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Nutrition Integration Diagnostic and Challenges for National Agricultural, Food Security and Nutrition Investment Plan in the Gambia, Guinea and Togo: A Data for the Next Revision and Implementation

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Abstract The Regional Organizations in West Africa had jointly lunched a regional Project to Improve the Governance of Resilience and Food Security and Nutrition and Sustainable Agriculture. The objective of the study was to understand the extent to which nutrition is taken into account in National Agricultural, Food Security and Nutrition Investment Plan of The Gambia, Guinea and Togo, and to identify challenges for future revision and implementation. The methodology used the Compendium of Key Nutrition Actions of the Scaling Up Nutrition Movement, and the mean core tools used to collect, store, code and analyze data was policy and plan overview from the United Nation Network. The findings revealed that nutrition is not an entire priority axis, it's combined with food security, resilience and social protection. On the total of 32 key actions used to assess, 26 was considered as relevant for Togo, and 23 respectively for Guinea and The Gambia. There was a variation of key actions considered as relevant between country plans, and in total 66% (21/32) common priority actions were identified. The analyses show a significative funding gap estimated, around 40% for The Gambia, 44.4% for Guinea, and 90.83% for Togo, and none of the country didn't clearly develop a detailed fund mobilization strategy. The nutrition integration tools is considered as a need for all country. The study helped to highlight opportunities to improve country plans in future revision, and could orient the elaboration of the next Economic Community of West African States nutrition agenda to be more nutrition-sensitive.

Keywords: *The Gambia, Guinea, Togo, PNIASAN, nutrition integration, policy and plan overview*

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1. Introduction

West Africa region is facing the double burden of over and undernutrition in the context of the global and regional financial crises, climate change and the demographic transition add further complications to the challenges that the Economic Community of West African States (ECOWAS) member States face [1]. The rapid human population growth makes malnutrition a pressing issue [2]. In the region, the prevalence of stunting in children under five years decline from 33.8 % in 2012 to 29.7 % in 2024, and respectively from 22.5 % to 14.0 % (The Gambia), 33.6 % to 26.6 % (Guinea) and 26.4 % to 23.0 % Togo [3]. From 2006-2024 the prevalence of undernourishment felt for The Gambia from 17.6% to 16.8 %, Guinea from 16.4% to 11.4 %, Togo from 24.8% to 09.1% [3].

The Scaling Up Nutrition (SUN) movement lunched in 2010 and acceptance of the Sustainable Development Goals (SDGs) in 2015 have defined a coherent international vision for ending malnutrition [4]. In efforts to address the regional situation, 16 of the 17 countries in the region joined the SUN; this multisectoral governance approach was the first attempt to undertake the revision of countries sectoral documents to facilitate the development of programs and projects to sustainably prevent malnutrition. The nutrition integration into policies, strategies, plans and programs has therefore, become increasingly important, not just to address fundamental inefficiencies but to promote sustainability through government ownership and improve service delivery across the life cycle [5].

It this dynamic, after close consultation the ECOWAS with its member states adopted its agricultural policy to sustainably meet the food security of the population and to reduce poverty and inequalities in the region. This regional organization scale-up and led the revision by the nutrition inclusion into the National Agricultural Investment Plan (first generation) and became the National Agricultural, Food Security and Nutrition Investment Plan (PNIASAN) linked to the Regional Program for Agricultural Investments and Food and Nutrition Security (PRIASAN). The SDGs explicitly outline the challenge of linking agriculture to nutrition, and nutrition is not adequately integrated within the health sector, and despite progress done, ending malnutrition in all its forms remains a global challenge [6].

The ECOWAS, the West African Economic and Monetary Union, the Permanent Inter-State Committee for Drought Control in the Sahel (CILSS) and the Regional Professional Organizations had jointly lunched ta regional Project to Improve the Governance of Resilience and Food Security and Nutrition and Sustainable Agriculture (PAGR-SANAD) in West Africa and the Sahel from June 2018 to June 2024. The general objective of PAGR-SANAD is to strengthen the governance of food and nutritional security, sustainable agriculture in order to ensure, despite the economic and environmental risks, improved access to food and increased nutritional impact, to ultimately strengthen the resilience of vulnerable populations while promoting inclusive economic and social growth. More so, the project aims to develop the capacities required within regional and national institutions to strengthen regional governance of food and nutrition security and agricultural policies in the context of resilience with a vision to achievement of the "zero hunger by 2025" objective. One of three main expected results of PAGRSANAD is to ensure that nutrition is effectively integrated and addressed in agricultural and food security policies at national and regional level. The multisectoral approach faces challenges particularly when it comes to financial allocations, implementation of interventions, and program evaluation, all of which often tend to reside within individual sectors [7].

The primary objective of the study was to understand the extent to which nutrition is taken into account in national PNIASAN's in the Gambia, Guinea and Togo, highlighting opportunities to improve them in future revision. Second, to collect information on the budget, and finance mobilization strategy, and third to identify mechanisms, challenges and conditions for better nutrition integration particularly for contributing sector.

2. Methodology

This study is part of a broad nutrition integration study into policy, strategy and plan documents conducted in 7 countries of West Africa, which primarily aims to assess the level of nutrition specific and sensitive actions in policies, strategies, programs and plans of the contributing sectors. The study evaluation targeted the agriculture, livestock, resilience, trade, agri-food industry and processing, social protection, water and sanitation, hydro-agriculture, research, environment, health, and education sectors.

This current document is a qualitative study focused on the PNIASAN of The Gambia, Guinea and Togo. An analytical review combining group discussion with key informants, and national triangulation workshop were conducted. The mean core tools used to collect, store, code and analyze data for the nutrition inclusion exercise was policy and program overview [8,9]. A tool from the United Nations Nutrition Network-REACH Initiative (Renewed Efforts Against Child Hunger & Undernutrition), a country-support mechanism for improving nutrition governance.

A multisectoral and multidisciplinary technical committee (TC), key informants, at each country level, not exceed 10 people, was created and placed under the supervision of the country structures in charge of multisectoral coordination of nutrition and the country Permanent Secretariat of the CILSS National Council. The strength of this process was to facilitate inclusive and collaborative approach during the whole step of the study [10,11,12] and to insure a greater coherence between sectors [13]. In each country 10 days of workshops with the committee were hold including: (i) an opening workshop to outline the objectives and methodology of the study in full transparency; (ii) a review workshop for approximately 7 days to evaluate preliminary findings, and (iii) a feedback workshop for approximately 2 days to review and finalize the work.

2.1. Initial Training

An initial training session was held to present the methodology and the tools developed for this study. Training was held twice a week for the first two months to support country consultants choose to carry out the study. Weekly calls took place individually and in group settings. After the initial months, a series of technical support were ad-hoc depending on country need and progress.

2.2. Compendium of Key Nutrition Actions

This stage of the study focused on defining key nutrition actions from the Compendium of Key Nutrition Actions (CKNA) developed by the United Nations Nutrition Network/REACH Secretariat [14]. A list of thirty-two (32) actions was drafted. After validation of the actions by the CILSS nutrition team, the list was presented to countries, and discussed with the national TC. The national TC had the full discretion to modify, remove or add actions to best align the study with their country needs. The Table 1, presents the common actions validated and used by The Gambia, Guinea and Togo.

2.3. Data Collection, Processing and Analysis

Data collection took place from July 2021 to December 2021, and was carried out by country consultant and supported by the lead consultant and the CILSS nutrition expert in charge of study global coordination and orientation.

For nutrition inclusion, data collection and the desk review phase of the study was guided by the Policy and Plan Overview (PPO) Excel tool. The goal of the PPO

Excel tool was to serve as the data collection document to facilitate collection and review, before transcribing the information gathered in the PPO PowerPoint Presentation Template (PPO PPT). The PPO Excel were developed in accordance with the Compendium of Key Nutrition Actions, and it included specific information for page numbers and content, to facilitate the review, and sourcing of each observation. The document also had a line to provide insight on whether the action was relevant to the sector and should be included in the next revision, and how including it would facilitate a multisectoral approach to tackle malnutrition. An information collection on budget allocation, deficit, and finance resource mobilization strategy was included to the PPO Excel. The PPO PPT Template then outlined the findings and implications of the overview. This summarized the document studied, outlining the primary objectives of the PNIASAN, any specific nutritional content, and indicators.

The slide provided the space for any additional remark or observation.

The analysis of the nutrition coverage is based on two streams of standardized criteria that verify the nutrition coverage in the PNIASAN through scores, with a weighting of 50% for each stream (Figure 1). The sheet was created and shared with specific formulas used a standard methodology by countries. A formula was also incorporate to generate a Harvey ball, to show the level of inclusion in a pie-graph format. Only five ratings were possible: (i) 0% or no inclusion of nutrition, (ii) 0-25% or minimal consideration of nutrition, (iii) 25-50% or partial consideration, (iv) 50-75% or moderate consideration, and (v) 75-100% or substantial consideration of nutrition.

Additionally for data collection, for each country, a group discussion was conducted with technical committee members, and information collection through workshops with key informants during a national workshop. The following items were discussed: (i) does mechanisms for monitoring the integration of nutrition aspects into policies and programs at country level exist? (ii) What are the challenges and conditions for successful nutrition inclusion in the strategic documents of the contributing sectors.

A content analysis of the collected data after the group discussions from key informants of TC and national workshop was done based on the keywords and ideas. It's was able to identify complimentary information needed to strengthen nutrition governance, in addition to the nutrition inclusion actions in the next document revision.

Table 1. List of key nutrition actions proposed and validated by countries

List of priority nutrition actions	
1	Provide nutrition education (Including promote eat what you grow practices)
2	Animal husbandry on the family farm (including insect breeding)
3	Aquaculture and capture fisheries (to produce food of animal origin in support of healthy diets)
4	Sustainable intensification of agricultural production
5	Biodiversity and underutilized crops
6	Implement fortification of foods (incl. varietal selection and crossing, for seeds with high nutritional value)
7	development of nutrient-rich crops for the benefit of communities, via community gardens
8	Implement safe pesticide and fertilizer control and management
9	Training on post-harvest management of crops (incl. quality assessment, storage, and preservation)
10	Treatment of moderate acute malnutrition and severe acute malnutrition (MAM & SAM)
11	Malnutrition screening
12	Provide Vitamin A supplementation
13	Provide Iron Folic Acid supplements
14	Micronutrient supplementation (zinc, iodine...)
15	Promote improved sanitation (latrines and handwashing with soap)
16	Improvement of water supply systems and services for better access to drinking water (urban and rural areas)
17	Improve agriculture water management
18	Promote infant and young child feeding practices (exclusive BF, complimentary feeding)
19	Provide deworming tablets
20	Provide insecticide treated nets (ITNs)
21	Provide social food and nutritional safety net (cash transfer, food for work)
22	Promote girl child primary school enrolment
23	Promote the prevention of adolescent pregnancies
24	Improve infrastructure (i.e., roads) for intraregional trade in food staples
25	Increase access and distribution of inputs
26	Improve access to markets for food, processed, semi-processed or unprocessed agricultural products.
27	Support for units or the creation of processing units (small, medium, or large companies, etc.)
28	Provide supplementary feeding to vulnerable households during emergencies or complex situations
29	Vulnerability assessment and early warning analysis
30	Improve access to financial services to increase productivity and resilience
31	Provision of credits and/or microfinance services for the benefit of farmers, livestock breeders, pastoralists, agro-pastoralists, fishermen and insect breeders
32	School feeding

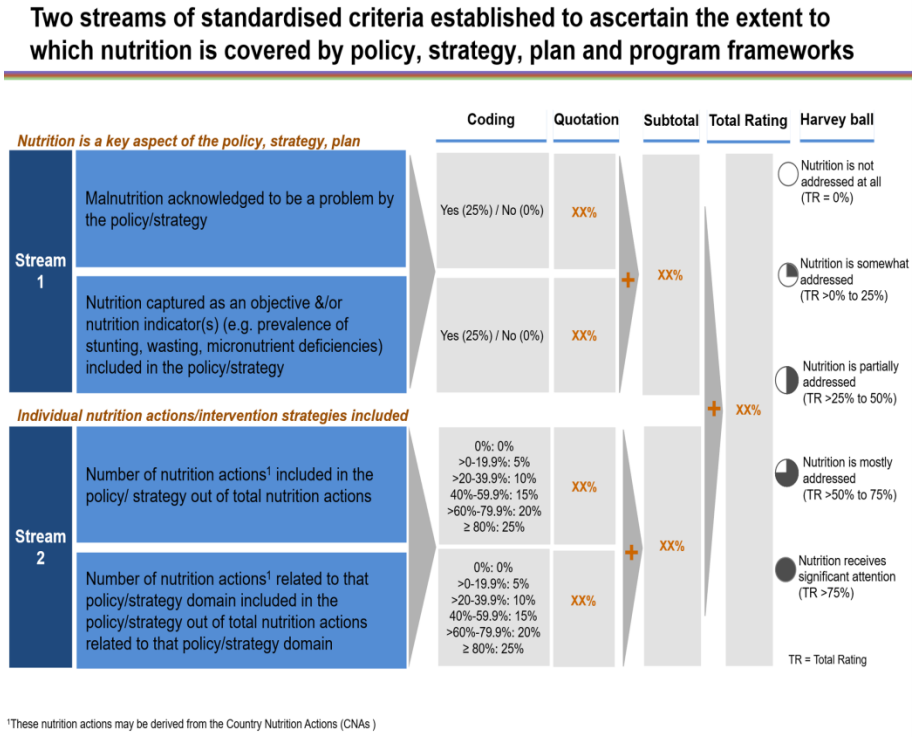

Figure 1. The coverage calculations to understand the extent of the nutrition consideration

Table 2. PNIASAN priorities and responsible ministries per country

Country	Validity	Axes priority	Responsible institution	Partners of implementation
Gambia GNIAP II - FNS	2019-2026 (7 years)	production and value chain promotion on food crops and vegetables, livestock husbandry and pastoralist, fisheries and aquaculture, forestry and environment, food security, nutrition, resilience and social protection, coordination, monitoring and food security	ministry of agriculture	ECOWAS, FAO
Guinea PNIASAN	2018-2025 (7 years)	productivity, access to markets, resilience and food security and nutrition, human capital, governance	ministry of agriculture, ministry of animal husbandry and animal production, ministry of fisheries, aquaculture and maritime economics, and ministry of the environment, water and forests	ECOWAS, NEPAD, UNICEF, SUN, FAO, WFP, WHO
Togo PNIASAN	2017-2026 (9 years)	organization of rural areas and agricultural sectors, improving the productivity, production, and processing of agricultural products, improving the resilience and nutrition of the population, improving the coordination of the sector	ministry of agriculture, animal and fish production	ECOWAS, FAO, WFP, IFAD, BOAD

Abbreviation: ECOWAS, Economic Community of West African States; FAO, Food and Agriculture Organization of the United Nations; NEPAD, New Partnership for Africa's Development; UNICEF, United Nations Children's Fund; SUN, SUN Scaling up Nutrition, WHO, World Health Organization; IFAD, International Fund for Agricultural Development; BOAD, West African Development Bank.

Table 3. Overall nutrition inclusion

PNIASAN	Malnutrition stated as a problem	Nutrition indicators and/or objectives	Extent of the nutrition	Observation
Gambia GNIAP II-FNS	no	yes		total rate: 50%, 23/32 key nutrition actions, 11/23 relevant actions
Guinea PNIASAN	yes	yes		total rate: 95%, 20/32 key nutrition actions, 20/23 relevant actions
Togo PNIASAN	yes	yes		total rate: 90%, 20/32 key nutrition actions, 20/26 relevant actions

As aforementioned, only five ratings were possible:

 0% or no inclusion of nutrition,

 0-25% or minimal consideration of nutrition,

 25-50% or partial consideration,

 50-75% or moderate consideration,

 75-100% or substantial consideration of nutrition

3. Results

3.1. Country's PNIASAN Priorities, Validity and Responsible Institution

The document review show that Guinea and Togo named their document PNIASAN, and for The Gambia is called Second Generation National Agricultural Investment Plan for Food and Nutrition Security (GNIAP II- FNS). The GNIAP II- FNS is the plan to implement a modern, sustainable, and market-oriented agriculture and livestock sector with 6 axes. The Guinea PNIASAN's, composed by 5 axes, is defined as the planning and coordination framework of the National Agricultural Development Policy. About Togo PNIASAN's with 4 axes aim to develop a modern, sustainable, and high value-added agriculture. The primary axes of intervention and responsible Ministry are outlined in the Table 2 below. These plans were elaborated in 2017 or 2018, with implementation period varying from 7 to 9 years, under the different leadership.

3.2. Nutrition Actions Included in the Document

3.2.1. Nutrition Inclusion Coverage

The nutrition inclusion analysis showed that only Togo and Guinea documents recognizes malnutrition as a national concern, but all of them included nutrition indicators. The aforementioned Guinea and Togo document have a good nutrition coverage 90% and more, and for The Gambia it's 50% (Table 3). However, into the GNIAP II- FNS the study found that 12 actions should be considered in the next revision, and respective three (3) and (5) additional actions for Guinea and Togo PNIASAN's. In addition, on the total of 32 key actions, 26 was considered as relevant by Togo, and 23 respectively by Guinea and The Gambia.

3.2.2. Comparative Analysis on Nutrition Inclusion Actions in the PNIASAN

In summary, 21 of the 32 common priority nutrition actions were found relevant for inclusion in the PNIASAN of the 3 countries (Figure 2). In addition, for Togo PNIASAN's, the study found 6 actions to not be relevant, or applicable for inclusion, and 9 actions respectively for The Gambia and Guinea.

All country PNIASANs include sustainable intensification as well as fortification. The development of nutrient-rich crops for the benefit of communities, via community gardens is included as a priority for all, however, is omitted in the Gambia's GNIAP II- FNS. The safe use and management of pesticides and fertilizers is recognized as a priority for all documents, however, was only included in the PNIASANs for Guinea, and Togo. Training on the post-harvest management of crops, including quality assessment, storage and preservation was prioritized by all, but the Gambia documents do not include this action in their current versions. Malnutrition screening was identified as a key priority action by all countries PNIASAN; however, the action was not found in any documents. Vitamin A and iron and folic acid supplementation were not considered important for inclusion of the 3 country's PNIASAN documents.

Moreover, the figure shows that the improvement of water supply systems and services for better access to drinking water in both rural and urban areas was not considered relevant in the Guinea PNIASANs. The technical committees for the Gambia and Togo suggested the action to be considered for inclusion in the next revisions. The provision of social food and nutritional safety net through for example, cash transfers or food for work were included into 2 of 3 PNIASANs; the Gambia committee did not consider this relevant for inclusion. In addition, the promotion and improvement of infrastructure (i.e., roads) for intraregional trade in food staples, the increase access to and distribution of inputs as well as the increased access to markets for food, processed, semi-processed or unprocessed agricultural products were all priority actions identified as relevant to the 2 PNIASANs, and all PNIASANs included these actions.

Lastly, the result indicates that all TC found that the provision of supplementary feeding to vulnerable households during emergencies should be included, and the promotion of school feeding practices was found relevant to the PNIASAN by but not that of the Gambia.

Figure 2. Comparative analysis on the inclusion of nutrition actions in the PNIASANs

✓ The specific action was present in the document version

✗ The specific action was not present in the document, but the study found the action to be relevant to the document and concluded that the action be considered for inclusion in the next document revision

▬ If the action was not present in the current document version, and the study found the action to not be relevant, or applicable for inclusion in the document.

The actions listed in blue are part of the core actions validated by all countries, as reflected in part two, Compendium of Key Nutrition Actions section of the report. Each country adjusted specificity to actions but agreed under the study to consider a core set of actions

Abbreviation: MAM & SAM, Moderate Acute Malnutrition and Severe Acute Malnutrition; Vit-A, Vitamin A; IYCF, Infant and Young Child Feeding; ITNs, Insecticide Treated Net

3.3. Budget Allocation, Deficit, and Fund Mobilization Strategy

From the review of documents, the financial projections of the PNIASAN per country fluctuates and the Table 4 present the budget in percentage by axis. The Gambia GNIAP II- FNS is approximately US$ 374.22 million, with a funding gap of 40%. The plan has provided the main sources of financing beyond the traditional donors of the mainstream agriculture sector. The document briefly mentions the resource mobilization strategy through the traditional donors of the agriculture sector. Regarding the Guinea PNIASAN total budget was estimated to US$ 4,187 million and a funding gap estimated 44.4%. The financial strategy for this plan was to allocate portions to be funded by four primary Ministries (see responsible ministry Table 2) and a fifth portion by external funding. The strategy for mobilizing the additional resources needed will include improving budget consumption rates, improving the attractiveness of the sector to encourage private investment by improving the business climate and the legal and regulatory framework, and mobilizing funding from innovative mechanisms, such as the Green Climate Fund. For Togo, the projected cost to achieve results outlined in the document is US$ 1,371 million. Although financial resources and funding promises were not noted in the document, the financial gap was estimated around 90.83%.

3.4. Existence of Mechanisms for Nutrition Integration Monitoring Into Plans

Group discussions from all country TC indicated that nutrition integration monitoring was a weakness, despite the multisectoral bodies that were created to lead nutrition governance. They identified the need to create institutional monitoring frameworks and tools as national priorities to ensure accountability.

A member of The Gambia technical committee said:

"The Gambia established the National Nutrition Agency in 2005, and a part of the mandate is to coordinate the integration of nutrition into sector policies and plans. The government drafted the new National Nutrition Policy for 2021-2025, this will improve the mechanisms for monitoring and evaluation".

And according to one stakeholder of Guinea:

"The main objectives of the evaluation monitoring framework are firstly to monitor activities through nutrition indicators over time, analyze the organization and resources allocated to activities and the progress".

From the group discussion in Togo, all sectors noted that they referred more to national framework documents and recommendations at the global, regional, sub-regional levels. An agent from agriculture sector highlighted:

"At the agricultural sector level, we follow the Sustainable Development Goals, Comprehensive Africa Agriculture Development Programme, the commitments of MAPUTO 2003 and MALABO 2014 as well as the recommendations resulting from the evaluation of previous strategic documents, notably the PNIASA 2010-2015 for the consideration of nutrition".

3.5. Difficulties and Conditions to Success the Nutrition Inclusion Into PNIASAN

From discussion groups, it's noted by all countries that political efforts need to be reinforced, to translate into strengthened guiding documents and consequently more explicit action. Also, four major points as conditions of success derived from challenges, have been globally evoked : (i) a strong governance operational mechanisms to be establish at all levels (monitoring & evaluation, accountability, consultation, communication, advocacy, etc.), (ii) the production, management and use of quality information to support decision-making, (iii) the conception and dissemination of guide interventions or nutrition inclusion, especially in sensitive sectors, and (iv) mobilization of financial partners for nutrition sensitive interventions. The Table 5 presents challenges and the conditions of success noted in each country.

4. Discussion

This study helped to highlight, using the Policy and Plan Overview developed by the United Nation Network-REACH and the SUN Compendium of Key Nutrition

Actions, the nutrition integration into PNIASAN of The Gambia, Guinea and Togo. It makes possible to identify the challenges at implementation given the multisectorality of nutrition [8,9,15] particularly in agriculture nutrition sensitive sector [16].

The study showed that the PNIASAN implementation period varies from 7 to 9 years, with similar priority axe, and all countries integrated a multisectoral coordination mechanism into their plan [17,18]. The findings revealed that nutrition is not an entire priority axis, it's combined with food security, resilience and social protection, or food security and resilience or only with resilience. This would constitute a weak point during the formulation and integration of nutrition activities into the document.

Guinea and Togo document have a good nutrition coverage respectively 90% and 95%, and for The Gambia it's 50%. The relatively good level of nutrition integration in Guinea and Togo could be explained by the influence of national nutrition policies, or international and regional strategies [19,20,21], such as the Comprehensive Africa Agriculture Development Programme, SDGs and the recommendations resulting from the evaluation of previous the National Agricultural Investment Plan as said by country key informants.

On the total of 32 key actions used to assess, 26 was considered as relevant for Togo, and 23 respectively for Guinea and The Gambia. These 26 key nutrition actions could directly be proposed as CKAN for subsequent revisions. They were a variation of key nutrition actions considered as relevant between countries PNIASANs', and in total 66% (21/32) common priority were identified. This indicates that the content of PNIASAN varies significantly between countries in terms of nutrition activities. It should be noted, however, that these countries are located on the Atlantic coast of West Africa with little contextual difference. This would demonstrate that planning is based on the country's needs, and also require a common planning approach.

Table 4. Budgetary information from Country PNIASAN

PNIASAN	Estimated in USD (millions)	Financial allocation by axis (%)	Existence of clear fund mobilization strategy
The Gambia GNIAP II-FNS	374.22	production and value chain promotion on food crops and vegetables sector (43%), production and value chain promotion on livestock husbandry and pastoralist sector (16%), production and value chain promotion on fisheries and aquaculture sector (20%), production and value chain promotion on forestry and environment sector (2%), food security, nutrition, resilience and social protection (11%), coordination, monitoring and food security (3%), contingency (5%)	not detailed
Guinea PNIASAN	4, 187	productivity (74%), access to markets (7%), resilience and food security and nutrition (7%), human capital (1%), governance (11%)	very low detailed
Togo PNIASAN	1,371	organization of rural areas and agricultural sectors (8%), improving the productivity, production, and processing of agricultural products (77%), improving the resilience and nutrition of the population (4%), improving the coordination of the sector (6%), contingency funds (5%)	not detailed

Table 5. Challenges and conditions to success nutrition integration into PNIASAN

Country	Challenges	Conditions of success
The Gambia	Limited of nutrition institutionalization into nutrition sensitive sector, limited budgetary allocation for sectors critical in enhancing nutrition, lack of key nutrition indicators	reinforce multisectoral approach and collaboration, develop a nutrition inclusion guide for the PNIASAN engaged sectors, share knowledge and awareness raising on nutrition, increase financing of nutrition across ministries (nutrition specific and sensitive), improve research and information systems
Guinea	low level of nutrition institutionalization into agriculture sector, weak national nutrition information system, low visibility of partner interventions and nutrition programs, lack of donor interest in nutrition to the sector, insufficient synergies, limited availability of domestic resources	renew the national food security council, define a common results framework for nutrition, reinforce civils servants' capacity and knowledge on food and nutrition, create an accountability session to assess, government and donor efforts
Togo	nutrition is not seen as an exclusive action but as a goal to be achieved indirectly, insufficient knowledge of key nutrition actions by contributing sector, low of financial partners advocating and acting for nutrition sensitive interventions, lack of key nutrition sensitive indicators	raise awareness among different sectors to recognize malnutrition as a problem, develop and disseminate nutrition integration tools, strengthen the capacities of human resources (planners, monitors-evaluators and decision-makers), on nutrition-sensitive interventions integration, advocacy for nutrition sensitive interventions financing

In addition, for Togo PNIASAN's the study found 6 actions to not be relevant, or applicable for inclusion, and 9 actions respectively for The Gambia and Guinea. The following nutrition actions namely vitamin A supplementation, iron and folic acid supplementation, school enrolment, prevention of adolescent pregnancies, deworming and Insecticide Treated Nets were not considered important for inclusion of the 3 country's PNIASAN documents. This indicates that these actions should no longer be included in the list of key actions from the CKNA and would not be appropriate for the nutrition sensitive sectors. The finding also noted that malnutrition screening and Infant and Young Child Feeding, was identified as a key priority action by all countries PNIASAN, however the action was not found in any documents. They were not considered as not relevant. These specific nutrition actions traditionally associated with the health sector could be integrated into the PNIASAN future revision. Similar research in Cape Verde identified that the national strategic plan for agricultural research system, and the national strategy for disasters risk reduction do not list any specific nutrition activity [22].

The implementation period of the PNIASAN range from 7 to 9 years, if ignoring the duration of the plan, Guinea allocates the most budget to its PNIASAN implementation, followed by Togo and The Gambia. However, the document content as priority interventions differ greatly, making a budgetary comparison difficult and justifying the budget variability. Also, this financial fluctuation projections per country could be proportionally linked to the population number, sign of issues and challenges.

The analyses show a significative funding gap estimated, around 40% for The Gambia, 44.4% for Guinea, and 90.83% for Togo, and none of the country didn't clearly develop a resource mobilization strategy; it's not detailed or very low detailed. It is critical that the funding mobilization strategy has a clear programme of activities, timeline and budget that is adequately resourced in terms of financial and human resources to be implementable [23]. Pelletier et *al* noted that for nutrition policy formulation and implementation in Bolivia, Peru and Guatemala, the indicators most rarely observed are the development of concrete operational plans translated into budgets [24]. The lack or low funding, or low financial partners advocating or acting for nutrition sensitive interventions and sectors have been cited by all country technical committee as challenges to success nutrition integration. Financial resources are needed to enhance the nutrition sensitivity of agri-food systems, and must be adequate, stable and flexible [25].

Our research revealed that budget lines where nutrition is explicitly linked to other major interventions, including food security, resilience, and social protection, ranged from 4% to 11% of the overall budget in different country documents. That association could affect nutrition programming, budgeting and budget allocation, particularly during the implementation of activities. Similar studies on policies and plans including nutrition sensitive sectors carried out in Mali [17], Cape Verde [22] and Togo [18] show that the most of the documents assessed lacked clearly defined nutrition budgets or providing insufficient detailed budget information.

The discussions during countries consultation indicated that nutrition integration monitoring was a weakness and considered as a challenge, despite the multisectoral bodies that were created to lead nutrition governance. Too, a low level of nutrition institutionalization inside of nutrition sensitive sector was also underlined as a bottleneck. A study conducted in Burkina-Faso, showed that 65.5% (19/29) of technical structures at central level did not have internal exchanges mechanism on nutrition [10]. An inexistence of exchange system on nutrition activities at the sector level and ineffective coordination within institutions is obstacle for nutrition integration and implementation of policies and programs [10,26].

Furthermore, insufficient knowledge of key nutrition actions by contributing sector was highlighted. It was also suggested by country key informants to strengthen the technical capacities of human resources (planners, monitors-evaluators and decision-makers) on nutrition and nutrition-sensitive interventions integration. Across all levels of food system governance, capacity reinforcement is needed to overcome challenges related to slow information flows, inadequate human resourcing and skills [27]. Research from India, Bangladesh and Pakistan revealed a lack of nutrition understanding and knowledge inhibiting the nutrition prioritization [25,28,29,30], and in Nepal the nutrition-sensitive agriculture knowledge and skills were a need for better program management [31].

The problem of the production, management and use of quality information to support decision-making was highlighted by the countries, addressing mainly the lack of key nutrition sensitive indicators. The popularity of new indicators demonstrates that there is a great demand for valid and feasible indicators related to the agriculture-nutrition nexus [32]. Data gaps undermine our ability to target resources, develop policy and monitor accountability [33]. Surveys conducted in Burkina Faso, particularly regarding the sensitive nutrition sectors at central and regional levels, has shown a strong demand for nutrition information and data [15].

Our study has contributed, using mainly the PPO, a tool from the United Nations Nutrition-REACH, and the Compendium of Key Nutrition action of the SUN, to analyse the nutrition integration into country PNIASAN; an important West Africa regional document declination at country level. The methodology and tools, allow to provide a reflection on the several key nutrition actions currently included or must be included into the next revision for each country PNIASAN document. As results, challenges and conditions were identified to enhance nutrition integration, principally for nutrition-sensitive contributing sectors involved into the PNIASAN implementation. This research has some notable limitations. The study is part of a broad nutrition integration study into agriculture, livestock, resilience, trade, agri-food industry and processing, social protection, water and sanitation, hydro-agriculture, research, environment, health, and education sectors policy, strategy and plan documents. So, the list of nutrition key actions from the CKNA was built taken into account these aeras including some traditionally nutrition actions from health sector, such as vitamin A supplementation, iron and folic acid supplementation, school enrolment, prevention of adolescent pregnancies, deworming and insecticide treated

nets. Using this list of nutrition key action to assess the level of nutrition covering into the PNIASAN linked to agriculture sector could bring bias by reducing the rate of relevant actions. The level of subjective risk was present, despite needing consensus within the technical committee. It's important to use different CKNA list to assess sensitive nutrition and specific nutrition sector or plan.

Additionally, considering only the Harvey ball showing the nutrition coverage rate can be limiting in the interpretation of nutrition consideration. It is therefore important to quarry information from the Power Point Presentation Template to know what key actions was integrated or not and other observations on the plans.

Finaly, some activities into the PNIASAN documents were often grouped in a package of actions without details in order to decide whether if it's a key action to be considered or not. This inadequacy formulation was a difficulty to make a better choice.

Conclusion

The diagnostic study of the nutrition integration into the PNIASAN of Gambia, Guinea and Togo made it possible to identify the progress and constraints in taking into account priority nutrition interventions. The study shows that nutrition is not a priority axis in its own right, and few specific nutrition actions traditionally associated with the health sector could be integrated into the PNIASAN future revision. In addition, resource mobilization strategies should be significative detailed in the documents, and the regional nutrition forum could continue to promote country plans and donor interest in agriculture nutrition-sensitive. An in-depth nutrition budgetary analysis could be done for the next document after their revision. Country committees suggested the development and disseminate of nutrition integration tools; from the finding results, a new guide has been developed in April 2024 by the PAGRSANAD, and could be used for PNIASAN next revision. The study results could orient the elaboration of the next Economic Community of West African States nutrition agenda to be more nutrition-sensitive.

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References

[1] United Nations Standing Committee on Nutrition (UNSCN), Planning and Financing Nutrition Programmes in ECOWAS. Supplement on the 12th. ECOWAS. *Nutrition Forum*. NEWS No 39 late-2011 ISSN 1564 – 3743 Supplement, 50p. [Online]. Available: https:// www.unnutrition.org/ sites/default/files/2024-03/Nutrition%20in% 20ECOWAS-WEB.pdf. [Accessed Aug. 12, 2025].

[2] Chadare, F.J., Affonfere, M., Sacla Aidé, E., Fassinou, F.K. Salako, K.V., Pereko, K., Deme, B., Failler, P., Glèlè Kakaï, R.L. and Assogbadjo, A.E, "Current state of nutrition in West Africa and projections to 2030," *Global Food Security*, 32. 100602. March 2022. [Online]. Available: https:// www.sciencedirect.com/ science/article/abs/pii/S2211912421001103?via%3Dihub.[Accessed Aug. 10, 2025].

[3] FAO., IFAD., UNICEF., WFP and WHO, *The State of Food Security and Nutrition in the World 2025 – Addressing high food price inflation for food security and nutrition*. Rome.

[4] Becquey, E., Sombié, I., Touré, M., Turowska, Z., Buttarelli, E. and Nisbett, N, "Stories of change in nutrition in Burkina Faso 1992–2018: A micro-level perspective," *Food Security*, 14. 937–950. Mar. 22, 2022.

[5] Asti Shafira and Javier Guzman, "A 'Diagonal' Approach to Integrating Nutrition into Health Systems: Opportunities, Challenges, and the Way Forward." CGD Policy Paper 360. Washington, DC: Center for Global Development.[Online]. Available: https:// www.cgdev.org/publication/diagonal-approach-integrating-nutrition-health-systems-opportunities-challenges-and-way. [Accessed Jul. 12, 2025].

[6] Summer, L and Brauw, Alan, "Nutrition sensitive value chains: Theory, progress, and open questions," *Global Food Security*, 16. 22-28. Mar. 2018.

[7] Doudou, M.H., Ouedraogo, O., Ouaro, B., Bidault, N. and Reinhardt, K, "Mapping Nutrition Interventions: a Key Analytical Tool for Informing the Multisectoral Planning Process: Example From Burkina Faso," *Food Nutr Bull*, 39(3). 449-464. Sep. 2018.

[8] Ouedraogo, O., Doudou, M.H., Drabo, K.M., Garnier, D., Zagré, N.M., Reinhardt, K. and Donnen, P, "Planning capacity, determinants, and challenges of integrating multisectoral nutrition into communal development plans in Burkina Faso," *Sci J Public Health*, 7.74–82. Jun. 2019.

[9] Ouedraogo, O., Doudou, M.H., Drabo, K.M., Garnier, D., Zagré, N.M., Sanou, D., Reinhardt K. and Donnen, P, "Policy Overview of the Multisectoral Nutrition Planning Process: The Progress, Challenges, and Lessons Learned from Burkina Faso," *The International Journal of Health Planning and Management*, 35. 120-139. Jan. 2020.

[10] Diasso, D., Doudou M.H., Cruz S., Tonnoir, F., Compaoré-Sérémé D., Zongo, U. and Savadogo, A, "Capacity needs assessment and challenges for multisectoral implementation of nutrition in Burkina Faso: a guide for the formulation of a capacity development plan," .*Int J Health Plann Mgmt*, 38(5). 1520-1538. July 2023.

[11] Ridde V, "Suggestions d'amélioration d'un cadre conceptuel de l'évaluation participative. *Revue canadienne d'évaluation de programme*," 21.2.1-23. Autumn 2006.

[12] Weaver L. and Cousins JB. Unpacking the participatory process. *J Multi-Discip Eval*. 2004; 1: 19-40. Autumn 2006.

[13] Patay, D., Ralston, R., Palu, A., Jones, A., Webster, J. and Buse, K, "Fifty shades of partnerships: a governance typology for public private engagement in the nutrition sector," *Global. Health*, 19.11. Feb. 2023

[14] Network for SUN/REACH Secretariat, Compendium of Actions for Nutrition, 2016. [Online]. Available : *https:// scalingupnutrition.org/ news/compendium-actions-nutrition-now-available*. [Accessed Aug. 8, 2025].

[15] Diasso, D., Doudou M.H., Tonnoir F., Cruz S. and Savadogo, A, "Information Management and Accountability for Multisectoral Nutrition Implementation in Burkina-Faso," *Science Journal of Public Health*, 8. 5. 130-140. Sept. 2020.

[16] Babu S.C., Mthindi G.B. and D Ng'ong'ola, "Developing decentralized capacity for development policy analysis-lessons from food security and nutrition monitoring in Malawi," *African Development Review*, 8. 127-145. 1996.

[17] Casu, L., Diatta, M., Dramé A.D., Uzhova, I., Mattern, B., Kaboré, J., Touré, F. and Verstraeten R, *Nutrition Policy in Mali*. Transform Nutrition West Africa, Evidence Note No. 16 Dakar, Senegal: *International Food Policy Research Institute*. Oct. 10, 202.

[18] Diatta, M., Casu, L., Dramé A.D., Uzhova, I., Mattern, B., Kaboré, J., Touré, F. and Verstraeten R, *Nutrition Policy in Togo*. Transform Nutrition West Africa, Evidence Note No. 9. Dakar, Senegal: International Food Policy Research Institute. Oct. 10, 2021.

[19] Doudou, H, REACHing for the SUN: UN support for scaling up nutrition in Burkina Faso. *Nutr Exch*, 7.17. Janv. 5, 2017.

[20] Farmery, A.K., Campbell., R, Flores, A., Mauli, S., Patay, D., Sarmento, A., Bless ., Davila, F., Berry F. and Tuqa A, "Multisectoral aspirations for food systems governance and the enduring dominance of agriculture," *Front. Sustain. Food Syst*,

9.1520245.

[21] Hodge, J., Herforth A., Gillespie S., Beyero M., Wagah M. and Semakula R, "Is There an Enabling Environment for Nutrition-Sensitive Agriculture in East Africa? Stakeholder Perspectives from Ethiopia, Kenya, and Uganda," Food Nutr Bull, 36.4. 503-19. Oct.15, 2015.

[22] Diatta, A.D., Casu, L., Dramé, M., Uzhova, I., Kaboré, J., Touré F. and Verstraeten R, *Nutrition Policy in Cape Verde.* Transform Nutrition West Africa, Evidence Note No. 7 Dakar, Senegal: International Food Policy Research Institute. Aug. 2021.

[23] UNITAR, United Nations Institute for Training and Research (UNITAR), Resource mobilization for the sound management of chemicals and wastes; guidance document, June 2011 edition. 24p.

[24] Pelletier, D.L., Frongillo, E.A., Gervais, S., Hoey, L., Menon, P., Ngo, T., Stoltzfus J.R., Shamsir Ahmed A,M. and Ahmed T, "Nutrition agenda setting, policy formulation and implementation: lessons from the mainstreaming nutrition initiative," *Health Pol Plann*, 27.1.19-31. Dec. 2012.

[25] Gillespie, S., Van Den Bold, M. and Hodge, J, "Nutrition and the governance of agri-food systems in South Asia: a systematic review," *Food Policy*, 82.13–27. Jan. 2019.

[26] World Health Organization (WHO), *Global Nutrition Policy Review: What Does it Take to Scale up Nutrition Action?* WHO; 2013.

[27] Mauli, S., Maelaua, J., Reeve, E., Thow, A. M., Johnson, E., Farrell, P. and Patay D, "Systemic capacity in food system governance in the Solomon Islands: "it's more than just training". Sustainability" 15:10710. Juil. 3, 2023.

[28] Downs, S.M., Thow, A.M., Ghosh-Jerath, S., Leeder, S.R, "Identifying the barriers and opportunities for enhanced coherence between agriculture and public health policies: improving the fat supply in India," *Ecol. Food Nutrit*, 54.6.603–624.

[29] van den Bold, M., Kohli, N., Gillespie, S., Zuberi, S., Rajeesh, S., Chakraborty, B, "Is there an enabling environment for nutrition-sensitive agriculture in South Asia? Stakeholder perspectives from India, Bangladesh, and Pakistan," *Food Nutr. Bull*, 36.2.231–247. Jun. 2015.

[30] Gillespie, S., van den Bold, M., Hodge, J, and Herforth, A, "Leveraging agriculture for nutrition in South Asia and East Africa: examining the enabling environment through stakeholder perceptions," *Food Security*, 7.3.463–477. May. 21, 2015.

[31] Fanzo, J., Lachat, C., Sparling, T. and Olds, T, "The nutrition sensitivity of agriculture and food policies: a summary of eight country case studies," *SCN News*, 40.19–25. Jan. 1, 2013.

[32] Herforth, A. and Ballard, T.J, Nutrition indicators in agriculture projects: Current measurement, priorities, and gaps. *Global Food Security*, 10. 1-10. Jul. 15, 2016.

[33] Annan K. «Data can help to end malnutrition across Africa». Nature, 555: 7, 2018. [Online]. Available: https:// www.nature.com/ articles/ d41586-018-02386-3. [Accessed Aug, 21, 2025].