

How Senegal created an enabling environment for nutrition: A story of change



Halie Kampman^a, Amanda Zongrone^b, Rahul Rawat^b, Elodie Becquey^{b,*}

^a Independent consultant, International Food Policy Research Institute, 390 Vista Linda Drive, Mill Valley, CA 94941, USA

^b Poverty, Health and Nutrition Division, International Food Policy Research Institute, 2033 K St, NW, Washington, D.C. 20006-1002, USA

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ABSTRACT

In the past 15 years, Senegal has made considerable progress in the fight against child undernutrition. To better understand how this was achieved, we reviewed 11 national policy documents published between 2001 and 2015, and interviewed 25 key-informants from the government, donor community, civil society, as well as 24 local service providers and 18 community members. We explored the *commitment* of actors and *coherence* between and within sectors. We linked this to changes in nutrition services experienced by *communities*. The key theme that emerged was the critical role of increased political commitment, materialized and maintained by a high-level national coordinating body for nutrition. The body actively facilitates multisectoral coherence in action for nutrition, overseeing the implementation of a national nutrition program, the effects of which are seen at the community level.

1. Introduction

Senegal is viewed as a relative success story in addressing undernutrition. The country has experienced marked improvements in nutrition in the last 20 years. Between 1993 and 2014, there has been a notable reduction in the prevalence of stunting among young children, from 33% to 19% (Ndiaye et al., 1994; ANSD Senegal and ICF International, 2015). Senegal currently has one of the lowest rates of stunting among West African countries (International Food Policy Research Institute, 2015). Recent research has identified potential drivers of this progress including multisectoral coordination for nutrition activities (Wuehler and Ly Wane, 2011) (Garrett and Natalicchio, 2011); the development of a national nutrition division (Wuehler and Ly Wane, 2011); nutrition-sensitive national agricultural policies (Lachat et al., 2015); and coordinated nutrition behavior change communication tools across sectors (Wuehler and Ly Wane 2011). Analyses that attempt to quantify the drivers of positive change in height-for-age document notable contributions of improvements in overall wealth, health care, and parental nutrition and education (Headey et al., 2017).

This paper presents a case study of Senegal's progress in mobilizing political commitment and increasing coherence in action to address child undernutrition. It constitutes one of a larger portfolio of case studies documenting the mechanisms by which nutrition has improved over the past 15 years in several countries as part of the *Stories of*

Change in Nutrition project. We examined the role of the enabling environment for nutrition including the translation of sectoral and multisectoral collaborations and initiatives at the national, sub-national, and community levels into nutrition improvements among children. The research questions were structured to examine change within three guiding themes i.e. *commitment of actors*, *coherence between and within sectors*, and *community experiences* (Table 1) (Gillespie and van den Bold, 2015).

2. Methods

2.1. Study sample

We used primary and secondary data from three sources: policy documents, in-depth qualitative interviews with national and sub-national stakeholders, and in-depth qualitative interviews with community members.

2.1.1. Policy documents

The objectives of the policy document review were to map the landscape of existing national policies and development plans that addressed undernutrition and to describe how this landscape evolved over the past 15 years. A list of 14 policy documents spanning 2001–2015, from the nutrition sector and from key nutrition-sensitive sectors, were identified. Nutrition-sensitive sectors were defined as

* Corresponding author.

E-mail addresses: haliekampman@gmail.com (H. Kampman), a.zongrone@cgiar.org (A. Zongrone), Rahul.Rawat@gatesfoundation.org (R. Rawat), e.becquey@cgiar.org (E. Becquey).

Table 1
Research questions by guiding theme.

<p>Commitment</p> <p><i>Changes (in the past 15 years):</i></p> <ul style="list-style-type: none"> • How have actors' ideas and understanding of nutrition changed? How does this indicate changes in political priority for nutrition? • What have been the major changes in the political context? How has this affected political commitment to nutrition? • Across other sectors what kinds of changes can we see in policies related to nutrition? How does this indicate a changes in the sectors' respective commitment to nutrition? <p><i>Challenges (present and future):</i></p> <ul style="list-style-type: none"> • How will commitment be sustained in the face of current or likely future challenges or threats?
<p>Coherence</p> <p><i>Changes (in the past 15 years):</i></p> <ul style="list-style-type: none"> • How is institutional coherence established, and how has it changed? • What changes can we see regarding horizontal coherence: intra and inter-sector? • What changes can we see regarding vertical coherence: from policy to community level implementation? <p><i>Challenges (present and future):</i></p> <ul style="list-style-type: none"> • What are the current and future challenges faced in ensuring policy and program coherence?
<p>Community</p> <p><i>Changes (in the past 15 years):</i></p> <ul style="list-style-type: none"> • What changes can we see in nutrition service delivery at the community level? • How have the lives of nutritionally vulnerable people (mothers and children) changed? <p><i>Challenges (present and future):</i></p> <ul style="list-style-type: none"> • What are the main current and future challenges regarding community level nutritional health and well-being?

agriculture, health, education, and finance. Of these documents, 6 were obtained through online searching and from our personal collections; 7 were recommended by the Unit for the Fight Against Malnutrition (CLM, *Cellule de Lutte contre la Malnutrition* in French); and 1 was recommended during a stakeholder interview. We reviewed the documents that met at least one of the following criteria: had a reference to

Table 2
Policy documents (2001–2015).

	Nutrition specific or sensitive objectives	Nutrition indicators	Nutrition in budget
<i>Final policy documents reviewed</i>			
Letter of Nutrition Policy (2001)	X	X	
National Plan for Local Development (2006)	X		
Strategic Document for the Reduction of Poverty II (DSRP II) (2006–2010)	X	X	
National Policy for Integrated Early Childhood Development (2007)	X	X	
National Plan for Child Survival (2007–2015)	X	X	X
National Health Development Plan (2009–2018)	X	X	X
National Agricultural Investment Program (2011–2015)	X		
The National Strategy for Economic Development (2013–2017)	X	X	X
Plan for an Emergent Senegal (2014–2035)	X	X	X
Policy Document of Health/Nutrition/Environment in the Education System (2015)	X	X	X
National Nutrition Policy (2015)	X	X	
<i>Policy documents discarded</i>			
Proposal for Operational Strategy for the Agricultural Sector 2001–2005			
Strategic Document for the Reduction of Poverty (DSRP) (2003–2005)	X ^a	X ^a	
Agricultural-Sylvo-Pastoral Orientation Law 2004–2016			

^a Eliminated because repetitive with DSRP II.

nutrition within policy objectives, included nutrition indicators, and specifically mentioned nutrition in the budget; and we excluded documents that were repetitive (Table 2).

2.1.2. National and local level stakeholders

To identify our study sample, we used policy and program documents to develop a chronological list of major national and international events, structures, and actors in nutrition over the last 15 years. From this list we identified 31 relevant structures, which can be characterized by 4 organizational categories (Government, Non-Governmental Organizations (NGOs), International Organizations, and Academic Institutions). Ten structures from this list were eliminated because they represented repetitive data collection within their category. We were not able to conduct an interview at two structures because stakeholders were unavailable for interview. Throughout the interview process, we attempted to interview the person with the most relevant experience in nutrition from each structure identified. As we interviewed, we also used snowball sampling to add new structures (n=0) and stakeholders (n=4) to our dataset. Data collection continued until we reached a point of theoretical saturation (Bhattachjee, 2012) within each stakeholder category; the same themes emerged repeatedly in the interviews. Thus, in-depth qualitative interviews were conducted with 25 individual stakeholders from 19 structures between August and December 2015 (Table 3).

2.1.3. Community members

We purposively selected an administrative department in Senegal that represented a department with a moderate rate of malnutrition, and that had experienced relative success in addressing undernutrition, but with scope for continued improvement. The department was identified independently both by a Nutrition Professor in a Senegalese University and by the CLM. Within the department, four subdivisions (CL, *Collectivités Locales* in French) were randomly selected out of nine total CL. The selection of villages was restricted by the linguistic ability of the field enumerators, which led to the exclusion of Pulaar speaking villages within the CL. From a list of Wolof and Mandinka speaking villages in each CL, one village was randomly selected. Community development agents (ADC, *Agent de Développement Communautaire* in French) in each of the four CL helped us to identify other community-level health service agents, which we will refer to as “Frontline Workers”.

A total of 24 Frontline Workers were interviewed in December 2015. These included 5 at the CL level: 4 ADC and 1 head nurse of the

Table 3
Selection of national and sub national stakeholders interviewed.^a

Organizational category	Structures interviewed (and number of interviews within each structure)	Structures not interviewed (and reason)
Government	CLM (2) Ministries: Education (1), Health (1), Agriculture (2), Women, Family and Childhood (1), Finance (1) National program of local development (1) Mayor office (Collectivité Local) (2)	COSFAM (repetitive) DGPSN, Ministry of Health and Social Action/ Division of Childhood Survival (unavailable for interview)
NGO	Yaajeende (2) Helen Keller International (1) Eau Vie Environnement (2) CONGAD (1) Micronutrient Initiative (1)	Save the Children, World Vision, Child Fund (repetitive)
International Organizations (IO)	WFP (1) World Bank (1) UNICEF (1) REACH (1) USAID (2)	FAO, WHO, UNESCO, GAIN, African Development Bank Group, BACDI (repetitive)
Academic Institution	University Cheikh Anta Diop, University Sine Saloum Kaolack (1) Total: 25	

^a Abbreviations used: Office of Canadian Cooperation/ Bureau d'Appui à la Coopération Canadienne BACDI, Unit for the Fight Against Malnutrition/ Cellule de Lutte contre la Malnutrition CLM, Council of NGOs Supporting Development/ Conseil des Organisations Non Gouvernementales d'Appui au Développement CONGAD, Senegalese Committee for Micronutrient Fortification of Food/ Comité Sénégalais pour la Fortification des Aliments en Micronutriments COSFAM, Delegation for Social Protection and National Solidarity/ Délégation à la Protection Sociale et à la Solidarité National DGPSN, Food and Agriculture Organization of the United Nations FAO, Global Alliance for Improved Nutrition GAIN, Renewed Efforts Against Child Hunger and undernutrition REACH, United Nations Educational Scientific and Cultural Organization UNESCO, United Nations International Children's Emergency Fund UNICEF, United States Agency for International Development USAID, World Food Programme of the United Nations WFP, World Health Organization of the United Nations WHO.

health post (ICP, *Infirmier Chef de Poste* in French). At the village level 19 Frontline Workers were interviewed: 17 Relays, volunteers who deliver health services at the community level (*Relais* in French); 1 Birthing Counsellor (*Bajenu Gokh*, in Wolof); and 1 informally trained midwife (*matrone* in French).

In each of the 4 villages, we selected one mother whose youngest child was in one of the following age groups, 0–3, 4–7, 8–11, and 12–15 years of age, in order to provide a diversity of historical perspectives on village level changes within the timeframe for this study. We asked the mother to focus on her youngest child to minimize recall bias. To identify mothers, we used a combination of identification by Frontline Workers and snowball sampling. Because of availability of mothers, we ultimately sampled 2 additional mothers of children 12–15 years of age and finally interviewed 18 mothers.

2.2. Data collection

2.2.1. Policy documents

Policy documents were summarized in English. Four organizational criteria were used for analysis; these included the dates that the policy covered, whether nutrition specific and sensitive objectives were specified, whether nutrition indicators were specified, and whether a budget devoted to nutrition was specified.

2.2.2. National and sub-national stakeholders

The ethnographic method of in-depth qualitative interviewing was used. Interviewees were initially contacted by phone or email, and provided with a letter describing the purpose of the study and the institutions involved. Participants gave signed consent before the interview began. A semi-structured interview guide was tailored to each respondent. The interview questions were designed to elicit responses that detailed changes and challenges over the last fifteen years in commitment and coherence in action for nutrition. Interviews ranged from 40 to 90 min, with an average interview time of 50 min. Interviews were conducted by a bilingual interviewer in either English or French, as preferred by the respondent. All interviews were digitally recorded, then simultaneously translated and transcribed into English by the bilingual interviewer (HK) with supervision from EB.

2.2.3. Community members

To address changes and challenges at the community level, in-depth qualitative interviews were also conducted with Frontline Workers and mothers. Interviewees were given a letter describing the purpose of the study, and we received signed consent from the Frontline Workers and verbal consent from the mothers, before the interview began. The aim of these interviews was to gather rich experiential narratives that provided evidence for changes in nutrition at the community level, where the policies and programs are expected to have their effects.

Two different semi-structured qualitative interview guides were used for mother and Frontline Worker interviews. Interviews lasted 20–60 min, averaging 40 min, and were digitally recorded. Interviews were conducted in the language the respondent was most comfortable speaking (French, Wolof, or Mandinka) by two local enumerators supervised by HK. Interviews were simultaneously transcribed and translated into either French or English by these enumerators. HK reviewed the French audio files and corresponding transcripts for accuracy and all transcripts for completeness.

2.3. Data analysis

Data analysis was grounded in three guiding themes: *commitment* of actors, *coherence* between and within sectors, and *community* experiences (Gillespie and van den Bold, 2015). For each of these guiding themes we examined the defining changes that have occurred since 2000 as well as current and future challenges.

2.3.1. Policy documents and national/sub-national stakeholder interviews

The data from policy documents and national/sub-national stakeholder interviews were analyzed using a code list that was developed a priori for *commitment* and *coherence*. These code lists were informed by the literature as well as key concepts from our interview guides. This code list was developed by HK, reviewed and edited by AZ and RR, and discussed with other Stories of Change country case study teams. Analysis of *commitment* was informed by the 2007 Shiffman and Smith framework for determinants of political priority for global initiatives (Shiffman and Smith, 2007). Codes were organized into three sub-themes 1) ideas and understanding 2) political context and 3) policies. *Coherence*, defined as clarity and consistency of communication and action, was guided by Garrett and Natalicchio's (2011) conceptual model for collaboration and institutional linkages (Garrett and Natalicchio, 2011). The three sub-themes of, 1) institutional coherence, 2) horizontal coherence between and within sectors, and 3) vertical coherence from policy to community level, were used to organize codes.

2.3.2. Community member interviews

We used a grounded theory approach (Bhattachjee, 2012) in the analysis of community-level interviews. A code list was generated from themes that emerged after reviewing the Frontline Workers' and mothers' transcripts. This code list was developed by HK, reviewed by

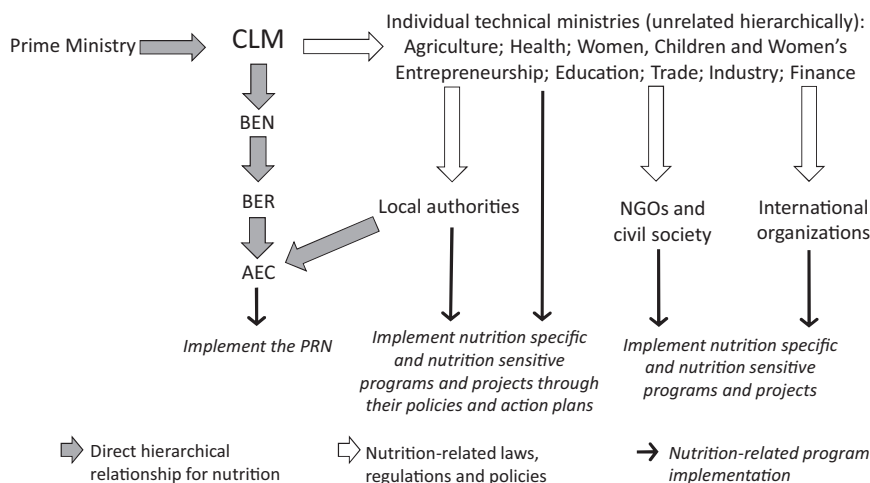


Fig. 1. Relationships between the CLM and its partners on nutrition. (Abbreviations used: Executing agency/Agence d'Execution Communautaire AEC, National executive bureau/Bureau Executif National BEN, Regional executive bureau/Bureau Executif Régional BER, Unit for the Fight Against Malnutrition/Cellule de Lutte contre la Malnutrition CLM, Non-governmental organization NGO).

RR and discussed with other country case study teams. From this code list, two sub-themes for analyzing *community* were defined: 1) changes in health service delivery, and 2) changes seen in the lives of the nutritionally vulnerable.

2.3.3. Summarizing and triangulation of coded data

All coded data was summarized by sub-theme under the larger umbrella of the three guiding themes. Community level experiences were further analyzed in relation to national policy processes documented through policy documents and national and sub-national stakeholder interviews analysis. Likewise, themes from national/sub-national stakeholder interviews were analyzed in relation to findings from the policy document analysis. This allowed us to triangulate between policy, stakeholder, and community-level experiences (Bhattachajee, 2012). All data was coded by HK and a sub-set of coded material was reviewed by AZ and RR. All authors contributed to data interpretation.

Quotes were identified by an acronym indicating the category of stakeholder - national or subnational stakeholder (NS), Frontline Worker (FLW), mother (M) - followed by a unique identification number.

3. Results

3.1. Commitment

3.1.1. Ideas and understanding

The majority of national and local level stakeholders agreed that in recent years, there has been a strong and growing understanding of the importance of nutrition. They spoke of a thematic shift towards a more widely encompassing understanding of nutrition. While nutrition was previously addressed by a select few sectors and through single-sector reactive interventions, nutrition is increasingly approached in a more holistic way that incorporates the potential contribution of multiple sectors. Within sectors such as agriculture, health, and education, stakeholders noted an improved understanding of how nutrition relates to individual mandates and how nutrition is a joint effort requiring engagement at multiple levels.

"I think that sectors are more aware of the fact that there are transformations happening. Two years ago I sat with a multisectoral group and I said to agriculture, you must include nutrition indicators: they said 'no that's not our affair'. But now when you talk to agriculture, they say, 'can you help us to integrate nutrition in our affairs?'" (NS3).

3.1.2. Government engagement

Changes in nutrition in Senegal appear to be driven by an increase in government engagement and ownership of nutrition as a development issue worth addressing. Starting in the early 2000s, there were three main changes that led to new levels of political commitment.

The first change was the end of the national Community Nutrition Program (PNC, *Programme de Nutrition Communautaire*, in French) (1994–2000). Created to address undernutrition and unemployment, the PNC was launched in response to the economic depression caused by the devaluation of the Senegalese currency (CFA) as part of structural adjustment reforms, designed to address unemployment and childhood malnutrition. In the interest of perceived efficiency, the government chose to execute the PNC through a semi-private contractor. A number of stakeholders in nutrition were surprised that such a project was not being executed by the government, and some felt that a semi-private contractor limited the long term effectiveness. The PNC thus brought up many questions about who "owns" nutrition and to which sector it "belongs" in Senegal. By 2000, drawing from the experience of the PNC, the need for an institutional anchorage for nutrition was becoming apparent.

This fueled the second major political change, the creation of the CLM in 2001. The CLM is a coordinating body for nutrition housed in the Prime Minister's office. Prior to this, there existed no group or agency which had the capacity for such an institutionalized, long term commitment to nutrition. For the first time Senegal had a legitimate platform for leadership in nutrition and a network of multisectoral engagement. As a coordinating body, the CLM does not belong to just one sector, but can be thought of as a centralized political and administrative hub that coordinates nutrition across all sectors. The CLM fosters commitment to nutrition by providing a platform on which the nutrition community can grow in size and influence, allowing leaders in nutrition to centralize and coordinate their efforts with a high level of political support (Figure 1).

"Government funding to all nutrition programs and activities the CLM coordinated matched that of the World Bank in 2014 and has since then exceeded it." (NS1)

The third major political change also occurred in 2001. A new national nutrition program was launched, the Nutrition Enhancement Program (PRN, *Programme de Renforcement de la Nutrition*, in French), with a fifteen-year agenda. The overall objective of the PRN is to improve the nutritional status of children under five years, and pregnant and breastfeeding women. The PRN is active in all 45 departments of Senegal, and works across multiple sectors and levels

Table 4
Summary of policies that address nutrition in Senegal.

Policy or program name (and sector)	Dates	Nutrition specific objectives	Nutrition sensitive objectives	Nutrition indicators	Budget for nutrition
Letter of Nutrition Policy (nutrition)	2001–2015	<ul style="list-style-type: none"> – Promoting child growth, 4–6 months exclusive breastfeeding, supplementation of vitamin A, iron, iodized salt. 	<ul style="list-style-type: none"> – Reorganize and reinforce the institutional framework for management of nutrition programs – Improve a system of collection, analysis, and diffusion of data on nutrition, and promote research – Reinforce food security through agricultural production, research in agrofood industry and distribution of food – Improve supply of potable water and sanitation – Reinforce a partnership with the local governments, NGOs, associations, agencies, and private sector – Reinforce capacities and human resources, change attitudes and behavior, and develop income generating activities 	Yes	No budget for the policy
National Plan for Local Development (multiple)	2006	No nutrition-specific objective	<ul style="list-style-type: none"> – Effectively articulate sectoral policies and decentralization – Strengthen capacities of local governments, community based organizations – Transfer resources for adequate financial management at the local level 	No	Policy has an overall budget, but it does not specifically include nutrition
Strategic Document for the Reduction of Poverty II (multiple)	2006–2010	No nutrition-specific objective	<ul style="list-style-type: none"> – Increase access to basic social services (access to health good quality health services in poorest regions) – Reinforce social protection and management of risks (improve maternal and juvenile health, improve nutritional situation of women and children) – Promote good governance including decentralized participatory governance 	Yes	Policy has an overall budget, and a specific budget for health including nutrition
National Policy for Integrated Early Childhood Development (health)	2007	<ul style="list-style-type: none"> – Promotion of breastfeeding – Access to food supplements, healthy foods, and full immunization 	<ul style="list-style-type: none"> – Access to a favorable environment for children, food fortification 	Yes	No budget for the policy
National Plan for Child Survival (health)	2007–2015	<ul style="list-style-type: none"> – Reduce neonatal mortality from 35% in 2005 to 16% in 2015 and reducing the infant/juvenile mortality rate from 121% in 2005 to 44% from 2015; – Improve the availability and accessibility of quality health intervention packages for mothers and newborns – Increase health services, especially for vulnerable groups 	<ul style="list-style-type: none"> – Create institutional environments favorable to scaling up the health intervention packages 	Yes	Policy has overall budget which incorporates nutrition
National Health Development Plan (health)	2009–2018	<ul style="list-style-type: none"> – Improve poor health and reduce high mortality of newborns and children under five – Improve prevention of illness 	<ul style="list-style-type: none"> – Sustainably reinforce the health system: human resources and capacities, information and research – Improve governance 	Yes	Policy has overall budget which incorporates nutrition
National Agricultural Investment Program (agriculture)	2011–2015	No nutrition-specific objective	<ul style="list-style-type: none"> – Reduce climatic risks by the management of water – Preserve and sustainably manage other natural resources – Increase production and improve global factors of productivity (with reference to nutrition sensitivity) 	No	Policy has an overall budget, but it does not specifically include nutrition
National Strategy for Economic and Social Development (multiple)	2013–2017	<ul style="list-style-type: none"> – Improve the nutritional status of children 	<ul style="list-style-type: none"> – Improve the health of mothers and children – Improve the supply and quality of health services 	Yes	Policy has overall budget which incorporates nutrition

(continued on next page)

Table 4 (continued)

Policy or program name (and sector)	Dates	Nutrition specific objectives	Nutrition sensitive objectives	Nutrition indicators	Budget for nutrition	
Plan for an Emergent Senegal (multiple)	2014–2035	(PSE is an umbrella policy which synthesizes existing policies from other sectors. Nutrition is mentioned in the National health development policy – see above)	<ul style="list-style-type: none"> – Improve performance in the prevention of disease – improve health governance 	(see national health development policy)	Yes	Policy has overall budget which incorporates nutrition
Policy Document of Health/Nutrition/ Environment in the Education System (education)	2015	<ul style="list-style-type: none"> – Define a package of services to implement in schools (deworming, support in supplying micronutrients, school canteens, school gardens, pharmacy stand) 	<ul style="list-style-type: none"> – Implement an adequate School Health Policy – Supply water and sanitation to schools in Senegal – Build competencies in preventing HIV/AIDS, malaria, tuberculosis, non-transmissible diseases, nutritional problems, neglected tropical diseases. – Promote reproductive health for adolescents. – Promote education in nutrition, health and environment – Conduct screening visits for schools 	Yes	Policy has overall budget which incorporates nutrition	
National Nutrition Development Policy (nutrition)	2015–2025	<ul style="list-style-type: none"> – Ensure adequate coverage in essential services for nutrition children under 5 and for women of reproductive age and adolescents – Improve access and quality health services 	<ul style="list-style-type: none"> – Improve knowledge of nutrition for good habits – Obtain enough perennial finance for nutrition interventions – Reinforce coordination, monitoring and evaluation of nutrition interventions in a multisectoral approach – Promote research, production and processing of foods with a high nutritive value 	Yes	No budget for the policy	

of government. The CLM provided the tools necessary for the operationalization of the PRN and gave it a “home” within an institution, something that the PNC lacked (Figure 1). The PRN was structured to engage the community by incorporating a broader network of implementers. The executing agencies of the PRN are composed of a network of already existing community agencies, NGOs, and branches of local government, thus implementation is conducted by organizations which are already embedded in local communities. For phase one of the PRN, the World Bank funded 90%, and the government 10%. Starting in 2016 with the second phase of the PRN, both the government and the World Bank contributed 50% of the total budget (World Bank, 2014).

3.1.3. Policy environment

The favorable political environment for nutrition enabled substantial changes in nutrition policy over the last fifteen years. There were also some improvements on the integration of nutrition in other sectors’ policies, particularly in health, in education, and to some extent, in agricultural policies (Table 4).

3.1.3.1. Nutrition policy. Over the last fifteen years, Senegal has had two national policies for nutrition: the Letter of Nutrition Policy (2001–2014), which was revised to the National Nutrition Development Policy (2015–2025) (Gouvernement du Sénégal, 2001) (Primature, 2015).

The primary objectives of the Letter of Nutrition Policy (2001) are centered around the provision of two essential nutrition services: promotion of child growth through exclusive breastfeeding and micronutrient supplementation. The letter promoted the reorganization of the institutional framework for the management of nutrition programs. It also called for a reinforced partnership with local governments, NGOs, the private sector, and other agencies. This was to be supported by increased capacities in human resources, a change in attitude, as well as complementary income generating activities.

Multisectoral collaboration for nutrition was emphasized in 2015 in the National Nutrition Development Policy. It included a clearer definition of the role that each sector plays to address nutrition. The new policy put a renewed focus on the structural determinants of nutrition, recognizing how it spans across several sectors. It outlined four pillars for optimization of action for nutrition: 1) food production 2) food processing 3) education and hygiene 4) health and nutrition services. (Primature, 2015).

The process of revising the Letter of Nutrition Policy to the National Nutrition Development Policy was participatory. It thus reflected a variety of perspectives and a collective new vision for nutrition.

“We as civil society gave our inputs and participated in the final version... In my opinion, it was a rather groundbreaking step because it allowed for a dialogue within the sectors and between the sectors. [...] And thus, what we’ve theorized for a while now - the multisectoral approach - we’re able to start now the operationalization” (NS15)

3.1.3.2. Policies from multiple sectors that address nutrition. Over the last fifteen years, the education and health sectors have made strides in addressing nutrition (Table 4). The Policy Document of Health/Nutrition/Environment in the Education System (2015) marked a change in thinking about the contribution of improved nutrition to cognitive outcomes and promoted cooperation with other sectors. (République du Sénégal Ministère de l’Éducation Nationale Division du Contrôle Médical Scolaire, 2015) In the health sector, there have been positive changes towards improving governance for nutrition, and increasing multisectoral cooperation. The National Health Development Plan (PNDS, *Plan National de Développement Sanitaire*, in French) (2009–2018), covered issues specific to nutrition including newborn health and the reduction of newborn mortality (République du Sénégal Ministère de la Santé et de la Prévention, 2009). The current PNDS marks a change from the preceding policy (1998–2007) by

incorporating additional objectives related to governance and institutional sustainability. The National Plan for Child Survival (PNSE, *Plan National de Survie de l’Enfant*, in French) (2007–2015) outlined an operational plan to reduce neonatal, infant, and juvenile mortality (République du Sénégal Ministère de la Santé et de la Prévention, 2007). The PNSE is anchored in the Ministry of Health but also engages with other relevant ministries, and works in collaboration with the CLM: this shows a move towards more multisectoral collaboration.

While the presence of nutrition is slowly emerging within agricultural policy in Senegal, significant gaps remain. The National Agricultural Investment Program (2011–2015) does little to address the connection between agriculture and nutrition: though it includes nutrition sensitive objectives, it includes no nutrition specific objectives, nor budget for nutrition.

The National Plan for Local Development (Office of the Prime Minister, 2006) and the Strategic Document for the Reduction of Poverty II (Republic of Senegal, 2006–2010) included objectives related to decentralization, strengthening local governments, and improving access to local social services. This has been instrumental in laying the groundwork for the implementation of nutrition programs (specifically the PRN) at the local level. The National Strategy for Economic and Social Development (Republic of Senegal, 2013–2017) showed impressive improvements, recognizing the link between nutrition and economic development by including nutrition specific and sensitive objectives, indicators, and a budget.

While there have been marked improvements, significant challenges remain. Across all other sectors there is a lack of monitoring, nutrition targets, and adequate budgeting for nutrition.

3.2. Coherence in action for nutrition

3.2.1. Institutional coherence

The CLM has been the major player in establishing coherence of action at the institutional level.

“People they take a train, but they don’t know the direction of the train. [...] they don’t really have a vision. We here at the CLM we have responsibility, if you look at the decree, for mainstreaming... there is a framework of results which is monitored at the level of the prime minister and all is well coordinated.” (NS2)

As the first national coordinating body, the CLM brought together related sectors such as health, education and agriculture, and facilitated the incorporation of nutrition into their agendas. It also brought together various types of actors in nutrition, including governmental bodies, NGOs and the civil society, International Organizations and to a lesser extent academics (Fig. 1).

A major challenge exists in that the CLM does not have the authority to enforce collaboration, including budgetary commitment; the future of coherence in action rests to a certain extent upon the willingness of the sectors involved.

“We [the CLM] don’t go to the other ministers and say this is what you need to do. What we work from is mandates. Within each of their mandates we can ask, what do you or what could you do to advance nutrition in your sector within your mandate? [...] It’s a dialogue.” (NS1)

Also, there is potential to strengthen links between the different sectors, but many lack internal initiative, mainly attributed to the absence of a nutrition budget. Looking ahead, the challenge of the authority of the CLM was specifically addressed by the new National Nutrition Development Policy (Primature, 2015). It included a key political measure involving the revision of the institutional and legal framework of the CLM, in order to reinforce its capacities and role in coordination.

3.2.2. Horizontal coherence

The PRN has been influential in facilitating cooperation between different sectors. When the PRN was created, it garnered the support from a wide range of sectors and involved a significant number of ministries that were not involved in nutrition discussions up until then; this included the Ministries of Agriculture, Health, Education, Commerce, and Fishing. Again, the main challenge behind sustained and meaningful coordination was the insufficient budget from the collaborating sectors.

“I think nutrition is anchored at the highest level with the CLM, which is multisectoral. There is a budget, there is really an effort, regarding international engagement and everything. Now, my only worry is at the level of sectors. The minister of health, the positioning of nutrition is still weak. Because the budget is weak...Other sectors it's the same thing, even worse.” (NS16)

The new National Nutrition Development Policy (2015–2025) specifically targets the issue of the lack of nutrition budgets at the sectoral level. This policy targets five sources for providing funds: the state budget for nutrition; contributions from the budgets of CLs; financial partners; NGOs; and innovative finance from private sector (Primature, 2015).

3.2.3. Vertical coherence

Over the past twenty years, there has been a renewed focus on community level approaches for interventions within several sectors. This was due in part to the decentralization reforms (1994) which transferred technical competencies to local governments. Challenges remain for coherence between the policy level and the community level. A number of stakeholders from the government, International Organizations, and NGOs working in nutrition were critical of the fact that many local governments do not have a clear vision of how to incorporate nutrition into their local development plans.

“...local governments...they don't have a clear vision of the problematic of nutrition, they don't have just one priority. And as a consequence of this, they don't organize themselves in order to mobilize resources for this. So there is a work of communication to do, but also support.” (NS15)

Not all representatives from local governments agreed that nutrition was insufficiently integrated in local development plans, but they cited other issues such as specific budget allocation for nutrition. They also explained that sometimes they had other priorities beyond nutrition.

“No, I didn't say that there are budget lines which correspond strictly with nutrition. The budget lines concern the protection of the child, in a general manner.” (NS24)

Looking ahead, the issue of giving more responsibility and funds for nutrition to local governments is specifically addressed in the new National Nutrition Development policy (2015–2025). Of the four specific political measures listed, one aims to revise the budgetary nomenclature for local collectivities to allow them to finance activities specific and sensitive to nutrition (Primature, 2015).

3.3. Community

3.3.1. Service delivery

Stakeholders made a strong link between the increase in health service delivery through the PRN, and growing awareness of nutrition in communities. A major feature of the PRN was the introduction of a large network of volunteer health development relays, who raise awareness among beneficiary mothers, conduct monthly screenings to detect acute malnutrition in young children, treat cases when appropriate, and refer other cases to a trained nurse.

“The Relays who work for the PRN are more numerous than before

because at the beginning there were 2 SPC [child growth monitoring] Relays and 4 CMAM [community based management of acute malnutrition]. Relays who did the screening for the whole CL [up to 80 villages]. Nowadays, we observe that there is a Relay for every 2 villages or even for one village.” (FLW20)

3.3.2. Changes in the lives of nutritionally vulnerable

Relays reported that nutrition knowledge and awareness among relays and mothers has increased since the launch of the PRN. They also reported that awareness for nutrition among community leaders has grown.

“[The supervisor of the relays] solicited our Relays, and we accompanied her in this...she raised awareness with public figures, with the religious or customary chief. Finally, these days even the politicians are involved.” (FLW9)

Mothers spoke about the benefits of health services provided through the PRN, appreciating increased access to screenings, vaccinations, and care for children suffering from acute malnutrition, as well as the benefits of community sensitization.

“So now everyone knows [about 6 months exclusive breastfeeding] and I think that it's linked with information and awareness raising sessions”. (M2)

However, despite increased awareness of the importance of exclusive breastfeeding and of nutritious diets for mothers and children, mothers reported that actual changes in behavior are limited and still challenging. Reported barriers include habits, cultural and religious traditions, partial misinterpretation of knowledge, and food insecurity. While the presence of the PRN was undoubtedly felt, the reach of services were reportedly hampered by village distance to cities or health centers, meaning that more remote villages tended to have less access. The most salient challenge at the community level was financial, with much of the operational tasks of the PRN based on volunteer labor, thus raising concerns about its long term sustainability. This was evident in relays' expression of frustration and pessimism regarding the future of PRN implementation.

“I think that [remuneration] is ridiculous as compared to what we are doing. For the [monthly] weight monitoring...I do it over 5 days with my bike... every day you work 13 or 14 h and you do a meeting after.” (FLW20)

4. Discussion and conclusions

The overall aim of this study was to identify the mechanisms by which nutrition has improved over the last 15 years in Senegal. This study addresses the question through qualitative analyses within three guiding themes: *commitment* of actors, *coherence* between and within sectors, and *community* experiences.

Senegal's increasing *commitment* to nutrition is evident among stakeholders who show a growing awareness and understanding of the relevance of nutrition. Action for nutrition is being advanced by increasing the network of contributing partners. Senegal has already joined international platforms (including SUN and REACH) and has been successful in securing global partners and in following recommendations of recent research on nutrition (Gillespie et al., 2013) (The Lancet, 2013). Senegal's commitment and international engagement has created notable momentum that has facilitated access to funding, as well as awareness, cooperation, and research.

Political commitment, materialized by the creation of the CLM at the level of the Prime Minister and increased government funding to CLM-coordinated programs and activities, has been paramount in Senegal's success. The creation of the CLM put nutrition on the highest level of political priority and created an opportunity for nutrition to

diffuse across several sectors, evidenced in sectoral policies. Political commitment is translated into action reported at the community level through the execution of the PRN and through strong coordination of other nutrition programs and projects.

Institutional *coherence* has been strengthened through the CLM as it integrates actors at new levels through building collaborative relationships. Coherence between sectors has been strengthened and individual sectors have begun to take more responsibility for incorporating nutrition, though they remain limited by budget and other priorities. The revision of the Letter of Nutrition Policy (2001) into the new National Nutrition Development Policy (2015–2025) shows a high level of multisectoral engagement and participation. This type of collaboration will serve to enhance coherence in action for nutrition and help actors to work together towards a shared goal. On the other hand, individual sectoral policies (agriculture, education, etc.) do not monitor enough Specific, Measurable, Available, Relevant and Time-bound (SMART) nutrition indicators, nor do they allocate a significant budget, if any, for nutrition. Nutrition will have to be better integrated into other sectoral policies, emphasizing its role not only as an outcome but also as a contributor to successfully reaching policy goals. To inform coherence, a multisectoral data gap needs to be filled to monitor progress and measure the respective contributions of nutrition to other sectors and other sectors to nutrition, considering all forms of malnutrition. The National Nutrition Development Policy (2015–2025) (Primature, 2015) clearly identifies and addresses this challenge. To have impact, it will have to be translated into adequate strategic and sectoral plans and programs.

Changes in service delivery at the *community* level were described through the accounts of Frontline Workers and beneficiaries. This community experience has been described in more depth elsewhere and compared to other under-resourced countries' community experiences (Nisbett et al., 2017). In Senegal, nutrition service delivery has seen noticeable changes that have been confirmed by beneficiaries and attributed to the national nutrition program, especially in places where community relays have been established since the advent of the PRN. However, leadership should continue to be developed at the local level, where a disconnect still exists between national level commitment to nutrition and local implementation of nutrition and health services. Progress is being made, evidenced by a recommendation made in the new National Nutrition Development Policy (2015–2025), calling for the revision of budgetary nomenclature (Primature, 2015). This should allow local governments to understand the power they have in defining budget lines that work for the local context. This should be accompanied by continued efforts to raise awareness among local leaders regarding the importance of nutrition, and ways in which good nutrition can be promoted. Communities themselves currently raise this awareness and have their role to play for sustaining political commitment and ensuring accountability. Coverage of nutrition services needs to expand to reach remote populations. Sites require a low amount of inputs (as meeting points where relays deliver services), and expanding their reach has the potential to have a large effect on mothers who struggle to access services.

While this study identifies the main storyline for changes in nutrition in Senegal to largely be about the CLM and the PRN, there are additional external factors that likely contributed to success in addressing child undernutrition that are not represented here. Additionally, our data collection was limited by the ability to interview stakeholders who had been engaged in nutrition for fifteen years or more.

There are reasons to be optimistic that progress in reducing undernutrition can be sustained in Senegal. In just fifteen years, a coordinating body for nutrition was established – the CLM – and anchored under the highest political authority. The national level nutrition program – the PRN – has substantially increased the reach and quality of nutrition services. Change has been fueled foremost by strong political commitment and delivered though increasingly fluid coherence between

various sectors. With increasing awareness of the need for a multi-sectoral approach to nutrition, coordination between policy and community is developing. At the local level, frontline workers translate policy into action and work to increase the quality and reach of nutrition services. Current challenges are not technical, but primarily financial. Without a nutrition budget, stakeholders struggle to afford nutrition staff, research, and/or programming. More funding is needed for sectors to incorporate and budget for nutrition, and at community level local governments require funding to incorporate nutrition into local development plans, and to sustain community outreach by Frontline Workers. The story of change in nutrition in Senegal continues to build upon the impressive strides made over the past fifteen years.

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