



ZIKA RESPONSE MULTI-PARTNER TRUST FUND

CONCEPT NOTE

Programme Title: Joint Programme on Multisectoral Integrated Vector Management of Zika in Cuba, El Salvador and Suriname

Objective(s) of Programme	<p>Overall aim: To reduce the Zika burden in participating countries through integrated vector control interventions that are adapted to local needs and by taking a multisectoral approach. This will be achieved through the following specific objectives:</p> <ol style="list-style-type: none">Develop a Multisectoral Action Framework for Integrated Vector ManagementEstablish a decentralized system of vector surveillance and information exchange on disease cases;Establish a novel participatory approach to the control of <i>Aedes</i> mosquitoes through 'source reduction' in the home, work/school and public domains;Targeted application of residual insecticides, based on surveillance data, to supplement source reduction;Assess benefits and costs of the new strategy versus the pre-existing conventional strategy;Extrapolation of environmental assessment when scaled-up (desk study).
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Geographic Area	Cuba, El Salvador, Suriname
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Implementing Entities	UNDP, UNWomen, FAO
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Timeframe	2016 – 2018
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Epidemiological context	<p><i>Cuba:</i> Cuba reported its first case of Zika on March 2, making it one of the last countries in the Americas to report the virus. The Cuban government, which has fumigated neighborhoods and homes for decades to contain dengue and more recently chinkungunya, put doctors on alert for the virus after the first case was reported. It also ramped up mosquito eradication efforts in neighborhoods in expectation of Zika's arrival.</p> <p>The risk for the introduction of mosquito-transmitted diseases in Cuba is high, due to the wide international cooperation and exchange activities held in the country. Added to this, the mosquito is present in 55 out of 168 municipalities of the country, in all the provinces; at the same time, a high epidemiological susceptibility to these illnesses is found.</p> <p><i>El Salvador:</i> Local transmission of Zika virus was confirmed in November 2015, and since then, there have been over 10,000 reported cases. An increase of Guillain-Barré syndrome (GBS) has been reported coinciding with the Zika virus outbreak. To date, 256 pregnant women with a history of rash illness are under observation, but two infants with microcephaly born late March are currently under study. The number of new cases is currently declining, but is expected to increase again in the coming rainy season.</p> <p>Salvadoran health authorities are implementing a national response plan, stratified according to risk level. The vector control response in high-risk municipalities includes preventing of vector breeding, larviciding, three cycles of residual spraying, and two cycles of space spraying, with inspection of dwellings and community centers.</p> <p><i>Suriname:</i> Zika cases were first reported in Suriname in November 2015, and since then the virus has spread to all districts, with a total of 1900 cases reported in April 2016. Urine and serum samples revealed that Guillain Barré Syndrome (GBS) cases are on the rise in Suriname. Four confirmed Zika-related deaths were reported early 2016.</p>
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Several interventions, such as spraying in affected communities and a communication strategy have been implemented but without a clear structure, coordination or consistency. The Bureau of Public Health undertook perifocal spraying and larviciding in cluster communities in a zone around reported Zika cases, and around schools, elderly homes and prisons. The Bureau is also encouraging the elimination of breeding sites. Recently some agencies have hired pest control companies to do the spraying.

SRP Objective

This Joint Programme (JP) comprehensively encompasses activities that will respond to all three strategies within the SRP strategic objective of:

PREVENTION: Prevent adverse health outcomes associated with Zika virus infection through integrated vector management, risk communication and community engagement.

Beneficiaries

1. Training of community workers and stakeholder representatives to drive implementation of communication strategies, and local health authorities on data analysis and decision making on vector control methods and operations: 1,500-3,000 (500-1,000 staff per country, through cascade trainings)
2. Residents of the six municipalities (two per country) (those living in (peri) urban parts of the municipality where the vector is most prevalent): 60,000-120,000 (between 20,000-40,000 per country)

Government counterparts

Suriname: Bureau of Public Health, MOH

Cuba: Ministry of Public Health (MoH), Department of vector control, Health Promotion and Prevention of illness Unit

El Salvador: MOH

Rationale

The Zika outbreak continues to spread at an alarming rate throughout Latin America and the Caribbean (LAC), where its geographical distribution has steadily widened since 2015. Zika virus transmission has been reported in 38 countries and territories of this region and the WHO has warned that up to 4 million people could be infected by the virus in 2016 alone¹. There is a need for a Zika Virus response to address the social and environmental factors that perpetuate it, given that the disease impedes efforts to tackle poverty and advance both economic and human development. The World Bank has estimated that the economic impact of Zika on the Americas could be as high as \$3.5 billion in 2016, mainly based on loss of tourism to the region alone².

A number of weapons against Zika are being developed or tested, but few are immediately available for operational use. In the absence of effective treatment or vaccines, the immediate prevention and control of Zika relies largely on control of the mosquito vector, *Aedes aegypti*, which is the primary route of transmission for the virus from person to person. Countries in the region are taking action against Zika, through campaigns run by public health officials. Their interventions generally rely heavily on indiscriminate insecticide space spraying, with some insecticidal treatment of habitats with standing water, and only limited awareness raising among the community without a clear community participatory approach to the response. The disadvantage of the current emphasis on insecticide spraying is that the highly visible spraying campaigns may discourage the active participation of communities and other sectors in vector control. Yet, one of the main pillars of effective control of *Aedes* mosquitoes is source reduction, through the systematic removal of water-filled breeding containers in and around people's homes, in schools and at work places. Source reduction requires behavioural change through empowerment of the community in order to be effective. Moreover, other public and private sectors, and local NGOs have a major role to play in prevention of mosquito breeding, including environmental sanitation, and to date they have not been actively engaged.

¹ <http://america.aljazeera.com/articles/2016/1/28/zika-virus-to-affect-up-to-4-million-people.html>

² <http://pubdocs.worldbank.org/pubdocs/publicdoc/2016/2/410321455758564708/The-short-term-economic-costs-of-Zika-in-LCR-final-doc-autores-feb-18.pdf>



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At the same time, there is growing concern about the adverse effects of extensive and frequent use of chemical insecticides on human health and the environment. There is a specific risk that countries in crisis will decide to reintroduce DDT, known for its efficacy against mosquitoes, but classified as a persistent organic pollutant (POP) chemical under the Stockholm Convention as it has an acceptable purpose for use in vector control. Consequently, there is an urgent need to develop more effective and sustainable systems of urban vector control, involving communities and multiple partners, in line with WHO's principles of integrated vector management (IVM)³ and the One Health Initiative⁴.

In the era of the Sustainable Development Goals, Zika highlights the need to address health and development issues by employing a multidimensional approach; thereby taking into account environmental, gender and socioeconomic impacts simultaneously⁵. The factors that make people vulnerable to mosquito bites include poor sanitation and housing, gender inequality, unplanned urban development, and low socioeconomic status, which in turn contribute to make people more vulnerable to Zika infection, calling for a multisectoral prevention response. Moreover, globalization and climate change are redistributing pathogens, vectors, and hosts, which can pose concerning risks to humans. Each country faces its own set of unique challenges that may hinder their response to Zika, including civil unrest and inequality. A Multisectoral Action Framework of IVM for Zika makes a clear case for re-structuring the way countries address Zika, with associated impacts on dengue and chikungunya (and malaria). It would present a menu of concrete, implementable processes and actions to transform Zika responses—from being a concern of the health sector only, towards a coordinated multi-pronged effort that harnesses expertise across a range of sectors and institutions. It is a guide for policymakers and practitioners and a stimulus for innovation.

The objective of the Joint Programme is to reduce the Zika burden in participating countries through vector control interventions that are adapted to local needs and by taking a multisectoral approach. The programme has 6 specific objectives, as are outlined below:

i. Develop a Multisectoral Action Framework for Integrated Vector Management

This will involve convening experts from government, academia, civil society, international financing institutions, UN organizations and the private sector to assess contributions that could expand the fight against Zika beyond the health sector. Each country will assess the relevant participants for the Framework's development.

ii. Establish a decentralized system of vector surveillance and information exchange on disease cases;

Surveillance of mosquito density and presence of breeding sites will be implemented by community workers to provide feedback on source reduction. Simple vector parameters will be recorded and managed in a tailor-made data system at municipality level, with technical guidance from the central level. This information, together with data on disease cases, will be used by the health sector for targeting of insecticide application in high-risk locations.

iii. Establish a novel participatory approach to the non-chemical control of *Aedes* mosquitoes through source reduction in the home, work/school and public domains;

Source reduction of *Aedes* mosquitoes will be carried out in three domains, in line with the mosquito's breeding habits and day-time biting behavior (Box). Development of a communication strategy and dissemination of key messages to communities.

Box. Three domains of source reduction activities

1. Home domain (by the community)
2. Work and school domain
3. Public domain (involvement of garbage collection; drainage of public roads and structures;

³ WHO, Handbook for integrated vector management. WHO/HTM/NTD/VEM/2012.3. Available:

http://whqlibdoc.who.int/publications/2012/9789241502801_eng.pdf. 2012, Geneva: World Health Organization.

⁴ <http://www.onehealthinitiative.com/>

⁵ http://www.huffingtonpost.com/mandeep-dhaliwal/zika-is-a-wakeup-call-for_b_9145164.html



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cemeteries; dump sites; places of public gatherings)

iv. Targeted application of residual insecticides, based on surveillance data, to supplement source reduction; The targeted use of residual insecticides will provide a need-based supplement of source reduction activities, rather than being the mainstay control. The non-residual method of space spraying (fogging) will be avoided, or used as last resort only, because of lack of evidence on its efficacy⁶ and risk of adverse effects on human health and the environment. Promote IVM strategies including the management of pesticides. FAO and WHO have generated extensive knowledge of the use and application of pesticides for vector control.

v. Assess benefits and costs of the new strategy versus the pre-existing conventional strategy; Two representative municipalities at risk of Zika transmission will be selected for project interventions. In addition, two matching municipalities will be selected for the purpose of comparing the programme strategy with the conventional strategy. Indicators of impact will include mosquito density, pesticide use, programme cost. The adverse effects of pesticide use will be measured, or deduced from available data.

vi. Extrapolation of environmental assessment when scaled-up (desk study). A desk study will be conducted to extrapolate results from programme sites to country and region level in order to estimate the environmental consequences of the old vs new strategy.

Focus countries: All three countries reported Zika cases and are facing the threat of increased cases of neurological disorders such as microcephaly and Guillain-Barré Syndrome (GBS). Multisectoral IVM proposals are developed for Cuba, Suriname and El Salvador (in dialogue with UNDP and government agencies), after being identified as focus countries from a regional mapping exercise conducted by UNDP. These three countries possess the optimum conditions for this JP, as they all have vector control strategies that highlight IVM as an opportunity area.

Oversight: The JP on Multisectoral IVM for Zika will be overseen by a dedicated Steering Committee (regional and country office level) with representatives of UNDP, FAO, UN Women and national partners from government agencies including the Ministry of Health, Ministry of Women's Affairs and Ministry of Environment.

Gender Equality: Women must play a leading role in Zika prevention, firstly, because they bear the highest burden and risk in terms of the impact of infection due to the incidence of neurological disorders during pregnancy, and the fact that they do not necessarily have control over decisions to prevent pregnancy; and because of expectations that women will carry out traditional roles in maintenance of the home and community environment – while having limited say in relevant community and national level public policy forums that govern, for example, water and sanitation. Therefore, this JP will promote women's participation in decision-making at all levels.

Replicability and sustainability: The project's methods will be replicable to other (peri) urban contexts in the region. The inclusive and participative processes used will generate local project ownership and inter-sectoral collaboration between the stakeholders. Moreover, the evidence base generated by the field assessment will assist in policy change towards more integrated and better targeted vector control. Ultimately, the investments made for Zika control will be of direct benefit for the control of dengue, chikungunya and other emerging arboviral diseases because these diseases are transmitted by the same Aedes mosquitoes. The proposed approach will be fully suitable for integration with future vector control tools, once recommended for operational use.

Role of UN agencies: UN agencies involved in this JP address vector control of Zika in complementary ways: UNWomen in alliances with women's organizations addresses the gender aspects of Zika; FAO addresses the management of vector control pesticides; and UNDP implements 'bottom-up' participatory IVM approaches, multisectoral frameworks of governance and working with and through local stakeholders. Detailed roles of each agency are as follows:

⁶ Bowman, L.R., S. Donegan, and P.J. McCall, Is dengue vector control deficient in effectiveness or evidence? systematic review and meta-analysis. PLOS Negl Trop Dis, 2016. 10(3): p. e0004551



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- *UNDP*– Considering that the main focus of this project is on multisectoral partnerships and ‘bottom-up’ participative approaches, it is proposed that UNDP will be the coordinating agency, managing the activities by the partner agencies, with support from its field offices at country level and its regional support office. UNDP has gained valuable experience in participatory approaches in the context of Integrated Vector Management, for example in a GEF-funded project in Mauritius. UNDP has a particular interest in reducing reliance on chemical insecticides for vector control, and to assess the environmental and cost implications of an improved strategy. UNDP will guide surveillance activities (objective 3) and facilitate decision making on targeted use of insecticides (objective 4) in conjunction with national partners and with technical assistance from FAO.
 - *UNWomen*– The proposed role for UN Women is to mobilize women’s organizations in project areas on Zika prevention, by extending the cascade trainings on *Aedes* control to grassroots level. In addition, UN Women will facilitate policy dialogue on a rights-based approach to Zika. UN Women in partnership with UNDP will develop and implement a strategy for communicating and disseminating the project’s (interim) results to policy makers and to potential beneficiaries in other non-project municipalities.
 - *FAO*-- FAO’s proposed role will be to provide technical assistance on targeted use of insecticides and on project objective 4, specifically in relation to pesticide selection, spray application methods, spray equipment quality control, and pesticide life-cycle management (but FAO’s sterile insect technique is not included in this project). In addition, FAO will collaborate with UN Women in relation to pesticide risk communication to the general public.

Implementation arrangements: The UN Resident Coordinators in the focus countries will have a leadership role in providing strategic guidance and support in the implementation of the JP. Participating UN agencies will implement the programme through their respective country offices in collaboration with the national counterparts. A lead UN agency will be assigned to ensure effective coordination of the JP and implementation coherence and oversight; this agency will carry out these functions with the support of a JP Coordinator. Regional technical support will be provided for activities that require adopting common vision, approaches and economies of scale as identified.

Output 1: Multisectoral Action Framework for IVM of Zika developed

- a. Develop the general outline of the Framework with the Steering Committee;
- b. Prepare and share an early draft in consultations, focusing on the social, economic and environmental determinants of Zika and providing tools for translating the analysis into implementable actions;
- c. Establish three working groups in consultations —‘Concrete action,’ ‘Coordination and management’ and ‘Current and future financing synergies’ to arrive at consensus for the Framework;
- d. Review and finalize the Framework with participation from all partners in consultations.

Output 2: Vector surveillance and information exchange functional

- a. Develop methods of decentralized vector surveillance and information exchange, which may include the use of proven trapping tools made with local materials;
- b. Train community workers and health staff on methods of vector surveillance and information exchange;
- c. Supervision, coordination and data management.

Output 3: Source reduction systematically implemented and monitored

- a. Establish municipal-level multi-stakeholder IVM committees, with technical working groups for design and M&E of new methods and tools;
 - b. Design optimal communication and education strategies for source reduction in the home, work, school and public domains, based on lessons learnt from available case studies and adapted to the local context;
 - c. Conduct training and coordination workshops for community workers and stakeholder representatives to drive implementation of communication strategies;
 - d. Monitoring and evaluation of source reduction and vector breeding in each domain; case study
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documentation.

Output 4: Targeted application of residual insecticides based on surveillance data

- a. Training workshops for local health authorities on data analysis and decision making on vector control methods and operations;
- b. Mapping, planning, implementation and monitoring of targeted control operations, in line with IVM principles;
- c. Annual evaluation of efficacy and insecticide resistance, using the WHO susceptibility test and cone test bioassays.

Output 5: Benefits and costs of new versus old strategy assessed

- a. Development of input, output and outcome indicators for evaluation the new versus old strategy;
- b. Baseline and annual surveys of key indicators in intervention and control municipalities;
- c. Special studies, using field measurements and/or literature data, to establish the negative impact of pesticide use on non-target organisms and human health in each of the two strategies;
- d. Documentation and dissemination of results.

Output 6: Environmental assessment of each strategy when scaled-up

- a. Desk study to extrapolate results form project sites to country and region level.
 - b. Documentation and dissemination of results.
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Project budget by UN categories

CATEGORIES	Amount UNDP	Amount FAO	Amount UN Women	TOTAL
1. Staff and other personnel				
<i>Country level (Programme coordination)</i>	285,000	150,000	100,000	535,000
<i>Regional support</i>	150,000	100,000	100,000	350,000
2. Supplies, Commodities, Materials	15,000	-	40,000	55,000
3. Equipment	75,000	-	-	75,000
4. Contractual services:				
<i>National consultants</i>	100,000	80,000	70,000	250,000
<i>Int. consultants</i>	100,000	125,000	60,000	285,000
<i>Contracts</i>	75,000	-	-	75,000
5. Travel	100,000	65,000	100,000	265,000
6. Transfers and Grants to Counterparts:	-	-	-	-
7. General Operating and other Direct Costs				
<i>Facilities, use of vehicles</i>	170,000	25,000	50,000	245,000
<i>Trainings</i>	170,000	30,000	60,000	260,000
<i>Workshops</i>	160,000	50,000	60,000	270,000
<i>Miscellaneous</i>	85,000	27,000	50,000	162,000
Sub-Total Project Costs	1,485,000	652,000	690,000	2,827,000
8. Indirect Support Costs*	63,000	36,400	32,900	132,300
TOTAL	1,548,000	688,400	722,900	2,959,300



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** The rate shall not exceed 7% of the total of categories 1-7, as specified in the Ebola Response MOU and should follow the rules and guidelines of each recipient organization. Note that Agency-incurred direct project implementation costs should be charged to the relevant budget line, according to the Agency's regulations, rules and procedures.*