



# A Revisit to Food Security System Modelling in Sub-Saharan Africa

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**Abstract:** *Sub-Saharan African countries, since the attainment of independence have been the bone of contention for the global community for abundance of natural resources, untapped potentiality and for frequent natural calamities that causes for human apathy and misery, in one or another form. It is uncontested truth that the concept of Food Insecurity was conceived in the era of post 1974 famine and continuously be relevant in 21<sup>st</sup> century. Now with the induction of African Union in G-20 under the aegis of Delhi declaration in 2023, the region attained central place on the global forum for its chronicle food-insecurity and its new version namely Acute-Food insecurity which is claiming lives and livelihood concerns of the people. The question arises that despite policy-flux, food security still seems a far distant dream which confirms that food security instrumental mechanisms have badly failed to deliver at grass root level. Why? Food aid failed to transcend till last man and simultaneously failed to convert food aid as a stimulant for development. Thus, it makes it inevitable to think up-on and revisit, the existing food system mode, to draw some use-full insight for a brighter future.*

**Key Words:** *Acute -food insecurity, food aid, least immune class, policy -flux, world food order.*

## 1. INTRODUCTION:

In recent past, the food security concern of masses, across the globe has attained the central place in the global discourse and policy-planning at all sphere. Irrespective global developmental momentum especially developing countries have been striving hard for the attainment of hunger -free society, but unfortunately it still seems a long distant dream for the mechanism in place. Since, Food Insecurity term had been believed to recognised and evolved from Sub -Saharan Africa and now a day its being used across the world to refer critical and chronicle apathy of masses on the planet who don't have access to suffice food to maintain their productive (workability) capacity. In this context, SSA region's ongoing food security status along with plans and policy on the ground have been subject to empirical investigation in the light of present study especially to ascertain the real player of the game among i.e. home production, crop pattern, land holdings, agriculture produce export pattern and pace-pattern and direction of foreign funds etc. Asia and African countries have been housing most of the hungry people on the planet. The World Bank's latest update reveals the food price inflation across the globe, observed that about 52.4 percent low-income countries experienced above 5 percent inflation, 88.6 percent lower middle income and 61 percent upper middle-income countries have been suffering from double-digit inflation while high income countries were also facing acute high food price inflation.. Since Ukraine and Russia have been exporter of about 29 percent wheat and 62 percent sunflower oil to the world, consequent up on their conflict, it has aggravated the food price inflation for developing and vulnerable countries. It is admitted fact that Ukraine war has badly jolted the world food order. The World Bank Policy research Working Paper(WBPRWP-2005) investigated macro level progress in achieving the Millennium Development Goal in Sub-Saharan African Countries rather gave a Macro Model established linkages between operational agents(foreign aid, public investment, supply side and poverty) for the elimination of poverty. The research devised a composite MDG (Millennium Development Goal) indicator that is entrusted to serve as land mark strategy for human development in the region. As a recent report on impact of climate change reveals that the Indian agriculture is one of the most vulnerable sectors which engaged 40 percent labour force. It also highlighted temperatures' effects, deteriorating crop yields combined with gradual surge in food prices which has attained double digit mark in 2023 i.e.,11.51 percent. It has reported the chronology of changing pattern of summer monsoon since last century with devastating effects, especially on rain-fed agriculture of the central



region. Further the report also highlighted the reciprocal effects of agriculture on climate and enlisted major functional agents viz. ice melting in the Himalayan region, pollution and greenhouse gases emission etc. Food Security concept had been an outcome of sub-Sahara African famines of 1974 (a child of African Famine) which had witnessed acute shortage of food –feed for masses in the continent. This phase of mass –hunger had raised some fundamental queries namely, how a net agricultural produce exporting country has been trapped into a persisting and increasing hunger? While tracing the root cause it was believed that colonial mental and structural setup had been the major player for this chronic apathy (food insecurity). Thereafter, skewed space for endogenous knowledge, agriculture practices, community leadership and instrumental practices for tackling the food security issues on the continents had also been aggravated the food security problem in the 21st century. Although, food security concerns have grown complex in structure and composition around the planet but in SSA it has become more fatal and poses a serious threat to human existence in few regions.

## **2. LITERATURE REVIEW:**

In order to gauge the intensity of the problem an insight into the existing and on- going literary works have been an imperative job. Hence, some major and effective work has been reviewed. Underperformance of different agricultural, infrastructural and irrigations development projects those have also been further worsened the livelihood concerns of people especially funded by world agencies. (Vibeke Bjornlund, Henning Bjornlund and Andr'evan Rooyen (Feb.2022).

Food Security concept had been an outcome of sub-Sahara African famines of 1974 which had witnessed acute shortage of food –feed for masses in the continent. This phase of mass –hunger had raised some fundamental queries namely, how a net agricultural produce exporting country has been trapped into a persisting and increasing hunger? While tracing the root cause it was believed that colonial mental and structural setup had been the major player for this chronic apathy (food insecurity). Thereafter, skewed space for endogenous knowledge, agriculture practices, community leadership and instrumental practices for tackling the food security issues on the continents had also been aggravated the food security problem in the 21st century. Sometime underperformance of agriculture and other infrastructural and irrigations development projects has also been further added to livelihood concerns of people especially funded by world agencies and developed countries.). A new era of good Global Governance Model under the Chair of G-20 , Indian initiative “ Vasudhaiva Kutumbakam” lauds for ‘ONE EARTH, ONE FAMILY, ONE FUTURE, that has put forth anew multilateralism and system model shift form merely GDP Centric growth to Humanistic Growth . It lauds a lot about Global unification for many rather than few and also suggested way ahead through some fundamental reforms, may be pronounced as mantra for human centric progress blended with global harmony. This is an umbrella approach consisting of four components i.e. inclusive, ambitious, action -oriented and decisive (NDLD) New Delhi Leaders Declaration that got unanimous acceptance on the G\_20 forum. It is firmly believed by the member nations and their habitants that this umbrella strategy will definitely bear fruits for the human betterment across the planet. Indian Presidential words have immediately turned into action while inclusion of the African Union (AU) was pronounced and unanimously adopted, promised to the world about inclusive approach of G\_20 which makes it the largest forum of the world’s 80 per cent population. United Nations Millennium Summit 2000, resolved to the international community to opt for Millennium Development Goal (MDG) as a strategic instrument for the total elimination of poverty and to keep vigil on goals attainment. The Developed countries were also proposed to extend helping hands for financing of developmental activities in African countries called financial -brotherhood across the world. The Millennium Project Report, January 2005 (UNs) shows that several countries were moving on the right track towards partial achievements of goal while the Sub-Saharan African countries were lagging behind. Many other international agencies had also supported the narrative of African achievements that Women commands for about 50 percent of the world’s small holdings and produces about 70 percent of Africa’s food while owned about 20 percent of land in the world. Although in the world smallholder farms are just 12 percent of farmland which are contributing about 80 percent of food produced in the Asia and Africa. (Florence Odiwuor, 2022). In net shell, it is true that across the world Small holder farmers are instrumental to mitigate food-feed needs of the world, despite they are most vulnerable to hunger and poverty stricken in biased national and international policy regime. It is acknowledged that most of Sub -Saharan African countries agriculture sector had been contributing up to 25percent to the GDP (Paul Chiudza Banda, 2020). The present day’s apathy of the African people has its traces in the colonialism of European Union which has shattered the region badly for ruthless and irrational resource exploitation for centuries. The SSA’s dependence for its food-feed requirements on United States had been a well-thought -off strategic policy rather “a trap” of the US to serve its long run objectives of commanding maximum resources in the region. (Campbell, 2017) A UNICEF report reveals that the ratio of extreme



poverty among children have dropped by 11 percent between 2013-2023. Surprisingly, fertility rates have also been continuously declined. As the pandemic scenario has established that this class had emerged least-immune-one (LIO) to any shock like COVID and other natural or man-made vagaries, which had easily trapped about 5 million children in extreme poverty and derailed the recovery momentum of all poverty programs in the region. The Extreme Child poverty has become Sub-Saharan Africa Centric, as every 7 out of 10 children are in extreme poverty have been living in this region. Although, fertility rate has fallen but still adding to population and children poverty. Hence, it is doubted that whether the present pace of poverty reduction is enough to hit the target of Millennium Development Goal by 2030.

The present work indeed provides an insight into operational food security programs in the region with a critical analysis. Since, the developed world and agencies have been the major funding sources for decades. Thus, it becomes imperative to investigate into the pattern and pace of funding, to identify any snag in operability of programs at grass root and finally to identify system model failure to cope up the problem. Thus the present research work is designated to analyse the following objectivity in the light of prevailing scenario in Sub-Saharan Africa region. (i) To distinguish the Least Immune Class to food insecurity. (ii) To enlist the human centric accomplishment of the on-going policy programs in place. (iii) To ascertain if there is any correlation between any indicator.

### 3. METHODOLOGY:

In order to scan the outcome of existing influx of food security programs, simple statistical tools have been used aimed to get some concrete idea about the performances of the same. A comprehensive, re-look into the system model's trickle-down process has been done to ascertain the snags. In order to ascertain the human development in the region the academic attainments have been analysed as a core indicator for human development. Hence, published global and local reports of different programmes and plans had been reviewed in the light of study objectives. Irrespective of same targets under MDGs Why SSA region is lagging behind to elevate its people out of poverty at par to global pace? Whether it is governance failure or something else? If it is lack of Governance to be blamed with the sad story of human apathy and misery than it makes it imperative to peep into the realm of governance pattern in the region. Since good governance relates to political and institutional processes and outcomes that are mandated for human well-being and development which can be gauged in form of its delivery on humanistic counts namely civil cultural, economic, political and social rights. In the present work we are confined to the inquiry into the delivery of right to adequate health and education facilities to the children as MODE OF BEST INVESTMENT IN HUMAN BEING. Here, we can draw an outline of future of the region in the shape of graduating acute-food-insecurity in coming days.

### 4. ANALYSIS:

Those two observations had been definitely proved ray of hopes for the region in fighting against rapid population growth and chronicle poverty. It has been witnessed that children as compare to adults have been more vulnerable to monetary poverty (40 percent and 29 percent respectively). These facts have further strengthened the need for quick and synergised efforts to make a BIG-BLOW on the deep rooted and multi-dimensional poverty especially among the children. It is imperative here to mention that this NEW VULNERABLE CLASS of society i.e. children, those can be dragged out of the jaw of misery and poverty in near future on the basis of past experience.

#### TRNDS IN CHILDREN POVERTY IN SUB-SAHARAN AFRICA

YEAR	POVERTY Including COVID-SCENARIO (Lakh)	Poverty Growth Rate
2013	209.78	-----
2014	209.85	0.04
2015	215.47	2.67
2016	218.83	1.55
2017	219.71	0.402
2018	219.60	-0.05
2019	222.07	1.12
2020	229.92 (225.08)*	3.54 (1.35)
2021	233.61 (228.03)*	1.60 (-0.82)
2022	237.03 (230.24)*	1.46 (-1.46)

Source: Data analysed by Daylon Salmeron-Gomez as part of the World Bank's Policy Research Working Paper 10525. Figures in ()\* denotes non-covid scenario.



On the basis of above calculated annual growth rates of poverty, an analysis through Exponential Moving Averages (EMA) has been done to make a projection up to 2030 which witnessed that these trends in poverty growth would be continue at the same pace by above at the rate of one percent. Hence, we should chalk out strategy to cope up with this consistent growth.

It is crystal clear from the data that pandemic has forced a major chunk of children to be stuck in extreme poverty, irrespective of the all the mechanisms in place. It can be concluded that pandemic had brought misfortune to about 7 million children whose status could be otherwise changed. It is because this vulnerable class had little immunity and shock absorption capacity in the absence of external supportive system. The fertility rate per women in SSA during 2010-15 had been highest in the world i.e. 5.1 over 2.5 in world.

**MAGNITUDE OF EXTREME MONETARY CHILDREN POVERTY in SSA 2013-22.**

Year	Children in Poverty %	Children in Poverty (A.G.R)*	Persistence to last Grade of Primary, Total(% of cohort)	Persistence to last Grade of Primary (A.G.R)*
2013	45.21	-----	55	-----
2014	44.00	-2.67	56	1.82
2015	43.95	-0.12	57	1.78
2016	43.44	-1.09	57	00
2017	42.46	-2.26	58	1.75
2018	41.32	-2.68	59	1.72
2019	40.69	-1.52	60	1.69
2020	41.02	-0.82	61	1.66
2021	40.62	-0.97	-----	-----
2022	40.18	-1.08	-----	-----

Source: Data analysed by Daylon Salmeron-Gomez as part of the World Bank’s Policy Research Working Paper10525.

AGR\*= Annual Growth Rate in percentage.

Coefficient of correlation is  $r$  ranges between -1 to 1, while  $r=1$  implies for perfect positive linear relationship and  $r=-1$  implies for perfect negative linear relationship,  $r=0$  stands for no-linear relation. However, the correlation coefficient between  $X$  (Children in Poverty) and  $Y$  (Persistence to last grade of primary) to series is approximately -0.246 which indicate a weak negative or least correlation. This further established that in SSA region acute children poverty and low learning have no established linkage.

The data depicts that poverty alleviation programs seemed to have been operational in the SSA region and gradually advancing towards their goals. This has fallen from 45.21 percent to 40.18 percent between 2013 to 2022 about 5 percent drop over 9 years i.e. about 0.50 percent per annum which means a lot. Further it is a testimony of the ongoing policy regime in place. It explicit the progression of poverty elimination in the region which could be proved path-breaking for rest of the world and very much in align with Millennium Development Goals. Although, learning among the primary standard students had been in bad shape and it has no linkages with the poverty. Since the percentages of primary standard students those persistent to last grade has gradually increased over the last decade. But at the same time, it seems better half of the real story while shaded side is still to come out. It is imperative here to compare these declining trends of children poverty with population growth to make some concrete conclusion as well as to produce some valuable empirical research for future. The SSA region has an alarming pooled estimate of fertility rate around five children per women, although the average fertility rate in the region has been recorded 4.45 while fertility rate in Chad, Niger, Somalia and Democratic Republic of the Congo had been above 6. Surprisingly, most of the European countries and United States have fertility rate about 1.6. It is necessary to mention here that India had been passed through this demographic transition stage in 1960 i.e. fertility was about 6 and now it is at 2 i.e. 2.2 in rural areas and 1.6 in urban India (2020). China had 1.28 fertility rates in 2020. Interestingly, North Indian state Bihar, featured with least literacy rate had the highest total fertility rate than rural -urban areas.



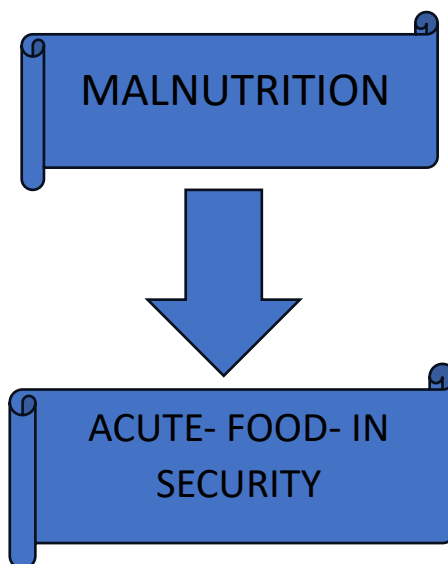
**GROSS PRIMARY SCHOOL ENROLMENT (Percentage) IN SUB- SAHARAN AFRICA  
 2013-22**

Year	% Gross Enrolment	% Gross Female Enrolment	% Gross Male Enrolment	Persistence to last Grade of Primary, Total(% of cohort)
2013	99	96	102	55
2014	98	95	101	56
2015	97	95	99	57
2016	97	94	99	57
2017	97	95	100	58
2018	98	96	100	59
2019	99	97	101	60
2020	100	98	102	61
2021	99	97	101	----
2022	99	97	101	----

Source: [apiportal.uis.unesco.org/bdds](http://apiportal.uis.unesco.org/bdds).

It is crystal clear that Sub-Saharan Africa has been the worst poverty-stricken region on the planet, by one reason or other reason in recent past. In the present scenario, may be pandemic or Russian war, altogether had added to the plight of people in the region. Although, up to 2012 malnourishment had been talked and taken care off but now problem has further aggravated, reported as “acute-food-insecurity” by Food and Agriculture Organisation. The FAO has claimed that acute-food -insecurity is a more serious condition than undernourishment because it directly leads to food deprivation that perished lives and livelihood regardless of cause of concern, context and duration.

**Fundamental Transition in Food Security Problem**



Present day’s (Acute-food-insecurity) problem has grown manifold in its intensity, magnitude and coverage especially up to most vulnerable class of children. This class needs to be more equipped with life learning and skills to become triumphant over modern time shocks like climate change, wars and any interruption to food supply chain. Moreover, a more resilient and all -weather FOOD-SECURITY-NET (FSN) is the need of hour to tackle this menace of acute-food-security. A large number of analysis and fact findings of the worldly organizations like FAO, IMF, World Bank etc. reveals that the forces behind this human apathy were region centric and class specific. Thus, a cluster of issues centric remedies needed to tackle the menace in a time bound manner. Here are the few key drivers behind the scene, those if acknowledged accurately well in time, then every effort would definitely bear positive and expected outcome for humanistic development. There are weather extremes that cause the major dent to the existing food-feed needs and procuring system in the region. It may be frequent droughts, deficit rain, rising temperature and distorting crop pattern.



Consequently, harming livelihood concerns of a major chunk of farming community resulted in low earning as well as learning and finally wastage of human resources which might be beneficial for their own and national growth. Social complex of the regional was distorted to serve the master's interest by coping on land, labour and endogenous industrial system which had been their bona-fide and tested blend of socio-cultural life. It has altered crop pattern and crop system, turned into a export-centric system irrespective of food needs at home, consequently social unrest, clashes etc. led to poor leadership as well as governance. Moreover, transition in role of institutions and native authority undermined the social fabric of self-sufficiency on endogenous means as well as ends.

European players had also reshaped the localized institutions of governance and rule that hampered the social make-up of belongingness of the land causes chronicle trouble in formation of stable and trust-worthy governments which could be able to run smoothly for a quite (necessary time for a government to perform) long-time. Moreover, SSA's people government taken the charge of a resources poor economy which lacking public finances and thus failed badly to sustain and grow, led to poor governance which causes for chronicle poor performer governments one after another. These, inherited deep rooted defects lead to present days political and economic poor leadership in the region. This resulted into lack of good policymakers, good policies and finally good governance. Population rise and changing demographic pattern has again done a lot of harm to the economic wellbeing of the regional. Hence, a new class of poverty-stricken children has emerged with least food security and high vulnerability. It is again a matter of great concern that while most of the developing and under developed countries are expecting to harness demographic dividend in near future, the SSA region would not be seemingly seen sailing on soothing track in near future due to low learning capability and avenues for its future generation.

It was merely disposing of its surplus grains on the name of "Food Aid". It is also evident from the World Bank, Vice-President's 1972 words that the sole objective of the US for foreign aid was to create conducive economics and political environments for the accomplishment of its own socio-economics. Furthermore, it is World Bank and International Monetary Fund whose food programmes and trade policy regime had been charged to distort the existing in-land food production system to the worst and made them food dependent.(Ahulwalia,2019).Hence, post -world war -II, geo-political scenario has been deep impact on the prevailing food aid and food export strategy around the globe especially in the SSA region, consequent upon SSA's chronicle food dependence ever increased on imports and food-aid from the global agencies as well as from developed countries even in 21<sup>st</sup> century.

Real GDP growth blinked sharply by average 1.4 percent, consequent upon the slowdown of major contributors accounting for about 4/5<sup>th</sup>GDP of the SSA region. More over since2020 growth in the region had been more consistent (less frequently of expansion and contractions) comparative to preceding time. Ten Indian States those are earmarked as the poorest ones having been observed with similar learning and livelihood state, such similarities provide enough food for thoughts to make the study useful enriched with policy making contents.

## **5. SUGGESTIONS**

On the basis of present analysis, it is inevitable to make some suggestion for a bright future of masses of African region especially Sub- Saharan Africa. The sky rocketing fertility rate must be taken care in alignment with mother-baby health issues. Low -learning at primary level must be linked to some nutritional program like Mid -day Meal Scheme (MDMS) in India. Human centric development model is need of hour to create QUALITY HUMAN ASSETS. Secondly, a more adaptable system is needed for the social, economic and institutional transformation .Thirdly, revival, promotion and Protection of endogenous production and consumption system to counter growing import-led consumption and production which has shaken the social-institutional fabric of the region for the sake of coming generation. More, over low level learning (least in the world) of humanistic basic skills also pawed the way towards human apathy in the region which has ample potential to gain the momentum with a more care full honest approach of development. Thus the analysis would definitely prove its worth by providing enough food for thoughts of policy planners as well researchers.

## **REFERENCES:**

1. Sarah Hauge, Paul Quarles van Ufford and Bob Mucha Baiwa. (2023) Good News or Bad News For Africa: recent Trends in Monetary Child Poverty in sub-Saharan Africa,. Regional Policy Adviser, East and Southern Africa, UNICEF and Regional Policy Adviser, West and Central Africa, UNICEF& Social Policy Specialist, EastAnd Southern Africa Regional Office, UNICEF.



2. Article by Prof. Chetan Singh Solanki ( 2023) India to be most impacted by climate change Business Standard, E\_paper,. Business-Standard.com
3. A World Bank Report (2023) Food Security Update: World Bank Response to Rising Food Insecurity. Worldbank.org \_<https://data.worldbank.org>
4. [apiportal. uis.unesco.org/bdds](http://apiportal.uis.unesco.org/bdds).
5. <https://www.ohchr.org>
6. The Tribune “India’s G20 presidency and a new multilateralism”, 30 Nov.2023, p.09
7. World Bank (2023), Africa’s Pulse , Delivering Growth to people through better jobs. Washington, DC: World Bank.Doi: 10.1596/978-1-4648-2043-4
8. <http://hdi.handle.net/10986/4038>
9. Agenor, Pierre-Richard, Nihal Bayraktar, E.P.Moreio and Karim El Aynaoui. (October 2005) Achieving the Millennium Development Goals in Sub-Saharan Africa: A Macro Monitoring Framework. World bank Policy Research working Paper 3750,. -<http://econ.worldbank.org>
10. The Times of India published the Report ( 4<sup>TH</sup>, December 2023),“Climate Change Threatens India’s Agricultural Backbone, Impacting Food Security and Economy” released by **Climate Trend**, Climate Think Tank. Timesofindia.com
11. Belue Rhonda, Titlayo A Okoro, Juliet Lwelunmor, Kelly D Taylor, Arnold N Degboe, Charles Agyemang & Gbenga Ogedegbe,( 2009) An Overview of cardiovascular risk factor burden in Sub-Saharan African Countries: A Socio cultural perspective
12. Vibeke Bjoornlund, Henning Bjornlund, Andre’ van Rooyen (2022).Why Food insecurity persist in Sub-Saharan Africa: A review of existing evidence.”. Published on –Line. Open access
1. <https://doi.org/10.1007/s12571-022-01256-1>
13. Noort, M.W.J.; Renzetti, S.; Linderhof, V.; du Rand, G.E.; Marx-Pienaar, N.J.M.M.; de Kock, H.L.; Magano, N.; Taylor, J.R.N. Towards Sustainable Shifts to Healthy Diets and Food Security in
14. Sub-Saharan Africa with Climate-Resilient Crops in Bread-Type Products: A Food System Analysis. 2022,11,135.
15. [https://doi.org/10.3390/ foods11020135](https://doi.org/10.3390/foods11020135)
16. Fox, L., & Jayne, T.S. (2020,). Africa in Focus: Unpacking the misconceptions about Africa’s food imports. Brookings. <https://www.brookings.edu/blog/africa-in-focus/2020/12/14/unpacking-the-misconceptions-about-africas-food-imports/>
17. Food and Agriculture Organization (FAO). (1996). Rome declaration on world food security and World Food Summit Plan of Action. World Food Summit, 13–17 November, Rome. <http://www.fao.org/3/w3613e/w3613e00.htm>
18. Food and Agriculture Organization (FAO) 2017. The future of food and agriculture: Trends and challenges.
19. <http://www.fao.org/3/a-i6583e.pdf> “Forgotten food crops in sub-Saharan Africa for healthy diets in a changing climate”
20. Maarten Van Zonneveld, a , 1 Roeland Kindt, b Stepha McMullin, b Enoch G. Achigan-Dako, c SognigbéN’Danikou, d Wei-hsun Hsieh, e Yann-rong Lin, a , e and Ian K. Dawson ( March,2023) Published online.. doi: 10.1073/pnas.2205794120
21. Florence Odiwuor. (September, 2022) Women smallholders Farmers: What is the missing link for the food system in Africa? (Blog Post)
22. Paul Chiudza Banda. (March, 2020.) Agriculture: The Backbone of The African Economy. Extraordinary and Plenipotentiary Diplomatist, Analysing International Relations.
23. Noort,M.W.J., Renzetti,S., Linderhof,V., duRand, G,E., (2022) Towards Sustainable Shifts to Healthy Diets and Food Security in Sub-Saharan Africa with Climate-Resilient Crops in Bread-Type Products: A food System Analysis.. <https://doi.org/10.3390/foods11020135>