Applicant notifications on access to genetic resources
Application for Access permit
NOTICE TO THE PUBLIC
ENVIRONMENTAL MANAGEMENT AND CO-ORDINATION ACT (No. 8 of 1999)
NATIONAL ENVIRONMENTAL MANAGEMENT AUTHORITY
INVITATION FOR PUBLIC COMMENTS

Pursuant to legal notice No. 160 of Environmental Management and coordination (Conservation of Biodiversity and Resource, Access to Genetic resources and Benefit Sharing) regulations, 2006 the National Environment Management Authority (NEMA) has received application for access permit for the following

ACCESS TO GENETIC RESOURCES
Details of Applicant
Name: Laure Kaiser
Project title
Toward sustainable biological control of the Mediterranean corn borer: from the adaptive mechanisms to the mass release of a new Cotesia species''
Partners / Sponsors / Co-PI
Dr. Paul-Andre' Calatayud- International Centre of Insect Physiology and Ecology (ICIPE) & Institute de Recherche pour le Development (IRD)
Dr. Jean-Michel Drezen -Centre national de la Recherche Scientifique (CNRS) & University of Tours (UoT)/Institute for Research on the biology of the insect (IRBI)
Mr. Jean- Baptiste Thibord-Institut du Vegetal (Arvalis)
''Agence Nationale pour la recherche'' ''Agence Francaise pour la Biodiversite'- Ecophyto''
Activity
Conducting the research and development necessary for future use of the newly described parasitoid species Cotesia typhae nov. sp. as a biocontrol agent against the maize stem borer Sesamia nonagrioides.
Genetic Resource to be accessed
Cotesia typhae species, (Hymenoptera: Braconidae)
Specific Site in which access will be undertaken
Kenya (icipe) and France
Methods to be used
 Host and parasitoid mass rearing with the perspective of industrial production and commercialization
 Sampling of biological materials
 Evaluation of the parasitism potential of cotesia typhae
 Analysis of the reproductive success of genetic, physiological and behavioral components and molecular mechanisms of virulence
 Data collection through GPS coordinates
 Laboratory Methodology
Purpose of Research
 Evaluate risks and benefits of introducing C. typhae in France.
 Identify mechanisms of C. typhae reproductive success and the factors of

variation, by uncovering physiological and behavioral components of this success, the genes involved and their function.
 Test the parasitic efficiency of C. typhae against S. nonagrioides on maize plantations in greenhouses.
 Set up methods for host and parasitoid mass rearing with the perspective of industrial production and commercialization.
 Devote to the scientific coordination and juridical aspects of the project.

Research Beneficiaries

If successful, the biocontrol agent against S. nonagrioides will allow reducing chemical treatment of maize. This project will also contribute to understand behavioral and molecular processes at play in reproductive success and adaptation to new habitats, which are essential components of successful biological control programs.
Fill gaps in the knowledge on the Mediterranean maize borer ecology in France.
It will provide the genome sequence of C. typhae that will enrich the Cotesia database and thus serve the scientific community studying the evolution of different gene families in this genus.
CoteBio will allow to relate data on the reproductive success evaluated in the lab and in semi-field conditions (WP3), which will contribute to fill the gap between lab observations and what happens in real life, a common obstacle in biology.
It will also produce data on parasitoid and host insect responses to variable temperatures, which are invaluable for models of population dynamics incorporating climatic data, currently developed in EGCE in the context of global warming.
Altogether, C. typhae biocontrol would offer maize growers the possibility to produce maize with environmentally safe methods.
This new biological control method would also create new job opportunities in the fields of production and commercialization.

Scientific and technical investments realized in this project would open new avenues for the production of other larval parasitoids that are interesting for their host specificity, like
Cotesia glomerata a parasitoid of cabbage Lepidoptera pests (Pieridae).

ACCESS TO GENETIC RESOURCES

Details of Applicant

Name: Meredith C. Van Acker, Ph.D.

Project title

Tracking avian, bat, and livestock movement to infer pathogen transmission in Nairobi, Kenya

Partners / Sponsors / Co-PI

Dr. James Hassell
Dr. Jared Stabach
Dr. Eric Fèvre
Dr. Titus Imboma
Dr. Paul Webala
National Museum of Kenya (NMK)
Wildlife Research Training Institute (WRTI)
Activity
We aim to trap, sample, and deploy movement and contact tracing units on birds, bats, and
livestock.
Genetic Resource to be accessed
Tracking avian, bat, and livestock movement to infer pathogen transmission in particular,

house sparrows (Passer domesticus), Marabou storks (Leptoptilos crumeniferus), Wahlberg's
epauletted fruit bat (Epomophorus wahlbergi) and the straw-colored fruit bat (Eidolon helvum).
• E. helvum: 53 total bats divided across 18 sites = 3 bats per site.
• E. wahlbergi: 95 total bats divided across 18 sites = 6 bats per site.
• P. domesticus: 77 total sparrows divided across 18 sites = 5 sparrows per site.
• L. crumeniferus: 91 storks divided across 3 sites = 30 storks per site.
• Pigs: 64 pigs divided across 18 sites = 4 pigs per site.
• Chickens: 65 total chickens divided across 18 sites = 4 chickens per site.

• Cattle: 64 cows divided across 18 sites = 4 cows per site.
• Goats: 64 goats divided across 18 sites = 4 goats per site.

Specific Site in which access will be undertaken
Nairobi, Kenya
Methods to be used

- Sampling and Tagging Strategy
- Location Data Collection using GIS
- Bat Sampling & Capture
- Power Analysis & Sampling Design
- Laboratory Methodology

Project duration
October 2022 – August 2026
Purpose of Research
The main objective is to collect biological samples for pathogen screening and deploy proximity
sensors and GPS tags on live birds, bats, and livestock to;
(1) Identify areas with increased transmission of zoonotic pathogens between reservoir hosts
(bats and birds) and intermediate hosts (livestock) across an urbanization gradient and at select
urban-wildland interfaces, and
(2) Characterize the movement patterns and proximity between birds, bats, and livestock.
Together this data will be used to construct contact and transmission networks between animals
to describe high risk interfaces for humans in Nairobi, Kenya.
Research Beneficiaries
The research aims to trap, sample, and deploy movement and contact tracing units on birds, bats,
and livestock to inform decision makers such as.NGOs, researchers, and national agencies

ACCESS TO GENETIC RESOURCES
Details of Applicant
Name: Johanneke Dinie Hemmink
Project title
Next generation vaccines for the control of African swine fever”

Partners / Sponsors
Clinglobal limited
Phibro animal health holdings,inc

MBFT therapeutics
Base immune
Activity
Development of vaccine against African Swine Fever (ASF)
Genetic Resource to be accessed
Sus scrofa domesticus (Domestic pig)
Specific Site in which access will be undertaken
International Livestock Research Institute (ILRI), Nairobi campus
Methods to be used
Nanovaccine Technology
Project duration
October 2023 to September 2025
Purpose of Research
The aim of this project is to develop a safer next generation African swine fever vaccine. The candidate antigens, known to induce cellular immune responses will be delivered using a variety of existing and novel antigen delivery systems.
Research Beneficiaries
Findings of this project will be reported to commercial partner in a final study report

ACCESS TO GENETIC RESOURCES

Details of Applicant

Name: Mr. Juma Kibisu

Project title
Environmental Sampling to Study the Impact of Regenerative Farming on Biodiversity in Coffee Plantations in Kenya
Sponsor
Techno Serve.
Activity
Non-destructive collection of soil and water samples
Genetic Resource to be accessed
Water and Soil samples
Specific Site in which access will be undertaken
Kirinyaga County.
Methods to be used
Sampling will be done in Coffee farms, intact forest habitat and Staple cropland.
Project duration
August 31, 2025
Purpose of Research
1. To compare the richness and abundance in micro- and macro fauna between coffee farms with high and low levels of regenerative practices adopted.
2) To benchmark the biodiversity on coffee plantations with the richness found in nearby intact habitats and on cereal croplands.
3) To assess the impact of regenerative farming practices on the richness and abundance of pollinators and predators higher up in the food chain.
4) To evaluate the effectiveness of regenerative farming practices in enhancing biodiversity.
Research Beneficiaries

1. Enhanced biodiversity: The study will provide insights into how regenerative farming practices can improve biodiversity, contributing to healthier ecosystems. By engaging with the community, the project aims to promote sustainable agricultural practices and contribute to the conservation of biodiversity in the region.
2. Sustainable agriculture: Findings will support the promotion of sustainable farming practices, potentially improving coffee yield and quality.
3. Informed policy making: Data-driven recommendations will aid policymakers in developing strategies to promote regenerative farming.
4. Increased coffee incomes: Scientific evidence for a positive impact of regenerative farming practices on the local biodiversity richness and abundance would allow regenerative coffee farms may to charge a premium to customers, boosting the local economy.

ACCESS TO GENETIC RESOURCES

Details of Applicant

Name: Boniface Nyarega

Project title

Comprehensive sampling of the Ledebouriinae (Scilloideae, Asparagaceae) in Africa

Sponsor

Oklahoma State University.

Activity

Additional samples from across the distribution of the Ledebouriinae to be collected to better resolve the phylogenetic relationships within the group as well as to improve the understanding of fine scale biogeographical processes

Genetic Resource to be accessed

Ledebouriinae (Scilloideae, Asparagaceae)

Specific Site in which access will be undertaken

Kwale, Kitui, Makueni, Taita Taveta, and Trans Nzoia Counties.

Methods to be used

Seeds, leaves, live bulbs and tubers.

Project duration

November 2024 – May 31, 2025

Purpose of Research

1. To collect living organisms and herbarium Ledebouriinae from across sub-Saharan Africa
2. Gather DNA sequence data for phylogenomic and population genomic analysis
3. Build a living collection of Ledebouriinae at Oklahama State University for detailed studies
4. Build upon and further collaborations with researchers at local Universities and herbaria

Research Beneficiaries

Scientists and students will benefit from the improved collections of Ledebouriinae that will be housed in the National Museums of Kenya (NMK), Herbier National du Gabon (HNG), National Herbarium of Cameroon (HCN), National Herbarium of Tanzania (NHT), the National Herbarium (US), and Oklahoma State University (OKLA). TYPE specimens of all newly described species will be deposited in NMK, HNG, HCN, and NHT. DNA voucher specimens reported in NCBI GenBank will be linked to herbarium specimens housed at these institutions, further increasing their value. Improved living collections will allow for ex-situ conservation of potentially important species and allow for deeper genomic (i.e., whole genome sequencing) and morphological investigations by the lead and PI and other researchers..

ACCESS TO GENETIC RESOURCES
Details of Applicant
Name
Prof. Samuel Thumbi
Project title
Identification of factors influencing zoonotic transmission of Middle East Respiratory Syndrome Coronavirus (MERS-CORONAVIRUS) in Kenya
Objectives of the Research
To understand the fundamental ecological, epidemiological and molecular factors that influence zoonotic transmission of MERS-CoV to humans and prevent future epidemics. This study will establish diagnostic and research infrastructure for MERS-CoV at the University of Nairobi to enhance early detection and control of MERS outbreaks as well as increase the capacity for MERS –CoV research in the region through PhD training and post-doctoral research fellowship
Methods to be used
Blood samples will be collected from 480 high-risk individuals presenting themselves in the study facility with history of severe ling infections and contact with dromedary camels for testing of MERS-CoV Using PCR. Respiratory and blood samples will be collected from 500 juvenile and adults camels and tested for MERS-CoV and virus isolation for positive cases. The serological testing algorithm will include a MERS-CoV antibody ELISA or seraSpot and confirmation by recombinant MERS-CoV spike protein-based immunofluorescence test, virus neutralization test and IGRA
Sponsor/Collaborators
German research council (DFG)
Specific research questions
1. Are there any undetected human cases in Kenya?
2. How does dromedary migration influence MERS-CoV evolution and virus outbreaks or transmission to humans?
3. Are genetic or phenotypic difference between African and Arabic MERS-CoV variants a reason for different epidemiology?
Genetic Resource to be accessed
Whole virus of Middle East Respiratory Syndrome Coronavirus (MERS-CoV)
Specific Site in which access will be undertaken
Isiolo County camel abattoir, Isiolo County
Project duration.
Expected commencement date 2 nd September 2024
Research Purpose
To determine the undetected human cases of MERS-CoV in Kenya and list the factors associated with the transmission if zoonotic disease to humans.

DETAILS OF THE APPLICANT:
Dr. Jens Zinke
Research assistant professor, UWA/AIMS
University of Western Australia, 35 stirling Highway – WA 6009 crawley.
PROJECT TITTLE:
Evaluating Current Responses and Projecting the Effects of Climate Change on WIO and Reef Ecosystem from Historical Variability.
SPONSOR:
The project is supported by a WIOMSA MASMA grant and the advanced Geochemical Facility for Indian Ocean Research at the University of Western Australia in collaboration with Stanford University (US) and RWTH Aachen (GERMANY)

ACTIVITY:
Drilling of cores from living massive porites sp. Corals along a transect covering Mombasa, Malindi and Tana Coral Reefs.
Sample coral fragments from ancient Swahili ruins to date the Swahili settlements precisely and to simultaneously reconstruct the climate that prevailed during the various settlement periods for the past 1000 years.
The primary objective is to determine the seasonal variability in sea surface temperature (SST), the hydrological balance and sediment river discharge due to climate changes, foremost of year and decadal-scale variability. The climate baseline includes hydrological re-organization during e.g. the medieval warm period around 800-1200 AD, the Little Ice Age around 1550-1850 AD.

METHODS TO BE USED
Use commercially available hand-held pneumatic air tool (RODCRAFT) with a working pressure of 6 bars. One dive cylinder of 220 bars is needed to drill 30cm of coral core section. Each 30cm core section is broken at the base to remove the single pieces. The drill holes in the massive corals will be plugged with concrete cylinders to prevent bio-eroding organisms to damage and weaken the corals.
The element analysis will be done at the advanced Geochemical Facility for Indian Ocean Research (AGFIOR) at the University of Western Australia in Perth and at the RWTH Aachen in Germany.
Stable isotopes will be measured at Stanford University (US) in the lab of Prof. Rob Dunbar.

PROJECT DURATION
13th June 2014 to 31st may 2017

PURPOSE OF THE RESEARCH:
The study proposes to examine the spatial and temporal environmental changes affecting coastal ecosystems and livelihoods in the western Indian Ocean on a historical time scale covering the last 1000 years.

DETAILS OF THE APPLICANT:
Prof. Susan Claire Alberts
Department Of Biology
Duke University, 2813 Mcdowellrd-27705 Durham,Nc.

PROJECT TITTLE:
Research on ***Demography and behavior of baboons in Amboseli Ecosystem***, Kenya

ACTIVITY:
Designing sampling protocols and analysis of samples that include blood, feaces, hair and tissues from the study populations of baboons in Amboseli Ecosystem.

PROJECT DURATION
11th September 2015 to 30th September 2018

PURPOSE OF THE RESEARCH:
The study will generate data and information to enhance conservation and management of species in Amboseli Ecosystem

DETAILS OF THE APPLICANT:

Dr. Daniel Rubenstein
Department Of ecology and evolutionary biology
Princeton University
25 East Frank Line Road, Pennington, New Jersey, USA 08534

PROJECT TITTLE:

Research on ***Wildlife behavior, ecology and ranging about vegetation, predation and livestock in the greater Laikipia-Samburu ecosystem***.

ACTIVITY:

I am collecting fecal specimens from a variety of wildlife species including equine, bovine, elephant, hippopotamus, caprine, porcine, murine, canine, reptile, feline, and laporidae species.
They will be collected non-invasively after the animal has deposited the feces. The feces will be used for DNA analysis to identify the specific species fed upon.
A sample of the collected feces to be thoroughly dried and analyzed for nutrients contents. Sample of the vegetation to be collected as baseline reference, which will be similarly dried and tested for nutrients.

METHODS TO BE USED

Deploy 16 radio collars, divided evenly between the two species, and between the sexes, and distributed across the geographic area where population survey is conducted.
Use permutation tests to identify differences between the two species in their movement responses to bottom-up, top-down, and competitive forces. Used an array of statistical techniques to learn much from the rich data set primarily focusing on permutation tests and Bayesian Monte Carlo Approaches.
Test the balance between forage and water use by measuring various spatiotemporal statistics relating to water use and proximity, including distance from water, temporal correlations in such distances, and interval between successive visits to water.

PROJECT DURATION

The project will run for 5 years

PURPOSE OF THE RESEARCH:

The study proposes to investigate the forces shaping interindividual interactions as well as interspecies interactions as affected by bottom-up factors (food and water), top-down factors (predation and diseases) , and side-ways factors (completion fir resources and mutualism) , among the community of herbivorous in central Kenya.

NOTE:

The full documentation of the proposed activities is available during working hours at national environmental authority (NEMA) headquarters, popo road, off Mombasa road, P.O. BOX 67839-00200 Nairobi, Tel 020-2183718. Email: dgnema@nema.go.ke Web : www.nema.go.ke

Prof. Geoffrey Wahungu
Director General
National Environment Management Authority

ACCESS TO GENETIC RESOURCES

Details of Applicant: Finote Aster Gijsman Kelemu

Project title

Disentangling Ecological Cascades. How the Loss of Megafauna affect Dung Beetle Food Webs and Ecosystem Services in African Savanna.

Sponsor

Rufford Foundation (6,000 Euros) and the Princeton Institute for International and Regional Studies (5,200 Euros).

Activity
Disentangling Ecological Cascades.
Genetic Resource to be accessed
Dung Beetles (Coleoptera: Scarabaedae) (Tissues, Microbial gut contents).
Specific Site in which access will be undertaken
Mpala Research Centre, Laikipia, Kenya (0^0 17' N 37^0 52' E)
Methods to be used
Pitfall traps consisting of cups buried flush with the ground and baited with 20g of fresh herbivore dung.
Project duration
July 2023-2025
Purpose of Research

1. Characterize Dung Beetle communities across seasons and environmental gradients to; Establish which species of dung beetles are present at Mpala Research Center, Describe dung beetle food preferences across seasons and environmental gradients to understand patterns of community assembly and Facilitate dung beetle taxonomy and species identification by creating a barcode library of specimens collected at Mpala Research Center.
2. Uncover the chemical mechanisms driving Dung Beetle interactions with Large Mammalian Herbivores to; Characterize the odor profiles of LMH dung and identify diagnostic chemicals and assess the attractiveness of dung and their diagnostic odors to dung beetles.
3. Examine the effects of species richness on species-mediated ecological processes to; Evaluate ecosystem services (dung removal, nutrient cycling) provided by dung beetle assemblages of different sizes (i.e., species numbers).

The research aims at understanding of the structure and composition of dung beetle communities in African savannas.

ACCESS TO GENETIC RESOURCES
Details of Applicant: Charles Kivasu Maingi
Project title
Social and Environmental Factors Affecting Fecal Glucocorticoids in Wild Female Tana River Mangabeys (*Cercocebus galeritus*).
Sponsor
Support from the Rutgers University (Internal funding).
Activity
Social and Environmental Factors Affecting Fecal Glucorticoids.
Genetic Resource to be accessed
Wild Female Tana River Mangabeys (Fecal samples).
Specific Site in which access will be undertaken
Lower Tana River forest fragments, Tana River Primate National Reserve.
Methods to be used: Habituation of groups and follow-up where samples will be collected non-invasively - Opportunically once feaces are dropped from a known individual.
Project duration

Saturday, July 01, 2023

Purpose of Research

1. Determine the effect of environmental factors on the social behaviors of female Tana River Mangabeys.
2. Determine effect of social behavior on the fecal glucocorticoids (GCs) metabolites levels among the Tana River Mangabeys.
3. Determine effect of reproductive state on the seasonal variation of fecal GCs metabolites of female individuals.

The research aims at understanding the social and environmental factors affecting Fecal Glucocorticoids in Tana River.

ACCESS TO GENETIC RESOURCES

Details of Applicant

Name: Dr. Ben Jonathan Evans

Project title

Sex chromosomes of the Marsabit Clawed frog, *Xenopus borealis* and other insights into frog diversity in Kenya.

Sponsor

Natural Sciences and Engineering Research Council of Canada.

Activity

Sex chromosomal determination in frogs *Xenopus borealis*.

Genetic Resource to be accessed

Frogs (*Xenopus borealis*).

Specific Site in which access will be undertaken

Taita Taveta, Kwale and Kakamega.

Methods to be used

Baited traps made from buckets, and hand held nets.

Project duration

June 1, 2022 – May 31, 2032

Purpose of Research

Study how sex determination works in *X. borealis*.

Contribute to understanding and documentation of amphibian (frog) diversity in Kenya.

The research aims at studying and understanding sex chromosomes in frogs.

ACCESS TO GENETIC RESOURCES

Details of Applicant

Name Dr. Nicholas Pilfold

Project title

Social and Environmental Factors Affecting Fecal Glucocorticoids in Wild Female Tana River Mangabeys (*Cercocebus galeritus*).

Sponsor

Zoological Society of San Diego d/b/a San Diego Zoo Wildlife Alliance (SDZWA).

Activity

Integrating ecological and social science into community- based conservation.

Genetic Resource to be accessed

African Leopard (*Panthera pardus pardus)*

Specific Site in which access will be undertaken

Laikipia, Isiolo and Samburu counties.

Methods to be used

Non- invasive collection in the environment and immobilization.

Project duration

September 2023 – August 2024

Purpose of Research

1. Mitigate Human Leopard conflicts in Northern Kenya's rangelands.

The research aims at understanding the drivers of Human- Wildlife conflicts.

ACCESS TO GENETIC RESOURCES
Details of Applicant
Name :Paul Odhiambo Mireji
Project title
Expanding the Toolbox for Tsetse control in Kenya.
Sponsor
National Institutes of Health - National Institute of Allergy and Infectious Diseases (NIH-NIAID), (Grant No: R01AI169503)
Activity
Tsetse control in Kenya.
Genetic Resource to be accessed
Monitor Lizards, Bush Pigs, Warthogs, Antelopes and other bovines and angulates
Specific Site in which access will be undertaken
Ndere Island National Park, Shimba Hills National Reserve, Arabuko Sokoke National Reserve
Methods to be used
Bait traps.
Project duration
Friday, September 01, 2023
Purpose of Research

1. Expand the toolbox available for tsetse population control.
2. Develop Decision Support System (DSS) to monitor tsetse transmitted disease risk in Kenya.

The research aims at controlling tsetse fly transmitted diseases in Kenya.

ACCESS TO GENETIC RESOURCES

Details of Applicant
Name :Save The Elephants
Project title: Elephant Program of Save The Elephants.
Sponsor: Save The Elephants
Activity
Tracking the African Elephant through collaring.
Genetic Resource to be accessed
Elephants
Specific Site in which access will be undertaken
Samburu County, Marsabit County, Meru County, Laikipia County, Taita Taveta County, Kajiado County, Isiolo County
Methods to be used
Elephant Immobilization.
Project duration
Continuous
Purpose of Research

Determine the eco-evolutionary causes underlying the peculiarity of elephant social and reproductive behaviors.

Determine the environmental and anthropogenic factors affecting large-scale elephant movements in the Samburu-Laikipia and Tsavo ecosystems

Investigate the impact of human activities as drivers of elephant population dynamics, with special attention to illegal killings due ivory poaching and human-elephant conflicts, among other objectives.

The research aims at developing viable and innovative long term strategies for Elephant conservation.

ACCESS TO GENETIC RESOURCES
Details of Applicant
Name
Prof. Marina Ann Cords
Project title
The Kakamega Monkey Project: Blue monkey population monitoring for life history and social behavior.
Sponsor
None
Activity
Monitoring the study population, including the life history and behavioral trends of individual animals, in the unique ways possible when a population has a substantial history of study.
Genetic Resource to be access
Blue monkey
Specific Site in which access will be undertaken
Kakamega forest station, Kakamega County
Methods to be used
Observational data collection
Project duration
Monday, January 15, 2024 to 2025
Purpose of Research
1. To enhance understanding of the reproductive biology and life history of Kakamega Forest blue monkeys, including how these biological traits change with age, social circumstances and environment.
2. To enhance understanding of the extent and significance of social variation, both between and within groups, focusing on group size and within-group variation in social profiles, and to see how such factors influence reproduction and survival.
3. To document rare but important social changes in the study animals and the groups in which they live, such as group fissions, migrations and dynamic male residence patterns; this documentation may contribute to Goals 1 and 2.

ACCESS TO GENETIC RESOURCES
Details of Applicant
Name
Regina Wamuyu Kihagi
Project title
Phytochemical and pharmacological assessment of isolates from Kenyan medicinal plants.
Sponsor
KAAD
Activity
To evaluate the phytochemicals and screen for anticancer and neuropharmacological

activities of isolates extracted by ligand from the selected Kenyan medical plants.
Genetic Resource to be access
All plant parts: seeds, leaves, fruits, stem and root bark (Craterispermum schweinfurthii, Vismia orientalis)
Specific Site in which access will be undertaken
Kakamenga Forest station
Methods to be used
Sample collection of seeds, stem, leaves and fruits.
Project duration
June, 2023 to end June, 2024
Purpose of Research
To determine the anticancer and neuropharmacological activities of crude extracts of selected plant species from Kenyan flora
To determine the structures of the compounds isolated by chromatographic method from extracts of selected plant species using spectroscopic methods.
To design nanoparticles from human serum albumin for ligand fishing of compounds from the extracts of selected Kenyan flora.
To determine the anticancer and neuropharmacological activities of the compounds isolated by chromatographic techniques and by ligand fishing.

ACCESS TO GENETIC RESOURCES
Details of Applicant
Name :**Ms Maria Gorreti Onyango**
Project title
Developng aedes aegypti saliva barcodes as a risk assessment tool for dengue outbreaks in Kenya
Sponsor
American Society of Tropical Medicine and Hygiene
Activity
To assess the prevalence of Dengue virus field-infected mosquitoes in Busia, Mombasa, Nairobi and Lodwar.
Genetic Resource to be access
Aedes species mosquitoes
Specific Site in which access will be undertaken
Mombasa and Busia
Methods to be used
BG sentinel trapping
Project duration
January 2024 to December 2024
Purpose of Research
To determine the transmission efficiency for Dengue virus of mosquito population from these regions and to profile the salivary microbiome of both mosquito population and associate this to the Dengue virus transmission patterns of those regions.
ACCESS TO GENETIC RESOURCES
Details of Applicant
Name
Dr. Anna Lacasta
Project title
Analysis of African swine fever (ASFV) spread model and immune response of warthog against ASFV infection
Objectives of the Research
1. To evaluate the cellular immune response of ASF resistant warthogs and compared

to susceptible domestic pigs
2. To analyze the composition of feacal microbiota of warthogs and compare with domestic pigs to identify key pig health-improving bacteria in the African continent
Methods to be used
For all animals, peripheral blood mononuclear cells (PBMCs) will be isolated from blood in the presence of anticoagulant, cell populations will be characterized by means of flow cytometry and subjected to in vitro infection with ASFV and the transcriptomics evaluated via RNAseq and RT-qPCR at different time points after infection. Blood samples will be also used to extract serum to perform routine assays, such as ELIZA to detect virus and anti-ASFV antibodies, antigen screening and virus neutralization assay (VNA). Faecal samples will be used to isolate DNA and sequencing to identify and isolate key bacteria with potential pig health benefits in Africa
Sponsor
Rural Development Administration (RDA) of Republic of Korea
Genetic Resource to be accessed
Sus scrofa domesticus (domestic pigs) and Phacochoerus africanus (warthog)
Specific Site in which access will be undertaken
Nairobi and Machakos Counties
Project duration.
Expected to commence October 2024 to end December 2025
Research Purpose
To gather information on how different warthogs and domestic pics will react to virus infection and evaluate the differences in immune cell profile and antibody profile in warthogs compared to domestic pigs

ACCESS TO GENETIC RESOURCES
Details of Applicant
Name
DR Elise Schieck
Project title
Development of novel subunit vaccine for Contagious BovinePleuropneumonia
Objectives
1. To develop a challenge model to increase infection rates and subsequent Contagious Bovine Pleuropneumonia (CBPP) disease
2. To conduct an on-site trial to compare the efficacy of the novel subunit vaccine for CBPP to the existing live attenuated T1/44 vaccine (Contavax TM)
Activity for the project
1. Isolation of a more virulent Mmm strains
2. Develop an animal challenge model that results in 80% or more clinical and pathological signs of CBPP
3. Production of pre-licensure vaccine batches and preparation of an outline/manual of production
4. Trials conducted on-station to prepare the efficacy of the new subunit vaccine against Contavax TM , a live attenuated TI/44 vaccine produced by KEVEVAPI
Methods to be used
Blood samples were collected through bleeding from live animals following the ILRI farm SOPs approved by the IACUC.
Sponsor/Collaborators
International Development Research Centre

Genetic Resource to be accessed
Bos Indicus (Cattle)
Specific Site in which access will be undertaken
International Livestock Research Institute, Nairobi campus
Project duration.
Expected commencement date Thursday, August 01, 2024

ACCESS TO GENETIC RESOURCES
Details of Applicant
Name
Dr Max Graham
Project title
Supporting broad scale wildlife elephant conservation goals guided by satellite tracking
technology
Objectives of the Research
1. Global scientific understanding of elephant ecology
2. The identification of key elephant corridors for conservation planning
3. Evaluating the performance of Human-Elephant conflicts mitigation measures
4. Assessment of general infrastructure development of elephant movement
Methods to be used
Deployment of 24 a total of satellite collars, the deployment period is proposed to be for five years from January 2033-December 2027. We have proposed to deploy collars in both Laikipia and Nyeri Counties
Sponsor/Collaborators
Kenya Wildlife Service, County Government of Laikipia, Laikipia Conservancies Association, Space for Giants, Wildlife Research and Training Institute.
Genetic Resource to be accessed
Loxodanta africana
Specific Site in which access will be undertaken
Laikipia County
Project duration.
Period ending 2027
Output
Space for giants will manage the database for all collared elephants on daily basis to ensure all collars are reporting as expected. Quarterly elephant management reports detailing the movement of collared elephants will be shared with KWS HQ, KWS Conservation Research Scientists and wardens, in addition space for giants will produce weekly movement maps for all stakeholders.
Also space for giants will provide Kenya Wildlife Service with access to the secure google earth tracking platform that is used to follow the collared elephants in real time and collar status updates, the data provided by the platform will be shared with our conservation partners: Loisaba

ACCESS TO GENETIC RESOURCES
Details of Applicant
Name
Stephen Kasyoki
Project title
Biodiversity of oribatid mites (Acari oribatida) in Forest and Agricultural ecosystems in
Taita Hills, Kenya
Objectives of the Research
1. To analyze the distribution and composition of oribatid mites in various ecosystems.
2. To investigate the oribatid mite species diversity of agricultural and forest ecosystem
3. To assess the effects of conversion of primary forest on oribatid mites communities
4. To investigate the potential influence of environmental factors on the biodiversity of oribatid mites
Methods to be used
Collection of litter and soil corers. The mites will be extracted from the collected materials using the modified Berlese-Tullgren funnels.
Sponsor
Institute of Zoology, Chinese Academic Sciences (IOZ-CAS), Address: 1 Beichen West Road, Chaoyang District, Beijing 1001001, P.R. China.
Aim of research
To assess and compare the biodiversity of oribatid mites (Acari oribatida) in forests and in agricultural ecosystems
Genetic Resource to be accessed
Oribatid mites (Acari, oribatida)
Specific Site in which access will be undertaken
Taita-Taveta County, Taita Hills (Ngangao Indigenous Forest, Coffee Farm, Eucalyptus Plantation and Cypress Plantation).
Project duration.
Period ending April 2025
Research output
To unravel biodiversity complexities of critically threatened Afromontane forests and apply knowledge gained from this research to better understand the communities of soil oribatid mites and their role in the ecosystem

ACCESS TO GENETIC RESOURCES
Details of Applicant
Name
Justus Mukavi
Project title
Natural products from Boxus obtusifolia (Midbr) Hutch. (Buxaceae) and Holarrhena pubescens Wall.ex G. Don (Apocynaceae) with activity against protozoan parasites
Objectives of the Research
1. To determine the in vitro antiprotozoal activity and cytotoxicity activity of crude dichloromethane extract of leaves and twigs of Buxus obtusifolia and leaves and stem bark of Holarrehena pubescens and their crude alkaloidal fractions obtained by acid-base extraction.
2. To fractionate the crude alkaloidal fraction by chromatographic technique(column chromatography (CC) centrifuge partition chromatography (CPC)
3. To submit the fractions to in vitro biological testing against the parasites under study and to obtain their detailed analytical profiles by UHPLC-ESI QTOF MSMS (LC-MS).

4. To perform PLS modeling with the LC-MS and bioactivity data in order to identify the most promising active constituents.
5. To isolate these constituents in a target-oriented manner using various chromatographic methods, including preparative HPLC
6. To elucidate the full structure of the pure compounds using NMR spectroscopy and possibly Xray crystallography and to evaluate their in vitro antiprotozoal activity and selectivity.
7. To perform three-dimensional quantitative structure-activity relationship (3D-QSAR) studies on antiprotozoal and cytotoxicity activities of the bioactive compounds.
8. To investigate the mode of action of the most potent compounds and cross-resistance with existing antiprotozoal drugs.

Methods to be used

1. Collection of plant materials
2. Acid/base extraction of alkaloids from Buxus obtusifolia and Holarrhena pubescens.
3. Fractionation of the crude alkaloid fraction.
4. Analytical characterization and biological testing of fractions.
5. PLS modelling.
6. Isolation and analytical characterization of pure compunds.
7. In vitro antiprotozoal assays.
8. Computational methods
9. Determination of mode of action and cross-resistance of strongly active isolates

Sponsor/Collaborators

German Academic Exchange Service (DAAD)

Genetic Resource to be accessed

Buxus obtusifolia (leaves and twigs) and Holarrhena pubescens (leaves, twigs and stem bark

Specific Site in which access will be undertaken

Gongoni Forest

Project duration.

Expected to end Tuesday, June 30, 2026

Expected results

At the end of the project we expect three publications in peer-reviewed journals. In addition active compound will serve as leads for development of novel antiprotozoal agentsagainst NTDs with active efficacy and reduced cytotoxicity.