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# Examples of 'systems thinking' projects in international development

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*15 March 2022*

## Question

*What are some examples of 'systems thinking' projects in international development?*

## Contents

# 1. Overview

**Short definition of "systems thinking" (ST)**:

A "systems thinking" approach generally recognises that international development processes are complex, inter-related, non-linear, and constantly changing. They involve many different types of actors, all with different levels of power. ST change methods try to mirror these qualities, and move away from more conventional project design and implementation that use simple linear input-output-impact project logic. Different definitions of ST may emphasise different elements.

**Scope of this rapid review:**

There are many other resources that offer guidance on using an ST approach, including principles, practices and helpful tools (see Further Resources). By contrast, the aim of this rapid review is to provide concrete examples of how ST shows up in the project design and management processes that are typically used by people working in the international development sector. These include project management arrangements, evaluation indicators, results frameworks, budget allocations and procurement, country diagnostics, and the foundational analysis that informs project design.

An attempt was made to find a range of projects from different sectors, and to go beyond projects that exemplified "Market Systems Development" and "Adaptive Management," for which there are already repositories of project examples (see Further Resources).

The inclusion of the projects in this review does not imply that they were successful, only that they contain some evidence of ST in them. Most of the projects identified have a further library of documents, including evaluations, that give more detailed information about their successes and failures.

**Key findings:**

In the search for examples of ST projects in international development, **this rapid review did not find "pure" ST projects.**

Rather, **there are some projects that have certain elements of ST in them**, often explicitly identified as such, sometimes not. The search is then dependent on first identifying some of the elements that may constitute an ST approach. For the purposes of this review, the search operationalised a definition of ST projects as containing one or more of the following elements:

- Cross-sectoral integration.
- Locally-owned problem formulation.
- Iterative and adaptive programming.
- Foundational analysis that draws on systems theory.

This review found that **projects focused on one sector**, particularly food or water, **had a more coherent integration of ST** compared to projects focused on other or multiple sectors.

**Evidence base:** The examples found were mostly extracted from donor project documents.

## 2. Cross-sectoral analysis and design: A decentralisation and health project.

One feature of ST can be analysis and programme design that **reaches across sectors**. Drawing on the idea of **interconnectedness** between different elements in a system, Abercrombie et al. (2018, p.19) describe a practice of "forging relationships **across traditional sector boundaries** or bringing together 'unusual suspects' who would not normally work together."

**Programme Example:** USAID, "Strengthening Decentralization for Sustainability" (SDS) in Uganda (US$69 million, 2010-2017).

**ST Element:** Focused on decentralisation, SDS is described as "a hybrid project addressing health, HIV, and governance," which crucially "was **designed and managed by a health team at USAID, not a democracy and governance team**" (Russell-Einhorn & Meagher, 2017).

**Implications:** In a 68-page independent case study, Russell-Einhorn & Meagher (2017) analyse several features of the project in depth. The following highlights some of the authors' findings on the cross-sectoral element of the project only.

Overall, the authors call the project "a promising model only partly applied" (p.10), and provide some **cautionary advice for others involved in cross-sectoral programme design**. Some weaknesses of SDS included:

- A **lack of coordination between the health and governance teams** in both the design and implementation phase. The evaluators partly place responsibility for this on a lack of "institutional leadership to spur active team collaboration in strategy and design" (p.56).
- **No overarching theory of change** which meant that the causal pathways by which district capacity-building would translate into better health service delivery were not clearly articulated.
- **Little investment in health policy reform advocacy,** which the evaluators speculate was because health teams tend to steer clear of policy work, believing it is not an area of expertise and distracts from the project's main service delivery objectives.
- **Health team's apparent unfamiliarity with political economy analysis**, leading them to underestimate the challenges of local capacity building.

Russell-Einhorn & Meagher (2017), alongside other evaluations and analyses of the SDS programme, also **note its many successes**, saying it "raised the quality of service delivery in some areas" (p.59), "greatly enhanced reporting and delivery of health outputs" (p.7), and was able to show many quantitative impact indicators (Cardno, undated).

Research for this rapid review found **no clear examples of logframes**, **theory of change, or impact indicators of its ST elements** that could easily inform others interested in designing similar interconnected cross-sectoral programmes. Indeed, such a lack of clarity in these normal management tools seemed to be a feature of the SDS programme as it changed, adapted and expanded during its seven years:

SDS fell victim to its own success. As it innovated, achieved, and demonstrated its flexibility as a successful platform, it attracted higher-level interest in the Mission. This resulted in the project's assuming the [District Operation Plans] work, as well as the later [Human Resources for Health], primary reading, and WASH activities. Such disparate, high-visibility demands discouraged reflection and learning, which might otherwise have led to stronger, more sustainable results consistent with the original capacity-building focus (Russell-Einhorn & Meagher, 2017, *Executive Summary*, p.10 of pdf).

Nevertheless, the authors note that **SDS' cross-sectoral work inspired subsequent similar programmes in USAID**, "aided by strong Mission leadership, more flexible contracting mechanisms, and increasingly useful cross-agency information sharing" (Russell-Einhorn & Meagher, 2017, p.55).

## 3. Indicators to evaluate systemic change: A water, sanitation and hygiene project.

In a review of evaluation practices for projects with ST elements, Gates (2017) notes that **evaluations need to be made compatible with these types of projects** "and the change processes they advance" (p.153). Typically, systems approaches emphasise the **relational elements of programme work**, and imply a more facilitative and advisory role for donor staff (Bowman et al., 2015).

**Programme Example:** WaterAid, "SusWASH programme" in Cambodia, Ethiopia, Pakistan and Uganda (£10.3 million, 2017–2022).

**ST Element:** Explicitly designed and implemented as a "system strengthening project for more inclusive and sustainable water, sanitation and hygiene (WASH)," the ST element highlighted here is **the indicators used to measure change**.

> *"A shift in focus towards system change requires a change in the way we measure change/success."*
>
> (Casey & Crichton-Smith, 2020, p.23)

**Implications:** WaterAid developed an "organisational system change measurement framework" for the project. This evaluation framework builds on "building block assessment" methods which were introduced by the World Health Organisation (WHO) for health systems projects in 2007 (WHO, 2007). WaterAid presents their **"system change measurement framework"** as enabling the "recording of information that **details interactions and leverage points, so we can capture how the system is functioning"** (Casey & Crichton-Smith, 2020, p.23).

In a separate more detailed publication (Kimbugwe et al., 2022), WaterAid authors recognise that **monitoring and evaluation of their systems projects requires a combination of different approaches**: "a combination of 'qualitative monitoring methods focused primarily on the process

of systems change, analytical monitoring and analysis of the overall structure of the system and actor networks and **the use of indicators or proxy indicators** that adequately capture impacts and results while also considering the complex nature of such impacts" (p.3 of pdf).

Some examples of the indicators used to measure system change are in Box One below. While they are specific to WASH projects, they also give an idea of the general level of indicators used.

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Box One: Example indicators used to measure system change

- **Government demonstrates greater commitment and leadership** for WASH.
- **Increased budget** for WASH, particularly capital maintenance costs.
- **Government** and service providers **use** WASH **data to inform their decision making**.
- **Communities actively engage with user feedback mechanisms** (particularly women and marginalised people).
- **Concerns raised by communities are addressed by service authorities**/providers in a timely manner.
- District **plans incorporate full life-cycle cost components**.
- **The Management Information System uses harmonised indicators** aligned to the WHO/UNICEF Joint Monitoring Programme (JMP).

(Casey & Crichton-Smith, 2020, p.23).

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# 4. Adaptive management: An investment climate project.

**Traditional development programming has been criticised for its assumption that problems are knowable in advance** and amenable to ready-made solutions (Ruffer et al., 2018, p.6).

One element of ST projects is the use of "adaptive management techniques" – a large and well-researched topic related to, but can be independent of, ST approaches. It acknowledges that **solutions to complex and dynamic development problems cannot be identified at the outset of a programme but need to emerge throughout the process of implementation** (Prieto et al., 2020).  In essence, adaptive management allows for project change during implementation.

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*Because social systems are complex and interventions can be unpredictable, there is no serious alternative but to take a flexible approach, learning and adapting as you go.*

(Abercrombie et al., 2018).

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**Programme Example**: DFID, "Legal Assistance for Economic Reform (LASER)," eight countries with conflict affected contexts (£4.3 million, 2014–2017).

**ST Element:** Adaptive management techniques.

**Implications:** A review of adaptive management techniques written by DFID personnel who worked in the project (Derbyshire & Donovan, 2016) provides some first-hand insight into designing, contracting and implementing adaptive programmes. **Some of the many practical tips from this document include**:

- Initial **results frameworks** *were* **included** in the first project design documents (in DFID parlance, the "**business case**"), but were explicitly understood to be markers that were likely to change in the course of the programme. The project documents provided a pre-defined menu of results at output level and agreed on a number of "stories of change" without specifying exactly what they would contain. **Country logframes were amended 11 times** in the first two years as country needs became clearer.
- Although conceived as a three-year project, LASER **initially tendered as a six-month design project**, with a clear expectation that this was the first step in a longer programme of engagement.
- The **use of short-term consultants was minimised**, with a small, close team of staff from the implementing agency complemented by a few longer-term technical associates. Staff were chosen for their expertise in adaptive management as well as technical skills.
- Reflection and learning were programmed into the initial design stage, with **35 per cent of LASER's budget assigned to a lesson learning** and influencing output.

## 5. Integrated results: A country strategy paper.

The **interconnectedness** which is a core feature of ST projects can also appear in the results frameworks of project documents.

**Programme Example**: USAID, "Country Development Cooperation Strategy 2016-2021: Uganda" (US$ Unknown (budget redacted).

**ST Element:** Integrated results framework. The country strategy document explicitly states that the results framework "is rooted in systems thinking" (USAID, 2016, p.17).

**Implications:** The report presents the **overall goal** of USAID's involvement in Uganda as supporting the country's systems to accelerate inclusive health, education and economic development. In order to achieve this goal, it presents **three development objectives**: population growth is slowed, a greater number of people are more resilient to stresses and shocks, and systems are responsive and accountable.

For the purposes of this rapid review, the key point is that **these development objectives are presented as "highly interdependent and mutually reinforcing"** – "Systems cannot be strengthened unless the demographic drivers are addressed and resilience of the people increased. Conversely, demographic drivers cannot be affected and the resilience of the people increased unless key systems are more accountable and responsive" (USAID, 2016, p.17).

The narrative of the report promises that the country strategy will pay "particular attention to the interrelated nature of problems" in the country (USAID, 2016, p.17). It plans to do this through **projects and activities that address intermediate results that are sometimes found in different development objectives** (see Figure One below).

However, the authors **struggle to represent this graphically**, stating that "the graphic representation of the integrated Results Framework appears vertical on paper and concerned with three separate objectives with mutually exclusive results. In reality, however, the framework tells a single story, with the [development objectives] and the [intermediate results] connecting both vertically and horizontally" (USAID, 2016, p.18). The authors say that the benefit of keeping them separate is that it "allows for monitoring and accounting for results."

**Figure One: Graphic representation of integrated results framework**

This image has been removed for copyright reasons.It can be viewed at https://www.usaid.gov/sites/default/files/documents/1860/PUBLIC_DRAFT.Uganda_2017-2021_CDCS_Final1.pdf

Source: **USAID, 2016, p.18**

In an annex, the authors represent a small part of the results framework in a different graphical form to try to better capture its interrelatedness (see Figure Two below).

**Figure Two: Wheel of intermediate results connections.**

This image has been removed for copyright reasons. It can be viewed at https://www.usaid.gov/sites/default/files/documents/1860/PUBLIC_DRAFT.Uganda_2017-2021_CDCS_Final1.pdf

Source: **USAID, 2016, p.121**

## 6. Locally-owned problem formulation: An agricultural market systems programme.

Market systems development (MSD) programmes seek to reduce poverty by making markets function more effectively, sustainably and beneficially for poor people (Delforce & Gill, 2018). Rather than directly delivering development resources like training or subsidies, MSD projects seek to modify the incentives of different "market players" - public, private, formal and informal (Beam Exchange, undated).

There is a large overlap between MSD and systems projects more broadly as both start with a systems analysis, imply a facilitative rather than direct role for donors, and recognise the importance of flexibility in project management. However, not all systems projects engage with market systems.

MSD programmes are highly contextual. Their design relies on the identification and analysis of how a market system, including its underlying functions or rules, is failing poor people and what is causing the status quo (Ruffer et al., 2018). Because these programmes are so context-specific, they need to be rooted in local knowledge.

**Programme Example**: FCDO, "Rural and Agriculture Markets Development Programme for Northern Nigeria (PrOpCom Mai-karfi)", Nigeria (£51 million, 2013-2021).

**ST Element:** Locally owned problem formulation. However, the extent of local stakeholder involvement in the first decision to pursue an MSD approach in contrast to other potential approaches is not clear from the documents reviewed.

**Implications:** Some ways that the programme was based on input from local stakeholders according to its final evaluation (Freer et al., 2018) are:

- It was a continuation of a previous nine year MSD programme in the same region, which meant that it built on existing knowledge and relationships.
- The design phase included widespread consultations with potential stakeholders to both discuss the programme's approach, and understand people's problems with market engagement.
- Evaluation of the project was ongoing throughout its implementation ("longitudinal"). This included 45 focus groups and over 100 individual interviews with male and female farmers, non-beneficiary farmers (in comparison areas), and people knowledgeable of the local economies. This information was fed into the project as it was implemented.
- Consultations with local people were filtered through existing local organisation, such as village leaders and farmer cooperatives, ensuring engagement was culturally appropriate.

## 7. Finding leverage points in a project's foundational analysis: A food systems research project.

Systems projects are often preceded by a period of reflection and analysis via a process of drawing up a **systems map** to reveal key dynamics, patterns and inter-relationships.

A primary goal of producing systems maps is to help programme designers identify leverage points for change - **places where relatively small changes can lead to larger shifts in the behaviour of the system** (Meadows, 2009, p.145). Meadows, a highly cited early scholar of systems theory, recognises the importance but also the **elusive character of leverage points**:

> *"Folks who do systems analysis have a great belief in 'leverage points.' These are places within a complex system…where a small shift in one thing can produce big changes in everything…the silver bullet…the miracle cure, the secret passage, the magic password…We not only want to believe that there are leverage points, we want to know where they are and how to get our hands on them. Leverage points are points of power."*
>
> Meadows (2009, p.145).

There is a sense in some of the literature that effective leverage points tend to be counterintuitive or not obvious (Ricigliano & Chigas, 2011, p.10). From the examples found during the course of this rapid review, explicitly identified leverage points in a system are not always particularly novel or surprising. Some examples of leverage points given for a WASH systems project are "insufficient local government capacity" or "annual budget allocation processes" (Huston & Moriarty, 2018).

**Example:** USAID, "Towards Safe & Sustainable Food Systems in Vietnam" (located on USAID website, but unclear if the research fed into a programme design).

**ST Element:** Locating leverage points in a pre-programme analysis.

**Details:** Slides from a presentation about USAID-funded research (Mayton et al., undated) show some of the steps taken to identify a leverage point to support sustainable food systems in Vietnam.

1. The research first identified eight domains of sustainable food in Vietnam: Environmental health; Food loss and inorganic waste; Food safety and water quality; Food production; Food processing and distribution; Food access and consumption; Socio-political context; Nutrition.
2. It then identified stakeholders and held a workshop with them to establish trust and partnerships for future project phases, gain insight on the priorities and perspectives within each domain, and facilitate interdisciplinary interactions between stakeholders across traditional specialisations of food systems.
3. The workshop led to several different possible policy options, such as modernising supply chains and retail, or incentivising private standards.
4. Public surveys then identified a substantial concern among consumers about food safety.
5. Through these steps, the research identified food safety as a key leverage point to support a sustainable food system.

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## Further Resources

Comprehensive collection of Market Systems Development (MSD) project examples, guides, and reflection:

- Beam Exchange, https://beamexchange.org/

Collection of resources for adaptive management:

- The Global Learning for Adaptive Management initiative (GLAM), https://odi.org/en/about/our-work/the-global-learning-for-adaptive-management-initiative-glam/

Selected systems thinking guides:

- Easily digestible overview: Bowman, K., Chettleborough, J., Jeans, H., Whitehead, J., & Rowlands, J. (2015). *Systems Thinking: An introduction for Oxfam programme staff.* https://oxfamilibrary.openrepository.com/bitstream/handle/10546/579896/ml-systems-thinking-151020-en.pdf?sequence=1
- Detailed examination of how internal donor processes need to change to support systems thinking projects. Focuses on MSD, but is more widely applicable: Ruffer, T., Bailey, H., Dahlgren, S., Spaven, P. & Winters, M. (2018). *Evaluation of the market systems development approach: Lessons for expanded use and adaptive management at Sida Volume I: Evaluation Report.* ITAD. https://cdn.sida.se/publications/files/sida62186en-evaluation-of-the-market-systems-devepment-approach.pdf

## Suggested citation

## About this report

This report is based on six days of desk-based research. The K4D research helpdesk provides rapid syntheses of a selection of recent relevant literature and international expert thinking in response to specific questions relating to international development. For any enquiries, contact helpdesk@k4d.info.

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