# The short-term economic costs of Zika in Latin America and the Caribbean (LCR) [1]

February 18, 2016

***Key Messages:***

- *Initial estimates of the short-term economic impact of the Zika Virus epidemic for 2016 in the Latin American and the Caribbean region (LCR) are modest: a total of US$3.5 billion, or 0.06% of GDP.*
- *These estimates are predicated on a swift, coordinated international response to the epidemic as well as on the current assumptions that the most significant health risks – and behaviors to avoid transmission - are for women of child-bearing age, due to the association of cases of Zika virus and children born with microcephaly.*
- *However, even under these assumptions, there is a group of countries in the region – those highly dependent on tourism - where the economic impact could be significant and may require additional support from the international community to stem the impact. Should science confirm a link between Zika or Guillain-Barré Syndrome and Zika transmission through sexual contact, or should public perceptions of risks from Zika rise sharply, the economic impacts could be significantly larger and will need to be re-assessed.*
- *Urgent action is required to halt the spread of the Zika virus, or the human and economic impacts across the region will increase.*

[1] This note was prepared by a World Bank team led by John Panzer and Pablo Saavedra and comprising of Andrew Burns, Fritzi Koehler-Geib, Fernando Im and Charl Jooste (Macroeconomics and Fiscal Management Global Practice), Marialisa Motta, Raha Shahidsaless, Damien Shiels and John Perrottet (Trade and Competitiveness Global Practice). Comments and inputs were provided by: Augusto de la Torre (Chief Economist for the Latin America Region); Jorge Araujo and Karin Kemper (Office of the Vice President for Latin America and the Caribbean Region); Francisco H. G. Ferreira (Development Economics Vice Presidency); Daniel Dulitzky, Fernando Lavadenz, David Oliveira and Leslie Elder (Health, Nutrition and Population Global Practice).

The Zika outbreak in LCR is at an early stage and much is still uncertain about its incidence, transmission mechanisms, and medical effects. The short-term economic costs of the disease are driven by behavior to avoid transmission, especially from the highest at-risk groups, which are considered now to be women of child-bearing age.

An effective response which avoids widespread avoidance behaviors would lead to overall limited short-term economic costs for the Region as a whole. Foregone income (GDP) for 2016 for the entire LCR is estimated at roughly US$3.5 billion, or 0.06% of GDP. The fiscal impact would also be limited to roughly US$420 million or 0.01% of GDP.

| | Income foregone | | Fiscal revenues foregone | |
|---|---|---|---|---|
| | USD Mn | % of GDP | USD Mn | % of GDP |
| **Latin America & Caribbean** | **3478** | **0.06** | **420** | **0.01** |
| **Largest impacts in USD** | | | | |
| Mexico | 744 | 0.06 | 80 | 0.01 |
| Cuba | 664 | 0.86 | na | na |
| Dominican Republic | 318 | 0.50 | 43 | 0.07 |
| Brazil | 310 | 0.01 | 75 | 0.00 |
| Argentina | 229 | 0.04 | 72 | 0.01 |
| **Significant impacts, as % of GDP** | | | | |
| Belize | 21 | 1.22 | 5 | 0.29 |
| Cuba | 664 | 0.86 | na | na |
| Jamaica | 112 | 0.81 | 27 | 0.19 |
| Dominica | 4 | 0.77 | 1 | 0.18 |
| Dominican Republic | 318 | 0.50 | 43 | 0.07 |

NB: Several small Caribbean Islands economies are estimated to have impacts in excess of 1 percent of their GDP. These include The Bahamas, Antigua and Barbuda, and The Barbados.

These aggregate estimates mask some important differences among countries. Countries whose economies depend significantly on tourism could suffer significant foregone incomes. On average the foregone income of these countries could be in the order of 0.8% of GDP and for some island-states it could reach as high as 1.6% of GDP. Fiscal pressures for the most affected economies could reach up to 0.3% of GDP. Many of these countries have already been facing severe shortage of fiscal space and subdued economic growth. For them the urgency of a coordinated and swift response to contain Zika would be a priority.

Acting now and fast in controlling the spread of this disease would entail fairly marginal costs but could yield high returns by helping avoid much larger economic impacts over the medium term.

## Estimation of Short Term Costs

**Avoidance behavior**

For any given level of risk aversion, avoidance is likely to be a positive function of (i) the number of Zika cases reported (the size of the population infected), and (ii) the way in which the Zika problem is reported (i.e. how it appears in and is treated by the media).

For the purposes of these estimates and given the uncertain evidence available about the spread of the disease, its transmission mechanisms, and impacts, we have assumed:

- The negative impact on tourism/travel revenues is likely to be more weighted on the personal/vacation tourism segment than on the business segment.
- The erosion of revenues will be mostly driven by the ***effort to avoid infection*** of pregnant women and women trying to become pregnant planning to travel to the region with their families.
- That neither fear of sexually transmitting the disease to a pregnant partner nor fear of contracting GBS will impact travel by other unaccompanied men or women not planning to become or currently pregnant.
- That because mosquitos are endemic to the region, avoidance behavior by nationals is assumed to be restricted to increased use of standard prophylactics and have limited economic consequences.

**Time, labor and productivity losses** due to time off from work based on 1 week absence for one in 5 of the 4 million projected by PAHO to be infected in the course of 2016. Given the mild symptoms of the disease for those affected, this cost is very low.

**Additional health and prevention costs,** such as intensified anti-mosquito efforts and enhanced medical monitoring are assumed to be met through reallocation of funds from existing budget envelopes. Given the budget for health in most countries in LCR, these fiscal costs can be fairly moderate if countries act immediately. However countries facing very tight fiscal space may be in need of special financial assistance. Medium to longer-term health care costs may be larger if action is not taken now, the virus is not controlled and the linkages to newborn microcephaly by mother-to-child transmission and to GBS are confirmed.

## Risks of a more severe epidemic or behavioral reaction

Avoidance behavior and associated costs, could be much higher if the incidence and spread of the disease rises (or is perceived to rise) significantly, or if science (or popular perceptions) increase size of the at-risk population, say by confirming a sexual transmission vector and or an increased risk of Guillain-Barré Syndrome. Importantly, should perceptions change they may do so abruptly and in a non-linear manner, particularly if fanned by media attention.

While such scenarios are possible, given that the nature of these possible new revelations is unknown (and unknowable), any modelling of them would be entirely speculative and therefore of little value to policy makers in the absence of new information.

## Next Steps

- Unless the virus is promptly contained, the human and longer-term effects of the disease and their economic impacts will increase.

- Should science confirm or behavior be consistent with a sexual transmission or a link between Zika and Guillain-Barré Syndrome then impacts could be much larger and will need to be re-assessed.

- In either of these cases, the importance of the longer-term consequences of the epidemic will rise. Longer-term analysis that might be undertaken includes: an analysis of expected productivity and income impacts for individuals affected with microcephaly or GBS; additional costs of long-term care and social protection; and potential long-term implications for fertility and demography should avoidance behavior change fertility patterns.