Clean Cookstoves for a Billion Cooks: Designing Diverse Laws to Solve a Worldwide Problem

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ABSTRACT

Roughly half the world's people use solid biomass fuel for cooking and heating. Most cook over open fires or with stoves that burn the fuel incompletely. Nearly two million people, mostly women and children, die prematurely from inhaling the smoke and particulates. Millions of others are sickened or disabled from chronic or acute disease or disfiguring burns. The cookstoves problem also has other serious consequences. The search for fuel obliges women and children to spend much of their time gathering fuel, often in dangerous places, and strains the incomes of poor families. The burning of wood and other biomass also exacerbates problems of deforestation and produces black carbon, a pollutant associated with climate change.

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Many policies are being developed to address the cookstoves problem, and each will need laws to guide their implementation. The problem's vast scope raises the question: how can one draft effective laws to meet a challenge of this scale?

The cookstoves problem poses one example of a more general challenge: even where a problem appears similar in many places, the behavior that creates the problem may differ from place to place. To address the problem effectively, different places may need different laws. In addition, the rule of law demands transparency. Justifying a law's legitimacy requires showing that the law's requirements reflect rational, rather than arbitrary, decision-making.

This Article presents a theory and methodology for designing and justifying effective laws. The theory posits that laws solve problems only by changing patterns of behavior. Designing an effective law, and justifying it rationally, requires identifying those patterns of behavior, responding to their causes, and showing the relationship between the reasons for the behavior and the requirements of the proposed law.

The methodology offers a four-step checklist of evidence-based questions to guide a drafting team in designing and justifying an effective law:

- STEP 1: PROBLEM

  Define the problem: both its harmful symptoms and the underlying behavior.

- STEP 2: EXPLANATIONS

  Identify the reasons for the behavior. The following categories suggest reasons that laws can address:

  - Intentions
    - *Reason 1*: practicality (weighing burdens versus benefits)
    - *Reason 2*: principles (ideas, values, goals, organizational mission)
  - Freedom and Limitations
    - *Reason 3*: freedom of action
    - *Reason 4*: limited capacity (physical, intellectual, time, etc.)
  - Rules
    - *Reason 5*: laws on the books
    - *Reason 6*: laws as understood (or not)

- The Decision-Making Process
  - *Reason 7 for groups*: how a group reaches a meeting of the minds (procedurally)
  - *Reason 7 for individuals*: how individuals make up their minds (subconsciously)

- STEP 3: SOLUTION AND JUSTIFICATION

  Design a law that responds to the reasons for the behavior. Justify the law by showing the connection between those reasons and the law's requirements.

- STEP 4: MONITORING AND EVALUATION

  Provide for monitoring and evaluation of the law's effects.

The theory and methodology address behavior: the element that the cookstoves problem shares with *all* social problems. While the answers may differ from place to place, the checklist's questions about behavior apply universally.

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I. THE CHALLENGE: CREATING EFFECTIVE LAWS FOR HALF THE WORLD

A. The Cookstoves Problem[1]

Roughly half the world's people still use solid biomass fuel for cooking and heating.[2] Most cook over open fires or with stoves that burn the fuel incompletely; the result is an indoor atmosphere thick with toxic smoke and fine particulates.[3] Nearly two million people, mostly women and children, die prematurely from inhaling the smoke and particulates; millions more are sickened, and some debilitated, by acute and chronic diseases or disfiguring burns.[4]

Cooking and heating with biomass fuel and inefficient stoves leads to many other problems as well. In many rural areas, women and children must gather fuel far from home, making it difficult for them to participate in other kinds of work or in education, and often exposing them to danger.[5] In crowded urban areas, fires started by exposed flames indoors can spread quickly to engulf many homes. Families that must buy fuel for inefficient stoves spend a large portion of their limited

1. The problem summarized here has been described in detail in many places. *See, e.g.*, GLOBAL ALLIANCE FOR CLEAN COOKSTOVES, IGNITING CHANGE: A STRATEGY FOR UNIVERSAL ADOPTION OF CLEAN COOKSTOVES (Nov. 2011) [hereinafter IGNITING CHANGE]; THE INT'L BANK FOR RECONSTRUCTION & DEV. & THE WORLD BANK, HOUSEHOLD COOKSTOVES, ENVIRONMENT, HEALTH, AND CLIMATE CHANGE: A NEW LOOK AT AN OLD PROBLEM (2011) [hereinafter HOUSEHOLD COOKSTOVES]; DOUGLAS F. BARNES, PRITI KUMAR & KEITH OPENSHAW, ENERGY SECTOR MGMT. ASSISTANCE PROGRAM, CLEANER HEARTHS, BETTER HOMES: NEW STOVES FOR INDIA AND THE DEVELOPING WORLD (Oxford Univ. Press 2012) [hereinafter CLEANER HEARTHS/INDIA]; THE INT'L BANK FOR RECONSTRUCTION & DEV. & THE WORLD BANK, IMPROVED COOKSTOVES AND BETTER HEALTH IN BANGLADESH: LESSONS FROM HOUSEHOLD ENERGY AND SANITATION PROGRAMS (2011) [hereinafter BANGLADESH LESSONS]; Koffi Ekouevi & Voravate Tuntivate, *Household Energy Access For Cooking And Heating: Lessons Learned And The Way Forward* (World Bank, Energy & Mining Sector Bd. Discussion, Paper No. 23, June 2011) [hereinafter *Household Energy Access*].

2. *See, e.g.*, IGNITING CHANGE, *supra* note 1, at 4, 10; *Household Energy Access*, *supra* note 1, at viii, 1.

3. *See, e.g.*, IGNITING CHANGE, *supra* note 1, at 4, 10; *Household Energy Access*, *supra* note 1, at ix, 5, 7.

4. *See, e.g.*, IGNITING CHANGE, *supra* note 1, at 4, 10 (citing data from the World Health Organization); *Household Energy Access*, *supra* note 1, at ix, 5-8; HOUSEHOLD COOKSTOVES, *supra* note 1, at ix, 9.

5. *See, e.g.*, IGNITING CHANGE, *supra* note 1, at 4, 12-13; *Household Energy Access*, *supra* note 1, at ix, 4; HOUSEHOLD COOKSTOVES, *supra* note 1, at 11.

incomes on fuel.[6] The use of wood for firewood and charcoal has exacerbated problems of deforestation, and the burning of biofuels produces black carbon, a pollutant that has been associated with climate change.[7]

Concerted efforts are underway to address the cookstoves problem from multiple perspectives—technological, financial, educational, and on the like. This Article addresses the question from the legal perspective: how can one design effective laws to address the cookstoves problem around the world?

B. A Universal Problem with Diverse Characteristics

Programs to solve the cookstoves problem have been underway for many decades, with mixed results.[8] These programs have experienced varying degrees of success, and each program faces unique challenges.[9]

The creation of the Global Alliance for Clean Cookstoves ("GACC") in 2010 catalyzed a renewed effort to understand what kinds of approaches to the cookstoves problem will prove effective.[10] The GACC and its partners (particularly the World Bank) have been gathering and reviewing extensive research on cookstoves programs around the world and are leading the effort to find successful strategies to solve the cookstoves problem.[11] Already, a great deal of the research has derived lessons to be learned from current and past programs and

6. *See, e.g.*, IGNITING CHANGE, *supra* note 1, at 4, 13.

7. *See, e.g.*, IGNITING CHANGE, *supra* note 1, at 4, 13-14; *Household Energy Access*, *supra* note 1, at ix, 9; HOUSEHOLD COOKSTOVES, *supra* note 1, at 12-14.

8. *See, e.g.*, HOUSEHOLD COOKSTOVES, *supra* note 1, Preface; BANGLADESH LESSONS, *supra* note 1, at 51–56; CLEANER HEARTHS/INDIA, *supra* note 1.

9. *See, e.g.*, *Household Energy Access*, *supra* note 1. *See also, e.g.* BANGLADESH LESSONS, *supra* note 1 (comparing and drawing lessons from six cookstove programs from different regions of the world (China, Guatemala, Haiti, Mongolia, Nepal, and Uganda), as well as from Bangladesh's successful Total Sanitation Campaign (which promoted universal access to sanitary latrines)). *See also, e.g.*, CLEANER HEARTHS/INDIA, *supra* note 1, at 24–113 (comparing six of India's "legacy" cookstove programs).

10. *See, e.g.*, HOUSEHOLD COOKSTOVES, *supra* note 1, at 28. *See generally* IGNITING CHANGE, *supra* note 1.

11. Much of this research is made available on GACC's website, *The Cookstove Story*, GACC, http://www.cleancookstoves.org, and the World Bank's website, *Clean Cookstoves Save Lives, Reduce Carbon*, THE WORLD BANK, http://web.worldbank.org/WBSITE/EXTERNAL/TOPICS/EXTSDNET/0,,contentMDK:22854231~menuPK:64885113~pagePK:7278667~piPK:64911824~theSitePK:5929282,00.html.

produced recommendations on how those lessons might be applied to future programs.[12]

While the research on cookstoves programs has looked for common lessons that can be learned from worldwide experience and applied broadly, it also has highlighted the diversity of circumstances under which people cook with unsafe or inadequate stoves. Reports on the experience of cookstoves programs emphasize that there is no universal answer, either technologically (in the design of cookstoves)[13] or socially (in the design of programs to encourage the production and adoption of clean cookstoves).[14]

Even studies comparing relatively similar areas have observed that small differences can have significant impacts. A recent report prepared for the World Bank examined India's history of cookstoves programs, with the goal of gleaning lessons for the development of India's new national initiative.[15] The report examined and compared the results of six of India's "legacy" cookstoves programs (those instituted before the current generation of advanced cookstoves). All of the programs produced mixed results, but the reasons for their successes and shortcomings differed. Although all the programs operated in the same country, and for much of the time under the same national program, the

12. *See generally The Cookstove Story*, *supra* note 11; IGNITING CHANGE, *supra* note 1; HOUSEHOLD COOKSTOVES, *supra* note 1. IGNITING CHANGE and HOUSEHOLD COOKSTOVES review programs worldwide and derive lessons to guide public and private actors in designing more successful strategies. These lessons are incorporated in the GACC's October 2012 Alliance Business Plan (available in Power Point on the GACC web site: http://www.cleancookstoves.org/).

13. *See, e.g.*, Fiona Lambe & Aaron Atteridge, *Putting the Cook Before the Stove: A User-Centred Approach to Understanding Household Energy Decision-Making – A Case Study of Haryana State, Northern India* 24 (Stockholm Env't Inst., Working Paper 2012-03) (hereinafter *Putting the Cook Before the Stove*):

> We should note that although the demographics may be similar in other parts of rural India, the villages studied in Haryana are just one case study. The results are therefore not directly transferrable to other settings, since different factors may have sway in different communities. . . . Thus it is important to understand stove users in their own unique settings. The wider value of our findings here, then, is in pointing to the types of factors that need to be brought to light if people's needs and desires are to be understood and met and, by implication, if biomass energy economies are to be successfully transformed by shifting to less damaging, more efficient practices.

14. IGNITING CHANGE, *supra* note 1; HOUSEHOLD COOKSTOVES, *supra* note 1. Extensive research demonstrating the need for varied solutions to the cookstoves problem also is available on GACC web site. *The Cookstove Story*, *supra* note 11.

15. CLEANER HEARTHS/INDIA, *supra* note 1.

participants and their patterns of behavior varied from state to state.[16] In Haryana, women's groups played an important role in the community and had an important influence in cookstove adoption, while other states had no equivalent role for women.[17] In Maharashtra, local artisans had traditionally taken an entrepreneurial approach to selling cookstoves and meeting users' needs, while in other states, artisans manufactured only a targeted number of stoves to meet orders from a government agency.[18] In West Bengal, non-governmental organizations ("NGOs") played an important role in the community, while in other states, they were rare.[19] All of these differences had significant impacts on the design of the programs and their outcomes.[20]

The variations in local conditions are far greater across the full range of the cookstoves problem, which affects nearly half the world's population and is spread over most of its continents.[21]

C. The Role of Laws and Their Drafters

1. Policies Need Laws[22]

Much of current cookstoves research suggests that having strong government policies plays an important role in ensuring the success of a cookstoves program.[23] However, good policy alone is not enough. Cookstoves programs also need laws. Laws serve two purposes: they make implementation possible, and they confer legitimacy.[24]

16. *See id.* at 21, 116–20.

17. *Id.* (compare the program in Haryana (ch. 4) with the other five programs (described in chapters 2, 3, and 5-8)).

18. *Id.* (compare the program in Maharashtra (ch. 3) with the other five programs (described in chapters 2, 4, and 5-8)).

19. *Id.* (compare the program in West Bengal (ch. 8) with the other five programs described in chapters 2-7)).

20. *Id.*

21. IGNITING CHANGE, *supra* note 1; HOUSEHOLD COOKSTOVES, *supra* note 1; *see, e.g.*, *The Cookstove Story*, *supra* note 11.

22. This Article will use the term "law" in its broadest sense, to encompass every type of public rule (statutes, regulations, ordinances, etc.).

23. *See, e.g.*, IGNITING CHANGE, *supra* note 1; HOUSEHOLD COOKSTOVES, *supra* note 1; CLEANER HEARTHS/INDIA, *supra* note 1; BANGLADESH LESSONS, *supra* note 1; *Household Energy Access*, *supra* note 1.

24. *See* ANN SEIDMAN, ROBERT B. SEIDMAN & NALIN ABEYESEKERE, LEGISLATIVE DRAFTING FOR DEMOCRATIC SOCIAL CHANGE: A MANUAL FOR DRAFTERS 13–14 (2004) [hereinafter MANUAL].

a. Governance

To implement a cookstoves policy, governments need to tell people what to do. Transforming the way people cook, the way stoves are made and delivered, and the way the cookstoves market is financed, involves an enormous number of people, acting individually or through private and public organizations at many levels. Laws provide the instructions that inform these actors what they must, may, and may not do under different circumstances.

b. Legitimacy

Policies express ideas. Laws transform those ideas into obligations. The force of law is not just a practical one (in that laws contain enforcement provisions), but also a moral one (in that most people feel obliged to follow laws). Good governance and the rule of law require that the decisions of government be transparent and responsive to the governed. Through laws that meet these requirements, governments demonstrate that their decisions are made rationally, not arbitrarily, and that they benefit the public interest.

2. The Unity of Form and Substance

The role of the drafter is not merely to translate words of policy into words of law (although that translation does take place).[25] The drafter must translate policy goals into specific instructions to individuals, private organizations, and government agencies. Designing those instructions requires asking many of the same kinds of questions required for designing good policy. Designing effective cookstove programs and laws requires a collaborative effort by policymakers, lawmakers, legislative drafters, and experts in various subject areas related to the cookstoves problem. The drafter's role on that team is a substantive one.[26]

3. Designing Diverse Laws for a Universal Problem

Those who design laws face a special challenge in trying to apply lessons learned elsewhere. Laws must give the right instructions to the right people under the right circumstances to achieve the desired results. Because local conditions differ, importing laws can be perilous.[27] Lessons learned elsewhere can offer guidance, but the devil lurks in the details.

25. This Article will not, however, address drafting techniques.

26. *See, e.g.*, MANUAL, *supra* note 24, at 25–49.

27. *Id.* at 68.

Governments around the world have varying levels of capacity (especially at the sub-national level) for drafting effective laws. The need for effective laws to solve the cookstoves problem is widespread and urgent. Drafting these laws cannot be left to slow, *ad hoc* trial and error. The situation calls for an effective drafting strategy that can be applied worldwide. This challenge raises the question: how can a drafting team meet the needs of its community when the lessons learned elsewhere have grown out of different conditions?

A note on language: Given the close connection between law and policy, this Article will speak of cookstoves "programs" and "laws" more or less interchangeably. For the same reason, this Article will speak of the "drafting team," rather than of legislative drafters alone.

II. A PROPOSAL: A CHECKLIST OF QUESTIONS FOR DESIGNING LAWS THAT WORK[28]

For any broad social problem, no single solution will work for all cases. What this Article proposes instead is not a law, but a tool—a theory and methodology for designing effective laws and justifying them to skeptics.

The theory rests on the proposition that laws work by changing behavior.[29] The methodology offers a checklist of evidence-based questions for identifying the relevant behavior, understanding the reasons for that behavior, and designing a solution that responds to those reasons. The checklist provides a means to ensure, and to demonstrate to a rational skeptic, that the law's provisions respond to the problem's causes. Demonstrating this relationship provides a transparent justification, showing that the law is based on reason and experience, rather than arbitrary decision-making.[30]

28. The proposal offered in this Article was developed by Professors Ann Seidman and Robert B. Seidman and is discussed in detail in their MANUAL, *supra* note 24, and in many of their other writings. *See, e.g.*, Robert B. Seidman, *Justifying Legislation: A Pragmatic, Institutionalist Approach to the Memorandum of Law, Legislative Theory, and Practical Reason*, 29 HARV. J. ON LEGIS. 1 (1992). In their more recent writings, the Seidmans name this theory and methodology "ILTAM" ("Institutionalist Legislative Theory and Methodology"). (The author finds this name awkward but has yet to propose a better one.)

29. MANUAL, *supra* note 24, at 11.

30. *See id.* at 85–92; *see generally id.* ch. 4.

A. Theory: Laws Solve Problems by Changing Behavior

Laws can address social problems only by changing behavior. The task of changing the way half the world cooks takes on a problem that spans the globe and has roots reaching back as far as human memory. To effect such a transformation, laws will need to induce behavioral changes of many kinds, in many different places.

The practice of using biomass fuel in inefficient stoves is associated with developing countries, and mostly with their poorer populations.[31] Like so many development challenges, the cookstoves problem may be viewed as a problem of resource distribution: people cook with biomass and smoky stoves because they have little access to clean fuels or more efficient stoves. Yet, the distribution of resources is not foreordained. A country's resource distribution reflects repeated patterns of behavior by individuals, private organizations, and government entities. These repeated patterns of behavior make up a country's institutions.[32]

Solving the cookstoves problem will mean changing many kinds of institutions. They include not only governmental, political, and financial institutions, but educational, social, and cultural ones as well. Because the patterns of behavior that form these institutions vary from place to place, the kinds of behavioral changes needed must vary, too.

Changing behavior in a way that solves a problem requires knowing who is doing what, and why they are doing it.

B. Methodology: A Checklist of Evidence-Based Questions for Changing Behavior

The methodology proposed here offers a checklist of questions to help a drafting team gather evidence of a problem's behavioral causes, design a responsive solution, and justify the solution to skeptics.

The checklist sets out four steps to guide the problem-solving process. Step 2 proposes an agenda of reasons why individuals and organizations act as they do. The checklist is described briefly below, and in greater detail in the next Subpart.[33]

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31. *See generally* IGNITING CHANGE, *supra* note 1, at 4; *Household Energy Access*, *supra* note 1, at viii, 1; HOUSEHOLD COOKSTOVES, *supra* note 1, at 7-8.

32. *See* MANUAL, *supra* note 24, at 10–12.

33. *Id.* at 90–92.

1. Step 1 – Problem: Identify the Harm and the Behavior.

Laws can solve problems only by changing behavior. Defining the problem therefore requires identifying two aspects: the harm to be alleviated, and the behavior that causes, enables, or contributes to that harm. (The question is not whether an actor has acted badly, or for malicious reasons, but whether the actor's behavior has some causal relationship to the harm.) The behavior will involve multiple actors, both private and public.

2. Step 2 – Explanations: Explain the Behavior—Why Do Those Actors Do What They Do?

Individuals and organizations act for multiple reasons, both subjective and objective. The checklist offers seven categories of reasons why individuals and organizations do what they do. These categories respond to what a law can do.[34] Identifying the reasons for each actor's behavior provides the key to designing a responsive solution. The reasons encompass:

- 1-2: the actor's intentions (practical and principled);
- 3-4: the opportunities and constraints of the actor's world;
- 5-6: the rules that govern the actor's world (both as understood and not); and
- 7: the process by which the actor reaches a decision (as an individual or as a group).

3. Step 3 – Solution and Justification: Design and Justify the Proposed Law.

The solution must meet two requirements: effectiveness and legitimacy. The explanations (identified in Step 2) provide the information needed to design a solution that can change behavior in useful ways. Showing how the law responds to the reasons for behavior provides the law's justification.

4. Step 4 – Monitoring and Evaluation: Check and Respond to Results.

Laws are not perfect, and the world continues to change. Therefore, one must monitor and evaluate the law's real-world results and modify the law as needed. To make sure this happens, the law should include provisions that provide for monitoring and evaluation of its effects.

34. See the detailed discussion regarding Step 2, *infra*.

C. The Checklist in Detail

The following discussion describes each step of the checklist in greater detail.

Caveat: Designing and justifying an effective solution requires a more detailed examination of facts and laws than is possible here.[35] The discussion below offers brief, disconnected examples only to clarify the description of each part of the checklist.

1. Step 1 – The Problem

Defining the problem involves identifying two parts: (a) the harm (the problem's symptoms); and (b) the behavior that contributes to, or enables, that harm.

a. The Harm (the Problem's Symptoms)

Which harmful condition needs to be fixed? If the scope of that harm is broad, how much of it can a single law address?

The Broad Harm

The incomplete combustion of biomass and the use of unsafe cookstoves (or open fires indoors) produce a variety of harms. They include:[36]

- indoor air pollution, which may cause 1.5 to 2 million deaths per year, as well as serious illnesses;
- serious burns from open fires;
- time spent gathering fuel, which inhibits women's and children's ability to receive an education, and for women to engage in more productive work;
- danger of violence against women and children who must gather fuel in unsafe areas;
- environmental degradation from deforestation in areas using wood or charcoal; and
- black carbon, a by-product of incomplete combustion, which has been shown to contribute significantly to climate change.

Scope: Narrowing the Harm

The conditions described above all result from the use of poorly designed stoves and indoor fires, and a program that increases the use of clean cookstoves can contribute to eliminating more than one of them.

35. For a discussion of the importance of the research report as the means to use the checklist to full effect, see Part II.D, *infra*.

36. *See, e.g.*, IGNITING CHANGE, *supra* note 1, at 10–13; HOUSEHOLD COOKSTOVES, *supra* note 1, ch. 3.

However, addressing different aspects of the broad harm may require different measures.

Frequently, the broad harm will prove too large or varied to address in a single law. Studying all dimensions of the harm may entail too extensive a research project. Moreover, proposing a law to address many aspects of the harm may incite opposition from many sources. To address the broad problem effectively, the drafting team may need to recommend a legislative program that encompasses a series of laws focusing on different aspects of the problem.[37]

How can the drafting team divide the broad harm into narrower parts that make functional sense? Generally, looking at the behavior that underlies the harm (the second part of Step 1) will provide appropriate guidance.

b. The Behavior: The Actors and Their Actions

The harm may appear in the form of a health problem (respiratory illness caused by smoke), a time or safety problem (the need to spend hours searching for fuel, sometimes in unsafe environments), or an environmental problem (potential effects on deforestation or global warming).[38] However, the law can address these harms only by changing behavior. For this reason, the second part of Step 1 requires identifying what individuals, private organizations, and government entities do (wittingly or unwittingly) that causes, enables, or exacerbates the harm. The drafting team must ask: *who* are the relevant actors and *what* are they doing?

What Behavior Matters?

A social problem involves multiple actors, private and public, acting in different ways and often influencing each other. The law may change their behavior directly (for example, by requiring cookstove manufacturers to build stoves to certain specifications) or indirectly (perhaps requiring schools to teach children about the dangers of smoke and the need for proper ventilation in order to change the attitudes and cooking habits of the children's families).

Identifying relevant actors and their actions quickly produces a long list of candidates. In the cookstoves context, the relevant actors may include not only women who cook, but also the family members, neighbors, and community leaders who influence their cooking habits; the many actors along the cookstoves supply chain (including designers

37. Deciding how to prioritize different parts of the agenda raises a number of important questions. For a general discussion, see MANUAL, *supra* note 24, ch. 3. *See also id.* at 101.

38. *See generally supra* notes 3–7.

and engineers, manufacturers, wholesale and retail distributors, and public and private entities that test and certify cookstoves); a variety of government agencies that address issues of energy, environment, economic development, and public health; funding entities (government agencies, NGOs, banks, and foreign aid organizations); and a variety of other actors, public and private.

Examining in full the actions of every kind of actor generally will prove too burdensome and unnecessary. Often, examining the behavior of some actors, and the reasons for their actions (in Step 2), will reveal the behavior of other actors (for example, studying the behavior of women who alter the dimensions of improved cookstoves may reveal that engineers who design the stoves fail to consider the type of food local women need to cook).[39]

A full diagnosis of the problem requires an understanding not only of private actors, but of governmental actors—what policies they set, how they deploy their resources, how they interact with private contractors and members of the public, and so on. The relevant actors may include a number of public entities from multiple levels of government and different areas of expertise and responsibility. The interaction (or lack of interaction) among public agencies can influence the outcomes of a program, for better and for worse.

Although it is not necessary to study every actor, the actors examined should always include the existing implementing agency or agencies. This is a particularly important concern where existing laws are poorly enforced (though it remains important even where laws are well enforced). A law generally will have two types of addressees: the primary addressee, and the implementing agency (often, it will have more than one of each type).[40] For example, a law that requires cookstove manufacturers to meet certain technical requirements not only will give instructions to the manufacturers, but also will charge an implementing agency with responsibility for ensuring that manufacturers meet those requirements. Understanding the current behavior of the implementing agency (or agencies) helps reveal why the current laws are

39. This is a common problem cited in many reports. *See, e.g.*, Lambe & Atteridge, *supra* note 13; JASON BURWEN, ENERGY & RES. GRP., UNIV. OF CAL. BERKELEY, FROM TECHNOLOGY TO IMPACT: UNDERSTANDING AND MEASURING BEHAVIOR CHANGE WITH IMPROVED BIOMASS COOKSTOVES (2011) [hereinafter FROM TECHNOLOGY TO IMPACT]; Douglas F. Barnes, Keith Openshaw, Kirk R. Smith, & Robert van der Plas, *What Makes People Cook With Improved Biomass Stoves? – A Comparative International Review of Stove Programs*, 15–19 (World Bank Technical Paper No. 242, Energy Series, May 1994) [hereinafter *What Makes People Cook?*].

40. *See* MANUAL, *supra* note 24, at 16-17, fig. 1.1 ("A model of the legal system").

effective or ineffective. This information will help the drafting team understand how to design a law that can be implemented effectively.[41]

Problematic Behavior Need Not Mean Bad Behavior

Identifying behavior to study does not represent a moral judgment. Rather, it serves as a diagnostic tool. Often, individuals, private organizations, and governmental entities contribute to a problem while acting with the best of intentions, sometimes without knowing the full effects of their actions and decisions. Step 2 of the analysis (Explanations), described in the next Subpart, provides the opportunity to learn why individuals and organizations act as they do.

2. Step 2 – Explanations: Identify the Reasons for the Behavior

Why do the identified actors do what they do? The reasons for behavior provide information that is crucial for designing a law that not only works, but can be justified to skeptics.

Individuals and organizations act for multiple, interrelated reasons. Some are particular to the actor (their own calculations of burdens and benefits, and their own ideas of what is right, wrong, and expected). Others are characteristic of their environment (freedom of action, limited resources, laws as stated and understood, and the decision-making process itself).

To predict how a law will change behavior, and what consequences are likely to result from the law's instructions, the drafting team needs to know the full range of reasons why the relevant actors do what they do.[42]

a. What Reasons Matter? An Agenda of Reasons Why People Do What They Do

To design an effective law, a drafting team needs to identify reasons to which law can respond. Laws can expand, restrict, or redirect the choices that individuals and organizations make, both by influencing their conscious intentions and by altering the legal and practical environment in which they operate.

Step 2 of the checklist suggests categories of reasons why individuals and organizations act the way they do.[43] These categories

41. *See generally id.* ch. 5.

42. Considerable research on the cookstoves problem emphasizes that changing behavior requires understanding the full variety of reasons why people (both individuals and organizations) do what they do. A number of reports examine those reasons in detail and discuss the need to tailor cookstoves programs to respond to those reasons. *See, e.g.*, Lambe & Atteridge, *supra* note 13; IGNITING CHANGE, *supra* note 1, at 28-30; Barnes, Openshaw, Smith & van der Plas, *supra* note 39.

guide the search for evidence and provide the rationale for justifying the law's provisions. They include the following:

- **Intentions**
  - *Reason 1*: practicality (weighing burdens versus benefits)
  - *Reason 2*: principles (ideas, values, goals; view of job/duty/role; organizational mission)
- **Freedom and Limitations**
  - *Reason 3*: freedom of action
  - *Reason 4*: limited capacity (physical, intellectual, time, etc.)
- **Rules**
  - *Reason 5*: laws on the books
  - *Reason 6*: laws as understood (or not)
- **Decision-Making Process**
  - *Reason 7 for groups*: how a group reaches a meeting of the minds (procedurally)
  - *Reason 7 for individuals*: how individuals make up their minds (subconsciously)

These categories are useful for designing and evaluating laws because they correspond to the kinds of issues laws can address. They are discussed in detail below.

Caveat: The value of the checklist comes from examining all of the categories to explain the behavior of each relevant actor. The discussion below uses brief, unconnected examples only to illustrate the application of each question.

b. Intentions

Individuals and organizations have deliberate intentions, based on both practical and principled considerations.

Reason 1: **Practicality—weighing benefits and burdens.** In most situations, individuals and organizations act as they do, in part, because they perceive the benefits of their actions as outweighing the burdens.

What can laws do? In many ways, laws can change an actor's calculations of benefits and burdens both directly and indirectly. Directly, laws can, for example, raise and lower taxes and fees and provide direct subsidies and services. In many less direct ways, laws can

43. *See* MANUAL, *supra* note 24, at 93–98. In substance, the seven reasons discussed in this Article correspond to the seven reasons described in the MANUAL (subject to any errors made by this Article's author). The MANUAL offers a mnemonic, "ROCCIPI," based on the following names: "Rule, Opportunity, Capacity, Communication, Interest, Process, Ideology." *Id.* at 95. In this Article, the author has used different names and changed the order of presentation. Alas, no mnemonic has yet come to mind.

also alter the practical and legal circumstances in which the individual or organization operates.

In the cookstoves context, for example, many families are reluctant to invest in a new kind of stove until they are sure its benefits are worth the costs and other risks of adopting the new technology.[44] An effective response might create conditions for social marketing, in which respected community members adopt the new stoves first and demonstrate their advantages, or credible community groups endorse the stoves and educate the community about their use.[45]

Reason 2: **Principles—values, ideas, goals; sense of role, duty, or job; organizational mission.** Both individuals and organizations have principled reasons for what they do, as well as practical concerns. Although we do not generally think of laws as mandating or forbidding ideas, laws do have many ways to affect what people choose to believe, what they aim to accomplish, and what they envision as their proper role in their world or organization.

Individuals: influencing values, attitudes, ideologies, goals, and perceived role. Laws can influence people's ideas, goals, and sense of their role by challenging them directly (for example, through publicity campaigns), or by changing people's actions, with a resulting effect of changing attitudes. (For example, laws in many countries restricting smoking in public places have, over time, changed attitudes about smoking. Similarly, laws that have required racial integration in public schools, despite initial resistance, have prompted fundamental changes in attitudes over time.)

In the cookstoves context, the willingness of women (or their husbands) to adopt clean cookstoves may be influenced by factors such as social status. (Are the stoves generally used by people of high or low social status?)[46] In addition, they may be influenced by local practices. (Are most of their neighbors and friends adopting the stoves?).[47] Family and social roles may also influence how women cook and whose lead they follow.[48] So may attitudes toward innovation in general.[49]

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44. *See, e.g.*, IGNITING CHANGE, *supra* note 1, at 28–29; FROM TECHNOLOGY TO IMPACT, *supra* note 39, at 16.

45. *See, e.g.*, IGNITING CHANGE, *supra* note 1, at 28–29.

46. *See, e.g.*, FROM TECHNOLOGY TO IMPACT, *supra* note 39, at 18.

47. *See, e.g.*, IGNITING CHANGE, *supra* note 1, at 28–31.

48. *See, e.g.*, FROM TECHNOLOGY TO IMPACT, *supra* note 39, at 18.

49. *See, e.g.*, *id.* at 16.

Cookstoves programs, and the laws that implement them, can use a variety of approaches to influence attitudes.[50]

Organizations: influencing the mission. Organizations do not have minds (just people with minds), but they do have policies and goals. Laws can change the missions of organizations, both in government (directly) and in the private sector (indirectly), or work around them.

For example, if responsibility for cookstove programs is given to an agency charged with improving energy access in rural areas, the agency may focus its efforts on testing cookstoves for energy efficiency and assuring wide distribution of the stoves. However, if families quickly return to cooking with traditional stoves, or alter the dimensions of the new ones, it may help to consider shifting responsibility for the program to an agency charged with protecting public health.

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Individuals and organizations have their own conscious intentions, but they do not operate in a vacuum. To find out why people do what they do in enough detail to design a good law, one must consider not only what people intend, but also the world with which they contend. The other categories of reasons examine the influence of external factors on the actor's behavior.

c. Freedom and Limitations

The circumstances of the actor's environment both expand and restrict the choices that individuals and organizations can make.

Reason 3: **Freedom to act unsupervised.** Freedom of action expands people's range of choice—sometimes in ways that create problems. Problems of corruption, for example, often involve diversion of funds or granting of favors that take place, in part, because no barrier to that action exists. Where laws are poorly enforced, opportunities to act without restriction often play a role. The opportunity to act without supervision can provide an enabling environment for behavior as diverse as speeding, tax evasion, use of toxic substances in manufacturing, domestic violence, and so on. However, the examples extend far beyond behavior that appears antisocial. In the cookstoves context, for example, many women make changes to cookstoves to produce tastier food (unintentionally producing more smoke), because they have the opportunity to do so in their own kitchens, without objection from family, neighbors, or officials.

50. *See, e.g.*, IGNITING CHANGE, *supra* note 1, at 28–31; BANGLADESH LESSONS, *supra* note 1; CLEANER HEARTHS/INDIA, *supra* note 1; *Household Energy Access*, *supra* note 1.

What can laws do? Laws can impose restrictions on action or provide oversight. At their most dramatic, laws can authorize imprisonment of offenders. They also can establish oversight and monitoring (for example, by monitoring highway speeds with radar, auditing tax returns, or requiring disclosure of toxic substances used in manufacturing). Less directly, laws can influence social attitudes, establish community organizations, and encourage community members to influence the behavior of the people they know. Where inadequate oversight helps explain the behavior of an implementing agency (for example, in poor enforcement of laws, failure to meet program targets, or corruption), the law can provide measures to close that gap.[51]

Reason 4: **Capacity limitations (for example, limited resources, skills, knowledge).** No individual or organization has enough time, space, people, knowledge, equipment, or energy. Everyone's choices are constrained by limitations in what their resources and human capacities will enable them to do.

In the cookstoves context, for example, stove users and their families may not know that the smoke from cooking is what accounts for many of their children's health problems.[52] Or they may not know that the changes they make to new cookstoves may decrease the stove's effectiveness.[53] Or they may not know how to use the stoves to produce the best results.[54] Stove designers may not have ways to learn what families think of their stoves, or they may lack access to credit to upgrade their facilities to meet demand.[55] Fieldworkers for the agency distributing cookstoves may not have the equipment needed to test stoves in the field or the time to visit more than a small percentage of the homes in their jurisdiction.[56]

What can laws do? In many ways, both direct and indirect, laws can enhance the capacities of individuals and organizations. Directly, laws control the government's power of the purse. Indirectly, laws have a broad range of mechanisms to influence how the private sector uses and distributes resources.

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51. *See, e.g.*, MANUAL, *supra* note 24, at 135, 140, 343–75.

52. *See, e.g.*, IGNITING CHANGE, *supra* note 1, at 28; CLEANER HEARTHS/INDIA, *supra* note 1, at 124.

53. *See, e.g.*, CLEANER HEARTHS/INDIA, *supra* note 1, at 124-25.

54. *See, e.g.*, FROM TECHNOLOGY TO IMPACT, *supra* note 39, at 15-16.

55. *See, e.g.*, CLEANER HEARTHS/INDIA, *supra* note 1.

56. *See, e.g.*, IGNITING CHANGE, *supra* note 1; HOUSEHOLD COOKSTOVES, *supra* note 1; CLEANER HEARTHS/INDIA, *supra* note 1; BANGLADESH LESSONS, *supra* note 1; *Household Energy Access*, *supra* note 1 (all of these are common fact patterns).

In the cookstoves context, for example, laws implement a wide range of programs for publicizing the benefits of clean cookstoves and training women to use them; making micro-finance available to families and various forms of financing to stove designers and other actors throughout the cookstoves supply chain; training local fieldworkers from NGOs and government implementing agencies in a wide range of skills; and enhancing the capacity of private and public actors in various ways.[57]

d. Rules

Except in places where government and civil society have broken down, people take into consideration the laws that apply to them. This does not mean, however, that people always know a law exists, or what (if anything) it requires of them.

Reason 5: **Laws on the books—what the laws require (and how they sometimes conflict).** Laws are notorious for sowing unintended consequences. Sometimes, laws themselves encourage the behavior that creates a problem. A law to improve public safety might limit the number of passengers a minibus may carry. However, if the supply of minibuses remains the same, the law could leave people stranded or encourage them to crowd into unregulated vehicles, creating more dangerous conditions.

Laws also may conflict, creating requirements, all of which cannot be met. A law to promote clean streets and reduce the spread of disease may require people to put out garbage for collection no later than 6:30 A.M., while another law, designed to hold down the population of rodents, may forbid people to put out garbage before 6:30 A.M.

In the cookstoves context, the effects of direct subsidy programs have been the subject of much study.[58] While earlier cookstoves programs generally subsidized the cost of stoves directly, much of the recent research concludes that (1) with the exception of the poorest of the poor, subsidies to families for the purchase of stoves has often depressed demand; and (2) families would have access to better, affordable stoves if the subsidies were directed toward stove designers and others in the

57. *See, e.g.*, IGNITING CHANGE, *supra* note 1; HOUSEHOLD COOKSTOVES, *supra* note 1; CLEANER HEARTHS/INDIA, *supra* note 1; BANGLADESH LESSONS, *supra* note 1; *Household Energy Access*, *supra* note 1.

58. *See, e.g.*, IGNITING CHANGE, *supra* note 1; HOUSEHOLD COOKSTOVES, *supra* note 1; CLEANER HEARTHS/INDIA, *supra* note 1; BANGLADESH LESSONS, *supra* note 1; *Household Energy Access*, *supra* note 1.

supply chain.[59] Other rules that have not always worked as intended are cookstove distribution targets.[60] While these have often helped expand the distribution of cookstoves, they have sometimes discouraged local stove producers from taking a more entrepreneurial approach that would respond to user needs, and have focused the efforts of implementing agencies toward stove placement, rather than long-term stove use.[61]

What can laws do? Lawmakers can change or eliminate laws that conflict, have undesirable loopholes, or encourage behavior that creates a problem.

Reason 6: **Laws in action—what people know (or do not know) about the law; room for interpretation of the law.** A gap between what the law says and what people understand about it can often help explain the behavior of individuals and organizations. Do the law's addressees know the law exists? Do they know the law applies to them? Do they know what the law requires of them? Do they know how to meet those requirements? How much room does the language of the law (or the precedent interpreting it) allow for interpretation?

The element of uncertainty affects both those who have a sophisticated knowledge of the law and those who know nothing of it. Members of the public, especially those with little formal education, may know little about the existence of many laws, much less whether the law applies to them or what it requires. However, laws also may perplex or mislead even those with considerable education. For example, multiple laws may apply to a situation, the law's language may allow considerable freedom for interpretation, or interpretations of the laws may conflict.

What can laws do? Laws can, for example, (1) require a public agency to publicize the law and its requirements more widely or in different media; (2) offer assistance (workshops, public education campaigns, etc.) to help people understand or comply with the law; or (3) authorize the agency to contract with private sector organizations to

59. *See generally* IGNITING CHANGE, *supra* note 1; HOUSEHOLD COOKSTOVES, *supra* note 1; CLEANER HEARTHS/INDIA, *supra* note 1; BANGLADESH LESSONS, *supra* note 1; *Household Energy Access*, *supra* note 1.

60. *See, e.g.*, IGNITING CHANGE, *supra* note 1; HOUSEHOLD COOKSTOVES, *supra* note 1; CLEANER HEARTHS/INDIA, *supra* note 1; BANGLADESH LESSONS, *supra* note 1; *Household Energy Access*, *supra* note 1.

61. *See, e.g.*, IGNITING CHANGE, *supra* note 1; HOUSEHOLD COOKSTOVES, *supra* note 1; CLEANER HEARTHS/INDIA, *supra* note 1; BANGLADESH LESSONS, *supra* note 1; *Household Energy Access*, *supra* note 1. In India, laws intended to expand the use of cleaner fuels have conflicted. A subsidy scheme for kerosene conflicts creates disincentives for families to use liquified petroleum gas. *Putting the Cook Before the Stove*, *supra* note 13, at 6.

assist with publicity and public education. Laws also can clarify ambiguous language (for example, what does "reasonable" mean?).

e. Decision-Making

The process by which a group or an individual reaches a decision can influence the decision itself. Individuals and organizations make decisions in different ways, and laws can respond to each method.

Reason 7 for Groups: **Organizational decision-making process.** To make a decision, a group of two or more people has to reach a meeting of the minds. How do they do it? The question here is not "Why?" but "*How?*". In particular, *who* participates in making the decision, and *what* procedures and information do they use to make it?[62]

Who participates in making the decision? Does the organization reach a decision in public or in private? Are the participants many or few? Are the people making the decision representative of those affected by it? Is the decision-making hierarchical? Is it democratic? (Note: when examining the behavior of an organization, it generally helps to begin with the decision-making process. An organization is not a "single rational actor" with a unified mind.[63] The organization comprises different actors (who may themselves be groups) behaving in a variety of ways. Examining who participates in making a decision and how they arrive at it can help refine the description of the behavior.)

What procedures does the organization use to reach a decision? Are those procedures formal or informal? Must the agency issue a written decision? What information does the organization gather, and from whom? Must it consider that information? What process does the organization have for obtaining feedback on its decisions? Is it proactive (seeking the information) or reactive (learning of problems only via complaints)?

What can laws do? Laws can change who is represented in an organization's decision-making process and influence how the organization uses information. For example, laws can require public agencies to conduct public hearings and establish public notice-and-comment periods. Laws also can require that members of affected communities be represented on a governing board of a public agency, and laws can set requirements for representation on corporate boards. Laws can require public and private organizations to report their decisions in writing, and to disclose the information the organization considered in making its decision.

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62. For the decision-making processes of implementing agencies, see MANUAL, *supra* note 24, at 130–34.

63. *See id.* at 128–29.

Reason 7 for Individuals: **How individuals make up their minds.** It may seem strange to talk about individual decision-making as external to the individual. After all, are we not all masters of our own minds? Yes—and not quite. As much as we would like to think of ourselves as fully rational, and our decisions as fully within our control, it seems that human beings also make decisions in ways that, to some extent, have a life of their own. The various fields of social science have long studied the workings of human decision-making. Among these, psychology, anthropology, sociology, and the growing field of behavioral economics, examine how individuals make decisions in ways that are not entirely conscious or rational.

What can laws do? Laws can be used in a variety of ways to take into account how individuals make decisions.[64] For example, families who are reluctant to purchase unfamiliar cookstoves may be influenced by the fact that the health benefits are distant and invisible, while the burdens are immediate and evident.[65] In such a case, the law could make the benefit of the stoves more evident in the short term (by, for example, making it easier to measure the immediate reductions in indoor air pollution), or make the short-term burdens lighter (by, for example, offering micro-credit for purchases).

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The reasons for behavior, as identified in Step 2, provide the key to designing a law that can change behavior.[66]

3. Step 3 – Solution and Justification[67]

Demonstrating the relationship between the problem's causes and the law's provisions provides the law's justification. To the extent that the law responds to the problem's causes, a rational skeptic can see that

64. For a detailed consideration of how policymakers can apply the insights of behavioral economics to the design of regulations, see RICHARD H. THALER & CASS R. SUNSTEIN, NUDGE (2008).

65. CLEANER HEARTHS/INDIA, *supra* note 1, at 9 ("Although experts are beginning to realize [the] long-term health consequences of indoor pollution, households generally do not make such connections. Even if the risks are well-known, the vast evidence from the literature on smoking suggests that getting people to change their behavior based solely on long-term health consequences is a difficult task.").

66. *See generally* MANUAL, *supra* note 24, at 107–10 (at "F. Demonstrating that the Bill will Prove Effective" and Box 4.9).

67. *See generally id.* at 99–115.

the law was not the result of arbitrary decision-making, but is supported by reason informed by experience.[68]

Showing the match between the reasons for behavior and the law's provisions both provides the transparency required by the rule of law and makes it possible to test the law before its adoption. For example, suppose the goal is to increase the purchase of clean cookstoves by poor families who currently receive cookstoves at a subsidized price. A proposal has been made to end the subsidies provided to families, and direct the money instead to businesses that manufacture cookstoves. Is the proposal an effort to benefit businesses (perhaps on a corrupt basis) at the expense of poor families? Or is the law likely to give poor families better access to better stoves? Suppose the analysis shows that families quickly abandoned subsidized stoves, in part because they did not value the stoves, and they found the stoves difficult to use. Suppose cookstove manufacturers made unpopular stoves, in part because they did not know what families needed and lacked the resources to conduct market research and test new stove designs. In that case, a law that would end the direct subsidies to families to buy cookstoves, but provide new subsidies to cookstove manufacturers to conduct market research and design popular stoves at low cost, may well increase the purchase and use of stoves by poor families.[69]

Assuring Effective Implementation[70]

Examining the behavior of the implementing agency provides guidance for designing effective implementation.[71] For example, consider a situation in which an implementing agency administering a cookstoves program directs its field workers to focus on persuading a certain number of households to adopt improved cookstoves. The required number of households might use the stoves for a while, but quickly return to using traditional stoves, in part because the stoves provided by the program are difficult to use for cooking traditional foods. An examination of the agency's decision-making process might reveal that the agency does not have a procedure for seeking feedback from the women who use the cookstoves. In this scenario, one part of the solution

68. *See id.* at 87, 109 (showing how the explanations for behavior guide the design of a solution).

69. *See generally* IGNITING CHANGE, *supra* note 1; HOUSEHOLD COOKSTOVES, *supra* note 1; CLEANER HEARTHS/INDIA, *supra* note 1; BANGLADESH LESSONS, *supra* note 1; *Household Energy Access*, *supra* note 1.

70. *See* MANUAL, *supra* note 24, at 92.

71. *See* MANUAL, *supra* note 24, at 130, box 5.5 (showing how the explanations for the behavior of the implementing agency guide the design of laws to improve implementation); *see generally id.* at 125–66.

may be to direct the agency to establish procedures for surveying cookstove users on a regular basis and reviewing the results of those surveys.[72]

4. Step 4 – Monitoring and Evaluation

A final element in the solution must be provisions to ensure that the law's results will be monitored and evaluated, and that the law will be changed in accordance with the resulting observations. This element is important enough to deserve its own step in the checklist.

No matter how well-researched and well-designed, a law is likely to meet unexpected elements when it ventures into the real world. That is even more likely when circumstances have made it difficult to gather all the necessary research or political concerns have required changes in the law between its original design and adoption. Moreover, the world may have changed while the law was in development, and it will continue to change after the law's adoption. A well-designed law should provide for effective monitoring and evaluation, and for modifying the law as necessary.[73]

D. The Checklist in Action: The Research Report[74]

The checklist provides a framework for researching the causes of a problem, designing and testing proposals, and justifying the proposed law based on "reason informed by experience."[75]

Analyzing a multi-actor, multi-reason problem requires asking many questions and answering them in detail.[76] The answers to those questions also must be presented in a usable form that reveals the logic of the argument and provides the relevant evidence.

How can the drafting team put the checklist into action? The research report provides the vehicle, both for using the checklist and for offering its results.

72. *See, e.g.*, CLEANER HEARTHS/INDIA, *supra* note 1.

73. *Id.* at 114–15 (discussion of monitoring and evaluation provisions).

74. *See generally id.* at 85–123.

75. *See id.* at 90, box 4.3 ("An Example of Reason Informed by Experience: The Hammer").

76. *See, e.g.*, *id.* at 87; *Putting the Cook Before the Stove*, *supra* note 13; FROM TECHNOLOGY TO IMPACT, *supra* note 39.

1. The Importance of the Research Report

Preparing a fully researched, logically organized research report serves several important purposes.

Guiding the research. The checklist provides the logical structure for the research report. Preparing the report helps the drafting team determine what evidence is relevant.[77] Preparing the research report also can help the principal drafters seek out and collaborate with others as needed, and to organize an interdisciplinary research mission without losing focus.[78]

Testing the proposed law. Presenting the analysis described in the checklist (particularly a well-supported description of the reasons for behavior) makes it possible to test, in advance, whether the law's provisions are likely to address the problem's causes.

Assuring legitimacy. A properly supported research report provides assurance of a proposed law's legitimacy in much the same way that a judge's written opinion establishes the legitimacy of a court's decision.[79] We consider the court's decision legitimate if the written opinion establishes a logical connection between the facts and law presented and the decision rendered.[80] The research report for a proposed law provides the same justification and assurance of legitimacy.

Establishing the law's effectiveness and legitimacy is crucial, not only for advancing the rule of law, but also for attracting support from the many players who must collaborate in any solution to the cookstoves problem. Government agencies and NGOs working in relevant areas (for example, public health, sanitation, or the environment) can provide expertise and resources, but will need to know that their efforts are well directed.[81] Potential financial partners need assurance that the funds allocated or invested under the law will achieve the stated goals.[82] A well-designed and properly supported research report provides the

77. *See* MANUAL, *supra* note 24, at 115–22.

78. This Article has spoken throughout of a "drafting team," but in practice, such a team, at best, consists of a loose collaboration among drafters, lawmakers, policymakers, and experts in various subject areas in ministries, academia, and the private sector. Preparing the report can assist the principal drafters in organizing an effective, if *ad hoc*, drafting team.

79. *See id.* at 87.

80. *Id.*

81. *See generally* IGNITING CHANGE, *supra* note 1; HOUSEHOLD COOKSTOVES, *supra* note 1.

82. *See generally* IGNITING CHANGE, *supra* note 1; HOUSEHOLD COOKSTOVES, *supra* note 1.

required evidence that the proposed law will prove effective and will advance the rule of law.

2. Building Capacity

In practice, justifications for proposed laws often come with little more than a statement of the proposed law's purpose and a summary of its provisions.[83] Government entities charged with designing laws, particularly at the regional or local level, may lack the personnel with the time or training to research and draft a full-scale research report. Nonetheless, they must design effective laws and justify their legitimacy.

Where government does not have the capacity to prepare adequate research reports, it may be helpful (where there is no conflict of interest) for international development agencies or NGOs, or even investors in the global carbon market[84] to direct funding toward capacity building. There may be a useful analogy to be made here. The GACC, the World Bank, and others have recommended that subsidies be directed toward expanding the capacity of the cookstoves supply chain and creating an enabling environment for the development of a sustainable cookstove market.[85] Laws that are both effective and legitimate represent an important element of the enabling environment for solutions to the cookstoves problem.

E. Conclusion: Not Universal Answers, But Universal Questions

The cookstoves problem plagues half the world's people.[86] Worldwide, governments and the private sector are designing policies to bring clean cookstoves to all who need them.[87] The laws that bring those policies into action must account for all the variations in the human condition that the cookstoves problem poses. Laws that work well in one place may prove ineffective, or worse, in another. How, then, can one design local laws to solve a global problem?

No matter how vast the problem, the common element is behavior. The key to drafting laws that work may lie, not in starting with the right answers, but in starting with the right questions.

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83. *See* MANUAL, *supra* note 24, at 25.

84. The goals of the carbon financing system might be well served by building legislative capacity to design and justify effective cookstoves laws.

85. *See generally* IGNITING CHANGE, *supra* note 1; *Household Energy Access*, *supra* note 1.

86. *See supra* note 1.

87. *See generally* IGNITING CHANGE, *supra* note 1, at 5; HOUSEHOLD COOKSTOVES, *supra* note 1, at 35.