

TERMS OF REFERENCE FOR CONSULTANTS

A. Outline of the Terms of Reference for Consultants

1. The terms of reference (TOR) for consultants describe the main tasks under this regional transactional technical assistance (TA) facility. The TA facility will require 40 person-months of international consultant inputs. The facility will also recruit two firms for a total of 29 person-months to conduct data analytics to support identification and management of epidemiological clusters to respond to the COVID-19 outbreak.
2. Asian Development Bank (ADB) will engage consultants on an individual basis for the range of deliverables outlined below, using the individual consultant selection method. Consultants will be engaged in accordance with ADB Procurement Policy (2017, as amended from time to time) and the associated project administration instructions (PAIs)/TA staff instructions. The firms will be recruited using consultant qualification selection.
3. Training, consultations, and workshops will be organized by ADB or by the consultants in accordance with ADB Procurement Policy (2017, as amended from time to time) as appropriate. The team will coordinate closely with the government agencies in recipient developing member countries (DMCs); and other key stakeholders during TA implementation.

B. Individual Consultants

1. International

4. **Senior health security expert (international, 3 person-months, intermittent).** The senior health security is expected to have a master's degree in public health, hospital management, health policy, health system or related field. A degree in medicine is desirable. The expert shall have at least 10 years of experience (12 years without a degree in medicine) in conducting assessment of health system response to outbreaks and minimum of five years of experience of working with government or international organizations. Experience in working on assignments with private sector partnership to complement public sector support will be given additional weight. The consultant will prepare comprehensive documents proposing national strategies, action plans, short and long-term recommendations on the design of an appropriate response to strengthen health systems to better address the COVID-19 outbreak and potential outbreaks of other communicable diseases. The consultant will support governments and ADB teams to conduct rapid health security health system impact assessments on the potential effect of COVID-19 under different scenarios (short containment and long containment periods); assessment will consider diagnostic and treatment capacities, human resources, adequacy of medical supplies, financing, capability of risk communication and capability of subnational reporting and decision-making. The consultant will also participate in capacity building workshops or seminars for relevant project implementing staff, government officials and health workers.
5. **Senior data scientist (international, 2 person months intermittent).** The consultant will have an advanced degree in public health, statistics, demography, economics, or epidemiology. He/she should have preferably 10 years of relevant experience with a strong research background in the area of health, population, and poverty. He/she should have experience in analyzing data from household surveys, health facility surveys, and administrative health-related data. He/she should have experience with measuring quality of healthcare service, utilization of healthcare services, client satisfaction, poverty, benefit incidence, national health accounts, and expenditure tracking. Knowledge of and experience working with national and

state-level health related information systems, datasets, and surveys in South Asia is highly preferred.

6. The consultant will undertake analysis to assess the supply side elements of healthcare and demand side factors behind health care utilization. Supply side elements will include improvement of public health infrastructure, empanelment of catchment population, private sector engagement, and the provision of financial protection for health. Demand side analysis would consider how healthcare utilization has evolved in the recent past under various national/state level health schemes and social protection programs, and utilization may change in the future. She/he will support the ADB team to examine the microlevel associations and trends of healthcare utilization in the selected countries. Of particular interest would be health access and health seeking behavior (including knowledge, attitudes, and perceptions) between urban and rural settings for poor/non-poor populations, private/public, various facility/provider types, for various ailments and conditions, etc. The findings should provide evidence on the relative importance of public health care institutions in both urban and rural areas. The study should also identify the current enablers and barriers to healthcare access (and their evolution over time) which may have implications on design and implementation of public health policies/programs. The consultant will conduct the following tasks.

- (i) Review and revise draft national and state urban health fact sheets (with disaggregated analysis for urban poor and non-poor, and rural populations);
- (ii) Conduct multilevel analysis of healthcare utilization in urban areas;
- (iii) Prepare a ten-page analytic brief with figures/tables on the key findings and insights (to be used as an ADB publication);
- (iv) Prepare a 4,000-word research manuscript for journal publication; and
- (v) Prepare issue briefs related to urban health indicators using NFHS data.

7. The consultant will largely work independently to accomplish the assignment, and will be guided by ADB SAHS team and relevant line ministry. The consultant may at times be required to coordinate with other ADB consultants, officials from government and technical institutions, and academics.

8. **Health information technology expert (international, 2 person-months, intermittent).** The health information technology (IT) expert will have around 10 years of relevant experience with relevant academic degree. The expert will support ADB teams and governments in strengthening health information systems, specifically focusing on electronic disease surveillance and frontline data capture, and monitoring and supervising tools for health service delivery. These include: (i) conduct of IT due diligence with respect to use of IT in project related activities; (ii) assess appropriate technologies and good practices that can be adopted in SARD DMCs, including mobile, web-based and geographic information system-based technologies; and (iii) develop guidelines for implementing the project health information systems.

9. **Maternal, child health and nutrition specialist (international, 2 person-months).** The consultant will have a postgraduate degree in public health, demography or related discipline with at least 8 years of experience working in maternal and reproductive health, pediatric health, or nutrition. Experience with health service delivery, financing and utilization of maternal and child health in South Asian countries is preferred. Previous experience working in ADB or other donor-funded projects will be given more weight. Familiarity with Service Availability and Readiness Assessment tool is desired. The consultant will provide policy-relevant support to governments and/or ADB project teams in ensuring continuity of access to quality maternal and child health care in the context of the COVID-19 outbreaks and strengthening preparedness of systems for maternal and child health service delivery in the event of future outbreaks. She/he will (i) review

national policies and strategies for improving maternal and newborn health, and the composition of healthcare providers; (ii) take stock of the capacity and coverage of service delivery in terms of the number of trained birth attendants, doctors, midwives and other related health-workers by geographic areas or location type; (iii) identify gaps in the existing systems as well as entry points for strengthening service delivery in the event of health-related disasters, including identifying opportunities within existing ADB supported health sector projects for ensuring continuity in maternal and child health care and nutrition; (iv) prepare short country-specific briefs with policy recommendations for mitigating impacts of health-related disasters and strengthening resilience of health service delivery for maternal and child health.

10. Health economist- demand side research (international, 2 person-months). The consultant will have an advanced degree in health economics, health systems, economics, behavioral psychology for public policy or related subject with preferably 10 years of relevant experience. Previous work on an ADB or donor-funded projects will be given preference. The consultant will conduct assessments of demand side factors in ensuring positive health outcomes, especially in context of crowding out of regular health care services due to the COVID-19 outbreak or similar potential outbreaks in the future. In assessing demand side factors, the consultant will look at determinants of health care utilization such as costs, financing, social norms including gender-related barriers to health care, and other actual or perceived barriers using latest available data from household surveys. The consultant will supplement household survey analysis with small-scale qualitative or quantitative surveys in selected countries to assess changes in healthcare utilization during emergencies. The consultant will prepare a consolidated report or country-specific background reports to inform ADB project teams. The report/s shall include findings along with proposed recommendations for risk communication strategies and other interventions to addressing demand side factors in ensuring continuity in health care access and quality.

11. Senior education specialist – education systems (international, 3 person-months). The consultant will have a master's degree in education, public policy or other related fields with at least 10 years of experience in education sector projects or research. Experience in (i) conducting emergency assessments and emergency and recovery planning; (ii) leading independent assessments and evaluation; (iii) dealing with government and government planning systems; and (iv) use of distance learning in developing countries is preferred. Experience working in developing or fragile contexts will be given additional weight. She/he shall have excellent writing and communication skills in English. The Senior education specialist will independently lead an assessment of the impact of the COVID-19 outbreak and resulting closures of school and educational institutions on learners across subsectors across SARD countries. The assessment will (i) synthesize existing assessments of government responses to address impacts of the COVID-19 outbreak; (ii) summarize and assess the policies related to education system capabilities, infrastructure for distance learning, adjustments in financing, and system-level capacity to coordinate complex education sector emergencies; (iii) draw from education sector responses in crises and emergency situations in other countries or countries with low resources; and (iv) recommend priority areas for ADB and government support. The consultant will draw mostly from secondary data sources and conduct virtual consultations with stakeholders in DMCs as appropriate. The consultant will deliver a finalized report or country-specific briefs which shall be shared with relevant education officials and policymakers.

12. Senior education specialist- learning support (international, 3 person-months, intermittent). The consultant will have a master' degree in education, child psychology or other related fields with at least 10 years of international experience in learning and pedagogy support. A PhD degree in either of these disciplines is preferred. Experience working in developing or

fragile contexts will be given additional weight. The consultant will provide expert technical inputs to ADB teams and relevant officials in SARD DMCs on the implications of the disruptions due to COVID-19 outbreak on learning including cognitive development and socioemotional skills and explore mitigating measures. She/he will provide advice related to i) understanding the effects of restricted learning environments which could result in reduced stimuli needed for enhancing learning ability; (ii) potential use of ICT in enhancing the learning process and building 21st century skills; (iii) supporting parents or caregivers in improving learning and development; (iv) incorporating activities within classroom or home settings to enhance learning and building self-direction skills across education subsectors; and (v) identifying available resources and guides to integrate practices to improve learning in context of the disruptions caused by the COVID-19 outbreak. She/he may prepare brief assessment reports or documentation to share with the ADB team or governments as appropriate.

13. Teacher development specialist (international, 3 person-months, intermittent). The consultant will have expertise in teacher training and broader human resource development (HRD) approaches, and student-centered pedagogy. Experience with developing teachers' ICT competencies and virtual instruction will be given additional weight. She/he should hold an advanced degree in education, public policy or other related discipline and have at least 10 years of experience in supporting HRD in education. Experience working in developing countries will be considered an advantage. The specialist will work closely with ADB teams and government stakeholders to (i) assess the policies, strategies and institutional capacities related to pre- and in- service teacher development programs in teaching through virtual education modes and ensuring learner-centered approaches in the teaching process; (ii) assess the implications of education disruptions and possible reforms to existing policies and legislation on pre- and in-service teacher development programs; (iii) identify necessary changes to the curriculum for strengthening teacher training in the medium to long-term; (iv) assess broad issues affecting HRD of teachers and principals, including performance assessment, recruitment and deployment, financial and non-financial incentives at national or local levels, and how they interact with any efforts to improve digital teaching skills; (v) conduct consultations with different stakeholder groups to verify the assessment findings and proposed strategic interventions to address key issues; and (vi) identify areas for policy considerations or actions in strengthening teacher development for preparedness against emergency situations such as the COVID-19 pandemic in the long-term.

14. Education technology specialist (international, 3 person-months, intermittent). The consultant should preferably have an advanced degree in education, public policy, management or related fields and have at least 5 years of relevant experience in identifying and promoting use of education technology (EdTech) solutions for distance learning and enhancing teaching-learning process. Knowledge of internationally and nationally available EdTech programs, software or hardware is required. Experience working with low-tech requirements is a plus. Excellent written and oral communication in English is required. The consultant will (i) map out available EdTech programs in SARD DMCs that can be used for different levels of schooling and for different areas such as continuity in schooling, teacher training, adaptive learning, formative assessments, and activity-oriented learning; (ii) map low-tech to high-tech areas within SARD DMCs and assess feasibility of appropriate modes of education and learning delivery; (iii) assess challenges and opportunities and outline detailed implementation requirements of various EdTech solutions, such as localization and training requirements; and (iv) identify gaps in adoption of potentially feasible EdTech solutions and recommend strategies to adopt appropriate and context-specific approaches.

15. **Social protection specialist (international, 2 person-months).** The consultant will preferably have an advanced degree in the fields related to social protection, social and public policy or other related fields and at least 10 years of experience working in social protection interventions or research across different countries, especially in SARD DMCs. In particular, the specialist will have the following expertise and experiences: (i) conducting rapid diagnostics of emergency social protection measures in developing countries; (ii) strong quantitative and qualitative analytic skills to carry out independent assessments and evaluation and good understanding of data availability across different DMCs; (iii) good understanding of labor market issues in SARD countries (e.g., India, Bangladesh, Nepal, Sri Lanka) and economic vulnerabilities across different sectors of the labor market; (iv) good knowledge of government response systems, planning processes, and administrative capacities in the areas of social insurance and social assistance systems; (v) familiarity with the role of NGOs and private sector players in social assistance systems in SARD DMCs; (vi) proven records in developing emergency intervention measures and resource mobilization in multilateral settings; and (vii) excellent English writing and communication skills. She/he will (i) synthesize existing social protection assessments of government policies, plans, interventions and response actions to address the COVID-19 pandemic and identify gaps focusing on inclusion in access to critical social sector services such as health, education and employment; (ii) identify priority areas for ADB support; and (iii) analyze national response components based on sectoral assessments in terms of the coverage and adequacy of emergency measures and identify major gaps as well as entry-points in the existing social protection systems, government responses, and other emergency support by development partners, private sectors or NGOs. The analysis will assess the alignment between the types of affected populations and eligibility criteria for accessing relief measures, efficacy and efficiency of existing social protection mechanisms, adequacy of financing and transfer mechanisms, logistics, communication, administrative capacity of governments in reporting, tracking, and coordinating with different levels of government agencies and other private and NGO sectors.

16. **Pool of expert consultants (international, 15 person-months, intermittent).** The consultants will have a master's degree or higher in health systems, health security, health finance, public health, medicine, public policy, human resource development, data analytics, education, technology, economics or a related field. They should have 10 years of general experience, including 5 years of relevant experience. The international experts in the areas of health, education, and social protection will be drawn as resource people or short-term consultants to provide technical expertise and capacity building support for ongoing and ensuing projects, assessments, and policy dialogue, as needed. The areas of expertise may cover building procurement capacity including recommendations for developing contingency plans and flexible systems for procuring necessary medical equipment and drugs, strengthening incident management structure, developing or improving surveillance systems, providing guidance on risk communication, guidance on strategy for developing the healthcare workforce and technical support for strengthening overall health systems preparedness, supporting project and activities implementation, assessing impacts of the COVID-19 outbreak or similar disruptions on education access and learning, teacher development, education systems planning, research and synthesis of ongoing operations to identify strengths, gaps and opportunities, assessing social protection systems and identifying approaches to strengthen coverage and quality, and multi-sectoral approaches to improve service delivery in health, education and social protection. International experts will also be used as facilitators and resource people for seminars and workshops.

C. Consulting Firms (2 firms, 1 each for Kathmandu, Nepal and Colombo, Sri Lanka; 14.5 person-months each)

17. The consulting firm will conduct immediate data analytics for identifying and addressing epidemiological clusters within the relevant city. Given the uncertainties regarding vaccine development and the rising humanitarian and economic costs of server lockdowns, it is unlikely that such restrictions can be maintained for extended periods. However, it is quite likely that as the restrictions are lifted, the virus infections may spike again. This would likely cause a recurrent regime of cluster identification, testing, isolation/ quarantine/ restriction, and treatment. Poor and low-income neighborhoods in cities of South Asia, with high population density and less social distancing options, are likely to be more at risk of COVID-19 outbreaks. Given the experience of COVID-19, it is likely that many of the cases in clusters do not need hospitalization but need to be isolated or quarantined in location and treated. Testing kits are also limited in availability, and so have also to be directed optimally as the clusters break out. Basic medicines, nutritional supplements, trial medication (if any), must be delivered to these neighborhoods, which may be under quarantine and have low ability to pay. If the coronavirus causing COVID-19 follows patterns of recurrence and cluster outbreaks, better testing and tracking would allow more targeted lockdown policies and distribution of testing kits, medicines, and protective equipment.

18. This data analytics exercise will explore the use of telecommunication and media data, including information from mobile phone operators and call centers, to help manage the “logistics” of testing and tracing COVID-19 clusters. “Logistics” in this context is unrelated to transport, but on sampling strategy, strategized deployment of testing kits, and reaching primary medication, nutritional supplements, and protective equipment to those who need them in low income areas and/or vulnerable clusters.

19. The proposed methodology may rely on the consultant gathering, collating, analyzing and organizing (a) telecommunication data obtained from telecom service providers to show clusters of low-load and frequent recharge population, (b) call data records (CDR) for tracing movement in and about such clusters, (c) simple text-based response surveys with designed sampling. Data obtained from items (a) to (c) will need to be overlaid on demographic and geographical maps obtained from the best available sources. Once this is done, data from health clinics, hospitals, and surveys under (c) would then be overlaid on these maps to get potential (vulnerable) clusters. The methodology suggested above is indicative and may be refined by the consultant based on ground reality and data availability. The methodology and outputs should be such as to easily guide any strategy to direct targeted lockdown policies and distribution of testing kits, medicines, and protective equipment. is not envisaged as a report for academic purposes but would yield data that can be directly used by DMC government, and the developed model should follow a methodology that can be replicated in other cities. However, the actual logistics of any financial assistance for implementing any follow-on project, by the government, by possible second-stage follow-on assistance by ADB, or by other agencies, is not part of this assignment.

20. **Firm qualification:** The skillset required would be (a) familiarity with epidemiology; (b) information and telecommunication technology; (c) data science and charting/ mapping; (d) transaction control and anchoring. Since physical movement is restricted, the assignment would need to rely on existing offices and contacts in the relevant city, and collating data from multiple sources to create a coherent approach. In terms of technology, the requirement would be more to access and process data by correlations and overlays and provide clear pictorial outputs. Therefore, *per-se*, the technological requirements are deliberately kept low and manageable. No international travel is envisaged. Each team will be composed of the following positions. The number of person-months indicated below is for each firm.

- (i) **Team leader/ management expert (international, 1.5 person-months):** The Team Leader/ Management Expert will be a management professional with academic qualifications in Business Administration, or equivalent, at Master's level, with at least 12 years of relevant professional experience in healthcare, or social sectors. The Team Leader should have demonstrated skills in innovation, coordination, and presentation.
- (ii) **Healthcare management expert (international, 1.5 person-months):** The Healthcare Management Expert will be a healthcare professional with Master's level qualifications in Medicine, Management, Public Health, or equivalent with at least 8 years relevant experience in health administration, public health, healthcare logistics, or healthcare projects.
- (iii) **Medical professional (Epidemiologist) (international, 1 person-month):** The Epidemiologist will be a qualified Doctor with at least 8 years relevant experience of having dealt with infectious diseases on an epidemic scale. She or he should be completely familiar with COVID-19 in terms of latest protocols, testing, and treatment options.
- (iv) **Statistician/ Data analytics Expert (international, 1.5 person-month):** The expert will be a professional with a master's degree in Mathematics, Statistics or equivalent. Certifications or other qualifications in Data Sciences will be given a preference. The Expert should have demonstrated experience of statistical analysis, sampling, and managing and analyzing large data sets, with at least 10 years of general experience, and 3 years of relevant experience.
- (v) **Information and telecommunications expert (international, 1 person-month):** The IT Expert will be a professional with master's degree in IT, Computer Sciences, or related fields, with at least 8 years' experience relevant in mobile telecommunications.
- (vi) **GIS and mapping expert (international, 1 person-month):** The expert will be a professional with Master's degree in geography, civil engineering or equivalent, with demonstrated ability to use GIS and mapping software with at least 10 years of general experience, and 3 years of relevant experience.
- (vii) **Pool of national consultants (national, 7 person-months):** To provide on-the-ground consultant support, each firm/team will recruit national consultants with expertise in project coordination, quantitative data analysis, IT analysis, and social and gender issues.

21. **Deliverables and outputs.** The following deliverables shall be produced within the indicated timelines.

- (i) **Inception report (10 days after mobilization):** Covering ground situation assessment, the key stakeholders to be contacted, and the approach and methodology;
- (ii) **Data analysis report (60 days after mobilization):** Covering the data collected and its analysis, methodology for analysis, and conclusions. Data obtained from city and telecom sources need to be overlaid on demographic and geographical maps. Data from health clinics, hospitals, and surveys would then be overlaid to get potential (vulnerable) clusters;
- (iii) **Strategy and action plan (60 days after mobilization):** Based on Data Analysis Report, a strategy and plan of action(s) will be evolved to direct targeted lockdown policies and distribution of testing kits, medicines, and protective equipment; and

- (iv) **Digital maps and charts (70 days after mobilization):** Covering entire city, showing city layout, demographic layout including derived income distribution and movement patterns, overlaid telecom data, overlaid clinical and testing data. The maps will be on readily usable software and free software readers, not requiring software that needs end-use licensing payments.