

'Developing a model for policy formulation - an extension of Kingdon's model of agenda setting' $\,$

Aditi Raina Lee Kuan Yew School of Public Policy



EVELOPING A MODEL FOR POLICY FORMULATION - AN EXTENSION OF KINGDON'S MODEL OF AGENDA SETTING

INTRODUCTION

Policy Formulation is the stage in the policy-making cycle that involves identifying, and/or crafting, a set of policy alternatives to address a problem, and narrowing that set of solutions in preparation for the final policy decision (Sidney 2007). It is a crucial stage, because designing of alternatives is critically linked to the ultimate policy choice (Sidney 2007). It also expresses and allocates power among social, political and economic interests. Therefore, it is essential to better understand not only the context within which policy formulation takes place, but also if, and how, the process of selecting policy alternatives could be improved, as this would directly impact the efficacy and success of policy outcomes. However, of all the stages in the traditional process model of policy making, critical analysis of this stage is found to be most lacking, with no formal theory or model having been developed to describe or understand the processes taking place and is, therefore, arguably also the least understood (Linder and Peters 1990).

Notwithstanding that, models for other stages, such as the Kingdon's (1995) policy stream model for agenda setting (looking at how issues come to the attention of government in the first place), have been well established in the policy research community and have been validated through several empirical case studies and applied to a variety of scenarios, including environmental policy (Clark 2004; Simon and Alm 1995; Solecki and Shelley 1996), climate change policy (Fisher-Vanden 1997), transportation policy (Lindquist 2006), health policy (Sardell & Johnson 1998), and applied in an international and comparative perspective (Zahariadis 1992, 1995; Liu et al. 2008; Zahariadis and Allen 1995). Therefore, this paper attempts to fulfill the knowledge gap within policy formulation by building a model based on Kingdon's conceptualization of agenda setting. Agenda setting is the stage immediately preceding policy formulation and given the wide-recognized nature of the Kingdon model, it forms a sound and reasonable basis for developing a similar model of analysis for policy formulation. This model, however, would need to be modified in order to accommodate the specific nature, activities and processes of the formulation stage.

Thus, this paper will first briefly describe the Kingdon model, and then explain the proposed model for policy formulation, detailing the modifications that are aimed at making the model more applicable to policy formulation. The two primary modifications proposed are that, first, the problem stream merges into the policy stream in policy formulation and second, the politics stream interacts with the policy stream during policy formulation and critically relates to policy outcomes. It is also proposed that, similar to agenda setting, policy formulation involves the

opening and closing of policy windows as well as policy entrepreneurs, whose presence play a critical role in bringing the streams together and ensuring that their preferred policy alternative moves through to the next stage. Lastly, it is asserted that the combination of the policy and politics stream enhances the likelihood of successful policy adoption. The essay then tests these new propositions by analyzing a unique case of policy formulation related to the reform of the power regime in the western state of Gujarat in India. It concludes by assessing whether or not the proposed model is found to be in congruence with the findings in the case study as well as directions for future research.

POLICY FORMULATION

Policy formulation is the process of developing options on how to solve a public problem. In this stage, the policy options to deal with problems identified at the preceding agenda-setting stage are defined, refined and formalized. An initial feasibility assessment is also conducted to determine the viability of the tabled options. The dynamics at this stage are distinct from the next stage of decision-making, where authoritative decision-makers choose a particular course of action.

As pointed out by Charles Jones (1984, p.7), what makes policy formulation distinct is that a range of possible solutions to resolve perceived societal needs are considered, and then narrowed down to those that policy makers could accept, before they move on to the formal deliberations of decision makers. Therefore, substantively, this stage in theory involves the weighing of costs and benefits of each option, and so, policy analysis, forms an important part of this stage.

Jones' (1984) description of the broad characteristics of policy formulation represents the process as a "highly diffused and disjointed process that varies by case" (in Howlett et al 2009, p.111). In that, he contends that formulation can proceed without a clear definition of the problem; that formulation and reformulation may occur over a long period of time without ever building sufficient support for any one proposal; and also, that it need not be limited to one set of actors, but may well have two or more formulation groups producing competing (or complementary) proposals.

This is reflective of the image conjured by Lindblom (1959) of policy makers "muddling through." In his view, policy makers in reality, adopt a more constrained process of "successive limited comparison" or "branch" approach, where they look only at policies that differ in relative small degrees from the existing policy and therefore, narrow the scope of investigation, leading to incrementalism. This is as opposed to adopting a "rational-comprehensive" or "root" approach,

where policy makers formally rank values and objectives, and rigorously analyze and evaluate every policy option in order to identify the most effective one that would deliver the highest value in terms of fulfilling the objectives. This is why, normally, new policies are not radically different from the ones currently in effect. However, understanding the context of, and limitations within, which policy alternatives are explored and chosen, can improve our understanding and the process of formulation itself. For example, acknowledging the impact of bounded rationality, which allows us to know that policy makers often rely on heuristics rather than a perfectly rational approach to making decisions, might enable policy makers to consciously broaden their search for solutions.

Overall, as has been pointed out by Sidney (2007), the literature on policy formulation is sparse and somewhat disconnected. While it is a distinct object of enquiry, a lot of work on it has been embedded in works on subsystems, advocacy coalitions, networks and policy communities as well as agenda setting. While the traditional focus in the literature has been on understanding the context of decision-making, the more contemporary work has had a policy design focus, i.e. exploring how one can improve the practice of policy analysis or the search for policy alternatives in order to have more effective and successful policies.

However, still, a comprehensive model is absent from the literature that looks at the key components of policy formulation and their inter-relationship. Even the authors cited above who talk about the idiosyncratic and variable nature of the policy formulation process, do not provide a model for the same that would enable a deeper understanding, nor do they test their propositions empirically. This could be due to the difficulty of empirically studying this stage, as information about the actors, processes and discussions during formulation is not easily accessible and so, it is a largely opaque stage. But, that does not minimize the significance of this stage and its impact of policy outcomes. Furthermore, most empirical work, even in stages such as agenda setting, has been limited to western countries, and there are no studies that examine policy formulation in the Asian context. This paper, therefore, aims to fill this gap in the literature by building a theoretical model based on the Kingdon model for agenda setting, and then empirically testing it by examining a case of policy formulation in the power sector in the state of Gujarat, India.

KINGDON'S MODEL OF AGENDA SETTING

John Kingdon (1984) draws on the "garbage can model" of organizational choice (Cohen et al. 1972), which sees decision-making not as a rational systematic process but as a scarcely predictable one, to develop his three-stream model of agenda setting. In the garbage can model, the decision making process is imagined as one in which "all the inputs into decision are thrown

into the garbage can and the decision makers decide which bits to retrieve, as and when it suits them." (Linder and Peters 1984, p.238). Therefore, decisions are the outcome of independent streams of events, i.e. problem points, potential solutions, participants and choice opportunities, within an organization. Therefore, "decision opportunities are fundamentally ambiguous stimuli." (Cohen et al 2001).

Kingdon (1984) conceptualized agenda setting as comprising of three largely unrelated streams — (1) a problem stream, comprising of the information about the issues at hand and the effects of past governmental interventions, (2) a policy stream that consists of researchers, advocates and other specialists who analyze problems and formulate possible alternatives, and (3) a political stream, consisting of elections, legislative leadership contexts etc. (Sabatier 1991). According to him, subject to different internal dynamics, different actors and different rules of internal governance, the problems, policy and political streams generally operate independently of one another (Pralle 2009). The policy stream is also conceptualized as a 'primeval soup' in which ideas float around, confronting each other and combining. In this "soup", a process similar to natural selection takes place, leading to some ideas surviving and others fading. For ideas to survive, they need to be technically feasible, aligned with the dominant value of the community and able to anticipate the constraints under which they would need to operate (Brunner 2008).

Further, "when a feasible solution is attached to what the public and policymakers perceive as an important public problem, and when political conditions are amenable to change, a policy window opens" (Pralle 2009). Therefore, it is when these three streams intersect that a policy window or window of opportunity arises, and this results in an issue being discussed by the government. These windows do not stay open indefinitely, and if such an opportunity is lost, then one has to wait until the three streams align again. Therefore, a crucial role is played by 'policy entrepreneurs', who can be inside or outside the government, and "are willing to invest resources of various kinds in hopes of a future return in the form of policies they favor" (Kingdon 1985, p. 151). They often guide the agenda setting process, by coupling the problems and solutions together from the stream through the window.

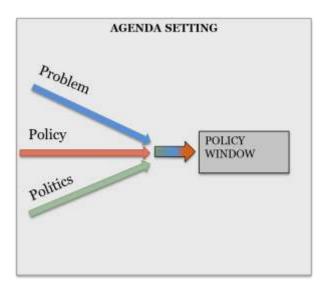


Figure 1: Kingdon's Agenda Setting Model

The opening and closing of these windows, according to Kingdon, is not always predictable (unless linked to institutionalized events such as periodic elections or budgetary cycles), as it also depends upon the characteristics of the issues, the policy solutions as well as the existing political institutions and circumstances, such as 'focusing events' which lead to concentrated attention on one particular issue.

Kingdon's approach has been extremely influential in policy studies, for both descriptive and explanatory studies, and the semantics have found wide use in scholarly work. While his work was based on his investigation of the federal legislative system in the United States, the model has since then been tested several times through cases, though primarily set in the North American or European context. Also, it is important to note that Kingdon's work focused exclusively on agenda setting and therefore, any further application of it has to be thought through systematically.

In applying it to policy formulation, while the overall conceptualization of the three streams would still be relevant, they are likely to relate to and interact with each other in a different way. This is due to the different activities undertaken in policy formulation as well as the fact that it is leading out of the completion of agenda setting, and therefore, would need to be accordingly modified.

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¹ Examples include Travis and Zahariadis 2002, Durant and Diehl 1989, Moya 1998, Zahariadis 1995 and Howlett 1998. Howlett (1998) provides a brief summary of the range of subjects that have used Kingdon's model of agenda setting as a framework of assessment.

PROPOSED MODEL OF POLICY FORMULATION

A key distinction between agenda-setting and policy formulation is the fact that in formulation, tangible policy alternatives are designed and consciously chosen (Sidney 2007). This implies that a significant role is played by expertise in the stage for the selection of broad approaches as well as the more specific tools and policy mixes. Kingdon (1995) alludes to a similar distinction in his writings where he distinguishes between the process of agenda setting and that of alternative specification, or policy formulation. Agenda setting is defined as the process that narrows the set of conceivable problems that policy makers could be considering to a set that actually gets attention. Alternative specification, on the other hand, filters the number of alternatives that can address the problems on the agenda down to a set of alternatives that gets serious attention. Further, policy formulation also involves undertaking value judgments, because different alternatives redistribute resources and power in different ways, determining different winners and losers.

Additionally, as Sidney (2007) mentions, the process of policy formulation is largely conducted out of the public eye and therefore, may not be up for as much scrutiny as agenda setting. However, despite the differences, there remain some important similarities. This includes the important role of politics as well as the role of technocrats who comprise the policy stream, though probably here they play a greater role. Therefore, it is found that there is not a need to create a radically different model, but rather, it is essential to adapt Kingdon's model to be more applicable to the particular characteristics of this stage.

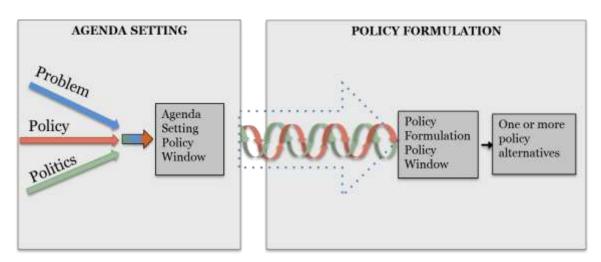


Figure 2: Proposed Model of Policy Formulation

At the culmination of the agenda-setting stage, as the name suggests, the agenda is set. This implies that, at the most basic level, there is recognition of a situation as a problem that requires

government attention and action (Baumgartner and Jones 2005). While this does not guarantee that the issue will be resolved, it does show that the problem is identified (among several other competing ones) for which then solutions are sought at the following stage, i.e. policy formulation. Birkland (2006) also notes that during agenda setting the definition of issues or problems or solutions are critical as they enable a particular agenda to 'monopolize' the attention of the public and decision makers.

There has been literature to suggest that this outcome is not always so clear, that the problem definition may remain an open question even as the policy process plays out (Weiss 1989). Defining and interpreting a problem is seen as a nebulous process that often does not lead to agreed-upon problem definitions, which make identification of solution even more problematic. However, in the model conceptualized in this paper, the agenda setting leads to a clear definition of the 'core problem' or the fundamental issue in question, as opposed to the 'peripheral problems' which may be add on or supplementary issues or other spillover effects, the conversation on which could be changing. This core problem which policy formulation is addressing does not change over the course of this stage.

Therefore, even though in the time that it takes for policy alternatives to reach the stage of decision-making, the overall discourse and semantics about the problem may be altered, different terminologies may be suggested, additional aspects may be included; the core issue identified at the end of agenda setting remains the same. Thus, in moving from the intangible outcome of agenda setting to the tangible policy alternative, the *problem stream is mainly subsumed under the policy stream*, which is the dominant stream that is looking at policy alternatives for the issue identified at the preceding stage, even though the peripheral problems may remain in the background and have a more undefined and mutable nature.

Also at this stage, an important factor that is typically under-recognized in the literature is the role of politics, an element that is a central issue for policy making, conceptually as well as practically, yet has for the most part been given only background status (Gilabert and Lawford-Smith 2012). A large part of the literature perceives this realm to function primarily at the level of experts who provide technically sound policy options based on feasibility and capability assessments (especially in articles by rationalist policy design theorists such as Alexander 1982; Ingraham 1987; Bardach 2005; Salomon 2002). This is supported even in Kingdon's work (1995), which suggests that different processes may govern agenda setting and alternative specification, where political leaders are more active in the former and experts more prominent in the latter. He states that this distinction is often not made in literature where both processes get absorbed under the umbrella of "agenda-setting." These experts can be wide-ranging, from think tanks to researchers

to bureaucrats, but the main point is that this stage is dominated by subject-matter experts and technocrats with minimal involvement of the legislative body and the public, who were both important players in agenda setting.

What this viewpoint tends to ignore is that different policy alternatives have different political feasibilities, and therefore, are associated with varying levels of political risks and costs; which constitute an important criterion for identifying the preferable policy (Dror 1969). Hence, the search for solutions is not only about technical feasibility but also about being politically acceptable. Some authors like Majone (1975), Huitt (1968), Dror (1969) and Webber (1986) have recognized that formulation involves identifying constraints that are both, technical as well as political, in nature. Webber (2005) also emphasizes the importance of undertaking a political feasibility assessment at this stage of policy design and discussion, rather than an input at the decision making stage. Hence, in the proposed model it is contended that the policy stream interacts with the politics stream in order to narrow down the alternatives for the next stage of decision-making. The politics stream primarily relates to the political factors that influence the feasibility of the alternatives, such as political climate or mood, and the voices of advocacy or opposition groups. As Howlett et al (2009) point out, while this may seem obvious, in most normative arguments made about what policy makers ought to be doing, these constraints are often not acknowledged. The lack of recognition of these two interactive streams leads to a gap between "what is desirable and what is possible" (Meltsner 1972, p. 859).

As Kingdon (1995) demonstrated in his model, a policy window opens when the three streams merge, i.e. when simultaneously a problem is recognized, a feasible solution is present, and the political climate is favorable towards change. Since in the present model, it is assumed that the problem stream is pre-defined, it is conceptualized that, it is when the policy and politics streams combine that the policy window for policy formulation opens. The process is dynamic because in the formulation stage as well, several solutions are floating around, but only some are able to combine with the political stream, dependent primarily on the mediating role of the policy entrepreneur. Kingdon saw policy entrepreneurs as those who were "willing to invest their resources in return for future policies they favor" (1984, p. 214). So, while they did promote a particular problem definition over another, in the case of agenda-setting, their function was more of a coupler in a complex policy making process. However, in policy formulation, their role has an added element which is akin to Polsby's (1984) conceptualization of policy entrepreneurs, who saw them as individuals "who specialize in identifying problems and finding solutions" (1984, p. 171). However, in his view, they provide the solution ideas, and in order to move their preferred solutions from "incubation" to enactment, they need allies and form "symbiotic relationships" with politicians. Therefore, the entrepreneurs are seemingly not part of the politics stream, but form a

relationship with it in order to have a mutually beneficial situation through which they can push forth their agenda, and politicians can "yield up public credit, which politicians need in order to survive in their election-dependent world" (1984, p. 172). In this paper, policy entrepreneurs in the formulation stage are conceptualized as an amalgamation of Kingdon and Polsby's entrepreneurs. They are key in promoting particular technical solutions, but they can lie in either the politics or the policy stream. Hence, they can be politicians, bureaucrats, lobbyists or even researchers, and so, can be found inside or outside the government. Their key characteristic is that they consistently work to bridge the gap between the streams and push for the policy alternative of their choice. Therefore, it is proposed, that in policy formulation, a policy window opens when the policy and politics stream merge, but the solutions move onto the decision making stage, when there is a policy entrepreneur present who acts upon the opportunity to promote his preferred solution.

Therefore, the proposed model of policy formulation is based on the following premises -

- At end of the agenda-setting stage, the core problem or the issue(s) requiring the policy intervention gets well defined.
- Even though policy formulation is conceptualized predominantly as a technical endeavor in the literature, politics continues to play a crucial role in the determination of the policy choices
- c) Windows of opportunity arise in policy formulation for a particular alternative to be chosen, when the policy and politics streams merge.
- d) Presence of policy entrepreneurs ensure that one or more policy alternatives reach the decision making stage when such a window opens.

HYPOTHESES AND METHODOLOGY

From the discussion above, four clear hypotheses can be generated that can be tested empirically to evaluate their accuracy and validity –

- a. As the policy process moves from agenda setting to formulation, the problem stream merges into the policy (solution) stream.
- b. At the policy formulation stage, the politics stream interacts with the policy stream to narrow down alternatives to one or more options, which then move onto the decisionmaking stage.

c. Windows of opportunity occur when the two streams (policy and politics) coincide. When this occurs along with the presence of a policy entrepreneur, then one or more policy alternatives move to the decision making phase.

A case study method has been selected to test these hypotheses because, like agenda setting, the nuances of policy formulation can only be fully understood through empirical case studies. Further, the paper addresses descriptive questions aimed at looking at how policy formulation is taking place in the real world and therefore, lends itself best to an analysis through a case study. The case study method is distinctive in this regard, i.e. it is "an empirical inquiry about a contemporary phenomenon (e.g., a "case"), set within its real-world context—especially when the boundaries between phenomenon and context are not clearly evident" (Yin 2009, p.18). Moreover, because of the interplay of various streams, the processes that are actually taking place are complex and require in-depth analyses from various perspectives. Case studies emphasize detailed contextual analysis of a limited number of events or conditions and their relationships, and therefore, are deemed suitable for the purposes of this line of enquiry.

CASE STUDY ANALYSIS AND DISCUSSION

Background

Gujarat is one of the most industrialized states in India, with the sixth highest per capita income (of US\$ 1185) in the country, and a GDP that has increased its annual rate of growth from 8.01% to 8.68% in the last decade (Government of Gujarat 2011). It experienced rapid growth in the development of its economy, since India started liberalizing economic controls in 1991. However, it was conceived that this growth was constrained by infrastructural bottlenecks, primarily the lack of electricity. The Gujarat Electricity Board (GEB), which was the state's primary executing agency in the sector, was unable to raise resources for investments



due to recurring financial deficits, primarily due to the state's policy of supplying electricity to agricultural consumers at extremely subsidized levels. This lead to considerable operational inefficiencies in the power sector, revenue losses as well as poor electricity supply. The State Government made strong efforts to maintain fiscal discipline in its overall finances, but was constrained by its payables to GEB on electricity subsidies to agricultural consumers, which had escalated to about 20 percent of its total revenues in 2000 (ADB 2000). In addition to this, the

large-scale political mobilization of farmers and the existence of powerful vote-bank politics² prevented any attempt at reducing farm-power subsidy (Shah 2006). This adversely affected resource availability for other important areas of infrastructure as well as for social services, thus causing the state to lag behind in socioeconomic indicators compared with other economically advanced states in India. Thus, it was established that a comprehensive restructuring of the power sector was essential to the state's overall economic and social development (ADB 2000). While this situation was not unique to Gujarat, as the case will elucidate, it is the first state in India to have solved this issue innovatively and effectively. Therefore, the case of the Jyotigram (Lighted Village) Scheme has been selected for the purposes of this paper, as it highlights some crucial aspects of policy formulation that have been hitherto not been addressed in the literature.

Hypothesis 1: As the policy process moves from agenda setting to formulation the problem stream merges into the policy (solution) stream

The Government of Gujarat recognizing the ailments of its power sector and the impediment it posed on the potential growth of the state, embarked on a comprehensive reform policy in December 1995 (ADB 2000). It first approached the Asia Development Bank (ADB) for technical support for this process in 1996 under the Gujarat Public Sector Resource Management Program (GPSRMP), for \$250 million (ADB 2000). As part of the reforms to enhance revenue generation, an autonomous body, the Gujarat Electricity Regulatory Commission (GERC), was established in 1998, and mandated to discharge a large spectrum of functions including determining tariffs and corresponding performance norms, issuing licenses, and ensuring nondiscriminatory and commercial business environment (ADB 2000). One of the key conditionalities of the ADB loan included increasing user charges to improve cost recovery focused on increasing (an effectiveness condition), and later revising (a final tranche condition) power tariffs to maintain a 3% rate of return on the fixed assets of Gujarat Electricity Board (GEB), and increasing irrigation charges by 50%.

In the fiscal year of 1999, Gujarat experienced a daily load shedding that varied between 50-1450 megawatts, with an expected shortfall of about 7000MW in generation over the next ten years (ADB 2000). Adding to this burden were the problems of the large amounts of subsidies given to the farmers as well as the increased cross-subsidy burden borne by the industrial sector, both jeopardizing the continuance of viability in this department. The water sector was being handicapped by the flat tariffs charged per horsepower per pump in the agricultural sectors. To

² Vote-bank politics is a term commonly used in India to refer to the practice of creating and maintaining a loyal bloc of voters (who assuredly vote for a particular candidate) through divisive policies. The practices involved in developed a party's vote back are said to encourage voting based on narrow communal considerations that are against the democratic spirit.

make matters worse, continued political interference was not permitting much needed revisions in tariff-setting and in operations, leading to a severe resource crunch in an industry already crippled by poor fund allocation. Reform became not only necessary but also imperative. The Gujarat Government, therefore, decided to take the necessary steps to implement organizational and financial reforms, and approached the ADB again, in 2000, with a view to make reformative changes in both, the transmission and distribution of power as well as the basic organizational set-up (ADB 2000).

On 13 December 2000, at the same ADB Board meeting that approved the release of the final tranche of the GPSRMP, the Board approved the Gujarat Power Sector Development Program (SDP), a \$200 million project loan, and a \$150 million program loan supporting power sector reform in Gujarat (ADB 2000). It aimed to provide incentives for institutional and organizational actions to improve sector governance and achieve the functional unbundling of GEB. Since in the given circumstances, private investment capital was not forthcoming, and yet, there was a continually growing demand for electricity; it was decided that the emphasis of the reforms would be on increasing the income from the distribution side. Therefore, the SDP focused on rationalizing the tariff structure, achieving 100% metering, enhancing billing and collection efficiency, reducing transmission and distribution losses, and installing efficient operational management in the power sector companies. The SDP was formed in consultation with the GEB, the State Government and the central Power Ministry, yet it ran immediately into exogenous roadblocks in the form of state elections and the coming in of a new party at the helm. All this led to a delay in the release of the second installment of the loan.

So, when Narendra Damodardas Modi took over as Chief Minister (CM) of Gujarat in October 2001, he found that the State's power situation still remained grim. The Gujarat State Electricity Board, or GEB, had posted a loss of US 420\$ million for 2000/01, on revenues of US 1160\$ million. Interest costs alone were almost US 225\$ million (Madhavan 2012). Additionally, there were transmission and distribution losses amounting to 35.27% along with frequent load shedding. Due to this, the GEB neither had revenues to enhance its power generation capacity nor build enough trust to invite private sector interest. Therefore, reforming the GEB, became one of Modi's top priorities. The Gujarat Industries and Power Minister, Mr. Saurabh Patel has been quoted as saying "He (CM Narendra Modi) feared that a bankrupt power utility could derail his vision for the state. He knew electricity is crucial for growth." (Madhavan 2012)

As mentioned by Dr. Tushaar Shah³ in a telephonic interview (2013), the Chief Minister, on coming into power placed electricity and the power sector reform agenda as one of his top priorities, which included reviewing of the ADB loan. Since it sounded technically strong, he in fact announced his support for increasing electricity tariff for farmers in a press conference soon after coming to power. This led to severe protests, with over 100,000 farmers congregating to voice their discontent in the political-administrative city of Gandhinagar in Gujarat (Times of India 2003; Bunsha 2004; The Hindu 2004). These strident protests led the Chief Minister to reconsider the policy alternatives and search for possibly different ones.

Therefore, it is evident from the literature, that the problem in this case had been clearly defined since the mid-1990s. In fact, it was after the implementation of the scheme that arose out of the policy formulation under the Modi regime, i.e. the Jyotigram Scheme, that its positive role in managing ground water through a non-price solution was highlighted in several articles and reports (Shah and Verma 2008; Shah et al. 2008; Mukherjee et al 2010). This aspect has not been noted in any of the early reform-related documents. Hence, this indicates that additional elements may be added to the problem stream, but the core remains consistent. Without the core problem being identified at agenda setting, the formulation process cannot take place and the policy process would be unable to move forward. This is because different conceptions of the problem will guide the different actors, who find ways to operationalize the official rhetoric into actual policy programs, in multiple ways as each different problem definition will imply its own set of solutions (Katzmann 1986; Weiss 1989). Hence, no tangible outcome would be arrived at.

Hypothesis 2: At the policy formulation stage, the politics stream interacts with the policy stream to narrow down alternatives to one or more options, which then move onto the decision-making stage.

When the new Chief Minister got appointed in 2001, there was considerable pressure to promise free power to farmers, as has been the norm in the state and elsewhere in India for several years (Madhavan 2001). However, as mentioned earlier, reform of the sector was already on the priority agenda list since it was seen as a major impediment in the State's growth potential. One of critical issues to be tackled was the subsidies to agriculture consumers, which constituted over 40% of total sales of GEB (ICRA Limited/CRISIL Ratings 2005). Their tariff has historically been much lower than the cost of supply. Due to the losses faced by the State Electricity Boards, farmers normally received extremely erratic and poor quality electricity.

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³ Dr. Tushaar Shah is a Senior Fellow at IWMI, based out of Gujarat, and was the principal researcher in the team that proposed intelligent rationing to the government, on the basis of which the Jyotigram Scheme was developed. He was, therefore, identified as a key informant and telephonically interviewed to gain some insights and information about processes that may be undocumented in the secondary literature.

In to solve this, the GERC, at the outset, proposed metering of electricity and raising of the tariffs. This was attempted twice and tariff orders were issued in 2000 and 2004, which aimed to charge farmers electricity tariff based on consumption (ADB 2001), but these were met with stiff resistance from farmers and hence, were never implemented in reality. In fact, the Bharatiya Kisan Sangh (BKS), the farmers' wing of the BJP, the party of the CM Narendra Modi himself (Times of India 2003; Bunsha 2004; The Hindu 2004; Shah 2013), led the protests. The lack of progress in increasing power tariffs, as the documents reveal, have been a serious issue between the ADB and the Government of Gujarat since the first loan itself⁴. At various points, the ADB had even considered withdrawing further installments of the loan due to non-performance (Times of India 2002a, 2002b; ADB 2007).

This level of protest was what forced the CM to rethink this action, since it was essential to solve the power issue, as he faced a critical situation with the aquifers steadily depleting, the electricity board being financially crippled, and powerful farmer lobbies not permitting a metering of the electrical tariffs, which was thought to be the only way to control the unfeasibly high subsidies. Therefore, technical feasibility was a necessary, but not sufficient, condition to enable policy success.

So in order to reformulate the policy alternative, the CM appointed a high level, well-experienced bureaucrat, Manjula Subramaniam, as the Chairman of the Electricity Board to spearhead the work. At the same time, researchers from an eminent research group, the International Water Management Institute (IWMI), were able to present to her their idea of intelligent rationing of electricity with the Minister of Power, Gujarat Electricity Regulatory Authority as well as the Chairman of Gujarat Electricity Board (Shah and Verma 2008). This policy alternative had been proposed by them since several years at various forums, seminars and workshops, but the

⁴ From the ADB Performance Evaluation Report (July 2007) - "The political sensitivity of increasing power tariffs constrained action on the GEB condition and became the subject of intense discussion between GSG (Gujarat State Government) and ADB throughout 2000-2001, eventually resulting in an amendment to enable the release of the final tranche. The GSG self-assessment report recognized the problem created by power sector subsidies. In FY1998 they accounted for 1.5% of SDP, and the delay in restructuring the power sector was a contributing factor to a higher than expected fiscal deficit. The report restated GSG's commitment to reform the sector, but stated that reducing subsidies "has to be a gradual and smooth process so as not to create social upheaval and bitter public perception. [Both bureaucrats and politicians were aware of the need to contain subsidies, but] it will probably take some more time before the target of eliminating subsidies is fully achieved". The report proposed that ADB review this condition as GERC was considering a tariff increase, and concluded with a proposal to defer the objectives of power sector reform and reduction in subsidies to the power sector-restructuring loan, which was then being negotiated with ADB. ADB did not agree. The effectiveness condition had not been met, and the proposal to do away with the condition completely would have been extremely problematic for both the GPSRMP and the proposed power sector loan, particularly as a number of ADB Board members had commented on the importance of power sector reform at the time of GPSRMP approval. A resolution was found, with GSG taking a decision to cap power sector subsidies at Rs11,000 million in the FY2000 state budget. After 6 months of public hearings, GERC increased electricity tariffs including a substantial upward revision of agriculture tariffs in October 2000, after completion of local government elections. But even then the revisions did not enable GEB to attain 3% returns on fixed assets."

Government had never been interested in taking it up or exploring it as an alternative (Shah 2013).

The IWMI proposal recommended a second-best practical solution with three components: a) rationing of power in such a way that it fulfilled the farmers' irrigational needs without becoming unfeasible; b) a strictly rostered supply of power to different villages at fixed times; and c) during the supply period, guarantee of continuous, full-voltage supply so as to fully satisfy the farmers that their basic needs were being met (IWMI 2011). The suggestions made by IWMI were relevant to the government because it helped achieve its aim of providing 24/7 three-phase electricity to rural households and other non-farm consumers (IWMI 2011). Thus, as opposed to the ADB answer to the power problem of metering and pricing farm power supply, the IWMI non-price solution also meant that farmers would not experience a price hike for electricity, but instead would receive a rationed amount, but of high quality. IWMI researchers asserted that that this improved quality (in terms of voltage, frequency, and minimum

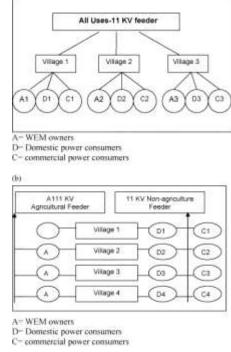


Figure 3: Feeder Separation (IWMI, 2011)

interruptions); greater predictability and reliability of power supply would overcome the initial resistance of farmers to rationing (Shah 2006).

Since this solution seemed both practical as well as politically viable, this recommendation was taken up by the government and was launched in September 2003 under a scheme called Jyotigram ("Lighted Village") Yojana (scheme). Initially, it was piloted in 8 districts, but by November 2004, it was extended to the entire state. Agricultural and non-agricultural feeder, lines were separated at a cost of US\$ 260 million, so that the farm power would remain efficient and inviolate (Devaiah, 2008). The non-agricultural lines provided continuous electricity, albeit at a much higher rate, while the agricultural lines provided limited period electricity at much lower rates (IWMI 2011). Gujarat was not only able to cut down the losses, but was able to report profits after they implemented the dual distribution lines. The strategy helped Gujarat Urja Vikas Nigam Ltd (GUVNL) — the holding company formed after the unbundling of the GEB in 2003— to shift its financial position from a loss of US\$ 227 million in 2003-2004 to a profit of above US\$ 23 million in 2007-08, the first year of the eleventh Plan period. Since then, profits have jumped five times to US\$ 120 million over five years that ended in March 2012 (Singh 2012).

Therefore, in the formulation of this policy, the political aspect played an equally important role as the technical aspect. In fact, the political constraints were one of the primary reasons why technically and financially feasible solution was not being successfully adopted. Thus, clearly the politics and policy stream at this stage strongly interact with each other in the effort to select policy alternatives.

Hypothesis 3: Windows of opportunity occur when the two stream coincide. When this occurs along with the presence of a policy entrepreneur, then one or more policy alternatives to move to the decision making phase.

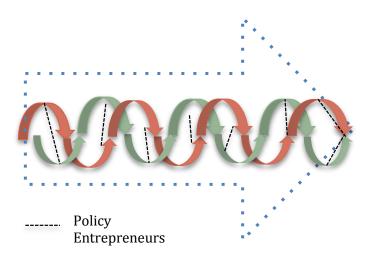
In Kingdon's model, the three streams work along different, largely, independent channels until a particular time, when they flow together or intersect. This is the policy window or window of opportunity for delivering a change and moving items onto the government's formal agenda. A similar situation occurs in policy formulation. The politics and policy streams work independently, until they are able to align their goals and objectives with each other, leading to the opening of a policy window.

In the case under study here, we see a clear point of assimilation of the politics and policy streams leading to the creation of a policy window, and through it, the emergence of the Jyotigram Scheme as the preferred policy alternative. The policy window emerged in this case with the election of a new Chief Minister, in 2001, who came to power with a strong agenda of overhauling the power system and improving service delivery. In the political realm, there was also an uproar with regard to the increase in tariff prices, which was creating an imperative to find a more feasible solution to the power troubles of the state without hampering the vote-banks. In the policy realm, there was the ADB proposed reforms that had proven to be infeasible due to the strong resistance of people to any reduction in farm power subsidies (Shah and Verma 2008). In view of this, the Government of Gujarat had to slow down its earlier reform plans and the ADB suspended the release of the loan installment. At the same time, "floating" in this stream was the IWMI proposal of intelligent-rationing of power and rather than pricing, i.e. of segregating the feeders and allocating specific hours for agriculture. As theorized by Kingdon (1984), the coupling process of the stream is dynamic and it occurs when simultaneously a problem is recognized, a solution is available, and the political climate is positive for change. It is then that a policy window emerges. This situation of the impasse described above led to the merging of the streams and created the opportunity (or a policy window) for other policy alternatives apart from the ones being proposed from a decade earlier could be pushed through the window. In this case, it allowed specifically for the IWMI proposal (which was floating in the primeval soup of the policy

stream) to gain influence, even though theoretically, it was not the technical first-best solution, but clearly it was a more politically feasible one.

As mentioned earlier, in policy formulation too, the role of the policy entrepreneur is critical. This could be an expert who is able to navigate the political side to table his/her policy preference, and it could also be a politician, who is seeking to satisfy his voters by choosing a conducive policy. However, the nature of the entrepreneur in the formulation stage is not one of just coupling the streams to take his preferred idea forward, but she/he is responsible for actively seeking and specifying policy alternatives, mobilizing public opinion and brokering the ideas among the policy actors (Roberts and King 1991).

In the case of the Jyotigram Scheme, there are clearly two entrepreneurs, one from the politics stream, the CM Narendra Modi, and the other from the policy stream, Manjula Subramaniam, the Chairperson of GSEB and Principal Secretary, Energy and Power. It was undoubtedly their initiative that led to the formulation of the Scheme in its present form, though it is difficult to disentangle the specific role of the two of them from secondary literature. The Chief Minister, on realizing that the first solution of raising tariffs was not resulting in the desired outcomes, made investments to understand the issues at stake at a deeper level, and actively sought out different viewpoints and solutions that could be offered (Shah 2013). Similarly, Ms. Subramaniam engaged with a wider audience of experts as well the employees of the electricity board to boost morale, relay insecurities due to the changes and generally, create a readiness for undertaking of a significant policy change (Madhavan 2012). Therefore, they were active in seeking and identifying the specific policy alternative, while at the same time, working to build a favorable response from the key policy actors in order to ensure both political and technical feasibility. As the figure below illustrates, policy entrepreneurs consistently make efforts during policy formulation to bridge the two streams together by finding the right policy solution to the identified problem, within the existing political climate. In the case, the window of opportunity emerged and because of the efforts of these two policy entrepreneurs, a specific policy alternative (the Jyotigram Scheme) was identified and pushed through the window to reach the next stage of decision-making.



It would also be reasonable to surmise that the coming together of policy entrepreneurs from both the streams enhances the propensity for a successful and effective policy. All literature on managing energy as well as groundwater, alludes to "setting the prices right" as the most efficient and effective option and so, the first-best solution (Johanssen et al. 2002). However, as this case shows, expanding the search for policy alternatives based on not just technical aspects but also political expediency, may lead to more effective second-best solutions; or as in this case, I would argue, in all practical ways, to the first-best solution. Due to the new policy, the once bankrupt GEB was revitalized, as revenue collection increased from \$189 million in 2004-2005 to \$273 million in 2007–2008 to \$327 million in 2008–2009, with raising a single electricity tariff in seven years. Moreover, there is surplus of tradable power of about 600 MW (Varma 2011). In fact, having brought electricity to rural households also allowed the Chief Minister, one of the policy entrepreneurs, to create a powerful rural support base to counter tubewell owners' initial resistance to power rationing (Shah and Verma 2008). He has since them been re-elected twice as the Chief Minister of the State and lauded for his achievements in reforming the power sector (Indian Express, 2013)⁵. Gujarat is now also the only Indian state that generates more power than it consumes (Wall Street Journal 2012).

Conclusion and areas of further research

Policy formulation is a critical stage in the policy making cycle and, as is evident from the case study findings and discussion above, a very complex one as well. There is an interplay of several actors, from both policy subsystems as well as epistemic communities, who strongly influence the eventual policy alternatives. However, despite its importance, there has been a lack of theory building for this stage, a gap that this paper attempted to fulfill.

⁵ The Chief Minister received a commendation by the Stockholm International Water Institute (SIWI) as well as an award in the Public Service Innovations Category for the Innovation for India Awards 2010 for the Jyotigram Scheme.

A model, based on Kingdon's model of agenda-setting, was conceptualized which proposed that in policy formulation, a) the problem stream merges with the policy stream since the core problem is identified at agenda-setting, b) the politics stream interacts with the policy stream to narrow down alternatives for decision making, and c) windows of opportunity open when the two streams combine, and alternatives are moved through the window only when an entrepreneur is present. This thesis was tested against a case study based on the Jyotigram Scheme in Gujarat, India, in which the government successfully supplied 3-phase, 24×7 uninterrupted power supply, to all 18,742 villages of Gujarat as well as over 9680 suburbs attached to these villages (Shah and Verma 2008; Devaiah 2010). The results of the case substantiated and supported the hypotheses that were frame based on the proposed model of policy formulation.

The problem definition in the case was clear right from the start. After the agenda was set to resolve the power crisis in the state of Gujarat, the policy alternatives changed, but the way the problem was defined and understood remained unchanged. This supports the proposition that after agenda setting, the problem stream does not float as an independent stream, but is subsumed under the policy stream, which in the formulation stage involves finding policy solutions.

Secondly, politics played a key role in not only the selection and specification of the policy alternative, but also in the creation of a policy window. When for several years, technical solutions based on expert opinion were being promoted; little was achieved because there was little political readiness for the issue. Even the ADB (2007) in its evaluation report accepts that with the entire political and bureaucratic support of the Gujarat Government, it became possible to successfully implement such legislation so as to bring about reforms with such outstanding results. However, in the case of Jyotigram, the solution not only resolved the revenue loss and groundwater overdraft problem, but also paved the way to building social capital in order to move towards the first-best technical solution. Since the Jyotigram Scheme, all new tubewells are required to be metered. Currently, the tariff is still priced very low, but again, the government is incrementally moving towards it, ensuring that both the feasibility needs are met (Shah and Verma 2008).

Lastly, the case illustrated how during formulation, one sees the coming together of the politics and policy streams leads to a window of opportunity, that when leveraged by a policy entrepreneur leads to the selection of a particular policy alternative. In this case, the window opened at the time, when the technically first-best solution of raising prices was strongly resisted by the populace and the power issues in the state were critical. This created the space for policy

change and with the presence of two entrepreneurs, one a politician and the other a bureaucrat, who sought out alternative policy solutions and built the support of policy actors, a policy solution was put forth.

Therefore, the proposed model of policy formulation found support in the case that was studied and hence, is a good basis on which to further empirically test other cases of policy formulation to strengthen its external validity and potential to have generalizable implications. The model allows one to deconstruct the policy formulation process into different aspects and understand the interactions and dynamics between the different institutions, ideas and actors. It enables one to analyze this important phase of policy making systematically and identify the players in the streams and the relationship between them, to see how they influence the outcome at this stage. For further research, it would be interesting to study the strength/influence of the two streams, politics and policy, in determining this outcome as well as eventual success (or not) of the policy choice.

The chosen case study had sufficient information in the secondary literature to trace its formulation for over a decade. However, this is often not the case. A key limitation with trying to study formulation is the fact that most processes occur outside the public eye. Even the brokering and negotiating role of the entrepreneur is not usually visible and has to be surmised in most cases. Without the crucial access to the key players, it is difficult to ascertain the accuracy of the secondary literature and it is likely that some interesting complexities and processes may be missed in the analysis.

There are also several additional factors, some based on drawing parallels from Kingdon's work, which warrant further exploration and research. One significant aspect that this case could not analyze with sufficient detail was the role of the entrepreneurs. It is conceivable that different types of entrepreneurs play a different role in the emergence of a policy window. As mentioned earlier, this is difficult in the case of formulation but can possibly be overcome by gaining access to several key informant interviews and then triangulating the information with other information sources. A related aspect that came through this case was the notion of entrepreneurs creating a readiness for a policy, reflecting a human capital development role that has hitherto never been mentioned in the literature, and goes beyond just merging the technical and political aspects. The information in the secondary literature for the case was insufficient to explore this aspect in detail, but may warrant further documentation and research. This could potentially be a distinguishing feature of entrepreneurs in formulation as opposed to agenda-setting. In continuing the association with the Kingdon model, one could also look at the role of focusing events. Though in the case analyzed in this paper, the problem definition was very clear, it is possible to see the

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protests against price hikes as 'focusing events' that catalyzed the search for alternative solutions. Lastly, further work in applying a similar approach to the other stages of policy making would also be a valuable step at creating a more cohesive and comprehensive model for the policy making process as a whole.

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