



Critical topics in Bangladesh's and Nigeria's food system related policies

An exploratory policy review

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Abstract

This study looks into national nutrition-related policy documents and A4NH publications considering Nigeria and Bangladesh from a food systems perspective. Its aim is to identify the most important policy topics identified in current p[olicies related to nutrition and healthier diets at the national level. The key questions addressed were: 1) What are the critical topics from a food system's [erspective, highlighted in national policies, to be addressed in order to improve food system's outcomes and healthier diets? 2) How do food system related topics relate to the current agendas of existing platform initiatives?

The analysis serves to demonstrate which domains of the food system have the emphasis of policy in both countries. For Bangladesh, the study concluded that the documents tend to focus on the food production side as well as the consumer side, alongside market connectivity, improving market infrastructure and reducing price volatility, while the transportation, shortage, processing, and retail functions of a food value chain tend to receive less attention. For Nigeria, the study concluded that there is a clear production issue: insufficient food is produced for national consumption and high post-harvest losses are high. This in combination with a growing population and rapid urbanization leads to inequalities between rural and urban areas, between the North and South of the country and between women and men, and the risk of conflict situations put the food system under pressure. The triple burden of nutrition is well recognised, as well as food safety issues. The findings show that in Nigeria the emphasis is on interventions at storage, distribution, processing, retail and marketing level and with interventions directed at the consumer.

Finally, the results are compared to the results of the A4NH P4HD Platforms Identification study from 2017, to see how the goals of the platforms identified align with the most important themes at national level. The findings of this study in relation to the Platform identification study indicate that platforms may be more focused on the day-to-day practice and build on historically grown consensus what to address, and not necessarily adopt forward looking current policies.

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List of acronyms

A4NH	Agriculture for Nutrition and health
A4NH CN	A4NH country Note Bangladesh
A4NH FPB	A4NH Food Policy Baseline Bangladesh
APP	Agriculture Promotion Policy Nigeria
ARA4NH	Annual report A4NH
BGD	Bangladesh
CIP2	Second Country Investment Plan
D&FA4NH	A4NH Note Diagnosis & Foresight Workshop Nigeria
Docs	Documents
FSHD	Food systems for Healthier Diets
GLOPAN	Global Level Panel on Agriculture and Food Systems for Nutrition
NPAN2	Second National Plan of Action for Nutrition
NCD	Non Communicable Disease
NNGNCD	National Nutritional Guideline On Non-Communicable Disease Prevention, Control and Management
NPFS	National Policy on Food Safety
NSHDP II	Second National Strategic Health Development Plan
NSPC MN	National strategy on prevention and control of Micronutrient deficiencies
NSPN	National Strategic Plan for Nutrition
P4HD	Platforms for Healthier Diets
SYP	7th 5 Year Plan
WCDI	Wageningen Centre for Development Innovation, Wageningen University & Research
UNDP	United Nations Development Programme
WHO	World Health Organization
WUR	Wageningen University & Research

1 Introduction

1.1 Background

The Platforms for Healthier Diets project (P4HD) aims to examine and support the role of platforms as mechanisms to strengthen and/or support the processes of scaling up and anchoring food system transformations for healthier diets. P4HD is one of the projects implemented under the IFPRI programme Agriculture for Nutrition and Health (A4NH) 2017-2022¹, Flagship 1 Food systems for Healthier Diets (FSHD).

To be able to understand and support platforms in their transformative capacities, it is crucial to comprehend how they perceive their roles in food system transitions. In 2017 and 2018, a first step was made by WCDI to develop an inventory of the platforms that deal with issues related to food systems for healthier diets in the FSHD focal countries (Bangladesh, Ethiopia, Nigeria and Vietnam). Through a desk-based literature review and a web-based scan, platforms were identified and analysis of their shared aim, structure, functionality, urgency, and linkages was performed. Network analysis was used to visualise relevant platforms, clustering organisations and identify key connectors (multiple memberships)^{2,3,4,5}.

Assuming that each of the countries follow their own processes and dynamics, and departing from the perspective that areas addressed by platforms may represent food systemic bottlenecks, a next exploratory step was defined. This was to identify the critical topics at national level, emerging from relevant (policy) documents, which need to be addressed from a food systems perspective, and to relate those with the key areas of action of platforms active in-country.

The results of this literature scan seek to provide an overview from a food systems perspective of key topics in national policies and according to A4NH which can be used to initiate dialogue and reflection with existing platforms, to explore their role in food system transitions and assess their relation to policy.

This report presents the results of the inventory in two FSHD focal countries: Bangladesh and Nigeria. It commences with a description the methodology used (chapter 2), followed by the findings for both countries (chapter 3) and a discussion of the findings (chapter 4), finalized by a conclusion and recommendations for next steps (chapter 5).

1.2 Objective

Platforms which seek to influence food systems transitions, must be contextually relevant and seek to support the implementation or influence the development of national policies in their respective counties⁶. Thus the next step in the process is to review leading policy documents, using a food

¹IFPRI' Research Programme on Agriculture for Nutrition and Health 2017-2022: <https://a4nh.cgiar.org/>

² Herens, M., Peters, B., & Pittore, K. (2018). *Identifying Platforms for Healthier Diets; Discussion paper; A4NH Flagship 1 Food Systems for Healthier Diets*. Wageningen Centre for Development Innovation, Wageningen University & Research. Report WCDI-18-009. Wageningen

³ Bakker, S., Herens, M., & Pittore, K. (2019). *Identifying platforms for healthier diets in Ethiopia and Vietnam: Annex to the discussion paper identifying platforms for healthier diets: A4NH Flagship Programme 1 Food systems for healthier Diets*. (Report / WDCI; No. 19-056). Wageningen: Wageningen Centre for Development Innovation. <https://doi.org/10.18174/472117>

⁴ Alam, N., & Herens, M. (2019): *Platforms for Healthier Diets in Bangladesh*. Workshop Report. Wageningen Centre for Development Innovation, Wageningen University & Research, Wageningen.

⁵ Bakker, S. & Herens, M. (2019) *Platforms for Healthier Diets in Vietnam*. Workshop Report. Wageningen Centre for Development Innovation, Wageningen University & Research, Wageningen.

⁶ Van Tulder, R. & Keen, N. (2018) Capturing Collaborative Challenges: Designing Complexity-Sensitive Theories of Change for Cross-Sector Partnerships, *Journal for Business Ethics*, April: doi.org/10.1007/s10551-018-3857-7

systems for healthier diets- lens, to develop an inventory of the most prominent topics in current policy. The key questions are:

- What are the critical topics from a food system's [perspective, highlighted in national policies, to be addressed in order to improve food system's outcomes and healthier diets?
- How do food system related topics relate to the current agendas of existing platform initiatives?

2 Methodology

2.1 Document selection

The inventory, conducted from May to June 2019, was based on selected national policy documents from Nigeria and Bangladesh (agriculture policy, food policy, food & nutrition security policy, food safety policy etc.) and A4NH publications which consider both countries. A research team was set up which discussed inclusion criteria to select documents for the inventory. These criteria should ensure that the selection of documents give an idea of the current policy context in which the platforms in Nigeria and Bangladesh are operating:

- All documents should address issues at country level (sub-national or international level documents were excluded);
- All documents should focus on current policies.

In addition, the team agreed to include at least 2 A4NH documents for both countries, to be able to assess the main topics in these countries for the A4NH programme and how these align with the topics mentioned in policies. Documents about Bangladesh were analysed by one researcher, documents about Nigeria by a second researcher. During the analytical process, results were discussed and reviewed with two other researchers to ensure alignment in the analytical process. All the documents included in this study are presented in Table 1 (A4NH documents are highlighted in green).

Table 1 List of food systems- relevant policies and A4NH documents included for Bangladesh

No.	Name	Abbreviation	Start	End	Accessed
Bangladesh					
1	Second Country Investment Plan	[CIP2 2016-2020]	2016	2020	Website Government Bangladesh, Food Planning and Monitoring Unit, Ministry of Food.
2	National strategy on prevention and control of Micronutrient deficiencies	[NSPC MN 2015-2024]	2015	2024	WHO website
3	Second National Plan of Action for Nutrition ⁷	[NPAN2 2016-2025]	2016	2025	Facebook platform nutrition in Bangladesh
4	7th 5 Year Plan	[7 th 5YP 2016-2020]	2016	2020	UNDP website
5	A4NH Food Policy Baseline 2018	[A4NH FPB 2018]	2018		FSDH colleagues
6	A4NH country Note Bangladesh	[A4NH CN]			A4NH website
Nigeria					
1	Agriculture Promotion Policy	[APP 2016-2020]	2016	2020	Foodsecurity cluster.org
2	National Nutritional Guideline On Non-Communicable Disease Prevention, Control and Management	[NNGNCD 2014]	2014		Nigeria Federal Ministry of Health website
3	National Policy on Food Safety	[NPFS 2014]	2014		FAO database

⁷ For the NAPN2, only the strategies were reviewed, not the sub-strategies.

No.	Name	Abbreviation	Start	End	Accessed
4	Second National Strategic Health Development Plan	[NSHDP II 2018-2022]	2018	2022	Nigeria Federal Ministry of Health website
5	National Strategic Plan for Nutrition	[NSPN 2014-2019]	2014	2019	USAID FANTA project website
6	Annual report A4NH 2018	[ARA4NH 2018]	2018		A4NH website
7	Nigeria A4NH Note Diagnosis & Foresight Workshop	[D&FA4NH 2018]	2018		A4NH website
8	A4NH workplan 2019	[A4NH workplan 2019]	2019		A4NH website

2.2 Food system topics defined

For this inventory, a *prominent food system topic* was defined as a topic mentioned in at least two separate documents that were scanned in the inventory. When a topic was mentioned in national level documents from multiple sources and considered important by multiple actors/ministries, this topic, in our definition, qualified as prominent.

All documents were scanned looking for topics related to nutrition, food, food security and diets that were presented as important issues and approaches. In the A4NH documents we looked for plans, approaches and descriptions of issues which were flagged by the programme in both countries. In the policy documents, both the context/background description and main activities/strategies, were scanned to identify prominent topics.

2.3 Analytical grid

For analysis of the most prominent topics in the two countries with a food system focus, an analytical grid was developed. The food systems model created by GLOPAN 2016 (see figure 1), was used as the basis for a food system's driven analysis and adapted to form an analytical grid. The original and adapted models are presented in figure one and two. The final analytical grid served to group and organize the topics that were identified in the literature scan and show the focal policy areas of the food system in the two countries.

A food system can, according to our adaptation of the model, be seen as construed by the continuously interacting domains of Agricultural Production Systems, Storage, distribution, processing and packaging, Retail & marketing Consumer and Diet Quality.

Box 1: Definitions of food system drivers & outcomes

Food system drivers: The HLPE identifies 5 main categories of drivers^a. Biophysical and environmental drivers include natural resource and ecosystem services, and climate change. Political and economic drivers include leadership, globalization, foreign investment and trade, food policies, land tenure, food prices and volatility, conflicts and humanitarian crises. Socio-cultural drivers include culture, religion, rituals, social traditions and women's empowerment. Finally, demographic drivers include population growth, changing age distribution, urbanization, migration and forced displacement.

Food system outcomes: Food systems, through diets, give rise to a variety of outcomes. These relate not only to nutrition and health, but also to all the dimensions of sustainability, which in turn link back to the food system drivers. The HLPE identifies three main outcomes; Nutrition and health outcomes, environmental outcomes, economic outcomes.

^aHLPE (2017) Nutrition and food systems. A report by the High Level Panel of Experts on Food Security and Nutrition of the Committee on World Food Security, Rome.

Food systems drivers and Food system outcomes form the context of issues and opportunities in which a food system takes shape.

Figure 1 Food system components model by GLOPAN 2016

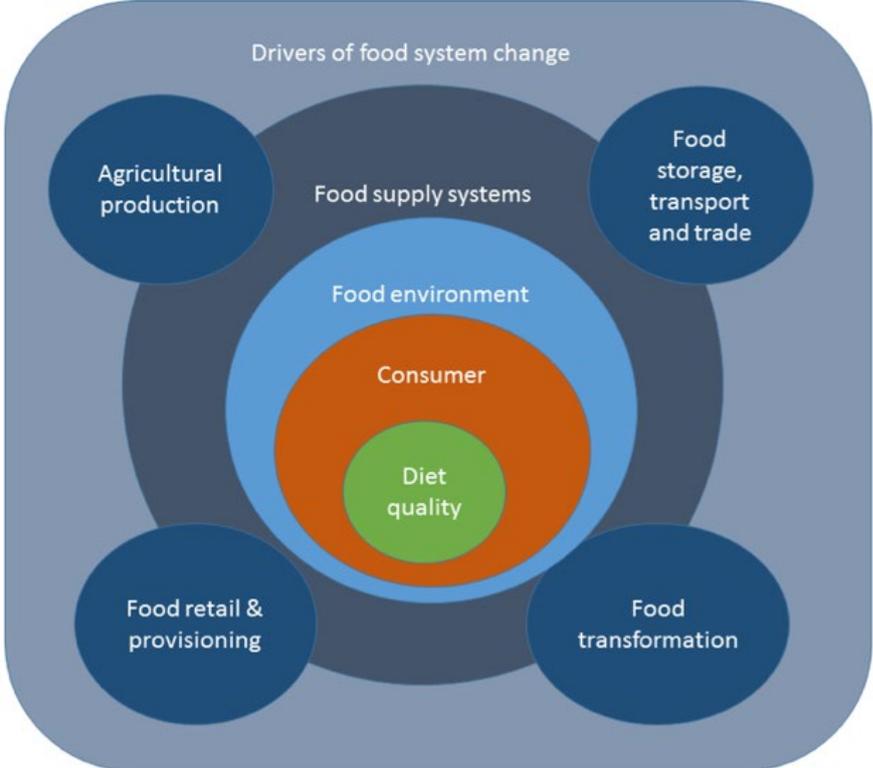
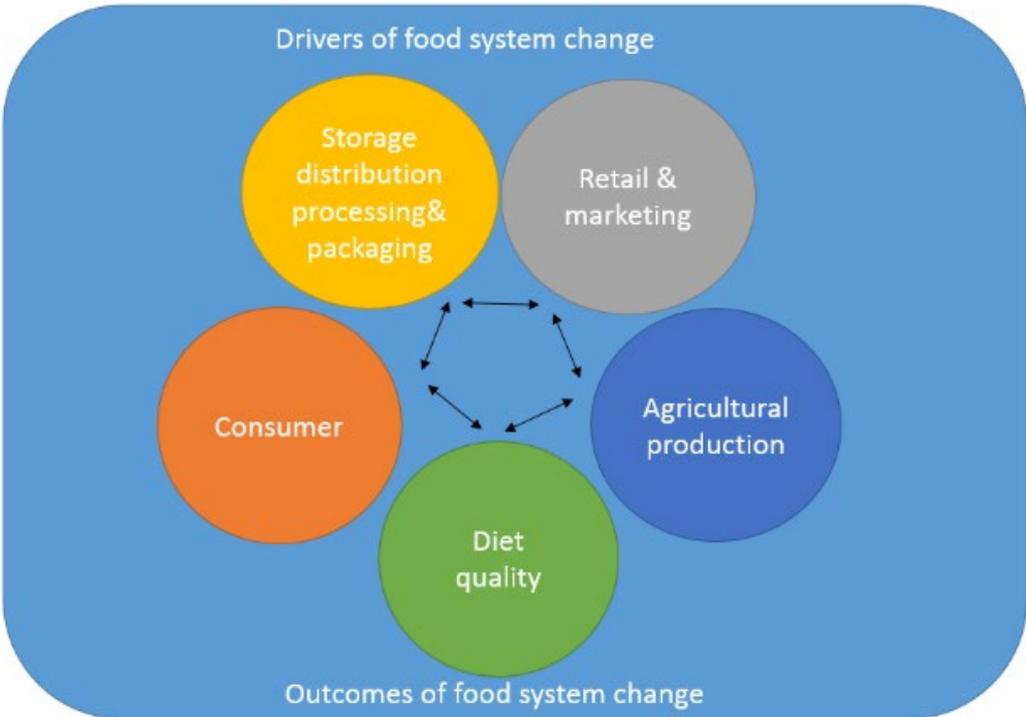


Figure 2 Adapted model for analysis of documents



3 Main topics from the food system's perspective

This chapter presents the critical topics identified from a food system's perspective, highlighted in national policies, from the inventory in Bangladesh and Nigeria, and how these topics relate to the current agendas of existing platform initiatives. Following the analytical grid, the findings on food systems drivers and outcomes are presented separately from the other food system domains analysed. As a result, a distinction is presented between interventions that are deemed necessary to improve diets (under food system domains) and the issues at play in the food system that affect- and are affected by these interventions (under drivers and outcomes). The tables 2 to 5 list the topics that were identified and specify in which documents the topics were mentioned, thus illustrating the number of documents in which the topic surfaced as well as the nature of the document. Paragraph 3.1 presents an analysis of most important topics at national level in Bangladesh, according to national policy documents and the A4NH programme text. Paragraph 3.2 presents an analysis of most important topics at national level in Nigeria, according to national policy documents and the A4NH programme text. Paragraph 3.3 presents how the food system related topics relate to platform initiatives. Paragraph 3.4 presents a reflection on the Alignment between A4NH country documents and national policy documents.

3.1 Topics identified for Bangladesh

3.1.1 Food system drivers and outcomes

Table 2 summarizes the findings on the food system drivers and outcomes. When it comes to drivers of the food system in Bangladesh, the following main topics were found:

- i. Climate change with its unpredictable extremes and disasters is a prominent topic (3 docs).
- ii. Related drivers are the degradation of natural resources, such as water (quality) (3 docs) and land (3 docs).
- iii. Accelerated urbanization and related changes in consumption patterns (3 docs).
- iv. Weak agricultural extension services, in particular looking at their potential role in the promotion of nutritious (bio fortified) crops and diversified production (3 docs).
- v. A lack of appropriate coordination and synergistic action among line ministries which contribute to nutrition -(2 docs).

The document scan identified in total seven food systems outcomes that were mentioned in multiple documents;

- i. the intergenerational cycle of malnutrition (2 docs),
- ii. high rates of urban slum malnutrition and suboptimal feeding practices (2 docs),
- iii. Triple burden of malnutrition; undernutrition (stunting and wasting in children; micronutrition deficiencies in both children and women of reproductive age) in combination with a rapid increase of overnutrition and related non communicable diseases taking place (5 docs),
- iv. Poor infant and young child feeding practices (2 docs) and
- v. A general monotonous diet, dominated by staples. Diets are typically deficient in one or more micronutrients, notably Vitamin A, iron, iodine, calcium and zinc (3 docs).

Table 2 Bangladesh food system drivers & outcomes

	Topic	Documents
Food system drivers	Degradation of natural resources threatens fisheries sector	7th 5yp 2016-2020, CIP2 2016-2020, A4NH FPB 2018
	Low coverage of nutrition service	7th 5YP 2016-2020, NAPN2 2016-2025, CIP2 2016-2020
	Climate change. With events of vulnerability affecting food production including floods, droughts, water logging, salinity intrusion, tidal surge, uncertain rainfall, extreme weather events. Food distribution required during natural disasters	7th 5YP 2016-2020, CIP2 2016-2020, NAPN2 2016-2025
	Accelerated urbanization and related changes in consumption patterns	A4NH FPB 2018, A4NH country note, NAPN2 2015-2025
	Insufficient coordination and synergistic action among line ministries which contribute to nutrition	7th 5YP 2016-2020, NAPN2 2015-2025
	Loss of arable land due to population pressure, soil degradation, loss of soil fertility and climate change	A4NH FPB 2018, 7th 5YP 2016-2020, CIP2 2016-2020
Food system outcomes	Intergenerational cycle of malnutrition (maternal malnutrition and low birthday weight)	A4NH FPB 2018, NAPN2 2016-2025
	Rate of malnutrition and suboptimal feeding practises higher in the slum areas	NAPN2 2016-2025, NSPC MN 2015-2024
	Triple burden of malnutrition: stunting and wasting prevalence in children (< 5 years); stunting, micronutrient deficiencies in women of reproductive age. Rapid increase in prevalence of overweight and obesity and non-communicable diseases	NAPN2 2016-2025, 7th 5YP 2016-2020, A4NH FPB 2018, A4NH CN, CIP2 2016-2020
	Poor infant and young child feeding practices	NAPN2 2016-2025, NSPC MN 2015-2024
	Low dietary diversity and lack of awareness on the importance of dietary diversity	7th 5YP 2016-2020, NAPN2 2015-2025, NSPC MN 2015-2024
	The usual diets in Bangladesh are typically monotonous and dominated by staples. Usual diet typically deficient in one or more micronutrients, notably Vitamin A, iron, iodine, calcium and zinc.	NAPN2 2016-2025, A4NH FPB 2018, NSPC MN 2015-2024

3.1.2 Bangladesh food system domains

Table 3 summarizes the findings on the different food system domains.

Agricultural production

Eleven topics related to agricultural production were identified for Bangladesh.

- i. Multiple documents recognize local and indigenous varieties as potential for improving nutrition (3 docs).
- ii. Other interventions mentioned are promotion of Good Agriculture, Aquaculture and Husbandry practices for safe and quality food (2 docs),
- iii. promotion of the cultivation of small fish to meet nutritional needs of rural families (2 docs),
- iv. increasing resilience to climate change impacts e.g. climate smart technologies for food production and climate resilient crop varieties (3 docs),
- v. investing in nutrition sensitive agriculture (and research) and crop diversification (beyond cereals) to produce fruits, vegetables, chicken fish and meat (5 docs),
- vi. Biofortification for Vit A, Iron and Zinc rich crops (2 docs),
- vii. promotion of home gardens and school garden for production of nutrient rich food (2 docs),
- viii. Increase in resource efficiency (land, water) required for food security (3 docs),
- ix. Livestock production (meat, poultry, eggs, milk) needs to increase substantially (3 docs),
- x. agricultural disaster management to strengthen the effectiveness of post-disaster rehabilitation programmes in agriculture (2 docs) and
- xi. enhance availability and efficient use of affordable and quality inputs (seeds, fertilisers, pesticides) and credit for safe and diversified crops (3 docs).

Storage, distribution, processing and packaging

The topic inventory found only a limited number of topics in the category storage, distribution, processing and packaging. The most prominent topic in this category is the

- i. food fortification programme (mentioned in 4 docs) – and the infrastructure, technology and regulations necessary to expand it. The urgency of this topic is often linked to the double burden of nutrition in Bangladesh, which sees a high prevalence of micronutrient deficiencies among children and women (mentioned in 3 docs), and the lack of dietary diversity (3 docs).
- ii. Two other strategies are bulking food stocks at national and household level (2 docs) and
- iii. Post-harvest losses and (food) waste management (2 docs).

Retail and markets

With regard to the category retail and markets, four topics were identified. The most often identified topic was the

- i. market infrastructure (3 docs), meaning link and feeder roads to connect local markets, and removing barriers to increase access to national and international markets.
- ii. Remunerative pricing & market connectivity (2 docs),
- iii. food safety management (2 docs), and
- iv. price volatility (2 docs).

Consumers

At the level of consumers, seven national policy documents and the A4NH programme text topics were identified.

- i. special attention to those 'consumers' which are most vulnerable to undernutrition, such as people living with HIV/AIDS, elderly and adolescent women (2 docs).
- ii. strategies of awareness raising and behaviour change communication for consumers around issues of unhealthy processed foods, high in salt and saturated and trans-fat, and safe food storage and processing (2 docs).
- iii. Nutrition education in educational institutions (2 docs) and
- iv. infant and young child feeding practises were also identified as topics related to consumers (2 docs).
- v. Other topics identified at consumer level are vitamin supplementation (2 docs), and social safety nets (1 docs).

Diet quality

Two topics were identified in the category of dietary quality. These are

- i. capacity building of health personnel and agricultural extension workers on nutrition and promotion dietary diversification (3 docs) and
- ii. publicizing food based dietary guidelines with special focus on diversified food consumption (2 docs).

Table 3 Bangladesh food system domains

Food system entry point	Topic	Documents
Food production systems	Exploring local and indigenous varieties of crops and promoting their production	NAPN2 2015-2025, NSPC MN 2015-2024, 7th 5YP 2016-2020
	Promotion of Good Agriculture, Aquaculture and Husbandry practices for safe and quality food	A4NH FPB 2018, CIP2 2016-2020
	Promotion of the cultivation of small fish to meet nutritional needs of rural families	NAPN2 2015-2025, NSPC MN 2015-2024
	Increasing resilience to climate change impacts. E.g. Climate smart technologies for food production and climate resilient crop varieties	NAPN2 2015-2025, 7th 5YP 2016-2020, A4NH FPB 2018
	Investing in nutrition sensitive agriculture (and research) and crop diversification (beyond cereals) to produce fruits, vegetables, chicken fish and meat	A4NH FPB 2018, NAPN2 2015-2025, 7th 5YP 2016-2020, CIP2 2016-2020, NSPC MN 2015-2024
	Biofortification for Vit A, Iron and Zinc rich crops	7th 5YP 2016-2020, NSPC MN 2015-2024
	Promotion of home gardens and school garden for production of nutrient rich food	NSPC MN 2015-2024, NAPN2 2015-2025

Food system entry point	Topic	Documents
	Increase in resource efficiency (land, water) required for food security	A4NH FPB 2018, 7th 5YP 2016-2020, CIP2 2016-2020
	Livestock production (meat, poultry, eggs, milk) needs to increase substantially	A4NH FPB 2018, 7th 5YP 2016-2020, CIP2 2016-2020
	Agricultural disaster management to strengthen the effectiveness of post-disaster rehabilitation programmes in agriculture	7th 5YP 2016-2020, CIP2 2016-2020
	Enhance availability and efficient use of affordable and quality inputs (seeds, fertilisers, pesticides) and credit for safe and diversified crops	A4NH FPB 2018, 7th 5YP 2016-2020, CIP2 2016-2020
Storage, distribution, processing/packaging	maintaining buffer stock through public food stock and distribution system as well as promotion of household level food grain stock	7th 5YP 2016-2020, CIP2 2016-2020
	Improving capacity in post-harvest management, infrastructure	7th 5YP 2016-2020, CIP2 2016-2020
	Infrastructure, technology and regulations to expand food fortification programme	NAPN2 2015-2025, CIP2 2016-2020, NSPC MN 2015-2024, A4NH CN
Retail & marketing	Ensuring that what is produced can be sold a remunerative pricing by improving market connectivity	A4NH FPB 2018, 7th 5YP 2016-2020
	Food safety management and the regulatory framework	A4NH FPB 2018, 7th 5YP 2016-2020
	Improving the infrastructure of markets making them more efficient	A4NH FPB 2018, 7th 5YP 2016-2020, CIP2 2016-2020
	Price volatility and government interventions to stabilize market prices	A4NH FPB 2018, 7th 5YP 2016-2020
Consumer	Special attention to vulnerable groups for malnutrition, such as elderly, people suffering from tuberculosis HIV/AIDS, adolescent women	NAPN2 2016-2025, CIP2 2016-2020
	Social behaviour change communication program (through all media) to create awareness of the need to avoid processed food, excess salt, saturated fat and trans-fat	NAPN2 2016-2025, CIP2 2016-2020
	Nutrition education in educational institutions	NAPN2 2016-2025, NSPC MN 2015-2024
	Consumer awareness creation around food safety (including safe storage and household processing), enhance food safety education, and food safety networks	NAPN2 2016-2025, CIP2 2016-2020
	Vitamin supplementation programmes	NAPN2 2016-2025, NSPC MN 2015-2024
Diet quality	Social safety nets and targeting nutritionally vulnerable groups such children, mothers, people living on shores, river banks, and urban slums. The documents talk about making social safety nets more nutrition sensitive by widening the food baskets and adding fortified rice.	NAPN2 2015-2025,
	Capacity building of health personnel and agricultural extension workers on nutrition and promotion dietary diversification	7th 5YP 2016-2020, CIP2 2016-2020, NSPC MN 2015-2024
	Publicize and promote Food based Dietary guidelines with special focus on diversified food consumption	NAPN2 2016-2025, CIP2 2016-2020

3.1.3 Synthesis of key elements in the Bangladesh topic inventory

In terms of drivers of the food system (table 2) loss and degradation of natural resources plays a very large role in Bangladesh. the lack of coordination and services of government bodies related to nutrition is also explicitly mentioned. The most noted outcomes of the food system relate to undernutrition and low dietary diversity. The documents point to women and children as the ones mostly affected by these issues. Overweight and NCDs are also on the rise, leading to a triple burden of malnutrition.

Looking at table 3, it catches one's attention that for interventions to combat nutrition issues, the documents for Bangladesh tend to focus on the agricultural production side – with a large list of topics identified, thus suggesting a policy emphasis on food availability. There is also considerable attention paid to interventions at consumer level. What can be noticed is what Thomas Reardon has coined the "hidden middle"⁸. While the transportation, shortage, processing, marketing and retail functions of a food value chain are critical functions within the food system, and also key places for generating

⁸ Reardon, T. (2015). The hidden middle: the quiet revolution in the midstream of agrifood value chains in developing countries. Oxford Review of Economic Policy, 31(1), 45-63.

employment and value, they tend to receive less overall attention within national policies for supporting food systems to deliver more nutritious foods.

What was also showed is that in the retail and marketing section of table 3, there is much emphasis on markets: improving market connectivity, infrastructure and price volatility. The issues requiring those solutions are not very clearly expressed in the drivers section. Also, fish seems to play an important role in the food system in Bangladesh, showing up in multiple interventions. Among the drivers, though, it is expressed that the fisheries sector is threatened by the degradation of natural resources. There is no clear intervention to work on this.

3.2 Topics identified for Nigeria

3.2.1 Food system drivers and outcomes

Table 4 summarizes the findings on the food system drivers and outcomes. There are eight main drivers affecting the food system in Nigeria, according to the documents that were analysed.

- i. A first important driver is widespread poverty in the country, which is much more severe in the North of the country than in the South (mentioned in 2 docs).
- ii. Others are inefficient and outdated food quality and safety system (2 docs),
- iii. food loss and waste along agricultural value chains (3 docs),
- iv. Low agricultural production in relation to national food demand (2 docs),
- v. there is a lack of access to healthcare, water and sanitation (2 docs),
- vi. women have low status which leads to large gender disparities in education and employment (3 docs),
- vii. rapid urbanization is taking place which leads to overcrowding of urban areas and change in lifestyles but also to increasing inequality between urban and rural areas (3 docs) and
- viii. climate change forms an issue for food production (2 docs).

In terms of outcomes of the food system five main topics were identified, among which indications that Nigeria clearly suffers from a triple burden of malnutrition.

- i. The first, micronutrient deficiency ('hidden hunger') is a prominent issue, especially in rural areas. In more than half of all households the estimated intake of calcium, fat, iron, riboflavin, vitamin B12, vitamin C and zinc is inadequate (5 docs).
- ii. Next to that, undernutrition is a prominent issue, which strongly relates to poor infant and child feeding practices. There is high infant mortality due to undernutrition (4 docs).
- iii. The third burden is overnutrition and its consequences. Diet-related, non-communicable diseases (NCDs) are very common (obesity, diabetes, heart and vascular disease), often through consumption of too many processed foods and general unhealthy lifestyle (5 docs). For all three forms of malnutrition it is explicitly indicated in the documents that women and children are strongly affected.
- iv. Two other outcomes of the food system in Nigeria are indicated to be high risks of physical, chemical and biological hazards in foods and water (3 docs) and
- v. low access to nutritious foods (fruits, vegetables, animal products), especially for rural people (2 docs).

Table 4 Nigeria food system drivers & outcomes

	Topic	Documents
Food system drivers	Widespread severe poverty, especially in Northern parts of the country. Exacerbated by rapid population growth.	NSPAN 2014-2019, NSHDP II 2018-2022
	Inefficient and outdated food quality and safety system	APP 2016-2020, NPFS 2014
	Food loss and waste occur a lot along agricultural value chains. Post- harvest losses reach up to 60%.	APP 2016-2020, ARA4NH 2018, D&FA4NH 2018
	Agricultural production is too low for national food demand [low use of inputs and mechanisation, lack of land]	D&FA4NH 2018, APP 2016-2020

	Topic	Documents
	Lack of access to healthcare, water and sanitation	NSPAN 2014-2019, NSHDP II 2018-2022
	Large gender disparities in education and employment; women have low status.	NSDHP II 2018-2022, NSPAN 2014-2019, APP 2016-2020
	Large and growing urbanization, leading to overcrowding of urban areas and change in lifestyles & diets but also to increasing inequality between urban and rural areas.	A4NH workplan 2019, NSPAN 2014-2019, NSDHP II 2018-2022
	Climate change as an issue for food production (droughts, desertification)	NCDC 2014, APP 2016-2020
Food system outcomes	Micronutrient deficiency ('hidden hunger') is a prominent issue, especially in rural areas. In more than half of all households the estimated intake of calcium, fat, iron, riboflavin, vitamin B12, vitamin C and zinc is inadequate]. Especially children and women are affected.	A4NH workplan 2019, APP 2016-2020, NSPAN 2014-2019, ARA4NH 2018, D&FA4NH 2018
	Diet related non communicable diseases are very common (obesity, diabetes, heart and vascular disease), often through consumption of too many processed foods and unhealthy lifestyle. Overweight of children and women is emphasized in the documents as being problematic.	NSPN 2014-2019, NNGNCD 2014, NSHDP II 2018-2022, D&FA4NH 2018
	Undernutrition (acute hunger) is a prominent issue, especially severe for women and children. Also related to poor infant and child feeding practices. There is high infant mortality due to undernutrition.	NSPN 2014-2019, D&FA4NH 2018, APP 2016-2020, NSPN 2014-2019, NSHDP II 2018-2022
	High risks of physical, chemical and biological hazards in foods and water – high level of food and water borne diseases and quality too low for sales and exports.	APP 2016-2020, NPFS 2014, NSHDP II 2018-2022
	Low access to nutritious foods (fruits, vegetables, animal products), especially for rural people	NNGNCD 2014, D&FA4NH 2018

3.2.2 Nigeria food system domains

Table 5 summarizes the findings on the different food system domains.

Agricultural production

In the domain of agricultural production, two important topics were identified.

- i. Firstly, support is needed for the implementation of Good Agriculture Practice quality standards (GAP)⁹ and methods like biocontrol¹⁰ (2 docs). This would positively influence food and water safety.
- ii. Additionally, to increase the availability of nutritious foods in the country, a call is made to intensify the production of nutritious crops and livestock for domestic consumption (2 docs). The documents suggest that these goals can be achieved through the increased use of technology and improved inputs.

Storage, distribution, processing/packaging

At the level of storage, distribution and processing, five topics were identified.

- i. Food safety is a critical concern: according to the literature scanned (4 docs). There is a need to strengthen the standards and regulations for processing.
- ii. This has to go hand in hand with capacity building for food processing safety and quality along the supply chain (2 docs).
- iii. Innovations in storage and distribution of fresh foods have to be made to reduce post-harvest losses (2 docs).

⁹ Good agricultural practices (GAP) codes, standards and regulations are guidelines which have been developed by the food industry, producers' organizations, governments and NGOs, aiming to codify agricultural practices at farm level for a range of commodities. <http://www.fao.org/3/ag130e/ag130e12.htm>

¹⁰ Biocontrol is the use of living organisms, such as insects or pathogens, to control pest populations <https://www.cabi.org/projects/controlling-invasive-species/biocontrol/>
Aflasafe is a natural solution to Aflatoxins, a fungus that attacks the fungus that produces the toxin. Aflatoxin is common in staple foods in Nigeria <https://aflasafe.com/aflasafe/>

- iv. To be able to prevent extreme food scarcity in case of emergencies, reliable and well-placed food stocks have to be established (2 docs).
- v. Lastly, another action that takes place in the domain of processing, food fortification programmes needed on a large scale (2 docs).

Retail and marketing

Related to retail and marketing, four topics were identified.

- i. The most crucial approach to be implemented in Nigeria is stimulating access to fruits and vegetables, local produce and healthy foods in general (5 docs). This can serve to increase dietary diversity and combat both micronutrient deficiencies and undernutrition. The other three approaches found that relate to retail and marketing are mainly focused on dealing with malnutrition in terms of the consumption of unhealthy, fatty and processed foods.
- ii. These are changing peoples' food environment by providing healthier foods in cafeterias of companies and schools and in city centres (2 docs),
- iii. marketing healthy instead of unhealthy foods (2 docs) and
- iv. making labels with nutritive contents of food obligatory (2 docs).

Consumer

At consumer level, five topics were identified. Awareness raising is indicated as an important approach to combat nutritional issues in Nigeria. Awareness raising is discussed in two areas:

- i. food safety and hygiene (2 docs), and
- ii. promotion of healthy foods and lifestyle (2 docs).
- iii. There is a strong call for specified nutrition interventions for pregnant and lactating mothers and children under five – which are most vulnerable to malnutrition. Examples of this is stimulating early breast feeding, infant & young child feeding and folic acid supplementation. (2 docs).
- iv. The documents also emphasize the importance of implementing a programme for nutritionally balanced school meals (3 docs) and
- v. the implementation of a vitamin supplementation programme at a large scale (2 docs).

Diet quality

Considering diet quality, one topic was identified. The documents mention the importance of building and strengthening systems that monitor peoples' diets and how they change. The information these systems can provide is necessary to detect hidden hunger and risks of non-communicable diseases (3 docs).

Table 5 Nigeria food system domains

Food system entry point	Topic	Documents
Food production systems	Supporting implementation of Good Agricultural Practice production quality standards and biocontrol methods (i.e. Aflasafe) food safety and quality	A4NH workplan 2019, APP 2016-2020
	Intensifying agricultural production of domestic crops and livestock through increasing use of technology and improved inputs	APP 2016-2020, D&FA4NH 2018
Storage, distribution, processing/packaging	Strengthening application and implementation of food processing quality & safety standards and regulations	APP 2016-2020, NPFS 2014, NSHDP II 2018-2022, D&FA4NH 2018
	Improving the safety and quality of processing of food along the supply chain through building strong systems & capacities	APP 2016-2020, NPFS 2014
	Preventing (post-harvest) food loss and waste through innovations in storage and distribution of fresh foods (reducing time to table)	APP 2016-2020, D&FA4NH 2018
	Establishment of reliable and well-placed food safety stocks to be used in times emergencies, scarcity and/or conflict	APP 2016-2020, NSPN 2014-2019
	Food fortification of staple food through post- harvest handling	APP 2016-2020, D&FA4NH 2018
Retail & marketing	Stimulating access to fruit & vegetables, local produce and healthy foods in general	A4NH workplan 2019, NNGNCD 2014, D&FA4NH 2018, ARA4NH 2018, APP 2016-2020

	Exploring opportunities for regulations on the sales of different types of foods in cafeterias of companies and schools ('changing food environment')	NNGNCD 2014, D&FA4NH 2018
	Enhancing the promotion of healthier foods and limiting the marketing of unhealthy foods	NNGNCD 2014, D&FA4NH 2018
	Labels with nutritive content on packaging of processed foods need to be obliged.	NNGNCD 2014, APP 2016-2020
Consumer	Public awareness raising about food safety and hygiene	NSHDP II 2018-2022, NPFS 2014
	Public awareness raising about healthy foods & lifestyle	APP 2016-2020, NSHDP II 2018-2022
	Specific nutrition interventions for pregnant and lactating mothers and children under five (e.g. early breast feeding, infant & young child feeding, folic acid supplementation etc.) need to be implemented and strengthened	NSPN 2014-2019, NSHDP II 2018-2022
	Programme to be developed for provision of school meals with proper nutritive content	A4NH workplan 2019, APP 2016-2020, NSHDP II 2018-2022
	Vitamin supplementation programme needed at a large scale	APP 2016-2020, D&FA4NH 2018
Diet quality	Proper monitoring of (changing) diets to detect hidden hunger and non- communicable disease risks	A4NH workplan 2019, NSPN 2014-2019, D&FA4NH 2018

3.2.3 Synthesis of key elements in the Nigeria topic inventory

In Nigeria there is a clear production issue as food system driver – insufficient food is produced for national consumption and combined with high post-harvest losses. This scarcity combines with high and growing population numbers and rapid urbanization. Inequalities between rural and urban areas, between the North and South of the country and between women and men also affect the food system. This leads to various malnutrition outcomes in Nigeria, suffering from a triple burden of nutrition – micronutrient deficiencies, undernutrition and overnutrition are at play. Another issue that is emphasized in most documents is food safety.

The findings show that in Nigeria the emphasis is on interventions at storage, distribution, processing, retail and marketing level and with interventions directed at the consumer (table 5). Many interventions, especially in marketing and consumer awareness raising, are focused on combating overnutrition and its consequences – indicating the severity of this issue. Undernutrition and micronutrient deficiencies are tackled with production increase, working against post- harvest loss, fortification and supplementation. Food safety is also prominent as a theme of interventions.

Interestingly, reference is made to the risks of conflict situations in mentioning the need for food safety stocks for emergencies, among which conflict, but conflict is hardly considered as a driver in the documents. Only the Second National Strategic Health Development Plan (NSDHP II) refers to recent insurgencies (especially in the North-eastern region) having a large impact on development. Another issue that receives some attention but not extensively is climate change. It is mentioned twice in literature as a driver which is at play and affecting production and thus nutrition, but the exact consequences are not clearly described and clear interventions are neither, except for a short reference to the need for anticipatory climate governance in the A4NH workplan 2019 and the potential usefulness of climate smart agriculture in the Agricultural Production Policy (APP).

3.3 How do food system related topics relate to platform initiatives?

Inclusive and sustainable food systems should guarantee stable availability of safe and healthy food, equitable access to food outlets, and efficient delivery and utilisation of food. This inherently requires multiple actors to work together towards a common goal and asks for interconnectedness between sectors. Multi-stakeholder platforms provide an specific space for these actors to come together,

define and common agenda, and work towards fulfilling their common goals. The Platform Identification study, done in 2017¹¹ and 2018¹² under the P4HD project, explored the role of platforms as mechanism to strengthen and/or support the processes of scaling up/anchoring food system transformations for healthier diets and explored the most promising way to strengthen the process of scaling up and anchoring through understanding existing platforms for healthier diets. Strategies may include public and private interventions, such as certification, or agreements on transparency within supply chains. This section presents a reflection on how the topics identified in this study relate to the focus of platforms active in the field of combatting food insecurity and malnutrition.

3.3.1 Bangladesh

In Bangladesh, the Platform Identification study found that the main focus of the platforms identified in Bangladesh was on the prevention and reduction of malnutrition, often stunting, and tackling micronutrient deficiencies, the latter mainly in relation to bio-fortification interventions. According to the present inventory of food system related topics in policy documents, the triple burden of nutrition seems to be more prominent, highlighting the rapid increase in overweight and obesity among women. This could indicate that platforms may be more focused on the day-today practice and build on historically grown consensus what to address, and not necessarily adopt forward looking current policies.

Biofortification was a key topic in both the mapping of food system related topics and analysis of platform activities. Following this observation, one could question; 'are platforms coming together to set the policies or support in implementation?

Similar to the findings of this inventory, the platform identification studies also concluded that platforms are mostly linking stakeholders thematically together either at the beginning (agricultural production) or at the end of the value chain (consumers), but much less so stakeholder involved in transport, processing and marketing. The platform initiatives around food safety seem to be the few targeting these domains more. Likewise, despite the prominence of the topic of overweight and obesity in national policy documents in Bangladesh, the only strategy identified to address this issue, was consumer awareness raising on unhealthy food; for the food system components in the 'hidden middle', none of the strategies specifically focused on unhealthy diets.

3.3.2 Nigeria

The most important focus of platforms in Nigeria that were found in the platforms identification study, was agribusiness. There are several linkages between the prominent food system related topics identified in the present study and the platform identification. Firstly, policy documents and platform agendas align relating to the need for intensified agricultural production of domestic crops and livestock through increasing use of technology and improved inputs. Other points of alignment could be the implementation of quality standards, safety regulations and processing systems, post-harvest loss prevention and food fortification (table 5). It could be interesting to assess what role these platforms play and/or could in those types of interventions.

Another common platform focus that aligns with the topics identified is fighting malnutrition. This is done mainly through working combating food insecurity and working on diet diversification. Food fortification is a method to reach this which is worked on by two platforms (Harvest Plus Nigeria and The Building Nutritious Food baskets (BNFB) project).

In contrast to the topics identified in this study, the platforms that were analysed do not touch upon the topic of the 'third' burden of nutrition – overnutrition, overweight and associated NCD's. Only one

¹¹ Marion Herens, Bram Peters, Kat Pittore, 2018. *Identifying Platforms for Healthier Diets; Discussion paper; A4NH Flagship 1 Food Systems for Healthier Diets*. Wageningen Centre for Development Innovation, Wageningen University & Research. Report WCDI-18-009. Wageningen; <https://research.wur.nl/en/publications/identifying-platforms-for-healthier-diets-discussion-paper-a4hn-f>

¹² Sanne Bakker, Marion Herens, Kat Pittore, 2019. *Identifying platforms for healthier diets in Ethiopia and Vietnam: Annex to the discussion paper identifying platforms for healthier diets: A4NH Flagship Programme 1 Food systems for healthier Diets*. Wageningen Centre for Development Innovation. Wageningen University & Research. Report WDCI-19-056. <https://edepot.wur.nl/472117>

of the 21 platforms has a possible relevant focus for this issue, which is health: the Nigeria Health watch.

An interesting platform, which conflates with the topic of safety stocks for emergency and conflicts, is one which focuses on humanitarian aid and food security: the Food Security Working Group Nigeria.

4 Discussion

4.1 Alignment between A4NH country documents and national policy documents

Next to national policy documents, documents from the Agriculture for Nutrition and Health (A4NH) program were also used for topic identification. This was done to find the latest activities and highlights related to healthier diets and nutrition, but also to assess to which extent policy topics and A4NH focus are aligned. This paragraph offers a brief presentation of this for both countries.

4.1.1 Bangladesh

The triple burden of malnutrition is clearly considered by A4NH (country) documents. Climate change, nutrition service coverage and nutrition-related ministerial alignment are mentioned as key drivers of the food system that are of concern at national level but are not mentioned in the A4NH documents. In terms of interventions, A4NH activities take place in the food system domains of agricultural production and that of retail and marketing, but not much in the domains of storage, distribution, processing and packaging, that of the consumer and that of diet quality - domains which are considered important in policy documents.

4.1.2 Nigeria

For Nigeria too, the triple burden of malnutrition is taken into account by A4NH (country) documents. A few important drivers that are not mentioned are poverty, outdated food quality and safety system, lack of access to water, health care and sanitation, gender inequalities and climate change. In terms of approaches, A4NH covers all food system domains in Nigeria. Most emphasis is on agricultural production and storage, distribution, processing and packaging. Less emphasis is placed on consumer level interventions. Awareness raising on food safety and on healthy foods is pure a policy topic.

4.2 Reflections on the methodology

The main limitations of this study relate to the desk-based nature of the study and the limited selection of documents that were included due to time constraints. The desk-based nature requires a follow up and validation as a next step.

Initially, the researchers struggled with the presence of both issues and strategies – because some documents focused more on issues, others more on strategies and others on both, depending on the nature of the document and the mandate of the organisation that wrote the document. To be able to do the scoring of importance of topics that the researchers wanted to do, they consciously decided to make both count as ‘topics’ – being aware that in the strictest sense strategies might not be considered as such.

The methodology did not capture the importance of a specific topic within a certain document, as the number of times key words (topics) appear in the document was not considered. Also, if one document was informed by another document, (for example, the 2nd Country Investment Plan and 7th 5 Year Plan in Bangladesh and the A4NH documents that are also strongly related), chances are much higher a topic is mentioned in two documents.

The step whereby topics were merged, might have also affected the findings. Grouping of subjects/approaches from documents related to the same theme was needed to be able to demonstrate how often a topic was mentioned. Despite the fact that the process of merging was done

by two researchers, subjectivity has its unavoidable impact in this merging process and it might have led to some loss of detail.

Finally, the application of the adapted food systems model has served well for analysis with a food systems perspective to provide an overview of where the emphasis of topics lies and to show what is seen as the drivers and outcomes of food systems at the national level. A disadvantage is that the categories of the domains were sometimes not ideal to typify approaches, which led to us placing the approach in the 'closest' category but might have skewed the results somewhat.

5 Conclusions and recommendations

The findings of this study in relation to the Platform identification study indicate that platforms may be more focused on the day-to-day practice and build on historically grown consensus what to address, and not necessarily adopt forward looking current policies. The researchers therefore recommend;

- To use the outcomes of this scan in the engagement with platforms in FSHD countries. As part of the planned platform support strategy, one could assess jointly with relevant platforms how they are affected by these national level topics, and in turn how the platforms influence the national nutrition and food security agendas with their key topics. To explore if platforms have the ability to change the framing of national policies and change the national policy narrative to a food system focus;
- To jointly reflect on the main approaches identified in this study that are taken to tackle system-wide issues in both countries. Do the platform consider these as useful? Is the package of approaches complete? What could they add to the system in place? Possibly, the inventory could help platforms spell out their role in food system transitions.

For Bangladesh the study concluded that the documents tend to focus on the food production side, and the consumer part of the food system. While the transportation, shortage, processing, marketing and retail functions of a food value chain tend to receive less overall attention within national policies for supporting food systems to deliver more nutritious foods. Also markets are central in the approaches of Bangladesh: working on connectivity with markets, improving infrastructure for markets and reducing markets' price volatility. The concrete problem is not very clearly framed, though. Lastly, the fishery sector is indicated to be very important for nutrition and to be threatened by resource degradation, but no clear approach is offered to counter resource degradation. The recommendations therefore are:

- To investigate the 'hidden middle' observed in Bangladesh, by exploring who the stakeholders are and if they are represented in platforms. To find out what prominent food system issues are, related to storage, processing, transport, marketing, and retailing and what approaches could be taken to tackle these issues;
- To obtain clarity on the drivers and outcomes of food systems, related to markets;
- To look into how the issue of the threatened fishery sector can be approached.

For Nigeria there was a lack of clarity on climate change. It was mentioned as a driver but its impact is not clearly explained. There were also no approaches to deal with climate change issues identified as topics. Next to that something striking was the strong inequalities within the country: between urban and rural areas, between the poorer North and the richer South and between men and women. Thirdly, conflict and insurgency is only mentioned once, paired with an approach in the context of emergency food stocks, while the issue is undoubtedly of a large impact on food and nutrition. The recommendations considering Nigeria are:

- To look deeper into the climate change issue: what are the concrete effects on food systems and what are actions that need to be taken for adaptation, intertwined with improvement of governance;
- To not take a blanket approach to nutrition and healthier diets for the country, but take the present inequalities into account;
- To research the effect of conflict and insurgency on food security and diets and accordingly come up with approaches to increase resilience.

This study also showed that policy documents often discuss topics either as an issue related to the food system, or as a strategy and that the topics or issues included in the problem analysis are not always consistent with the topics of the proposed strategies. It is not always clear how the proposed strategies will contribute to topics related to the food system. It could be helpful;

- For the national policy documents, to describe, more explicitly, the effect of food system strategies on dietary quality. For example, if a strategy is proposed to improve food distribution

and transport, how this strategy is expected to change people's access to diverse, adequate and safe food;

- In addition, future studies could compare the strategies proposed to address certain food system related topics across policy documents and across countries. For example, if micronutrient deficiencies are a key topic in food policies, is the narrative more around fortification or dietary diversity?

Lastly the current methodology primarily reflects which topics are prominent for food policy makers and A4NH researchers. It is recommended to complement the findings by identifying prominent topics related to food systems through other sources such as media, key informants, internet fora etc.

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