

Correspondence

Africa: invest in local manufacturing of COVID-19 vaccines

High-income countries' limited COVID-19 vaccine donations to Africa are prolonging the pandemic and worsening its social and economic impact here. African governments need to allocate more resources to making their own vaccines (J. N. Nkengasong *Nature* 567, 147; 2019), forming alliances with wealthy Africans and African businesses to build local manufacturing capacity (*Nature* 592, 487–488; 2021).

With some 200,000 deaths reported so far in a population of 1.3 billion, Africa accounts for 4% of COVID-related deaths worldwide. Just 2.8% of Africans were fully vaccinated against COVID-19 by the end of August (see go.nature.com/2vp7gmw). The situation could deteriorate further as high-income countries embark on booster jabs for their citizens.

Foreign aid to Africa provides treatment and care for prevalent diseases and conditions, such as tuberculosis and AIDS. The continent's health systems, already badly affected, must not be further crippled by any diversion of this aid into COVID-19 vaccination. In addition to mobilizing its own resources, Africa must seek more donated doses, patent waivers and technology transfer.

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Afghanistan: conflict risks local and global health

Deteriorating health care for children, women and older people in Afghanistan, resulting from the country's armed conflict, requires urgent attention. Given that Afghanistan (along with neighbouring Pakistan) is polio's last redoubt, the situation could lead to grave global health problems.

Since February 2020, there have been more than 100 reported incidents of violence or threatened violence affecting Afghanistan's fragile health system, including the destruction of facilities and the killing of staff (see go.nature.com/2wyykzg). Numerous polio and COVID-19 vaccine doses were destroyed in a rocket attack in eastern Afghanistan in June. Power cuts resulting from damage to electricity pylons in recent months have disrupted health care.

International humanitarian organizations, including Doctors Without Borders (Médecins Sans Frontières) and the International Committee of the Red Cross (ICRC), continue to provide medical care in Afghanistan but are desperately short of funds. The ICRC estimates that its Afghanistan programme has a budget shortfall of US\$33 million. I urge the global community to support such organizations, and to ensure that testing for COVID-19 and polio is available at entry points to nations receiving refugees. The deteriorating health situation in Afghanistan must be on the agenda of ongoing international diplomacy.

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Anthropocene: event or epoch?

The concept of the Anthropocene has inspired more than two decades of constructive scholarship and public discussion. Yet much of this work seems to us incompatible with the proposal to define the Anthropocene as an epoch or series in the geological timescale, with a precise start date and stratigraphic boundary in the mid-twentieth century. As geologists, archaeologists, environmental scientists and geographers, we have another approach to suggest: recognize the Anthropocene as an ongoing geological event.

The problems with demarcating the Anthropocene as a globally synchronous change in human–environment relations, occurring in 1950 or otherwise, have long been evident (P. J. Crutzen and E. F. Stoermer *IGBP Newsletter* 41, 17–18; 2000). As an ongoing geological event, it would be analogous to other major transformative events, such as the Great Oxidation Event (starting around 2.4 billion years ago) or the Great Ordovician Biodiversification Event (around 500 million years ago).

Unlike formally defined epochs or series, geological events can encompass spatial and temporal heterogeneity and the diverse processes – environmental and now social – that interact to produce global environmental changes. Defining the Anthropocene in this way would, in our view, better engage with how the term has been used and criticized across the scholarly world.

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see go.nature.com/3ju5ycb

Preventing spillover is a key strategy against pandemics

Most new infectious diseases result from the spillover of pathogens from animals, particularly wildlife, to people. Spillover prevention should not be dismissed in discussions on how best to address pandemics (see *Nature* 596, 332–335; 2021).

The belief that we are powerless to prevent spillover is, unfortunately, endorsed by many in public health and government. Improved management of farmed animals, regulations on wildlife trade and conservation of tropical forests have all helped to prevent spillover and subsequent outbreaks, as well as boosting greenhouse-gas mitigation and wildlife conservation (see go.nature.com/2uqwx1u). Moreover, preventing spillover is cheap compared with the costs of a single pandemic (A. P. Dobson *et al. Science* 369, 379–381; 2020).

Outbreak containment measures will always be necessary, especially for the most vulnerable people in resource-limited settings, because spillover can never be completely eliminated. But if prioritized alongside post-spillover initiatives, outcomes will be more cost-effective, scientifically informed and equitable.

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