

'Good' Theories of Change

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Intervention

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What are ToCs?

- Models showing how interventions are expected to (or do) work
- Beyond that, no general agreement; hence the need to define what you mean by a ToC
- Furthermore, ToC can be seen as
 - A product
 - A process for agreeing and understanding
 - A framework for MEL
 - An intervention planning & design tool
 - A basis for theory-driven evaluation

What are ToCs?

- Examples, much less 'definitions', of what a ToC is are all over the map
- Often ToCs seem to be anything with boxes and lines/arrows that represent in some fashion an intervention
- Lots of criticism:
 - Just something dreamed up and hence of questionable validity
 - No or little empirical basis
 - Too messy to use: spaghetti maps
 - Too simplistic

Theories of change

- **Impact pathways/logic**
models/results chains show the logic of an intervention & key steps along the way to impact
- **ToCs** add the causal link
assumptions behind the pathway

What are 'Good' ToCs?

Adding to the confusion, there is much less written about what comprises a good ToC.

Most if not all interventions aim at changing the behaviour of target groups and/or institutions.

Hence for me, **a good ToC reflects this behaviour change** in an intuitive way.

Further, **a good ToC is supported by prior research**

Finally, **a good ToC is robust**: plausible and structurally sound.

Behaviour Change ToCs

- There has been extensive social science research on behaviour change
- There are a few behaviour change-based ToCs discussed, such as Bennett's hierarchy
- The common outputs, outcomes, impact ToC, I argue, is not that useful; not intuitive

Useful ToCs

I have written about behaviour change-based
'Useful ToCs':

Mayne, J. (2015). "Useful Theory of Change Models." *Canadian Journal of Program Evaluation* 30(2): 119-142. Available at https://evaluationcanada.ca/system/files/cjpe-entries/30-2-119_0.pdf

Since then I discovered an even better
behaviour change model:

Michie, S., M. M. v. Stralen and R. West (2011). "The behaviour change wheel: A new method for characterising and designing behaviour change interventions." *Implementation Science* 6(42): 11 pages. Available at

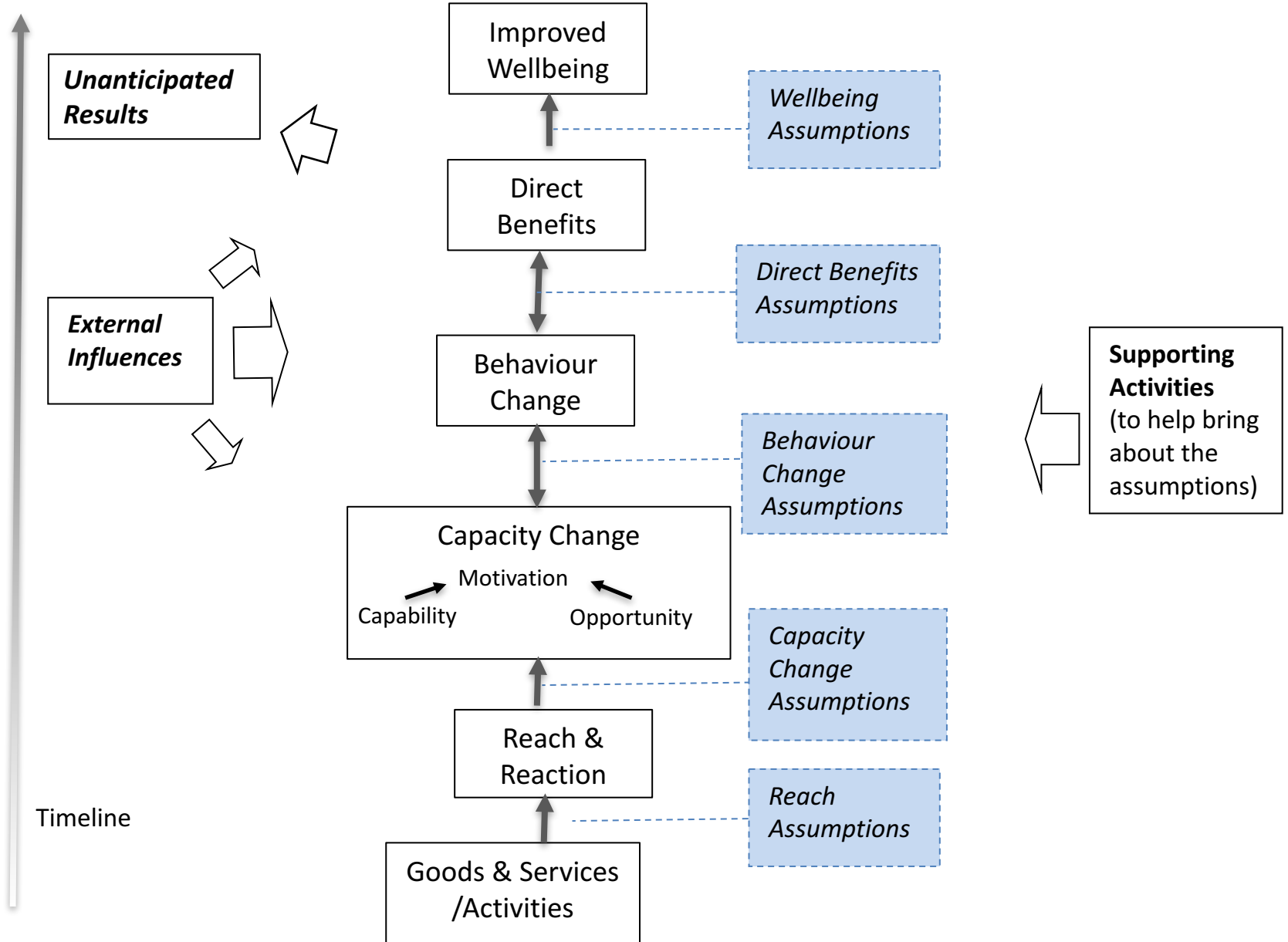
<http://www.implementationscience.com/content/pdf/1748-5908-6-42.pdf>

COM-B ToC Model

Behaviour change is brought about by three *necessary* elements

- *Capabilities* (knowledge, skills)
- *Opportunity* (all the factors that lie outside the individual that make the behaviour possible or prompt it)
- *Motivation* (habitual processes, emotional responding, as well as analytical decision-making)

The COM-B Theory of Change Model



Causal Link Assumptions

- Events and conditions that are (likely) necessary for the causal link to work
- They are NOT descriptions of the link
- The 'likely' allows for probabilistic interpretations: if the assumption doesn't occur, then the link is unlikely to be realized
- Can be based on prior research and/or experience, stakeholder beliefs, logical analysis

Supporting Activities

- Actions taken to help ensure that causal link assumptions are realized
- Often means engaging with other partners
- Results in a more complicated but more likely successful intervention—*a comprehensive or multifaceted intervention*

The Strength of the COM-B ToC Model

- Based on a social science theory of behaviour change, rather than the usual collection of ad hoc ideas and beliefs
- Provides a structured and intuitive way to develop a ToC
- Looks, but is not linear
- A great basis for developing ToCs in complex settings

Building a COM-B ToC

- Figure out the pathways to impact
- Develop initially in text, first setting out each step in the pathway, including when the steps are likely to occur
- Then add in the assumptions needed to get from step to step
- May then be able to *intelligently* simplify it
- Then can draw it
- Then get feedback on it
- Is the result a good ToC, or at least good enough?

Theories of Change as a Model of Contributory Causes

A ToC is a model of the intervention as an (INUS) contributing cause, identifying:

- The causal chain to impact (generative causality)
- The causal package (intervention outputs plus the assumptions)
- Explaining how and why intended results are expected to occur

Contribution Analysis

*Using a generative perspective on causality, CA shows that an intervention is a **contributory cause**:*

- The expected result occurred
- The ToC (causal package) is sufficient
 - support factors (assumptions) occurred and any other support factors have been included in the ToC
- The intervention is necessary for the ToC to be sufficient
- Can explore the role the intervention played, such as a trigger
- And can explore the contribution played by other influencing factors

Making a Causal claim

- Using the ToC models discussed, one can make credible causal claims about the intervention
- Provides a credible, theory-based and practical way to address causality without the need for counterfactuals

A Nutrition Intervention

This example is of an intervention aimed at improving the nutritional diets of young pre-school children in a particular region by providing knowledge and training to mothers.

The **theory of change narrative** would be something like:

By educating and informing mothers about the importance of a nutritious diet for their children, mothers will change their past behaviour and seek to improve the diets of their children.

The **rationale assumption** here is that better information will change behaviour.

Figure 1: A Nutrition Intervention Impact Pathway

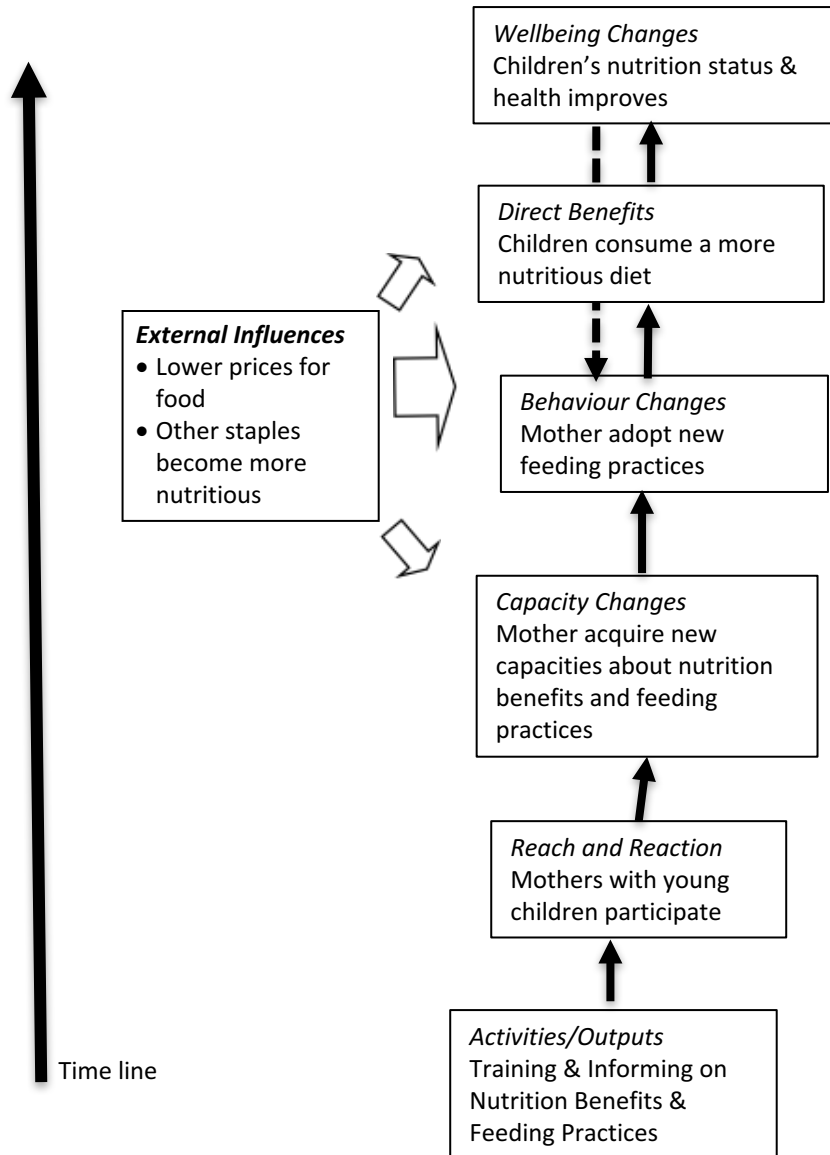
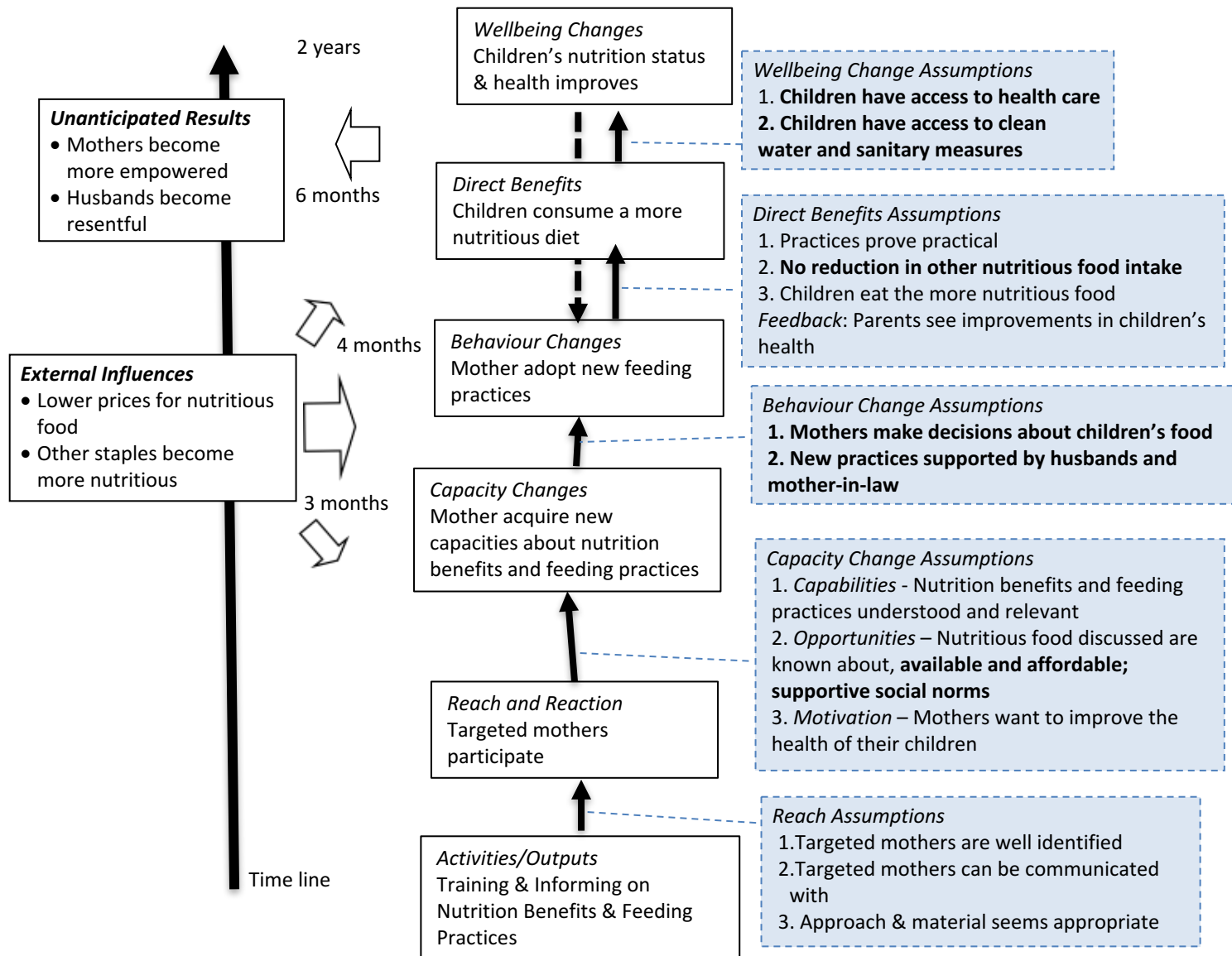


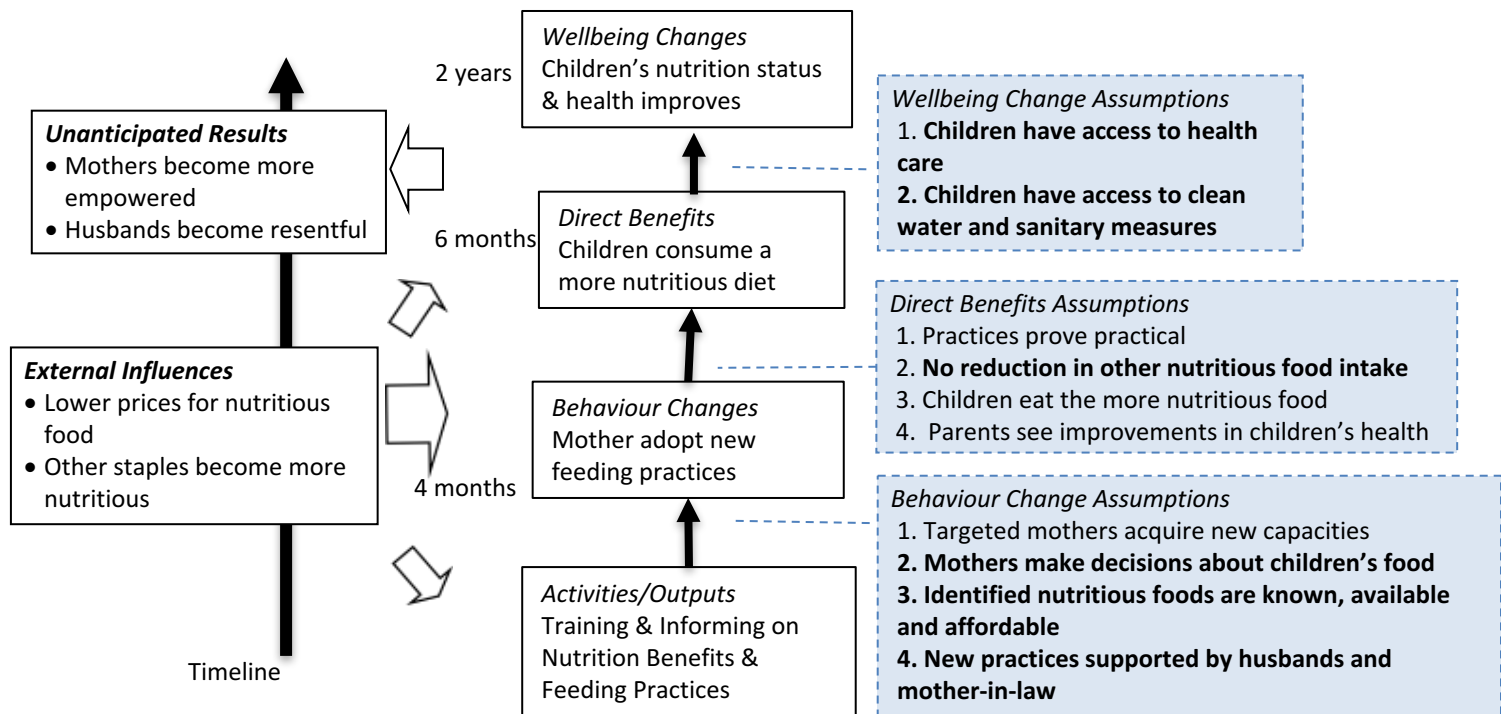
Figure 2: The Nutrition Intervention Theory of Change



Legend

Bold text – assumptions at-risk

Figure 3: A Simplified Nutrition Intervention Theory of Change



Legend

Bold text – assumptions at-risk

Notes

Enabling Environment (Context) – Nutritious foods available and affordable, new practices supported, mothers make decisions, children have access to health care, clean water and sanitation

Evaluation Questions

- Does the training work in changing mothers' behaviour?
- Do all children get the same food?
- Under what conditions does the intervention work?

Figure 3: A Simplified Nutrition Intervention Theory of Change

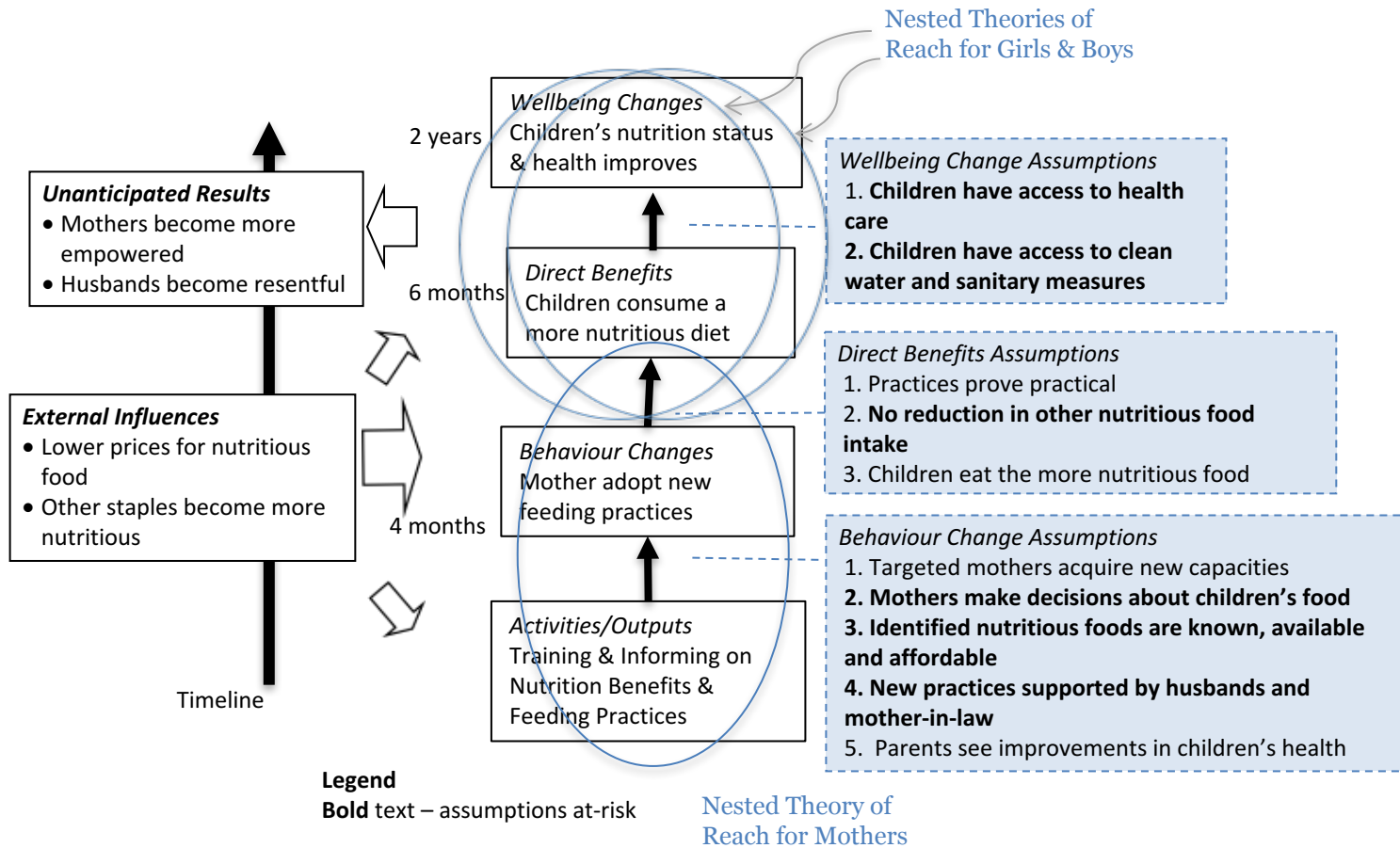
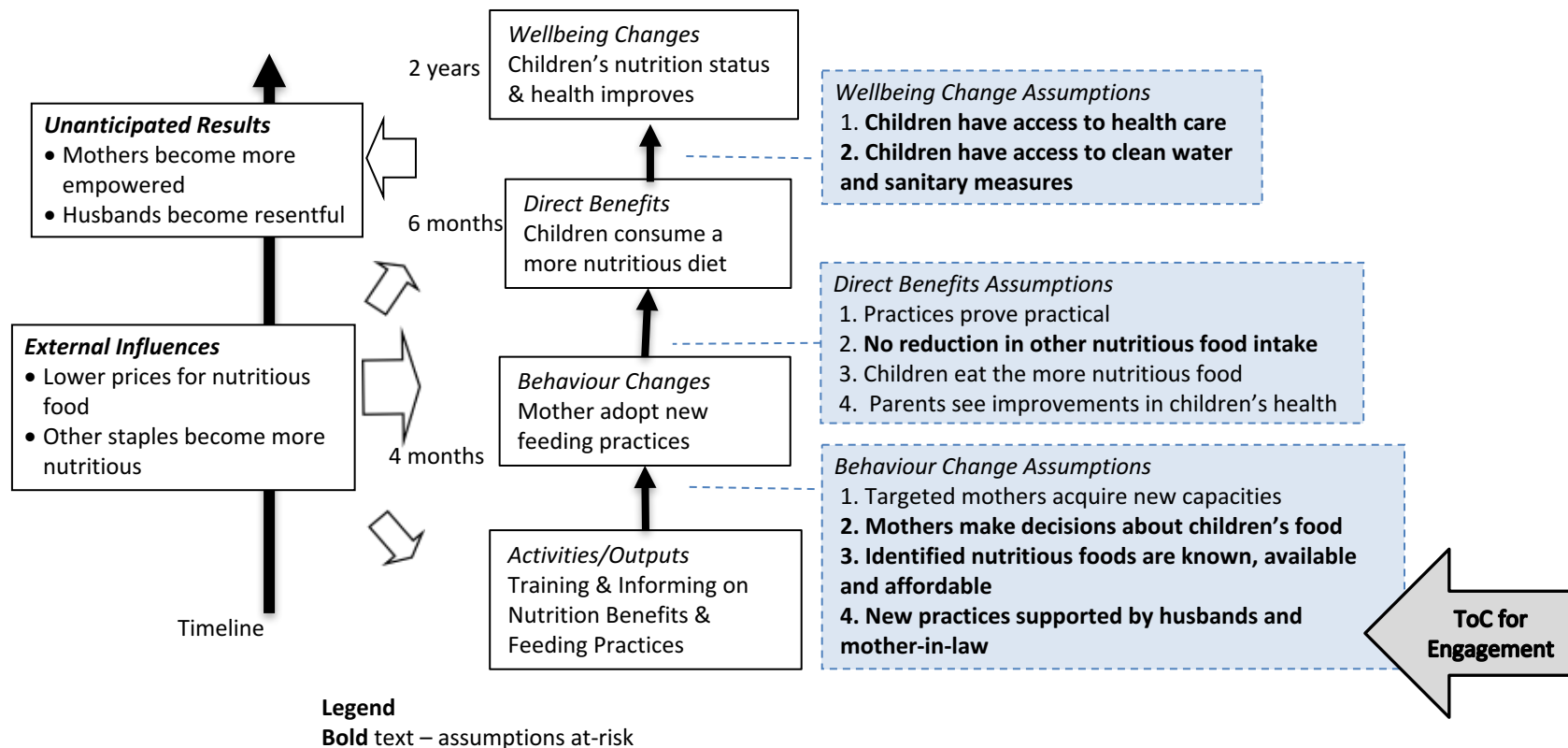


Figure 3: A Simplified Nutrition Intervention Theory of Change



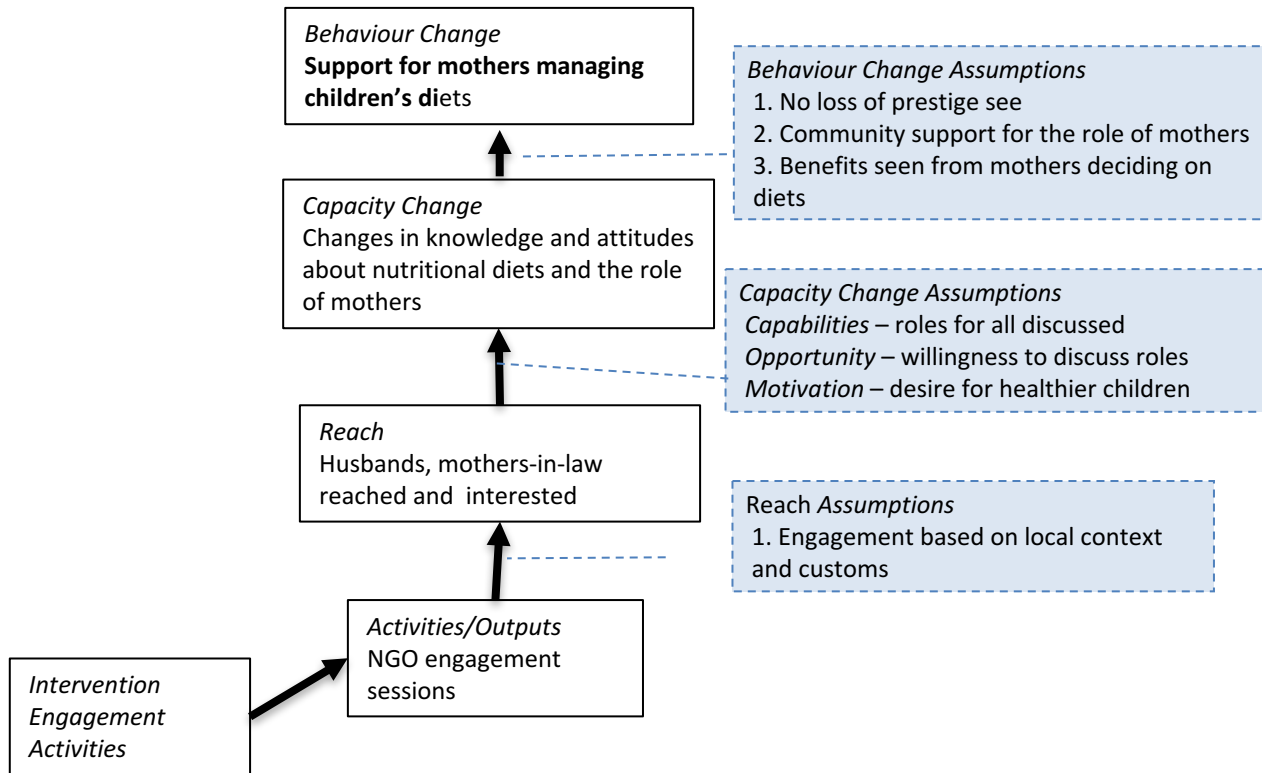
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Figure 4: Nested NGO Theory of Change for Engagement



Relation to Realist Evaluation

- Realist evaluation focusses on CMO configurations: **context + mechanisms produces outcomes**
- CMO configurations are causal links in a ToC. That is, they are the causal link assumptions + the 'cause'
- Mid-level theories are good ToCs

Generalizing

- Good ToCs support generalizing to other places
- Generalizing requires that the set of ToC assumptions can be transferred to another location

What is a Robust ToC?

- A robust ToC is:
 - Structurally sound
 - Plausible
- Robustness is needed to strengthen
 - Assessing intervention design
 - Concluding on the contribution being made

Robust ToC Criteria

For a **structurally sound** ToC:

- Is the ToC **understandable**?
- Are the ToC results and assumptions **well defined**?
- Is the **timing** sequence plausible?
- Is the ToC **logically coherent**?
- Are the causal link assumptions **necessary** or **likely necessary**?
- Are the assumptions **independent** of each other?

Robust ToC Criteria

For a structurally sound ToC that is **plausible**:

- Is the ToC generally **agreed**?
- Are the results and assumptions **measurable**?
- Are the causal link assumptions likely to be **realized**?
Are **at-risk assumptions** identified?
- Are the sets of assumptions for each causal link along with the prior causal factor plausibly **sufficient** to bring about the effect?
- Is the **level of effort** commensurate with the expected results?
- To what extent are the assumptions **sustainable**?

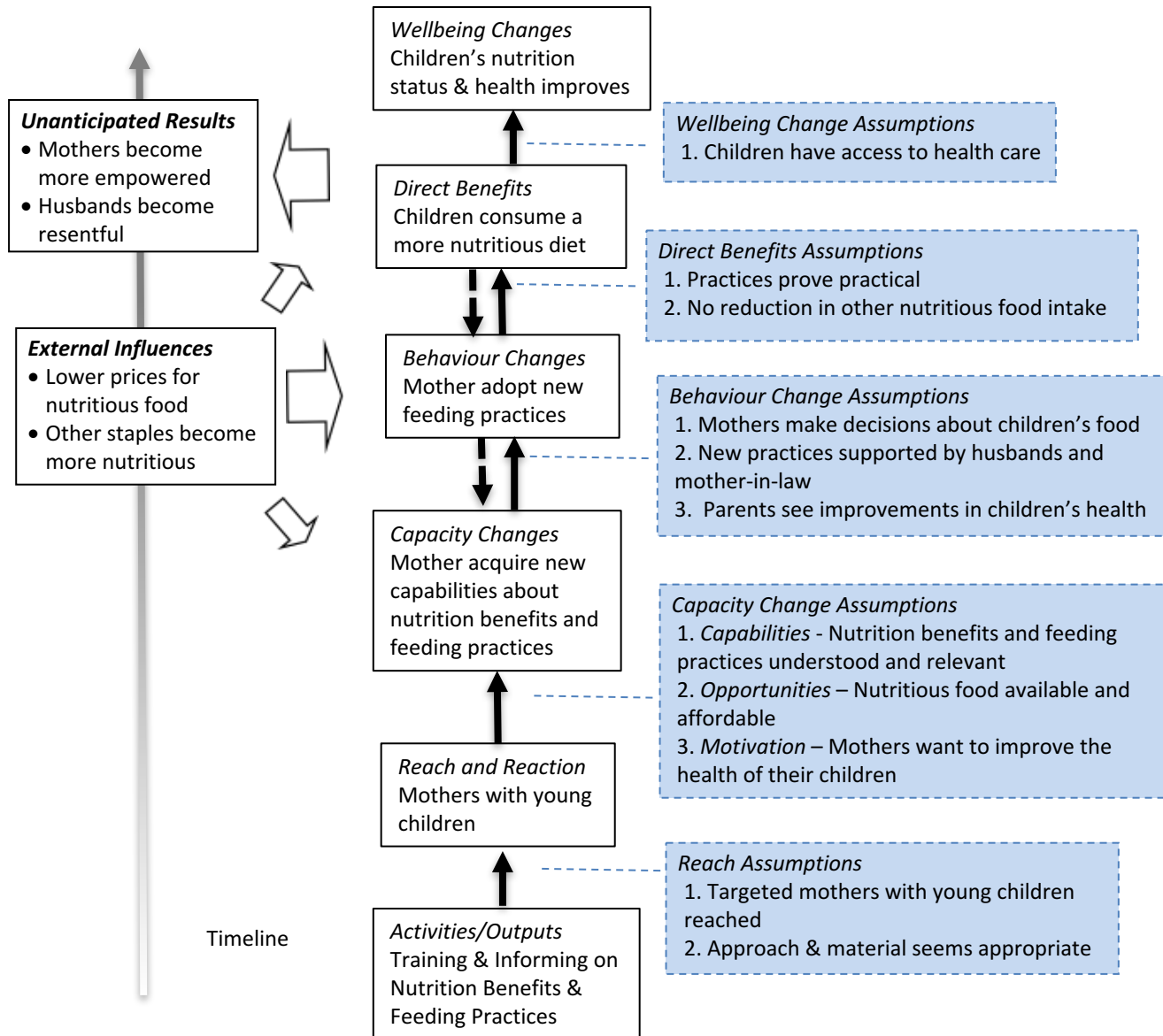
Criteria for a Robust ToC

Overall Criteria	
<i>Understandable</i>	Is the logic and structure of the ToC clear?
<i>Agreed</i>	To what extent is the ToC agreed or contestable?
<i>Level of effort</i>	Are the activities and outputs of the intervention commensurate with the expected results?
Criteria for Each Result	
<i>Well-defined</i>	Is the results statement unambiguous?
<i>Plausible timing</i>	Is the time frame for the result reasonable?
<i>Logical coherence</i>	Does the result follow logically from the previous result? Is the sequence plausible or at least possible?
<i>Measureable</i>	Is there a need to measure the result? How can the results be measured? What is the likely strength or status of evidence for the result being realized?
<i>M&E Implications</i>	What are the implications for monitoring and evaluation?

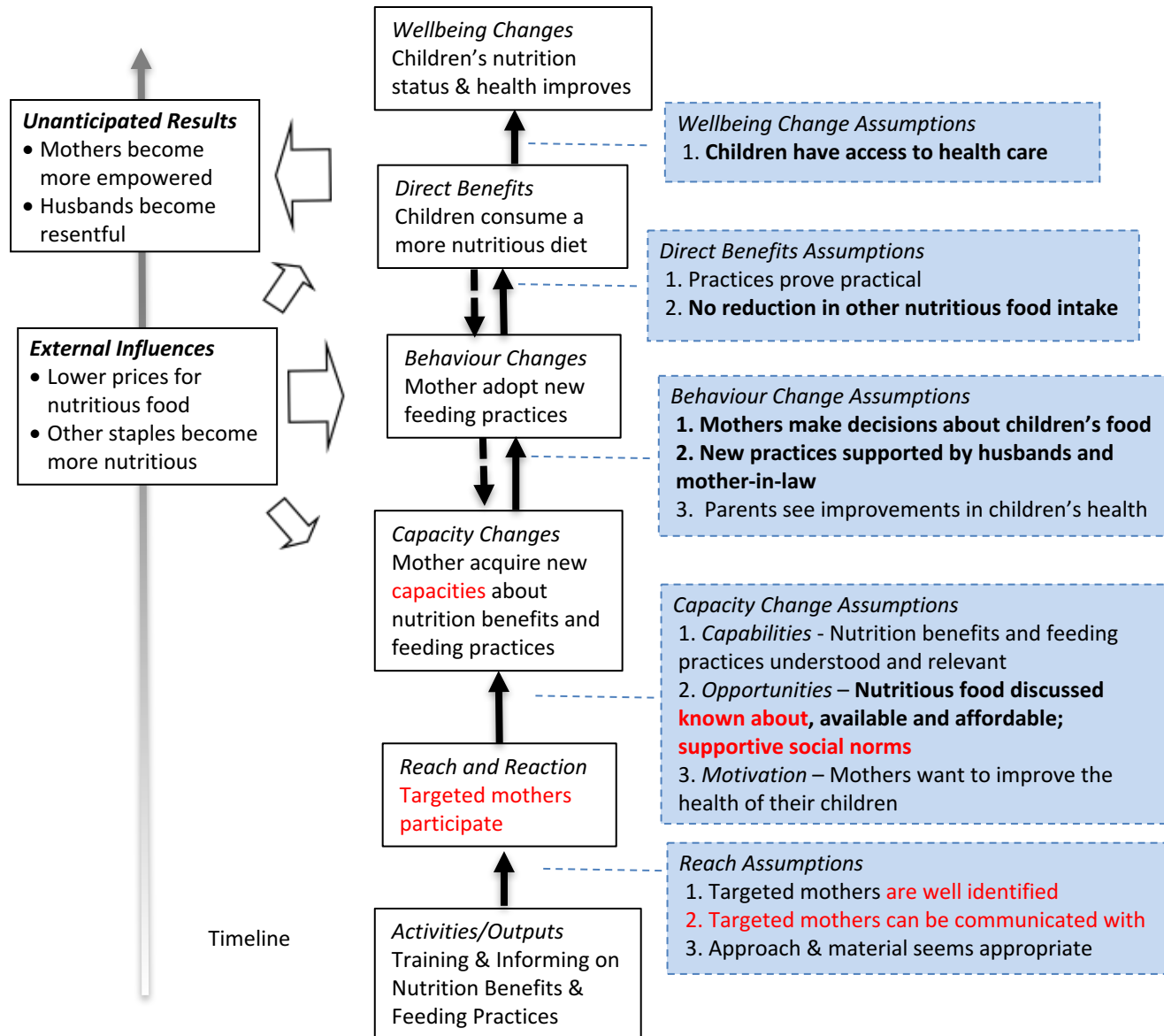
Criteria for a Robust ToC (con't)

Criteria for Each Assumption	
<i>Well-defined</i>	Is the assumption unambiguous?
<i>Logical coherence</i>	Is the assumption a pre-condition or event for the effect sought?
<i>Justified</i>	What is the justification for the assumption as being necessary or likely necessary?
<i>Realized</i>	Is it plausible that the assumption will be realized? Are there at-risk assumptions that should be addressed?
<i>Sustainable</i>	Is the assumption sustainable?
<i>Measureable</i>	Is there a need to measure the assumption? How can the assumption be measured? What is the likely strength or status of evidence for the assumption being realized?
<i>M&E Implications</i>	What are the implications for monitoring and evaluation?
Criteria for each causal link	
<i>Independence</i>	Are the assumptions for the link independent from each other?
<i>A sufficient set</i>	Are the set of causal link assumptions along with the prior causal factor sufficient to bring about the effect? Is the link plausible?
<i>Strength/Status of evidence</i>	What is the strength or current status of evidence for the causal link being realized?

A Nutrition Intervention Theory of Change (Original)



A Robust Nutrition Intervention Theory of Change



Legend

Red text – changes made in the original ToC to increase robustness

Bold text – assumptions at-risk

Table 1 Analysis of Nutrition Intervention Causal Link Assumptions

Causal Link Assumptions	Degree of Control	Supporting actions needed beyond core activities
<p><i>Reach Assumptions</i></p> <p>1. Targeted mothers with young children are well identified</p> <p>2. Targeted mothers can be communicated with</p> <p>3. Approach & material seems appropriate</p>	<p>Medium</p> <p>Medium</p> <p>High</p>	<p>Intervention needs to know its target population and how to communicate with them.</p> <p>Action: <i>Likely requires outreach efforts.</i></p> <p>Requires good planning and knowing the specific context.</p>
<p><i>Capacity Change Assumptions</i></p> <p>1. Nutrition benefits understood and relevant</p> <p>2. The nutritious food discussed in the sessions is known about, available and affordable;</p> <p>supportive social norms</p> <p>3. Mothers want to improve the health of their children</p>	<p>High</p> <p>Medium</p> <p>n/a</p>	<p>Requires good planning and knowing the specific context</p> <p>A prerequisite for the intervention. If not likely available or affordable, need a different type of intervention such as subsidies.</p> <p>Action: <i>Market research on locally available and affordable nutritious foods</i></p> <p>Also important to provide opportunity is that it is seen as acceptable for mothers to take decisions on what food their children eat. If this is not the case, then action is needed. [See below]</p> <p>Can be assumed</p>
<p><i>Behavioural Change Assumptions</i></p> <p>1. Mothers make decisions about children’s food</p> <p>2. New practices supported by husbands and mother-in-law</p> <p>3. Parents see improvement’s in children’s heath</p>	<p>Unknown</p> <p>Low</p> <p>Medium</p>	<p>Would require knowledge of the specific context.</p> <p>Possibly a key issue if social norms need changing.</p> <p>Action: <i>Need for engagement with husbands/mothers in law on need for better nutritional diets for children.</i></p> <p>One would assume there has been solid research about the effects of increased nutritious diet</p>

<p><i>Direct Benefits Assumptions</i></p> <p>1. Practices prove practical</p> <p>2. No reduction in other nutritious food intake</p> <p>3. Children eat the more nutritious food</p>	<p>Medium</p> <p>High?</p> <p>??</p>	<p>Action: <i>Could require monitoring to see if practices do prove practical in the specific context</i></p> <p>Should be part of the training: don't stop consuming other nutritious food. But, risk that husbands and mothers-in-law in households will insist on substituting.</p> <p>Action: <i>Need to engage with husbands/ mothers-in-law.</i></p> <p>Depending on what local nutritious food is available, might be an problem. Action: <i>need to monitor reaction of children to new diets.</i></p>
<p><i>Wellbeing Change Assumptions</i></p> <p>1. Children have access to health care, clean water and sanitary measures</p>	<p>??</p>	<p>Would probably just be assumed. If health services are a major problem, then might question the rationale for the intervention. Similarly for clean water and sanitation.</p>

Concluding Remarks

- Good ToCs are extremely useful in evaluation and in intervention design
- Provide a solid basis for theory-driven evaluations
- Including, I would argue, for realist evaluations

References

Mayne, J. (2017). "Theory of Change Analysis: Building Robust Theories of Change." *Canadian Journal of Program Evaluation* 31(2).

Mayne, J. (2016). *An Example of ToC Analysis*. Available at [https://www.researchgate.net/publication/305957815 An Example of ToC Analysis](https://www.researchgate.net/publication/305957815_An_Example_of_ToC_Analysis).

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