



---

## Narrators and Narratives: A Study of Climate and Air Issues in Delhi, India

Daniel Costie and Kristin Olofsson

---



**Electronic version**

URL: <https://journals.openedition.org/irpp/2698>  
DOI: 10.4000/irpp.2698  
ISSN: 2706-6274

**Publisher**

International Public Policy Association

**Printed version**

Date of publication: 1 November 2022  
Number of pages: 171-190  
ISSN: 2679-3873

**Electronic reference**

Daniel Costie and Kristin Olofsson, "Narrators and Narratives: A Study of Climate and Air Issues in Delhi, India", *International Review of Public Policy* [Online], 4:2 | 2022, Online since 01 November 2022, connection on 22 February 2023. URL: <http://journals.openedition.org/irpp/2698> ; DOI: <https://doi.org/10.4000/irpp.2698>

---



Creative Commons - Attribution 4.0 International - CC BY 4.0  
<https://creativecommons.org/licenses/by/4.0/>

# **Narrators and Narratives: A Study of Climate and Air Issues in Delhi, India**

---

**Daniel Costie**

*Eastern Oregon University, USA*

**Kristin Olofsson**

*Oklahoma State University, USA*

---

## **Abstract**

Policy narratives are deliberative tools used to influence public opinion and shape the policy agenda. This work examines policy narratives and the policy actors who tell them by exploring the stories surrounding air and climate issues in Delhi, India, using the Narrative Policy Framework (NPF). As a proof-of-concept exercise that explores the potential validity and reliability of the ego-alter dyadic approach to dissecting narratives, we aim to enhance theory regarding narrativity by focusing on the narrator. We find distinct patterns of narrators in this set of narratives and several key trends are identified. There is an overall tendency towards hero-centric narratives and some distinct proliferation of specific groups as the receivers of actions. In addition, we find that there is a relationship between the magnitude of stories produced and a tendency to use traditional characterization in those narratives. This work has implications for future scholarship interested in empirical applications of discursive power in the policy process.

---

## **Keywords**

Narrative Policy Framework, India, climate policy, pollution, media studies, Policy Narratives

## Introduction

Policy narratives are social constructions of reality that give storytellers a means to express their values, influence the priorities of government, and shape policymaking. In a democratic system shaped by the interests of the citizenry, how policy narratives positively or negatively depict individuals or groups helps explain why policy designs might benefit one group or punish another (Schneider et al., 2014). These perceptions manifest in the policy narratives used by policy actors within a policy subsystem and play a key role in shaping public opinion (Shanahan et al., 2011).

Narrative analysis contributes to our understanding of the interaction of policy and politics in two ways. First, it offers the opportunity to empirically explore the stories told by policy actors who have power over discourse. The strength of a democracy can be measured by the linkage between public opinion and the conduct of public institutions and elected officials (Shanahan et al., 2011). Public opinion is influenced by discourse, and narrative analysis explores discourse to better understand the impact of policymaking. Second, one strength of public opinion lies in its influence over the policy agenda (Kingdon, 2003; McMorris, Zanicco, & Jones, 2018). Narratives help shape agendas by defining the issues and determining the severity of the problem. Understanding the content and structure of policy narratives provides insight into how public opinion is shaped. Using a tool first employed by Weible et al (2016), this work analyses narratives surrounding air and climate issues in Delhi, India by addressing the question 'In what ways are narrators connected to policy narratives?'

This research uses the Narrative Policy Framework (NPF) to connect narrators with narratives. One of the assumptions of the NPF is that policy narratives have common forms and contents that can be applied across various policy contexts (Jones & McBeth, 2010). These narratives can be captured through mediums such as books, articles, blogs, and pamphlets, among many others forms of communication. Observing these narratives allows scholars to study the strategies and belief systems of the storyteller. Currently, there are few empirical studies on the relationship between the policy actor-as-storyteller and the content of those narratives. Few exceptions exist, such as Merry (2015) who observed variation in narrative content between pro-gun organizations and anti-gun organizations, but with more focus on the narrative and less on the narrator.

As a methodological contribution as well, this research represents an extension of the approach for observing policy narratives created by Weible et al. (2016). Paul Sabatier, a leading scholar of policy process research, once characterized good research as "clear enough to be wrong" (2000). Similarly, there have been calls in recent years to establish systematic ways of identifying both policy narratives and the authors that tell them (Shanahan et al., 2018; Sievers & Jones, 2020). This idea was the driving force that prompted the construction of an instrument by Weible et al (2016) that could provide a systematic, transportable, and generalizable approach to capturing policy narratives and the policy actors that tell them. This method was developed to address the apparent inconsistencies of theoretical conceptualization and methodological procedures within the NPF. In response, and drawing on network science thinking, Weible et al. established the ego-alter dyad as a necessary attribute of a policy narrative (2016). A relational tool for identifying narratives was constructed around these dyads based on the idea that a core element of a narrative is that there is an ego (represented as either a hero or villain), an alter (represented as a victim or beneficiary), and an action that links the ego to the alter.

Applying this dyadic approach, we performed a content analysis of narratives within the air and climate subsystem using publicly available publications. We then analyzed this data with a focus on the narrators of the publications and identified several patterns. First, broadly speaking, there is strong evidence that narrators in this case study are typically *research institutions*, *advocacy groups*, *government agencies*, and *industry groups*, with the former two creating the most policy narratives. Second, most author groups tell hero-centric stories with federal government frequently used as the ego and the public most often portrayed as the alter. Third, the public was frequently included in the narratives by all types of narrators as both a beneficiary and a victim. Lastly, the two most prolific narrator groups (*research institutions and advocacy groups*) both construct narratives with governments as the ego, but research narrators demonstrate a tendency to characterize government as heroes, while advocacy narrators tend to characterize government as villains. As a methodological exercise, the findings of this research point to the potential to expand our understanding of patterns of narration by incorporating narrators – and their attributes – as an important component of discourse analysis.

This work will begin with an overview of the NPF. It will then focus on the theoretical and methodological gaps in the narrative literature that this research intends to address. Next, air and climate issues in Delhi, India will be presented as our case study and the methodological tool used in this research will be explained in detail. Lastly, the results of the research will be presented followed by the conclusion and implications of our study.

## Literature review

Shanahan, Jones, and McBeth developed the NPF to facilitate research on storytelling in policy processes (Jones & McBeth, 2010; Shanahan et al., 2011). A core assumption of the NPF is that narratives play a central role in how people share information (Polkinghorne, 1988, Sabatier & Weible, 2014). This assumption follows Jones (2001), who argues that emotions play a critical role in cognitive processes by signalling an individual's priorities. Individuals involved in policy issues, otherwise known as policy actors, use emotionally-charged narratives to both frame events and advocate for positions and policies. Research indicates that *how* a person receives information (e.g. via a story), as well as when they receive it, can influence internal cognitive processes about policy issues (Berinsky & Kinder, 2006; Jones & Song, 2014; Crow & Jones, 2018; Shanahan et al., 2018).

Under the NPF, two aspects of stories have been identified as the principle units of analysis: narrative form and narrative content.<sup>1</sup> Narrative form refers to the structure of a narrative as expressed by recognizable elements. These elements include setting, characters, and moral of the story. Narrative content refers to the details and connections of the narrative elements that constitute a story.

One of the primary contributions of the NPF was to establish general story elements that are identifiable across narratives, and therefore comparable using empirical data analysis methods (McBeth et al., 2014). Within the NPF, the definition of a narrative is not settled theory. However, Jones & McBeth (2005) contend that a policy narrative contains essential elements that include setting, plot, characters, and a moral. The NPF provides a replicable, empirically-based approach to compare and analyze how information relevant to policy debates is being shared

---

1 – These units of analysis help assuage some challenges in studying, describing, and delineating policy narratives (Chong & Druckman, 2007, Gibson & Gouws, 2001, Lejano et al., 2013). Still, challenges persist. Social scientists disagree about what the necessary elements of a story should be, how data about stories should be collected, and whether it is possible to generalize beyond a specific case study.

and consumed by the public and by policy actors (Nowlin, 2011). Our research picks up on a recommendation made by Weible and Schlager (2014) to continue to develop the theoretical underpinnings of the NPF by fleshing out two important aspects of policy narrative: the type of narrator telling the story and their relationship with the content of narratives.

This work also builds on a prior application of the NPF that identified characters and their interactions as essential elements of a narrative (Weible et al., 2016). It clarified the definitions of narrative characters such as *heroes*, *villains*, *beneficiaries*, and *victims*. An additional theoretical advancement was the development of a network-based approach for observing a relationship between characters: the ego-alter dyad (Weible et al., 2016). The ego-alter dyad draws upon network analysis literature recognizing that individuals, as characters, are connected through actions in a narrative. In this approach, a policy narrative must contain an ego, as a character type of *hero* or a *villain*, and an alter, either as a character type of *victim* or *beneficiary*. The ego is connected to the alter through an action, in which the alter receives the action of the ego. An alter character is considered a beneficiary if they are directly or indirectly the recipient of an action by an ego character but not negatively affected by that action. An example of a beneficiary has often been an actor affiliated with industry such as a transportation or energy company that is not the intended target of a hero's helping policy change, but nonetheless derives benefit. An alter character is considered a victim under two circumstances directly determined by the hero or villain archetype of the ego character. An alter can be a victim if they are actually or potentially hurt by a villain's action. An alter can also be a victim if they are helped by the actions of a hero character. Using this story definition, Weible et al. found that while heroes and villains are associated with different types of actions, the public was frequently used as the victim. Results also indicated that the types of stories told, such as hero-focused stories, can change over time and are observed in patterns connected to the story context. For example, stories about air pollution in Delhi frequently focus on heroes (Olofsson et al., 2017). These findings revealed the need for further research into another influential piece of the narrative puzzle: the narrators. We know that policy advocates either purposefully or unconsciously use stories to promote their policy beliefs, and we also know that information delivered via narratives can be more influential than scientific information alone (Jones, 2014; Golding et al., 1992; McBeth et al., 2012). However, we do not understand how different narrators construct policy narratives differently.

Theoretically, the research presented here is concerned with the narrators of policy narratives and how their organizational type influences their choice of characters (ex. governmental characters versus NGO characters). The analysis aggregates narrators into groups based on organizational affiliation to explore potential patterns of narration among different types of narrator affiliation. Empirical work in the NPF has considered both the micro-level of analysis of the individual stakeholders (the recipients of policy narratives) and the macro-level of analysis of broad policy themes but has not considered the meso-level space between: the narrator, aggregated to the organizational level. This research addresses this gap by looking at the narrators and patterns of narrative elements instead of the recipients of policy narratives.

More broadly, this work has implications for how power dynamics within a pluralist society is understood. Discursive power can be observed by studying the role narratives play in shaping what is (and is not) on the policy agenda as well as what narratives the public is being exposed to (Sievers & Jones, 2020). In addition, Lasswell (1956) calls upon policy scholars to establish a systematic approach for comparing the policy process across different forms of government. Similar to the European NPF community's call for a broader narrative research perspective as

articulated by Stauffer and Kuenzler (2021), the methodological approach contained in our analysis of Indian policy discourse can be used to compare and contrast states with varying capacity for democratic governance.

## Case study

Much has been written about environmental issues in India. Some studies have analyzed the influence of specific policy actors in the policy process (Véron, 2006; Bell et al., 2004; Singh, 2012). Other studies have focused on the outcomes of a policy aimed at mitigating environmental issues such as air pollution (Goyal et al., 2006; Kathuria, 2002). Still others have conducted more technical studies by collecting data on air quality and explaining the health risks associated with such contaminants (Cropper et al., 1997; Srivastava et al., 2005; Pande et al., 2002; Chakraborty & Basu, 2021). What is often overlooked is the relationship between policy actors-as-narrators and the content of the policy narratives told in an urban governing context such as Delhi. More attention should be dedicated to those shaping the narratives and how they portray other actors involved or affected by the issue.

This work analyses policy actors in India and the extent to which they use narratives to shape the societal debates towards their strategic benefit using documents, studies, blogs, and other forms of publicly consumable digital materials. Environmental issues are frequently complex and characterized by coalitions promoting a variety of policy solutions and priorities. Perhaps it is for this reason that the NPF has frequently been applied to the study of environmental issues in a variety of settings including hydraulic fracturing (Heikkilä et al., 2014), nuclear power in India (Gupta, 2014), climate change (Jones, 2014), and management of public lands (McBeth et al., 2005). However, few NPF applications have examined issues related to air and climate in urban areas (Gupta, 2014; Olofsson, 2017), which is a highly salient topic for planners and researchers interested in climate change. With its rapidly growing population, increasing air pollution, and substantial risks associated with climate change (Véron, 2006), Delhi provides a rich setting in which to study how different groups, with different motivations, promote policy priorities through the use of policy narratives found in online media.

## Methodology

Informal interviews were conducted in Delhi in the summer of 2013 to create an initial sample of organizations and individuals active in the air and climate issue in Delhi.<sup>2</sup> We used those discussions and topically-relevant scientific articles, news articles, government documents and reports to create the base of our research (see Appendix 1 for a list of organizations and search terms). We combed through the different websites to identify additional organizations. When this sampling process revealed additional organizations working around this issue, the latter were added to the list and reviewed for policy narratives. A total of eighteen organizations were identified. The websites of these organizations were then analysed in full to obtain policy narratives.

There were four inclusion rules for the document sample. First, the document had to be written in English and publicly available online. There was no restriction on the type of document.<sup>3</sup> Sec-

2 — Information collected during the informal interviews was not analyzed as part of the dataset. The interviews served only to provide context and initial information about the specifics of the setting in the case of Delhi, India and to start the identification of relevant policy actors and organizations.

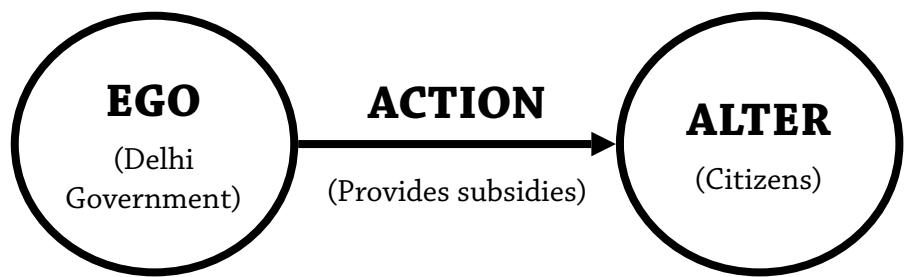
3 — Academic journal articles were excluded from the final sample. Although these documents – if publicly available online – were eligible for inclusion, it became obvious during the testing of the codebook that academic journal articles are not narratives as conceived by the NPF. As academic journal articles most often aim for neutrality in their presentation, it is hardly surprising that the documents tend to lack a narrative or storytelling pattern, and as such this lends validity to the definition of narrative used in this research.

ond, the topic of the document had to deal substantively with air and climate issues in Delhi. Air and climate issues included topics such as air pollution, climate change, global warming, and carbon emissions, among others (see Appendix 1). In addition, the setting for the narrative had to be Delhi. For example, a report on the state of carbon emissions in Delhi would be included while a press release discussing a climate change meeting in Delhi would not. Third, the date of publication had to be between 2012 and 2014 (inclusive). Lastly, documents had to include at least one observation of an ego-alter dyad (e.g. Weible et al., 2016). Each dyad represents two characters (an alter and an ego) from the same publication, connected by an action.

A standardized codebook was developed to capture NPF elements such as narrator, hosting organization, organizational affiliations, characters, and setting (see Appendix 2 for a copy of the full codebook). In keeping with best practice recommendations for qualitative content analysis, essential coding items were determined a priori and tested against the empirical material (Flick, 2014). However, as this effort represents theory in development, some categories were developed inductively after a review of the coded material.

Coding occurred at the document level and subsequent analysis occurred at the ego-alter dyad level.<sup>4</sup> A given document could include multiple observations of dyads. If a document did not include a dyad, it was omitted from the dataset. Attributes of an observed ego-alter dyad such as sub-topic, ego character type, ego character organizational affiliation, alter character type, alter character organizational affiliation, and alter object were coded for each and every observation. Categorization and associated rules were established after the initial round of coding to identify patterns and simplify analysis. Character types of *hero*, *villain*, and *victim* have been thoroughly established in the NPF, but the *action* linking ego characters to alter characters and the alter archetype of *beneficiary* character is relatively new (Weible et al., 2016). An example of an action is when an NGO *feeds* the homeless. Beneficiary is a character type that recognises that not all receivers of action from egos are necessarily victims. An ego as a hero can act upon an alter as a beneficiary when, for example, the Delhi government provides citizens with subsidies for electricity needs. In this case, the Delhi government is an ego as a *hero* character that *provides* subsidies that benefit citizens as a *beneficiary* alter character. See **Figure 1** for a graphical representation of the ego-alter dyad. Note that although analysis occurred at the dyad level, the results have been aggregated to the level of organizational affiliation, which was recorded as an attribute in the original observation.

Figure 1. Ego-Alter Dyad



Source : The Authors

4 — The narratives as captured in the documents were not as clear as a simple sentence. Based on the coding rules, narratives could be constructed across many paragraphs. The tables representing common narrative content are not strictly direct quotes from the data but rather reconstructed from the document's text.



Intercoder reliability was established using the “successive approximation” method developed by Ansell and Gash (2007). First, a small sample of the documents was reviewed as a team to establish shared understandings of the codebook, after which three rounds of team coding were used to refine the codebook and achieve agreement. Each researcher coded three documents individually, then the team met to review and compare results. The codebook was updated to reflect changes and the testing process began again. Once intercoder reliability of 80% agreement was achieved (Lombard et al., 2002), the remainder of the sample was divided among three coders.<sup>5</sup> Agreement on qualitative metrics was achieved through successive coding rounds, drawing upon Patton’s (1990) triangulation through multiple researchers.

## Analysis

Individual narrators and narrator groups were collapsed into categories based on their organizational affiliation. The term *narrator groups* refer to when a single document lists more than one narrator. The organizational affiliations were determined based on 1) publicly available website information provided by organizations about their missions and goals and 2) when relevant, information obtained through informal interviews. From this information, four categories were inductively created: *Research*, *NGO*, *Domestic Government*, and *Industry*. The *Other* category included one document, a legal advisory document, which did not fit into any of the aforementioned categories.

The final sample identifies 73 documents divided into 38 distinct narrator groups with 252 observations of ego-alter dyads.<sup>6</sup> **Table 1** offers descriptive statistics regarding narrator actors aggregated by their organizational affiliation. It relates organizational affiliation with the number and percentage of narrators, documents, and ego-alter dyads in the data. The results show that most documents and dyads analyzed are affiliated with research institutions and advocacy groups. Research institutions are organizations creating original knowledge and offering more technical information to the general public. Advocacy groups do not conduct research but advocate for certain causes and may present outside facts and figures to advance their own agenda. The former comprises about 44% of all narrators captured and a little under half of all documents analyzed and dyads observed. The latter makes up about 37% of the narrators captured and about 33% of the observed dyads. Together, research institutions and advocacy groups are the most prolific in these data, producing three-fourths of all documents and observations of ego-alter dyads. Among the other narrator groups, government represented approximately 18% of the documents analyzed and approximately 11% of the ego-alter dyads captured. Industry represents the smallest portion of narrators, documents, and dyads. The “other” document is an amicus curie brief, which did not fit the description of our other author groups.

5 — Intercoder reliability was tested using Freelon’s ReCal reliability calculator (Freelon, 2010; 2013).

6 — In many cases, a ‘distinct narrator’ was a group of actors crafting these documents as a writing team.



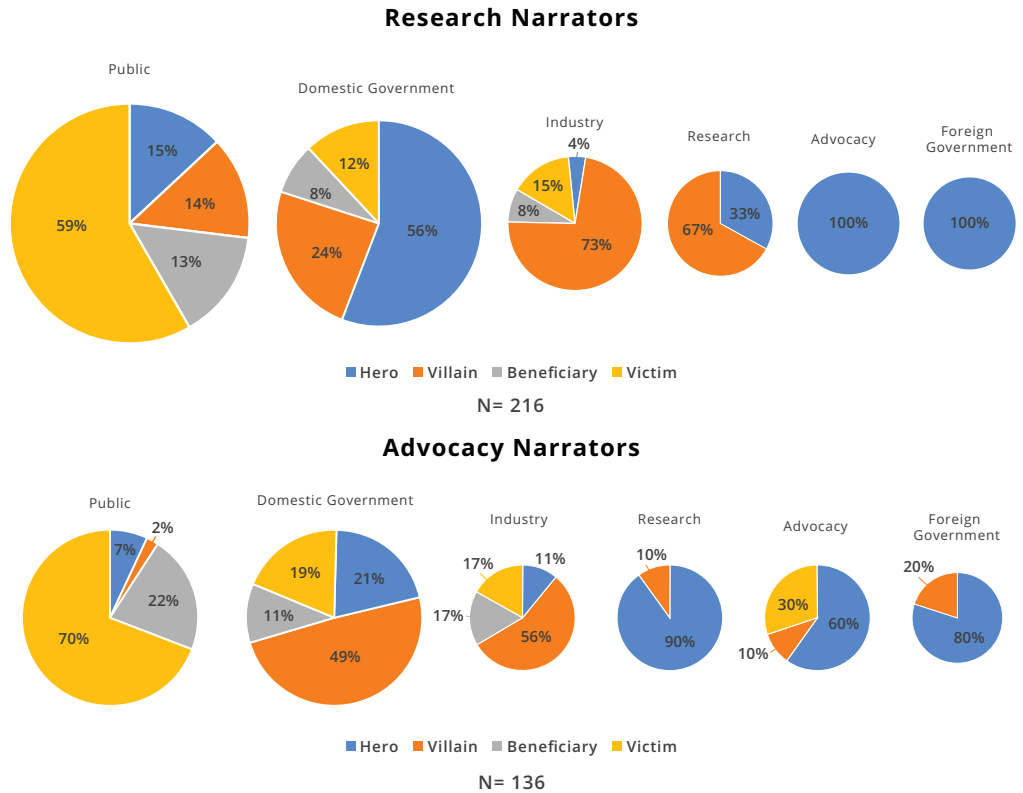
Table 1. Descriptive Statistics

<b>Organizational Affiliation by Author Group</b>	<b>Authors</b>	<b>%</b>	<b>Documents</b>	<b>%</b>	<b>Dyads</b>	<b>%</b>
Research	20	43.5	33	45.2	120	47.6
Advocacy	17	37.0	24	32.9	93	36.9
Domestic Government	6	13.0	13	17.8	27	10.7
Industry	2	4.3	2	2.7	10	4.0
Other	1	2.2	1	1.4	2	0.8
Total	46	100	73	100	252	100

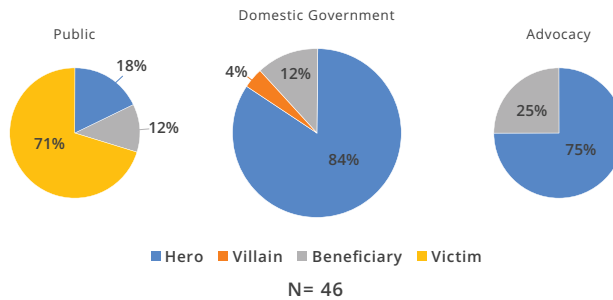
Source : The Authors

**Figure 2** displays the types of characters used by the four different narrator organizational groups (See Appendix 3 for examples of these policy narratives and Appendix 4 for the pie chart scale legend). It shows the frequency with which hero, villain, beneficiary, and victim characters are associated with different groups of people. The organizational affiliations of the characters were organized in a similar manner as the narrator groups in **Table 1** with the inclusion of two additional groups, foreign governments and the public. Foreign government affiliation refers to any individual or collective that represented a national government other than the Indian government. Public characters were generally abstract terms referring to a general group of people such as “community,” “citizens,” and in many cases “the public.”

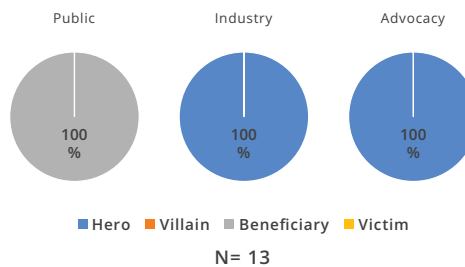
Figure 2: Narrative characterization by type of organization



### Government Narrators



### Industry Narrators



Source : The Authors

The most commonly chosen character by all narrators was the hero. The domestic government was most often referenced as the hero and this finding was most acute among research narrators. In these hero-centric stories, the public was most often the recipient of the government's actions. The public was by far the most frequently constructed as the alter across all four narrator types and was primarily characterized as a victim.<sup>7</sup>

Looking at the two most prolific author groups, i.e., research institutions and advocacy groups, reveals a few subtle differences in characterization. Research narrators more frequently used government, both domestic and foreign, as the ego character. Advocacy narrators, on the other hand, focused on the actions of the domestic government as the villain. Domestic government narrators included those from the local, state, and national levels of government. This narrator group tended to construct narratives using government as the hero and the public as a victim. Industry narrators had the least policy narratives. The narratives that were captured included egos portrayed as industry characters. These characters were depicted as heroes. While the public was the most common alter, this narrator group deviated from the other narrators by portraying them as beneficiaries of the industry characters actions. While this work did not focus on industry narrators, these narrators would often associate the actions of an ego with an inanimate object like the air or a water source, without including a beneficiary or a victim.

## Discussion

From this preliminary study, we have identified patterns of characterization based on the organizational affiliations of the narrators. In particular, four patterns stand out. First, in the context of air and climate issues in Delhi at the time of study, the type of narrator mattered.

7 – While most dyads included victims and beneficiaries, some narratives linked the actions of an ego to an inanimate object in addition to an alter.

Industry characters, for instance, were often portrayed as villains, but when industry narrators told the story, they portrayed themselves as the hero. This may have been a strategy used to challenge a dominant narrative by offering a countervailing one. Research and advocacy narrators often used the government as an ego; however, the ways in which these groups characterized government varied. Research narrators portrayed government as a hero, and advocacy narrators as a villain. Given the policy situation in Delhi at the time of the study, the results here reflect a Schattschneider-type logic about the motivations of out-groups to expand the scope of conflict through narrative strategies and perhaps shift the agenda (Schattschneider, 1960; Olofsson, 2022).

Second, as it relates to pollution in Delhi, all narrative groups tended to tell hero-centric stories. This may speak to the cultural dimension of narratives as certain groups may be more inclined to frame discourse in a more positive light than others. While all narrator types used heroes, they were most frequently used by research institutions. As the body of NPF empirical research grows, we learn more not only about how narrativity is constructed but also about how that construction may vary across contexts. It is overly simplistic to assume that telling stories is standard across cultures, and we need more research that considers patterns of narration in different cultural settings.

Third, the public was often portrayed as the victim. The ubiquity in which the public was used as a victim may reflect the true nature of the politics and problems surrounding air and climate issues, or it may be simply a narrative that is propagated through narrative content. Additional insight could be gained by connecting the target audience of the narrative to the characterization patterns. If the public is the target audience for a narrative, perhaps it makes sense to appeal to that group as the victim of the ego's actions. It may also be that the particular cultural context of a narrative drives narrative patterns in a powerful way, such as the victimization of the public in these Delhi narratives. Finally, it may also be that in the case of climate narratives in Delhi, the public is the ultimate victim and its characterization as such is logical. Much of the NPF work is set in environmental topics. Further studies in topics beyond environmental policy might reveal – or fail to reveal – the regularity of the patterns uncovered here.

Lastly, the majority of narratives were constructed by research institutions and advocacy groups. This finding may reflect that researchers and advocacy groups are more active in the online space, or that they were tackling these topics more frequently than other narrators affiliated with other types of organizations. While the use of government as an ego is commonplace, research and advocacy narrator groups told a greater diversity of stories, presenting a variety of characters as heroes, villains, beneficiaries, victims, and affected inanimate objects.

Attending to the broader topic regarding how citizens involve themselves in the deliberative process, this work demonstrates how policy narratives have been used, particularly by narrators affiliated with research and advocacy. The fact that different narrator types choose different types of characters indicates that elements of a story are deliberately chosen and may reflect a strategy aimed at influencing public opinion and the policy process. While it is outside the realm of this paper to explain how this trend shapes public opinion and the behavior of public officials and institutions, it does act as a stepping stone for further research into how narratives are used by citizens differently across different forms of government.

Another noteworthy discovery involves the common use of inanimate objects as alters. For example, research narrators discuss how an ego's actions impact objects related to air and trans-

port. This may reflect an interest in highlighting the causes of public health issues instead of its impact on the health of an individual or community. The research also shows that domestic government narrators use environment objects. This could demonstrate that the priority of government actors is more focused on environmental risk mitigation than on issues related directly to the public. As the framing of climate change is likely related to how public opinion is shaped and how opinion influences the political agenda, creating an accurate and systematic approach to capturing the role of inanimate objects in policy narratives is important.

There are several limitations to this research that future studies using this methodological approach must address. First, the sample size of the organizations represented in the data is small and is dominated by the policy narratives of *research organizations* and *advocacy groups*. Although this may appropriately reflect the proportion of actors involved in the air and climate issues in Delhi, India, applying this methodology to a context with a greater representation of industry and governmental groups may result in richer findings. Second, these results may not be representative of all relevant policy narratives due to the source material. While these were publicly available materials, they are only representative of those found online. Follow-up interviews with actors from the organizational affiliations identified in this work would help to corroborate results. Lastly, this research does not capture all narrative elements, but rather those that are fundamental to this particular analysis and goal of a better understanding of the role of the narrator. Different approaches to coding would have had to been employed to capture all elements. For instance, plot could have been captured through observations of how the story was structured. The moral of the story could have been captured by considering calls to action (Jones, 2018). We constructed our codebook based on the characterization by narrators at a given moment in time. While successful at capturing characterization, it could not be used to capture a narrative's sequence of events (to capture the plot) or a narrator's desired policy change (to capture the moral of the story). In addition, a common operationalization of policy narratives is that they must have at least one character and a policy referent (Shanahan et al., 2017). While elements such as plot and moral of the story are important, this work is strategically focused on some necessary (but perhaps insufficient) elements of a policy narrative. Stone's foundational work on policy storytelling highlighted the ways in which plot or morals are used by narrators to create causal arguments to compel audiences (1989); we extend that work by recognizing the importance of understanding narrators themselves and understanding the narrative as a whole.

## Conclusion

In democratic societies characterized by open policy debates and freedom of expression, one might expect that the perceptions, opinions, and framing of salient policy issues would be influenced by the organizational affiliations of actors writing on the topics of air and climate issues. Identifying the narrators of policy narratives and examining patterns of characterization based on their organizational affiliation provides added clarity regarding how different types of narrators construct different types of narratives. This is important to the policy process as policy narratives play a key role in shaping public opinion and are strategic tools of policy actors interested in influencing the political agenda.

The NPF offers researchers tools to better understand the use of narratives in shaping cognition and informing discursive strategy (Shanahan et al., 2018). Associating narrators to choices of egos and alters is important for scholars interested in understanding who uses policy

narratives and how those narratives are structured to influence a political agenda. This study, which uses the methodological tool developed by Weible et al. (2016), shows that this tool is relevant for studying the use of narrative strategies to influence policy processes. The application of this tool is not limited to Delhi or to environmental policy. Indeed, the approach has been designed as a means to observe policy narratives in a variety of policy issues and contexts.

This research found that narrator type influences certain elements of narratives as told within the context of air and climate issues in Delhi, India. Industry narrators portrayed themselves as heroes while research and advocacy narrators tended to frame stories with government as both a hero and a villain. Other important trends were identified as well. Hero-centric stories abound: the public is commonly characterized as the recipient of the actions of heroes and villains, and research institutions and advocacy groups play an important role in political discourse.

The theory of how narrators and narratives relate in a particular setting needs theoretical development. This study shows that narrator type matters and, reinforcing a central assumption of the NPF, that characterization is not boundless or randomly distributed (Jones, 2018). The patterns that emerge in this paper might fall under a category of settings with negative externalities (e.g., health effects from air pollution). In such settings, the theoretical expectation would be that the source of the externality would be villainized by proponents for policy change. Supporters of the status quo, such as the polluters, would not characterize themselves as the villains but rather emphasize the benefits of their actions and self-portray themselves as the heroes. Also, the common portrayal of the public as the victims could be viewed as an attempt to expand the scope of conflict. The expectation from this study, and many others, is that we would expect to observe discursive efforts made by policy actors to mobilize the general public when risks are broadly distributed, such as in cases of air and climate issues. Ideally, from this study and from others, we can develop contextually specific hypotheses attuned to the attributes of a particular setting.

In addition to contributing to the ongoing scholarship on the role of narratives in the policy process, this work has implications for studying power in the policy process. This work studies power through discourse, heeding the call of Sievers and Jones (2020) who dissuade scholars from shying away from normative democratic values and, instead, encourage them to be transparent about these underlying orientations and to explore ways to study power as an empirically viable concept. Narrator power over public opinion and the policy agenda through the stories they tell are salient matters within all policy domains.

This research does not aim to present generalizable findings regarding air and climate issues or narrative patterns among certain types of narrators. The results are limited to the context of Delhi, India, and to air and climate issues. While this research did not attempt to demonstrate cohesion among narrator groups, this approach could be used to examine the coalitional structure of policy actors. This research is the first step toward bringing together different studies that recognize that policy narratives play a role in decision-making in democratic societies. If the NPF is designed to understand the role that stories play in the policy process, then a standardized tool, such as the one presented here, is valuable. If scholars are to heed Sabatier's advice, this is an important next step in advancing the NPF. Future research should test this approach in other contexts and with other policy issues to better understand the limitations and strengths of the methodology presented here.

## Bibliography

- Ansell, C., & Gash, A. (2007). Collaborative governance in theory and practice. *Journal of Public Administration Research and Theory*, 18(4), 543-571.
- Bell, R. G., Mathur, K., Narain, U., & Simpson, D. (2004). Clearing the Air: How Delhi Broke the Logjam on Air Quality Reforms. Environment. *Science and Policy for Sustainable Development*, 46(3), 22-39.
- Berinsky, A. J., & Kinder, D. R. (2006). Making sense of issues through media frames: Understanding the Kosovo crisis. *Journal of Politics*, 68(3), 640-656.
- Chakraborty, J., & Basu, P. (2021). Air quality and environmental injustice in India: Connecting particulate pollution to social disadvantages. *International Journal of Environmental Research and Public Health*, 18(1), 304.
- Chong, D., & Druckman, J. N. (2007). Framing theory. *Annual Review of Political Science*, 10(1), 103-126.
- Cropper, M. L., Simon, N. B., Alberini, A., Arora, S., & Sharma, P. K. (1997). The Health Benefits of Air Pollution Control in Delhi. *American Journal of Agricultural Economics*, 79(5), 1625-1629. <https://doi.org/10.2307/1244393>
- Crow, D., & Jones, M. (2018). Narratives as tools for influencing policy change. *Policy & Politics*, 46(2), 217-234.
- Dahl, R. A. (2013). *A preface to democratic theory*. University of Chicago Press.
- Flick, U. (2014). *An introduction to qualitative research* (5th ed.). SAGE Publications Ltd.
- Freelon, D. (2010). ReCal: Intercoder Reliability Calculation as a Web Service. *International Journal of Internet Science*, 5(1), 20-33.
- Freelon, D. (2013). ReCal OIR: Ordinal, Interval, and Ratio Intercoder Reliability as a Web Service. *International Journal of Internet Science*, 8(1), 10-16.
- Gibson, J. L., & Gouws, A. (2001). Making tolerance judgments: the effects of context, local and national. *The Journal of Politics*, 63(4), 1067-1090.
- Golding, D., Krinsky, S., & Plough, A. (1992). Evaluating risk communication: Narrative vs. technical presentations of information about radon. *Risk Analysis*, 12(1), 27-35.
- Goyal, S. K., Ghatge, S. V., Nema, P. M., & Tamhane, S. (2006). Understanding urban vehicular pollution problem vis-a-vis ambient air quality—case study of a megacity (Delhi, India). *Environmental Monitoring and Assessment*, 119(1-3), 557-569.
- Gupta, K. (2014). A comparative policy analysis of coalition strategies: Case studies of nuclear energy and forest management in India. *Journal of Comparative Policy Analysis: Research and Practice*, 16(4), 356-372.
- Heikkila, T., Weible, C. M., & Pierce, J. J. (2014). Exploring the policy narratives and politics of hydraulic fracturing in New York. In M. D. Jones, E. A. Shanahan & M. K. McBeth (Eds.), *The science of stories: Applications of the narrative policy framework in public policy analysis* (pp. 185-207). Palgrave Macmillan.
- Jones, B. D. (2001). *Politics and the architecture of choice: Bounded rationality and governance*. University of Chicago Press.

- Jones, M. D. (2014). Communicating climate change: Are stories better than “just the facts”? *Policy Studies Journal*, 42(4), 644-673.
- Jones, M. D. (2018). Advancing the narrative policy framework? The Musings of a potentially unreliable narrator. *Policy Studies Journal*, 46(4), 724-746.
- Jones, M. D., & McBeth, M. K. (2010). A narrative policy framework: Clear enough to be wrong? *Policy Studies Journal*, 38(2), 329-353.
- Jones, M. D., & Song, G. (2014). Making sense of climate change: How story frames shape cognition. *Political Psychology*, 35(4), 447-476.
- Kathuria, V. (2002). Vehicular pollution control in Delhi. *Transportation Research Part D: Transport and Environment*, 7(5), 373-387.
- Kingdon, J. W. (2003). *Agendas, alternatives, and public policies*. Longman.
- Lasswell, H. D. (1956). *The decision process: Seven categories of functional analysis*. Bureau of Governmental Research, College of Business and Public Administration, University of Maryland.
- Lejano, R., Ingram, M., & Ingram, H. (2013). *The power of narrative in environmental networks*. MIT Press.
- Lombard, M., Snyder-Duch, J., & Bracken, C. (2002). Content analysis in mass communication: Assessment and reporting of intercoder reliability. *Human Communication Research*, 28(4), 587-604.
- McBeth, M. K., Shanahan, E. A., & Jones, M. D. (2005). The science of storytelling: Measuring policy beliefs in Greater Yellowstone. *Society and Natural Resources*, 18(5), 413-429.
- McBeth, M. K., Shanahan, E. A., Arrandale Anderson, M. C., & Rose, B. (2012). Policy Story or Gory Story? Narrative Policy Framework Analysis of Buffalo Field Campaign's YouTube Videos. *Policy & Internet*, 4, 159-183.
- McBeth, M. K., Lybecker, D. L., & Husmann, M. A. (2014). The Narrative Policy Framework and the Practitioner: Communicating Recycling Policy. In M. D Jones, E. A Shanahan & M. K. McBeth, *The Science of Stories* (pp. 45-68). Palgrave Macmillan US.
- McMorris, C., Zanooco, C., & Jones, M. (2018). Policy Narratives and Policy Outcomes: An NPF Examination of Oregon's Ballot Measure 97. *Policy Studies Journal*, 46(4), 771-797.
- Merry, M. K. (2015). Constructing policy narratives in 140 characters or less: The case of gun policy organizations. *Policy Studies Journal*, 44(4), 373-395.
- Nowlin, M. C. (2011). Theories of the policy process: State of the research and emerging trends. *Policy Studies Journal*, 39(S1), 4160.
- Olofsson, K. L., Weible C. M., Heikkila, T., & Martel, J. C. (2017). Using Nonprofit Narratives and News Media Framing to Depict Air Pollution in Delhi, India. *Environmental Communication*, 12(7), 956-972.
- Olofsson, K. L. 2022. Winners and losers: Conflict management through strategic policy engagement. *Review of Policy Research*, 39, 73-89.
- Pande, J. N., Bhatta, N., Biswas, D., Pandey, R. M., Ahluwalia, G., Siddaramaiah, N. H., & Khilnani, G. C. (2002). Outdoor air pollution and emergency room visits at a hospital in Delhi. *Indian Journal of Chest Diseases and Allied Sciences*, 44(1), 13-19.
- Patton, M.Q. (1990). *Qualitative evaluation and research methods*. SAGE Publications Ltd.
- Polkinghorne, D. E. (1988). *Narrative knowing and the human sciences*. Suny Press.



- Sabatier, P. A. (2000). Clear enough to be wrong. *Journal of European Public Policy*, 7(1), 135-140.
- Sabatier, P. A., & Weible, C. (Eds.) (2014). *Theories of the policy process*. Westview Press.
- Schattschneider, E. E. (1960). *The semi-sovereign people*. Holt, Rinehart, and Winston.
- Schneider, A., Ingram, H., & deLeon, P. (2014). Democratic policy design: Social construction of target populations. In: P.A. Sabatier & C. M. Weible (Eds.) *Theories of the policy process* (pp. 225-266). Westview Press.
- Shanahan, E. A., McBeth, M. K., & Hathaway, P. L. (2011). Narrative policy framework: The influence of media policy narratives on public opinion. *Politics & Policy*, 39(3), 373-400.
- Shanahan, Elizabeth A., Michael D. Jones, Mark K. McBeth, and Claudio Radaelli. 2017. In P.A. Sabatier & C. M. Weible (Eds.) *Theories of the policy process* (pp. 173-213). Westview Press 173-213
- Shanahan, E. A., Raile, E. D., French, K. A., & McEvoy, J. (2018). Bounded stories. *Policy Studies Journal*, 46(4), 922-948.
- Sievers, T., & Jones, M. D. (2020). Can power be made an empirically viable concept in policy process theory? Exploring the power potential of the Narrative Policy Framework. *International Review of Public Policy*, 2(1), 90-114.
- Singh, B. (2012). Changing contours of solid waste management in India. *Journal of Asian Public Policy*, 5(3), 333-342.
- Srivastava, A., Joseph, A. E., Patil, S., More, A., Dixit, R. C., & Prakash, M. (2005). Air toxics in ambient air of Delhi. *Atmospheric Environment*, 39(1), 59-71.
- Stauffer, B., & Kuenzler, J. (2021). Introduction—Stories of the old world: The Narrative Policy Framework in the European context. *European Policy Analysis*, 7, 268-275.
- Stone, D. (1989). Causal stories and the formation of policy agendas. *Political Science Quarterly*, 104(2), 281-300.
- Véron, R. (2006). Remaking urban environments: the political ecology of air pollution in Delhi. *Environment and PlanningA*, 38(11), 2093.
- Weible, C. M., & Schlager, E. (2014). Narrative policy framework: Contributions, limitations, and recommendations. In: M. D. Jones, E. A. Shanahan, & M. K. McBeth (Eds.), *The science of stories: Applications of the narrative policy framework in public policy analysis* (pp. 235-246). Palgrave Macmillan.
- Weible, C. M., Olofsson, K. L., Costie, D. P., Katz, J. M. & Heikkilä, T. (2016). Enhancing Precision and Clarity in the Study of Policy Narratives: An Analysis of Climate and Air Issues in Delhi, India. *Review of Policy Research*, 33, 420-441.  
<https://doi.org/10.1111/ropr.12181>

## Appendix

### Appendix Table 1. Search Terms and organization Websites

#### Search Terms

Air Pollution	Low Carbon	Climate Change	Global Warming	Greenhouse Gas
GHG	Carbon Emissions	Carbon Dioxide	CO2	

Organization websites

Organization	Website
Centre for Science and Environment	<a href="http://www.cseindia.org">www.cseindia.org</a>
Clean Air Initiative	<a href="http://www.cleanairnet.org">www.cleanairnet.org</a>
Climate Group	<a href="http://www.theclimategroup.org">www.theclimategroup.org</a>
Confederation of Indian Industry	<a href="http://www.cii.in">www.cii.in</a>
Delhi Greens	<a href="http://www.delhigreens.com">www.delhigreens.com</a>
Delhi Pollution Control Committee	<a href="http://delhi.gov.in/wps/wcm/connect/doit_pollution/Pollution/Home/">delhi.gov.in/wps/wcm/connect/doit_pollution/Pollution/Home/</a>
Down to Earth	<a href="http://www.downtoearth.org.in">www.downtoearth.org.in</a>
Environment Pollution (Prevention and Control) Authority	<a href="http://www.dpcc.delhigovt.nic.in/epca.html">http://www.dpcc.delhigovt.nic.in/epca.html</a>
Government of India	<a href="http://India.gov.in">India.gov.in</a>
India Environment Portal	<a href="http://www.indiaenvironmentportal.org.in">www.indiaenvironmentportal.org.in</a>
International Food Policy Research Institute	<a href="http://www.ifpri.org">www.ifpri.org</a>
Ministry of Environment, Forest and Climate Change	<a href="http://envfor.nic.in">envfor.nic.in</a>
The Energy and Resources Institute	<a href="http://www.teriin.org">www.teriin.org</a>
Urban Emissions Info	<a href="http://www.urbanemissions.org">www.urbanemissions.org</a>
World Resources Institute	<a href="http://www.wri.org">www.wri.org</a>

Appendix Table 2. The Ego-Alter Dyad Code Form for Coding Narratives

Coded Item	Description
Coder	Name of person conducting coding
Document ID	Unique identifier for each document
Document Hosting Org Name	
Document Hosting Org Type	Six types of hosting organizations were identified (see figure 5)
Document Year	The year the document was published on-line (may be different than the year written)
Document Month	
Document Day	
Narrator	
Narrator Org Type	Narrator org type was assumed to be the same as the Document Hosting Org Type unless otherwise stated
Ego Actor Name	Character taking action (to help or hurt either character targeted or inanimate object targeted).
Ego Actor organization	

Ego Character	Hero, Villain
Ego Action	Hurting or helping action verbs, as matches the character definition.
Alter Actor Name	Character receiving the action (if applicable).
Alter Actor organization	
Alter Character	Victim or Beneficiary and, if in the same document as egos, victim- or beneficiary-hero or victim- or beneficiary-villain
Effect of Relationship and Action	Result of the acting character's actions on the alter character or object
Alter Object	If applicable.

### **Additional Instructions and Coding Strategies**

1. If the document is in the target location, topic, and time period, include.
2. Read the entire document, then identify ego characters by archetype, action, and alter characters and objects.
3. Each distinct relationship between an ego character and alter character or object is a new observation.
4. Only code characters related to topic or sub-topic.
5. Characters must be animate: an individual, people, organization, classification of people, political entity, etc.
6. No hero or villain: do not code as there is not an ego-alter dyad.
7. A hero and a villain must have an action and either an alter character or object.
8. First-person egos are acceptable but there still must be an action and an alter character and/or object.
9. Multiple actions by the same ego on the same alter character or object(s) can be reported together.
10. Can have multiple alter objects (like actions) in one observation.
11. Help action can include releasing information, alerting to a problem, mitigating effects of villain, stopping villain, etc.
12. Unintended alter objects targeted should be included if specifically mentioned, even if not the explicit target.
13. Organization types: include all that apply, separated by semicolons.
14. Do not code titles, figures or tables.
15. Programs should be coded as alter objects.
16. Beneficiary is a character defined as 1) an animate alter character type; 2) explicitly stated; 3) directly linked to a hero and the receiver of an action of a hero; 4) not in a prior state of distress.

Appendix Table 3. Narratives Told

Research Narrators						
Narrative #1	United States adopts best AQI practices to raise public awareness					
Narrative #2	Developed countries adopted ultra-sulphur diesel gas to improve air quality					
Narrative #3	Beijing government starts public information system to mitigate effects of air pollution on citizens					
	Ego	Action	Ego Type	Alter	Victim or Beneficiary	Object?
#1	United States	adopts best practices	Hero	public	Victim	No
#2	Developed countries	adopted ultra-sulphur diesel gas	Hero	public	Victim	Yes
#3	Beijing government	starts public information system	Hero	citizens	Victim	Yes

Advocacy Narrators						
Narrative #1	Police intimidated people in order to stop them from protesting					
Narrative #2	Government leaders are pushing for construction of waste incineration plants, hurting residents by increasing toxins					
Narrative #3	Government registering twice as many vehicles at the expense of public transportation					
	Ego	Action	Ego Type	Alter	Victim or Beneficiary	Object?
#1	Police	Intimidating	Villain	People	Victim	No
#2	Government leaders	Are pushing for the construction of plants... hurting residents	Villain	Residents	Victim	Yes
#3	Government	Registering many vehicles	Villain	Public	Victim	Yes

<b>Domestic Government Narrators</b>						
Narrative #1	Department of Environment begins public awareness program to minimize pollution for Delhi citizens					
Narrative #2	The state government is constructing auto express ways to help reduce pollution for Delhi drivers					
Narrative #3	The Delhi government is taking steps to ensure control of air pollution to improve air quality for infants					
	<b>Ego</b>	<b>Action</b>	<b>Ego Type</b>	<b>Alter</b>	<b>Victim or Beneficiary</b>	<b>Object?</b>
#1	Department of Environment	Begins public awareness program	Hero	Citizens	Victim	No
#2	The State Government	Is constructing auto express ways	Hero	Delhi Drivers	Victim	No
#3	Delhi Government	Is taking steps to improve air quality	Hero	Infants	Victim	Yes

<b>Industry Narrators</b>						
Narrative #1	Paharpur Business Centre helped workers by improving indoor air quality					
Narrative #2	Industry members create solutions that benefit citizens by reducing environmental impact of human activity					
Narrative #3	Tata Power launches effort to improve the efficiency of thermal power plants					
	<b>Ego</b>	<b>Action</b>	<b>Ego Type</b>	<b>Alter</b>	<b>Victim or Beneficiary</b>	<b>Object?</b>
#1	Paharpur Business Centre	Improve indoor air quality	Hero	Public	Beneficiary	Yes
#2	Industry members	Reduce environmental impacts	Hero	Public	Beneficiary	Yes
#3	Tata Power	Improve the efficiency of thermal power plants	Hero	N/A	N/A	Yes

Appendix Table 4: Pie Chart Legend

Numbers of Characters

