



## Conference on ‘Food and nutrition security in Africa: new challenges and opportunities for sustainability’

### Capacity for scaling up nutrition: a focus on pre-service training in West Africa and a Ghanaian case study

Richmond N. O. Aryeetey<sup>1\*</sup>, Amos Laar<sup>1</sup>, Francis Zotor<sup>2</sup> and Ghana SUN Academic Platform

<sup>1</sup>*School of Public Health, University of Ghana, Legon, Accra*

<sup>2</sup>*School of Public Health, University of Health and Allied Sciences, Hohoe, Ghana*

The 2013 *Lancet* series on maternal and child nutrition is identified and advocated for improved institutional and human capacity in nutrition towards scaling up nutrition (SUN) in countries with high stunting rates. Of the fifty-four countries with high burden of child undernutrition who have committed to the SUN movement, thirty-six are in Africa. In the present paper, the academic platform of the SUN movement in Ghana presents an overview of nutrition pre-service capacity in West Africa with a focus on Ghana. The present paper is based on the findings of a sub-region-wide assessment of degree programmes in nutrition in West Africa, plus another report on pre-service nutrition capacity in diploma awarding nursing and nutrition programmes in Ghana. Although there is inadequate evidence on pre-service nutrition training in the sub-region, the two reports provide useful evidence for action, including inadequate number and distribution of pre-service nutrition training programmes, low nutrition graduate output, poor quality of the programme curriculum and instruction, and sub-optimal capital investment. The present paper calls for urgent action to improve pre-service nutrition capacity building as a critical step towards SUN in West Africa.

#### Nutrition: Capacity: Scaling up: West Africa

##### The scaling up nutrition movement

The scaling up nutrition (SUN) movement was initiated in 2010 as a renewed effort to address high burden of undernutrition in developing countries<sup>(1)</sup>. The movement was a response to the 2008 *Lancet* series on maternal and child nutrition which showed that there was an unacceptably high burden of undernutrition among women and children<sup>(2–6)</sup>. The 2008 series and its sequel in 2013<sup>(7–10)</sup> both demonstrated that undernutrition, especially stunting, was clustered in a few high burden countries. The series further identified the existence of proven nutrition-specific interventions which should be implemented at scale, together with the other nutrition-sensitive strategies in a policy environment which calls for partnerships in efforts across implementing agencies. Four years later, the SUN movement has evolved into an important global infrastructure with multiple networks

collaborating at the global and national levels in SUN countries.

At the global level, the SUN movement led by a SUN Lead Group which coordinates a global network organised into four categories including: donors network, business network, The United Nations agencies and civil society network<sup>(1)</sup>. At the country level, the movement is organised around various platforms, including government, civil society, United Nations agencies, bilateral and other donor agencies, and more recently, the knowledge or academic platform in some countries.

##### *Academic platform in Ghana*

As part of the SUN movement efforts in Ghana, an academic platform made up of lecturers and researchers from institutions of higher learning in Ghana, have been working together to support the efforts of the

**Abbreviations:** SUN, scaling up nutrition.

**\*Corresponding author:** Dr Richmond N. O. Aryeetey, email [rmokai@gmail.com](mailto:rmokai@gmail.com)

national SUN movement. In 2013, the academic platform emerged as a separate entity from the Ghana Coalition of Civil Society Organizations for SUN which was brought together in 2011. The platform is focused on generating and disseminating evidence needed for advocacy and programme implementation in nutrition in Ghana, in collaboration with the other existing SUN networks in the country. Since its formation, the academic platform has played key roles in the movement in Ghana including, serving on the National Cross Sectoral Planning Group on nutrition, developing material for the workshop on Prevention and Management of Conflict of Interest in SUN, and organising the SUN Symposium at the Sixth African Nutrition Epidemiology Conference in Accra. The present paper is one out of the two papers presented by the platform at the 2014 African Nutrition Epidemiology Conference. The present paper reviews pre-service capacity building as an essential ingredient for scaling up effective nutrition strategies in Ghana. Considering the similarities in the nutrition challenges facing other countries in the sub-region, the presentation is situated within the broader context of pre-service nutrition capacity in the West African sub-region<sup>(11)</sup>.

### The Ghanaian nutrition context

In March 2011, Ghana signed up as one of the fifty-four countries which have committed to scale up effective nutrition interventions and to reduce malnutrition in the country<sup>(12)</sup>. Despite being one of the few countries in sub-Saharan Africa which is on track to achieve the Millennium Development Goal target of halving under-five underweight, high rate of stunting persists among young Ghanaian children. In the past 25 years, stunting rate in children has seen only marginal reduction from 35 % in 1988 to the present estimate of 23 % in 2012<sup>(13,14)</sup>. In addition, high rates of micronutrient malnutrition, particularly iron-deficiency anaemia and vitamin A deficiency persist among both young children and women of reproductive age. Recent evidence from the Multiple Indicator Cluster Survey shows that the optimal breastfeeding practices such as exclusive breastfeeding and also initiation rates have declined<sup>(14)</sup>. These adverse outcomes persist despite a long history of national policies, plans and strategies implemented to address malnutrition. At the national level, the 2009 landscape analysis of readiness to accelerate nutrition concluded that although there was a high political commitment to nutrition, inadequate nutrition staff numbers, their distribution as well as sub-optimal skill mix is a barrier to accelerate scaling up of nutrition interventions<sup>(15)</sup>. Subsequently, Gongwer and Aryeetey have also reported insufficient number of nutrition staff as well as inadequate training for other staff (nurses and midwives) implementing nutrition actions at the district level in the Greater Accra region of Ghana<sup>(16)</sup>.

### Why nutrition capacity is important?

Building on the preceding landmark seminal series in 2008, the 2013 *Lancet* Series on Maternal and Child

Nutrition also identified inadequate human capacity as a key barrier to reduce the high burden of undernutrition among vulnerable women and children in the most affected countries in the developing world<sup>(7,17)</sup>. The revised framework for actions to achieve optimum fetal and child nutrition and development (see Fig. 1) which was presented in the 2013 *Lancet* series clearly outlined the role of leadership and capacity as essential underlying determinants of malnutrition. A strong case is therefore made for building capacity for the critically needed personnel who will translate available effective technologies and approaches into optimal nutrition outcomes. This strong advocacy by the *Lancet* series is founded on evidence from multiple settings demonstrating that appropriate training of health and nutrition personnel improved both service delivery competence as well as nutrition status. For example, Sunguya *et al.* in a recent systematic review that included twenty-five experimental studies conducted in multiple sites but mostly in Europe and North America, reported that in-service training in nutrition for health workers resulted in improved health worker knowledge and competence. The improved competence was reflected in their skills in nutrition counselling and management of nutrition-related conditions<sup>(18)</sup>. The same authors have reported in another systematic review, the benefits of health worker training in nutrition on caregiver knowledge and care behaviour as well as child feeding. Based on the ten studies, Sunguya *et al.* reported an improved feeding frequency, energy intake and dietary diversity among young children under the care of health workers who received in-service training in nutrition<sup>(19)</sup>. Earlier in 2001, Santos *et al.* had demonstrated that the training of doctors improved not only the nutrition knowledge and counselling competence of the doctors, but also improved the ability of the caregivers as well as weight gain of children aged less than 2 years<sup>(20)</sup>. These studies suggest that in settings like Ghana where there is inadequate number of nutrition personnel, improved nutrition practices and nutrition status outcomes can be achieved by training other health workers who are already deployed in the health system.

Translating this knowledge into action is especially important in many sub-Saharan African countries where there is already a critical deficit of quality human capacity for delivering the effective nutrition technologies and strategies identified by the *Lancet* Series<sup>(8)</sup>. This manpower deficit in nutrition in sub-Saharan African can be described at two levels in the capacity-building process: pre-service and in-service. In the present paper, we focus on pre-service nutrition capacity because it is more likely to be sustainable and also less-expensive compared with in-service training.

### Pre-service nutrition training in Ghana

Evidence on pre-service training in nutrition in Ghana is scarce as there is currently no routine monitoring of pre-service nutrition personnel output from training institutions in Ghana. However, two recent publications of

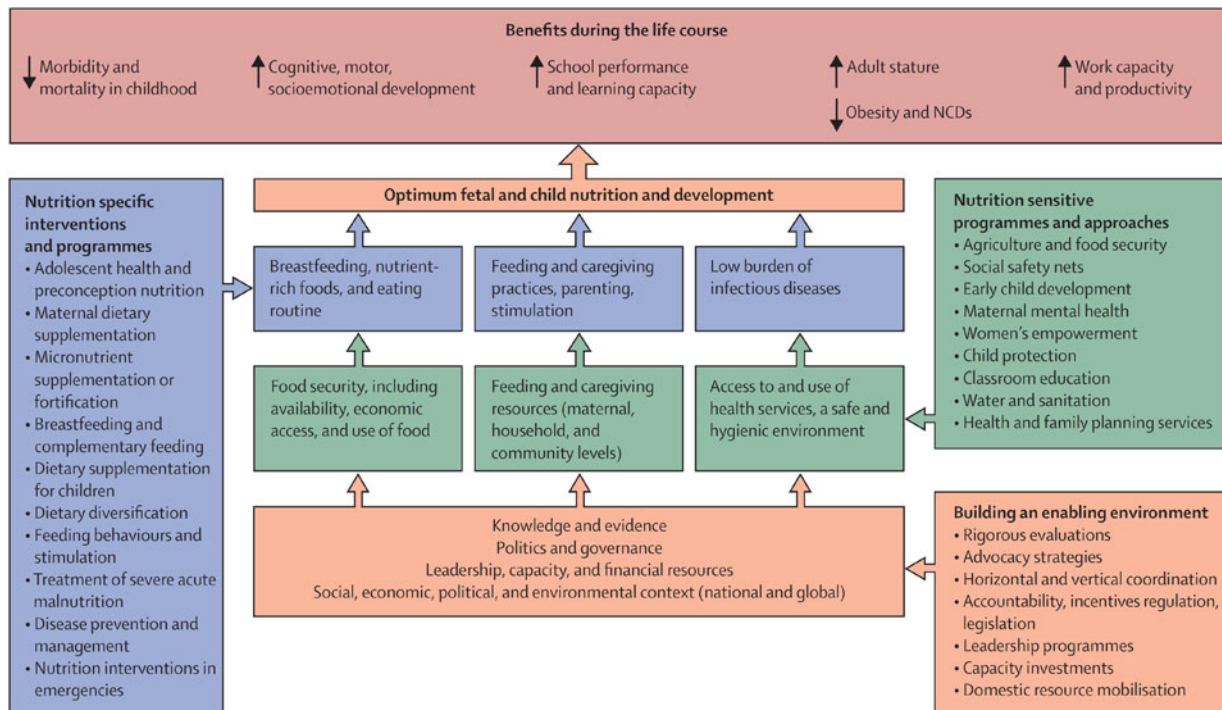


Fig. 1. (colour online) Framework for actions to achieve optimum fetal and child nutrition and development (from Black *et al.*)<sup>(8)</sup>.

pre-service capacity building in nutrition describe the situation in Ghana and elsewhere in West African. In early 2014, a region-wide assessment of nutrition capacity by the West African Nutrition Capacity Development Initiative, used a combination of country visits, interviews and desk review of nutrition-training programmes in all the sixteen countries of the West Africa sub-region<sup>(11)</sup>. The assessment was designed to describe the present situation regarding existing nutrition degree training programmes, output of these training programmes as well as constraints regarding inputs for the programmes.

Altogether, a total of eighty-three undergraduate and postgraduate degree programmes were identified. Per capita, approximately three graduate-level and two undergraduate-level nutrition degree programmes were identified per country. However, most of the programmes were concentrated in a few countries. For example, more than half ( $n$  47) of the programmes were in Nigeria alone; Ghana has nine programmes. Six countries did not have any degree programmes in nutrition. This finding demonstrates the inequitable access to pre-service nutrition training in the West African sub-region. The study also provided estimates of the number of nutrition-trained personnel who graduated from the identified programmes in 2012. Based on this single year data, almost all the countries were considered unable to graduate the minimum number of nutrition trained personnel, especially at the undergraduate and doctoral levels. This estimated shortfall was based on the recommendations made regarding the target number of trained nutrition personnel based on country population<sup>(21)</sup>. The inadequate graduate turnover may be due to the constraints

reported in running of the programmes, including inadequate teaching staff, funding, infrastructure and equipment, and access to technology. It is worth noting that most of the programmes lacked practical aspects which brings into question the readiness of the graduates to fill positions requiring practical application of nutrition knowledge. Overall, the study concluded that there were critical gaps in pre-service nutrition training in most West African countries. This timely study has shown the clear need for countries without nutrition programmes to be supported to establish their own programmes, in the medium to the long term. Towards this end, a region-wide harmonisation of curriculum will be useful to allow trainees to access programmes in the countries endowed with multiple nutrition training programmes and institutions.

Additional evidence on pre-service capacity in nutrition was identified in a report prepared by the Ghana Health Service and other partners. The report presented the findings of an assessment of the knowledge and competencies of trainers in ten pre-service institutions which train nurses, midwives and other midlevel public health staff in Ghana<sup>(22)</sup>. The trainers in all ten pre-service institutions demonstrated either poor or weak knowledge of essential nutrition actions (including infant and young child feeding, nutrition assessment, community management of acute malnutrition, etc.). Furthermore, all the trainers demonstrated poor competence in nutrition assessment and infant and young child feeding counselling. The rather poor performance of the trainers suggests that the nurses, midwives and nutrition technical officers whom they are training, also have poor nutrition knowledge and skills. This is not

surprising as earlier indicated by the *Lancet* Series, and also by the studies of nutrition capacity in West Africa<sup>(8,11)</sup>. The findings of this report were also consistent with the findings by Sodjinou *et al.* regarding limited practical components of the nutrition programmes<sup>(11)</sup>. Frequently, the curriculum was found to lag behind emerging, concepts policies, strategies and approaches already approved for addressing nutrition at the national level. Together, these reports suggest the need to also focus on enhancing quality in the pre-service training of nutrition in health training institutions as well as in nutrition-training programmes.

### Conclusion

Although there is inadequate evidence on pre-service nutrition training in Ghana and in West Africa in general, these two reports provide useful evidence for action. They demonstrate that there is inadequate monitoring of nutrition capacity building in West Africa. Also, they point to the concentration of the majority of existing pre-service training institutions in only a few countries, including Nigeria, Ghana and Niger which have comparatively better institutional capacity to train nutritionists at the pre-service level. However, even those countries with an adequate training capacity do not produce enough nutritionists to meet their needs. More critically, they show that about half the countries in West Africa have a critical deficit in their capacity to train nutrition professionals. In addition, responding to the limited output of nutrition graduates, there is also an urgent need to enhance quality in the existing nutrition training schools. It must be recognised, however, that the capacity of training institutions which train nutritionists is limited by funding, and inadequate equipment and technology. This call to action should be supported as a critical step towards SUN in West Africa.

### Acknowledgements

We acknowledge the contribution of the authors of the two reports that were reviewed for the writing of this paper.

### Financial Support

No external or institutional funds were obtained for writing the present paper.

### Conflicts of Interest

None.

### Authorship

R. A. led the drafting of the paper; A. L. and F. Z. contributed to drafting and editing the paper.

### Academic Platform members

Abizari Abdul-Razak, Robert Akparibo, Paul Amuna, Richmond Aryeetey, Kingsley Asare, Esi Colecraft, Amos Laar, Anna Lartey, Tom Ndanu, Francis Zotor.

### References

1. Scaling Up Nutrition Secretariat (2014) *Scaling Up Nutrition in Outline: An Introduction to the Scaling Up Nutrition Movement*. Rome: Scaling Up Nutrition Secretariat.
2. Black RE, Allen LH, Bhutta ZA *et al.* (2008) Maternal and child undernutrition: global and regional exposures and health consequences. *Lancet* **371**, 243–260.
3. Bhutta Z, Ahmed T, Black R *et al.* (2008) What works? Interventions for maternal and child undernutrition and survival. *Lancet* **371**, 417–440.
4. Victora CG, Adair L, Fall C *et al.* (2008) Maternal and child undernutrition: consequences for adult health and human capital. *Lancet* **371**, 340–357.
5. Bryce J, Coitinho D, Darnton-Hill I *et al.* (2008) Maternal and child undernutrition: effective action at national level. *Lancet* **371**, 510–526.
6. Morris SS, Cogill B & Uauy R (2008) Effective international action against undernutrition: why has it proven so difficult and what can be done to accelerate progress? *Lancet* **371**, 608–621.
7. Black RE, Victora CG, Walker SP *et al.* (2013) Maternal and child undernutrition and overweight in low-income and middle-income countries. *Lancet* **382**, 427–451.
8. Gillespie S, Haddad L, Mannar V *et al.* (2013) The politics of reducing malnutrition: building commitment and accelerating progress. *Lancet* **382**, 552–569.
9. Ruel MT & Alderman H (2013) Nutrition-sensitive interventions and programmes: how can they help to accelerate progress in improving maternal and child nutrition? *Lancet* **382**, 536–551.
10. Bhutta ZA, Das JK, Rizvi A *et al.* (2013) Evidence-based interventions for improvement of maternal and child nutrition: what can be done and at what cost?. *Lancet* **382**, 452–477.
11. Sodjinou R, Fanou N, Deart L *et al.* (2014) Region-wide assessment of the capacity for human nutrition training in West Africa: current situation, challenges, and way forward. *Glob Health Action* **7**, 23247.
12. Scaling Up Nutrition Movement (SUN) (2014) *SUN Countries: Ghana Rome: Scaling Up Nutrition Movement*. <http://scalingupnutrition.org/>
13. Ghana Statistical Service, Ghana Health Services, ICF Macro (2009) *Ghana Demographic and Health Survey 2008*. [http://dhsprogram.com/pubs/pdf/FR221/FR221\[13Aug2012\].pdf](http://dhsprogram.com/pubs/pdf/FR221/FR221[13Aug2012].pdf).
14. Ghana Statistical Service (GSS) (2011) *Ghana Multiple Indicator Cluster Survey with an Enhanced Malaria Module and Biomarker 2011 Final Report*. Accra: GSS.
15. Brantuo M, Okwabi W, Adu-Afuawuah S *et al.* (2009) Landscape analysis of readiness to accelerate the reduction of maternal and child undernutrition in Ghana. *SCN News* **37**, 31–37.
16. Gongwer C & Aryeetey R (2014) Implementing nutrition interventions in Ghana at the district level: gaps and opportunities. *Afr J Food Agric Nutr Dev* **14**, 1–17.
17. Black R, Allen L, Bhutta Z *et al.* (2008) Maternal and child undernutrition: global and regional exposures and health consequences. *Lancet* **371**, 243–260.





18. Sunguya BF, Poudel KC, Mlunde LB *et al.* (2013) Nutrition training improves health workers' nutrition knowledge and competence to manage child undernutrition: a systematic review. *Front Public Health* **1**, 37.
19. Sunguya BF, Poudel KC, Mlunde LB *et al.* (2013) Effectiveness of nutrition training of health workers toward improving caregivers' feeding practices for children aged six months to two years: a systematic review. *Nutr J* **12**, 66.
20. Santos I, Victora CG, Martines J *et al.* (2001) Nutrition counseling increases weight gain among Brazilian children. *J Nutr* **131**, 2866–2873.
21. United Nations University, International Union of Nutritional Sciences (1997) Executive summary of the workshop on institution-building for research and advanced training in food and nutrition in developing countries in Manila. *Philippines Food Nutr Bull* **18**, 103–109.
22. Ghana Health Services, USAID., FANTA III., FHI 360., MCHIP (2013) Assessment of Nutrition Competencies Among Tutors Teaching Nutrition in Nursing, Midwifery and Community Nutrition Programs. Accra: Ghana Health Service.