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A USER'S GUIDE TO THE KALEIDOSCOPE MODEL: PRACTICAL TOOLS FOR UNDERSTANDING POLICY CHANGE

By

Steven Haggblade and Suresh Babu











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The papers are aimed at researchers, policy makers, donor agencies, educators, and international development practitioners. Selected papers will be translated into French, Portuguese, or other languages.

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AUTHORS

Steven Haggblade is a Professor of International Development at the Department of Agricultural, Food, and Resource Economics, Michigan State University

Suresh C. Babu is a senior research fellow and head of capacity strengthening in the Director General's Office of the International Food Policy Research Institute, Washington, DC.

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1. INTRODUCTION

As governments across the globe increasingly recognize, favorable policy environments facilitate economic growth, while unfavorable policy regimes stymie development outcomes. The policy systems within which stakeholders interact to formulate and implement policies, therefore, become critical to the content and effectiveness of any given policy regime. Donors, likewise, harbor growing interest in policy systems, particularly in the wake of the recently adopted Sustainable Development Goals, the Paris Declaration for Aid Effectiveness and the ensuing demands to achieve and measure policy impact (see OECD 2014; White 2014). Together, national governments and donors claim common interest in improved understanding of policymaking processes and improved policy outcomes.

In response to growing interest by the development community in developing country policy systems, a team from the Food Security Policy Innovation Lab has recently developed a formal framework for studying policy systems and for identifying key drivers of policy change. The resulting framework, the Kaleidoscope Model, analyzes drivers of policy change in developing country policy systems (Resnick et al. 2015).

The Kaleidoscope Model (KM) pulls together evidence and experience from both the academic and donor communities to develop a practical framework for analyzing the policy process in developing country contexts¹. The framework draws on documented episodes of policy change from the public administration, political science, and international development experiences to inductively derive a set of variables that prove consistently important across multiple policy arenas and country settings. Focusing on five key stages of the policy cycle -- agenda setting, design, adoption, implementation, and evaluation and reform -- the Kaleidoscope Model identifies 16 key variables that define the necessary and sufficient conditions for policy change to occur (Figure 1). As the model's developers explain, *"The framework is termed the 'kaleidoscope model' because just as shifting a kaleidoscope refracts light on a new pattern, so does focusing on a particular stage of the policy process reveal a different constellation of key variables."* (Resnick et al. 2015, p.26). The FSP team has tested and refined the KM in six initial case studies, three examining micronutrient policy change (in Malawi, South Africa and Zambia) and three examining changes in input subsidy policies (in Ghana, Tanzania and Zambia).²

This document provides a practical guide for stakeholders interested in applying the Kaleidoscope Model in specific developing country policy settings. It serves as companion document to the detailed description of the structure and development of the Kaleidoscope Model as well as its theoretical and empirical underpinnings, provided by Resnick et al. (2015 and 2017).

¹ For examples from the academic literature, see for example, Binswanger and Deininger 1997; Grindle 2004; Pinstrup-Andersen 2014; Poulton 2014; Gillespie et al. 2013; Pelletier 2011; Shiffman and Smith 2007. For reviews of policy system applications in the donor community, see Snodgrass and Rice 1990; Nelson 1986; Resnick et al. 2015; Africa Lead 2016 and USAID 201 and 2015.

² See Babu et al. (2016), Haggblade et al. (2016), Hendriks et al. (2016), Mather and Nyangi (2016), Resnick and Mason (2016) and Resnick and Mather (2015).





Source: Resnick et al. (2015, 2017).

This user's guide outlines a series of diagnostic tools derived from the KM which may prove useful for any of the following purposes:

- improve understanding of a specific policy system structure and processes
- assess critical requirements for enabling policy reform in a given situation
- identify promising opportunities for policy reform
- identify effective partners and entry points.

2. DIAGNOSTIC TOOLS

The Kaleidoscope Model (KM) provides a structured framework for identifying the key factors that drive policy change. The model revolves around a series of 16 testable hypotheses summarized in Figure 1 across each stage of the policy process. In order to help interested stakeholders understand a specific policy system or policy outcome and to participate more effectively in that system, the model includes four basic diagnostic tools:

- policy chronology
- stakeholder inventory
- policy system schematic
- circle of influence.

Together, these diagnostic tools enable interested participants to systematically assemble evidence about policy processes, key players and forces driving specific policy outcomes. Already, the tools have proven useful in a variety of settings (see Babu et al. 2016; Haggblade et al. 2016; Hendriks et al. 2016; Mather et al. 2016; Resnick et al. 2016a,b). Interested practitioners can apply these tools in a specific country and policy context.

The discussion below outlines each of these tools in detail. For each of them, the discussion describes each tool and illustrates its application and interpretation using examples from recent policy work in Zambia. For purposes of continuity, this guide will demonstrate each of the KM tools in tracing the evolution of Zambia's vitamin A fortification policies.

2.1. Policy chronology

Interested stakeholders can apply the Kaleidoscope Model diagnostic tools to look forward or backwards. Looking backwards, the tools help to trace policy changes and understand the reasons for past policy outcomes. Looking forward, the diagnostic tools can help to identify promising opportunities for future policy reform.

The policy chronology provides a key starting point, in both applications. The chronology identifies major policy decisions as well as key individuals, interest groups, information and events shaping these policy changes. Table 1 provides an example from a recent study of micronutrient policy in Zambia. For additional examples, see Babu et al. (2016), Haggblade et al. (2016), Hendriks et al. (2016), Mather and Nyangi (2016), Resnick and Mason (2016) and Resnick and Mather (2015).

The policy chronology provides several benefits to interested stakeholders. It serves, of course, to identify the key players in a given policy system. In addition, the reconstruction of policy events, debates and outcomes helps to distinguish the highly influential players from the less influential and marginal actors. Moreover, the timing of key decisions and key influencing factors often helps to understand how to contribute most effectively to ongoing future policy discussions.

Construction of a policy chronology requires careful review of available policy documents as well as any government, donor or academic studies of the specific policy in question. Note the several dozen published and gray literature references populating Table 1. In the Zambia micronutrient policy study key overviews by Serlemitsos and Fusco (2001), Ellis et al. (2010), Chisanga et al. (2014) and CUTS (2014) provided invaluable documentation about key policy issues, evidence, players and outcomes.

Box 1. Pointers for studying policy change

1. Start with documentary evidence. Where available, written documentation can help to identify key policies, inflection points and to develop initial hypotheses about causes of policy change.

2. Interview key stakeholders. Documentation rarely suffices for understanding policy outcomes. Therefore, personal interviews with key players and observers becomes an essential complement.

3. Follow new leads. Over time, as you interview policy system stakeholders, your understanding of the policy process and the outcomes it produces will improve. Each respondent will offer new leads for you to follow.

4. Remember the retirees. Retired stakeholders often have long views and fewer axes to grind.

5. Ensure confidentiality. Respondents require confidentiality in order to speak freely.

6. Independently confirm key findings from multiple sources. Stakeholder memories frequently fade over time. Moreover, self-interest sometimes shapes recollections and points of view conveyed to probing outsiders. A mix of government, donor, private sector and academic interviewees typically provides good balance.

7. Stop when you get consistent answers.

In addition to published reports, policy diagnostics typically require in-depth interviews with key participants and observers of the policy system. In each of the micro-nutrient studies, the teams required a minimum of one intensive week of interviews followed by many months of follow-ups to fill in gaps and pursue leads uncovered in the initial interviews. In the process, the teams have picked up a series of useful lessons, summarized in Box .

Date	Policy Events	External Influences	Domestic Influences
1990		• UNICEF World Summit on Children	MOH begins VA supplementation
1993			• NFNC establishes Micronutrient Task Force
1995		• Tate and Lyle purchase Zambia Sugar	• Zambia Sugar privatized
1996	• Maize meal fortification fails: implementing stage veto player refuses		 DHS survey finds 68% VAD, despite large-scale supplementation NFNC seeks additional tools to combat VAD NFNC convenes vitamin A workshop; suggests maize meal fortification first, but millers object

Table 1.	Policy	Chronology:	Zambia	Vitamin	A Fortification
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1997		• USAID funds national survey on VAD	• national survey on VAD (NFNC 1997)
		• USAID funds visit by Dr. Omar Dary, a specialist with experience in Guatemala, to examine prospects for sugar fortification in Zambia	• Zambia Sugar expresses willingness to fortify sugar; requests \$1 million in donor funding for equipment and one-year supply of fortificant
		• USAID provides \$250,000 in equipment, chemicals and training (Serlemitsos and Fusca 2001)	
1998	• Sugar fortification mandated: SI 155	• FTF members visit Guatemala to investigate sugar fortification	• GOZ bans imports of unfortified sugar
1999			• Zambia Sugar threatens to discontinue fortification if illegal sugar imports continue
			• MOH agrees to improve enforcement of import ban on unfortified sugar
			• VA supplementation expanded to a national campaign with biannual mega-doses delivered through CHW campaigns
			• Kalungwishi Estate begins commercial sugar production, with under 1% market share
2000		• UNICEF supports testing and enforcement of sugar fortification	• MOH begins enforcement of sugar fortification mandate
		• USAID MOST project sponsors training workshop for VA	• NFNC establishes Suga r Fortification Technical Committee
		 inspectors NFNC expresses concern about advertising sugar as a « healthy » product 	• Zambia Sugar complains that Kalungwisihi Sugar's fortificant does not comply with fortification regulations
		• OAU summit Roll Back Malaria	
2001		• CIP launches its Vitamin A for Africa (VITAA) partnership among sweet potato breeders in Eastern and Southern Africa	• widespread smuggling of unfortified sugar from surrounding countries accounts for 10% to 25% of national consumption
			• ZNFU and Zambia Sugar protest lack of controls on sugar imports
2001		• Ilovo, a South African company, purchases Zambia Sugar	
2003		• UNICEF and other donors support VAD survey	• national survey on VAD (MOST,UNICEF,CDC, NFNC 2005)

			• ZARI releases 2 light orange sweet potato varieties
			• Kafue Sugar enters sugar market as 3 rd producer with 7% market share
2004		• Global Alliance for Improving Nutrition (GAIN) provides	• NFNC requests GAIN support to design maize meal fortification
		for maize meal fortification	• large maize millers test fortification and agree to cooperate
2006	• Maize meal fortification fails: government veto	• British Foods buys controlling interest in Ilovo, and hence in Zambia Sugar	CCPC investigates complaints of high sugar prices by large sugar users ZABS works with fortification task
	player intervenes	• GAIN comes to Zambia to help NFNC promote maize meal	force and industry to prepares standards for maize meal fortification
		fortification with vitamin mineral multi-mix	• Office of the President orders MOH and ZABS to stop preparing maize meal fortification standards
2007		• HarvestPlus approaches ZARI about breeding vitamin A rich maize	• ZARI begins breeding for vitamin A traits in maize, using varieties supplied by CIMMYT through HarvestPlus
2008			• sugar prices spike by 150%, triggering widespread public awareness of high domestic sugar prices
2009	• Sugar fortification reform effort fails: government veto players		• Parliamentary Committee on Economic and Labour Affairs calls for policy change (dropping vitamin A fortification mandate) to improve sugar market competition
	refuse parliamentary review request		• NFNC defends fortification policy (Lusaka Times 2009)
2010		• ODI study of oligopoly in Zambian sugar market concludes that oligopoly combined with lack of import competition enables excessively high domestic sugar prices (Ellis et al. 2010)	
2011			• ZARI submits 4 varieties of bio- fortified sweet potatoes for SCCI review
2012		• ACF regional study concludes that Zambia Sugar exerts	• ZARI releases 3 varieties of bio- fortified "orange" maize
		monopoly power to raise sugar prices (Chisanga et al. 2014)	• UNZA study concludes that sugar fortification mandate constitutes a non-tariff barrier, reduces competition and enables local sugar oligopoly to charge high prices for sugar (Kalinda and Chisanga 2012)

2013	 UNICEF hires fortification consultant to explore maize meal fortification for a third time given prior concerns, the consultant recommends voluntary fortification 	• President's Office phones ZARI to ask if orange maize is GMO
2014		• IAPRI study concludes that sugar fortification limits imports, enabling local sugar producers to charge excessively high prices (Chisanga et al. 2014)
2014		• CUTS study examines reasons for Zambia's high sugar prices (CUTS 2014)
		• CCPC indicates that lack of competition leads to excessively high sugar prices (Chanda 2014)
		• NFNC convenes breakfast briefing session to discuss sugar pricing and VAD; defends sugar fortification policy to the press (Chanda 2014)
2015		• ZARI releases 4 varieties of orange fleshed sweet potatoes

Source: Haggblade et al. (2016).

2.2. Stakeholder mapping

Policy processes typically involve multiple actors. In the Zambia micro-nutrient case studies, donors, national ministries, and academics all played a large role in agenda setting and policy design options. While government's cabinet made the key policy decisions in this case, implementation rested largely with the private sector, the sugar companies and maize millers in the case of the failed efforts to mandate fortification of maize meal. The monitoring stage involved not only government agencies but also major expenditures by donors, research efforts by research institutions and think tanks.

To understand any given policy system, the second major diagnostic step involves identification and mapping of the key stakeholders. The Kaleidoscope Model deploys three tools for this purpose:

- Stakeholder inventory (Table 2)
- Policy system schematic (Figure 2)
- Circle of influence (Figure 3)

The stakeholder inventory lists the key stakeholders, their roles, resources and policy stances. Zambia's micro-nutrient policies naturally involved many government stakeholders, including multiple ministries, labs and coordinating agencies (Table 2). In addition, parliament played a key role in focusing debate on the unintended consequences of sugar fortification mandate in stifling imports, limiting competition and raising domestic sugar prices. Private sector firms played a key role in implementation. Refusal by maize millers forced government agencies to shift from their preferred fortification vehicle and major food staple (maize meal) to instead look at alternatives, such as sugar, where local monopolist proved more willing. Donors played a critical role at all stages – financing many of the international conferences that served as rallying points focusing policy attention as well as many of the studies and implementation costs. Not least, researchers played a significant role in micro-nutrient policy discussions, particularly in the case of mandatory sugar fortification, which many researchers believe stifled competition and enabled local monopoly suppliers to raise up domestic sugar prices arbitrarily (Ellis et al. 2010; Chisanga et al. 2014). A recent study by a local think-tank summarizes the situation as follows:

"Zambia Sugar has embraced fortification, which has also served to control the influx of cheap imported sugar to the Zambian market millers, wholesalers and retailers are probably overpricing sugar in the domestic market despite having comparative advantage and surplus production" (Chisanga et al. 2014b: 19-20).

Institution	Category	Role	Resources	Influence	Policy Stance
МОН	Government	 issue regulations enforcement education manage public health campaigns 	• limited	• large	• champions all forms of VA fortification, supplementation and bio- fortification
MCDMCH	Government	• implement public health programs (supplementation, CHW, bed nets, immunizations)	• limited	• large	• pro VA promotion
NFNC	Government	 identify key issues and policy options monitor implementation advise MOH and GOZ 	• limited	• large	• champions all forms of VA fortification, supplementation and bio- fortification
FTF	Government	• identify fortification opportunities	• mostly donor-supplied	• large	• champions fortification
ZABS	Government	• set standards & testing protocols	• limited	• large	• neutral
FDCL	Government	• tests samples	• limited	• limited	• neutral
МОТ	Government	• enforces import ban on sugar	• limited	• large	• intervened to stop CCPC inquiry into sugar market oligopoly
MAL	Government	 crop breeding for biofortification enforces import ban on sugar 	• limited	• large	• champions bio- fortification
ССРС	Government	• monitors competition levels in local industries	• limited	• limited	• neutral
Parliament	Legislature	passes legislation monitors competition	• limited	• large	• questions competitiveness of sugar market
Zambia Sugar	Private sector	 produces over 90% of Zambia's sugar fortify sugar 	• large	• large	• strongly supports VA fortification

Table 2. Stakeholder Inventory: Key Players in Zambia's Micronutrient Policy Processes

Small sugar producers	Private sector	• fortify sugar	• small	• limited	• support VA fortification
ZNFU	Private sector	 represents farmer interests protest illegal sugar imports 	• moderate	• large	• support import ban on sugar
CUTS	Civil society	• protect consumer interests	• limited	• moderate	• questions VA fortification and its resulting restraint on competition
UNICEF	Donor	fund studiesfund testingfund educationtechnical assistance	• large	• large	• champions all forms of VA supplementation, fortification and bio-fortification
USAID	Donor	• ditto	• large	• large	• ditto
ODI	Donor	• conduct sugar market study	• moderate	• limited	• questions VA fortification and its resulting restraint on competition
TDRC	Researchers	empirical research inform policy makers	• limited	• large	• promotes all programs that reduce VAD
IAPRI	Researchers	• empirical research on sugar markets	• moderate	• limited	• opposes sugar fortification
UNZA	Researchers	• empirical research on sugar markets	• limited	• limited	• research suggests VA fortification confers monopoly advantages and raises prices
ACF	Researchers	• promote competition	• moderate	• limited	• question VA fortification and its resulting restraint on competition

The policy system schematic, in turn, describes functionally how these key players interact in setting policy agendas, designing policy options, decision-making, implementation and monitoring. The Zambia policy system schematic in Figure 2 highlights key differences in implementation responsibility across different nutrition policies. While government agencies (clinics and schools) implement micro-nutrient supplementation programs, bio-fortification involves government breeders and farmers, and food fortification requires implementation by private sector food processors. In cases such as these, where implementation depends on private sector compliance, trade organizations and even powerful individual firms become de facto veto players.



Figure 2. Policy System Schematic: Zambia's Micronutrient Policy Processes

The circle of influence graphic, adapted from Grindle (2006), describes pictorially the key players and their positions. As demonstrated in Figure 3, the big shift in policy dynamics involved the emergence, over time, of significant opposition to the policy of mandatory fortification of sugar. A regional study by ODI summarizes this growing tension as follows:

The government argues that a large part of the Zambian population suffers from vitamin A deficiency, and since sugar is a staple commodity, it is a good medium through which to provide vitamin A to the people. However, many stakeholders outside the Government and the sugar industry consider fortification to be a mechanism for protecting the Zambian sugar market from foreign competition. (Ellis et al. 2010: 5)



Figure 3. Circle of Influence: Changing Views on Vitamin A Fortification in Zambia

3. USING THE KALEIDOSCOPE MODEL TO ANALYZE DRIVERS OF POLICY CHANGE

For most operational purposes, the four diagnostic tools presented in chapter 2 will suffice. However, for forecasting purposes and for more rigorous academic research, the formal hypothesis testing tools described in this chapter become important. A growing body of analytical work has used the KM to formally test hypotheses about what factors prove critical in enabling past policy changes (see Hendriks et al 2017; Resnick et al. 2017 and Haggblade et al. 2017).

Forward-looking identification and ranking of opportunities for successful policy reform depend on this growing body of evidence. As patterns emerge and as knowledge accumulates from the formal hypothesis testing studies, it will become possible to develop simple rating tools for ranking policy reform opportunities in terms of likelihood of successful reform.³ The following discussion presents the KM hypotheses, data requirements and standards of evidence required to accept or reject key hypotheses about the key factors driving policy reform.

3.1. Testable hypotheses

The Kaleidoscope Model revolves around 16 testable hypotheses about the proximate causes of policy reform. The inner circle in Figure 1 enumerates these 16 hypotheses, while Table 3 describes them formally. For convenience of exposition, the model lists each variable at the policy stage where it typically influences outcomes most directly. Nonetheless, as many students of the policy process have observed, policy change often involves iterative and nonlinear trajectories, with substantial feedback loops as past decisions influence future policies (see John 1998; Sabatier 2007). Similarly, particular variables may influences outcomes at multiple stages. Knowledge and research (variable #4), for example, clearly affects design options but also frequently motivates agenda setting as well as monitoring and evaluation. Rather than listing each variable multiple times, at every point where it may potentially prove relevant, the KM lists each variable only once, at the stage in the policy process where it typically takes precedence.

In addition to these primary causal variables, an array of contextual conditions envelop the policy environment and shape its contours. Macro-economic conditions, for example, often shape prices, private sector motivations and government's budgetary resources. Similarly, material conditions, such as asset distribution, poverty rates, available technologies, soil structure and climate, also shape the intensity of specific policy problems as well as feasible design options. To illustrate influences, the outer circle of the KM wheel includes a non-exhaustive list of these contextual conditions.

³ Resnick et al. (2017b) provide an initial effort to summarize and generalize from findings available to date in 50 episodes of policy reform.

Table 3. Kaleidoscope Model Hypotheses

PolicyDeterminants of PolicyStagesChange		Hypothesis	Measurement
Agenda setting	1. Recognized, relevant problem	A concerned constituency identifies a relevant problem based on credible evidence or popular perception	Identify evidence used to document the problem and measure its significance. Identify the constituency concerned.
	2. Focusing event	A well-defined event focuses public attention on a problem or creates a window of opportunity for policy change	Define the specific event that put a specific issue on the policy agenda.
	3. Powerful advocates	Strong individuals, organizations, or companies support a new or changed policy to key decision makers.	List actors lobbying for policy change.
Design	4. Knowledge & research	Evidence-based knowledge shapes feasible design options.	List existing or commissioned case studies, research, or examples that informed the design of the policy program.
	5. Norms, biases, ideology & beliefs	Beliefs and biases shape the range of design features that are acceptable	List norms or beliefs that influenced policy design and to whom they belonged.
	6. Cost-benefit calculations	Expected costs and expected benefits (political, economic, social) determine preferred design.	List particularly salient costs or benefits that influenced policy design.
Adoption	7. Powerful opponents vs. proponents	 For a policy to be adopted, supporters must be relatively more powerful than opponents. For a policy to not be adopted, opponents must be relatively more powerful than supporters. 	List the supporters and the opponents of the policy drawing from government, private sector, civil society, donors and other international groups.
	8. Government veto players	•For a policy to be adopted, government agents with ultimate decision-making power must be supportive or neutral.	List government decision-makers with ultimate authority. Classify actors as proponents, opponents, or neutral. Identify if the veto player opposed reform (negative) or allowed it to proceed (positive).

		•For a policy to be vetoed, government agents with ultimate decision-making power must be an opponent.	
	9. Propitious timing	Supporters wait for opportune moments (political, economic, social) to push policy change.	Identify if timing (political, economic, social) was leveraged to help increase the probability of program adoption. Identify the specific event and how it influenced the probability of adoption, with specific reference to when it occurred vis-a-vis the period of adoption.
Implementa tion	10. Requisite budget	Government or donors provide fund sufficient to carry out the new policy or program as intended	Identify if funding for the program was sufficient for the new policy over time. Also note if there were periods when funding was not sufficient and the program deviated from stated intent.
	11. Institutional capacity	Government, organizations, or companies were available and able to practice and manage the new policy or program as it was intended	List the actors tasked with program implementation. Consider the following factors: 1) Did they have the human resources to implement the program as designed? 2) Did they have the capacity for monitoring and oversight? 3) Did they have the ability to engage in inter-ministerial coordination, if needed? 4) Did they have the decentralized infrastructure to do this, if needed?
	12.Implementing stage veto players	Designated implementers from the private sector, NGO or local agencies have both incentives and willingness to implement the policy program	Did private sector, NGO or local agency implementers or refuse implementation? Why?
	13. Commitment of policy champions	Strong individuals, organizations, or companies continued to publicly support the program	Identify any strong proponents who acted as a watchdog to ensure the program was operating as intended.
Evaluation & Reform	14. Changing information & beliefs	New learning emerges that impacts how decision makers believe the policy/program should be structured	List new information or beliefs that emerged post-implementation and influenced how policymakers think programs should be structured.
	15. Changing material conditions	Available resources, technology, or policy relevance has changed since the policy was originally implemented	List changes in the policy environment (resources, problem status, technology) that influence the need for the operation of the program.
	16. Institutional shifts	New actors enter the policy arena as the result of elections, cabinet reshuffle, or new staffing	Identify key changes in policy institutions: new administration, new minister, new policy architecture. What new perspectives and priorities did the new players bring to the policy debates?

3.2. Data sources

Data for testing the KM hypotheses come from two principal sources. The first includes a range of secondary resources, including academic articles, parliamentary hansards, media reporting, donor reviews, and other gray literature. In addition, full understanding of policy processes and outcomes requires qualitative, semi-structured interviews with knowledgeable stakeholders and observers. Although interview numbers vary according to the complexity of the system under review, past work with the KM has involved interviews with roughly 20 to 30 policy system stakeholders.

3.3. Standards of evidence for hypothesis testing

Unlike quantitative statistical analysis, qualitative research such as this requires that researchers establish explicit criteria for hypothesis testing and clear standards of evidence for assessing the significance (or insignificance) of each key variable. This requires triangulation among respondents and across sources to identify points of consensus and of disagreement.⁴ The last column in Table 3 summarizes the evidence required and the measurement protocols the FSP team has developed for formal testing of key KM hypotheses. Table 4 below provides an example of the hypotheses tested in the Zambia micro-nutrient study.

Evidence required for testing KM hypotheses comes from both written documentation as well as qualitative interviews. Transparency requires that the researchers reveal the data on which they assess a significant influence. Confidentiality, however, requires that the researchers simultaneously respect the identity of the key informants on whose observations the research findings rely. In order to balance out the needs for both transparency and confidentiality, the FSP team has developed a protocol for demonstrating the number of written and interview sources documenting a specific variable, while at the same time keeping the specific respondent identities confidential. Table 5 below provides the evidence used in assessing the level of significance of each KM variable in the Zambia micro-nutrient case study.⁵ For further details about this case study and the hypothesis testing results, see Haggblade et al. (2016) and Resnick et al. (2017).

3.4. An example

Table 4 provides an example of the formal hypothesis testing for all 16 KM hypotheses in the case of the four vitamin A fortification policy decisions in Zambia. A plus sign (+) indicates a significant positive impact on the proposed policy, while a minus sign (-) signals a significant negative impact.

Agenda setting. Vitamin A deficiency (VAD) has been a recognized public health problem (KMV1⁶) for many decades. In Zambia, a stream of research by WHO, TDRC, local university and donor project researchers has motivated political interest by highlighting the extent and durability of Zambia's VAD problem (TDRC 2015, NFNC 1999, 2005). The top role in Table 5 details roughly a dozen local publications and surveys documenting widespread VAD in Zambia. Internationally, UNICEF's 1990 World Summit for Children served as a signal event focusing (KMV2) world-wide attention on VAD and unleashing a large wave of donor funding for VAD prevention efforts. Since then, UNICEF, USAID and others have strongly advocated (KMV3)

⁴ See Box 1 for practical tips on how to triangulate in ways that converge on credible, qualitative consensus assessments.

⁵ To economize on space, Table 5 provides only the evidence supporting hypotheses 1, 2 and 3

⁶ Kaleidoscope Model Variable No. 1 (KMV1).

fortification efforts, and have supported them both financially and technically. A coalition of international and domestic public health advocates placed micro-nutrient fortification on the policy agenda in Zambia beginning in the early 1990s. Table 5 enumerates the long list of advocacy groups as well as they evidence they marshalled in lobbying for an expanded range of policies promoting Vitamin A uptake by vulnerable groups.

Design. A wealth of international research and knowledge (KMV4) about micro-nutrient deficiencies, as well as the costs and benefits (KMV6) of various policy options, has guided formulation policy formulation in Zambia, as elsewhere in the developing world (Horton et al. 2008). As a result, donors and the various micronutrient projects they fund have frequently served as key contributors to policy design. UNICEF, USAID, WHO and others have brought to bear a broad array of medical research and public health evidence summarizing the impact and cost of alternative models for increasing Vitamin A uptake. They likewise financed a series of international consultants and technical assistance programs aimed at vetting and testing alternative policy and program designs.

Adoption and implementation. Differing outcomes in the sugar and maize meal fortification initiatives stem largely from the key role played by various veto players (KMV8) in the public and private sector. While private millers squashed early efforts to fortify maize meal, in 1996 (hence the minus sign in the first column of row KMV7 in Table 4), political leaders in Lusaka blocked the second effort in 2006 (hence the minus sign in the third column of KMV8 in Table 4). The failure of parliament's request to reform the sugar fortification mandate in 2009 (see the 4th column in Table 4) underlines the power of Zambia's strong presidency and the weakness of the legislature in both budgetary and policy matters. In contrast, the determined effort by key donors to support sugar fortification pushed this mandate over the finish line by supporting design, financing, implementation and monitoring. Comparison of the 2nd and 4th columns in Table 4 highlight the very different actions and outcomes in the 1998 policy discussions compared to the reform efforts in 2009.

Implementation. Chronic budget and staffing shortages (KMV10) in line ministries (of health, education and community development) led to the expansion from government-delivered supplement capsules to private-sector delivered fortified foods. Strong support from external advocates and champions (KMV13), including USAID and UNICEF, enabled the fortification policy to proceed with the support of various donor projects and resources that proved critical in making implementation palatable to the private sector and feasible for government monitoring agencies.

Evaluation and reform. The power of information (KMV14) – both empirical evidence and rumors – emerges repeatedly from these fortification policy efforts. Vitamin A monitoring surveys in 1997 and 2003 provided key benchmarks for tracking problem levels and progress. Indeed, the modest impact of Vitamin A supplementation programs documented by the 2003 study triggered broad efforts to expand the range of Vitamin A delivery mechanisms (NFNC 2005). Ongoing monitoring of Zambia's stubbornly high VAD problem has led public health advocates to pursue multiple strategies for improving vitamin A intake, while repeated studies of high sugar prices have motivated and empowered consumer groups to call into question the wisdom of mandatory sugar fortification (Ellis et al. 2010, Chisanga et al. 2014).

Policy	Determinants of Policy	Vitamin A Fortification Proposals				
Stages	Cnange	Maize meal	Sugar	Maize meal	Sugar	
		1996	1998	2006	2009	
		Vetoed	Imple- mented	Vetoed	Reform stalled	
Agenda setting	1. Recognized, relevant problem	+	+	+	+	
	2. Focusing event	+			+	
	3. Powerful advocacy coalitions	+	+	+	+	
Design	4. Knowledge & research	+	+	+	+	
	5. Norms, biases, ideology and beliefs			-		
	6. Cost-benefit calculations	-	+	+		
Adoption	7. Powerful opponents vs. proponents	-	+		-	
	8. Government veto players		+	-		
	9. Propitious timing					
Implementa tion	10. Requisite budget		-			
	11. Institutional capacity		-			
	12.Implementing stage veto players		+			
	13. Commitment of policy champions		+			
Evaluation & Reform	14. Changing information and beliefs		-			
	15. Changing material conditions		-			
	16. Institutional shifts		-			

Table 4. Hypothesis Testing Results: Zambia Vitamin A Fortification Policy Changes

Source: Resnick et al. (2017).

Notes: A positive (+) sign indicates that the variable was present in the cases and played a role in the reform proceeding as intended. A negative (-) sign indicates that the variable was present but played a negative role in the reform proceeding as intended. A naught (0) indicates that while the variable was present, it did not affect the reform moving forward. Empty cells indicate that the variables was not present in the cases. Finally, grey boxes indicate that those variables were never relevant since the policy reform never proceeded to that stage of the process.

	Maize meal	Sugar	Maize meal	Sugar		
	1996	1998	2006	2009		
Variables	vetoed	implemented	vetoed	failed reform		
1 Recognized, relevan problem	 Constituency: NFNC, USAID, UNICEF, MOH Evidence: NFNC VAD Surveys 1997, 2003 NFNC (1997, 2005) + IR: 2, 5, 6, 11, 12, 14, 15, 17, 20, 21, 24 	 Constituency: NFNC, USAID, UNICEF, MOH Evidence: NFNC VAD Surveys 1997, 2003 NFNC (1997, 2005) + IR: 2, 5, 6, 11, 12, 14, 15, 17, 20, 21, 24 	 Constituency: NFNC, USAID, UNICEF, MOH Evidence: NFNC VAD Surveys 1997, 2003 NFNC (1997, 2005) + IR: 2, 5, 6, 11, 12, 14, 15, 17, 20, 21, 24 	 Constituency: Parliar Committee on Economic Labour Affàirs; large ind consumers (breweries, confectioners); consume advocates (CUTS, CCI researchers (IAPRI, OE UNZA), competition mo groups (ACF, CCPC); Evidence: Domestic r about sugar pricing and competition: Chulu (2009) Lusaka Times (2009) Ellis et al (2010), Chisanga et al. (2014) CUTS (2014a, 2014b) Kalinda and Chisanga Chanda (2014) 		
2 Focusing event	•May 1996 UNICEF and NFNC workshop on vitamin A fortification + IR: 5, 6, 11, 14, 15, 24			 + IR: 1,5,8,17,26 *Complaints by industria users to CCPC *CCPC launches invest domestic sugar market Doubling of sugar pric Lusaka Times (2009) Ellis et al. (2010) Chisanga et al. (2014) + IR: 1, 5, 8, 17, 26 		
3 Powerful advocates	• USAID • UNICEF • NFNC + IR: 6,11,14,24	 UNICEF supports mandatory fortification, funds testing USAID supports research, design, and implementation MOST project support USAID funds visit by consultant Omar Dary, fortification specialist with Guatemala experience Serlemitsos and Fusco (2001) + IR: 6,11,14,15,24 	• GAIN • NFNC • UNICEF • USAID + IR: 3,5,9,14	 Parliament ODI CCPC ACF CUTS IAPRI UNZA + IR: 1,5,8,17,26 		
** IR# = intervie	w respondent number					

Table 5. Evidence Supporting the Hypothesis Testing*

Source: Haggblade et al. (2016)

4. RESOURCES

4.1. Resource requirements

The Kaleidoscope offers a menu of analytical tools that can prove helpful in a variety of situations. Each of the tools outlined in this guide may be used individually or in tandem.

Resource requirement vary along with the complexity of the policy system under review and according to the intensity interest and investment by a potential intervenor in a specific policy system. The general guidelines in Table 6 below aim to help practitioners determine which tools may prove helpful in a given situation.

Policy tools	Purposes	Resources Required			
Diagnostic tools					
1. Policy chronology	 outlines the sequence of policy decisions, affirmative and failed summarizes key events, actions and evidence shaping policy outcomes 	 documentary evidence (1 week to assemble) interview (1 week of interviews) 			
2. Stakeholder inventory	• identifies the key stakeholders involved in a specific policy system				
3. Policy system schematic	• describes relationships among policy system actors				
4. Circle of influence	• maps the positions and relative power of key policy stakeholders				
Hypothesis testing tools					
5. Hypothesis tests	 summarizes variables that significantly influence policy outcomes collective rankings enable forecasting of likelihood of successful future policy reforms 	 documentary evidence (2-4 weeks to assemble) 1-2 weeks of intensive interviewing 1 month of intermittent email and telephone follow- up 			
6. Data matrix	• documents the evidence use to accept or reject specific KM hypotheses				

Table 6. Policy tools

4.2. Online tools

A variety of online tools exist to support policy system analysis and interventions. The FSP Innovation Lab and others have posted a series of useful materials. A partial listing follows below:

- Feed the Future Innovation Lab for Food Security Policy's tools: http://foodsecuritypolicy.msu.edu/resources/policy_tools
- Research Papers related to KM: http://foodsecuritypolicy.msu.edu/components/c3. global_research/publications
- <u>The Kaleidoscope Model of Policy Change</u> Suresh Babu and Danielle Resnick. 2016
- <u>Drivers of Policy Change: The Kaleidoscope Model</u> Steven Haggblade, Suresh Babu, Danielle Resnick, Sheryl Hendriks and David Mather, 2015
- Steven Haggblade, Suresh Babu, Jody Harris, Elizabeth Mkandawire, Dorothy Nthani and Sheryl L. Hendriks. 2016. Drivers of Micronutrient Policy Change in Zambia: An Application of the Kaleidoscope Model. <u>Feed the Future Innovation Lab for Food Security</u> <u>Policy Research Paper 14</u>. East Lansing: Michigan State University
- <u>http://www.africaleadftf.org/trainerdirectory/</u> *Africa Lead Trainer Directory*
- Sitko, Nicholas J, Suresh Babu, and Barak Hoffman. 2017. Practitioner's Guidebook and Toolkit for Agricultural Policy Reform: The P.M.C.A. Approach to Strategic Policy Engagement. <u>Feed the Future Innovation Lab for Food Security Policy Research Paper 49</u>. East Lansing: Michigan State University

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APPENDIX 1. TEMPLATES FOR KALEIDOSCOPE MODEL DIAGNOSTIC TOOLS

Table A1. Policy Chronology

Date	Policy Events	External Influences	Domestic Influences

Table A2. Stakeholder Inventory: Key Players in the Policy Process

Institution	Category	Role	Resources	Influence	Policy Stance

Table A3. Hypothesis Testing Results

Policy	Determinants of Policy	Policy Reform Episodes						
Stages	Change	Policy 1	Policy 2	Policy 3	Policy 4			
Agenda setting	1. Recognized, relevant problem							
	2. Focusing event							
	3. Powerful advocacy coalitions							
Design	4. Knowledge & research							
	5. Norms, biases, ideology and beliefs							
	6. Cost-benefit calculations							
Adoption	7. Powerful opponents vs. proponents							
	8. Government veto players							
	9. Propitious timing							
Implementa tion	10. Requisite budget							
	11. Institutional capacity							
	12.Implementing stage veto players							
	13. Commitment of policy champions							
Evaluation & Reform	14. Changing information and beliefs							
	15. Changing material conditions							
	16. Institutional shifts							

Notes: A positive (+) sign indicates that the variable was present in the cases and played a role in the reform proceeding as intended. A negative (-) sign indicates that the variable was present but played a negative role in the reform proceeding as intended. A naught (0) indicates that while the variable was present, it did not affect the reform moving forward. Empty cells indicate that the variables was not present in the cases. Finally, grey boxes indicate that those variables were never relevant since the policy reform never proceeded to that stage of the process.

Figure A1. Policy System Schematic

Agenda Settir	ng	Design	Decision Making		Implementation M&E		M&E					
									Primary Roles			
									$\langle \rangle$	Policy formulation		
									\frown	Policy administration a	nd impleme	entation
									\smile			
									\wedge			
										Oversight		
										Ū		
										Knowledge sharing		
										0		
									Primary Flows			
								-		Financial		
										Authority		
								-		Sugar		
										Information		
									Acronyms			
									ABC			
								1	DEF			
									GHI			
								-	IKL			
								1	MNO			
								I	PQR			
									STU			
									/WXYZ			

Figure A2. Circle of Influence Graphic



APPENDIX 2. TRAINING EXERCISE: AN INTRODUCTION TO THE KALEIDOSCOPE MODEL

Objectives: This exercise introduces participants to the KM and to the diagnostic tools and policy insights it can provide.

Participants: people interested in improving their understanding of policy processes or engaging more effectively in specific ongoing policy processes; 12-20 participants ideal for the group assignment

Timetable:

- Introduction to the Kaleidoscope model, powerpoint and discussion (1 hour)
- Circle of Influence participatory case study exercise (1 hour)
- Wrap-up discussion (30 minutes)

Group exercise:

- 1. Each participant will draw a stakeholder profile card at random from the stakeholder inventory list
- 2. Review your participant profile
- 3. Place a post-it note on the circle of influence graphic in the front of the seminar room in the appropriate location (supporter, opponent, neutral)
- 4. Group discussion: Each participant, in turn, comes to the circle of influence to presents his/her stakeholder's position to the full group

Materials:

• <u>The Kaleidoscope Model of Policy Change</u> Suresh Babu and Danielle Resnick. 2016

• Stakeholder Profile cards:

Drivers of Policy Change: The Kaleidoscope Model - Zambia Micronutrient Case Study Materials