Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

Elsevier hereby grants permission to make all its COVID-19-related research that is available on the COVID-19 resource centre - including this research content - immediately available in PubMed Central and other publicly funded repositories, such as the WHO COVID database with rights for unrestricted research re-use and analyses in any form or by any means with acknowledgement of the original source. These permissions are granted for free by Elsevier for as long as the COVID-19 resource centre remains active.
The coronavirus pandemic has made evident the weakness of school feeding programs in addressing the nutritional needs of children in sub-Saharan Africa (SSA). Since March 2020, when governments around the world announced the closure of schools and businesses to curb the spread of coronavirus, policy-makers in SSA have been seeking ways to mitigate the impact of the lockdown on the social welfare of children (UNICEF, 2020; WFP, 2020). While remote learning methods are being used to maintain the learning outcomes of children, there is a growing concern about how to maintain nutrition outcomes of children that previously had access to school meals through the school feeding program. This situation has made evident the weakness of the school feeding program model which targets the nutritional needs of children during school terms and is only feasible within an in-person learning setting. In this article, I further explain how the coronavirus pandemic has exposed the limitations of the school feeding program and offer a supplementary approach to the program, focusing on the nutritional needs of children all year round.

School feeding programs are targeted at providing mid-day meals to school children and cover about twenty SSA (WFP, 2019). The program supplies free lunches to primary school pupils on school days using registered local cooks and aims at improving the nutritional status and learning outcomes of children (Alderman, et al. 2012; WFP, 2019). However, children spend about 150–200 days in school per year and have no access to mid-day meals for the remaining part of the year. The pandemic lockdown, which has lasted for more than five months, presents an extreme case of absenteeism and is associated with lack of access to school meals.

The restriction of school feeding programs to school pupils during the school term and the restriction of the program to in-person learning methods, to increase education outcomes, may be linked to its ineffectiveness in addressing child malnutrition issues in the region. Learning methods are rapidly evolving with globalisation and digitalisation, and policy-makers are recognising the importance of remote learning methods in improving educational outcomes (UNESCO, 2019). Children's basic need for food, on the other hand, remains constant irrespective of the learning methods used in schools. Child nutrition is central to the child's well-being and future productivity, and there is need to understand the sustainability of policy instruments targeted at improving the nutrition status of children. Hence, the coronavirus pandemic presents the need to redesign the school feeding program to address children's constant need for food.

The issuance of food vouchers to schoolchildren to be used at any registered vendor outlets may address the limitations of the school feeding program. Vendors may include supermarkets or stores that are verified and registered, and pupils may use vouchers on sick days, weekends or during holidays. The use of food vouchers relaxes the present model of providing meals to pupils during school terms only. This approach considers the need to provide food to children all year round and anywhere within the country, thereby ensuring that the nutritional needs of children are met wherever they are located and irrespective of the learning methods used. This approach also considers important health conditions like allergies since pupils have access to different food options and sources.

The issuance of vendor vouchers to school pupils may also have some disadvantages, but the advantages outweigh the disadvantages. For example, schools may not have information regarding the food content and the safety conditions under which the food is prepared. However, excluding unhealthy food options, frequent assessment of vendors and issuance of food safety certificates may help ascertain reliability and cleanliness. Also, the cost of providing food vouchers all year round may be enormous and may be greater than that of the regular school feeding programs, but UNICEF (2019) notes that every dollar invested in reducing malnutrition leads to an economic return equivalent to about eighteen dollars.

In conclusion, the coronavirus pandemic presents an opportunity to reassess SSA's aim of improving the nutritional needs and learning outcomes of children. To achieve this aim, policy-makers need to understand the sustainability of the school feeding program in improving the nutritional status of children. Policy-makers should also consider the digitalisation of learning, transformations in the education sector and the need to provide children with food.
all-year-round. Adding vendor vouchers to the normal school feeding model may help address the limitations of the program thereby improving the nutritional status of children and subsequently enhancing their learning abilities.

**Declaration of Competing Interest**

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

**Acknowledgments**

I am grateful to Elizabeth Bageant, Joanna Upton, and Sylvia Blom of Cornell University’s Dyson School of Applied Economics and Management for the helpful comments around this piece. I also appreciate Tunde Badru and Nkwuka Kosi for the edits and suggestions.

**References**

Alderman, H., Gilligan, D. O., & Lehrer, K. (2012). The Impact of Food for Education Programs on School Participation in Northern Uganda. *Economic Development and Cultural Change, 61*(1), 187–218.

United Nations Educational, Scientific and Cultural Organization, UNESCO (2019). Fact Sheet no. 56. Paris. Available at [http://uis.unesco.org/sites/default/files/documents/new-methodology-shows-258-million-children-adolescents-and-youth-are-out-school.pdf](http://uis.unesco.org/sites/default/files/documents/new-methodology-shows-258-million-children-adolescents-and-youth-are-out-school.pdf).

United Nations Children’s Fund, UNICEF (2019). Children, Food and Nutrition Growing Well in a Changing World. The State of the World’s Children. New York. Available at [https://www.unicef.org/media/60806/file/SOWC-2019.pdf](https://www.unicef.org/media/60806/file/SOWC-2019.pdf).

United Nations Children’s Fund, UNICEF (2020). Coronavirus (COVID-19) Global Response. New York. Available at [https://www.unicef.org/appeals/files/2020-HAC-CoronaVirus-05.11.pdf](https://www.unicef.org/appeals/files/2020-HAC-CoronaVirus-05.11.pdf).

World Food Programme, WFP (2019) The impact of school feeding programmes. Rome. Available at [https://docs.wfp.org/api/documents/WFP-0000102338/download/](https://docs.wfp.org/api/documents/WFP-0000102338/download/).

World Food Programme, WFP (2020) The Impact of COVID-19 on children. Rome. Available at [https://docs.wfp.org/api/documents/WFP-0000114560/download/?_ga=2.91996184.348767569.1590051352-2123280625.1590020398](https://docs.wfp.org/api/documents/WFP-0000114560/download/?_ga=2.91996184.348767569.1590051352-2123280625.1590020398).