RETA 8763: Results for Malaria Elimination and Control of Communicable Disease Threats in Asia and the Pacific

TERMS OF REFERENCE

(additional terms of reference for revised outputs)

OUTPUT 1

Regional Health Security Expert
International consultant (12 person-months, intermittent)

Background:

In November 2014 ADB approved the TA Results for Malaria Elimination and Communicable Diseases Control (RECAP) in Asia Pacific financed under the regional malaria and other communicable diseases threats trust fund (RMTF). The outcome is reduced risk to the Asia and Pacific region, and globally from drug-resistant malaria and other communicable diseases. While the TA focuses on malaria and other communicable diseases, it also aims to strengthen health systems and address root causes of malaria drug resistance and communicable disease spreading.

The RECAP TA aims to respond to key challenges in combating malaria and other communicable diseases in Asia and the Pacific. These challenges include the need (i) for higher level of sustained financing, (ii) for cooperation for managing the efficacy and affordability of key drugs and commodities, (iii) for improved data for evidence-based decision making across countries, and (iv) to expand leadership beyond the health sector.

Output 1 of the TA was designed to build capacity and strengthen coordination among governments to improve regional leadership for malaria elimination and control of other communicable diseases threats (part of regional health security). .

Activities under output 1 have been updated to include sub-regional capacity development and policy dialogue between the Ministries of Finance, Health, and Foreign Affairs to advance regional health security in the context of Ebola and pandemic preparedness, mobilize regional financing and strengthening of sub-regional information exchange for disease surveillance.

Scope of Work

The consultant will lead the collaboration with WHO on regional health security and will prepare 2 sub-regional consultations, one in *S*outh Asian Association for Regional Cooperation (SAARC) countries, one in the ASEAN countries. The workshops will bring together policy makers from Ministry of Finance, Ministry of Health and Foreign Affairs and other relevant stakeholders to discuss investment and capacity development needs to strengthen national and regional health security and to discuss what kind of sub-regional funding mechanisms can be established trough existing sub-regional bodies to fund emerging and existing communicable diseases threats. Ebola and MERS will be used as case studies

Detailed tasks and/or Expected Output

- Establish collaboration including work plan for the time period 2016-2017 with South East Asia Regional Office and Western Pacific Regional Office of WHO to lay out the planned joined activities to enhance understanding and support of governments for regional health security.
- Develop landscape analysis of ongoing sub-regional activities supporting regional health security.
- Develop with the support of resource persons from Center of Excellence summary paper with case studies for MERS and Ebola on the potential economic impact of pandemics in South Asia and Southeast Asian countries.
- Prepare two sub-regional workshops/conferences in coordination with WHO, SAARC and ASEAN
- Prepare background and presentation material for the workshops
- Prepare workshop/conference summary report and recommendations for action including investment needs at national and sub-regional level.
- Lead weeks communication with WHO and other partners
- Support ADB in the broader regional health security work.
- Develop working paper on ADB's support for regional health security (historical review, achievements, future plans).
- Provide technical input into ADB's new Regional Integration and Cooperation Operational Plan
- Support RECAP task manager as needed.

Deliverables:

- Landscape analysis;
- Summary paper with case studies on potential economic impact of pandemics;
- Workshop material, concept note, agenda, presentation material, technical background papers for South Asia and Southeast Asia context;
- Workshop/conference summary report;
- ADB brief on ADB's regional health security flagship program; and
- Input to ADB's regional health security projects

Educational background:

Master in public health or international/global health or related field.

Professional Experience:

More than 8 years experience working on regional health security related topics in Asia and the Pacific, experience working with ADB, WHO and regional bodies, experience working on and solid knowledge about emerging infectious diseases threats.

OUTPUT 2

SFFC Medicine Reporting and Regulatory Expert
International consultant (18 person months, full time)

Background:
In November 2014 ADB approved the TA Results for Malaria Elimination and Communicable Diseases Control (RECAP) in Asia Pacific financed under the regional malaria and other communicable diseases threats trust fund (RMTF). The outcome is reduced risk to the Asia and Pacific region, and globally from drug-resistant malaria and other communicable diseases. While the TA focuses on malaria and other communicable diseases, it also aims to strengthen health systems and address root causes of malaria drug resistance and communicable disease spreading.

The RECAP TA aims to respond to key challenges in combating malaria and other communicable diseases in Asia and the Pacific. These challenges include the need (i) for higher level of sustained financing, (ii) for cooperation for managing the efficacy and affordability of key drugs and commodities, (iii) for improved data for evidence-based decision making across countries, and (iv) to expand leadership beyond the health sector.

Output 2 of the TA was designed to address cooperation for managing the efficacy and affordability of key drugs and commodities. Output 2 also aims to increase availability and use of quality assured commodities appropriate to internationally-agreed guidelines for malaria and other communicable disease threats.

Activities under output 2 have been updated to include strengthening the capacity of ASEAN countries National Regulatory Agencies to report spurious/falsely-labeled/falsified/counterfeit (SFFC) medicines. This activity is in collaboration with WHO and it requires collaboration with the private sector and needs to be linked to broader capacity development of national agencies through the Center of Regulatory Excellence in Singapore.

Scope of Work
The consultant will lead for ADB the collaboration with WHO on strengthening the capacity of ASEAN countries' National Regulatory Agencies to report spurious/falsely-labeled/falsified/counterfeit (SFFC) medicines, especially related to anti-malarials. The activity will build on WHO experience in Africa and the work that has been started in the GMS a couple of years ago but was not further pursued due to funding gaps. The activity will conduct sub-regional capacity development to strengthen reporting, build trust and establish focal points and mode of communication to report SFFC medicine.

Detailed tasks and/or Expected Output
- Establish collaboration including work plan for the time period 2016-2017 with WHO Head Quarter and Western Pacific Regional Office of WHO to explain the planned joined activities to enhance capacity to report SFFC medicine in ASEAN countries.
- Develop landscape analysis of ongoing sub-regional activities supporting strengthening of reporting of SFFC medicine.
- Conduct desk review and conduct gap analysis of SFFC reporting in ASEAN countries, include case studies and include best practices from other regions.

- Reach out to private sector pharmaceutical companies to build their support for strengthening reporting of SSFC.
- Reach out to m-health toll developers (e.g. mclinica) how their tools can be used by NRA to improve monitoring and reporting of SFFC penetration in the markets.
- Establish collaboration with Interpol.
- Develop project proposal for collaboration with Interpol.
- Prepare sub-regional workshops/conferences in coordination with WHO, and ASEAN.
- Prepare background and presentation material for the workshops together with WHO experts.
- Prepare workshop/conference summary report and recommendations for action including investment needs at national and sub-regional level to strengthen NRA capacity to report on SFFC medicine.
- Lead weekly communication with WHO and other partners.
- Support ADB in the broader regional health security work related to regulatory practices of pharmaceuticals.
- Develop working paper on ADB's support for strengthening regulatory practices in Asia Pacific.
- Support RECAP task manager as needed.

Educational background:
Master in pharmacology, public health or international/global health or related field

Experience:
More than 10 years experience working on regulatory aspects of pharmaceuticals and SFFC medicine in ASEAN countries, has experience working with WHO and regional bodies, experience working on and solid knowledge about convergence of regulatory practices.

Post Market Surveillance Tools Experts
International and national consultant, 23 person-months, intermittent

Collaboration between Georgia Institute of Technology, Oxford University, London School of Hygiene and Lao-*Oxford*-Mahosot Hospital-Wellcome Trust Research Unit

Background:
In November 2014 ADB approved the TA Results for Malaria Elimination and Communicable Diseases Control (RECAP) in Asia Pacific financed under the regional malaria and other communicable diseases threats trust fund (RMTF). The outcome is reduced risk to the Asia and Pacific region, and globally from drug-resistant malaria and other communicable diseases. While the TA focuses on malaria and other communicable diseases, it also aims to strengthen health systems and address root causes of malaria drug resistance and communicable disease spreading.

The RECAP TA aims to respond to key challenges in combating malaria and other communicable diseases in Asia and the Pacific. These challenges include the need (i) for higher level of sustained financing, (ii) for cooperation for managing the efficacy and affordability of key drugs and commodities, (iii)for improved data for evidence-based decision making across countries, and (iv)to expand leadership beyond the health sector.

Output 2 of the TA was designed to address cooperation for managing the efficacy and affordability of key drugs and commodities. Output 2 also aims to increase availability and use of quality assured commodities appropriate to internationally-agreed guidelines for malaria and other communicable disease threats.

Activities under output 2 have been updated to include post-market surveillance to pilot test new technological innovations for pharmaceutical quality testing and reporting of low quality anti-malarials. This activity is a collaboration with WHO and it requires collaboration with the private sector and needs to be linked to broader capacity development of national agencies through the Center of Regulatory Excellence in Singapore. Quality testing tools will have benefits beyond anti-malaria post market surveillance modalities for sample screening of the quality of medicine available to patients. The following quality assessment tools are proposed to be tested:

A. <u>Raman Spectroscopy</u>
Portable Raman spectrometers can accurately distinguish different types of falsified artesunate from genuine products (de Viej*et al.* 2007, 2008, Ricci *et al.* 2007, 2008). Some antimalarials such as the lumefantrine containing ACTS produce a distinct Raman band for the lumefantrinemoiety which can be directly observed. For most medicines, chemometric techniques are employed to compare the recorded spectra with those in areference library. Advantages of the technique include the ability to scan through blister packs and bottles, producing a combined spectrum of all the ingredients in the preparation – allowing the generation of a fingerprint for a particular product (Eliasson&Matousek 2007). The latter advantage is also a limitation as the fingerprint is specific for a particular brand due to variability in excipient content. The machine needs to be 'trained' for the medicines and medicine brands available in particular countries via specific databases. The TruScan^{TM} portable Raman spectrometer (Ahura Scientific, Inc., Wilmington, MA) has been shown to accurately detect falsified artesunate in the

laboratory (Ricci *et al.* 2008) and in the field in Nigeria, leading to seizure of 60,000 tablets and arrests (Udoh 2010).

B. Near-Infrared Spectroscopy (NIRS)

Near-infrared spectroscopy (NIRS) was shown by Scafi&Pasquini (2001) to be effective in discriminating between 27 different genuine and falsified medicines, lamivudine (Lopes *et al.* 2007), artesunate (Dowell *et al.* 2008) and dexamethasone (Rodionova*et al*. 2010). NIRS is complementary to Raman in that molecular features that are detectable by Raman are not generally detectable by NIRS and vice versa. Also spectral overtones, characteristic of NIR, tend to make the spectras complicated; thus requiring chemometric techniques for spectral interpretation. A high degree of expertise is required for accurate operation. An advantage of NIRS is that it does not suffer from fluorescent excipient interferences, as Raman does, but tends to be less sensitive. Portable NIRS instruments are also available and, the Chinese NICPBP has equipped 200 vans with benchtop NIR spectrometers to check chemical medicine quality in the 'field' (Mukhopadhyay 2007). Miniature NIR devices have been developed and could be evaluated for detecting poor quality medicines – see https://www.consumerphysics.com/myscio/.

C. Portable Mass Spectrometry (MS)

Mass Spectrometry is the technique of choice when highly selective and sensitive measurements of pharmaceuticals are needed. Recent innovative miniaturization has led to portable instruments, which have not been evaluated for medicine quality testing (see http://908devices.com/products/). Quantitative measurements are now possible but require more skilled personnel.

D. Microfluidics devices

The Zaman group at Boston University has developed a suitcase sized microfluidics device for rapid chemical analysis of suspect medicines (see Dwortzan 2014 and http://savinglivesatbirth.net/summaries/327). This device shows promise but needs independent field testing and comparison with other tools.

E. Card tests

Weaver & Lieberman (2015) have developed a screening system for library of chemical color tests embedded on a paper card can presumptively identify formulations corresponding to very low quality antimalarial drugs. They are being field tested in Kenya.

F. CD4

The US Food and Drug Administration (FDA) developed an optical tool (CD_3) for the objective visual examination of packaging and tablets in comparison to reference images held in the device. In an evaluation of large series of antimalarials in Laos this gave extremely good agreement with the combined manual packaging/chemistry results (Ranieri*et al.* 2014). This device could be useful for evaluating medicine packaging in the field. A new generation of this device has been developed (CD_4) and is been evaluated in Ghana but has not been evaluated in Asia yet.

The combination of a two complementary portable, battery powered devices, one directed at the chemistry and one at the packaging may be especially powerful.

Laboratory based evaluations of single systems for a few medicines have been performed but there have been no evaluations for wide varieties of drugs or in the field.

As demonstrated by Hajjou*et al.* (2013), there are issues with Raman spectroscopy, especially for co-formulated medicines, that have not been considered properly and they are unlikely to be accurate in detecting substandard medicines (that are likely to be key drivers of antimicrobial resistance) but may, in principle, be able to detect degraded medicines. Nor have there been comparisons of the accuracy, ease of use and cost-effectiveness of different techniques across a diversity of essential medicines. Their comparative ability to detect falsified, substandard or degraded medicines remains unknown. That high fluorescence pharmaceutical ingredients may markedly reduce the accuracy of Raman instruments, that Raman signatures are brand or lot specific and that none of these techniques have been evaluated for the combination, co-formulated therapy, that are the mainstays for malaria, TB and HIV therapy, is of great concern. This needs to be done urgently before they are widely used.

There is therefore an urgent need for such investigations to allow National Regulatory Agencies (NRA) to decide whether these new technologies are appropriate for screening of diverse medicines and by whom and at what position within the medicine surveillance system they are best used. Without such research these innovations will not realize their potential to improve medicine quality.

Impact, Outcome, Outputs

The impact of the TA will be improved health status of the population in Asia and the Pacific. The outcome will be reduced risk to the Asia and Pacific region and globally from drug-resistant malaria and other communicable disease threats.The aim is to deliver 4 specific outputs.

The TA will build on work of the WHO and other partners, and stakeholder consultations to analyze challenges to improving the quality and availability of malaria drugs and other commodities, develop approaches to address them, build consensus on priorities, and provide technical support for relevant country-level action in 5 GMS countries.

The evidence obtained through the TA would allow NRAs and international organizations to make informed choices as the optimal devices for their requirements. We would expect that the use of the optimal devices in a systematic surveillance system would greatly assist regulating the medicine supply and result in a lower prevalence of poor quality medicines.

Expected outputs as follows:

i) A literature review of the current evidence regarding utility of rapid diagnostic devices for assessing medicine quality;
ii) Engagement with each medicine regulatory authority (MRA) in the GMS to advise them of this study and, where possible, secure agreements to take this data into account in formulating policy on post-market surveillance;
iii) A report summarizing the work conducted on each of the technologies described above, the results and discussion of the implications of the work for MRAs and international organizations;
iv) Scientific publications outlining the study findings on each of these technologies, compared against high performance liquid chromatography as the baseline (HPLC); and
v) Bilateral meetings and workshops with each GMS country to discuss the results and implications of these findings and support the development of post-market surveillance plans that build on them

Objective and Scope

Objective:

i) To evaluate the diagnostic accuracy (against advanced formal chemical techniques), ease of use and cost-effectiveness of combinations of devices including the minilab, portable packaging analysis tool, potable NIR, Raman, MS instruments – initially in the laboratory and then in Laos;
ii) To publish and disseminate the results and discussion of this investigation and
iii) To support MRAs in incorporating the most up to date scholarly evidence (including these studies) into their policy discussions on post-market surveillance.

Scope:

i) The project will cover essential anti-infective medicines (antimalarials, anti-TB, antibiotics, anti-retrovirals) commonly used in LAO PDR and the GMS;
ii) The project will include diverse portable chemical and packaging analysis devices and the minilab; and
iii) The project will include diagnostic accuracy and cost-effectiveness analysis.

Methodology:

1. With the expression of interest for this activity, a draft proposal will need to be submitted.

2. A literature review of the current evidence regarding utility of rapid diagnostic devices for assaying medicine quality;

3. Discussions with various stakeholders currently engaged in these topics (donors, technical agencies, government organizations, academia, NGOs); AND

4. The comparative accuracy and ease of use of these technologies will initially be compared in the laboratory for a range of essential anti-infective medicines (antimalarials, anti-TB, antibiotics, anti-retrovirals). The most promising technologies will then be evaluated in a specially constructed Evaluation Pharmacy in collaboration with the MRA of Laos (Food & Drug Department (FDD)).

Phase 1. A CD_4 database of registered medicines and scans of packaging will be generated. Instrument-specific chemical databases for each portable chemical analyser and reference HPLC and mass spectrometry will be performed in Atlanta, USA, for key essential anti-infective medicines used in Laos and the GMS. Falsified, substandard and degraded medicines, both collected and especially created in the laboratory, will be used to test the ability of the MiniLab and portable chemical analysers to detect them.

Phase 2. In Laos an Evaluation Pharmacy will be specially constructed to mimic a small Grade III Lao pharmacy and stocked with a range of genuine, substandard, degraded and falsified products of known packaging and chemical composition. Drug inspectors will, strictly blinded to the contents of the pharmacy, be asked to inspect the contents as they conventionally would and with the CD_4 and the portable chemical analysers in different combinations and choose which medicines would require further

testing. Diagnostic accuracy and times to complete will be measured. The Minilab tests will be performed on the entire pharmacy medicines after the drug inspections.

An economic analysis of the cost-effectiveness of these experimental medicine inspector systems, compared with that currently in place, will be performed.
The study will therefore, for the first time, allow an understanding of the diagnostic accuracy of portable field-testing of packaging and chemistry, their ease of use and economic implications.

Finally, in the first six months after completion of Phase 2, the team will hold a series of 1:1 meetings with NRAs and international organizations in Asia in order to share project results and workshops with NRAs to support incorporating these findings into policy development on post-market surveillance.

Phasing and Duration

23 months – December 1st 2015 - 30thOctober 2017

Phase 1 - December 1st 2015 - 30th November 2016 (12 months)

A literature review of the current evidence regarding utility of rapid diagnostic devices for assaying medicine quality will be conducted. A CD_4 database of registered medicines and scans of packaging will be generated. Instrument-specific chemical databases for each portable chemical analyzer and reference HPLC and mass spectrometry will be performed in Atlanta, USA, for key essential anti-infective medicines used in Laos and the GMS. Falsified, substandard and degraded medicines will be used to test the ability of the MiniLab and portable chemical analyzers to detect them. Cost-effectiveness analysis planning will be conducted.

Phase 2 - December 1st 2016 - 30th Sept 2017 (10 Months)

In Laos an Evaluation Pharmacy will be specially constructed to mimic a small Grade III Lao pharmacy and stocked with a range of genuine, substandard, degraded and falsified products of known packaging and chemical composition. Drug inspectors will, strictly blinded to the contents of the pharmacy, be asked to inspect the contents as they conventionally would and with the CD_4 and the portable chemical analyzers in different combinations and choose which medicines require further testing. Diagnostic accuracy and times to complete will be measured. The Minilab tests will be performed on the entire pharmacy medicines after the drug inspections.

An economic analysis of the cost-effectiveness of these experimental medicine inspector systems, compared with that currently in place, will be performed.

Final phase of phase 2: 1- 31 October 2017 (1 month)
Following the completion of these studies, the team will hold bilateral meetings and workshops with each GMS country to discuss the results and implications of these findings and support the development of post-market surveillance plans that build on them. These can be conducted in conjunction with the ADB teams working on direct support for National Regulatory Authorities through the Center of Regulatory Excellence.

Activities, timelines and deliverables

Phase 1 – 12 months	Activities	Deliverables
	Literature review	Literature review
	Discussion with stakeholders	
	Planning of economic analysis	
	Chemistry/packaging databases per device	
	Completion of laboratory assays	Interim report

Phase 2 - 11 months	Activities	Deliverables
	Development of Evaluation Pharmacy	
	Completion of Evaluation Pharmacy assessments	
	Completion of economic analysis	
	Completion of final report followed by Discussion Meeting in GMS	Final report, following by peer-reviewed publications
	1:1 consultations with each GMS MRA in order to share the study results	Workshop report
	Workshops with each MRA to support incorporation of results and latest scholarship on post-market surveillance into policy on post-market surveillance	

Composition of team and skill sets required

Positions	Int/Nat	Person months
Phase 1 and 2		
Post-doctoral research chemist	Int	23 person-months
Chemist Leads	Int	30 days
Public health and epidemiology	Int	30 days
Health Economist	Int	30 days)
Logistician/administrator	Nat	23 person months
IT and data support	Nat	23 person months
3 resource persons	Int	10 days each
Pharmacist	Nat	10 person months

Skills and Educational Background Requirements

Positions	Tasks & responsibilities	Educational background	Skills requirements
Post-doctoral research chemist	To coordinate and run the research project. To run chemical assays, analyze results and prepare reports	PhD in chemistry; experienced analytical chemist with skills in LC-MS, Raman and NIR	Experienced analytical chemist with skills in LC-MS, Raman and NIR
Chemist leads	To supervise the chemistry aspects	PhD in chemistry. Established positions	Experienced senior analytical chemists
Public health and epidemiology lead	To supervise the public health aspects	MD	Experienced public health physician
Pharmacist	To support	Degree in Pharmacy	Experienced pharmacist
Health economist	To perform the cost-effectiveness analysis	PhD in health economics or related field	Experienced health economist with knowledge of cost-effectiveness analysis of diagnostic tests
Logistician/administrator	To support the logistics and administration of the project	College qualification	Experienced logistician/administrator
IT and data support	To support the IT and data management of the project	Degree in IT and/or data management	Experienced IT and data support manager

OUTPUT 4

Health Impact Assessment – Technical lead
International Consultant, intermittent, 150 working days

Background

In November 2014, ADB has approved a large scale TA financed under the regional malaria and other communicable diseases threats trust fund (RMTF). The TA aims to support countries in Asia and the Pacific to reduce the risk to the region and globally from drug-resistant malaria and other communicable disease threats, and support the region to eliminate malaria. While the TA focuses on malaria and other communicable diseases, it aims to strengthen health systems and address root causes of malaria drug resistance and communicable disease spreading. One area of work will strengthen health impact assessment (HIA) in large infrastructure projects in malaria endemic areas, particularly in border areas. These can be ADB-financed infrastructure projects and/or private sector financed projects.

The infrastructure projects will pilot approaches to malaria prevention and treatment among workers (including migrants) and surrounding communities. There are ongoing initiatives in this space in Cambodia and Lao PDR supported by Population Service International and in Myanmar supported by the Myanmar Business Coalition on Aid, which could be scaled up and operationalized within a broader HIA policy framework.

The TA will (i) explore possible intervention at development sites and possibly at different points on migration paths, including work with companies involved in infrastructure projects; (ii) work with relevant regional associations to develop norms and standards for health protection and access to care around development projects; (iii) develop and test mechanisms to ensure that migrant workers and other vulnerable populations at development sites have access to malaria prevention and treatment, including in areas where migrants may avoid or not be eligible for government services; and (iv) work to include considerations on communicable diseases in instruments for economic and social impact assessments of development projects.

Within the context and guiding principles of the recently approved Operational Plan for Health (OPH), 2015-2020 (Health in Asia and the Pacific: A Focused Approach to Address the Health Needs of ADB Developing Member Countries), specifically Appendix 3 on Infrastructure Projects and Health Outcomes, health impact assessment of projects funded by ADB should ensure sound health for communities within the health, environment and development nexus.

ADB has been actively involved in major health undertakings such as HIV/AIDS in the region, malaria control and elimination through the Asia Pacific Leaders Malaria Alliance (APLMA) and the RMTF which include regulatory convergence of medical goods and pharmaceuticals, and nascent initiatives on climate change and health. These are proof that the region can benefit from ADB's convening power, interdisciplinary approaches to regional health governance, and the ability to combine technical knowledge with development finance.

ADB will continue to optimize health outcomes through development infrastructure under a broader public health approach. However, collaboration with infrastructure sectors (such as urban development, water and sanitation, transportation, energy) has thus far

been insufficient. The OPH will promote cross-sectoral cooperation for ADB to use its financing leverage in infrastructure to better account for the contribution of non-health sectors to health outcomes and to mitigate possible adverse health impacts of infrastructure projects.

Scope of work:
Strengthening health impact assessment in large infrastructure projects will involve three main tasks: (1) strengthening ADB's HIA tools, applications, and project screening; (2) strengthening and supporting the policy dialogue on HIA in the Greater Mekong Sub-region (GMS); (3) working with infrastructure project owners (ADB and private sector) to develop in collaboration with civil society organizations (CSOs) malaria screening and treatment activities linked with workers and communities involved in infrastructure projects. These tasks will be delivered in 24 months by 4 individual consultants working as a team, one of whom is a Technical Lead.

Detailed tasks and or expected outputs:
The Research and Development Expert will have the following tasks:

- Discuss with ADB team leaders possible projects which will benefit from HIA;
- Work with ADB operational departments, specifically in the transport and energy group;
- Serve as a resource person for the HIA training for ADB staff and DMCs(also on call for consultations and request for advice from ADB staff);
- Lead the conduct of HIA for ADB projects; and
- Coordinate and consolidate the work of the team experts

Deliverables:

- Working paper on HIA;
- Lessons paper;
- Presentation materials for training; and
- HIA of 2 ADB projects

Educational Background:
Graduate degree in public health, medical science, medicine, occupational health or related fields. Additional training and experience in health impact assessment is a must.

Professional background
15-20 years of experience in public health and health impact assessment. Experience working in Southeast Asia (Cambodia, Lao PDR, Myanmar, Viet Nam, Thailand). Experience working with private sector on HIA of infrastructure projects. Experience in policy dialogue with Governments on HIA.

BUDGET:

			Amount (In US$)
Remuneration	$850 per day or more plus per diem and housing for Manila	180 days	$ 142,500
Travel and per diem			42,986
Insurance	$0.84	707 days	596
Contingency			5,000
Total			$ 191,082

Health impact Assessment – Capacity Development Expert
International Consultant, intermittent, 100 working days

Background

In November 2014, ADB has approved a large scale TA financed under the regional malaria and other communicable diseases threats trust fund (RMTF). The TA aims to support countries in Asia and the Pacific to reduce the risk to the region and globally from drug-resistant malaria and other communicable disease threats, and support the region to eliminate malaria. While the TA focuses on malaria and other communicable diseases, it aims to strengthen health systems and address root causes of malaria drug resistance and communicable disease spreading. One area of work will strengthen health impact assessment (HIA) in large infrastructure projects in malaria endemic areas, particularly in border areas. These can be ADB-financed infrastructure projects and/or private sector financed projects.

The infrastructure projects will pilot approaches to malaria prevention and treatment among workers (including migrants) and surrounding communities. There are ongoing initiatives in this space in Cambodia and Lao PDR supported by Population Service International and in Myanmar supported by the Myanmar Business Coalition on Aid, which could be scaled up and operationalized within a broader HIA policy framework.

The TA will (i) explore possible intervention at development sites and possibly at different points on migration paths, including work with companies involved in infrastructure projects; (ii) work with relevant regional associations to develop norms and standards for health protection and access to care around development projects; (iii) develop and test mechanisms to ensure that migrant workers and other vulnerable populations at development sites have access to malaria prevention and treatment, including in areas where migrants may avoid or not be eligible for government services; and (iv) work to include considerations on communicable diseases in instruments for economic and social impact assessments of development projects.

Within the context and guiding principles of the recently approved Operational Plan for Health (OPH), 2015-2020 (Health in Asia and the Pacific: A Focused Approach to Address the Health Needs of ADB Developing Member Countries), specifically Appendix 3 on Infrastructure Projects and Health Outcomes, health impact assessment of projects funded by ADB should ensure sound health for communities within the health, environment and development nexus.

ADB has been actively involved in major health undertakings such as HIV/AIDS in the region, malaria control and elimination through the Asia Pacific Leaders Malaria Alliance (APLMA) and the RMTF which include regulatory convergence of medical goods and pharmaceuticals, and nascent initiatives on climate change and health. These are proof that the region can benefit from ADB's convening power, interdisciplinary approaches to regional health governance, and the ability to combine technical knowledge with development finance.

ADB will continue to optimize health outcomes through development infrastructure under a broader public health approach. However, collaboration with infrastructure sectors (such as urban development, water and sanitation, transportation, energy) has thus far been insufficient. The OPH will promote cross-sectoral cooperation for ADB to use its financing leverage in infrastructure to better account for the contribution of non-health

sectors to health outcomes and to mitigate possible adverse health impacts of infrastructure projects.

Scope of work:
Strengthening health impact assessment in large infrastructure projects will involve three main tasks: (1) strengthening ADB's HIA tools, applications, and project screening; (2) strengthening and supporting the policy dialogue on HIA in the Greater Mekong Sub-region (GMS); (3) working with infrastructure project owners (ADB and private sector) to develop in collaboration with civil society organizations (CSOs) malaria screening and treatment activities linked with workers and communities involved in infrastructure projects. These tasks will be delivered in 24 months by 4 individual consultants working as a team, one of whom is a Capacity Development Expert.

Detailed tasks and or expected outputs:
The Capacity Development Expert will have the following tasks:

- Lead the preparation and conduct of GMS regional workshop on HIA with governments, development partners, and private sector;
- Organize and serve a main facilitator for HIA training for ADB staff and for DMCs; and
- Assist in the conduct of HIA for ADB projects.

Deliverables:

- Training materials for ADB staff on HIA;
- Presentation materials on HIA for DMCs and private sector; and
- Final capacity development report

Educational Background:
Graduate degree in public health, medical science, medicine, occupational health or related fields. Additional training and experience in health impact assessment is a must.

Professional background
15-20 years of experience in public health and health impact assessment. Experience working in Southeast Asia (Cambodia, Lao PDR, Myanmar, Viet Nam, Thailand). Experience working with private sector on HIA of infrastructure projects. Experience in policy dialogue with governments on HIA.

BUDGET:

			Amount (In US$)
Remuneration	$850 per day or more plus per diem and housing for Manila	100 days	$ 85,000
Travel and per diem			13,706
Insurance	$0.84	707	596
Contingency			5,000
Total			**$104,302**

Health Impact Assessment – Partnership and Advocacy Expert
International consultant, intermittent, 100 working days

Background

In November 2014, ADB has approved a large scale TA financed under the regional malaria and other communicable diseases threats trust fund (RMTF). The TA aims to support countries in Asia and the Pacific to reduce the risk to the region and globally from drug-resistant malaria and other communicable disease threats, and support the region to eliminate malaria. While the TA focuses on malaria and other communicable diseases, it aims to strengthen health systems and address root causes of malaria drug resistance and communicable disease spreading. One area of work will strengthen health impact assessment (HIA) in large infrastructure projects in malaria endemic areas, particularly in border areas. These can be ADB-financed infrastructure projects and/or private sector financed projects.

The infrastructure projects will pilot approaches to malaria prevention and treatment among workers (including migrants) and surrounding communities. There are ongoing initiatives in this space in Cambodia and Lao PDR supported by Population Service International and in Myanmar supported by the Myanmar Business Coalition on Aid, which could be scaled up and operationalized within a broader HIA policy framework.

The TA will (i) explore possible intervention at development sites and possibly at different points on migration paths, including work with companies involved in infrastructure projects; (ii) work with relevant regional associations to develop norms and standards for health protection and access to care around development projects; (iii) develop and test mechanisms to ensure that migrant workers and other vulnerable populations at development sites have access to malaria prevention and treatment, including in areas where migrants may avoid or not be eligible for government services; and (iv) work to include considerations on communicable diseases in instruments for economic and social impact assessments of development projects.

Within the context and guiding principles of the recently approved Operational Plan for Health (OPH), 2015-2020 (Health in Asia and the Pacific: A Focused Approach to Address the Health Needs of ADB Developing Member Countries), specifically Appendix 3 on Infrastructure Projects and Health Outcomes, health impact assessment of projects funded by ADB should ensure sound health for communities within the health, environment and development nexus.

ADB has been actively involved in major health undertakings such as HIV/AIDS in the region, malaria control and elimination through the Asia Pacific Leaders Malaria Alliance (APLMA) and the RMTF which include regulatory convergence of medical goods and pharmaceuticals, and nascent initiatives on climate change and health. These are proof that the region can benefit from ADB's convening power, interdisciplinary approaches to regional health governance, and the ability to combine technical knowledge with development finance.

ADB will continue to optimize health outcomes through development infrastructure under a broader public health approach. However, collaboration with infrastructure sectors (such as urban development, water and sanitation, transportation, energy) has thus far been insufficient. The OPH will promote cross-sectoral cooperation for ADB to use its financing leverage in infrastructure to better account for the contribution of non-health

sectors to health outcomes and to mitigate possible adverse health impacts of infrastructure projects.

Scope of work:
Strengthening health impact assessment in large infrastructure projects will involve three main tasks: (1) strengthening ADB's HIA tools, applications, and project screening; (2) strengthening and supporting the policy dialogue on HIA in the Greater Mekong Sub-region (GMS); (3) working with infrastructure project owners (ADB and private sector) to develop in collaboration with civil society organizations (CSOs) malaria screening and treatment activities linked with workers and communities involved in infrastructure projects. These tasks will be delivered in 24 months by 4 individual consultants working as a team, one of whom is a Partnership and Advocacy Expert.

Detailed tasks and or expected outputs:
The Partnership and Advocacy Expert will have the following tasks:

- Undertake desk review and stakeholder consultations on existing HIA policies, practices, and tools in countries;
- In-country consultation workshops with stakeholders on HIA policies and implementation;
- Identify private sector partners;
- Collaborate with national malaria programs and Mahidol Oxford Research Unit on identifying geographic malaria hotspots;
- Collaborate with various regional stakeholders such as Private Sector Industries, Myanmar Business Coalition on Aid; and
- Serve as resource person for the HIA training for ADB staff and for DMCs

Deliverables:

- Map/database of partners, private sector companies and other stakeholders in countries;
- Communication materials; and
- List of suitable CSOs to implement HIA action plan

Educational Background:
Graduate degree in public health, medical science, medicine, occupational health or related fields. Additional training and experience in health impact assessment is a must.

Professional background
15-20 years of experience in public health and health impact assessment. Experience working in Southeast Asia (Cambodia, Lao PDR, Myanmar, Viet Nam, Thailand). Experience working with private sector on HIA of infrastructure projects. Experience in policy dialogue with governments on HIA.

BUDGET:			Amount (In US$)
Remuneration	$850 per day or more plus per diem and housing for Manila	100 days	$ 85,000
Travel and per diem			13,706
Insurance	$0.84	707 days	596
Contingency			$ 5,000
Total			$ 104,302

Health Impact Assessment – Research and Development Expert
International Consultant, intermittent, 180 working days

Background

In November 2014, ADB has approved a large scale TA financed under the regional malaria and other communicable diseases threats trust fund (RMTF). The TA aims to support countries in Asia and the Pacific to reduce the risk to the region and globally from drug-resistant malaria and other communicable disease threats, and support the region to eliminate malaria. While the TA focuses on malaria and other communicable diseases, it aims to strengthen health systems and address root causes of malaria drug resistance and communicable disease spreading. One area of work will strengthen health impact assessment (HIA) in large infrastructure projects in malaria endemic areas, particularly in border areas. These can be ADB-financed infrastructure projects and/or private sector financed projects.

The infrastructure projects will pilot approaches to malaria prevention and treatment among workers (including migrants) and surrounding communities. There are ongoing initiatives in this space in Cambodia and Lao PDR supported by Population Service International and in Myanmar supported by the Myanmar Business Coalition on Aid, which could be scaled up and operationalized within a broader HIA policy framework.

The TA will (i) explore possible intervention at development sites and possibly at different points on migration paths, including work with companies involved in infrastructure projects; (ii) work with relevant regional associations to develop norms and standards for health protection and access to care around development projects; (iii) develop and test mechanisms to ensure that migrant workers and other vulnerable populations at development sites have access to malaria prevention and treatment, including in areas where migrants may avoid or not be eligible for government services; and (iv) work to include considerations on communicable diseases in instruments for economic and social impact assessments of development projects.

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Detailed tasks and or expected outputs:
The Research and Development Expert will have the following tasks:

- Develop HIA assessment tools and guidelines for infrastructure projects;
- Work with local governments to apply HIA tools in at least 2 infrastructure projects in malaria endemic areas;
- Serve as a resource person for the HIA training for ADB staff and DMCs; and
- Assist in the conduct of HIA for ADB projects.

Deliverables:

- HIA assessment tools (for ADB projects; for local governments);
- Guidelines for HIA for ADB infrastructure projects

Educational Background:
Graduate degree in public health, medical science, medicine, occupational health or related fields. Additional training and experience in health impact assessment is a must.

Professional background
15-20 years of experience in public health and health impact assessment. Experience working in Southeast Asia (Cambodia, Lao PDR, Myanmar, Viet Nam, Thailand). Experience working with private sector on HIA of infrastructure projects. Experience in policy dialogue with Governments on HIA.

BUDGET:

			Amount (In US$)
Remuneration	$850 per day or more plus per diem and housing for Manila	180 days	$ 153,000
Travel and per diem			18,438
Insurance	$0.84	707	596
Contingency			5,000
Total			**$ 177,034**