	M	M	M	M	M	M	M	M	M	=	
The involvement of private sector not party to CBD and Nagoya Protocol may affect compliance	All outcomes	M	M	M	M	M	M	M	M	M	M	=	
The best organism producing a candidate compound is protected by another institution oversees	All outcomes	M	M	M	M	M	M	M	M	M	M	=	
Time taken to realize potential product commercialization and share of benefits is uncertain	All outcomes	M	M	M	M	M	M	M	M	M	M	=	
COVID19 pandemic	All outcomes	L	L	L	L	L	L	L	L	L	L	=	
Consolidated project risk	NA	L	L	L	L	L	L	L	L	L	L	=	This section focuses on the variation. The overall rating is discussed in section 2.3.

4.3 Table C. Outstanding Moderate, Significant, and High risks

*List here only risks from Table A and B above that have a risk rating of **M or higher** in the **current** PIR*

Risk	Actions decided during the previous reporting instance (PIR-1, MTR, etc.)	Actions effectively undertaken this reporting period	Additional mitigation measures for the next periods: What	When	By whom

Lack of clarity in policy framework on ABS may affect implementation of the project	None	None	The government is in the process of reviewing ABS legislation in the country and also the project has factored in elements of harmonizing related incoherence.	Jun-22	KWS
Local communities may not perceive the connection between the project activities and conservation	None	None	The project objectives will be extensively discussed with the communities at the project sites during implementation of the proposed activities through workshops	Jun-22	KWS
Bioprospecting benefits take time to be realized and, in some cases, it is not clear to determine community beneficiaries	None	None	Effective community structures will be established as a platform for managing and utilizing benefits arising from Bioprospecting activities within the soda lakes. Also, measures for both short term and long-term benefits will be factored in the project	Jun-22	KWS
The involvement of private sector not party to CBD and Nagoya Protocol may affect compliance	None	None	Nagoya Protocol advocates use of agreements, PIC, MTA and MAT which are enforceable under the relevant law, in particular, the jurisdiction administering the ABS agreement. The agreements will be drafted by competent legal experts with clarity and in line with all legal provisions.	Jun-22	KWS and competent legal experts
The best organism producing a candidate compound is protected by another institution oversees	None	None	A well-defined MTA and agreement that will state the accession, patentability, depositing and commercialization of candidate microbial strain and derivatives.	Jun-22	KWS
Time taken to realize potential product commercialization and share of benefits is uncertain	None	Communication with communities to manage their expectations	Fast-track field tests for biopesticide products Communication with communities to manage their expectations		

High Risk (H): There is a probability of greater than 75% that **assumptions** may fail to hold or materialize, and/or the project may face high risks.
Significant Risk (S): There is a probability of between 51% and 75% that **assumptions** may fail to hold and/or the project may face substantial risks.
Moderate Risk (M): There is a probability of between 26% and 50% that **assumptions** may fail to hold or materialize, and/or the project may face only modest risks.
Low Risk (L): There is a probability of up to 25% that **assumptions** may fail to hold or materialize, and/or the project may face only modest risks.

Project Minor Amendments

Minor amendments are changes to the project design or implementation that do not have significant impact on the project objectives or scope, or an increase of the GEF project financing up to 5% as described in Annex 9 of the Project and Program Cycle Policy Guidelines.
Please tick each category for which a change occurred in the fiscal year of reporting and provide a description of the change that occurred in the textbox. You may attach supporting document as appropriate.

5.1 Table A: Listing of all Minor Amendment (TM)

Minor amendments	Changes
Results framework	No
Components and cost	No
Institutional and implementation arrangements	No
Financial management	No
Implementation schedule	**Explain in table B**
Executing Entity	No
Executing Entity Category	No
Minor project objective change	No
Safeguards	No
Risk analysis	No
Increase of GEF project financing up to 5%	No
Co-financing	No
Location of project activity	No
Other	No

Minor amendments

5.2 Table B: History of project revisions and/or extensions (TM)

Version	Type	Signed/Approved by UNEP	Entry Into Force (last signiture Date)	Agreement Expiry Date	Main changes introduced in this revision
Original Legal Instrument		20-Aug-14	8/20/2014		None
Amendment 1	Revision	9-Jul-18	7/9/2018		None
Extension 1	Extension	3-Mar-21	7/9/2018		None

GEO Location Information:

The Location Name, Latitude and Longitude are required fields insofar as an Agency chooses to enter a project location under the set format. The Geo Name ID is required in instances where the location is not exact, such as in the case of a city, as opposed to the exact site of a physical infrastructure. The Location & Activity Description fields are optional. Project longitude and latitude must follow the Decimal Degrees WGS84 format and Agencies are encouraged to use at least four decimal points for greater accuracy. Users may add as many locations as appropriate. Web mapping applications such as OpenStreetMap (https://www.openstreetmap.org/#map=4/21.84/82.79) or GeoNames(http://www.geonames.org/) use this format. Consider using a conversion tool as needed, such as: https://coordinates-converter.com Please see the Geocoding User Guide by clicking here(https://gefportal.worldbank.org/App/assets/general/Geocoding%20User%20Guide.docx)

Location Name Required field		Latitude Required field	Longitude Required field	Geo Name ID Required field if the location is not an exact site	Location Description Optional text field	Activity Description Optional text field
Nairobi		-1.27467	36.81178	Nairobi	Nairobi	

Please provide any further geo-referenced information and map where the project interventions is taking place as appropriate. *

[Annex any linked geospatial file]