

GEF - PROJECT IMPLEMENTATION REPORT (PIR)

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UNEP GEF PIR Fiscal Year 2024
Reporting from 1 July 2023 to 30 June 2024

1 PROJECT IDENTIFICATION

1.1 Project Details

GEF ID: 5626	Umoja WBS: SB-000689.46 SB-000689.46.01 SB-000689.46.02 SB-000689.46.03 SB-000689.46.04
SMA IPMR ID: 20453	Grant ID: S1-32NPL-000005,P1-33NPL-000002,P1-33NPL-000027
Project Short Title: Kenya Soda Lakes	
Project Title: Developing the Microbial Biotechnology Industry from Kenya's Soda Lakes in line with the Nagoya Protocol	
Duration months planned:	48
Duration months age:	120
Project Type:	Medium Sized Project (MSP)
Parent Programme if child project:	
Project Scope:	National
Region:	Africa
Countries:	Kenya
GEF Focal Area(s):	Biodiversity
GEF financing amount:	\$ 913,265.00
Co-financing amount:	\$ 1,751,845.00
Date of CEO Endorsement/Approval:	2013-12-04
UNEP Project Approval Date:	2014-08-20
Start of Implementation (PCA entering into force):	2014-08-14
Date of Inception Workshop, if available:	2014-02-14
Date of First Disbursement:	2014-11-14
Total disbursement as of 30 June 2024:	\$ 600,989.00
Total expenditure as of 30 June:	\$ 357,033.00

Midterm undertaken?:	n/a
Actual Mid-Term Date, if taken:	2019-04-28
Expected Mid-Term Date, if not taken:	2021-10-30
Completion Date Planned - Original PCA:	2018-07-09
Completion Date Revised - Current PCA:	2023-06-30
Expected Terminal Evaluation Date:	2025-12-31
Expected Financial Closure Date:	2026-12-31

1.2 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 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; Output 1.2.3 Tools for monitoring impact of Bioprospecting projects on conservation and community livelihoods established and operationalized; 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; 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 Mikroorganismen und Zellkulturen – DSMZ) 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; 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 Output 2.1.3 Status of microbial strains in culture collection center's at JKUAT and other partner institutions established and over 200 microbial isolates screened for cellulose degrading and enzyme for detergent and cotton processing 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 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; 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 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) Outcome 2.4: A living library of Kenyan Soda lakes microorganisms established at JKUAT 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; 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 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 Output 3.1.3 At least 1 technology registered with the Kenya Industrial Property Institute (KIPI) Output 3.1.4 At least 1 product successfully transferred to the private partner and commercialized; 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; Output 3.2.2 A well equipped bioinformatics center established at KWS Component 4: ABS agreements developed to build the capacity of the Kenyan authorities to engage with users of genetic resources Outcome 4.1: A model ABS agreement between provider and user in compliance with Nagoya Protocol in place for Kenya 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; 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;

1.3 Project Contacts

Division(s) Implementing the project	Ecosystems Division
Name of co-implementing Agency	
Executing Agency (ies)	UNEP Regional office for Africa

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
UNEP Portfolio Manager(s)	Johan Robinson
UNEP Task Manager(s)	Jane Nimpamya
UNEP Budget/Finance Officer	George Saddimbah
UNEP Support Assistants	Evelyn Machasio
Manager/Representative	Solomon Kyalo
Project Manager	Erustus Kanga
Finance Manager	Peter Mathenge
Communications Lead, if relevant	Judy Kemboi

2 Overview of Project Status

2.1 UNEP PoW & UN

UNEP Current Subprogramme(s):	Thematic: Nature action subprogramme
UNEP previous Subprogramme(s):	PoW 2014-2015, 2016-2017, 2018-2019, 2020-2021, 2022-2023Sub-programme 3: Ecosystems management
PoW Indicator(s):	<ul style="list-style-type: none"> Nature: (iii) Number of countries and national, regional and subnational authorities and entities that incorporate, with UNEP support, biodiversity and ecosystem-based approaches into development and sectoral plans, policies and processes for the sustainable management and/or restoration of terrestrial, freshwater and marine areas
UNSDCF/UNDAF linkages	Cuts across the three strategic objectives of UNDAF Kenya 2018 - 2022
Link to relevant SDG Goals	<ul style="list-style-type: none"> Goal 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
Link to relevant SDG Targets:	<ul style="list-style-type: none"> 15.5 Take urgent and significant action to reduce the degradation of natural habitats, halt the loss of biodiversity and, by 2020, protect and prevent the extinction of threatened species 15.6 Promote fair and equitable sharing of the benefits arising from the utilization of genetic resources and promote appropriate access to such resources, as internationally agreed

2.2. GEF Core and Sub Indicators

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

Indicators	Targets - Expected Value			Materialized to date
	Mid-term	End-of-project	Total Target	

Implementation Status 2024: 9th PIR

2.3. Implementation Status and Risks

	PIR#	Rating towards outcomes (section 3.1)	Rating towards outputs (section 3.2)	Risk rating (section 4.2)
FY 2024	10th PIR	MS	U	M
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

Summary of status

Project activity slowed down during the period of 30th July 2023 to 30th June 2024 as explained below.

Background:

The project was originally executed by the UNEP Law division and was later transferred to the UNEP Regional office for Africa (ROA). Basing on the recommendations of the MTR for this project, UNEP ROA decided to terminate its execution role of this project and handing it back to the UNEP ecosystem division.

This means that the UNEP ecosystem division had to sign a new PCA with Kenya wildlife Service (KWS) – the actual executing entity on the ground. It is at this time that the Task Manager (TM) discovered that the PCA between KWS and UNEP had expired on 31 August 2019. In addition, KWS had not fully accounted for all the funds they had received and had not even provided all the required reports. Therefore, a new PCA could not be signed unless KWS provided those reports. Meanwhile the project technical focal person and the finance focal person at KWS had also left.

Therefore, during this period, the TM has been working with KWS to make sure that they nominate new project focal persons, and when they were nominated, they were trained/coached on what the project is about and how to do the reports.

As of now the new project staff at KWS are working on the required reports, especially the financial reports including the audit report for the project since 2014 when the project started. Once these reports are provided and approved by our finance unit, then a new PCA will be developed between the UNEP ecosystem division and KWS.

In the meantime, KWs still has some funds, and it has been doing some work like coordinating partners and convening meetings with them. Also, some partners also have some residual funds especially universities and have continued doing their research related work. For example, 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.

However, this work is not significant to increase their rating.

Project Rating

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 U because not much progress has been registered during this period.

Overall risk rating: is M is due noncompliance of reporting requirements that has caused the delay of project implementation.

The main challenge/problem that has caused delay is that KWS has failed to provide the required financial reports to enable us to sign a new PCA. Once KWS provides all the required reports and signs a new PCA, this project will be on course and will be able to deliver its outcomes and outputs effectively. It is highly hoped that in the next reporting period, the project will be heading in the right direction.

2.4 Co Finance

Planned Co-finance:	\$ 1,751,845
Actual to date:	200,494
Progress	<p>Justify progress in terms of materialization of expected co-finance. State any relevant challenges:</p> <p>This cofiance amount is the one that was reported as of 30th Ine 2021. There is low amount of cofiance due to poor reporting by the executing Agency. It is highly hoped that in the subsquent reporing the co-faiance amount will increase.</p> <p>The above reported co-financing , though little, is both in kind and cash from partners described as below:</p> <p>Under the biodiscovery program, the partners bought institution equipment for implementation of the agreed activities including for long term investments.</p> <p>Like Rivatex bought equipment to be used in textile enzyme technology that will utilize those generated from Soda lakes and others. University of Nairobi</p>

	and KIRDI have bioreactors for enzyme-based upscaling process.
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2.5. Stakeholder

Date of project steering committee meeting	2020-08-01
Stakeholder engagement (will be uploaded to GEF Portal)	<p>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).</p> <p>The key stakeholder engagement was the organization for the country’s 10th Celebrations for Nagoya Protocol and the launch of the Model ABS Lake Bogoria Management plan. These brought on board wide range of stakeholders including Development partners, County government, local communities, regulatory academia, and research institute.</p>

2.6. Gender

Does the project have a gender action plan?	No
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

Moderate/High risk projects (in terms of Environmental and social safeguards)	Was the project classified as moderate/high risk CEO Endorsement/Approval Stage? No If yes, what specific safeguard risks were identified in the SRIF/ESERN?
New social and/or environmental risks	Have any new social and/or environmental risks been identified during the reporting period? No If yes, describe the new risks or changes?
Complaints and grievances related to social and/or environmental impacts	Has the project received complaints related to social and/or environmental impacts (actual or potential) during the reporting period? If yes, please describe the complaint(s) or grievance(s) in detail, including the status, significance, who was involved and what actions were taken? NA
Environmental and social safeguards management	The project is establishing model ABS practical pathways for implementation of Nagoya protocol by utilising local soda lakes microbial

	<p>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 the social and economic interests of the local communities and consequently the sustainability of the natural resources. The ABS Lake Bogoria Management Plan has highly been appreciated by all stakeholders as an instrument that brings together the local communities, the County government and other stakeholders for enhanced resource management and optimized benefits. Through the management plan the community monetary benefits have been enhanced from 10% to 25%. One of the salient aspects towards social safeguards is the revived Joint Management Committee for the reserve. The management plan respects the cultural practices of the people in the lake basin, including for instance: allowing communities to graze their cattle in the reserve during times of extreme droughts; and regulated access to natural resources such as papyrus.</p>
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2.8. KM/Learning

<p>Knowledge activities and products</p>	<p>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 samples collected by the project as well as other projects in Kenya.</p> <p>The key knowledge management and products is defined in the Intellectual Property (IP) management as indicated in the Standard Operating Procedures (SOPs) and the IP Audit reports which shows the baseline, research being generated and candidate products for marketplace.</p> <p>The biodiscovery team had various engagements to discuss the potential intellectual assets including media assets and how to utilize within the agreed procedures. Various outreach activities were undertaken. Of significance include the KWS senior management meeting to streamline ABS activities which include permitting process on biological resources, monitoring, compliance and enforcement. There were key recommendations both at national and institutional levels. The management committed to contribute further USD 100,000 to support the development of the digital permitting system for monitoring genetic resources thereby enhancing compliance and enforcement. http://kws.go.ke/content/strategies-unlock-business-potential-biodiversity-wealth . Experiences gained on the project were shared at key national meetings namely on genetic resources and traditional knowledge (https://abs-sustainabledevelopment.net/story/unlocking-kenyas-business-potential-arising-from-the-use-of-its-biodiversity-and-associated-traditional-knowledge/), the country's key permitting institutions meeting, national IP/ABS managers meeting (resolved to develop national IP-ABS guidelines as a basis of research/Universities IP policies to accelerate innovations arising from utilization of genetic resources). The Seychelles genetic resource valorization meeting supported under the UNDP ABS https://abs-sustainabledevelopment.net/story/sustainable-business-in-africa-tools-and-innovations-for-genetic-resources-in-the-pan-african-community-of-practice/ [section will be uploaded into the GEF Portal]</p>
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Main learning during the period	there is no main learning during this reporting period

2.9. Stories

Stories to be shared	<p>The project success and impacts on various sectors has been shared in different gatherings including showcasing at international meetings. Some of these include:</p> <p>Outreach programme: Under the project, various outreach programmes were undertaken. Of significance include the KWS senior management meeting to streamline ABS activities which include permitting process on biological resources, monitoring, compliance and enforcement. There were key recommendations both at national and institutional levels. The management committed to contribute further USD 10,000 to support the development of the digital permitting system for monitoring genetic resources thereby enhancing compliance and enforcement. http://kws.go.ke/content/strategies-unlock-business-potential-biodiversity-wealth.</p> <p>Experiences gained on the project were shared at key national meetings namely on genetic resources and traditional knowledge (https://abs-sustainabledevelopment.net/story/unlocking-kenyas-business-potential-arising-from-the-use-of-its-biodiversity-and-associated-traditional-knowledge/), the country's key permitting institutions meeting, national IP/ABS managers meeting (resolved to develop national IP-ABS guidelines as a basis of research/Universities IP policies to accelerate innovations arising from utilization of genetic resources), Seychelles genetic resource valorization meeting supported under the UNDP ABS https://abs-sustainabledevelopment.net/story/sustainable-business-in-africa-tools-and-innovations-for-genetic-resources-in-the-pan-african-community-of-practice/.</p>
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3 Performance

3.1 Rating of progress towards achieving the project outcomes

Project Objective and Outcomes	Indicator	Baseline level	Mid-Term Target or Milestones	End of Project Target	Progress as of current period (numerical, percentage, or binary entry only)	Summary by the EA of attainment of the indicator & target as of 30 June	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 resource management and livelihoods in compliance with the Nagoya Protocol on Access and Benefit Sharing	Legal clarity on ABS resulting in increased bioprospecting activities on Kenyan genetic resources	ABS laws reviewed Stakeholder awareness and development of ABS instruments in progress Mapping of Kenyan soda lakes	Review of ABS legislation fully underway PIC, MAT and MTA under development Development of joint management plans that integrate benefit-sharing schemes	Reviewed ABS laws PIC, MTA and MAT Joint management plans that integrate sustainable benefit-sharing schemes for selected soda lakes	66.6%	The National ABS laws is not yet finalised. Supported review for existing ABS legislations (The EMCA amendment 2015, WCMA 2013 (now being reviewed), Wildlife policy 2020, Wildlife Strategy 2030) PIC, and MAT finalized and signed. L. Bogoria Joint management plan developed (1 out of 2)	MS
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	30%	ABS laws reviewed through stakeholders meeting	U

Project Objective and Outcomes	Indicator	Baseline level	Mid-Term Target or Milestones	End of Project Target	Progress as of current period (numerical, percentage, or binary entry only)	Summary by the EA of attainment of the indicator & target as of 30 June	Progress rating
Outcome 1.1: Policy, legal and regulatory frameworks on ABS upgraded in compliance with the provisions of the Nagoya Protocol		Stakeholder awareness and development of ABS instruments in progress	PIC, MAT and MTA under development	PIC, MTA and MAT	30%	Partners ABS agreements finalized and being implemented	U
Outcome 1.1: Policy, legal and regulatory frameworks on ABS upgraded in compliance with the provisions of the Nagoya Protocol		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	30%	Model ABS management plan developed and launched as part of Kenya's milestone products during the 10th Nagoya Protocol Anniversary celebrations.	U
Outcome 1.2: ABS institutionalized in protected areas as a tool for enhanced conservation and livelihood improvement;	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	40%	Basic structures for ABS transaction established at national, county and community platforms to be actualized within the current legal reviews.	MS
Outcome 1.2: ABS institutionalized in protected areas as a tool for enhanced conservation and livelihood improvement;				Increased Bioprospecting activities within protected areas systems.	30%	Currently we have many bioprospecting activities in the	U

Project Objective and Outcomes	Indicator	Baseline level	Mid-Term Target or Milestones	End of Project Target	Progress as of current period (numerical, percentage, or binary entry only)	Summary by the EA of attainment of the indicator & target as of 30 June	Progress rating
						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.	
Outcome 1.2: ABS institutionalized in protected areas as a tool for enhanced conservation and livelihood improvement;				Trails around two soda lakes.	30%	Nature trails been mapped under the current Lake Bogoria management plan	U
Outcome 1.2: ABS institutionalized in protected areas as a tool for enhanced conservation and livelihood improvement;				Benefits from signed ABS agreements in support of conservation in place	10%	some basic work has been done	U
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	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;	30%	Over 171 microorganisms from soda lakes isolated with potential for biopesticide and industrial	U

Project Objective and Outcomes	Indicator	Baseline level	Mid-Term Target or Milestones	End of Project Target	Progress as of current period (numerical, percentage, or binary entry only)	Summary by the EA of attainment of the indicator & target as of 30 June	Progress rating
und Zellkulturen – DSMZ) and Verenium Corporation; Outcome 2.4: A living library of Kenyan Soda lakes microorganisms established at JKUAT;						enzymes have been collected but they have not yet been isolated and screened;	
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; Outcome 2.4: A living library of Kenyan Soda lakes microorganisms established at JKUAT;		Meeting to assess culture collections in the country	Culture collection centre under construction at JKUA	Culture collection Centre at JKUAT in place;	65%	Pilot Microbial culture collection Centre at JKUAT established and has been equipped	MS
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;	65%	94 microorganisms isolated and screened for potential enzymes, Probably 5 prioritized for enzyme production	MS
Outcome 2.2: A least 1 enzyme product developed for agro-processing, starch and fuel, textile, food and beverage industries	Number of bioactive enzymes characterized ;	No bioactive Enzymes have ever been Characterized from	Pilot production and up scaling of at least potential Microbial	One enzyme product;	30%	one industrial textile enzyme under	U

Project Objective and Outcomes	Indicator	Baseline level	Mid-Term Target or Milestones	End of Project Target	Progress as of current period (numerical, percentage, or binary entry only)	Summary by the EA of attainment of the indicator & target as of 30 June	Progress rating
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;		Kenya soda lakes;	candidates and enzyme production underway			pilot scale testing	
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;	35%	Over 171 Microbial isolates with potential for biopesticides screened and two under pilot field trials but have not been screened for secondary metabolite production	U
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 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	0%	to be done in the coming years	U
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	75%	Stock of previous isolates established Database of current isolates in	S

Project Objective and Outcomes	Indicator	Baseline level	Mid-Term Target or Milestones	End of Project Target	Progress as of current period (numerical, percentage, or binary entry only)	Summary by the EA of attainment of the indicator & target as of 30 June	Progress rating
						place Training of Microbial culture collection undertaken	
Outcome 2.4: Living library of Kenyan Soda lakes microorganisms established at JKUAT;	Number of microorganisms identified and deposited at JKUAT culture collection centre;	Database of microbial collections in JKUAT pilot collection available	Infrastructure for the living library at JKUAT improved and equipped.	Infrastructure for the living library at JKUAT improved and equipped.	30%	Stock of previous isolates established Database of current isolates in place Training of Microbial culture collection undertaken	MS
Outcome 3.1: Technology transferred (including equipment, knowhow and training) from DSMZ and Verenium Corporation to local research institutions and protected areas 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	50%	Training for culture collection undertaken IP Audit baseline established Potential technologies in place and negotiations with Industrial partners, Rivatex and DuDUtech underway but technology	S

Project Objective and Outcomes	Indicator	Baseline level	Mid-Term Target or Milestones	End of Project Target	Progress as of current period (numerical, percentage, or binary entry only)	Summary by the EA of attainment of the indicator & target as of 30 June	Progress rating
						transferred to local institutions is not yet well effected	
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 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	65%	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 4.1 ABS agreements developed to build the capacity of the Kenyan authorities to engage with users 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	55%	Model ABS agreement established. Forms basis of the partnership between users and providers Draft guidelines for PIC MAT in place	S

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

Component	Output/Activity	Expected completion date	Implementation status as of previous reporting period (%)	Implementation status as of current reporting period (%)	Progress rating justification, description of challenges faced and explanations for any delay	Progress Rating
1 Component 1 - To enhance legal and regulatory framework on ABS in Kenya	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	2026-02-16	50%	50%	Existing legislations governing ABS and genetic resources were reviewed	U
1 Component 1 - To enhance legal and regulatory framework on ABS in Kenya	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;	2025-12-31	50%	50%	Kenya ratified the Nagoya protocol in 2014. the reviewed ABS legislation is yet to be ascertained	U
1 Component 1 - To enhance legal and regulatory framework on ABS in Kenya	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;	2025-12-31	50%	50%	One management plan for lake Bogoria undertaken	U
1 Component 1 - To enhance legal and regulatory framework on ABS in Kenya	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;	2025-12-31	30%	30%	The process of developing the National strategy for bioprospecting within and outside protected areas in Kenya to promote bioprospecting in the soda lakes is under way and it is that strategy that will spell out the establishment of National bioprospecting steering committee	U
1 Component 1 - To enhance	Output 1.2.2 Protected area management capacities on ABS enhanced through education and awareness for sustainable use of soda lakes	2025-12-31	80%	80%	Outreach materials were developed and disseminated	S

Component	Output/Activity	Expected completion date	Implementation status as of previous reporting period (%)	Implementation status as of current reporting period (%)	Progress rating justification, description of challenges faced and explanations for any delay	Progress Rating
legal and regulatory framework on ABS in Kenya	genetic resources in line with the Nagoya Protocol;					
1 Component 1 - To enhance legal and regulatory framework on ABS in Kenya	Output1.2.3 Tools for monitoring impact of Bioprospecting projects on conservation and community livelihoods established and operationalized;	2025-12-31	40%	40%	A draft bioprospecting toolkit (manual) for monitoring the impact of bioprospecting projects on conservation and community livelihoods is in place	U
1 Component 1 - To enhance legal and regulatory framework on ABS in Kenya	Output1.2.4 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	2025-12-31	30%	30%	This was undertaken for Lake Bogoria management only. Work on the other lakes will begin soon.	U
2 Component 2: Systematic discovery of natural products for bio-pesticides and industrial enzymes	Output2.1.1. 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, DSMZ and Verenum Corporation;	2025-12-31	50%	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.	U
2 Component 2: Systematic discovery of natural	Output2.1.2. At least 5 isolates producing bioactive secondary metabolites as biopesticides for seed and seedling treatment characterized and deposited in the culture collection centres in JKUAT and DSMZ;	2025-12-31	60%	50%	Microbial isolates been characterized and deposited in the culture collection but pesticides have not been produced .	U

Component	Output/Activity	Expected completion date	Implementation status as of previous reporting period (%)	Implementation status as of current reporting period (%)	Progress rating justification, description of challenges faced and explanations for any delay	Progress Rating
	products for bio-pesticides and industrial enzymes					
2 Component 2: Systematic discovery of natural products for bio-pesticides and industrial enzymes	Output 2.1.3. Status of microbial strains in culture collection centres at JKUAT and other partner institutions established and over 200 microbial isolates screened for cellulose degradation and enzymes for detergent and cotton processing;	2025-12-16	100%	100%	A stock of previous isolates has been identified and screened for potential products. An analysis report of cellulose degrading and enzyme for detergent and cotton processing is under production	U
2 Component 2: Systematic discovery of natural products for bio-pesticides and industrial enzymes	Output 2.2.1. Optimization of fermentation conditions for large scale production of cellulases, proteases and phytases for industrial production;		45%	45%	Some work has been done but much will be achieved in the subsequent reporting period Potential candidates been identified and deposited in the pilot culture collection as the pilot lab optimization is taking place	U
2 Component 2: Systematic discovery of natural products for bio-pesticides and industrial enzymes	Output 2.2.2. Formulation and evaluation of the produced enzymes for application in starch and fuel, textile, food and beaverage industries together with the private companies (University of Nairobi Science and Technology Park, the JKUAT Enterprise Ltd, KIRD, Rivatex and Verenum Corporation);	2025-12-31	20%	20%	Formulation process on going on candidate's enzymes	U
2 Component	Output 2.3.1. Optimization of fermentation conditions for large scale	2025-12-31	35%	35%	Optimization taking place on the	U

Component	Output/Activity	Expected completion date	Implementation status as of previous reporting period (%)	Implementation status as of current reporting period (%)	Progress rating justification, description of challenges faced and explanations for any delay	Progress Rating
2: Systematic discovery of natural products for bio-pesticides and industrial enzymes	production of biopesticides for industrial production;				candidate biopesticide.	
2 Component 2: Systematic discovery of natural products for bio-pesticides and industrial enzymes	Output 2.3.2. Formulation and evaluation of the produced biopesticides for application in the seed and horticulture industry together with the private companies (University of Nairobi Science and Technology Park, JKUAT Enterprise Ltd and KIRDI);	2025-12-31	35%	35%	Formulation and field trials being undertaken	U
2 Component 2: Systematic discovery of natural products for bio-pesticides and industrial enzymes	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;	2025-12-31	55%	55%	The culture collection center is established only finishing up of systems and linking up with national processes is pending reviews of existing laws.	U
3 Component 3: Technology Transfer between resource provider and user	Output 3.1.1. Bioprocess technology for efficient secondary metabolite production from the soda lake microorganisms in place;	2025-12-31	50%	50%	The process was initiated and the technologies and potential products identified and on pilot scales.	U

Component	Output/Activity	Expected completion date	Implementation status as of previous reporting period (%)	Implementation status as of current reporting period (%)	Progress rating justification, description of challenges faced and explanations for any delay	Progress Rating
	operationalized					
3 Component 3. Technology Transfer between resource provider and user operationalized	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;	2025-12-31	30%	30%	IP baseline audit been undertaken	U
3 Component 3. Technology Transfer between resource provider and user operationalized	Output 3.1.3. At least 1 technology registered with the Kenya Industrial Property Institute;	2025-12-31	0%	0%	this will be done in the subsequent reporting periods	U
3 Component 3. Technology Transfer between resource provider and user operationalized	Output 3.1.4 At least 1 product successfully transferred to the private partner and commercialized;	2025-12-31	30%	30%	Negotiation with industrial partner is ongoing. Framework for ABS agreement in place	U
3 Component 3. Technology Transfer between	Output 3.2.1. Data handling system on collection and transfer of biological specimen within and outside Kenya established;	2025-12-31	45%	45%	Some work has been done but much will be achieved in the subsequent reporting period	U

Component	Output/Activity	Expected completion date	Implementation status as of previous reporting period (%)	Implementation status as of current reporting period (%)	Progress rating justification, description of challenges faced and explanations for any delay	Progress Rating
resource provider and user operationalized						
3 Component 3. Technology Transfer between resource provider and user operationalized	Output 3.2.2. A well-equipped bioinformatics centre established at KWS;	2025-12-31	30%	30%	Equipment/computers for bioinformatics and systems for scientific collections in place.	U
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, Rivatex, 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;	2025-12-31	60%	60%	There is a community ABS model agreements in place and being used for ABS activities in licensing and approvals but at community level by the Endorois community. There is need to upscale it to recourse users.	U
4 Component 4. ABS agreements developed to build the capacity of the	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;	2025-12-31	55%	55%	Draft Guidelines in place subject to gain from ongoing related legal reviews and stakeholder input.	U

Component	Output/Activity	Expected completion date	Implementation status as of previous reporting period (%)	Implementation status as of current reporting period (%)	Progress rating justification, description of challenges faced and explanations for any delay	Progress Rating
Kenyan authorities to engage with users of genetic resources						

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

4 Risks

4.1 Table A. Project management Risk

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

Risk Factor	EA Rating	TM Rating
1 Management structure - Roles and responsibilities	Substantial	Substantial
2 Governance structure - Oversight	Low	Low
3 Implementation schedule	Substantial	Substantial
4 Budget	Low	Low
5 Financial Management	Low	Low
6 Reporting	High	High
7 Capacity to deliver	Moderate	Moderate

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)

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.

Risks	Risk affecting: Outcome / outputs	CEO ED	PIR 1	PIR 2	PIR 3	PIR 4	PIR 5	Current PIR	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	=	
Local communities may not perceive the connection between the project activities	All outcomes	M	M	M	M	M	M	M	=	

Risks	Risk affecting: Outcome / outputs	CEO ED	PIR 1	PIR 2	PIR 3	PIR 4	PIR 5	Current PIR	Δ	Justification
and conservation										
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	=	
The involvement of private sector not party to CBD and Nagoya Protocol may affect compliance	All outcomes	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	=	
Time taken to realize potential product commercialization and share of benefits is uncertain	All outcomes	M	M	M	M	M	M	M	=	
Noncompliance to reporting requirements	All outcomes	L	L	L	L	L	L	H	=	This has been included here during this PIR
Implementation schedule	All outcomes	L						H	↑	
		L	L	L	L	L	L	M	↑	

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

Additional mitigation measures for the next periods

Risk	Actions decided during the previous reporting instance (PIRt-1, MTR, etc.)	Actions effectively undertaken this reporting period	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	31/12/2025	KWS

Risk	Actions decided during the previous reporting instance (PIRt-1, MTR, etc.)	Actions effectively undertaken this reporting period	What	When	By Whom
			has factored in elements of harmonizing related incoherence.		
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	31/12/2025	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	31/12/2025	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	31/12/2025	KWS and competent legal experts

Risk	Actions decided during the previous reporting instance (PIRt-1, MTR, etc.)	Actions effectively undertaken this reporting period	What	When	By Whom
			agreement. The agreements will be drafted by competent legal experts with clarity and in line with all legal provisions.		
The best organism producing a candidate compound is protected by another institution overseas	None	None	A well-defined MTA and agreement that will state the accession, patentability, depositing and commercialization of candidate microbial strain and derivatives.	31/12/2025	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	31/12/2025	KWS
Non compliance to project reporting requirements	UNEP held a series of meeting with KWS. Therefore KWS is now in good position to provide the required reports	UNEP held a series of meeting with KWS. Therefore KWS is now in good position to provide the required reports	UNEP will continue training and supporting the now new project staff of KWS to stick to reporting requirements	31/12/2025	UNEP and KWS

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.

5 Amendment - GeoSpatial

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:	Yes
Financial Management:	No
Implementation Schedule:	
Executing Entity:	Yes
Executing Entity Category:	Yes
Minor project objective change:	No
Safeguards:	No
Risk analysis:	No
Increase of GEF financing up to 5%:	No
Location of project activity:	No
Other:	No

Minor amendments

Originally, the project was being executed by the UNEP Regional Office for Africa (ROA) but it will now be directly executed by KWS. A new PCA will soon be signed between UNEP and KWS. Therefore, the amendments reported down are for the ICA between UNEP ecosystem division and UNEP ROA but in the subsequent reporting it will be the PCA between UNEP and KWS

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

Version	Type	Signed/Approved by UNEP	Entry Into Force (last signature Date)	Agreement Expiry Date	Main changes introduced in this revision
Original ICA between Law division and Ecosystem Division		2014-07-22	2014-08-20	2019-04-30	This was an ICA between Law division and Ecosystem Division
new ICA between UNEP Regional Office for Africa (ROA) and Ecosystem division	Revision	2017-07-21	2017-07-24	2018-12-31	the project was moved from Law division to the UNEP Regional Office for Africa (ROA)
Extension 1	Extension	2018-06-14	2018-07-09	2020-12-31	first extension of the ICA between UNEP Regional Office for Africa (ROA) and Ecosystem division
Extension 2	Extension	2021-03-01	2021-03-03	2023-12-31	second extension of the ICA between UNEP Regional Office for Africa (ROA) and Ecosystem division

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 or GeoNames 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

Location Name	Latitude	Longitude	GEO Name ID	Location Description	Activity Description
Nairobi	-1.27467	36.81178		Nairobi	

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

[Annex any linked geospatial file]