



MERCK



### 3rd UNESCO-MERCK Africa Research Summit

28th and 29th of November

*...road to Port-Louis, Republic of Mauritius*

#### - Introduction

The 3<sup>rd</sup> edition of the **UNESCO-MERCK Africa Research Summit** (UNESCO-MARS) consolidates the cooperation among the two Organizations for what concerns capacity building in STEM with special focus on the life sciences in the African continent. Indeed, after the previous successful editions, UNESCO and Merck Foundation join hands again to respond to Africa's STISA 2024, reinforcing the axiom that only through building local capacities can Africa rise again to becoming an equal partner in advancing STEM research and education.. Furthermore, this event will be organized under the patronage of the President of the Republic of Mauritius Ameenah Fakim-Gurib, who is an international recognized scientist in STEM. The main partners of this Summit are the African Union, The World Health Organization, the University of Cambridge UK and the Government of Mauritius.

Recalling UNESCO's priorities: Africa and Gender, and finding a common ground in the framework of the "Merck STEM Program for Women and Youth", this year's edition of the Summit will give a stronger focus in empowering Women and Youth in STEM, building on the successes of the previous edition in which almost 50% of the African researchers who participated were women and person of under 35 years. Furthermore, responding to the difficulties that are putting strain on the resilience of contemporary societies in Africa, the focus of the event will be on the scientific research and underpinning of cancer research and vaccine development, two of the emerging challenges that are affecting the African continent as a whole and which had not been given their due share of attention. The 3<sup>rd</sup> edition of the UNESCO-MARS will benefit from the scientific and institutional support of a highly-dynamic and prestigious community. The Institut Pasteur (France), the University of Cambridge (United Kingdom) and the University of Rome Tor Vergata (Italy), the Makerere University (Uganda) and the Kenya Medical Research Institute (Kenya), who will contribute again in laying the foundations for a vibrant project of international cooperation and capacity building in STEM.

## - **Targets, objectives and expected outcomes**

Thanks to the cooperation of UNESCO and Merck Foundation for what concerns Gender and Youth Empowerment in STEM, the long-term scope of this initiative is to give a strong contribution in building capacities in STEM-related fields - in the African continent. Continuing this virtuous cycle of valorizing of local talents, UNESCO and Merck Foundation aim to support Africa in becoming a hub for scientific excellence and technological innovation.

The second edition of the summit in 2016 in Addis Ababa, hosted 15 Ministers and many policy-makers representing African Governments of Education, Science, Health and Gender. Numerous Ambassadors/Permanent Delegates to UNESCO attended the Summit, and a total of 189 African researchers representing 35 countries in Africa with a diverse geographical and linguistic richness. As has already occurred in the previous editions, young investigators will have the opportunity to benefit of Merck Foundation sponsorship and fellowship to finance and support their researches. This occasion will positively impact the evolution of early career researchers, who will have the possibility to promote their works and use the UNESCO-MARS as a platform to establish new - and fruitful - collaborations.. Indeed, thanks to the interaction of actors with different backgrounds, it will be possible to create a platform for mutual understanding, cooperation and dialogue. Science and Research development, being a complex system characterized also by social, economic and cultural aspects, requires the interaction of heterogeneous participants. For this reason, participants with different backgrounds - such as Ministers of various fields as Education, Health, Science and Gender - will give birth to interdisciplinary dialogues in order to contribute to scientific development.

## - **The choice for focusing this year's summit on cancer research and vaccine development?**

Cancer is one of the major public health problems affecting Sub-Saharan Africa, especially for its correlations with demographical constraints (i.e. increase in average life expectancy, the upsurge of risk factors, such as social and economic dynamics). Moreover, the 2<sup>nd</sup> edition of UNESCO-MARS focused on infectious diseases and women's health. In order to give a sort of continuity to the scientific purposes of this event, the choice of focusing on cancer, oncological sciences and vaccine development was a natural consequence. In fact, some infectious agents, such as HIV and AIDS, hepatitis B-virus and human papillomavirus, can de-escalate into cancers. There is scientific

evidence that 1/3 of all cancers in Sub-Saharan African can be infection-related<sup>1</sup>. Moreover, in women, cervical and breast cancers are almost equal to the 50% of the cancer emergency of the region; for this reason, focusing this debate even on a Gender-related point of view, is a need more than a choice. This problem, of course, does not exclude men from the debate; in fact, Gender can be an element of vulnerability in the region for both women and men, especially because prostate, breast and cervical cancer are the principal cancers leading the risk of developing and dying from cancer. Furthermore, statistically around 1 woman out of 26 will develop cervical cancer in their lifetime and 1 out of 40 will die because of it. For what concerns the impact that UNESCO-MARS can play in capacity building in Africa, there is also the potential in outlining the current discussions related to the scientific and research tools required for diagnosis and proposing new arguments to implement them. Indeed, the necessity of discussing cancer burdens roots even in the problems caused by late diagnosis; "95% of cancer patients are diagnosed with late stage or end stage disease"<sup>2</sup>. The economic impact of infectious disease epidemics has a global cost of \$60 billion per year. Indeed, SARS, Zika and Ebola, in different historical moments, have highlighted the vulnerabilities of our societies for what concerns epidemic of infectious diseases. The upsurge of Ebola killed up to 11,000 people in Western Africa, causing an economic loss of 2.2 billion in 2015. These cases show the importance of working on prevention, for example through scientific research related to vaccines development; indeed, many of the epidemics that have affected our societies can be prevented through vaccinations. New vaccines can prevent deadly infectious diseases before they turn into regional or global epidemics. However it is crucial to highlight that the vaccines that humanity needs are not being developed quickly and efficiently in order to provide a prompt reply to an epidemics' burden. These lacks in efficiency is caused partly by the lack of capacities in undertaking scientific research, especially for what concerns the African continent, which is also the most affected region of the world. Another problem is that these weak human resources capacities, networks and institutions in STEM in Africa create a strong dependency on the outside, slowing an internal growth and a local development [CEPI]<sup>3</sup>.

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<sup>1</sup> Cancer in Sub-Saharan Africa, available at: <http://canceratlas.cancer.org/the-burden/cancer-in-sub-saharan-africa/>

<sup>2</sup> Wamburu Kabura, Naftali Busakhala, Kevin Owuor, Josephat Nyagero, "Association between stage at diagnosis and knowledge on cervical cancer among patients in a Kenyan tertiary hospital: a cross-sectional study", The Pan African Medical Journal, 2016, 25(2).

<sup>3</sup> CEPI - Mission, available at: <http://cepi.net/mission>

Moreover, as already outlined in the previous UNESCO-MARS' White Paper<sup>4</sup>, the Summit is framed by the 2030 Agenda for Sustainable Development tackling several of the 17 Sustainable Development Goals (SDGs)<sup>5</sup>. For example;



- **Goal 3: Good Health and Well-being.**

Millennium Development Goals (MDGs) have already contributed in raising awareness and in tackling infectious, communicative and poverty-related diseases, such as hepatitis, malaria, tuberculosis, polio and HIV/AIDS. One of the important targets of the new SDGs, Goal 3 is to fight also non-communicable diseases such as Cancer. Furthermore, point 3.8 of Goal 3 highlights the importance of improving the quality, efficacy, safety and affordability of essential medicines and vaccines for all.

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<sup>4</sup> 2016 UNESCO-MARS White Paper, available at:  
[http://www.unesco-mars.com/White\\_Paper.pdf](http://www.unesco-mars.com/White_Paper.pdf)

<sup>5</sup> The Sustainable Development Agenda, available at:  
<http://www.un.org/sustainabledevelopment/development-agenda/>

- **Goal 5: Gender Equality.**

“Achieve gender equality and empower all women and girls” is a crucial step in order to have a concrete progress for humanity. For this reason, it is crucial to join efforts in order to guarantee equal access to education, health care, decent work and representation in political and economic decision making. For this reason, projects related to the empowerment of Gender in Science and Research (Education and Career) are a key aspect in order to support all the other SDGs.

- **Goal 8: Decent Work and Economic Growth; and **Goal 9: Industry, Innovation and Infrastructure;****

Empowering Gender and Youth into Education and Research will strongly contribute in achieving the target of reducing the proportion of Youth out of employment, education or training by 2020; it should create jobs and economic growth, integrating the world of industry with the one of public health (for example through the promotion of R&D for what concerns vaccines and drugs).

- **Goal 10: Reduce Inequalities**

Since the first edition of the Summit, the expected objectives of this initiative were to support science research translation and bridge the “Know Do” gap in Africa, even with the long-term ambition of using North-South and South-South cooperation in order to reduce any sort of inequalities that may affect the region.

- **Goal 12: Responsible Consumption and Production; and **Goal 17: Partnerships for the Goals;****

Raising awareness on vaccines and consumption of pharmaceuticals should also contribute in understanding all the problems affecting health systems. Moreover, especially after all the controversies related to anti-vaccines campaigns, it urges to intensify the debate on the subject and raise people’s awareness. It is also important to discuss, in the framework of a responsible production, innovative ways of bio- designing and producing vaccines and drugs(-related technologies); indeed, there are highly interesting debates on companies producing and testing innovative and environmentally friendly solutions to deliver and test vaccines, for example in the framework of bio-economy strategies. Furthermore, establishing partnerships for goals among all the involved actors in the Summit (international and regional organizations as UNESCO and African Union, industry, civil society, academia, Media), it would be easier to work on technology transfer and to build up consensual strategies.

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