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Publication date:
2019

Document Version
Peer reviewed version

[Link back to DTU Orbit](#)

Citation (APA):

Witz, P., & Oehmen, J. (2019). Managing stakeholders in road infrastructure projects: Review of road directorates' approaches and practices. Paper presented at The 26th World Road Congress, Abu Dhabi, United Arab Emirates.

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MANAGING STAKEHOLDERS IN ROAD INFRASTRUCTURE PROJECTS: REVIEW OF ROAD DIRECTORATES' APPROACHES AND PRACTICES

THE 26TH WORLD ROAD CONGRESS ABU DHABI 2019

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ABSTRACT

There is an abundance of theoretical models of how to engage stakeholders in infrastructure projects. So far, however, there is very little empirical evidence of how, if ever, these models are put to use by project developers and managers in real projects. This paper thus explores how selected PIARC members perceive and work with stakeholders. It reviews attitudes, strategies and techniques used to identify, assess and mitigate stakeholder-related risks and securing additional social value out of the projects. It gives examples of best practice as well as recommendations for improvements. The findings are based on the outcomes of an on-line survey among 21 PIARC members conducted in 2018. In addition, a case study of a Danish road project is presented.

1. INTRODUCTION

With technical/engineering challenges to implementation of major infrastructure projects mostly solved, it is rather the opposition by various stakeholders that preoccupy project managers' minds and attention nowadays [1]. Road planners and administrators are no exception [2]. Participatory design and decision making are promoted primarily as an important component or risk prevention or risk mitigation strategies – it is seen as the means of preventing or resolving unnecessary conflicts. Several authors have found conflicts resulting from not addressing stakeholders' needs being one of the most common causes behind project failure [2] [3] [4] [5] [6]. However, conflicts with stakeholders are not only about hindering individual projects. The way conflicts are handled usually has far reaching implications for long term trust in policies, institutions and processes through which these are implemented [7].

Conflicts are a natural part of infrastructure development in the complex social context as any project represents a disruption of status quo. If managed in a constructive manner, they can even be beneficial [9]. Even though one can never fully accommodate opposing interests of all stakeholder groups it is vital for cultivation of democratic principles that no stakeholder is left aside and maximum effort is put into finding a fair and workable compromise by excluding all inferior alternatives.

On the other hand, all this adds further demands and pressure on project managers who might easily perceive various stakeholders as yet another threat to project completion - just like other aspects that are beyond their full control – and stakeholder engagement as necessary evil. Complex circumstances including numerous formal requirements of the approval process and all the legal delicacies surrounding modern infrastructure projects make it difficult for people whose job is to see projects through to find any opportunities in engaging with stakeholders beyond the bare minimum. This approach is best epitomised by

the response by one of the project managers in our survey: “We are engineers, not psychologists. Our job is to build roads, not to comfort unreasonable stakeholders.” The tendency towards making projects work as closed systems is natural, but poses a great danger of ignoring legitimate concerns and losing any social value added that might be there to grab.

There are many theories and concepts describing ideals of stakeholder management (SM) and how the social value from infrastructure projects can be maximized. So far, however, there is very little empirical evidence of whether and how these theoretical concepts get translated into concrete policies, measures and steps by infrastructure administrators and managers. This mismatch between what would be nice to have and what is actually achieved or indeed realistically achievable in different organizational circumstances still needs to be explored.

Initial studies from the road sector based on empirical data from various countries offer a mixed picture. The concern is that some road authorities are faced with major stakeholder related challenges for which they are not adequately positioned or equipped. In addition, the limited resources force them to reduce the scale of stakeholder-related activities and prevent them from applying new innovative approaches and tools. This is suspected to lead to inadequate risk identification and mitigation, not to speak about missing capacity for additional social value capture. At the same time, authorities with extra resources available for stakeholder engagement activities stick to traditional tools and tend to be rather cautious implementing innovative procedures and techniques. Yet, inappropriate, half-baked or half-hearted SM poses a real danger of raising expectation in stakeholders that cannot be met [2].

Therefore, the aim of this paper is to examine the robustness of current stakeholder-related practices in the specific context of road projects. We have conducted an online survey asking relevant employees of road agencies about their perception of stakeholder-related risks and procedures they use to counter these in the projects they manage. In addition, we have followed SM processes in one of the current projects implemented by the Danish Vejdirektoratet to get also stakeholders’ perspective on SM practices in use. Our research questions include: 1) How do the stakeholder-related risks rank against other types of risks in road agencies’ view. 2) How important is SM in the eyes of project managers and to what extent have the ideas of public participation been incorporated into road agencies’ practices? 3) What stakeholder engagement strategies do the road agencies use? 4) What capabilities for stakeholder engagement do the road agencies have and are those sufficient in the eyes of stakeholders?

We start the paper by discussing the various theoretical underpinnings of stakeholder engagement in major infrastructure projects, as well as organization concepts explaining the limitations in implementing new approach towards stakeholders. After describing the methods used, we then present the results of our survey and a Danish case study (Hillerød motorvejen project). These are further discussed in the last section of the paper before the final concluding remarks.

2. THEORETICAL BACKGROUND

The rise of SM is linked to the process of democratization and a shift towards more horizontal way of governing in most Western societies since the last decades of the 20th century. It is a result of an increasing complexity of relations and interactions among various actors forming networks that, as opposed to hierarchies, cannot be ruled, but rather influenced or nudged [8]. Social movements become more powerful and easily mobilized than ever.

Spontaneous ideas can inspire an action by thousands of people over night. In reaction to that, governments around the world commit themselves to the idea of participatory decision-making and public engagement that in turn is expected to evolve into a modus operandi in most publically funded endeavours. Stakeholder satisfaction represents a barometer of success and active stakeholder engagement a *conditio sine qua non*. That at least is the ideal.

The stakeholder theory itself has its roots back in 1984 starting with Freeman's widely-used definition of stakeholders [8]. Since then SM issues have become a fixture also in the project and construction management literature [12] [13]. Although the majority of authors have concentrated on SM from the perspective of project managers and successful project completion, some have adopted the viewpoint of stakeholders emphasising the question of wider-value creation. Overall, the most discussed themes within the topic of SM according to Mok et al. include (1) stakeholder interests and influences, (2) SM process, (3) stakeholder analysis methods, and (4) stakeholder engagement [13].

We argue that scholars also need to pay attention to SM capabilities. Therefore it is important to take into account issues of governance [14], organizational deficiencies and insufficiencies [15], as well as the theory of organizational learning and its limitations [16]. By imposing our exaggerated expectations upon road agencies or other public organizations we risk facing a discrepancy between a priori expectations and a posteriori experience [2]

3. RESEARCH METHOD

Our paper is based on a qualitative comparative case study design [14]. An on-line survey was conducted to collect information from road agencies' representatives from around the world. Danish agency Vejdirektoratet with which we collaborate on this project was instrumental in helping us contact the relevant counterparts within partner organizations – all of them PIARC members and associates. In addition, we contacted other organizations that do not have representatives in respective PIARC committees. The survey is anonymous and consists of 50 questions – a combination of open-ended, multiple-choice, Likert-type scales and rank order questions. The questions covered several areas of our interest – mainly road agencies' perception of stakeholder-related risks, the most problematic stakeholder groups, SM practices used and real costs and benefits of SM. So far we have received 21 responses from 21 different road agencies/countries. These include: Japan, Australia, United Kingdom, Denmark, Sweden, Czech Republic, Serbia, Slovakia, the United States of America, Italy, Greece, Romania, Poland, Malaysia, Bulgaria, Nigeria, Chile, Armenia, Hungary, Brazil and Turkey. 14 respondents referred to themselves as project managers or project directors and seven as risk managers. The responses express the respondents' views and may not necessarily be in line with the official stance of the respective organizations.

Complementary to the survey was our close observation of implementation of several projects managed by Vejdirektoratet. In connection to that we carried out 5 interviews: three with project managers, one with the risk manager and one with the director of the whole organizations. In one of the projects – extension and upgrade of Hillerød motorway to the north-west of Copenhagen - we also carried out a participatory observation of an official public hearing complemented with a survey among the hearing participants. Altogether, we collected 72 completed questionnaires. We continue to follow developments in this and other projects to see to what extent SM meets stakeholders' expectations and contributes to successful implementation and wider value creation of road projects.

4. RESULTS

4.1. Survey results

In this section we are going to present interim results of the survey that is still ongoing. 21 responses from countries from all continents have been collected so far.

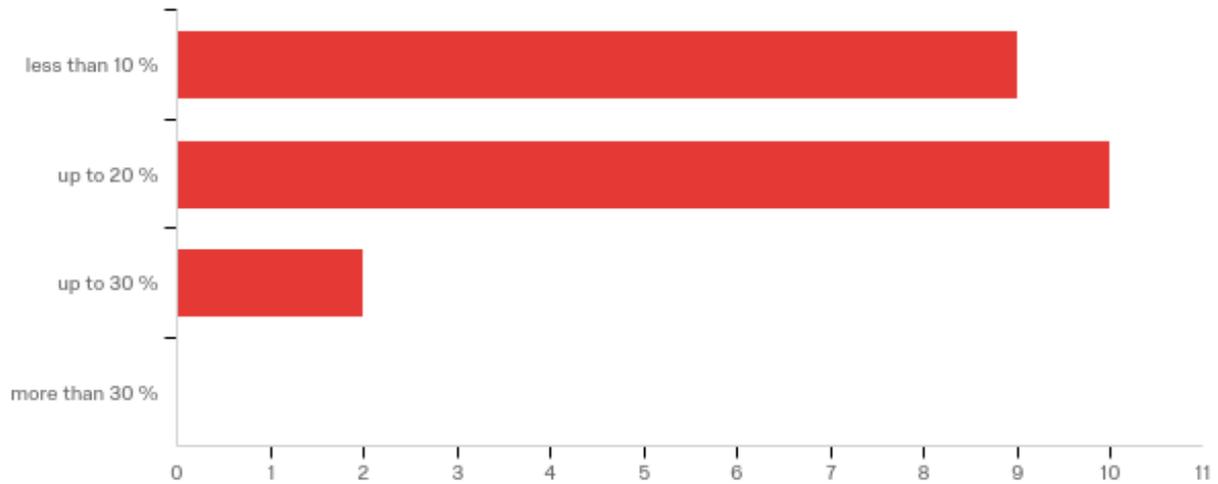
One of our first findings concerns respondents' perception of stakeholder-related risks in comparison to other typical risks affecting road infrastructure projects. Representatives of respective road agencies were presented with the list of 10 risks out of which five can be seen as directly involving stakeholders and their actions while other five are usually associated to a larger extent with other factors. The results are visualised in the table 1.

Table 1 Risk ranking according to road agencies' project and risk managers

#	Field	Mean	Std Deviation	Variance	Count
1	Lack of stable political support	3.71	2.86	8.20	21
2	Complaints/litigation by one or several interest groups/individuals	4.10	1.95	3.80	21
3	Funding shortage	4.24	3.08	9.51	21
4	Unforeseen technical problems	4.62	2.79	7.76	21
5	Problems with land acquisitions	4.95	2.24	5.00	21
6	Unforeseen ground conditions	5.33	1.81	3.27	21
7	Too much red tape	5.52	2.65	7.01	21
8	Staff shortage	6.62	2.87	8.24	21
9	Bidders'/contractors' incompetence	7.29	1.88	3.54	21
10	Force majeure events (weather or other natural disasters)	8.62	2.03	4.14	21

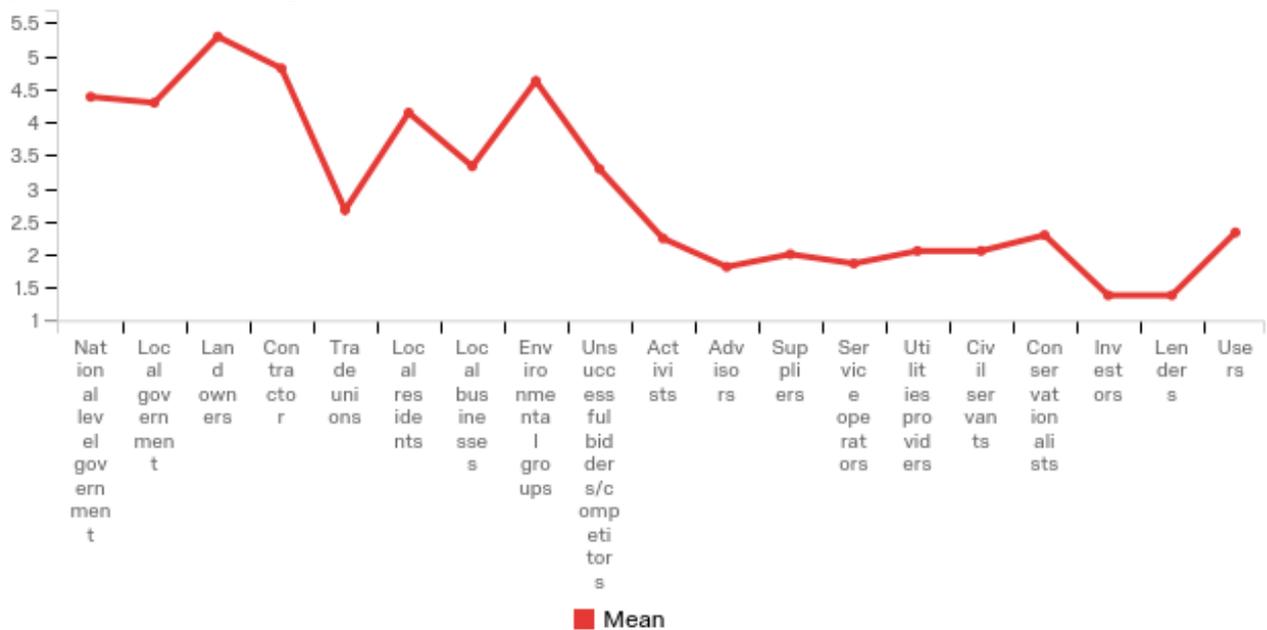
It is apparent that unstable political support and complaints/litigation rank as the most prominent risks from our selection. More than a half of all respondents also admit that stakeholder-related complications increase the project costs by more than 10 % (see figure 1). Road managers thus indirectly confirm that stakeholders in their projects matter and that they deserve their own categories in risk management systems and catalogues.

Figure 1 Project cost increase as a result of stakeholder-related complications



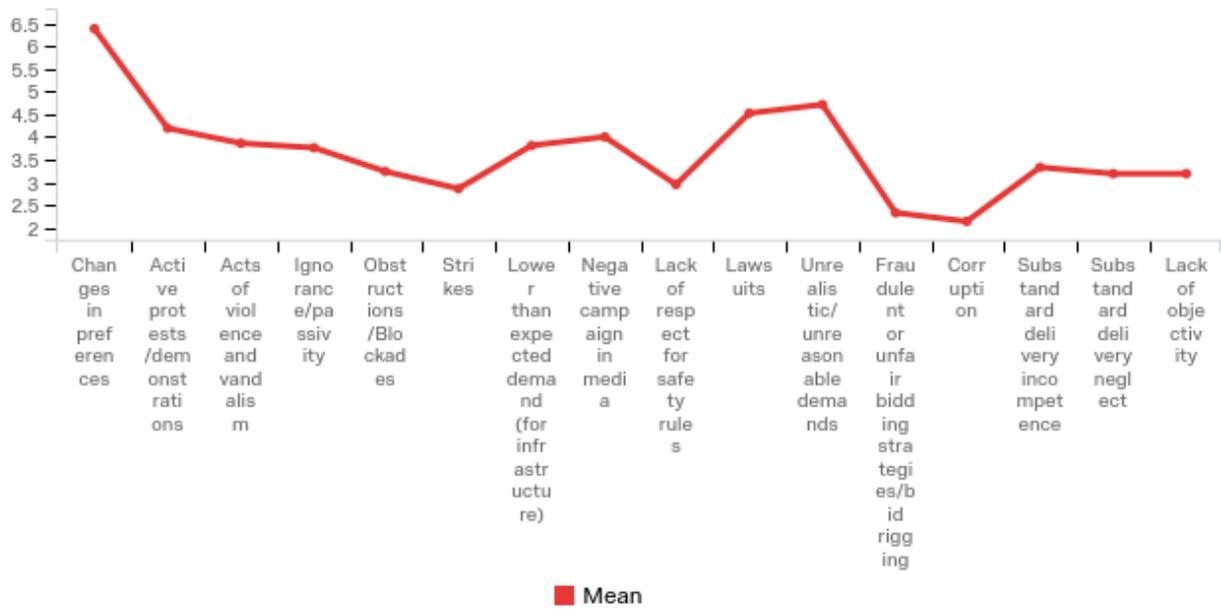
Which stakeholders are the most troublesome or worrying in road managers' eyes was the subject of the next question. Here perhaps somewhat surprisingly contractors appeared between land owners and environmental groups as the second most problematic stakeholder group of all (see figure 2).

Figure 2 Stakeholder groups (8=most and 1=least troublesome)



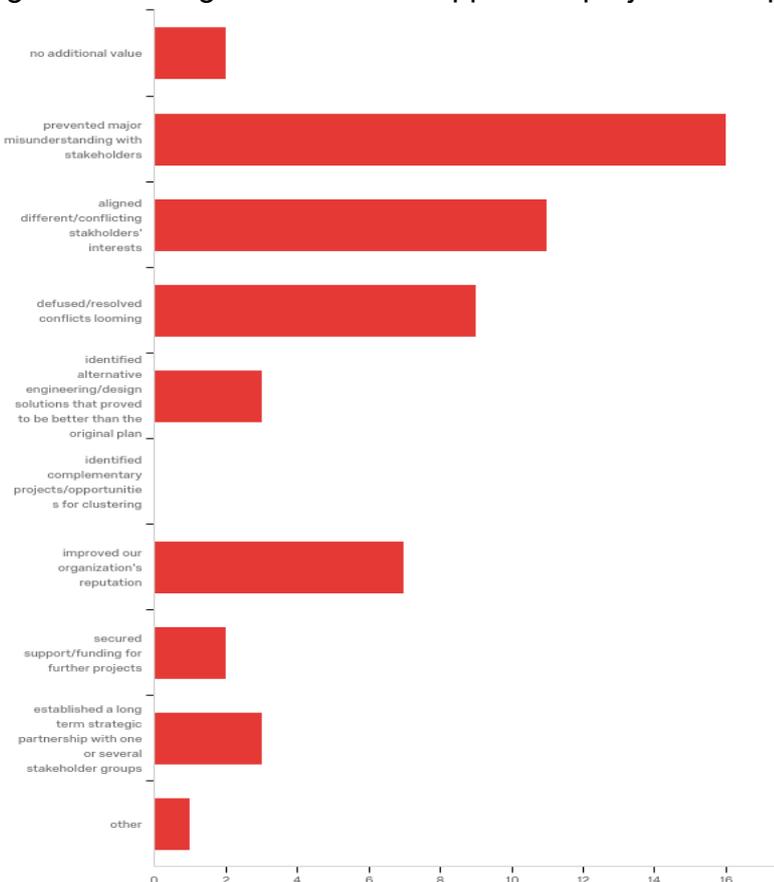
At the same time, if we take a look at the actual stakeholders' activities that the road project managers find most disturbing it is clear that it is primarily changing preferences and unreasonable demands followed by lawsuits (see figure 3)

Figure 3 Stakeholder behaviour towards the project (8=most and 1=least troublesome)



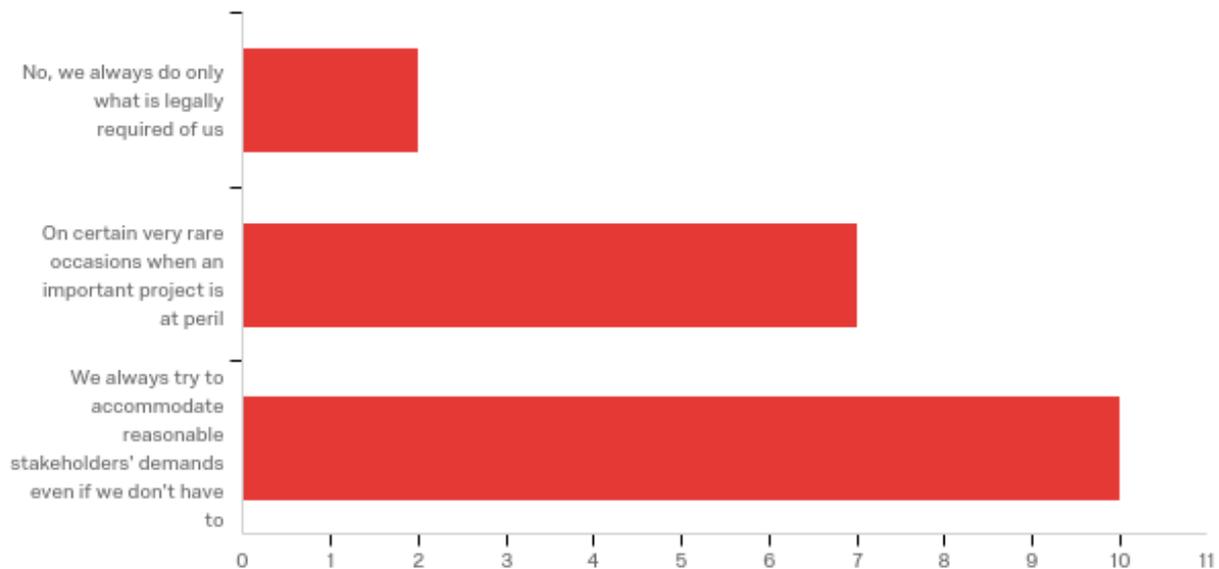
When we move towards the question of what kind of value have road agencies secured by using SM in their projects (see figure 4) we realise these are not limited to preventing misunderstanding, aligning interests or improving public image although these types of achievements clearly prevail. Some of the road agencies managed to identify alternative solutions increasing the social value of projects and establishing long term partnerships. In two cases additional sources of funding for road projects were identified. Equal number of respondents do not see any particular value in SM.

Figure 4 Value gained from SM applied to project in respondents' portfolio



That leads us to the question of how far the road agencies are ready to go in accommodating stakeholders' demands and in what circumstances such concessions are made (figure 5). In that respect we see that almost one half of respondents claim they always try to walk an extra mile in relation to stakeholders. However, one third of road project managers only do so in case of important projects that are otherwise at peril of not being implemented. Two road agencies are strictly bound by law in their SM strategies and they do not have much space for manoeuvres.

Figure 5 Are you ready to walk an extra mile to accommodate stakeholders' interests or concerns in your projects?



Yet, the menu of SM practices from which the road agencies can choose if they can and want is quite wide. In table 2 we can see how rich the toolbox actually is. Respondents were choosing from pre-defined options of selected SM methods – some of them rather basic and elementary and other arguably quite radical, ambitious and more systemic. While early stage stakeholder mapping or involvement of engineers and other technical professions in SM has become almost a commonplace, more in-depth or structural measures like crowdfunding, contracting local SMEs or referenda are much rarer. It seems that although a common base in SM practices has been established, when it comes to superstructure, combinations vary. It seems that only few agencies actually make the step beyond the mere one-way top-down authoritative approach that notifies and patiently explains about the project and that's about it. There are signs that this might not be sufficient to satisfy all stakeholder groups in current and future road projects. We are going to discuss stakeholders' stance in the next section.

Table 2 SM practices used in road agencies' projects

#	Answer	%	Count
16	Early stage survey of stakeholders' preferences and concerns	13.89%	20
1	Involving engineers, designers and other experts in engagement activities	11.11%	16
18	Individual consultations	9.72%	14
17	Pre-planning stage stakeholder landscape mapping	9.03%	13

2	Use of high quality visualisations, 3D simulations	9.03%	13
3	Enabling external stakeholders to shape/influence project features (routing, size, surface, design, safety and health protection features, decorations, aesthetics...)	4.86%	7
11	Establishing project office or contact center in the area	4.86%	7
5	Coordination/synchronization with local initiatives and related projects in the area	4.86%	7
10	Organizing social events, celebrations	4.86%	7
8	Financial compensation programme	4.86%	7
7	Project website and space in social media	4.86%	7
13	Employing artists or architects to increase aesthetic/visual value of the project	4.17%	6
14	Incorporating regional specificities or symbols into project	4.17%	6
9	Collecting feedback on ext. stakeholders' satisfaction	3.47%	5
12	Positive medialization (movie, documentary...)	3.47%	5
6	Co-ownership: enabling external stakeholders to invest and own a share in the project	2.08%	3
15	Involving/contracting local SMEs	0.69%	1
4	Local referendum or e-vote	0.00%	0
	Total	100%	144

4.2 Case study: SM in Hillerødmotorvejen project

The Hillerødmotorvejen project involves extension and upgrade of the existing road connection between the municipality of Hillerød and the capital city of Copenhagen. The stretch between the municipality of Allerød where the motorway currently ends and connects to a single-carriage way arterial road is to be widened and upgraded to a motorway with two lanes in either direction by 2022. It is a response to the long-standing problems with the capacity of the current road, especially during rush hours. The insufficient capacity is obvious and a significant amount of stakeholders have been for quite a long time calling for the remedy. On the other hand, Vejdirektoratets plans for a full-fledged motorway are going to impact numerous stakeholders living and working in this rather densely populated and economically exploited area. Following the consultation period, the EIA study was published in the autumn 2018 and presented in the second round of public hearings in which we together with our students took an active part.

4.2.1 Media coverage and public image of the project

As a preparation in the run up to the two public hearings, our team undertook a brief discourse analysis of media coverage to establish the general mood and attitudes towards the Hillerødmotorvejen project. We realized the opinions featured in the media were overall positive. There seemed to be a strong political backing behind the project and the general consensus is that it has been needed for a long time. We did not identify any popular

movement against the project with the exception of several discussion groups on Facebook. The main concerns expressed there included noise and pollution.

4.2.2 Invitation and timing

The consultation of the EIA report started on 26th September and was to run until 1st December 2019. At that time it was announced that public hearings will take place at some point during this period. The actual invitation to the meetings was posted on project's website one week ahead of the first meeting on 30th October. It was also published in local press. In connection to that we have recorded a few remarks by hearings' participants suggesting the notice was a bit too short. One participant noted the date conflicted with Halloween festivities.

4.2.3 Venues

Both public hearings were hosted by local municipalities at respective town halls. Although not exactly centrally located, both venues were relatively easily accessible by public transport, car or other transport modes. Both offered enough space for potentially more than 150 participants. The Hillerød municipality prepared basic refreshments which contributed to a rather relaxed atmosphere of the community gathering. Printed versions of Vejdirektoratet's EIA report were free to pick by hearings' participants. In addition, project maps and sketches were laid out on tables and desks at the back of the auditorium for people to be able to see and discuss project's attributes individually or in groups. Vejdirektoratet's employees were around after presentation sessions ready to provide further explanations. That was particularly important as maps were rather too technical for a layperson or people with sight limitations to read and understand. Despite of that, several groups got engaged in lively discussions over the maps.

4.2.4 Participants

There were approx. 150 participants at the Hillerød meeting while 69 (resp. 47) people turned up for the two hearings in Allerød. Majority of participants were local residents with a big proportion of them to be directly affected by the project. In neither of the cases was the seating capacity used in full. The average age of survey participants (of 68 who decided to disclose it) was almost 57 years. Observations indicate the sample is representative in this respect. While it is quite understandable that public hearings usually attract attention of affected property owners who logically tend to be more senior citizens, underrepresentation of younger generation is an issue to be considered. Several respondents lamented the choice of the date coinciding with Halloween festivities was not optimal. It might have discouraged some younger participants from attending.

4.2.5 Presentation and Discussion

Presentation was rich in content covering most important aspects of the project. It was not too long allowing enough time for discussion and power point included several high quality self-explanatory graphics. Several Vejdirektoratet's employees took an active role. Microphones were used and most people could hear clearly what was being said although one of the participants complained he/she could not hear properly. The discussion part of the public hearings took form of standard questions and answers following the presentation and more informal discussions in smaller groups before and after the main programme. The exchanges were substantive and relatively calm with the exception of isolated cases where affected land/property owners could not quite suppress their emotions owing to difficult life situation they found themselves in. Vejdirektoratet's responses were tactful even though they could not in several cases fully

satisfy the questioner. Altogether we registered 43 issues raised by participants. Vast majority of them were related to noise and environmental impact of the road. Not all of them could be satisfactorily answered as the project is still in early stages and final detailed design is not known. In particular questions related to noise barriers – their actual form and features – were left without adequate answers as well as remarks challenging traffic forecasts or potential speed limits on certain sections of the motorway.

Vejdirektoratet's employees were around after the main programme ready to provide further clarification. That was particularly important as maps laid out on tables in the surrounding area were rather too technical for a layperson or people with sight limitations to read and understand. Despite of that, several groups got engaged in lively discussions over the maps. Several participants had difficulties understanding the decibel scale that was being discussed. More instructive explanation on the matter could have been helpful.

4.2.6 Survey

Our survey involving in total 72 respondents from Hillerød and Allerød the project of Hillerødmotorvejen extension confirmed that the project is currently not facing a major opposition although some of the local residents and directly affected land owners have expressed their concerns and resolve to defend themselves from negative impacts of the project. Less than 10 % of respondents had a negative perception of the project while more than 70 % feel rather positive. People mostly appreciate time savings and better quality of traffic including increased safety. As for the weaknesses, respondents most often refer to increased noise levels and protracted process of project implementation. There are also some other particular concerns related to actual traffic effects that are worth addressing by Vejdirektoratet. A mass resistance against the project is rather unlikely to form, however at least five respondents stated they are going to actively oppose the project implementation

The hearings themselves served their purpose rather well as almost 80 % of all respondents marked the event as (extremely, moderately or slightly) satisfactory with the form of the meeting edging out the contents slightly. Overall, Vejdirektoratet's handling of the project was thus assessed rather favourably, as well as its reputation as an institution.

5. CONCLUSION

The purpose of this paper was to review road agencies' attitudes towards SM, perception of stakeholder-related risks and actual conduct and range of SM practices in the road agencies' toolbox. In the process so far we have reached out to both sides – project management teams and affected stakeholders - to make sense of what is expected and what is and actually can be delivered in terms of SM in road infrastructure projects.

One of the basic findings is the confirmation of trends described in the literature – stakeholder-related risks, mainly those related to political stability and social acceptance of the project, have gained in importance. Road agencies' representatives recognize the threat stakeholders potentially pose to project implementation. They already have enough experience with how this might impact the project costs and timelines. Yet the same managers often do not have enough trust in SM and added social but also project value it can bring.

This leads to SM becoming a formal top-down exercise where everyone has the right to be listened to once or twice, but where there is very little space for stakeholders' suggestions to be actually reflected and resolved. The SM methods base serves its formal purpose and superstructure in the form of methods that have the potential to build genuine partnerships

and long-term dialogue with stakeholders and enable them to contribute with their inputs is often not deemed necessary. Only few road agencies in our survey are thus able to live up to ever-rising expectations of SM standards and the risk of expectation disconfirmation is thus relatively high.

The case of Hillerødmotorvejen shows quite clearly the importance of optimising the range of communication platforms to engage all generations and handling of people's suggestions and complaints. Even in well managed SM process the limited options for stakeholder interaction may discourage some stakeholders which may result in unnecessary loss of support. Majority of those respondents who filed their comments during the consultation period said they either did not receive satisfactory answer or are doubtful about the Vejdirektoratet's response. In addition, several questions posed by participants during the discussion also remained unanswered or answered on a very general level due to the fact the details of the actual project design are not known as they are subject of the next project phase. Therefore, another round of stakeholder engagement exercise and clarification of outstanding issues is advisable once the detailed design is finished. The respective active stakeholders can be invited to take part in the process to prevent major surprises or resentment.

Invitation to public hearings should be published with sufficient notice (at least two weeks in advance) and more communication platforms could be utilized. Although having a regularly updated project website is clearly a very positive step, project managers in collaboration with the Vejdirektoratet's communication department should consider making use of e.g. social media or Youtube to a larger extent. The Hillerødmotorvejen project is already debated on Facebook and there is an opportunity to take stock of it. Video coverage and streaming of public hearings is another idea how to make more people participate.

ACKNOWLEDGEMENT

This project has received funding from the European Union's Horizon 2020 research and innovation programme under the Marie Skłodowska-Curie grant agreement No 713683.

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