TERMS OF REFERENCE FOR INDIVIDUAL CONTRACTORS/ CONSULTANTS

PART I		
Title of Assignment	**Summative Evaluation of Impact of using Drones on Population Health and Other Outcomes**	
Section	Research, Evaluation and Knowledge Management Section (REKM)	
Location	International consultancy – remote work National consultancy – based in Lilongwe	
Duration	4.5 months	
Start and End Date	From: 12 October 2020	To: 28 February 2021

BACKGROUND

Malawi is a landlocked country with a population of nearly 18 million people – which is estimated to surpass 20 million in the next five years.[1] Malawi has 28 administrative districts, which are further divided into traditional authorities (TA) and villages, the smallest administrative unit. Malawi's economy has expanded over the past 30 years, with real GDP growth estimated at 4.4% in 2019. It remains predominantly an agricultural country, with agriculture, forestry, and fishing contributing 28% of GDP. Currently, GDP per capita is approximately $380, and given that inflation and population growth currently outpace economic growth, average living standards are falling. About 70 percent of the population live below the international poverty line of US$1.90 per day (WDI, 2018). Poverty remains particularly prevalent in rural areas, where more than 80% of the population live.

Health Outcomes:

Despite recent achievements, Malawi has not yet achieved optimal health outcomes. Life expectancy remains low at 61 years. Over half of the country's total disability-adjusted life years are a result of the top four leading causes– HIV/AIDS, lower respiratory infections, malaria, and diarrheal diseases. Malawi has reduced its child mortality rate, leading to achievement of Millennium Development Goal (MDG) 4. However, other indicators remain stagnant or even face declines. The leading cause of morbidity in under five children are Malaria (29%), diarrhea (22%) and Acute Respiratory Infections (ARI) (5%) (MDHS, 2015).

The Malawi health sector operates under a decentralised system guided by the Local Government Act (1998). The Act delegates authority and funding from central government ministries to district assemblies, who guide health sector planning, budgeting, procurement, and service delivery at district and community levels. At central level, the Ministry of Health (MoH) sets strategic direction and formulates sector-wide governing policies. 29 district health offices oversee services provided in and outside of the district hospital. Five Zonal Health Support Offices (ZHSOs) provide technical support to districts in planning, delivery, supervision, and monitoring of health services. In total, the percent of government expenditure going toward public health averaged 10.4% from 2012-13 to 2014-15, well

[1] All information in this section comes from the HSSP II, the NCHS Situation Assessment, and the Malawi Demographic Health Survey; please refer to these documents for sources.

below the Abuja target of 15%. Therefore, donors have contributed most resources for the health sector in recent years.

Disaster Management and Preparedness: Climate variability, Rainfall, and Floods

Malawi is highly vulnerable to the impacts of extreme weather events given its location along the great African Rift Valley, rapid population growth, unsustainable urbanization, climate variability and change, and environmental degradation. The most common weather-related shocks affecting Malawi include floods, drought, stormy rains and hailstorms. Over the past five decades, Malawi has experienced more than 19 major floods and seven droughts, with these events increasing in frequency, magnitude and scope over the years.

In early March 2019, heavy rains developed from a Tropical Depression 11 that formed offshore central Mozambique. Heavy rains hit Malawi, causing severe flooding in the Southern and, to a lesser extent, Central Region of the country. These disaster events have had a significant impact on people's lives, livelihoods and socio-economic infrastructure in the affected areas, pushing many people into poverty and food insecurity. In total, an estimated 975,000 people were affected, with 86,976 displaced, 60 killed and 672 injured. The devastating heavy rains and floods caused substantive damage and loss across the social, productive and infrastructure sectors, with the social sector experiencing most of these effects. The housing subsector experienced the greatest damage, with 288,371 houses being partially or destroyed. Most affected people were accommodated in temporary internally displaced people (IDP) camps, mostly located in classrooms and school facilities, with limited access to safe water and sanitation facilities. This resulted in significant disruptions to learning and teaching activities at the school. In addition, the 2019 floods affected roads, bridges, power supply lines, irrigation infrastructure and mature crops. Power supplies were interrupted for more than two days across the country.

The extent, time, and impact of natural disasters such as Cyclone Idai could be predicted and the damage to sectors, assets, facilities and infrastructure could be mitigated or reduced, if geographical information systems would be supported by necessary accurate flood modelling and prediction analysis. Subsequently, such analysis would significantly improve disaster preparedness plans and early warning systems, ensuring that affected and vulnerable communities get all the necessary support and commodities in a timely manner, without big delays.

Currently, early warning systems and innovative disaster preparedness practices in Malawi are developing; however, much of the evidence used to make informed decisions is scattered, not optimized, and not even hosted on geographic information systems. This makes the preparedness process complicated and inconsistent, which ultimately leads to the situation of vulnerable communities not getting necessary humanitarian help.

Unmanned Aerial Vehicles (Drones)

In the wake of the above context, the UNICEF Malawi Drones Program has been operational since 2016 and has proven to be a successful intervention in delivering development and humanitarian aid. Drones in Malawi are used as a transportation modality, to conduct site surveys and aerial monitoring, acquiring images, mapping, and remote sensing. The uses have been singular in their operations: drones technology application in Malawi up until now has been used for a single purpose at a time in their

execution. As the use of drones is maturing, there is a need to understand ways in which the efficiency, efficacy, and versatility of the use of these drones can be increased.

JUSTIFICATION

Given the above background, the summative evaluation of the drones project is needed at this time to understand the project's achivements during the period of implemenation under review. The evaluation will also assist in understanding the extent to which the programme has contributed to improving the transportation and information problems highlighted above.

The findings will provide valuable lessons on what has worked and what has not worked in using drones to improve health service delivery and disaster preparedness for consideration in the design and implementation of other similar programmes in future.

THE PROGRAMME (OBJECT OF EVALUATION)

The object of this Summative Evaluation covers the Sustained Multipurpose Unmanned Aerial Vehicle (UAV) Operations in Southern Malawi pilot project. The project focuses on the flood-prone districts of Chikwawa and Nsanje. These districts are in need alternative transportation modalities during rainy and flood seasons, as some of the health facilities are in hard-to-reach areas. Both districts have a need for better access to information about flood-affected and flood-prone areas. High resolution aerial imagery is to be captured as part of the project. This imagery is used, in other projects, to create contingency and emergency preparedness plans, evacuation plans, and other analytical assets for improved emergency response. Further information on the project has been placed at Annex 1.

The project utilizes a comprehensive, continuous multi-purpose drone operation, to provide two important functions: (1). Collecting detailed, hard-to-access aerial data, which can then be turned into vulnerability maps (flood modelling, community planning, mosquito breeding site identification, infrastructure inspection and similar) to help make detailed emergency preparedness and resilience plans, run flood modelling, identify potential hotspots for disease outbreaks, evaluate crop health and yields, and others; (2). Delivery and pick-up of medical commodities, emergency medicine, diagnostic samples and results, providing timely regular or emergency on-demand delivery services for medical centers.

The main purpose of the project is to establish a viable multi-purpose UAV (drone) operations in Malawi, to realize the impact of UAVs in development and humanitarian contexts in a financially sustainable, long-term manner. The project has been using drones to deliver healthcare in Malawi and also conducting aerial imaging ultimately used for disaster management. In view of the above some expected outputs from the project included aerial data collected from hard to reach areas, vulnerability maps developed, medical commodities, emergency medicine, diagnostic samples and lab results picked and delivered in a timely manner.

The pilot drone operations have been conducted since January 2020 and will continue through September 2020. The pilot phase was designed to understand answers to four key questions: (1) Does the project have a positive social impact? (2) Do users engage with it? (3) Does the technology of drones work? (4) Will the use of drones grow after the pilot?

The pilot and its constituent drone operations were spread over four phases, called Sprints, with a total budget of GBP 150,000. Each phase has specific experiments to derive learnings from, the details of these experiments will be provided as part of the project documents packet to the Evaluator.

To date, more than 1,180 flights have been conducted, totaling 38,500 km flown in Malawi, and the operations employed five full-time Malawian employees. These flights have delivered medical supplies, medicines, vaccines, and medical bio-samples within the areas of Nsanje (Tengani, Chididi, Ndamera, Nyamithuthu, Mbenje, Lulwe, Phokera, Kalemba, Makhanga, Trinity, Masenjere, Sankhulani, Osiyana), Chikwawa (Bereu, Mapelera, Nchalo, Chapananga, Majete). More than 30 of these flights are related to the COVID-19 response.

The project was designed by DFID and UNICEF, and implemented by UNICEF, Swoop Aero (drone operator), UKaid Department for International Development (DFID) and FTL (technology advisor to DFID). UNICEF and UKaid have together considered how to use drones more widely as tools to more effectively deliver their collective mandates. For the purposes of this project, an Australia-based drone logistics company Swoop Aero was selected, to conduct the multi-purpose drone operations. UKaid and UNICEF Malawi have closely worked with University of Malawi, College of Medicine, a Malawi-based academic institution, that is focused on knowledge and research strengthening in the fields of medicine. College of Medicine is a co-investigator of the project, responsible for conducting a thorough ethical clearance, monitoring and evaluation of the project's health-related outcomes, as well as for ensuring the project's alignment with the health system's stakeholders in both districts. The project closely collaborates with both District Commissioners (Nsanje and Chikwawa), respective district officers (District Health Officers, Disaster Risk Reduction Officers, and other) and their national counterparts from Ministry of Health, Department of Disaster Management Affairs, Central Medical Stores, as well as Water Resources Department. Department of Civil Aviation (DCA) is an integral part of the project, as they are responsible for inspecting and approving flight operations, including the transportation of dangerous goods. The DCA as per regular protocol, conducts regular check-ins with the drone team to ensure the highest standards of safety and operational practices in the field.

The pilot project commenced without an elaborate theory of change. As part of the summative evaluation, the Evaluator is requested to retroactively construct a theory of change in consultation with all key partners to better understand the program logic and how it worked to achieve the desired results of conducting aerial imaging and mapping for humanitarian and developmental goals. The project also introduced the requirement of exploring multipurpose drone flights, and using data acquired by these drones for various purposes such as flood mapping, disaster response preparedness, disease risk, etc. UNICEF thus expects the evaluator to develop a ToC for the project during the inception phase.

PURPOSE OF THE ASSIGNMENT

The major purpose of the summative evaluation is to elicit learning gained from the implementation of

the pilot project while examining and evaluating its relevance, effectiveness, efficiency, sustainability and impact. It, therefore, aims to collect high-quality, impartial evidence focusing on learning that could enable evidence-based decision-making by identifying strengths and weaknesses of the pilot project. Finally, the summative evaluation is expected to make recommendations for project quality improvement and further action related to the sustainability and scaling up. The target audiences of the evaluation and their expected use of learning from evaluation include:

- UNICEF to determine lessons learnt from the pilot project, its efficiency and effectiveness;
- Drone operating partners understanding of the impact of their social investments;
- Government partners including Ministry of Health, Ministry of Agriculture, Irrigation and Water Development and Ministry of Local Government for policy guidance on future programs;
- Host communities to learn about benefits from these drone operations, and;
- Donors, for project accountability, and determining efficiency and effectiveness

SCOPE OF WORK/OBJECTIVES

Evaluation Objectives

The primary objective of evaluation is to answer the fundamental question: Did the DFID-funded drone transportation project, on health service provision and flood mapping, succeed in achieving its desired results. The evaluation will also determine whether the pilot was able to find answers to the four key research questions: (1) Does the project have a positive social impact? (2) Do users engage with it? (3) Does the technology of drones work? (4) Will this use of drones grow after the pilot? The summative evaluation also seeks answers to what extent did this project make a difference, its sustainability and scalability (for future funding opportunities); and has the execution of the project been efficient.

The specific objectives of the summative evaluation are therefore to:

- Assess the extent to which project activities were implemented in the cost-efficient manner across genders and all socio-cultural groups including the vulnerable in the targeted communities
- Assess effectiveness of the drone project in producing the expected results for both men and women, boys and girls across all socio-cultural groups including the marginalized and vulnerable in the targeted communities
- Assess the outcomes of drone operations and to which extent the project has contributed to improving the health outcomes and disaster preparedness in Nsanje and Chikwawa
- Evaluate whether the drone transportation was relevant to address the main bottlenecks across all socio-cultural groups including the vulnerable in the targeted communities
- Assess the extent to which the intervention promoted observance of HR and GE and how stakeholders regardless of sex, geographical location, disabilities, age have benefited from the intervention
- Document lessons, key challenges/gaps, strengths, good practices
- Assess how sustainable the drone program is at the district and national levels

EVALUATION SCOPE

Geographic scope: This summative evaluation will review the entire set of activities undertaken during the four phases of pilot project (from inception in January to its completion in September), as implemented by UNICEF, Swoop Aero, DFID, FTL and other partners. Geographically, it will cover the entire project areas of Nsanje (Tengani, Chididi, Ndamera, Nyamithuthu, Mbenje, Lulwe, Phokera, Kalemba, Makhanga, Trinity, Masenjere, Sankhlani & Osiyana) and Chikwawa (Bereu, Mapelera, Nchalo, Chapananga, Majete).

Programmatic scope: This summative evaluation will examine the relevance, efficiency, effectiveness, sustainability, and impact of drones and data (e.g. artificial intelligence) on (a) people's lives and community well-being, (b) access to health, nutrition, and infrastructure, and (c) the quality of knowledge and learnings from this project. The evaluation will also cover the use of drones as a transportation modality, their multi-purpose use, and in aerial imaging and mapping for humanitarian and developmental goals. Ultimately, the summative evaluation will attempt to analyse the social return on investment in drone use.

EVALUATION CRITERIA AND KEY EVALUATION QUESTIONS

The evaluation will use the UNEG standards for an impartial, coherent and effective evaluation. The OECD/DAC criteria - including relevance, efficiency, effectiveness and sustainability - will be used to assess the project. The evaluation will not measure the criterion of impact in this evaluation due to the short span of project (less than a year) and because it is not intended to be an impact evaluation. Any long-term outcomes will be assessed under the criterion of effectiveness. Additionally, cross cutting areas of gender and human rights will also be used as part of the evaluation criteria in this exercise. All major evaluation questions are given in the following under the OECD/DAC criteria:

Relevance	The extent to which the project design and implementation was relevant to national/provincial priorities and needs of men and women beneficiaries in terms of achieving expected results across all socio-cultural groups including the vulnerable in the targeted communities
Effectiveness	The extent in which the implementation strategies were effective and successful in achieving the planned outcomes/results for rich and poor men and women across all socio-cultural groups including the vulnerable in the targeted communities
Efficiency	The extent to which the outputs of the intervention has been achieved (in terms of quality and quantity) with the allocated resources/inputs (such as funds, time, and procedures)
Sustainability	The extent to which various stakeholders including the public sector, civil society and households are likely to sustain the behavior change related to the goals of the project after it has ended
Gender and Human Rights	The extent to which the intervention contributed to observance of human rights and gender equality in Malawi

	The extent to which stakeholders regardless of sex, geographical location, disabilities, age have benefited from the intervention

KEY EVALUATION QUESTIONS

The Evaluation Criteria (in the preceding section), except for the Impact criterion, will guide the key questions, identification of key metrics, the analysis and in the synthesis of findings, recommendations, and next steps. Relevant questions will be developed according to the Evaluation Criteria in service of the programmatic questions listed above. These questions will pertain to the following key categories (with some example questions suggested):

Relevance:

- How relevant and meaningful are the project objectives and activities in terms of addressing the needs and priorities of marginalized and vulnerable children, men and women, in the project areas?
- To what extent the objectives and strategies used are relevant to national (Government of Malawi) priorities and policies related to health outcomes?
- How relevant is the selection and targeting of project areas (districts and villages) with regard to programme objectives?

Effectiveness:

- To what extent the DFID-funded drone transportation project on health service provision and flood mapping, including multi-purpose drone operations was successful in achieving its objectives?
- What were the major factors influencing the achievement or non-achievement of the objectives?
- To what extent has the implementation of strategies and project approaches - such as use of multi-purpose drones- worked as intended?
- How effectively UNICEF engaged with the Government to strengthen coordination and how far government leadership and political will influenced the achievement of results, or vice versa?
- How successful was UNICEF in reaching the most vulnerable groups in the target areas?
- What other changes (positive/negative, direct/indirect, intended/unintended) have occurred as a result of the project interventions?

Efficiency:

- How well have UNICEF's resources, both human and financial, been managed to ensure the timely, cost-effective and efficient attainment of results?

Sustainability:

- To what extent has the programme contributed to the strengthened capacity of duty bearers / service providers in health and other relevant sectors?
- What evidence exists to inform the view that particular activities in the project are being replicated beyond the initially intended reach of the project (e.g. outside of geographic areas or target groups)?

- What internal/external factors and drivers contribute to or constrain the sustainability of the programme?

Gender and human rights:

- To what extent has the intervention aligned with UNICEF's equity agenda in addressing the needs of the target groups (i.e.to what extent the initiative reached different groups including the most marginalized)?
- Has the intervention contributed to equitable participation/reach and benefits to various groups (men, women, children and differently abled people)?

The evaluation shall include overall performance rating rubrics for each of the above evaluation criteria, based on the following scale:

- Highly satisfactory (in most cases exceeded the plan);
- More than satisfactory (fully according to plan or better)
- Satisfactory (on balance according to plan, positive aspects outweighing negative aspects);
- Less than satisfactory (not sufficiently according to plan, taking account of the evolving context; a few positive aspects, but outweighed by negative aspects):
- Highly unsatisfactory (seriously deficient, very few or no positive aspects).

The above ratings scales are for general reference and the consultants may propose an alternative rating approach. Each rating will be stated as part of the conclusions for each of the criteria.

EVALUABILITY ASSESSMENT

Evaluability is the extent to which the project can be evaluated in a reliable and credible manner. Evaluability is high if the subject has: (a) a clear description of the situation before/at the start that can be used as reference point to measure change (baseline); (b) a clear statement of intended outcomes, i.e. the desired changes that should be observable once implementation is under way or completed; (c) a set of clearly defined and appropriate indicators with which to measure changes; and (d) a defined timeframe by which outcomes should be occurring; and (e) a system for regularly collecting, storing and analyzing performance data.

The level of evaluability of the "Drones" project to meet the objectives set out in section 5 is assessed to medium because a) A baseline was not conducted at the beginning of the project; b) Regular monitoring of the project has taken place and is documented. As such, some information exists for assessing the achievements of intended outcomes and the utilization of resources over the period under review. A detailed evaluability assessment should be carried out at the inception phase to determine the appropriateness of the methodological approach proposed in section 10 below. It is expected that the evaluation will make use of already existing data as follows:

- Routine Progress Reports
- Project proposal including the Logical Framework and Key Deliverables
- Monitoring data and reports
- Quarterly and semi-annual reports/updates
- Partners' reports (progress and monitoring)

- Any assessment or review report (if conducted)
- Any other project related documentation

METHODOLOGY

This is a summative evaluation expected to provide a comprehensive overview of projects achievements of desired objectives, contribution to outcomes, challenges and lessons learned. Therefore, the applicants are invited to propose a robust design with a mixed methods approach - using both qualitative and quantitative approaches – triangulating information from different methods and sources to enhance the reliability of findings. The absence of baselines is a challenge to measure the progress and changes caused by the project to the lives of beneficiaries. The consultant may reconstruct baseline information from secondary sources that will be shared by the concerned project manager. Robust and adequate use of qualitative methods can also be helpful in the absence of baselines for the programme, however, other innovative measures to address this gap may also be proposed by the consultant. Accordingly, a comprehensive methodology will be expected from the consultant with adequate proposed measures to address this gap by considering all the project details and indicative methodology and approaches. The consultant will be expected to capture the entire set of the above given evaluation criteria, with gender-responsive and equity focused analytical approaches providing a reliable assessment of project's achievement and contribution toward short- and long-term outcomes and measuring value for money. Traditionally, cost-effectiveness, cost-utility and cost-benefit analyses have been used to assess value-for-money of public health interventions. For any proposed methodology, the consultant will be expected to provide details regarding the relevant approaches, data collection methods, sample size and data analysis approaches while meeting the quality criteria.

Prior to submission of the inception report, the selected consultant will be expected to undertake an extensive literature and desk review of all key documents, including the project proposal, surveys, work plans, progress reports and routine monitoring data etc. This summative evaluation will follow gender responsive, equity-focused, transparent, collaborative and participatory approaches to ensure involvement of men and women from the project areas specially from the marginalized and vulnerable groups. Participation of all key stakeholders such as the Innovations team, Swoop Aero, DFID and FTL and any other relevant partners will be ensured in the overall evaluation design and process. The evaluator will propose the methodological design which should demonstrate impartiality and lack of bias by relying on a cross-section of information sources (e.g. stakeholder groups, including beneficiaries, etc.). The consultant will use existing project data pertaining to drone operations, the nature, quantity, and purpose of commodities the drones transported, the distances flown, the types, quality, and footprint of imagery acquired. The consultant will be supported by the College of Medicine to elicit data from primary sources, the populations and/or communities served, the impact on health outcomes (as available), and number of patients helped.

A refined evaluation matrix based on the evaluation criteria and questions is expected to be provided in the inception report. An evaluation plan will be used to demonstrate a clear understanding and realistic plan of work for the evaluation, checking that the evaluation plan is in agreement with the TOR and the overall project vision for the evaluation. Data collection and analysis methods should be selected based

on their appropriateness to answer the key evaluation questions and based on what is realistic in the timeframe and the resources available. Proposed primary evaluation methods can include:

- Desk review
- Key informant and stakeholder interviews and discussions (also from field sources including but not limited to Riders for Health)
- Case studies (of best practices)
- Questionnaires as appropriate will be used as a particular form of qualitative analysis. These will be to analyze the action and its implementation from organization staff, concerned stakeholders and beneficiaries' perceptions.

The data analysis methods shall be in line with the design of the evaluation to provide fair, unbiased judgement of the project. There may be some challenges in data reliability and disaggregation of data by sex, age group, etc. It is proposed that some of the risks could be mitigated through triangulation, cross-referencing, and other means. The secondary data on the relevant indicators from the national surveys may not be reliable at a district level because of sample size limitations. Reliability could improve, among others, by pooling samples.

In preparing the results of the evaluation, the findings will be evidence-based and have clear references to respective sources. The structure and quality of the evaluation report must adhere to UNICEF quality standards, and include the following report structure:

- Title page
- Table of contents
- Executive Summary, including the purpose of the evaluation, key findings, conclusions and recommendations in priority order (3-4 pages)
- Background/context of the evaluation, including a description of project interventions, log frame/results matrix (Theory of Change)
- Purpose and objectives of the evaluation
- Scope of the evaluation
- Limitations and mitigation strategies
- Evaluation criteria and key questions
- Methodology (including ethical review)
- Findings per criteria
- Lessons learned
- Conclusions and recommendations, explicitly linked to the findings

The final report should follow the UNICEF Evaluation Report Standards and will be reported on UNICEF's global reporting system known as GEROS. The selected evaluator will receive these guidelines at the first meeting following issuance of the contract. A formal presentation of the final report and key findings for the evaluation is required. To ensure better understanding and use of evaluation, the evaluation report will be complemented with policy briefs (with infographics) targeting the policy makers. The hired institution will keep the project management team regularly informed of progress and key issues arising that may require additional direction or suggestions for other key informants or reference material.

GENDER AND HUMAN RIGHTS

Social constructs like gender, ethnicity or disability, and societal norms that dictate what a person should or should not do, influence the decisions of those in power. The voices, views and needs of those who have low status, minorities, those who are very poor, women, girls and children are often ignored when staff and policy makers take decisions, for example, over the location and equipment of health facilities or services in the national policies. This means that decisions can reinforce underlying inequalities and patriarchal norms.

Guided by the UNEG Guidance on Integrating Human Rights and Gender Equality in Evaluation (2014), the evaluation process should carefully consider issues of gender equality and human rights and all stages. T Gender equality and empowerment of women should be mainstreamed throughout the evaluation. Further details of the criteria can be sourced from: http://www.unevaluation.org/document/detail/22. The evaluation process, gender concerns should be addressed. UNICEF Malawi stands for gender responsive and equity-focused evaluation approaches, therefore, throughout the evaluation process, gender concerns will be addressed, and all data will be disaggregated by sex and age. Among other issues, the consultant will explore whether the transportation interventions are appropriate and socially impactful for both women, men, boys, girls and other marginalized groups. The study will also explore shortcomings of existing health services provision and the needs of specific user groups with regards to healthcare infrastructure. The issues to be explored includes but not limited to the following: security and safety, privacy, accessibility, comfort. Different needs of women, men, children and of marginalized groups targeted by the intervention will be considered throughout the evaluation process. The aspect of human rights will be assessed to give a measure of how the design and delivery incorporated rights issues. Community participation will be emphasized and how UNICEF ensures that communities were involved throughout the project cycle.

RISK ASSESSMENT AND MITIGATION

The consultant will need to take into consideration and provide workable solutions to the following challenges and possible limitation of the evaluation: (1) identification of data sources and data acquisition, and (2) operational, logistical, and travel limitations as posed by COVID-19 and any other environmental (e.g. rains, floods) that may be experienced. To mitigate these, there may be a requirement for remote coordination and/or data collection, implementation of safety measures during field visits, and appropriate study and evaluation design that account for the challenges posed by these.

ETHICAL CONSIDERATIONS

The evaluation will follow UNICEF procedure of Ethics in Evidence Generation and all its guidelines on the ethical participation of human participants, including children. The inception report will be ethically reviewed and cleared by the Malawi government's ethical review board. No filed work will commence before the final clearance of the inception report by the country's ethical standards. All

participants in the study will be fully informed about the nature and purpose of the evaluation and their requested involvement. Only participants who have given their written or verbal consent (documented) will be included in the study.

The prospective consultant is expected to provide a detailed plan on how the following principles will be ensured throughout the study: 1) Respect for dignity and diversity 2) Fair representation; 3) Compliance with codes for vulnerable groups (e.g., ethics of research involving young children or vulnerable groups); 4) Redress; 5) Confidentiality; and 6) Avoidance of harm.

The consultant is therefore required to clearly identify any potential ethical issues and approaches, as well as the processes for ethical review and oversight of the evaluation process in their proposal. Specific safeguards must be put in place to protect the safety (both physical and psychological) of both respondents and those collecting the data. These should include:

- A plan is in place to protect the rights of the respondent, including privacy and confidentiality
- The interviewer or data collector is trained in collecting sensitive information
- Data collection tools are designed in a way that are culturally appropriate and do not create distress for respondents
- Data collection visits are organized at the appropriate time and place to minimize risk to respondents
- The interviewer or data collector can provide information on how individuals in situations of risk can seek support

The consultant may not publish or disseminate the Evaluation Report, data collection tools, collected data or any other documents produced from this consultancy without the express permission of, and acknowledgement of UNICEF (may need to add partners' names here, including government).

REPORTING REQUIREMENTS

In accordance with UNICEF's evaluation policy, this evaluation will be managed by Chief of REKM as Evaluation Manager, with close coordination support from the UNICEF Malawi Innovations Program team. As part of the quality assurance mechanism, an evaluation reference group (ERG) will be established with members from key programmes, UN partners and UNICEF Regional Office for Eastern and Southern Africa (ESARO). All key deliverables of the evaluation – inception report, and final report – are required to be reviewed by the ERG and accepted by the Chief of REKM before payment is made to the evaluation agency. The final evaluation report will strictly follow "UNICEF Evaluation Report Standards" and UNICEF Evaluation Technical Notes which are aligned with UNEG Standards and Norms. A self-assessment of the draft report against the GEROS UNICEF tool will also be required by the evaluation consultant. Feedback to the consultant will be provided after the review of each deliverable. Performance evaluation of the supplier will be done at the end of the assignment or whenever a contract amendment is sought.

EXPECTED DELIVERABLES

The evaluation is expected to be carried for a period of 4.5 months. In alignment with the scope of work as described above, the consultant will be expected to perform the following activities and deliverables as per the schedule and estimated dates below:

No	Key activities and tasks	Deliverable	Estimated number of days required	Estimated Completion Date*	% of total fee payable
1	Draft Inception Report, including: - Introductory work: Meetings, document gathering, etc. - Plans, protocols, analytical framework, and indicators	Initial Inception Report	7 days	Oct 20, 2020	
2	- Review of the study plan, protocol, analytical framework and indicators by UNICEF - Feedback and revision; acceptance of the inception report	Final Inception Report + Work Plan	7 days	Oct 29, 2020	20
3	Data collection, data repository structure, and information and decision flow design	Data repository + Information and decision flow chart(s)	21 days	Nov 26, 2020	
4	Data Analysis	Data analysis reports with visualization	15 days	Dec 17, 2020	
5	Preparation and submission of draft report, policy briefs and infographics	Draft Evaluation Report, Policy Brief and Infographic	15 days	Jan 15, 2021	40
6	Preparation and submission of revised final report, revised policy briefs and infographic	Revised Draft Evaluation Report, policy brief and infographic for Review	7 days	Jan 22, 2021	
7	Validation workshop	Stakeholder workshop	2 days	Jan 25, 2021	10
8	Submission of final report and final policy briefs and infographic	Final Evaluation Report	5 days	Feb 12, 2021	30

* Exact deadlines will be mutually agreed upon contract signature.

However, as the actual starting date may impact the dates estimated in the TOR, the exact timeframes and actual delivery dates will be jointly agreed upon between the consultant and the supervisor upon contract signature.

Inception Report: as per UNICEF standards, will include but not be limited to the following: Background, details about the project to be evaluated (object of evaluation), theory of change of the project and its explanation and how it will be used for evaluation, evaluation design detailing the sampling frame and method, data collection tools, Interview guides, evaluation forms or other data collection instruments to be used, data analysis plan, Quality Assurance Plan, Field work plan/Timeline and the Reconstructed baseline information from secondary sources (as an appendix of the inception report).

Evaluation Report:

The draft evaluation report will be reviewed by the ERG and the feedback will be used by the consultant for refining and finalizing the evaluation report. The final report will be high-quality, ethically assured, gender responsive and utilization-focused evaluation informing decisions to deliver effective project. The evaluation report should be clear and include the following elements: an executive summary of maximum 4 pages, total report of not more than 30 pages (without annexes), a profile of the evaluated Programme, description of methodology and data collection tools, the main findings, lessons learned, conclusions and recommendations, attachments (TOR, reconstructed Theory of Changes, evaluation matrix and data collection tools, list of persons interviewed etc.). The findings and conclusions of the evaluation will answer the evaluation questions. The final evaluation report will be complemented with one policy briefs based on its key findings and recommendations targeting key decision-makers. Likewise, the consultant to produce one infographic.

QUALITY ASSURANCE

The quality of all evaluation reports (Inception Report and Draft Report) will be assessed by a company external to UNICEF and will be facilitated by UNICEF Malawi. The Contractor will be responsible for ensuring that recommendations for quality improvement of the report(s) are fully addressed. The Draft Report will be considered as a final one only after passing through the external quality assessment, addressing all comments and having final positive rating as "Satisfactory" or "Highly Satisfactory". The Final Evaluation report will be also submitted to the Global Evaluation Reports Oversight System (GEROS) for final quality assessment with feedback provided to the UNICEF Malawi office on the quality of the evaluation (could be shared with contractors upon request).

PERFORMANCE INIDICATORS FOR EVALUATION OF RESULTS

The performance of work will be evaluated based on the following indicators:

- Completion of tasks specified in TOR
- Compliance with the established deadlines for submission of deliverables
- Quality of work
- Demonstration of high standards in cooperation and communication with UNICEF and counterparts

PAYMENT SCHEDULE

All payments, without exception, will be made upon certification from the supervisor of the contract, of the satisfactory and quality completion of deliverables and upon receipt of the respective and approved invoice. The payment will be tied to submission of acceptable quality deliverables. The following show the key deliverables and associated proposed milestone payments:

S. No.	Deliverable	Expected completion date	Payment ratio (%)

1	Inception Report with workplan	Oct 29, 2020	20
2	Draft Evaluation Report, policy brief and infographic for review	Jan 15, 2020	40
3	A presentation at a validation workshop	Jan 25, 2021	10
4	Final Evaluation Report report incorporating comments from the validation workshop accompanied by policy brief, infographic and Micro datasets in an appropriate format with corresponding syntax/script files	Feb 12, 2021	30

Travel (international and local) costs will be reimbursed on actual expenditures and upon presentation of original supporting documents. As per UNICEF operational guidelines, travel for international consultancies, will be in economy class and will use the most economical route.

DESIRED COMPETENCIES, TECHNICAL BACKGROUND AND EXPERIENCE

The evaluation consultant will not have been involved in the design or implementation of the project to be evaluated or have any other conflicts of interest. It is expected that the consultant will disclose any potential conflict of interest.

Academic qualification:

- The consultant must have an advanced University degree in one of the following disciplines (or related) Decision Science, Operations Research, Policy Analysis, International Development, Social Sciences, or Management Science(s).

Work experience, Technical skills and competencies

- The consultant must have at least 8 years of experience leading, designing and conducting impact evaluations.
- Expertise in designing methodology and data collection tools and demonstrated experience in leading similar evaluations.
- Must have leadership, analytical and communication skills, including a track record of excellent writing and presentation skills.
- Proven experience evaluating Technology and Innovation dependent programs.
- Experience and good knowledge of gender issues and tools for integrating human rights and their link with the innovation
- Exceptional data analysis skills for both qualitative and quantitative data;

Languages:

- Proficiency in English and/or local languages (Chichewa) for a national consultant

ADMINISTRATIVE ISSUES

UNICEF will regularly communicate with the specialist and provide feedback and guidance and necessary support so to achieve objectives of the work, as well as remain aware of any upcoming issues related to the performance and quality of work.

As per policy on consultants and individual contractors, the individual will be expected to complete a list of mandatory training, including policies on Prohibiting and Combatting Fraud and Corruption; Prohibition of discrimination, harassment, sexual harassment and abuse of authority and other relevant policies for their information and acknowledgment. Within 5 days of the contract commencement, the consultant/individual contractor is requested to complete the applicable mandatory trainings.

The consultant/evaluation agency will work from their own workplace, with regular phone/Skype meetings with UNICEF Malawi, Research, Evaluation and Knowledge Management Section (REKM) and innovation programme with a clear schedule of online meetings. The consultant may need to travel for in-person interviews, if travel restrictions were removed at a later stage. The field sites will be determined in consultation with UNICEF and government counterparts once it is safe to travel and collect data face-to-face.

The consultants will provide their own laptop and working space.

CONDITIONS

- The candidate selected will be governed by and subject to UNICEF's General Terms and Conditions for individual contracts.
- No contract may commence unless the contract is signed by both UNICEF and the consultant.
- The evaluation will be conducted using remote methods of data collection and consultation such as online meetings. All data required from the field will be provided by the Innovation team, their partner institution, i.e. College of Medicine, relevant departments of Ministry or Health, and the drone operator Swoop Aero.
- The consultant will be paid an all-inclusive fee (stationary, communication and other miscellaneous expenses) as per the stipulated deliverable and payment schedule.
- Under the consultancy agreements, a month is defined as 21.75 working days, and fees are prorated accordingly for actual days worked.
- The consultant is not entitled to payment for overtime, weekends or public holidays, medical insurance, taxes, and any form of leave.
- Travel expenses for official in-country trips, including living costs, will be covered in accordance with UNICEF's rules and tariffs, by the consultant and reimbursed against actuals, unless otherwise agreed.
- Transport will be provided to the consultant during in-country field travel, if planned and approved.
- No travel should take place without an email travel authorization from section prior to the commencement of the journey from the duty station.
- Standard UNICEF procedures will apply for invoicing and all other financial management requirements set out in the contract.

- Standard penalty clauses will also apply for late and poor-quality deliverables. The supervisor of the contract will provide the consultant with the criteria for the evaluation of the quality of each deliverable.
- Additional details of UNICEF rules, regulations and conditions will be attached to the contract.
- Consultants will not have supervisory responsibilities or authority on UNICEF budget.
- The assignment is an on-site/off-site support.

HOW TO APPLY

Interested consultants should provide the following:

1. Curriculum Vitae

2. Brief technical proposal (no longer than five pages) demonstrating the consultant's understanding of the assignment and approach/methodology to the assignment, proposed work plan showing detailed sequence and timeline for each activity; quality assurance mechanism and risk mitigation measures put in place and ethical considerations and how the selected candidate will address them.

3. Financial proposal including a breakdown of their all-inclusive fees (including professional fees, travel, living cost, visa and other costs). Complete the attached form.

Financial Proposal.xlsx

4. References details

ANNEX 1

OBJECTIVES AND SCOPE OF PROJECT

So far, the majority of UAV delivery tests across the world have been sporadic and isolated demonstrations rather than a fully integrated, continuous operational process involving multiple different stakeholders. Additionally, the areas mapped by a drone in Africa is minimal. This multi-functional, sustained operation will contribute to the breakthrough in mapping of Malawi and its vulnerable areas for better emergency preparedness and for improved socio-economic development of the country, as well as it will introduce the new transport modality for the health supply chain in reaching the most hard-to-access health centers.

Within the scope of this project and in the context of the above described challenges the project will utilize a comprehensive, continuous multi-purpose drone operation, providing two important functions:

1. **Collecting detailed, hard-to-access aerial data**, which can then be turned into vulnerability maps (flood modelling, community planning, mosquito breeding site identification, infrastructure inspection and similar) to help make detailed emergency preparedness and resilience plans, run flood modelling, identify potential hotspots for disease outbreaks, evaluate crop health and yields, and others.

   Aerial data will be collected in a way, so that no individual or other human subject information is recognizable. In order to anonymize the data, the drone will be flown at approx. 80-100 m. altitude, and the camera will be set up to capture images at a resolution of 2-3 cm per pixel, ensuring that no human face or other human features can be recognized. The camera will also be flown at 90-degree angle to reduce any chances of recognizability. Below is an example of aerial data and the detail that is captured. It is evident that no individual human information can be extracted from this image.
   The collected aerial data, maps and analytical insights will be made available for district and national governmental agencies, and will be hosted on UNICEF's data platform 4P2C available here: https://malawi.4p2c.org/portal/home/

2. **Delivery and pick-up of medical commodities**, emergency medicine, diagnostic samples and results, providing timely regular or emergency on-demand delivery services for medical centers.

   The first phase of the project will focus on the demands assessment and site scoping, in order to identify the health facilities which are in the most need for quicker transportation of the above mentioned commodities. In doing so, project's partners will closely work with the Districts' health management team, in order to be able to incorporate their feedback and inputs, as well as will enable them to choose 2-3 facilities per district.

The project will not be collecting any human subject data related to delivery. As opposed to that, the project will look only at the quantities, types, frequencies, and stockouts of medical commodities requested and delivered. Where it concerns medical samples and their results, the data will be coded

under unique personal identifier, ensuring that neither drone service provider nor other project partners have access to patient data.
By running such continuous drone operation, evidence, such as flights, delivery contents and their quantities, and aerial imagery will be collected and monitored, to then subsequently provide materials for monitoring and evaluation activity, which will be completed by the co-investigator of the project. Should this turn into full-pledged research project, a separate, specific activity-focused ethics clearance would be undergone.