Implementation Science: Definitions and a Framework

From The Society for Implementation Science in Nutrition (SISN)

In the course of SISN's efforts to develop its strategic plan and engage with stakeholders (researchers and implementers) it has become clear that terms like implementation, implementation research and implementation science mean different things to different people. This note was developed in an effort to clarify and promote some common terms and understandings so that this field can move forward.

The Problem:

Poor nutrition is recognized as the biggest risk factor for morbidity and mortality worldwide. Over the past decade there has been increasing momentum within the global community to commit to "ending malnutrition in all its forms by 2030". Despite this unprecedented commitment, the Global Nutrition Report observed considerable variation in coverage across various interventions, as well as within and between countries. This demonstrates the persistent and significant gaps between global targets and actual achievements. Furthermore, the poor quality and coverage of the data itself hinders efforts to assess progress and establish accountability.

Together these observations highlight the profound challenge of translating the current evidence base and the collective will into high quality and sustainable implementation and impact at-scale. It is not enough to know that a nutrition intervention is efficacious; it is also necessary to identify and address barriers and enablers of effectiveness under large-scale, real-world conditions. Awareness of this need has stimulated interest in implementation science (IS) and also led to the founding of SISN.

Implementation science offers an opportunity for multiple stakeholders to engage in collaborative and sustainable efforts to advance our understanding of how interventions can work in 'real-world' settings. To that end it is important that the nutrition communities at global and country levels develop a shared understanding of the scope and breadth of decisions and processes that make up and affect implementation, the diverse forms of implementation research that can inform and strengthen implementation and the even broader and more immediate ways in which implementation science can inform and strengthen implementation.

Definitions and a Framework

Implementation involves *"systematic and planned efforts within a system (or organization) to introduce and institutionalize a policy, plan, program, intervention, guideline, innovation or practice and ensure its intended effects and impacts."* Building on some seminal reviews in the literature, SISN is embracing the view that implementation quality and impact is affected by the characteristics of and fit among five domains (**Figure 1**):

1. The **object of implementation** (e.g. a policy, plan, program, guideline, innovation or practice)

2. The **implementing organizations** and staff (e.g. an NGO versus a ministry of health)

3. The broader **enabling environment** and stakeholder interests and dynamics

4. The situation, needs and resources of **individuals, households, communities** and community actors

5. The **implementation** strategies and **processes** (from initiation to sustaining).

Figure 1. The Five Domains that Affect Implementation

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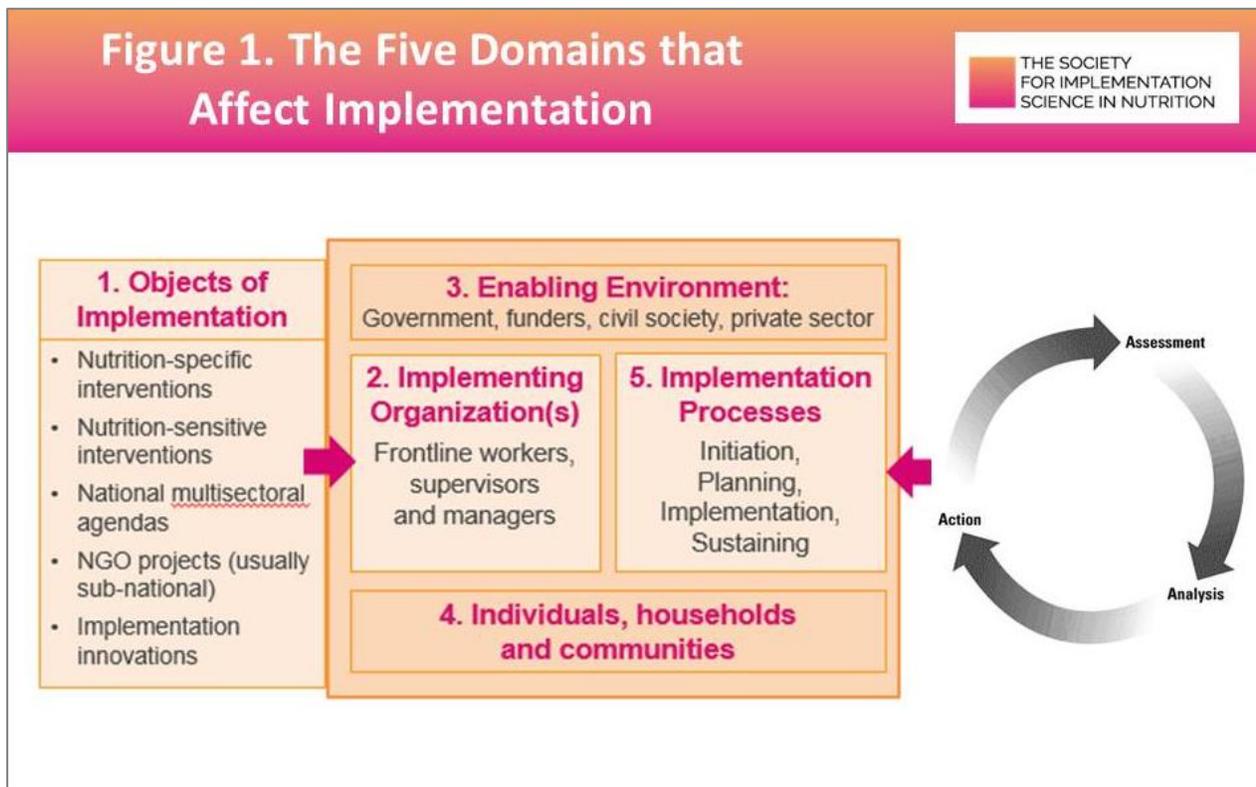
Implementation Research includes "a variety of methods of assessment, inquiry and formal research whose purpose is to systematically assess, build on strengths and address potential weaknesses within and between each of the five domains that affect implementation." Weaknesses could exist or arise in four broad functional areas or phases of implementation, specifically during:

1. **Initiation and Scoping** of interventions, platforms and partnership possibilities

2. **Planning and Designing** of implementation inputs, activities and strategies in greater detail

3. **Implementation, Iterative Improvement and Scaling Up** at field level

4. Generating and Maintaining **Commitment, Support, Financing and Sustainability**, as part of the enabling environment.

Some of the relevant methods are noted in **Figure 2.**

Figure 2. A Classification Scheme of Implementation Research

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Commitment, Support, Financing and Sustainability
cross-cutting governance functions that require diverse methods for stakeholder analysis, assessment of advocacy needs and opportunities, costing, capacity assessments, coordination, etc.

Objects of Implementation	Initiation and Scoping	Planning & Design	Implementation, Iterative Improvement & Scaling Up
Nutrition-specific interventions	diverse forms of assessments, stakeholder analysis, opinion leader research and consultations to guide: agenda setting, identification of policy/ program/intervention options and their fit with a) the problem and b) delivery capacities, and c) available collaborations/ partnerships.	diverse forms of formative research and consultations (at multiple scales/administrative levels) to guide the detailed design of policies/ programs/interventions and development of detailed implementation guidelines, guided by explicit PIPs or Theories of Change.	diverse forms of operations research, special studies, process evaluation, quality improvement/quality assurance schemes and monitoring and evaluation systems.
Nutrition-sensitive actions in various ministries / sectors			
A national multisectoral nutrition agenda			
NGO projects (typically sub-national)			
Implementation innovations			

Implementation Science as defined by SISN is *"an interdisciplinary body of theory, knowledge, frameworks, tools and approaches whose purpose is to strengthen implementation quality and impact."* Implementation science includes many forms of implementation research, as defined above, but it is a broader concept because it also includes a large body of theory, knowledge, frameworks and tools already available to strengthen implementation. A great deal is already

known about implementation, such that many of the most common mistakes could be prevented by applying current knowledge without the need to undertake new investigations. Thus, the most urgent need in nutrition implementation is to close the "knowledge utilization gap" by making these practical tools, frameworks and guidelines more readily accessible, through various forms of capacity building, technical assistance, coaching, knowledge brokering and dissemination.

An Integrative Framework for Implementation Science

Figure 3. brings all these concepts into a single picture. The following bullet points provide a way to "walk through" the figure and grasp the importance of each portion of the framework:

- There is a shared need and goal to **Assess, Build on Strengths and Address Weaknesses** in Varied Domains in a Timely Manner During All Phases of Implementation

- The most immediate and practical way to do this is to bring to bear existing and emerging knowledge on the science of implementation (**tools, frameworks and guidelines**), through the mechanisms and strategies shown (**capacity building, technical assistance, knowledge brokering, coaching,** etc.)

- These assessments, mechanisms and strategies can and should be informed and guided by
    1. **Contextual, tacit and experiential knowledge**
    2. **Implementation research in the context**, to provide practical and rapid feedback based on varied form of assessments, inquiries and analyses, and
    3. **Formal and rigorous research and evaluations** conducted over longer time frames to address critically important questions that can only be addressed in that fashion, especially when the findings may have broad applicability in many contexts. Such research and evaluations, along with contextual IR and contextual knowledge and experience, will contribute to the broader body of knowledge about implementation over time.

- Together, these three forms of knowledge constitute the **"Implementation Knowledge Portfolio"** and all three forms should be recognized and mobilized in an effort to improve implementation and impact.

In Closing

Over twenty-five years ago the UNICEF "food, health and care" conceptual framework was developed to help the nutrition community gain a common understanding of the causes of malnutrition. In like fashion, the framework presented here seeks to foster a common understanding of nutrition implementation and the ways it can be strengthened through the application of existing knowledge, tools and frameworks and through the generation and use of new knowledge from diverse and practical forms of assessments, inquiries and research. This is especially important for the emerging field of implementation science in nutrition because "nutrition implementation" is not one thing; it is complex; there are many objects of

implementation in nutrition; each has distinctive implementation requirements and challenges; and terms like "science" and "research" have particular and often limiting interpretations and connotations for varied stakeholders. Hopefully the present framework offers a foundation for implementers and researchers to gain a common "high-level" understanding, while further work continues to strengthen the science and practice of nutrition implementation.

Figure 3. An Integrative Framework for Implementation Science in Nutrition