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Boundary-spanning actors in complex adaptive governance systems: The case of multisectoral nutrition

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Abstract

A growing literature highlights complexity of policy implementation and governance in global health and argues that the processes and outcomes of policies could be improved by explicitly taking this complexity into account. Yet there is a paucity of studies exploring how this can be achieved in everyday practice. This study documents the strategies, tactics, and challenges of boundary-spanning actors working in 4 Sub-Saharan Africa countries who supported the implementation of multisectoral nutrition as part of the African Nutrition Security Partnership in Burkina Faso, Mali, Ethiopia, and Uganda. Three action researchers were posted to these countries during the final 2 years of the project to help the government and its partners implement multisectoral nutrition and document the lessons. Prospective data were collected through participant observation, end-line semistructured interviews, and document analysis. All 4 countries made significant progress despite a wide range of challenges at the individual, organizational, and system levels. The boundary-spanning actors and their collaborators deployed a wide range of strategies but faced significant challenges in playing these unconventional roles. The study concludes that, under the right conditions, intentional boundary spanning can be a feasible and acceptable practice within a multisectoral, complex adaptive system in low- and middle-income countries.

KEYWORDS

boundary-spanning actors, complex adaptive systems, multisectoral nutrition, nutrition governance, policy implementation

1 | INTRODUCTION

There is growing interest in the recent literature to apply complexity thinking to health policy, planning, implementation, evaluation, and overall governance.[1-4] This literature convincingly demonstrates that health systems have complex adaptive system (CAS)–like properties, argues that improved performance and outcomes could be achieved by explicitly taking these properties into account, and provides some guidance and tools for doing so. While the current literature is convincing at the conceptual level and is generating increasingly powerful tools for quantitative analysis of system dynamics,[5] there is a paucity of studies examining whether and how complexity can be taken into account as a practical matter in the everyday practice of issue governance. This is especially challenging when the institutional structures and "rules of the game" for addressing a multisectoral problem are still based on bureaucratic and hierarchical institutions and assumptions.[6-9] One strategy involves the use of boundary-spanning actors (BSAs) who may enhance the performance of a CAS by sharing information, facilitating common understanding, and managing relationships and who can generate trust and commitment and help problem-solve and innovate.[10-15] While theoretically promising, there is a paucity of case studies examining the experience of BSAs in the context of low- and middle-income countries.[16] This paper seeks to address these gaps in the complexity and BSA literatures through an examination of experiences with multisectoral nutrition (MSN) in 4 Sub-Saharan African countries. Nutrition is an appropriate focus because of intensive efforts underway to operationalize a multisectoral approach in a large number of countries, but the findings are relevant for a large number of other multisectoral health conditions, such as overweight and obesity, noncommunicable diseases, HIV, malaria, road safety, alcohol and substance abuse, and domestic violence.

2 | UNDERNUTRITION AND MULTISECTORALITY

Maternal and child undernutrition is a major risk factor for mortality and disability-adjusted life years on a global basis, is the leading risk factor in Sub-Saharan Africa, and has negative impacts on cognitive development, school learning, adult health and productivity, and national economic growth.[17,18] This, combined with evidence on the efficacy and cost-effectiveness of a number of interventions,[19,20] has contributed to the ascendancy of nutrition at the national and international levels. Examples include the Sustainable Development Goals, which include a target to end malnutrition in all its forms by 2030; the Nutrition for Growth Compact in 2013 that generated over $4B in commitments for high-priority nutrition interventions; the Second International Conference on Nutrition with representatives from more than 170 governments; a number of landmark resolutions and targets from the World Health Assembly; and high-level commitments from governments in over 59 countries currently in the Scaling Up Nutrition (SUN) movement.[21]

With the agenda-setting and commitment-building phases well underway, there is an urgent need to generate scientific and practical knowledge on how to design, strengthen, and implement effective systems, strategies, and interventions to address these problems on a large scale. The strategy promoted by the SUN movement and adopted in principle by all or most SUN countries is multisectoral.[22] This involves a combination of nutrition-specific interventions (eg, micronutrient supplements and the promotion of appropriate breastfeeding, complementary feeding, and hygiene practices) and efforts to improve the nutrition sensitivity of policies and programs in health, agriculture, education, social protection, and industry/trade among others.[23] In keeping with current discourse and global agreements concerning development cooperation,[24-26] the SUN movement places great emphasis on strengthening nutrition governance by promoting the principles of country-owned and country-led strategies and greater alignment of technical, operational, and financial support from development partners.

The nutrition community has embraced this view of the problem for nearly a quarter century but over the same period has faced persistent governance challenges at global and national levels.[27-33] This is because of the involvement of multiple ministries, sectors (public, private, nongovernment organization [NGO]), stakeholders, administrative

levels (community to national and global), dispersed loci of control, and dynamic networks of power and influence among actors. The "ecosystem" of individuals and institutions involved in the multisectoral governance behaves like a CAS, which makes it difficult to govern exclusively through the formal and hierarchical (legal and bureaucratic) institutions commonly established to address the problem (eg, multisectoral coordinating committees). Recent work in 3 SUN countries has documented significant challenges in operationalizing MSN through formal committees and conventional procedures, owing to weaknesses in leadership, coordination, collaboration, human resources, awareness, advocacy, and financing but stopped short of recasting the problem in terms of CASs.[34-37]

3 | NUTRITION GOVERNANCE IN CASs

The SUN movement is guided by strategic objectives that emphasize a strong and coherent policy and legal framework, a common results framework, effective multisectoral coordination platforms, and sufficient domestic resources, supplemented with external assistance. The movement also promotes explicit engagement principles (transparency, inclusiveness, mutual accountability, consensus orientation, continuous communication, learning and adapting, cost-effectiveness, rights-based). These are broadly similar to principles articulated in the broader governance literature (Appendix A)[38,39] and identified from country case studies on nutrition.[28,40,41] These sources are helpful for indicating *what* conditions or principles should exist or be put in place for effective governance. But there also is a need for knowledge and guidance on *how* to put them in place in the real world of multistakeholder CASs where power, authority, knowledge, interests, and incentives are dispersed, diverse, dynamic, and conflictual. For instance, how can the conditions for effective governance be created when executive leadership is not committed to the agenda, when the "soft skills" for managing consensus and disagreements among technical and bureaucratic stakeholders are weak and/or staff are already overcommitted with existing mandates and responsibilities?

A small body of empirical work in nutrition highlights the importance of strategic capacity, leadership, entrepreneurship, and similar qualities on the part of midlevel actors.[28,42,43] These qualities have been helpful in catalyzing or facilitating progress in national or subnational settings, with an emphasis on dealing with complexity, applying system thinking, crossing institutional boundaries, and adapting to the situation at hand, in line with the literature outside of nutrition.[9,10,16,44-46] These findings from nutrition research have strong resonance with the literature on "boundary spanners," who are seen as potentially important actors who, as noted earlier, can enhance the performance of a CAS by sharing information, facilitating common understanding, managing relationships, generating trust and commitment, problem-solving, and innovating.[10-13] The present study was undertaken to better understand the roles, strategies, and tactics and challenges of BSA working to advance national, MSN agendas. The paper examines the experiences in 4 African countries where a BSA was introduced into the nutrition policy ecosystem in each country, as an explicit intervention into a CAS to facilitate the efforts of other stakeholders to implement the country's MSN policies, plans, and programs.

The specific objectives of this paper are to describe (1) the overall country accomplishments, enabling conditions and challenges in implementing MSN, as a context for the work of the BSA; (2) the informal strategies and tactics used by the BSAs; and (3) the challenges faced by these BSAs and the coping strategies they used to manage them. The paper concludes with suggestions for future practice and research related to CASs and MSN.

4 | MATERIALS AND METHODS

4.1 | African Nutrition Security Partnership

This study took place in the context of the African Nutrition Security Partnership (ANSP). The ANSP was a European Union–funded project implemented from 2011 to 2015 through the United Nations (UN) Children's Fund (UNICEF) regional offices in west/central Africa (West and Central Africa Regional Office) and eastern and southern Africa

(Eastern and Southern Africa Regional Office) and the country offices in the 4 participating countries: Burkina Faso, Mali, Ethiopia, and Uganda. The overall purpose of ANSP at country level was to assist in developing, strengthening, and implementing MSN policies, plans, and/or programs. The intent was to complement and strengthen what was already being done by government and partners, with modest amounts of funding (approximately 20M Euros) distributed across 4 countries and 2 subregional UNICEF offices for 4 years, provided directly to governments through the UNICEF country offices. A statistical profile of the 4 countries is provided in Appendix B.

4.2 | Cornell's role, positionality, and overall approach

Cornell University was contracted by the UNICEF regional offices to (a) provide strategic guidance and support to the government officials and development partners in the nutrition policy community and (b) observe, document, and disseminate lessons from country experiences. Three staff members (H.H.u.R., D.S., J.T.) were posted to ANSP countries during the final 2 years of ANSP for this purpose (1 each in Ethiopia and Uganda and 1 for both Burkina Faso and Mali). Although the ANSP project has been implemented through UNICEF, these staff played the role of independent BSAs rather than being dedicated and accountable to any single development organization, and their work was approached as an opportunity to discover the realities of boundary-spanning work in real-world contexts. Their mandate was to help the country—meaning the government and its partners—to succeed in developing and implementing an effective MSN system and to document the lessons for internal and external audiences. The BSAs were granted an unusual degree of flexibility in how they approached this, but in broad terms, they all focused on promoting a systems view of MSN, identifying strategic bottlenecks, gaps, and opportunities within the system, bringing these to the attention of stakeholders that could take action upon them and serving as honest brokers of information and guidance within the policy community,* following the principles of developmental evaluation.[47]

The identities, skills, and positionality of BSAs are important factors that can facilitate or inhibit their work because of its inherently relational nature and their embeddedness within complex policy stakeholder systems. The 3 country-based BSAs in this project were recruited following an international search and interview process that emphasized relationship management with diverse policy stakeholders and relevant prior work experience, with a preference given for nationals from the respective countries. One (D.S.) was a Burkinabe national with a PhD in international nutrition who supported Mali and Burkina Faso; another (J.T.) was a Ugandan national with a PhD in development sociology who supported Uganda; and a third (H.H.u.R.) was a Pakistani national with an MA in economics and MPA (public administration) who supported Ethiopia. As noted, they were positioned as honest brokers of information and guidance within the policy community, building upon the recognized reputation of the principal investigators and Cornell University for prior work in international nutrition. The BSAs were mentored and supported through weekly Skype calls, 4 campus retreats, and 1 to 2 visits per country by these 2 PIs (D.P. and S.G.) based at Cornell University in Ithaca, NY. By virtue of its connections to the BSAs and the US-based staff, Cornell University itself was an indirect stakeholder within the nutrition policy communities in these 4 countries and had multiple influences on the work of the BSAs as described in this paper.

4.3 | Research methods

We approached this work from an action research orientation to gain insight into the realities and dynamics of the early stages of national multisectoral work in general and boundary-spanning work in particular. In formal terms, our study is a holistic, revelatory, multiple-case study,[48] focused on 2 objects of analysis: (1) the country experiences (in terms of accomplishments, enabling conditions, and challenges in implementing MSN) and (2) BSAs (in terms of their strategies and tactics as BSAs, their challenges working as BSAs, and their strategies for managing these BSA

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*The term BSA is used, as distinct from advisors, technical assistance providers, or other more commonly recognized terms, because these staff actually played multiple roles that cannot be accurately captured by these conventional terms. An important purpose of this paper is to provide an experience-based account of these roles along with the challenges and strategies associated with them.

challenges). For research purposes, the country experiences and the BSA experiences were both treated as emergent phenomena with a complex set of political, historical, sociocultural, bureaucratic, and interpersonal influences and interactions. Because of this complexity, this paper primarily seeks to describe, classify, and understand these phenomena, rather than attempt a systematic analysis of causal influences, but selected examples of such influences are noted when warranted by the available evidence. Data collection, analysis, and interpretation were guided by constructs from the policy sciences framework and complexity principles as applied to developmental evaluation.[47,49]

Data were collected in a prospective fashion from participant observation, complemented with end-line semistructured interviews and document analysis.[50] Participant observation was especially rich and diverse because the BSAs interacted with a variety of the MSN stakeholders on a regular basis over a 2-year period. The most frequent interactions (usually daily or weekly) were with key nutrition staff in the organizations that provided office space or administrative support or that were responsible for coordinating the multisectoral effort. This was the Office of the Prime Minister in Uganda, the Ministry of Health in the other 3 countries, and to varying degrees the UNICEF country office in all 4 countries, along with the ANSP-implementing NGOs in Western Africa. There also were frequent (eg, weekly) informal interactions with an "MSN subset" consisting of the 3 to 5 most active nutrition stakeholders from governments, UN agencies, and/or NGOs. Beyond the MSN subset, there were regular or periodic informal interactions with many other nutrition stakeholders in the course of performing the boundary-spanning work. These interactions all were focused on implementation issues, ranging from identifying bottlenecks and strategizing how to overcome them to the planning of workshops, trainings, or other events at national or subnational levels. In addition to these informal interactions, the BSAs attended many or most MSN-related meetings of the multisectoral coordinating bodies and partner organizations, as well as conferences or workshops at national or subnational levels. Semistructured interviews were conducted in the last few months of the project with a total of 36 individuals ranging from national-level current or former staff members in the Ministry of Health (MOH) (including a number of Nutrition Directors), other line ministries, Office of the Prime Minister (in Uganda), UN agencies and bilateral organizations, members of district-level MSN coordinating committee members, local NGOs implementing MSN, and consultants to government or other implementing agencies (Appendix C). The primary documents informing this paper are the current or historical government policies, plans or programs, decrees for MSN, MSN committee meeting notes, donor and NGO reports, and MSN workshop reports.

Several techniques were used to strengthen the data and interpretations emerging from the participant observation. As noted, the Ithaca-based staff had weekly Skype calls (of 1 to 1.5 h) with each of the BSAs to discuss the progress and bottlenecks during the week, strategize on next steps, and provide them ongoing mentoring and support. In addition to strengthening the "action" side of the action research, these calls allowed for deeper interrogation of the BSA observations, experiences, assumptions, and interpretations, in effect stress testing their participant observations as well as helping the staff to retain an insider-outsider perspective in their work.[51] These calls were audio-recorded and generated 149 audio files that were transcribed then coded and analyzed using the software Atlas.ti. A second method for validating and extending the emergent data and interpretations was the extensive interaction between the BSA and the MSN subset noted above, whose members served as key informants and a source of triangulation throughout the period in the field. A third method was the peer debriefing that occurred during the 4 retreats, where the entire Cornell team tabulated, compared, and interrogated the emergent findings from each country and placed them within a progressively more sophisticated and nuanced analytical framework (Appendix D). Finally, stakeholder member checks were conducted through 3 project-wide meetings of the key UNICEF and government staff where the emergent findings were presented, challenged, and modified.

The findings for this paper are presented in relation to the analytical framework that emerged from the final staff retreat (Appendix D). The country accomplishments and enabling conditions are presented on a country-specific basis, while the challenges faced by the countries and by the BSAs are aggregated across countries. The aggregation is done in part because many of the challenges are common across countries and in part to preserve and respect individuals' and countries' identities and confidentiality. This study was approved by Cornell University's Institutional Review Board on July 19, 2013.

5 | RESULTS

5.1 | Institutional situation at inception

The 4 countries differed in many respects and had some features in common at the time of inception (Table 1). They differed in relation to the existence of policies and plans authorizing and detailing the design of the MSN: Ethiopia and Uganda had formalized multisectoral plans in place, Mali had adopted its national nutrition policy (NNP) with a multisectoral lens and was in the process of developing its multisectoral action plan, and Burkina Faso had an NNP and strategic plan that was health sector focused rather than multisectoral. They differed in the status of multisectoral structures: Ethiopia and Uganda had established political and technical structures at the national level and authorized (but not yet implemented them) at the subnational level; Mali's policy anticipated political and technical structures for nutrition at national and subnational levels, but these were not yet in place; and Burkina Faso had consultation committees at the national and subnational levels. The MSN coordinating structure was anchored in the MOH in 3 of the countries (Burkina Faso, Ethiopia, and Mali) and in the Office of the Prime Minister in Uganda. A successful working model of MSN at district level existed in Ethiopia, for use as illustration in cascade training in the regions, but such a model did not yet exist in the other 3 countries. Government leadership on the nutrition agenda was strong in Ethiopia and still emergent in Uganda. Development partners were exercising strong influence on the nutrition agenda in Burkina Faso, Mali, and Uganda, but much less so in Ethiopia. In terms of commonalties, all 4 countries had previous experience with sectoral (health) or bisectoral (health and agriculture) approaches for addressing malnutrition, but with varied success and without the benefit of the policy, government, and partner interest seen in the current period. In all cases, development partners were active in nutrition but not well aligned with each other or the government. None of the countries possessed detailed MSN implementation guidelines, and all of them had placed responsibility

TABLE 1 Institutional situation at inception

	Burkina Faso	Mali	Ethiopia	Uganda
Legislatively authorized multisectoral policy	National nutrition policy 2008 but health centered	Yes, national nutrition plan 2013	No	Draft form since 2003
Politically endorsed multisectoral plan/ strategy	Nutrition strategic plan 2011 but Health centered	Multisectoral nutrition action plan 2014 in development (not yet endorsed)	Revised National Nutrition Program 2013	Uganda Nutrition Action Plan 2010
Anchorage	Ministry of Health	Ministry of Health	Ministry of Health	Office of the Prime Minister
Multisectoral structures	National: unilevel consultative only, dedicated to nutrition-specific interventions	National: anticipated in the policy, not yet in place	National: dedicated bilevel and sectoral coordination structures	National: dedicated bilevel coordination structures
	Subnational: consultative only, dedicated to nutrition-specific interventions	Subnational: anticipated in the policy, but not yet in place	Subnational: not yet	Subnational: in process at the district level
Functionality of the structures (meeting frequency and attendance)	National: irregular	National: not yet	National: partial	National: irregular
	Subnational: in a few regions, which began since 2008	Subnational: not yet	Subnational: not yet	Subnational: needed strengthening
Terms of reference and guidelines for structures and focal points	National: partial	National: not yet	National: in draft form	National: not yet
	Subnational: not yet	Subnational: not yet	Subnational: in draft form	Subnational: not yet

for its coordination on the shoulders of a very small number of already-over-committed staff. Finally, the level of understanding or interpretation of "MSN" was generally weak or highly variable in all 4 countries. Considered together, these features mean that much work remained in each country in creating an effective MSN system (as articulated in Appendix E), and the challenges and the openings for addressing them were quite different across the 4 countries. Accordingly, the strategies for moving the MSN forward in each country needed to be sensitive to these differences and responsive to the challenges and opportunities that presented themselves over time.

5.2 | Country accomplishments, enabling conditions, and challenges

During the time of this study, some accomplishments were observed in each country in relation to strengthening the enabling environment at the national level and cascading to the subnational level as shown in Table 2. In broad terms, these fall into 3 categories: (*a*) the creation or reform of institutions at national or subnational levels such as coordinating structures, anchorage arrangements, implementation teams, sectoral working groups, or formal alliances; (*b*) addition of multisectoral dimensions to preexisting policies, programs, plans, mandates, and indicators; and (*c*) a variety of "soft" accomplishments related to progress in aligning policies, programs, and/or approaches as well as improvements in multisectoral awareness, commitments, convergence, ownership, capacity, actions on bottleneck, advocacy, and so on. The hard accomplishments are ones that could be objectively verified and/or reported because they have a paper trail documenting the progress and/or are codified in official documents. Many of them were initiated during the 2-year period of this study, but some, such as the reform of coordinating structures or addition of multisectoral dimensions to existing policies or programs, involved many prior years of advocacy, debate, and deliberation. The soft accomplishments, in contrast, often do not leave a paper trail, represent rather nuanced changes, can also take months or years to emerge, and would be difficult or impossible to objectively document or verify. In many cases, they involve a shift in mindset in a small number of key individuals, which appeared as breakthroughs or critical moments in the participant observation data and led to new or invigorated efforts in a positive direction. For instance, a UNICEF staff member previously uninterested in MSN, while mainly concerned with nutrition-specific interventions, became a leader for the development of multisectoral approaches in the country. As another example, after participating even briefly in a sensitizing workshop on MSN, an MOH secretary became positively impressed by the progress of the MSN actors and invited the MSN technical committee to present a working plan for an MSN implementation team that he could later prioritize in his budget.

A set of enabling conditions were present in each country before and/or during the study period, with a number of common items across countries (Table 3). These enabling conditions were identified through the weekly Skype calls and retreats with the field staff and then grouped into 4 categories for presentation purposes, adapting a framework for microinstitutionalization of policies.[52] The MSN agenda in each of the countries appeared to be assisted by a combination of conditions (specifically, the existence of high rates of malnutrition); top-down signals, commitment, and/or pressure (to varying degrees); support, evidence, and/or advocacy from international partners and initiatives; and a wide variety of factors internal to the nutrition policy community. The latter relate to favorable relationships, prior experience and capacities, favorable understandings of the malnutrition problem, and the existence of strong or supportive organizations (government and partner) at subnational levels. The distinction between "hard" and "soft" factors, as seen in the accomplishments, is also relevant with the enabling conditions. Indeed, the vast majority of the enabling conditions shown here would be classified as soft because they revealed themselves in the course of the participant observation, but few of them would be codified in formal documents. Yet they were seen to be critical for enabling progress in small or large ways, by creating new openings or overcoming previous bottlenecks. For example, in 1 country, national-level authorities decided at the last minute to join in a short district-level workshop where the new MSN policy was being presented. Serendipitously, this exposure enamored them with MSN, and they then accelerated the organizing of MSN efforts at the national level.

Despite the impressive list of enabling conditions within each country, progress was not steady over time or uniform across all activity streams and stakeholders. To the contrary, progress was routinely delayed, halted, or reversed

TABLE 2 Accomplishments: strengthening the enabling environment and subnational cascading

Country	Accomplishment	
	Strengthening the Enabling Environment	**Subnational Cascading**
Burkina Faso	MSN awareness and government commitment increased, S Government ownership and leadership strengthened Coordinating structure reformed (awaiting final signature), (H) Progress in making the nutrition policy and strategy multisectoral, (H) Development of a common result framework in process, (H) Strengthening nutrition sensitivity of sectoral policies in progress, (H) Civil society alliance for nutrition created, H Infant and child feeding program became more multisectoral, (H)	Infant and child feeding program as an entry point for MSN, S MSN platform formed in the Yako district, H MSN platform operationalized in the Yako district, (H)
Mali	MSN action plan developed, launched, and disseminated, H Coordination structures formed, H National coordinating structures operationalized, (H) Civil society alliance for nutrition formed, H Functionality of MSN committee and funding gaps assessed, S Progress in aligning policies and programs, S Full-time implementation unit created and awaiting staff appointments, (H)	MSN platform created and coordinating committees formed in the Bankass and Yorosso districts, H Subdistrict platforms formed, H Subdistrict platforms operationalized, (H) Capacity for cascading strengthened in the national team, S Expansion to other districts in the Sikasso region underway, (H) Capacity to mainstream nutrition in local development plans strengthened, S 3 national actors trained as certified instructors in participatory evaluations and strategic planning and MSN group facilitation, S
Uganda	Strengthened capacity for coordinating the MSN action plan, S Stakeholder convergence concerning MSN anchorage, S Strengthened government ownership for nutrition, S Strengthened national implementation team, (H) Bottlenecks identified and being addressed at national and district levels, S Formal agreement by government and partners on guiding principles for MSN implementation, H	Strengthened implementation structures in 5 districts, S Strengthening local government planning for MSN in 5 districts, S Learning platforms for MSN formed in 5 districts, (H) Integration of nutrition indicators in district development plans in 5 districts, H Stakeholders in 5 districts fully engaged in creating MSN guiding principles, including the supports districts need from the national level, S The progress and learning in these 5 districts profoundly shape the guiding principles subsequently agreed upon at the national level, H
Ethiopia	NNP launched (2013) and revised (2015), H High-level MSN coordination body formed, H Regular and effective meetings of high-level body, (H) MSN Technical Committee formed, H Strengthened common understanding among members of the Technical Committee, S Sectoral working groups formed in some ministries, (H) Nutrition advocacy for parliamentarians and First Lady Ambassador, S Draft MSN implementation guidelines developed and launched, (H)	Official dissemination of NNP to all 9 regions, H Official launch of NNP by senior regional officials, H MSN structures created and focal points assigned in 4 regions, H Cascading workshops in 4 regions, zones, and woredas and menu of intervention workshops held at the zonal level, H Regional learning platforms formed, (H) MSN integrated into annual review meetings and supportive supervision, H

Abbreviations: H, hard accomplishment; (H), hard accomplishments in progress; MSN, multisectoral nutrition; NNP, National Nutrition Program; S, soft accomplishment.

TABLE 3 Enabling conditions for progress in each country

Country	Enabling Conditions
Burkina Faso	High levels of malnutrition (C) Commitment and leadership from the MOH (Director of Nutrition, SUN focal point, Director General, General Secretary, Minister, and a regional director) (Int) Prior experience with the sectoral consultation platform (Int) Some favorable relationships among local actors (Int) Critical deadlines for policy revision (Int) A large, experienced NGO (SEMUS) (Int) Favorable staff turnover in key positions (C) Financial incentives (real or perceived) for sectors, NGOs, and individuals (Int/Ext) Country commitment to global initiatives, ie, SUN movement (Int/Ext) REACH arrival in the country (Ext) Strong support from donors and the partner and technical platform (Ext)
Mali	High level of malnutrition and the "Sikasso paradox" (C) Favorable momentum and progress with the policy, action plan, and coordination structures (Int) Decree establishing MSN structures (Int) Flexibility and openness of members of the coordinating structure to explore all opportunities to learn and advance the agenda (Int) Commitment and leadership of central and local authorities (Int) Strong presence of some credible partners in the district (UNICEF and the ASDAP NGO) (Int/Ext) Strong support from donors and partners and technical forum (Ext) REACH presence in the country (Ext) Country commitment to global initiatives, ie, SUN movement (Int/Ext) Government commitment to ending malnutrition (Int)
Uganda	High levels of and long-standing malnutrition (C) Government acceptance of country-owned, country-led approach (Int) High-level political commitment and support from the President and Prime Minister (OPM), holding others accountable (Int) Country experiences with earlier attempts at MSN (Int) Availability of reference materials (policy/program documents) (Int) Action plan as a reference document for MSN implementation (Int) Earlier decision to have OPM as anchorage (Int) Well-established government structures: OPM, sectors, districts, and below (Int) Directive from OPM to orient all districts by a deadline (Int) Earlier experiences with multisectoral coordination from HIV/AIDS (Int) Ability to build on some ongoing activities in 5 districts (Int/Ext) Country commitment to global initiatives, ie, SUN (Int/Ext) Strong support from some donors and development partners (Ext)
Ethiopia	High rates of malnutrition (C) Momentum for transitioning from emergency response to development approach to nutrition (Int) Endorsement of NNP by State Ministers and pressure to launch and cascade to regions, reinforced by their request for progress markers to monitor and create accountability (Int) Political expectation to reach NNP goals and align them with high-level government goals and strategies (Int) Existence of positive examples of MSN working at the woreda level for use as an inspiration and examples in regional workshops (Int) Existence of regional universities as potential partners on regional learning platforms and for operations research; regional buy-in for university involvement because of past research on nutrition (Int) Existence of strong partners at the regional level to advocate for and support cascading (Int/Ext) Strong support from some donors and development partners (Ext) Global dialogue and evidence on MSN helped get high-level buy-in (Ext)

Abbreviations: C, conditions; Ext, external; Int, internal; MOH, Ministry of Health; MSN, multisectoral nutrition; NGO, non-government organization; NNP, National Nutrition Program; OPM, Office of the Prime Minister; REACH, Renewed Efforts Against Child Hunger and Undernutrition; SUN, Scaling Up Nutrition; UNICEF, United Nations Children's Fund. Adapted from Moseley and Charnley.[52]

by a large number of challenges (Table 4). These exist at the level of individuals, organizations, and the overall system and most of them relate to the factors internal to the nutrition policy community rather than at the macropolitical level. At the individual level, some of them relate to capacities, while others relate to micropolitics. At the organizational level, some of the challenges again relate to limited capacity or experience with MSN or nutrition in general; others reflect that in most cases nutrition has not even begun to be integrated (institutionalized) into the

TABLE 4 Challenges experienced in building the MSN systems (aggregated across countries and activity streams)

Level	Challenges
Individual level	Varied understanding of the multisectoral nature of malnutrition Varied commitment to stunting reduction Lack of experience aligning sectoral mandates and funding priorities with nutrition Capacity constraints in some key positions[a] Gatekeepers as bottlenecks Risk aversion by selected influential actors Fear of loss of control over nutrition agenda Resistance from some actors within government and some donors Micropolitics, power struggles, and personal agendas
Organizational level	Lack of knowledge in sectors of their contribution to nutrition Lack of alignment between sectoral objectives and MSN objectives Sector-specific indicators and planning with no common framework Overreliance on sectoral focal points to stimulate nutrition sensitivity Sectoral focal points that are of low level, different from one meeting to another, overcommitted, and unable to influence their ministry[a] Lack of nutrition in job descriptions and/or poor specificity Nutrition objectives in national development plans but not supported by appropriate indicators, strategies, and funding High staff turnover in key positions[a] Funding: levels, sources, dynamics, inflexibility, and unpredictability (eg, to fund meeting venues, consultants, and sitting fees) Bureaucratic inefficiencies with organizing small and large meetings Bureaucratic procedures and resistance in bringing consultants into the country even when they are needed
System level	Coordination structures weak or not in place Platform meetings with poor attendance, frequency, facilitation, and follow-up Time required for structures to become functional Time required to develop sector understanding and commitment Lack of clear roles and responsibilities for staff and structures Disagreements over anchorage Weak convening power and authority for MSN in MOH Health focus of the nutrition operational agenda Weak cascading approaches ("train and hope") Lack of detailed implementation guidelines Lack of harmonized orientation guidelines for sectors and districts Weak reporting mechanisms for MSN from district to national levels Disagreements within the nutrition policy community Absence of inclusive process in developing key plans, strategies Scheduling conflicts, too many meetings, too few staff[a] Partner mandates that do not align with government or each other Excessive influence of donors on government agendas and priorities Government not in the driver's seat Very few strategic team players at the national level[a] Lack of a shared long-term vision for MSN Lack of a real and shared commitment to country-owned, country-led approaches Irregular and poorly attended meetings of the high-level body Weak tracking, reporting, and accountability to the high-level body

Abbreviations: MOH, Ministry of Health; MSN, multisectoral nutrition.

[a]These challenges all point to a serious gap in human resources to support the MSN effort.

administrative architecture of the ministries (viz, job descriptions, staff positions, alignment of objectives, and integration into planning and reporting); and yet other challenges stem from administrative or bureaucratic procedures and inefficiencies in general. At the system level, a number of challenges relate to the functionality of the coordination platforms ("horizontal coordination"), the cascading of MSN to subnational levels ("vertical coordination"), and broader system features (disagreements, poor alignment, excessive donor influence, and lack of shared vision and commitment to country-centered strategy and ownership).

The challenges in Table 4 are aggregated across the 4 countries, in part because the vast majority are common across countries. This comprehensive presentation, which provides a grounded sense of some features and dynamics

of a CAS, is daunting to even review and contemplate. The cumulative effect of these daily, weekly, and persistent challenges, on staff assigned responsibility for building the MSN system, was overwhelming. The most persistent challenges were those related to staffing and capacity bottlenecks at organizational and system levels. In all 4 countries, the responsibility for creating the MSN system has been assigned to a very small number of staff who are already fully committed with preexisting responsibilities and have little or no experience with MSN. This reality, which has been noted previously,[30,34,37,42,53,54] was the rationale for seeking experience with BSAs as a possible high-leverage strategy for facilitating country progress.

5.3 | Boundary-spanning strategies, challenges, and coping strategies

This section presents our experiences with a BSA intervention, organized in terms of the strategies and tactics our staff used, the challenges they faced in this role, and the coping strategies they used in response to the challenges. An example from one of the countries is provided in Appendix F to illustrate how some of the BSA strategies and tactics interact with challenges when a BSA works with other members of the MSN subset to create or strengthen a component of the MSN system.

The BSA strategies and tactics, when analyzed through reflection exercises at several points during the study, were organized into 4 categories (Table 5). Within the first category (overall orientation, values, and strategies), the BSAs manifested the generic characteristics that are inherent in that role.[10,11,46] In addition, they enacted several strategies specific to the needs of MSN, such as reinforcing government ownership, working with sectors and specific actors to help them clarify their roles and responsibilities, and "building capacity" by enhancing the understanding of MSN through informal conversations, small-group meetings, workshops, conferences, emails, and all other opportunities that presented themselves or could be created. The second category, relationships, was a fundamental requirement for the BSAs to be effective in their roles. It involved creating and managing their own relationships with various actors as well as fostering good working relationships among actors. This is at the core of the "micropolitics" noted in Table 4, was an almost daily struggle, and was never "complete." The coping strategies and assets for this are discussed below. The third and fourth categories are more concrete actions that were mobilized in proactive and in responsive ways to address specific bottlenecks or achieve specific objectives. Many of these were identified, designed, and deployed in concert with other members of the MSN subset, while others (notably some of the tools) were designed by the Cornell team and deployed by the BSA. For instance, a simple decision matrix was used in one country to help nutrition stakeholders evaluate the strengths and weaknesses of various institutional (anchorage) arrangements for MSN. In another country, a set of context-specific progress markers was developed (at the request of politicians on the high-level coordinating body) to facilitate stronger reporting and accountability. And in all 4 countries a "Land Cruiser metaphor" was used and presented in dozens of venues, to help stakeholders see and approach MSN as a system-building challenge.

In addition to these relatively visible and instrumental contributions of BSAs, their presence in the nutrition stakeholder community provided some more subtle but no less important contributions, some of which are intimated in Table 5. Within the category of knowledge brokering, in one country, the language of "country-owned, country-led" (as used in the SUN movement) was introduced to a senior stakeholder, who used it to good effect over the subsequent months to urge greater collaboration among development partners; in another country, the views of district officials were shared with national authorities to help design a consensus approach to MSN; and in one of the project-wide meetings with all 4 countries present, the sharing of progress in 3 of the countries stimulated the team in the fourth country to overcome some internal disagreements and more fully embrace the intent of MSN. Within the category of informal communication, the BSA's became trusted sources of expertise and candid assessments of progress and bottlenecks in each of the countries and were sought out by selected higher-level officials in government and NGOs. And within the categories of building alliances and managing disagreements, the BSAs were able to catalyze strong subnational MSN working groups in one country, help overcome a high-level disagreement about institutional anchorage in another country, and convert a competitive or conflictual situation into a collaborative one in a third

TABLE 5 Boundary-spanning actor strategies and tactics for addressing the MSN challenges

Strategies	Tactics
1. Overall orientation, values, and strategies	Generic: Embeddedness and networking in stakeholder community Continuous assessment, feedback, and follow-up Reflective exercises and moments with stakeholders Issue selection at national and subnational levels Assisting stakeholders when asked, to build goodwill Credit giving, not credit taking Risk taking and weighing risk/benefit Knowledge brokering Bridging coordination and communication gaps MSN specific: Re-enforcing the norm of country owned/country led Strengthening government ownership of the agenda Continuous advocacy with the sectors Clarifying roles and responsibilities for MSN Responsive and opportunistic capacity building Engaging effective consultants Inspiring national authorities via subnational examples and initiatives
2. Relationships	Effective collaboration with the MSN "subset" Alliance building at all levels and in all sectors Stimulating the creation and/or strengthening of strategic alliances Outreach to individuals to build understanding and buy-in Managing misunderstandings and disagreements among stakeholders Helping or ensuring that people can "save face"
3. Using opportunities	Experience-sharing visits Venue shopping Critical moments and opportunities Critical deadlines Building and maintaining momentum Candid reporting to the high-level bodies Informal communication with higher-level officials Attendance of high-level officials at global meetings Engaging nutrition champions Partnering with ongoing initiatives in the country
4. Tools and activities	Decision making tools Sensitizing tools SWOT analysis Progress markers Innovative workshop tools Using evidence Initiating stakeholder surveys Effective presentations Goal-oriented sensitization workshops and meetings Goal-oriented district- and national-level workshops for alignment of sectors and partners Promoting and supporting collaborative planning

Abbreviations: MSN, multisectoral nutrition; SWOT, strengths, weaknesses, opportunities, and threats.

country. In general terms, the BSAs became resource persons on MSN, and their expertise was sought after, be it for advice, facilitation, reflection, and the making of easily understood MSN presentations at meetings or for their use of sensitizing tools, mobilizing capacity, wisdom and clear vision of MSN, and listening capacity. Many MSN stakeholders confided in the BSAs, providing them with a unique understanding of goals, interests, or struggles among selected MSN stakeholder; this, in turn, enabled the BSAs to facilitate productive dialogue and for the community of stakeholders to progress towards consensus building and advance MSN implementation. In these and other examples, the contributions stemmed from the "overall orientation, values and strategies" noted in Table 5 and were made possible because the BSAs had the mandate and flexibility (and skills) to act in this way. Equally important, the BSAs had developed and maintained good working relationships with a subset of MSN stakeholders who were strategically

located in various organizations, possessed valuable insider knowledge and relationships of their own, created access and opportunities for the BSA, and were active participants in the developing and enacting strategies and tactics to address MSN challenges.

These BSA roles and contributions were not without challenges, however, as detailed in Table 6. Some of the challenges were inherent in the nature of the role itself (eg, the ambiguity; lack of formal authority, control, or resources; and complete dependency on other actors and organizations). A second set of challenges relates to the fact that relationships are at the center of all the BSA's work and some stakeholders perceived the BSA as more of a threat to their personal, professional, or organizational interests than a benefit. This is especially the case when there are disagreements about MSN itself, including questions of anchorage, leadership, implementation strategies, resource control, and the like. In some cases, these relationship challenges were further complicated or compounded by certain identities of the BSA, such as age, gender, national or expatriate status, and jealousy regarding international training and employment. The relationship- and identity-based challenges, while being partially rooted in structural factors, were not completely defined by those factors and were not constant over time. In each of the 4 countries, there were stakeholders who occupied the same structural space (eg, as defined by organization and age/gender/national identity), some of whom were detractors or obstructers of the BSA (or MSN generally) and others of whom were strong allies and supporters; in both categories, some remained in that mode throughout the period of engagement while others moderated or even reversed. This placed the BSAs in a perpetual and emotionally difficult state of managing personal and political relationships and capital, as noted in other accounts of BSA practice.[15,55-57]

These challenges related to BSA roles and identities became a topic of discussion within the Cornell team from the earliest months of the project, remained as such for the duration, and stimulated corresponding discussions, reflections, and strategizing during weekly Skype calls and team retreats concerning how to best manage them. These coping or management strategies are summarized in 5 categories: reputation, identities and associations, personal qualities and orientations, knowledge, skills and analysis, and behaviors, practices, and tactics (Table 6). Some of these, such as reputation and identities and personal qualities initially may seem to be relatively fixed characteristics of individuals. But the experience revealed the need and the opportunity for these to be actively managed, in the moment and over time, in order to overcome some of the BSA challenges. This is most obvious in the case of reputation, in which the core values such as neutrality, inclusiveness, and respect could be revealed through the actions of the BSA, eventually earning the trust, respect, and support of most stakeholders. But the opportunity also existed to actively (and carefully) manage some of these, as in the case of drawing credibility, respect or power "by association," with their employer (Cornell) or some of the government organizations or NGOs in the country working on MSN (such as the Office of the Prime Minister, MOH, or UNICEF). Alternatively, this could take the form of creating a sense of distance from one or another organization or its reputation. In other words, "neutrality" was not a static concept or position for a BSA working in the midst of diverse and ever-evolving interests and agendas. It was a dynamic construct that was actively managed in ways that could build or maintain constructive relationships consistent with the overall goal of advancing MSN.

A second set of strategies and assets (knowledge, skills, and contextual analysis and behaviors, practices, and tactics) initially may appear to be qualities that can be acquired by training and experience, but in fact, they depend on having certain deep orientations and personal qualities. The 3 individuals in these positions were chosen based on evidence of their social and emotional intelligence, rather than their expertise or credentials in nutrition, and this proved to be essential for their work. Another vital element was their access to a selected few mentors or confidants in the country as well as the other members of the Cornell team (the other BSAs as well as the team leaders based at Cornell). These mentors, confidants, and team members provided technical, strategic, and social/emotional support to help endure if not manage the BSA challenges.

Finally, the role of the proximate funder (UNICEF), the employer (a university), and the orientation of the Cornell team leaders (as action researchers) were critically important, for providing the necessary flexibility, support, and "space" to play this BSA role. In particular, the key staff in the regional UNICEF offices understood the necessary

TABLE 6 Challenges of boundary-spanning and coping strategies and assets for managing them

Boundary-Spanning Challenges	Coping Strategies and Assets for Managing Boundary-Spanning Challenges
Inherent features	**Reputation**
Actual work out of synch with initial work plan and the country reality	Continually clarify our unique roles and responsibilities
Stress and ambiguity of working in an emerging context with no clear direction and plan	Reinforce and demonstrate that we have no separate agenda other than playing a supportive role to the country as a whole
Maintaining the insider/outsider approach when personal interests get in the way of the ultimate goal	Focus on results and remain true to our core values: neutrality, inclusiveness, respect of all partners and their potential contributions
Dependency on others with authority to convene meetings	Build your own credibility and respect
Limited staffing and lack of control over key partners' planning, scheduling, and convening	
Patchy administrative support because no own country office	**Identities and associations**
Lack of official mandate in the country	Selectively draw credibility and respect from association with Cornell and the team
Bureaucratic rigidity and delays limit our effectiveness	Selectively draw informal power by association with certain government or partner organizations without identifying too closely with them
Staff turnover requires constant renewal of sensitization efforts, advocacy, and strategic partners	Some challenges simply need time for our identities and authenticity to emerge from our work and how we conduct ourselves
Weak capacity within government and other stakeholders limits our effectiveness	
All possible solutions face a new round of bottlenecks	
Supporting 2 countries created insufficient physical presence in country at times	**Personal qualities and orientations**
	Patience, interaction, and communication skills
Relationships	Motivation and passion to help your own country maintain morale during the many difficult personal moments
Others with poor understanding of our unique role	Ability to take risks, cope with challenges, adjust, and keep moving forward
Managing personal/social and professional relationships	
Perceived competing roles by some stakeholders	**Knowledge, skill development, and contextual analysis**
Political interference in our work from some people	Mentoring from larger Cornell team
Gatekeeping dynamics and manipulation at different levels	Identify local mentors and continuously seek their advice and inputs
Lack of collaboration at some points from some partners who were key to our work	Use intermediaries to understand and help address the issues
Riskiness in alliance building and partnerships at the national level	Keep referring back to developmental evaluation principles
Historical alliances for nutrition governance can impede the time it takes to understand peoples motivations and hidden agendas	Carefully study people and systems
How to handle requests to join certain initiatives, alliances, or cliques that would compromise our neutrality	Assess peoples' intentions first, rather than assuming they are facilitators of the process just because of their position
Earning government trust	Try to understand the reason for not collaborating
Identities	**Behaviors, practices, and tactics**
Age, gender, expatriate, international PhD, international position	Accommodate to partner needs first; give credit, do not take it
Negative stereotypes about academic research that is extractive or exploitive and adds no practical value	Persistent attempts to collaborate
	Strategically plan with partners to get government buy-in through informal relations
	Form and draw upon strategic allies; do favors to build goodwill
	Create and/or seize opportunities
	Provide support out of our mandate without any incentives or expectations
	Bring in external consultants to build collaborative capacities in others
	Funder and employer understanding, flexibility, and support
	Appreciation of systems, complexity, and need for a responsive, emergent approach
	Flexible goals, strategies, spending rates, reporting requirements, accountabilities
	Willingness to defend the approach from/to higher ups

and distinctive role the BSAs were playing, trusted the Cornell team to pursue its dual mandate of supporting as well as documenting/learning, and, through largely informal means, moderated the more rigid planning, budgeting, disbursement, reporting, and accountability procedures used in conventional development projects.

6 | DISCUSSION

This paper makes three distinctive contributions. First, it confirms the challenges of implementing national MSN approaches as noted by many others[30,34,37,54,58-60] while extending our understanding by drawing attention to the importance of soft or intangible accomplishments; the importance and context-dependent nature of enabling conditions; the sheer number and variety of challenges at the individual, organizational, and system levels; and, thus, the time required to achieve the tangible outcomes (eg, in reducing malnutrition) that dominate the focus of politicians, funders, and other stakeholders. These observations have important implications for all current efforts (by the SUN movement and other organizations at national and international levels) to sustain and support progress, including advocacy, target setting, capacity building (at all levels), monitoring and evaluation (M&E), and financing.

Second, the fine-grained documentation of the change process (ie, the ways in which enabling conditions, challenges, and stakeholder dynamics interacted to produce or inhibit progress) vividly confirms that MSN does indeed exhibit the properties of a CAS (eg, emergence, coevolution, interdependence, path dependence, nonlinearity, and unpredictability). While previous work has identified many of the same challenges with MSN, albeit at higher levels of generality, it has generally stopped short of reconsidering the very nature of the problem and the complex adaptive nature of the systems involved. As noted in the introduction to this paper, the literature convincingly demonstrates that health (and other) systems have CAS-like properties and argues that improved performance and outcomes could be achieved by explicitly taking these properties into account. The present paper provides empirical evidence to that effect—firmly grounded in contrasting country experiences with MSN rather than theoretical arguments—and can stimulate discussion among national and global actors concerning practical strategies for "taking these properties into account."

Finally, this paper provides insights concerning one such strategy, in the form of BSAs. The remainder of the paper focuses on this aspect, integrating observations from the present study with insights from the literature to make suggestions for future practice and research.

There are many forms and definitions of boundary spanning. The roles, practices, and challenges of the BSAs in this project closely followed those described by Williams.[61,62] He defines boundary spanners as "individuals who have a dedicated job, role or responsibility to work in a multi-agency and multi-sectoral environment and to engage in boundary-spanning activities, processes and practices." He goes on to describe 4 types of roles and associated practices, including networking, diplomacy, brokering, risk taking, negotiating, listening, framing, and sensemaking, trust building, conflict resolution, coordinating, and convening. He notes that BSAs "bring together a diverse set of people from divergent professional, sectoral and organizational backgrounds under the umbrella of common purpose. However, this often masks materially different views and opinions on a range of fundamental issues; problem definition and solution; value and belief systems; culture, language and ways of working." The resonance with the BSAs in this project are obvious, and the present study makes several distinctive contributions.

First, while most of the current literature on BSAs is based on experiences in high-income countries, the present study is based in a very different context (Sub-Saharan African), involves significant national and cultural diversity within that context (across the 4 countries and between East and West Africa), and arguably involved a distinctive and much higher degree of complexity (viz, the number and variety of sectors, stakeholders, and organizations). This suggests that, under the right conditions and with a number of qualifications, intentional boundary spanning can be a feasible and acceptable practice within a multisectoral CAS in these contexts. The conditions and qualifications that seemed to allow and facilitate this in the present case include partnership with a well-regarded organization (UNICEF) at country level; flexibility and space to innovate, granted by the proximate sponsor (UNICEF regional offices); connections with a university recognized for its work in nutrition and the commitment of the team to a collaborative, action research approach; the strategy of working with and through a small number of stakeholders from different organizations in each country (the MSN subset) in virtually all aspects of the work; the personal characteristics and orientations of the BSAs themselves; and the mentoring and support (technical, strategic, and emotional) provided to the BSAs through the Cornell team and key stakeholders within the countries. None of these conditions were an unqualified panacea at all times, in all places, and with all stakeholders, but on balance, they played important enabling roles.

A second contribution lies in the fine-grained documentation of the boundary-spanning practice (Tables 5 and 6). The literature extensively discusses BSA orientations and personal qualities, as well as practices,[10,11,57,61,62] but some of the practices and challenges identified here are particular to these contexts and important for guiding future work. Moreover, many of the coping strategies that emerged in this project appear particular to these contexts and represent a further unique and important contribution. These strategies allowed the BSAs to persevere, learn, and become more effective in the face of the many challenges and, as importantly, provided the social and emotional support required in the position. The stresses of boundary spanning are noted in the literature,[10,55,56,61,63] but in very different contexts, and any future efforts in the present contexts must anticipate this need.

Third, the experiences in these four countries, all of whom are part of the SUN movement, allow us to identify a small number of critical bottlenecks that, if addressed, would significantly accelerate progress: anchorage capacity, implementation teams, and high-level engagement. In all four countries, the responsibilities for MSN coordination and oversight were assigned to current staff, on top of their existing responsibilities, and many did not have prior experience in those roles or with MSN generally. Countries need to ensure there is appropriate staff and staff capacity in the government unit responsible for these functions (ie, in the anchorage unit). Second, there is a need for a mobile, national implementation team that can perform the cascading of MSN structures and capacities to subnational levels and provide much needed support to those levels over time, in line with the implementation science literature.[64-66] Third, there is a need to effectively engage high-level decision makers in government and partner organizations in addressing critical bottlenecks, through candid reporting from the anchorage unit, the use of real-time progress markers, and the establishment of clear lines of accountability. Doing so will ensure that the limited time these decision makers can devote to MSN is used productively by enabling them to address bottlenecks that only they can address. The rationale for singling out these three actions is that all or most of the other challenges documented in this paper can be addressed if there are dedicated staff and clear procedures in place to do so. These staff also can become the focus for ongoing capacity strengthening and support in the areas of leadership, strategic management, boundary-spanning work, M&E, strategic communications, and other vital functions.

Finally, there are many opportunities to gain further experience facilitating the work of CASs, by engaging with countries in the SUN movement or with other global health initiatives. Future work should recognize that boundary spanners as used in this project represent only one possibility, along with knowledge brokers, bridges, policy entrepreneurs, and technical support units[14,16,57,67]; boundary spanning can have value at the level of leaders, managers, and frontline workers[9,68]; and there are important questions about where BSAs should be employed and housed within or outside of the system.[10,62] In the present work, there were distinct advantages in having the BSAs attached to a university, as distinct from one of the vested stakeholder organizations, in relation to neutrality, trust, and the flexibility to interact with any and all of the MSN stakeholders. Upon reflection, some of the ambiguity and confusion concerning their role, contribution, and status in the system could be reduced by positioning them as knowledge brokers.[69] This would be a natural and valued role for a university partner to play[70] and would be a good entry point, recognizing that the staff may end up playing multiple roles in actual practice.[15] For reasons of cost as well as capacity building, it is important to explore the potential for national universities to play such roles in the future.

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APPENDIX A: CONDITIONS AND PRINCIPLES FOR EFFECTIVE GOVERNANCE

Scaling Up Nutrition (SUN) Strategy and Roadmap 2016-2020 (scalingupnutrition.org)	Health System Governance[38]	Collective Impact[39]	Collaborative Governance (Meta-Framework)
Strategic objectives: 1. Enabling political environment, with strong leadership, multistakeholder platforms to align activities and take joint responsibility	Strategic vision: leaders with a broad and long-term perspective and strategic directions	Common agenda and shared vision for change, including common understanding of the problem and a joint approach to solving it through agreed-upon actions	System context: resources, policy and legal frameworks, history with the issue, political dynamics, power relations, network connectedness, conflict/trust, diversity
2. Follow best practice for scaling up proven interventions, including the adoption of effective laws and policies	Participation and consensus orientation: inclusion of diverse voices and interests towards the common good	Continuous communication to build trust and assure mutual objectives and common motivations	Drivers: leadership, incentives, interdependence, uncertainty
3. Aligned actions with high-quality and well-costed country plans, with an agreed results framework, tracking, and mutual accountability	Rule of law: legal health frameworks, fairly and impartially enforced	Effective coordination, including dedicated staff with specific soft skills	Quality of engagement: discovering interests, problem framing, deliberation, decisions
4. Increase resources, directed towards coherent, aligned approaches	Responsiveness: to the diverse needs of the population	Mutually reinforcing activities, coordinated via a mutually reinforcing plan of action	Shared motivation: trust, understanding, legitimacy, commitments

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Scaling Up Nutrition (SUN) Strategy and Roadmap 2016-2020 (scalingupnutrition.org)	Health System Governance[38]	Collective Impact[39]	Collaborative Governance (Meta-Framework)
Engagement principles: transparent, inclusive, mutual accountability, consensus oriented, continuous communication, learning and adapting, cost-effective, rights based	Accountability: government, private sector, and civil society are accountable to the public and institutional stakeholders Intelligence and information to support informed decisions Equity, inclusiveness, effectiveness, efficiency, ethics	Shared measurement system, across all participants to ensure efforts remain aligned and participants hold each other accountable	Capacity for joint action: procedural/institutional arrangements, leadership, knowledge, resources Proximate outputs: improved policy, resources, staffing, management practices, monitoring, enforcement System impacts: changes in aspects of the system context (above), collaboration dynamics and governance quality

APPENDIX B: COUNTRY PROFILES (FROM GLOBAL NUTRITION REPORT 2014, 2015)

	Burkina Faso	Mali	Ethiopia	Uganda
Nutritional status				
Stunting, %	42 (2006) 33 (2012)	43 (2001) 39 (2006)	57 (2000) 40 (2014)	45 (2000) 34 (2012)
Wasting, %	11 (2012)	15 (2006)	10 (2011)	5 (2011)
Low birth weight, %	14 (2010)	18 (2010)	20 (2005)	12 (2011)
Poverty and population				
Gross domestic product per capita, US dollar	1582 (2013)	1589 (2013)	1311 (2013)	1365 (2013)
Poverty < $2/day, %	...	79 (2010)	66 (2011)	...
Population (millions)	16.5 (2012)	14.9 (2012)	91.7 (2012)	36.3 (2012)
Services and practices				
Antenatal care visits 4+, %	34 (2010)	45 (2010)	19 (2011)	48 (2011)
Breastfeeding (BF) initiation < 1 h, %	42 (2010)	57 (2010)	52 (2011)	53 (2011)
BF 12+ months, %	96 (2010)	90 (2010)	96 (2011)	87 (2011)
Exclusive BF 6 months, %	25 (2010)	20 (2010)	52 (2011)	63 (2011)
Severe acute malnutrition geographic coverage, %	100 (2012)	5 (2012)	75 (2012)	9 (2012)
Vitamin A full coverage, %	99 (2012)	93 (2012)	31 (2012)	70 (2012)
Oral rehydration salt for under 5s with diarrhea, %	21 (2010)	11 (2010)	26 (2011)	44 (2011)
DPT3, %	90 (2012)	74 (2012)	61 (2012)	78 (2012)
Iodized salt consumption, %	34 (2006)	74 (2006)	20 (2006)	87 (2006)
Minimum adequate diet, %	3 (2010)	...	4 (2011)	6 (2011)
Minimum diet diversity, %	6 (2010)	...	5 (2011)	13 (2011)
Gender equity				
Births to women <18 years, %	28 (2010)	46 (2006)	22 (2011)	33 (2011)
Female secondary enroll, %	23 (2012)	37 (2011)	11 (2000)	14 (2011)
Water and sanitation				
Improved water, %	81 (2012)	67 (2012)	52 (2012)	76 (2012)
Improved sanitation, %	36 (2012)	41 (2012)	37 (2012)	57 (2012)

APPENDIX C: SEMISTRUCTURED INTERVIEW GUIDE

Introduction to the Interviewee:

One of Cornell's objectives in this project is to help each of the four ANSP countries to move forward with their MSN approach. We are doing that by assisting and partnering with the government and other partners, as you have seen. Our other objective is to learn from experience in these four countries and share what we learn with other countries. Today's interview is intended to support both of these objectives.

Specifically, I want to talk with you about what it takes to build an effective and sustainable MSN approach. This is obviously a large and complex challenge and one that many countries are struggling with. As someone who has been very involved, I know you have a lot of insights about this. In addition to gathering your insights, I am hoping our discussion will help us both to reflect on the situation here in [country] and possibly identify some additional steps or strategies that could help us move the agenda forward. So this interview is about sharing and reflecting.

Is this clear? Is it ok to proceed?

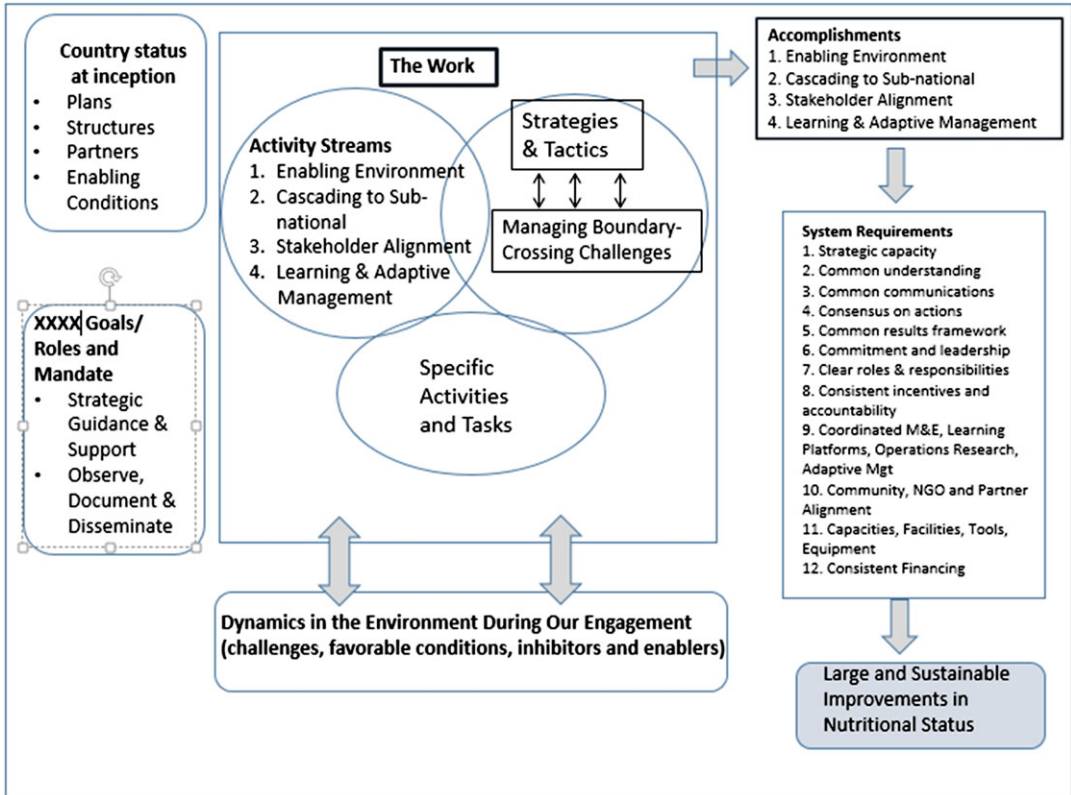| Question	Comments and Probes
Part 1: Your Thoughts Re the MSN Approach	
1. To begin with, for the record can you tell me your current position and how you are involved with the MSN effort?	
2. OK. Thank you. So I have noticed, as you may have as well, that not everyone has the same idea of what MSN is all about. To be sure we are on the same page, could you please tell me what it means to you?	For the most part we simply want to take at face value whatever they offer, so specific probes are not used after their response. But if they give a very short and superficial answer you could ask them to say more about the purpose, design and intended functioning of MSN approach
Thank you. 3. Now, I would like you to picture in your mind what the MSN system would look like a few years from now if it is fully developed and how it would be working. What would be in place, which institutions would be involved and what would be happening and how would it be improving nutritional status?	As they respond, take brief notes of what they mention in relation to: - what would be in place - what would be happening - which institutions would be involved These will be the basis for your follow-up questions as follows: A. Thank you for painting that picture of a MSN approach. You mentioned A,B and C would be in place... is there anything else? (keep prompting until s/he has nothing else to offer). B. And you mentioned that D,E and F would be happening. Is there anything else that would need to be happening if the MSN approach is to be effective in improving nutrition? C. And you mentioned G, H, and I would be involved. Are there others? Which sectors do you think should be involved? If they do not mention sub-national levels: D. And what about sub-national levels: what needs to be in place, what needs to be happening and what institutions need to be involved?
4. OK, great. Now that we have a picture of what needs to be in place and what needs to be happening, the question is: What conditions are necessary in order for this to be put into place and to function as intended?	They may need some help understanding what we are getting at here. So you could give an example like this: "For instance, you mentioned there needs to be a strong coordination platform—well, what is needed in order to a platform to function in a strong way?"

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Question	Comments and Probes
	As they get rolling, you should prompt them to respond in relation to each of the items they mentioned in #3 above: Things in place—A, B, C, etc Things happening—D, E, F etc
5. Wonderful. We are beginning to get a full picture of the approach and what it would take to be effective. Now I want us to focus on sustainability. If this whole MSN approach is to be sustainable—for 10 or 20 or more years—what will be needed?	They may have a lot of overlap here with their answers above (for effectiveness) because they may have been implicitly thinking in sustainability terms. But in some cases this question might also get them thinking differently about what needs to be in place and HOW things need to be done differently if MSN is to be sustainable.

Part 2: Your Reaction to the 12 Requirements for an Effective and Sustainable MSN

OK, that was very helpful. It is so helpful for us to see things from your perspective. This is really going to help us improve upon our own thinking and share a more complete picture with other countries. So the next step is for me to share with you the picture we have put together up to now, based on what we have seen in the four countries, and see if we should be adding, deleting or modifying anything in order to make it as complete as possible.
• Show them the 12 requirements picture.
• Briefly walk them through the twelve requirements (the "grand tour"). The tour might read something like this:

"In this vision we see MSN as a system with twelve components.
• there needs to be coordinating structures at national and subnational levels that bring together government sectors and development partners;
• they need to have a common or shared understanding of what MSN is all about
• they need to have good communication among themselves
• they need to have agreement on the policies, programs and interventions needed to improve nutrition
• they should have a common results framework so they are all working towards the same goal
• there needs to be individual and institutional commitment and leadership at all levels and in all sectors
• all actors need to have clear roles and responsibilities that are formalized in ToRs and other formal instruments
• there needs to be consistent incentives and mechanisms for ensuring accountability at all levels and for all actors
• there is a need for many types of resources, including varied actors working in alignment, capacities, facilities and tools as well as consistent and dependable financing
• here needs to be strong and functional M&E system linked to operations research and the ability to learn and adapt over time, and
• there needs to be strong guidance and support at each level in the form of leaderships and strategic capacities"

6. So, first, I would simply like to know your reaction to this picture. What is your overall impression? Do you have any questions? Is anything unclear?	
7. OK thank you. Now let's take one component at a time and I would like to know what you think the situation is for each in the country right now. Do you think each requirement is • fully met • partially met • not met at all or minimal	- if they need help understanding what each item means you can refer back to the grand tour (twelve bullet points) provided above. - no need to probe, but if time allows they can elaborate on the reasons for their scoring.
8. As you can see, this picture shows that the MSN system has many important parts and they need to work together —as a system. Clearly it is a long-term effort to build such a system and there are many challenges—which we will talk about next—but first: • we want to be sure we are not missing anything and • and that we are not including things that are unnecessary. What do you think?	
9. OK, now that we have a big picture of what would ideally be in place for an effective and sustainable MSN I would like to know your thoughts about the current status of each of these requirements here in [country]. Let us walk through these requirements again and for each one please tell me your opinion on how strong or weak each one is, using the following responses:	Note that some of the 12 requirements have multiple items and they may want to score each item differently. If so, that is fine—let them do that. After they have done so you can ask them for an assessment for that overall requirement.

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Question	Comments and Probes
#1: completely in place, or nearly so, or good enough for now #2: partially in place but needs more work #3. very weak or nonexistent	
At this point you can stop this interview or you can continue, as per the time availability and wishes of the respondent. The next four questions do not appear as time-consuming	
Part 3: Your Thoughts Re Challenges and Most Significant Changes	
10. In the previous exercise you provided an assessment of the current status of each of these twelve requirements for an effective and sustainable MSN system. (Show them the figure with their scores on each requirement.) Now in light of what we are seeing here (on the scored figure) I would like you to step back and think about the big picture. If this is the system that needs to be built, what are the major challenges that might be limiting progress at the present time? There may be a few key ones or there may be many. I am interested in what you think.	Their answers here may require some probing questions to get them to think more deeply about some of the challenges. For instance, if they say "poor coordination" or "weak commitment" you should ask them to "tell me more about that one" and "what do you mean by coordination" etc. Or you may need to ask them "why is there weak commitment in the various sectors?" and to their response ask deeper —"and why is that?" This line of questions will get to the root causes. These probes will identify more challenges/constraints and also will help them begin to see the connections and appreciate/reflect how these requirements represent an inter-connected system of factors.
11. Thank you. So we've been focusing primarily on requirements and challenges but now I would like to shift the conversation and talk about progress. Even though there are many huge challenges ahead, it is important to identify the progress that has been made and think about how that has happened. This is important for two reasons: it is important to recognize and celebrate the progress and because this may provide clues on how to make further progress. So I would like you to think about that last 1-2 years and tell me what changes you perceive over this period?	This one likely will require some probing. But first it is very important for us to learn what changes they perceive "off the top of their head" with no prompting from us. - As they identify things, simply note them and ask if there are any others - Then go back to each one and ask "tell me more about this one" and "how/why do you think this change has taken place?" As much as possible you should probe them for examples or evidence that supports the changes they are identifying.
12. OK, thank you, those are very interesting. Now I would like you to look again at the twelve requirements and see if you perceive any changes in any of these.	Here again, you may should probe with "tell me more about that" and "how/why do you think this change has taken place" and examples or evidence that supports the changes they are identifying.
13. Wonderful. Thank you. Now there is one more set of things I would like you to think about. This is another way of identifying changes that may be quite subtle and overlooked but could be quite important especially at the early stages of a country's efforts.	Here you should probe using our list of generic MSCs. These are: - mindsets, - behaviors/practices/ norms, - relationships and people/orgs involved, - questions being asked and people being asked, - meetings on MSN, - public discourse (media coverage, speeches, etc), new positions/actors, etc
14. OK. Thank you. One more question and it deals with coordination. If there is one word we hear over and over again in relation to MSN it is coordination. I am interested to know what you think about this word.	This should be an free ranging discussion but some of the prompts and things we are interested in are: What does it refer to? What needs to be coordinated? Who should be doing it? How should it be done? What factors get in the way of effective coordination? What skills are needed? What conditions must exist of it is to be successful? What would it look like if it were successful?
Thank the respondent and let them know the next steps for aggregating the information and feeding it back into the policy community to help advance the work.	

APPENDIX D: ANALYTICAL FRAMEWORK

APPENDIX E: REQUIREMENTS FOR AN EFFECTIVE AND SUSTAINABLE MSN

1. **Strategic capacities and adaptive management at national and subnational levels:** This refers to the collective capacity of people and organizations to align around the full set of requirements presented here. This requires formal and informal collaboration and a national core of leaders, champions, and supporters from many organizations.

2. **Common understanding and communication:** Stakeholders from national to community levels often have widely divergent views of nutrition problems and solutions. Diverse, frequent, and regular communication strategies are needed to promote and reinforce an integrated and balanced "food, health, and care" view of nutrition determinants at all levels and in all sectors.

3. **Coherent and authoritative policies and strategies and guidelines:** A coherent and authoritative set of policies and strategies are fundamental and enable all of the other issues in this list to be secured. Nutrition plans, programs, and guidelines often are intermediate steps, but ultimately legislative support is needed to ensure stable budgetary support and protection during political transitions.

4. **Consensus on actions:** Disagreements on nutrition-specific interventions, nutrition-sensitive policies within sectors, and implementation strategies can greatly impede progress. Strong guidelines are needed, along with formal and informal mechanisms for forging consensus when disagreements arise.

5. **Common results framework:** Detailing objectives, roles and responsibilities, expected results, targets, indicators, and data sources.

6. **High-level commitment, system commitment, and leadership at all levels:** High-level commitment and leadership is necessary but not sufficient. It must also exist at all levels within each sector, from managerial to frontline, and in development partners, civil society, and private sector as well as government ("system commitment").

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7. **Clear roles and responsibilities:** Defining clear roles and responsibilities for all sectors and focal points at all levels. Collaboration improves when the roles of individual team members are clearly defined, well understood, and reinforced with incentives and accountability.

8. **Consistent incentives and accountability:** Roles and responsibilities at all levels in each sector and for the coordination structures must be communicated, incentivized, and enforced to be effective. This often requires reconciling contradictions or inconsistencies between traditional sectoral roles and incentives versus nutrition sensitive ones, as well as revised job descriptions and performance metrics.

9. **Coordinated monitoring and evaluation, operations research, learning platforms:** The common results framework should be the basis for the M&E system within and across sectors. Major reforms in these systems may be needed, and this may require the attention and authority from the high-level coordination platform. A system for efficiently tracking and resolving implementation bottlenecks is needed at all levels and in all sectors. A culture of routinely adjusting program implementation at each level in response to M&E, operations research, and learning is required.

10. **Community, NGO, partner and private sector alignment:** The public sector cannot succeed alone. Each of these sectors, along with development partners, has key roles to play and must be engaged in appropriate ways at each level of the system.

11. **Capacities, facilities, tools equipment:** A strong capacity development plan with short-, medium-, and long-term objectives, financing, and results framework should be created as a high priority. Proper facilities, equipment, and tools should be in place.

12. **Consistent financing:** As nutrition becomes mainstreamed in sectoral work plans and national and subnational levels, the financing must follow suit. Government and partner financing must be consistent, stable from year to year, and aligned with these plans and the common results framework.

13. **Coordination:** A high-level platform with a strong anchorage is needed, as well as a technical platform, committed focal points from each sector, and effective working groups. Attendance and progress must be enforced from the high-level platform. Appropriate structures and mechanisms are needed at subnational levels as well. Essential, but not maximal, coordination is the objective.

APPENDIX F: THE INTERACTION OF ENABLING CONDITIONS, CHALLENGES, BSA PRACTICES, AND COMPLEXITY IN THE UNCERTAIN EMERGENCE OF ACCOMPLISHMENTS: A COMPOSITE CASE

This ANSP country has valued intersectoral synergies for nutrition since as early as 1999 when it created an intersectoral coordination committee for nutrition. It was anchored in one division of MOH until that division was abolished in 2007, leaving a void for multisectoral coordination for nutrition. In the meantime, many other agencies, commissions, and international programs had picked up various issues that influence nutrition and involved multiple sectors and ministries (context, enabling environment). The MOH nutrition leaders in place in 2012 capitalized on this opportune environment to develop am NNP with a strong multisectoral approach that included the coordination structures to operationalize it. The policy was officially authorized in 2013 (MSN hard accomplishment). This was followed by Renewed Efforts Against Child Hunger and Undernutrition (REACH)–facilitated meetings with representatives from various sectors working tediously to develop the Multisectoral Action Plan for Nutrition (MSAP) throughout the second part of 2013 (stakeholder engagement).

The BSA arrived in this country in the midst of this effort, as a foreigner with nutrition expertise but new to the country and its nutrition community and history, embarking on this fast-moving MSN train (BSA assets, challenges). The country was also under pressure by donors eager to see this new plan move forward, faster than the stakeholders' readiness (MSN challenges at individual, organizational, and system levels). The MSAP was launched in June 2014 (MSN hard accomplishment), and in early 2015, the government signed a decree defining the creation, mandate, and tasks of the coordination structures of the NNP (MSN hard accomplishments).

The NNP coordination structures involved a large number of people who were to play various roles as per the structure they participated in. These were the National Nutrition Council, the National Technical Intersectoral Committee, and its Technical Secretariat at the national level. At subnational levels, the coordination mandate of the NNP was assigned to the coordinating bodies of the subnational development plan. This established a straightforward

structural system for MSN implementation right from the get go, on paper (enabling environment), but with little or no true readiness to make it functional at the start-up. The National Nutrition Council that was composed of 17 ministers as well as representatives each from the administration, civil society, academia, and the private sector was to meet twice yearly. To advise the nutrition council and facilitate the implementation of the NNP, a National Technical Intersectoral Committee was set to meet twice yearly. Finally, the Technical Secretariat comprising 6 relevant members of the technical intersectoral committee was to broker and manage information within that larger body and organize its biannual meetings, while meeting twice monthly.

With these foundational documents now legalized and the structures having been defined and populated, the biggest challenges for all involved were to develop a common vision, collaborative leadership, and management and strategic planning capacities. For guidance, a key stakeholder was referring to a paper from an earlier era[74] warning of the pitfalls of the experiences with MSN in the 1970s, although it is unclear how many other people were familiar with it, and he was not aware of more recent guidance from the SUN movement or other sources. The SUN movement, REACH, and a World Bank consultant came to support the Action Plan costing exercise. And there was the ANSP project whose objectives—in a nutshell—were to help the country implement its MSN/NNP. Like elsewhere, for the most part, the country had little practical "how to" guidance and had to "learn as they go," together with the small group of MSN-dedicated national and international actors (MSN subset) to operationalize their fledgling MSN system (challenges).

The BSA had thus arrived at a very opportune time to participate in the NNP process, to foster stakeholders' engagement, colearn with them, and provide support for its implementation. This involved understanding the lay of the land, building trust and confidence, identifying assets and needs of various actors (and his own, in this new context), strategizing successful approaches, and deploying a set of tools and methods for which he was trained. Yet there was a broad array of possibilities (BSA opportunities), and given the diverse stakeholder views and dynamics and the need to "leave no one behind," knowing where and how to start was a challenge.

On the basis of previous experience,[42,53] the BSA was clear that the chances of success would be greatly enhanced by facilitating and capitalizing on the wisdom, assets, and networking capacity of a group of national MSN stakeholders capable of championing MSN. During several months, the BSA attended meetings, met with individuals, and observed firsthand the actors' dilemmas on how to get the system off the ground at both national and subnational levels. He listened, offered ideas when asked, and reflected back stakeholders' views. A 2-way trust quickly developed based on experiences of mutual respect and learning and the BSA's willingness to engage in reciprocity of services, while his rigor, sincerity, and ability to focus discussions earned him credibility. This led stakeholders to further recognize the added value of the ANSP and the contribution of the BSA to advance the country MSN agenda. Taking opportunities of ongoing processes such as REACH and SUN, the BSA promoted joint planning and coaccountability with these key strategic actors while strengthening government's ownership and leadership in the process.

Despite the formal establishment (on paper) of the MSN bodies to coordinate the NNP and its MSAP, there were delays in appointing members and operationalizing these structures. The BSA promoted the idea of a strategic move to establish subnational MSN platforms in the 2 target districts where, in the end, implementation is most crucial. Initially designed to promote multistakeholder involvement in the implementation of the ANSP project, the initiative ended up being the best practice for MSN implementation in the country. It led to the official establishment of the subnational MSN platforms, and its activities became critical for inspiring and informing national-level processes such as capacity building, meeting agendas, and the operationalization and reform of coordination structures.

Concomitantly at the national level, during the first year after the MSAP launch, multiple MSN operational scenarios were promoted by different stakeholders, including within the Technical Secretariat. This secretariat had a major role to play and took an interest in the BSA's suggestion for facilitated workshop to take a deeper look into the immediate challenges and strategies for operationalizing MSN. The BSA together with a subset of actors from the secretariat and the country ANSP steering committee (government SUN focal point, UNICEF, and a local NGO) with guidance from the Ithaca-based Cornell team began identifying/hiring an expert consultant and the venue and preparing workshop logistics.

This met with numerous challenges such as lengthy and rigid bureaucratic procedures in government and donor organizations, difficulty in identifying a consultant with expertise relevant to building strategic capacity applicable to

MSN, the politically sensitive process of identifying the key actors championing nutrition, the conflicting schedules of overcommitted members of the Technical Secretariat officers, and diverging approaches with other MSN actors, among others (MSN challenges). The partner community was fragmented, and it soon appeared that another MSN supporter wanted instead to promote the capacities of all members of the larger intersectoral committee, which would require an entirely different content and approach to the workshop. At first sight, this could have appeared as competition for the same funds and human resources for delivering the workshops and an overlap of participants (BSA challenge). While continuing to pursue an approach for strengthening the strategic capacities of the Technical Secretariat, plus a few others also championing nutrition, the BSA demonstrated flexibility and agreed to work with the other international organization and supported efforts to building capacities of the larger body (BSA asset: flexibility, capacity building). His strategy included fostering alignment of stakeholders through sharing information (knowledge brokering), raising awareness about the larger MSN perspective, and collaborating to planning the focus, content, organization, and implementation of the workshops (BSA strategy, flexibility and taking risks regarding funding availability and participant overload and attrition). Through his interaction with stakeholders, the BSA identified some key players in the nutrition community with strong potential to advance the nutrition agenda given their experience and leadership. Although they were not members of any official NNP coordination structure, on the basis of the BSA's suggestion they participated in MSN activities as an "extended" Intersectoral Technical Committee. A first set of successful orientation workshops were offered to the extended intersectoral technical body raising awareness about the NNP, its multisectoral approach, and the roles and responsibilities of various actors (MSN soft accomplishment). Although delayed several months, the strategic capacity building workshop eventually engaged actors from the Technical Secretariat and a few others from the nutrition community. It used innovative participatory approaches and focused on developing a systems perspective on MSN, strengthening the capacities to critically analyze the challenges at hand and the requirements to implement the MSN plan (MSN soft accomplishment).[†] Given the high expectation of the government for the strategic capacity workshop and as a result of the trust and credibility of the BSA, the Secretary General of the MOH, who chairs the Intersectoral Technical Committee, joined the workshop for a half-day question-and-answer discussion on critical issues that require the government's immediate attention to advance the MSN agenda. This led the MOH Secretary General to immediately invite this subset of actors to propose a clear plan of action and budget for the implementation of the recommendations that emanated from the workshop. A key outcome of this workshop was the need for the establishment of a nutrition coordination unit solely dedicated to the coordination of the implementation of MSN (buy-in, high-level commitment; MSN soft accomplishments) as the original structures comprised people who are already busy with their normal responsibilities and do not have enough time to focus on coordination activities, resulting in weak functionalities of the structures and irregularities of the meetings. At every step of this process, the BSA, as per his role, took many risks and took little direct credit for any achievements and constantly worked at aligning stakeholders to ensure progress and action and, especially to increase national actors' capacities for managing the MSN approach. Months later, he and others in the MSN subset supported the cascading of MSN structures, awareness, and capacities down to the emerging district-level platforms and beyond. Some representatives from the government who had participated in the national-level workshops decided to join in the delivery of these district-level workshops (high-level actors' appropriation of the approach). This enlightened both the district-level participants and the national-level representatives (enabling environment and MSN soft accomplishment), as mentioned above. It unexpectedly created a visible transformation in mindset especially to the national-level representatives. This in turn provided them with inspiration for how to proceed at the national level and especially with confidence in the potential performance of the district platforms and the potential for a fully operational MSN system to capture and address the communities' needs to reduce child stunting (MSN soft accomplishment).

[†]To ensure sustainability, a core group of 8 individuals from the MSN subset was trained on the use of some innovative participatory action research tools that will allow timely identification of implementation bottlenecks. The core group was also supported to develop a common vision and understanding of the system approach while stimulating their collaborative leadership capacity. Thanks to additional coaching/mentorship activities, 3 members of the core group including a faculty member of a national university and 2 NGO staff became certified instructors in fit-for-purpose participatory evaluations, strategic planning, and MSN group facilitation.