



African fictions to boost the scientific culture in Africa

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We popularize scientific topics through the 26-episode film series *Science in the City*, which depicts the perception of science in Africa. We campaign in African schools, universities and public events to initiate debates on science, inviting actors and scientists to engage with audiences.

The need to innovate

Africa is a continent driven by the urgent need to innovate, to improve the daily conditions of billions of people. Pressed by numerous crises and existential problems, priority has not been given to research, basic science particularly. How can this be done in an environment where coexist famine, lack of basic medical care, epidemics, migratory crises, social tensions and wars? This situation has contributed over time to the entrenchment of a very pronounced science illiteracy within African societies. Science denialism, as we saw during the COVID-19 pandemic, and the lack of skepticism about unscientific solutions have disconnected the average citizen from the real ways science evolves.

As a consequence, mankind evolves without Africa in many domains. For example, the African light source community still plans to build its first synchrotron on the continent and relies on external resources through networks such as LAAMP (Lightsources for Africa, the Americas, Asia, Middle East and Pacific). Computational scientists still rely on external computer capacities such as at the Abdus Salam International Centre for Theoretical Physics (ICTP) in Italy.

The need to boost the scientific culture

One of the main reasons for the scientific lag observed in Africa is the serious lack of scientific culture. Most countries still devote less than 1% of the gross domestic product to science. This low investment has yielded a ratio of only 198 scientists per million inhabitants in Africa compared with an average of 1,150 per million in the rest of the world. As an obvious consequence, the continent contributes less than 1% to the scientific production in the world. To develop homegrown solutions, Africa needs another million PhD scientists^{1,2}. More vocations must be created and the political will to invest into science must be boosted. Scientific culture should be strengthened, as it is missing cohesive energy between decision-makers and scientists, the basis of any scientific and technological development and consequent economic progress.

Cinema as a vehicle for science dissemination

Our project *Making Science the Star* aims to bring science within everyone's reach in Africa, using film screening campaigns and broadcasting as a vehicle³. We follow a socio-political approach that we believe will lead, in the long term, to this necessary phase transition in the African society — a critical point that can only happen if the adequate social temperature and pressure on decision-makers are reached. Our approach consists of the following.

Meet with African scientists and film professionals.

We discuss scientific topics that align with Sustainable Development Goals and local needs, and how to disseminate them through films that will be available in the two popular languages in Africa: English and French.

Mass diffusion to reach dozens of millions of people. We use social media (YouTube and Facebook), pan-African film platforms, universities and scientific events.

Engage celebrities. At screenings at universities and science and society events across Africa, the film actors are encouraged to serve as campaigners, to make use of their celebrity status to popularize the events and topics.

Initiate dialogue with the public. At every screening, selected episodes of the series are shown that align with local research and needs, followed by discussions between the general public, local decision-makers and invited scientists, to get the latter out of labs and engage.

African fictions to popularize science

In 2020, we produced a 26-part film series, *Science dans la cité (Science in the City)*⁴ (FIG. 1). It is a playful series, filmed in Cameroon, whose aim is to disseminate science to the general populace in a cool way. The themes covered range from optics, renewable energy and health, to biomass, agriculture and the environment, while being set in the daily life of the average African citizen. We projected Africa into a future in which development is driven by scientific research. We also highlighted the

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Fig. 1 | **Series poster.** Poster with the principal actors of the series *Science dans la cité* (*Science in the City*). Image courtesy of S. Kenmoe.

hindrance to development that can be caused by science denialism and superstition.

The series is about a scientist who could not find a job after his studies and decided to set up his own business. He is the owner of a bar, the most popular place of activity among the population, and uses science to make a profit. He works in an environment poor in scientific culture, not favourable to the maturation and materialization of ideas, a place where innovative ideas are fought until they triumph. However, he knows how to use CRISPR, piezoelectricity, pee power, water splitting, organic solar cells, optical levitation, air condensation and many other technologies to make a fortune from his bar, the main site of the series.

Successes and barriers

Synergies among scientists. In 2020, we launched a screening campaign throughout Africa that brought us successively to the Cocody University (Ivory Coast); Marien Nguabi University (Republic of Congo); UNESCO-CIPMA Chair (Benin); AIMS Cameroon; Ouagadougou; University of Lomé (Togo); and **Week of Science and Technology** in Democratic Republic of Congo (DRC), one of the, if not the, largest science and society events on the continent. Actors always attract many fans and curious people to the screenings, which are followed by discussion about how to promote local research via films. This includes writing joint scenarios and co-producing.

Breaking the wall between science and film. Navigating a scientific career around the world is not always easy for Africans⁵. Only a few are successful. Having more content like *Science in the City* on African TV could help create more vocations and boost investment in science. However, except the emerging Cameroon-based pan-African media DASH TV and CINAF TV that worked with us, finding dissemination partners is still difficult, despite the public reacting well to the series. The film market in Africa is not ready for such initiatives. Mass media finds this content too elitist for Africans, and broadcasters do not see how to benefit from this type of series. This reluctance is a direct consequence of the low scientific culture. Funding for public science education is a way to increase interest in science and solve this.

The lack of funding. Although voices are rising up to recognize service to science as a valuable criterion in evaluating scientists⁶, and the project received recognition from the **Falling Walls** international community, funding for science outreach, communication or engagement is scarce. Governments, universities and most institutions dedicated to advancing science in the developing world do not have a budget line for such projects; one exception is the ICTP **Physics Without Frontiers** programme. One should rely on themselves and a few people of good will.

The role of scientists in decision-making. In DRC, we got financial support from Raissa Malu, physicist, international education consultant, former member of the presidential panel at the head of the African Union and promoter of the Week of Science and Technology. She has been coordinating a national project to improve science and mathematics education from secondary school⁷. We have seized this opportunity to advocate for our project. Hopefully in her reforms she has made room for our vision. If so, DRC could be the epicentre of change. We believe as many do that when DRC wakes up, Africa will tremble.

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Competing interests

The author declares no competing interests.

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Physics Without Frontiers: <https://www.ictp.it/physics-without-frontiers/about.aspx>
Science dans la cité: <https://cinaf.tv/premium/serie/106/science-dans-la-cite.html>
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