**KENYA CO TERMS OF REFERENCE (TOR) FOR INDIVIDUAL CONTRACTORS/ CONSULTANTS**

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| PART I | |
| Purpose of Assignment | **GIS Consultant-** Strengthen Use of Geospatial Data and Technologies (GIS) and Geostatistical Modelling for Improved Immunization Coverage and Equity |
| Location of Assignment | NAIROBI |
| Duration of contract | 10 months |
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| Reporting to: | Health Information Management Specialist, UNICEF Kenya Country Office |

**Background and Justification**

Immunization is a core primary health care intervention critical to assuring the health of children and communities. However, as we move into the Sustainable Development Goals (SDG) agenda, it has become clear that despite significant progress in immunization coverage at global and national level, many countries fall short of addressing or even identifying subnational inequities immunization coverage and access to vaccinations services. Strong inequities are hidden behind global and national figures of vaccination coverage, associated with differences in urban/rural place of residence, wealth and education status, gender and remoteness. Kenya has a population of approximately 45 million out of which 1.5 million are surviving infants targeted for routine immunization services that is delivered through a network of more than 6000 health facilities and clinics spread across 47 counties in the country. Despite the immunization system in Kenya being fairly well developed, 5 counties have consistently achieved less than 50% of children under 1 year fully vaccinated.

Progress towards coverage and equity targets is hindered by several factors, amongst which: (i) difficulties in estimating and locating the target population to be reached (ii) reliance of local immunization planning and monitoring on uncertain denominators and approximate estimates of health services catchment areas and population geographic accessibility to services (iii) and insufficient data to identify and address subnational disparities in immunization coverage. More and better data and analytical techniques are needed to accelerate progress towards equitable vaccine coverage and to identify and account for children and communities that are lagging in access to immunization services due to geographic, socio-economic background or other barriers/sources of inequity. In addition to the availability of better data and tools, it is crucial to build the capacity to acquire, manage, maintain and use such new sources of information through local capacity building and strengthening of Health Information Systems (HIS).

In order to deliver better immunization outcomes, including addressing the current existing gaps in coverage and equity in a sustainable manner, the National Vaccines and Immunization Program (NVIP) in close collaboration with Health Information Systems, the Division of M&E, Health Research and Development and Health Informatics has initiated the adoption of geospatial data and technologies to improve planning and monitoring for equitable provision of immunization services. An exploratory meeting was held in Nairobi in February 2018, with participants the NVIP, UNICEF, Division of M&E, Health Research and Development and Health Informatics, and other immunization stakeholders (WHO, CDC) identified the strategic priorities, gaps and needs of the NVIP, defined a capacity building plan to address those gaps and initiate engagement with local stakeholders. A consultative review of the requirements for the sustainable integration of geospatial data and technologies against the current status of institutional capacity in the HIS and immunization programs led to the identification of a set of action points and recommendations for intervention to achieve a sustainable geo-enabling of the HIS in general and the immunization program in particular which were summarized in a preliminary roadmap.

A pilot training program on the use of geospatial data and technologies to support planning and monitoring for improved and equitable immunization coverage was conducted in May, 2018 and focused on building capacity of central and county level NVIP and HIS personnel on using GIS to map immunization coverage information from the District Health Information System (DHIS2) at sub-county level and geographic accessibility to vaccination services using the AccessMod platform ([www.accessmod.org)](http://www.accessmod.org)). The exercise served to build an initial technical capacity in the NVIP in regard to the utilization of GIS tools, as well as to provide some indications as to gaps in regards to the availability, management and utilization of core geospatial information in support of the immunization program.

UNICEF is planning to leverage and expand on this initiative through the Gavi TCA and Data SFA 2019 rounds to scale support for use of geospatial data and technologies for improved decision making related to immunization county planning, performance review and budgeting process.

*All pilot activities material and reports available at sites.google.com/view/giskenya/home.*

**Scope of Work**

Working in close collaboration with UNICEF NYHQ and respective KCO personnel, under the overall supervision of the M&E Specialist with support from the Health Specialist-Immunization and Child Health, the incumbent will oversee a number of proposed priority interventions aimed at strengthening the use of geospatial data and technologies for improved coverage and equity in the immunization programme in the following thematic areas:

1. Support the Ministry of Health (MoH) in the development of a governance structure, and vision and strategy related to the integration of geospatial data and technologies in the immunization program;
2. Support GIS technical capacity strengthening among the health stakeholders at national and sub-national level;
3. Support the strengthening of core geospatial assets for the health program;
4. Support the advancement of the use of geospatial data and technologies for improved decision making; and
5. Provide local logistic support to UNICEF Headquarters (HQ) personnel under the Gavi Data SFA project

Detailed tasks for each thematic area are summarized hereunder:

1. Support the MoH in the development of a governance structure, and vision and strategy related to the integration of geospatial data and technologies in the immunization program, including:

* Consolidate outcomes of HIS/NVIP March 2018 and 2019 consultations into a costed workplan for strengthening integration of geospatial data and technologies in the immunization program based on the UNICEF guidance document[[1]](#footnote-1)
* Support MoH to establish a national geospatial data and technologies coordination mechanism: Facilitate the establishment of a GIS Technical Working Group (TWG) to lead the MoH in all issues pertaining to geospatial data management and use for programming, support follow up and modelling work and produce maps and statistical results "on demand" from various stakeholders. The consultant shall be expected to give technical assistance in the mapping of key stakeholders for the TWG, development of the TOR and road map for the TWG and follow up on the implementation of the agreed workplan for this would be necessary.
* Support the geospatial TWG in the development of a strategy document to support to formalize the roll out of geospatial data and technologies to be incorporated into new or existing policies (M&E strategy/HIS policy, National immunization strategic plan, KHSSP, national Spatial Data Infrastructure)

1. Support GIS technical capacity building among the stakeholders in health, including:

* Support the identification of master users at the national level to spearhead the follow up andmentorship on use of geospatial data and tools for immunization programming at the sub-national level
* Identify champions among the key GIS stakeholders to support integration and capacity building on geospatial data and technologies in MoH including: Geospatial data collection and management to support master lists of core geospatial assets; mapping immunization coverage at sub-county level and; geographic accessibility mapping using the AccessMod platform
* Explore opportunities for knowledge management and information sharing, guide and support the TWG with development of select/identified information products on Geospatial Data and Technologies in repositioning integrated quarterly programme progress reviews (Technical Documentation: Technical updates, Programme updates, Bulletins, FAQs, Abstracts and other publications)
* Identify opportunities for inclusion of GIS training modules into existing data-related training platform/channels where the MoH is already involved
* Support TWG in strengthening the skills in geospatial data management of the technical team in the MoH responsible for the guardianship of the master lists (health facilities, vaccination sites, cold chain points)
* Provide technical assistance in the conduct of refresher trainings and orientations for county level personnel in 6 Gavi TCA focus counties on Geospatial Data and Technologies for mapping immunization coverage leveraging on the Machakos May 2018 training materials. This should aim at strengthening County quarterly review meetings and identification of key tools to be utilised in repositioning integrated quarterly programme progress reviews and advocacy at county and national level. This shall include a 1-2 days of non-technical advocacy training on the role and benefits of GIS, followed by technical GIS training.

1. Support the geospatial TWG in the strengthening of core geospatial assets for health programs, including:

* Kenya Master Health facility list
  + 1. Update of current health facility master list. Support the Ministry of Health, Division of M&E, Health Information Unit to complete the verification of geographic coordinates in the Kenya Master Health Facility List (KMHFL): Based on the updates made using the KEMRI Welcome Trust database (updated December 2016), work with the GIS TWG to support the Div. update the KMHFL geocodes which are missing for ~500 facilities
    2. Review current maintenance and updating mechanisms of the KMHFL, assess them against existing guidelines/best practices[[2]](#footnote-2) and provide actionable recommendations
    3. Support TWG in the enforcement of existing policy documents and Standard Operating Procedures (SOPs) for master list maintenance and updating, or the development or revision of said policy documents and SOPs using existing guidelines
    4. Support TWG in the review and enforcement of standard protocols for data entry in the DHIS2 related to health facilities coordinate precision) and health facilities unique ID’s from KMHFL
* Assessment of current maintenance and updating mechanisms for the master lists of administrative and reporting unit boundaries against existing guidelines/best practices, including the list of reporting units in DHIS2 and the boundaries datasets managed by the IEBC (Independent Electoral and Boundaries Commission), and support TWG in advocating for alignment between the two lists
* Support TWG in the review and enforcement of standard protocols for data entry in DHIS2 related to unique ID’s of wards and sub-counties linked to the official master list
* Assess existing datasets for the other master lists core to the immunization program (Vaccination sites, village/settlements, cold chain points and storage facilities) and make a plan for development of missing master lists. In particular assess whether vaccination sites, cold chain points and storage facilities can be all considered associated to health facilities in the health facilities master list or whether a separate master list is required.
* Advocate for the storage and maintenance of all master lists in a common geo-registry and conduct assessment of current capabilities/existing platforms that could function as common geo-registry (e.g., DHIS2, Data service layer) using international guidance2
* Advocate for an official mandate for the development, maintenance, regular update and sharing of the core master lists to be assigned to the geospatial TWG

1. Support the geospatial TWG to advance the use of geospatial data and technologies for improved decision making including county planning, performance review and budgeting process, including:

* Support the GIS work in the District/County Health System Strengthening Initiative (DHSSi) to establish geographic accessibility to health facilities by catchment populations which is one of six key determinants of the bottleneck analysis (BNA) methodology to be streamlined in county planning by the DHSSi.
* This support shall include linking the results of spatial modelling to assess geographic accessibility to health facilities as outlined below:
  + 1. Assessing the feasibility and testing use of modelled population estimates for sub-national health planning for the five DHSSi focus counties
    2. Testing the feasibility of using GIS modelled facility access data in DHIS2 and KMFHL to improve analysis of population access to facilities as part of bottleneck analysis in five DHSSi counties
* Develop a costed workplan for a pilot project on use of GIS for immunization microplanning and roll out the use of GIS for microplanning in 1-2 target counties, leveraging UNICEF ongoing work for immunization in urban context in Kenya, including creation of accurate maps of catchment areas, geolocation of target population, use of maps for better planning and supervision of vaccination sessions, optimization of vaccination service areas, based on documented examples from other countries (e.g., Myanmar, Mozambique)

1. Provide logistic support to UNICEF HQ personnel under Gavi Data SFA on mapping immunization coverage and equity, including:

* Lead the coordination of logistics for in-country activities related to Gavi Data SFA, including arrangements for initial consultation meeting, final dissemination and consultation meeting, procurement of workshop materials (electronic equipment, perishable etc.), coordination of logistics for meetings and consultations with stakeholders;
* Be the focal points for communication of HQ with MoH and local technical partners, including supporting the sourcing of local data for geospatial mapping (i.e., routine immunization coverage data from DHIS2, census data) by technical partners

**Timeline and Deliverables**

The timelines and deliverables for this assignment is for 11 months with the following delivery schedule

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| Tasks | Deliverables (% contribution to Total payment) | % of Total Payment for cluster of deliverable/mini deliverables |
| * Compilation of workplan for strengthening integration of geospatial data and technologies in the immunization program based on the outcomes of HIS/NVIP March 2018 and 2019 consultations * Presentation to the relevant technical working group and the Immunization Sub-committee for consensus and validation by all the stakeholders * Identification of relevant stakeholders for the geospatial Technical Working Group (TWG) | * Workplan for strengthening integration of geospatial data and technologies *(3% of the payment)* * Report detailing the outcome of the validation meeting with the sub-committee on the workplan *(3% of the payment)* * Stakeholders mapping report *(2% of the payment)* | 8% |
| * Establishment of a national geospatial Technical Working Group (TWG) and organization of the inception meeting * Development of Terms of Reference (ToR) for the geospatial TWG with consultation with the Immunization M&E Sub-committee and Division of Health Information Systems * Identification and integration of existing policies where the rollout of geospatial data and technologies could be formalized with support of the geospatial TWG * Development of a strategy document to formalize the roll out of geospatial data and technologies to be incorporated into new or existing policies | * Terms of References of the Geospatial Technical Working Group signed off *(2% of the payment)* * Strategy document to support to formalize the roll out of geospatial data and technologies incorporated into new or existing policies (M&E strategy/HIS policy, National immunization strategic plan, KHSSP, national Spatial Data Infrastructure) *(6% of the payment)* | 8% |
| * Identification of key GIS stakeholders to support capacity building activities for MOH and technical GIS support for the use of geospatial data and technologies * Organized training on geospatial data management for the team in the MoH at national level responsible for the guardianship of the master lists * Organized meeting with NVIP county officials, DHIS2 managers and key GIS stakeholders with the objective to identify a strategy for integration of AccessMod geographic accessibility outputs in DHIS2 | * Reports of training on geospatial data management for the technical team in the MoH responsible for the guardianship of the master lists *(5% of the payment)* * Report on the discussions on the strategy to be used to integrate of AccessMod geographic accessibility outputs with DHIS2 data *(3% of the payment)* | 8% |
| * Completed assessment of current maintenance and updating mechanisms of administrative and reporting units master lists against existing guidelines/best practices in collaboration with the TWG * Completed assessment of current capabilities/existing platforms that could function as common geo-registry (e.g., DHIS2, Data service layer) * Reviewed existing protocols for data entry in DHIS2 related to health facilities coordinate precision), health facilities unique ID’s from KMHFL and reporting divisions Unique IDs | * Reports detailing the outcomes of the assessment of current mechanisms for maintenance and updating of master lists of health facility and reporting divisions *(4% of the payment)* * Assessment report of current capabilities/existing platforms that could function as common geo-registry (e.g., DHIS2, Data service layer) *(4% of the payment)* | 8% |
| * Organized meeting with Technical Working Group (TWG) for review of master lists storage/updating mechanisms and assessment of platform candidate to function as common geo-registry * Identified strategies for strengthening storage and updating of core master lists as in collaboration with TWG * Identification of strategies for enforcing protocols for data entry in DHIS2 related to health facilities coordinate precision, Naming Nomenclature, health facilities unique ID’s from KMHFL and reporting divisions Unique IDs (in collaboration with TWG) * Updated Standard Operating Procedures for master list maintenance and updating using existing guidelines/best practices, and establishing mechanisms for the enforcement of SOP * Updated current health facility master list coordinates and geocodes (in collaboration with identified key GIS stakeholders) | * Meeting reports of the Geospatial Technical Working Group *(2% of the payment)* * Updated SOPs/Guidelines for updating and maintenance of the master facility list *(4% of the payment)* * Updated master facility list with all the health facilities having the coordinates and geocodes *(2% of the payment)* | 8% |
| * Completed assessment and plan for completion or development of the other master lists core to the immunization program including but not limited to the following: Vaccination sites (static, outreach, mobile), village/settlements, and cold chain points and storage facilities * Identification of any additional data collection if required for creation of vaccination sites and cold chain points master list if these cannot be considered attached to health facilities (e.g. vaccination outposts), and developed a workplan for completion or development of such master lists | * Sub-national DHIS2 data-based maps for the 6 TCA focus counties *(4% of the payment)* * Workplan for completion or development of the other master lists core to the immunization program (Vaccination sites, village/settlements, and cold chain points and storage facilities) *(4% of the payment)* | 8% |
| * Development of GIS based advocacy materials and hold advocacy meetings with key county government officials in focus counties included in the 2018 training to plan for capacity building activities on use of geospatial tools for improved decision making including county planning, performance review and budgeting process * Supported HQ in the arrangements of final dissemination and consultation meeting for Data SFA project on mapping coverage and equity * Identified relevant stakeholders for capacity building workshops | * Report on advocacy with key Government officials in the focus counties on use of GIS for improved decision-making meeting *(6% of the payment)* * Final HQ dissemination and consultation meeting report *(2% of the payment)* | 8% |
| * Development of curriculums for refresher trainings at County level on Geospatial Data and Technologies for strengthening County quarterly review meetings, including (i) mapping of sub-county level immunization coverage and (ii) use of geographic accessibility mapping for bottleneck analysis in DHIS2 * Support key GIS stakeholder in the completion of the Geographic accessibility analysis for DHSSi focus counties and revision of the related indicators and data for bottleneck analysis * Completed linking of AccessMod Geographic accessibility output to DHIS2 for 5 counties (in collaboration with identified key GIS stakeholders) | * GIS Training curricula *(8% of the payment)* * Refined/updated Geographic accessibility determinant indicators list and data for the 5 DHSSi Focus Counties *(5% of the payment)* * Report on outcome of linking of AccessMod Geographic accessibility output to DHIS2 for 5counties *(3% of the payment)* | **16%** |
| * Delivered refresher trainings for county level personnel in 6 focus counties on Geospatial Data and Technologies for strengthening County quarterly review meetings, including mapping of sub-county and ward level immunization coverage * Documented refresher trainings | * Reports of refresher trainings in 6 TCA focus counties on Geospatial Data and Technologies for strengthening County quarterly review meeting *(12% of the payment)* | 12% |
| * Development of a costed workplan for a pilot project on use of GIS for immunization microplanning, including creation of accurate maps of catchment areas, geolocation of target population, use of maps for better planning and supervision of vaccination sessions, optimization of vaccination service areas, based on documented examples from other countries * Pilot the use of GIS for microplanning in 1-2 target counties, leveraging UNICEF ongoing work for immunization | * Workplan for use of GIS in immunization microplanning *(6% of the payment)* * GIS in used in Microplanning in 2 counties and report to inform scale up submitted *(6% of the payment)* | 12% |
| * Attended regular meetings of the geospatial Technical Working Group (TWG) as required * Produced knowledge management and information sharing products related to the use of geospatial tools for improved decision making including county planning, performance review and budgeting process including human interest stories, best practices and lessons learnt | * At least one knowledge management product: Human Interest Story, Best Practice/Lessons learnt etc *(8% of the payment)* | 8% |
|  |  | 100% |

**Work relationships**

1. The consultant will work under the overall supervision of the Health Information Management Specialist, with close coordination with the Health Specialist Immunization and Child Health and GIS Consulting Specialist, NYHQ.
2. The consultancy will be for a period of 10 months
3. The consultant will be located within the UNICEF Kenya Country Office within UN Complex and progress reports will be submitted to UNICEF.

**Desired Competencies, Technical Background and Experience**

**Essential**

* Advanced university degree in Health System Strengthening, Monitoring and Evaluation, Population studies, Statistics or other related field.
* Over 5 years progressively responsible professional work experience at the national and sub-national levels with ddocumented experience with management and analysis of public health data for research, policy or implementation in health/health related programmes, monitoring and evaluation, Knowledge Management, research and metrics
* Working experience with GIS for public health, including for example production of maps, geospatial data management and quality control and/or spatial analysis for health program planning, monitoring and/or analysis
* Proficiency with GIS software (QGIS or ArcGIS preferred) and MS Office (excel)
* Good understanding of the country health system, including main actors, governance and health information system structure
* Good English writing skills
* Self-driven and able to work under remote supervision

**Desired Profile:**

* Clear understanding of the health sector monitoring and evaluation system
* Previous training and/or qualification in GIS for health (e.g. Professional training, accredited industry course)
* Experience with use of GIS for immunization program planning, monitoring and/or analysis
* Proven ability to conceptualize, innovate, plan and execute ideas as well as transfer knowledge and skills.
* Ability to work in a team and collaboration in a multi-cultural environment. Good analytical, negotiating, communication and advocacy skills.
* Experience with research, policy or implementation of maternal and child health service delivery
* Previous experience with facilitating training activities or teaching
* Demonstrated ability to work in a multi-cultural environment and establish harmonious and effective working relationships both within and outside the organization. Ability to quickly builds rapport with individuals and groups; maintains an effective network of individuals across organizational departments

**Payment Schedule**

The fee is payable in instalments upon certification of satisfactory performance at each phase as per the deliverables and submission of corresponding invoices

1. www.unicef.org/health/files/Gavi\_UNICEF\_HGLC\_GIS\_Immunization\_guidance\_Oct2018.pdf [↑](#footnote-ref-1)
2. https://www.healthgeolab.net/KNOW\_REP/Guidance\_Common\_Geo-registry\_Ve1.pdf [↑](#footnote-ref-2)