TOWARDS A NORMATIVE MODEL OF PUBLIC POLICY FOR ENVIRONMENTAL NOISE

Andrew Hede
University of the Sunshine Coast
Maroochydore
Queensland, 4558

ABSTRACT: Environmental noise regulations can be analysed in terms of the public policy process used to develop and implement them. The policy process is best viewed as occurring in a series of stages and as being acted out by a range of different players. The role of 'technofficials' varies from totally controlling to fully facilitative. These two approaches are compared in terms of a technofficial-centred model and a collaborative model of the noise policy process. Two case studies from different Australian jurisdictions are compared. It is argued that the collaborative model of public policy is more appropriate and results in more effective noise control regulation.

1. INTRODUCTION

Throughout the world regulations for the control of environmental noise are the responsibility of elected or appointed representatives who comprise law-making assemblies. Australia has one national, six state and two territory legislatures that enact noise control regulations. In addition, there are 696 local councils that also have responsibilities for regulating noise in their local government areas. The elected representatives at all three levels of government depend on officials to advise them on the details of noise and other regulations.

The process used to develop environmental noise regulations is essentially the same as that used in all government decision-making, namely, the public policy process [1]. We can uncover the dynamics of this process by subjecting it to analysis [2,3]. The present paper aims to analyse the noise policy process in terms of the different stages and the different people involved at each stage. It assesses the value of a collaborative approach to noise policy with reference to case studies.

2. PUBLIC POLICY PROCESS IN NOISE REGULATION

The public policy process can be best understood as occurring in a series of stages [4,5]. Table 1 lists a generally accepted set of policy stages and the corresponding stages of noise regulation, namely: noise problem identification, noise impact assessment, noise control options, decision on noise regulation, operation of noise regulation, and evaluation of noise regulation.

Policy Stage	Noise Regulation Stage
1. Agenda setting	Noise problem identification
2. Problem analysis	Noise impact assessment
3. Policy formulation	Noise control options
4. Policy adoption	Decision on noise regulation
5. Implementation	Operation of noise regulation
6. Policy evaluation	Evaluation of noise regulation

Table 1. Stages of the policy process relating to noise regulation

We can also identify different 'policy players' who act out the noise policy process, namely: 1) politicians who are elected representatives in the law-making assembly or legislature, 2) political advisers engaged by politicians particularly government ministers, 3) policy analysts in government agencies, 4) 'technofficials' or technical experts on noise within the relevant government agencies, 5) noise researchers in universities and other institutions, 6) acoustics and environmental professionals, 7) interest groups representing both those who make noise and those affected by noise, and 8) the general community.

The theory in a 'Washminster' democracy such as Australia (based on elements of the US and UK systems) is that elected representatives make decisions about public policy based on advice from government officials [3]. In an ideal world government decision-makers would be presented with a range of options for any policy together with a thorough and balanced assessment of the pros and cons for each option. Policy decision-makers also expect that the options have been developed in consultation with all the relevant policy players. Further, given that the whole policy process is inherently political, the decision-makers will want information on how the different options would be received by their various constituencies (i.e., how the voters will react).

3. APPROACHES TO NOISE POLICY

There are two fundamentally different approaches to noise policy which can be distinguished in terms of the role played by technofficials, namely, the technofficial-centred approach and the collaborative approach. The former approach is evidenced in cases where technofficials play a gatekeeper role in the policy process controlling how the different players participate in the various stages. The collaborative approach, on the other hand, entails technofficials playing a facilitative role to ensure effective participation by all relevant players at each stage of the policy process. Let us examine these two approaches. Note that technofficials are public servants employed as technical experts in the various government agencies involved in noise control including environmental protection agencies, transport departments (e.g., aviation, road traffic, rail), planning departments, local government

departments, and infrastructure agencies (e.g., main roads).

It is relevant to note that the author had three years experience as a senior 'technofficial' with overall responsibility for noise control and noise policy advice in the state of Victoria (1983-85). He also chaired a national committee providing noise policy advice to a council of Australian environment ministers.

Technofficial-centred Approach

Unlike most public policy areas, environmental noise is exceedingly complex. This complexity arises not only because of the technicalities of noise generation and propagation and the variety of noise sources in modern society, but more importantly, because of the nature of community reaction to noise. Policy-makers are faced with considerable uncertainty about the effectiveness of the different noise control options because the dose/response relationship is weak. Specifically, noise exposure explains less than 20% of community reaction, the remainder being mainly attitudinal [6]. Also, the available research data varies considerably across studies in where the community reaction curve is plotted relative to noise exposure [7]. This results in uncertainty on the key questions of how much noise causes what level of reaction and how much noise is too much.

This complexity of noise can lead technofficials to view themselves as the only ones capable of ensuring that the 'correct' noise control option is selected as policy and embodied in regulation. They come to dominate the policy process and adopt a gatekeeper role to control other policy players as depicted in the technofficial-centred model (see Figure 1). This model shows technofficials at the centre of the policy arena. The various players have an input to each of the policy stages only through the gatekeeper technofficials.

Let us briefly examine each of the stages and consider how the gatekeeper role is typically acted out. First, in agenda setting (noise problem identification), it will be technofficials who determine which noise problems are addressed. Even where politicians field community complaints and seek to have a specific noise problem put on the agenda, technofficials are usually able to control when and how it is addressed. The second policy stage is that of problem analysis (noise impact assessment). Here, the technofficial-centred approach is to rely on within-agency knowledge and experience rather than independent research to determine the seriousness of the noise problem. If specific studies are commissioned by researchers or acoustics professionals the results are still interpreted by the technofficials. Input from the community is typically regarded as spurious because they are seen as lacking technical expertise.

When it comes to the policy formulation stage (noise control options), the technofficial gatekeeper will endeavour to dictate which options are considered. They will also ensure that input from any policy players who might be consulted, does not cause difficulties for their preferred option. At the fourth stage of policy adoption (decision on noise regulation), the technofficial-centred approach is to influence the decision-makers (politicians) to adopt the technically correct option that the technofficials have already decided on. One tried-and-true technique is to 'snow' the relevant minister with complex technical detail so that the minister has no choice but to accept the pre-decided option of the technofficial.

The fifth stage is that of implementation where the noise regulation is put into operation. Depending on the particular situation the regulation can be implemented with bureaucratic rigidity or with democratic flexibility. The technofficial-centred approach is to opt for the former implementation strategy in every case. The sixth and final stage, that of policy evaluation (noise regulation evaluation), is often omitted by technofficials (as depicted by the dotted lines in Figure 1).

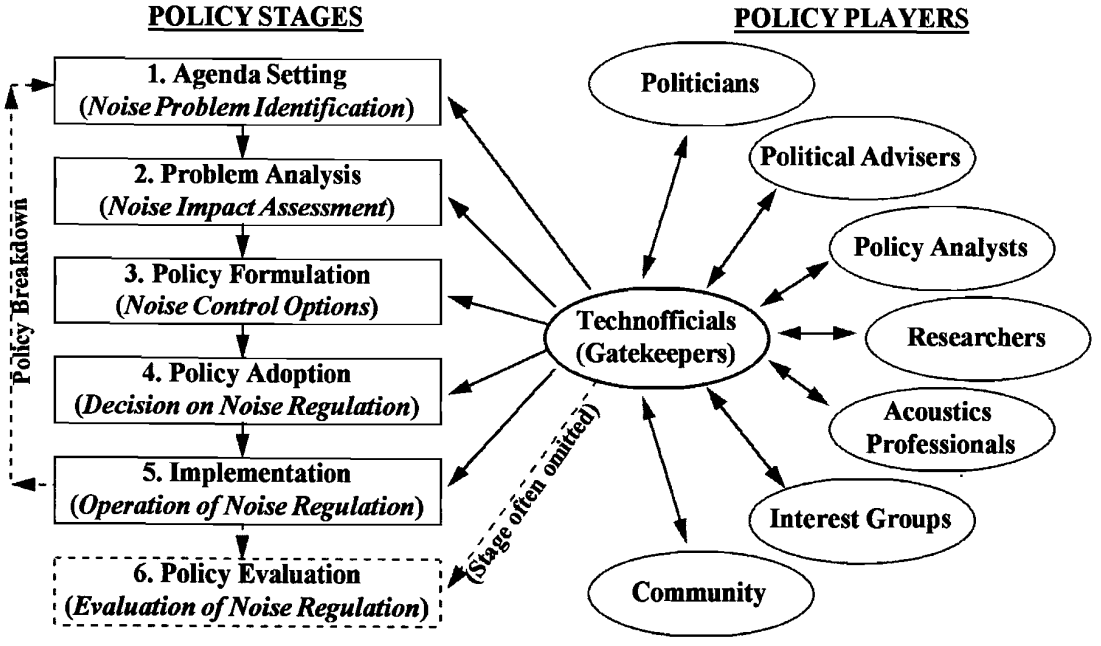

Figure 1. Technofficial-centred model of the noise policy process

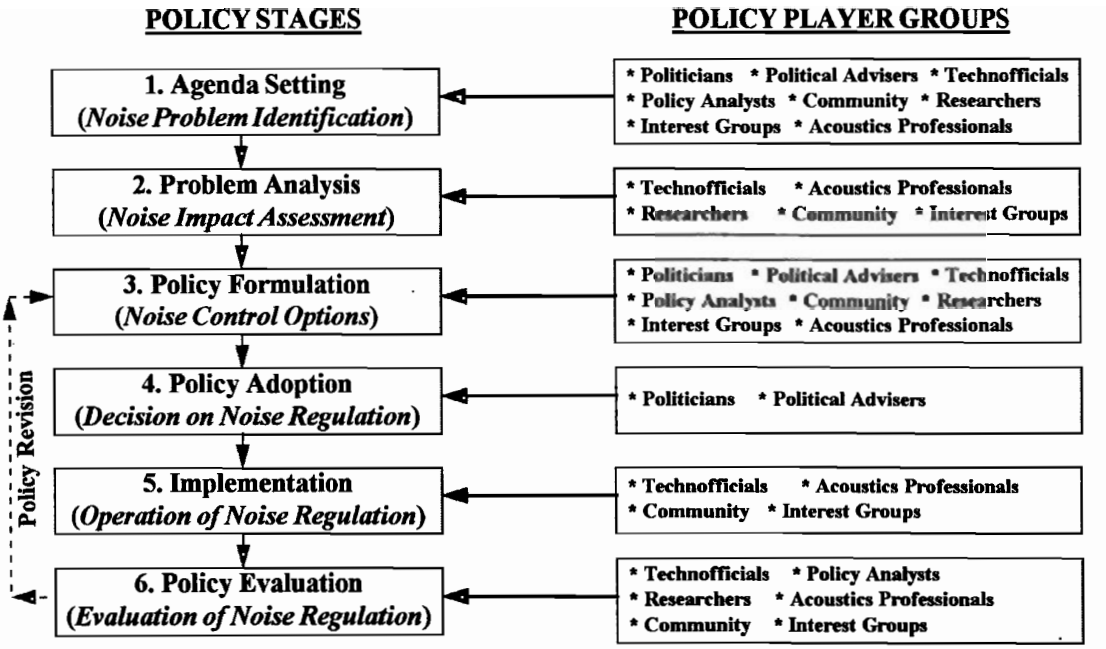

Figure 2. Collaborative model of the noise policy process

Here the gatekeeper attempts to prevent other policy players from providing feedback on the effectiveness of the noise policy. If the policy proves ineffective either in part or in total but is not amended or replaced as appropriate, there will eventually be 'policy breakdown' (see Figure 1). This may lead to community and political pressure to put the noise problem back on the policy agenda. Then, of course, the technofficial-centred approach would be to restrict when and how the issue gets addressed as the policy process begins again.

It is important to note that the intentions of technofficials in taking a gatekeeper role may be entirely honourable. In most cases the technofficial will simply intend that the noise regulation which is adopted and implemented is the best available in terms of technical criteria. It just so happens that their best of intentions have the effects of: 1) excluding other players from participation in the policy process, and 2) ensuring that non-technical issues are largely ignored.

Collaborative Approach

A fully participative approach to public policy requires technofficials to facilitate rather than restrict access to the process by the different players. Such an approach is illustrated in the collaborative model of noise policy (see Figure 2) which is offered as an ideal for a participative democracy such as Australia. The key feature of this model is that at each stage of the policy process the relevant players collaborate as depicted by the groupings shown in Figure 2. While not all players will want to have input at all stages, they are not specifically excluded from any stage except that of policy adoption (see discussion below). All of the policy players in each grouping can have a direct influence on each stage rather than via a gatekeeper.

At the first stage of the policy process, namely, agenda setting (noise problem identification), any of the major policy players could be involved depending on the particular noise problem. The role of the technofficial is to be responsive to the views of the other players particularly politicians and the community, regarding which problems are addressed. The second stage, that of problem analysis (noise impact assessment) would typically involve a reduced set of policy players (see Figure 2). The technofficials would ideally commission studies by independent researchers and seek independent technical advice from acoustics and environmental professionals.

Perhaps the most crucial stage in the process is that of policy formulation (noise control options) and here again all players have a role to play (see Figure 2). Ideally, there would be draft policy documents circulated widely to all players with an opportunity for discussion sessions open to the community. Here the role of the technofficial is to ensure: 1) that all players have an input, 2) that non-technical as well as technical issues are considered, 3) that a wide range of options is included, and 4) that the pros and cons of the different options are fully canvassed.

At the fourth stage, that of policy adoption (decision on noise regulation), the only players with a legitimate role are politicians and their immediate advisers. They make their decision having received a balanced assessment from technofficials and policy analysts of the relevant options and their implications. Under the collaborative approach, the technofficial gives impartial advice on all options and recommends on technical grounds without displaying a vested interest in any particular option. This decision-making stage defines the nature of the whole policy process as being essentially political, non-scientific, non-rational and value-based [3]. Technofficials have to resist any tendency to impose a technical or research framework (characterised as

empirical, scientific, rational and value-independent) at the policy adoption stage.

The fifth stage (implementation – operation of noise regulation) should primarily involve interaction of technofficials, acoustics professionals, interest groups and the community (see Figure 2). Technofficials facilitate a process of solving noise problems using the relevant noise regulation. A key feature of the collaborative approach is that the sixth stage (policy evaluation – evaluation of noise regulation) is always included. Ideally, an evaluation plan will be designed into the regulation rather than being an after-thought or a forced response to implementation difficulties. Evaluation can lead to 'policy revision' whereby the noise control options are reconsidered and adjusted as appropriate by means of a return to the policy formulation stage (see Figure 2). This way the policy can be fine-tuned or reformulated without completely breaking down as occurs when the evaluation stage is omitted (compare Figure 1).

4. NOISE POLICY IN ACTION

How do actual cases of the noise policy process measure up against the above ideal model based on a collaborative approach? Let us consider two recent Australian cases of noise policy in action.

Queensland Comprehensive Noise Policy 1997

The key events in the development of a comprehensive noise policy in Queensland are as follows:

- drafting by the Department of Environment in late 1980s of an initial comprehensive noise policy covering all types of noise,
- establishment in mid-1991 of the Noise Policy Advisory Committee with representation from government departments, local councils, the acoustics profession, industry and academe,
- evaluation by the committee in mid-late 1991 of the Draft Provisional Noise Policy, consultation with relevant organisations, and review of public comment on the provisional policy,
- termination of the committee in early 1992 (with continued in-house policy development by Department of Environment technofficials),
- public distribution in mid-1996 of a draft noise policy and explanatory documents [8],
- broad-based consultation in late 1996 and early 1997 involving circulation over five rounds of revised drafts and related information to those who responded to the previous round,
- revision of the policy and adoption by Parliament under the relevant act in late 1997.

In this case, the agenda setting stage of the policy process seems to have been conducted by technofficials with little involvement of other policy players but with no indication of their specific exclusion. The problem analysis stage involved a wider group of players as members of the Noise Policy Advisory Committee. This stage was close to ideal though the collaborative model would suggest a role for community representatives as well (see Figure 2). It appears that the policy formulation stage was handled very much in a collaborative manner as evidenced by the five rounds of consultation. There were 910 questionnaires returned in response to the draft policy as well as 373 detailed submissions. In addition, 25 public meetings and 49 meetings with 'key-stakeholders' were held before the policy was finalised [9].

The policy adoption stage was controlled by politicians which is in accordance with the democratic collaborative model of the policy process advocated in this paper. It seems that there was a high level of intervention by politicians who substantially amended the draft policy before adoption by Parliament as subordinate legislation under the Environment Protection Act 1994. The policy implementation stage also appears to be proceeding in accordance with the collaborative model (see Figure 2). Finally, an early evaluation stage is currently being conducted in response to a direction by the new government elected in mid-1998.

NSW Road Traffic Noise Policy 1998

This case is currently at the policy formulation stage. It involves a policy under development for road traffic noise in New South Wales. The key events to date are as follows:

- establishment of a joint task force in 1989 by the two ministers responsible for environment and for roads (with the task force of technofficials reporting to a steering committee of officers from the two relevant authorities),
- establishment of working groups of technofficials to investigate technical issues,
- release of a progress report by the task force and conduct of a community consultation workshop in late 1991,
- release in late 1994 of the final task force report detailing traffic noise control options [10],
- establishment in late 1995 of the Road Traffic Noise Committee comprising technofficials from various government departments and authorities,
- release by the committee of a progress report in 1996,
- release by the Minister for Environment of the draft policy on traffic noise and a call for submissions in mid-1998 [11],
- conduct of several consultation seminars with local government officers and one with the general public in mid-1998.

We see in this case that the agenda setting stage involved politicians as well as technofficials. Although other players were not involved at this stage there is no evidence of exclusion (gatekeeping) by technofficials. The problem analysis stage appears to have been conducted exclusively by technofficials though broad technical input was sought across government agencies. There was an early attempt to consult the community with a workshop in 1991 and the task force membership was expanded to include community representatives at this time because of concerns raised at this workshop. Considering that the task force was subsequently engaged in selecting policy options, it is arguable that the process had entered the policy formulation at this time. The

detailed assessment of the task force options was carried out by a new committee but again comprising only technofficials. The apparent exclusion of other players at this stage is inconsistent with the collaborative model.

However, full community consultation was initiated in mid-1998 with the public release of the draft policy, the call for submissions, and the consultation seminars. The planned process from here on is apparently that environment technofficials will prepare a report on the consultation feedback for consideration by the Road Traffic Noise Committee (comprising technofficials) [12]. The revised policy will then be submitted to the two ministers for adoption as government policy. In this case it is likely that the decision-makers will be presented with a final policy rather than a range of options - for a highly technical policy of this type the ministers could be expected to rely heavily on technofficial advice subject to confirmation by their own political advisers.

5. DISCUSSION

These two cases differ most notably in the level of consultation. Consultation was much more extensive in the case of Queensland's comprehensive noise policy under an act of Parliament than for the NSW traffic noise policy to be proclaimed by government ministers. It might be argued that the differences in the scope and the regulatory frameworks of the two policies explain and justify the difference in the respective approaches to consultation.

Another possible reason for the difference in consultation level is that in NSW consultation is viewed as a single separate stage of the policy process. Indeed, a NSW cabinet discussion paper released in early 1998 advocates an eight-stage 'policy cycle' with 'undertaking consultation' identified as one of the stages (the others being comparable to the stages used in the present paper except for the addition of 'coordination within government' as an extra stage prior to adoption/decision) [13]. The collaborative model offered here views consultation as an integral feature of the whole policy process not as a distinct stage. Groups of policy players should be able to participate at each policy stage rather than having their input restricted to a single stage just before policy adoption (see Figure 2). We can conclude that in terms of approach to consultation, the Queensland case aligns more closely with the collaborative model than does the NSW case. However, this does not of itself demonstrate any difference in the quality of the resultant noise policies.

A corollary to the level of consultation is the involvement of technofficials. In both cases it appears that the policy development was driven by technofficials which is entirely appropriate – policy is part of their job. The central question is whether the technofficials in the two cases adopted a controlling or a facilitative role in the process, that is, whether they operated as gatekeepers (technofficial-centred model) or as participation coordinators (collaborative model). The present paper poses but does not purport to answer this question as it would require a specific empirical investigation including interviews with all the relevant policy players. Nevertheless, it is clear that the Queensland case shows a more proactive attempt to include the different policy players in the developmental stages of the policy process.

One notable aspect of the two cases considered here is the length of time for the policy process to move through the second and third stages, namely, problem analysis and policy formulation. The technofficial-centred approach would reduce this timeframe from nine years to nine months! In fact, the protracted nature of the process in the two cases would suggest that they were both more collaborative than technofficial-centred in their approach. This raises the issue of the efficiency of the collaborative approach to policy-making. From a managerialist viewpoint it may appear much more efficient to restrict or even prevent the participation of the different policy players and to have technofficials use their expertise to come up with a workable policy in a relatively short time. Certainly, consultation takes considerable time and involves significant costs.

However, as we have seen, policy development is not a purely technical and rational process but rather is inherently political and to that extent is non-rational [2,4,5]. Nor should it be thought that consultation is simply the price of democracy. Input from the different policy players is essential for informed decision-making and for policy effectiveness. As with any public policy, noise policy development requires non-technical judgements about competing values in society [3,4]. While the technofficial-centred approach may seem efficient in the short-term, it cannot result in fully effective policies because of the restricted input from key players. This approach can easily give rise to a repeated cycle of policy development and policy breakdown (see Figure 1) thereby resulting in long-term inefficiency. The collaborative approach, on the other hand, takes longer and costs more but has a better chance of being effective because it ensures that noise policies are based on the full range of input available from all policy players (see Figure 2).

Possible criticisms of the present distinction between the technofficial-centred and collaborative approaches are that in reality noise public policy is not black-and-white but requires elements of both approaches, and in any case the former approach is outmoded [14]. On the latter criticism, it is a matter for empirical investigation whether technofficials in Australia's various jurisdictions play a gatekeeper role. The technofficial-centred model serves to highlight an approach which is certainly possible – if it is 'outmoded' then this must mean that technofficials today accept that this approach is inappropriate. The former criticism seems to suggest that collaboration is not always possible because of the greyness of the policy process. Again, the collaborative model serves to highlight an ideal which can be aimed for. Without such an ideal it would be easy to slip into a non-collaborative approach as typified by the technofficial-centred model.

6. CONCLUSION

The two models presented here highlight differences in the roles technofficials can take in the noise policy process. It is argued that technofficials should be required to adopt a facilitative role aimed at ensuring the participation of all relevant policy players at each stage of the policy process. They need to see consultation as desirable throughout the

whole process not as a distraction or as a barrier to technical and managerial efficiency. Technofficials are usually trained only in the relevant technical areas. But if they are to function effectively in the policy process, they also must have an understanding of policy analysis and of the political nature of policy-making. Finally, they need to model their behaviour on the collaborative rather than the technofficial-centred approach to noise policy development and implementation.

REFERENCES

1 M. Burgess and S. Macalpine, "Approaches to environmental noise policy in Australia" Acoustics Australia, 24, 87-90 (1996)

2 A. Hede and S. Prasser (eds), Policy-making in Volatile Times, Hale & Iremonger, Sydney (1993)

3 A. Hede, "Environmental noise regulation: A public policy perspective" Proceedings 7th International Congress on Noise as a Public Health Problem, Sydney, November (1998)

4 B.W. Hogwood and L.A. Gunn, Policy Analysis for the Real World, Oxford University Press, New York (1984)

5 W.N. Dunn, Public Policy Analysis: An Introduction (2nd ed.), Prentice Hall, Englewood Cliffs NJ (1994)

6 R.F.S. Job, "Community response to noise: A review of factors influencing the relationship between noise exposure and reaction" J. Acoust. Soc. Am. 83, 991-1001 (1988)

7 S. Fidell, D.S. Barber and T.J. Schultz, "Updating a dosage-effect relationship for the prevalence of annoyance due to general transportation noise" J. Acoust. Soc. Am. 89, 221-233 (1991)

8 Department of Environment (Qld), Environmental Protection (Noise) Policy 1996 and Explanatory Notes: Draft for Public Consultation, Queensland Department of Environment, Brisbane (1996)

9 Queensland Parliament, Environmental Protection (Noise) Policy, Queensland Government Printer, Brisbane (1997)

10 Government of NSW, Road Traffic Noise Task Force – Final Report: Options for Controlling Road Traffic Noise, NSW Government Printer, Sydney (1994)

11 Environment Protection Authority (NSW), Draft Environmental Criteria for Road Traffic Noise, Environment Protection Authority, Chatswood, NSW (1998)

12 Environment Protection Authority (NSW), Personal communication with technofficial, August (1998)

13 J. Byrne and G. Davis, Participation and the NSW Policy Process, NSW Cabinet Office, Sydney (1998)

14 Anonymous reviewer for Acoustics Australia (1998)