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UN panel identifies molecular diagnostics as priority

Christe S. Bruderlin-Nelson

Molecular diagnostics tops the list of emerging technologies that are projected to combat infectious diseases and improve human health in developing countries over the next decade, according to a report prepared for United Nations Secretary General Kofi Annan.

Calestous Juma, professor of the practice of international development at the John F. Kennedy School of Government at **Harvard University** (Cambridge, MA), and Yee Cheong Lee, president of the **World Federation of Engineering Organizations** (Paris), led an international team of experts that prepared the report, Forging Ahead: Technological Innovation and the Millennium Development Goals.

"The ranking is based on a pioneering study by the genomics working group at the University of Toronto that was designed to contribute to the U.N. Millennium Project's Task Force on Science, Technology, and Innovation," Juma says.

"Experts selected molecular diagnostics as the most likely biotechnology to become available, affordable, and to improve international health in this timeframe," says Dr. Abdallah Daar, a professor of public health sciences and surgery at the University of Toronto and a lead member of the genomics working group.

A panel of 28 international experts completed three rounds of questions over five months via the Delphi method of obtaining consensus. The criteria for ranking biotechnologies were visibility, affordability, and applicability.

"Diagnostics is the first frontier of genomics. However, developing countries are predominantly helpless because diagnostic tests are prohibitively expensive," says Juma. "The first point to bring to the attention of the U.S. government is that we must develop affordable, available diagnostic tests."

Juma says the key for IVD companies would be U.N.-based procurement programs specifically directed at biotechnologies.

"Such programs should mandate that technology alliances involve developing countries," he stresses. "International agencies such as the World Health Organization (WHO) need to make molecular diagnostics a priority and seek the necessary funding from governments. WHO has a history of acquiring and distributing vaccines, and could successfully

implement diagnostics procurement programs."

In fact, WHO released a report at a meeting of health ministers in Mexico City. This report outlined an action plan to improve the health status of developing countries with an explicit goal to "increase investments in health research," specifically delineating "new diagnostics, vaccines, and therapeutics" as high priorities.

Juma explains, "Many developing countries have the capacity to produce molecular diagnostics. For example, Kenya invests nearly $50 million in life sciences research annually, but without focus on deliverables with commercial potential. Here is an opportunity to forge international partnerships to produce molecular diagnostics relevant to the tropics."

Juma believes that it makes sense to align with IVD companies. Daar agrees, adding that health programs frequently waste pharmaceuticals because they lack the up-to-date, affordable diagnostics required for accurate diagnoses.

Developing countries need private-sector alliances and venture capital to succeed. "What would be best is to find a way to unite private- and public-sector institutions," says Juma. He emphasized a diagnostics focus is beneficial because it attracts information technology companies that have the venture capital to get molecular diagnostics to market quickly. "Private institutions could be instrumental in the development and distribution of molecular diagnostics."

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