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Impact of Africa-based manufacturing on cost-per-dose: A theoretical, inside-out analysis

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POTENTIAL IMPACT OF AFRICAN VACCINE MANUFACTURING ON VACCINE COST-PER-DOSE: THEORETICAL, OUTSIDE-IN ANALYSIS

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Key Words: production economics; African manufacturing; cost-per-dose.

The inequitable rollout of COVID-19 vaccines has drawn global attention to the lack of vaccine manufacturing capacity in Africa. The Bill & Melinda Gates Foundation has conducted three analyses to better understand resourcing and market implications of manufacturing at different locations in Africa. This includes (1) a review of market dynamics and selection of three vaccines for deeper analysis; (2) an analysis of the cost-per-dose of vaccines produced at different locations in Africa versus a baseline in South Asia; and (3) an assessment of the market health knock-on effects of potential new entrants. Toggling variables had a range of impacts, and overall, labor source and facility scale were found to be two key differentiators in scenarios. We also found that any idle capacity adds significant cost. For mRNA, where the cost of raw materials was high, the other factors became much less important proportionally.

The results showed that tariffs, utilities and transportation were not largely differentiating between scenarios. However, tariff measures can have a big impact on overall cost when raw material costs are high, and utilities can be important in limiting the location options (or adding cost if new infrastructure is needed). We did not examine the cost of intra-African transport, and deeper analysis of these variables could be important for future work.

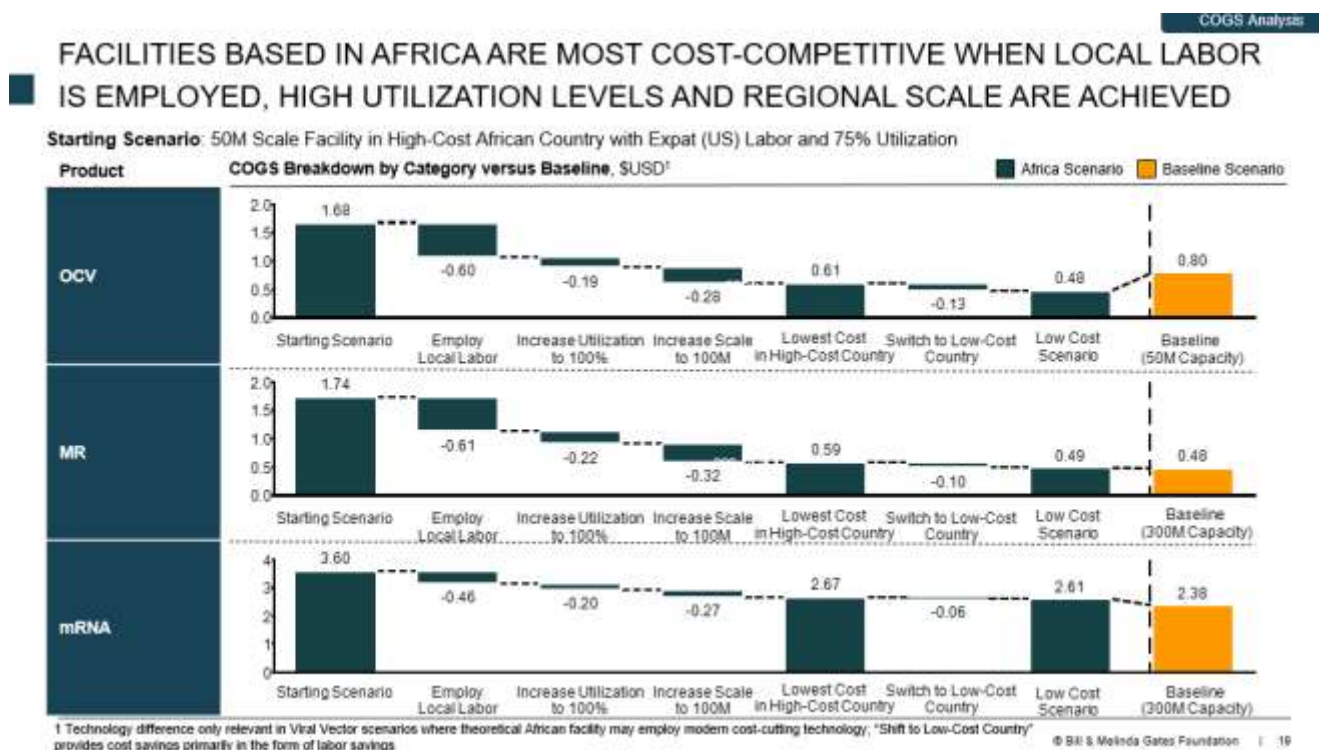


Figure 1 – Variable impact on three vaccine products