Chapter 10

The Risk Associated With Political Decision Making

Introduction

In Australia we live in a parliamentary democracy. Our elected representatives in Parliament are supposed to reflect the concerns of the electorate, voice these concerns during debate and enshrine the valid concerns in legislation. This is right and proper. Yet there is also an assumption of political consistency. Few express surprise when the public, in 1991, considered land degradation to be the third most important environmental issue, yet only two years later ranked it only as the seventh most important environmental issue (see Table 1.1). But if government, or one of the departments implementing government policy, lacks consistency then there are complaints (Coleman, 1994).

There are two aspects of the risk associated with government decision making. The first, which is presently being debated in the United States Congress and Senate, is what is the proper role for risk assessment (or risk analysis in Australian English) within the decision making process. The second, which has been of concern in Australia for a number of years, is how can one evaluate the likelihood of a contentious new project being allowed, modified or disallowed?

There are three issues that impinge on these matters. The first is the establishment of community accepted baselines from which decision making flows; the degree of predictability; and the degree of stability inherent in such a process.

Risk and the United States Congress

The 1995 US Congressional discovery of risk assessment has been outlined in Chapter 2. The surprising aspect of this, viewed through Australian eyes, is that the US EPA — an agency that embraced risk assessment with an eagerness unmatched by its other international counterparts — is now opposing the introduction of risk assessment and risk-benefit analysis by legislation.

Part of the reason for this lies in the subtle nuances of the congressional proposal. Risk assessment has to date been used to justify US EPA regulations. In this role, as a tool of the regulators, there was a tendency to determine upper-bound estimates of risk. A study based on a worst-case scenario would be an example of this. This tendency led certain observers to feel that environmental regulations were over-designed, in the same way that a dam that is too high is over-designed. Over-designed structures waste money and there is a feeling that over-designed environmental regulations waste money. Hence, the desire of Congress not only to have the EPA conduct mandatory risk assessment of new regulations, but also to have the EPA conduct a risk-benefit analysis of new regulations. (Davies, 1995).

Sovereign risk

The term 'sovereign risk' entered the Australian environmental lexicon as a result of the Coronation Hill dispute, which forms the case study for this chapter. The term has a well-defined meaning in international finance and refers to the risk of a sovereign nation defaulting on its loan obligations. Within the Australian environmental context it is used by the mining industry to refer to the risk of plans having to be changed as a result of either change of government or changes of government policy.

Sovereign risk can be evaluated and the changes in sovereign risk over time can be measured. The mining industry publishes regular risk surveys of countries that rank

their investment potential (for miners) on the basis of ten categories which include sovereign risk, red tape, green tape (i.e. the bureaucracy associated with environmental approvals), natural disasters, social risk, and various other items shown in Table 10.1. The method is to poll chief executive officers of mining companies who rate countries on a scale of zero (no risk) to 5 (maximum risk) on the above-mentioned ten criteria and then produce a weighted sum of their rankings. The year 1995 was the first year since the Coronation Hill dispute that Australian mining companies have considered Australia to be the least risky country for investment (Treadgold, 1995).

Table 10.1 Mining Industry Risk Survey by Country

Weights	5	4	3	4	3	3	3	3	1	2	
	Sovereign risk	Land access	Green tape	Land claims	Red tape	Social risk	Infra struct-ure	Civil unrest	Natural hazards	Labour dispute	Totals
Australia	1	3	3	3	2	2	1	0	1	2	11.6
Chile	2	2	2	1.5	2	2	2	2	2	2	12
Argentina	2	2	2	1	3	2	3	2	1	2	12.6
USA	1	3	4	2	2	3	1	1	1	2	12.6
Canada	1.5	3	4	3	2	2	1	0	1	2	12.7
Indonesia	2	2	2	2	2	2	3	2	2	2	13
Vietnam	3	3	2	2	4	3	4	2	2	2	17.2
China	4	4	2	2	4	3	4	2	2	2	19
PNG	4	3	2	4	3	3	4	3	3	3	20.4

Case Study - Coronation Hill

Introduction

On 7 December 1988 the Coronation Hill Joint Venture (CHJV) submitted a draft EIS for the development of a gold, platinum and palladium mine at Coronation Hill, in the Alligator Rivers region of the Northern Territory. Coronation Hill is located in the South Alligator River valley approximately 230km directly south-east of Darwin. The area under consideration for the mining project was within the Conservation Zone declared by the Commonwealth Government in June 1987 as a region where mineral resources should be evaluated prior to determining which areas should be put into Kakadu National Park.

In a Joint Statement by the Minister for Resources and Energy and the Minister for Arts, Heritage and Environment of 16 December 1986, it was explained that "A five year exploration programme will be conducted to help determine, by the end of that period, which areas [of The Conservation Zone] should be put into the [Kakadu National] Park" subject to the proviso that "The Government's intention is that ultimately as much of the Conservation Zone as possible will be incorporated in the Park and that only mining projects of major economic significance, not merely economic viability, will be excluded from the Park." This Joint Statement was made in the light of an earlier Joint Statement of 16 September 1986 which "agreed that the economic potential of the Coronation Hill Project is such that provisions should be made for the exclusion from any National Park extension of an appropriate mining lease area, and the Project allowed to proceed subject to normal environmental, Aboriginal heritage and related clearances."

The Coronation Hill Joint Venturers had been given numerous indications by the Government over the previous few years that the mine would be given the go ahead, and that exploration would take place in the surrounding Conservation Zone (Toyne, 1994: p. 137). Yet in the end mining was not permitted.

The mining industry made it plain that they saw the decision as a test case, warning that "if mineral investors in Australia and overseas continue to perceive sovereign risk in Australia as a major and increasing difficulty they will take their investment dollars elsewhere."

Aim

The Coronation Hill saga had a particularly long and tortuous history. Questions of particular relevance are:

1. Could a formalised risk assessment procedure have predicted the probability of a negative outcome in this particular situation?
2. Is it possible to systematise or quantify those factors which lead to the risk of a new project being disallowed or severely constrained?

History

The draft environmental impact statement was open for public comment until 7 March 1989. Over 100 of the 917 comments that were received indicated general misconceptions about the nature of the mine. The most common among the misconceptions was the idea that the Coronation Hill project was a uranium mine. This was not the case. It was to be a gold, platinum and palladium mine. Nevertheless, such a widely held view must, to a certain extent, have played a role in prejudicing people against the mine, because uranium mining has long been viewed with suspicion, and rigidly controlled.

The draft environmental impact statement declares that the resident fauna and flora of the Project Area are not rare or endangered and are not unique in terms of species associations. In February 1989 CSIRO submitted an interim report to the Australian National Parks & Wildlife Service, describing evidence that the area was of outstanding conservation significance, especially in its high diversity of notable species (Braithwaite & Woinarski, 1990). This finding was completely at odds with the statement in the draft EIS.

The environmental assessment report of September 1989 from the Federal Environment Department (DASETT) stated that "... the possibility of rare fauna entering the Coronation Hill area is not unreasonable and, for some species, probable. Of particular concern is the possibility of fauna drinking contaminated water or being adversely affected through mining operations. The Department cannot rule out the possibility of adverse impacts on fauna, however, such impacts are speculative." The assessment report found no environmental grounds on which to reject the report and drew attention to certain Aboriginal issues. It also mentioned that it deliberately failed to assess the environmental consequences of the possible accumulative effects associated with other possible mining development following on the Coronation Hill project.

As pointed out by Toyne (1994), at much the same time as the assessment report, the Aboriginal groups and the environmental groups resolved to offer each other support at the same time as maintaining distinctly separate positions. This meeting promised a new and increased capacity to coordinate the campaign against the mine and a deepened resolve to fight it to the very end.

Resource Assessment Inquiry

The Government, on 5 October 1989, decided to set up two inquiries into the Kakadu Conservation Zone. The reason given by the Prime Minister was that the cumulative impact of possible developments in the region could be of sufficient size and complexity to constitute an unacceptable hazard to the wetlands of the existing World Heritage area. Both inquiries were chaired by Justice Stewart.

The Resource Assessment Commission (RAC) was asked to assess the national economic significance of the possible mining developments in the area, and the

environmental values of the area. The other inquiry was asked to examine the question of sacred sites.

According to Toyne (1994: p.138), the explanation for the Government's change in direction was the powerful surge in community concern over the environment and the associated strength of the conservation movement as a result. Further, Kakadu was seen by Labor party tacticians as a vote winner — even an election winner. The Government did not want to go into an imminent Federal election with Kakadu open to miners and with Coronation Hill approved. Yet, even at this stage it appears that both the Prime Minister (Bob Hawke) and the Minister for Environment (Graham Richardson) were convinced that Coronation Hill would eventually go ahead.

The RAC engaged expert consultants to draw up separate reports on the three sets of issues involved: the economic costs and benefits of the proposed mine, the risks to the natural environment and the social impacts. The report set out the ranges of estimates in each area. According to Lowe (1993) the RAC did not essay the sort of simplistic cost-benefit analysis which seeks to express these incommensurables in some common currency. It said that weighing up the economic benefits against the social impacts and the environmental risks was a value judgement which should properly be made in the political domain. Accordingly, the decision went to Cabinet.

The final reports were presented on 1 May 1991. They pointed out that "the dilemma facing the Australian Government is clear: should it set aside the environmental risk that cannot be eliminated, and the strong views held by the Aboriginal people responsible for the Conservation Zone, in favour of securing increases in national income of the order that seems likely from the Coronation Hill project and possibly from other mineral resources in the Zone?" The environmental evaluation supported the CSIRO view by describing the ecological resources of the area as having substantial environmental value. But it supported the mining case by concluding that a single mine, properly managed, would have a small, and geographically limited, direct impact on the known biological resources. It also examined possible effects of multiple mines. Toyne (1994) notes with incredulity that the Federal Environment Department, which had earlier approved the EIS for the mine, opposed mining on environmental grounds in its submission to the inquiry. This view clashed with the comments of the Office of the Supervising Scientist which had extensive experience in the region. On the Aboriginal issue, Justice Stewart (RAC chair) found that the area was indeed a sacred site and to ignore this would require the Commonwealth to override its own Aboriginal heritage legislation.

In fact, the Federal Environment Department (DASETT) in its original assessment merely advised the Minister for Administrative Services that "the environmental impacts of the proposal have been examined as fully as practicable" (DASETT, 1989: p5). Once a decision has been made to deal with a project using the mechanism of an environmental impact statement, then the environmental assessment takes place under the administrative procedures of the Environment Protection (Impact of Proposals) Act. Essentially, the departmental response must determine the adequacy of the process used to generate the proposal, and identify environmental impacts. By contrast, a public inquiry offers the opportunity to state a departmental position.

The Cabinet decision on the issue was taken on 19 June, during a leadership dispute between Bob Hawke and Paul Keating. Hawke opposed mining based on a genuine concern for the Aboriginal people. Political analysts believe that Hawke was in the minority in opposing mining, even with the overwhelming weight of the RAC report behind him. But even those members of cabinet who desperately wanted the mine to proceed realised that they could not vote their shakily affirmed leader down. The view of the minority was adopted.

Risk, risk and more risk

The reports of the Coronation Hill project are replete with risk assessments. To a certain extent an EIA is itself the first stage of a risk assessment in that it is supposed to deal with significant environmental concerns and their consequences. Braithwaite &

Woinarski (1990) claim that there were three major threats arising from the CHJV proposal:

- spillage of contaminants into the South Alligator system either from the mine itself or from transport vehicles;
- the use of tailings dams containing cyanide by fauna for drinking (particularly during times of water scarcity); and
- disturbance to the fauna due to mining and its infrastructure.

They also identified the Kakadu Dunnart, Calaby's mouse, the pig-nosed turtle, and the hooded parrot as being the species most at risk of extinction, but emphasised the difficulty of evaluating the extent of such a risk.

A risk assessment of the engineering aspects of the Coronation Hill project (Resource Assessment Commission, 1990) considered the CHJV proposal to be satisfactory. The more quantitative assessment given in Appendix F17 of Resource Assessment Commission (1991) reports that the risk of a transport-related incident contaminating the South Alligator River with cyanide was acceptable, with a probability of about 10^{-5}.

A story in the 23 August 1991 issue of Engineers Australia (Kannegieter, 1991) points out that both of the above quantitative risk assessments considered the project design to be sound and safe. Yet the Government clearly took more into account than just the scientific evidence in determining the acceptability of the risk. Political and economic considerations played a role. In fact, we may hypothesise that, if one considers the environmental impact process to be that of the first stages of a qualitative environmental risk assessment, then the role of the inquiry was to be analogous to that of the first stages of a qualitative social and economic risk assessment.

Discussion

Many problems in life are a result of poor timing. The Coronation Hill proposal was one of them. To quote Toyne (1994):

> *"Had it not been for the mining industry wanting to tinker with the original boundaries of the Conservation Zone before the gazettal of Stage III proceeded, the whole matter would have been long settled before the 1987 election. Work might even have commenced."*

It is hard to see how the above quote can be correct unless the proponent's submission of the EIS was deliberately delayed until the Conservation Zone boundaries were determined. The presentation of a draft EIS in December 1988 virtually guaranteed that Cabinet would need to make a decision shortly before the 1990 election. The issue became a symbolic one both for the conservation movement and for the Aboriginal people. The government invoked a process to ascertain the facts and to escape the perceptions that had driven earlier forestry decisions. This was the Resource Assessment Commission (RAC), which could undertake functions that the EIS and EIA process could not do — namely to look at the potential cumulative effect of additional exploration or mining. In addition, the inquiry could look at the likely economic significance of the whole area, and at the Aboriginal issues.

There is a continuing perception that EIA procedures are project and site specific and rarely come to grips with cumulative regional and long-term impacts. Neither do they address the collective impact from a large number of developments occurring over time within a particular area. As part of a current review of Commonwealth Environmental Impact Assessment, Court et al. (1994) prepared a report recommending introduction of strategic environmental assessment, incorporating cumulative impact assessment, as the ultimate principal means of achieving ecologically sustainable development.

The RAC was a casualty of the final decision. Lowe (1993) notes the Government of the time's preference for hiding behind the cloak of expert advice and implies that the RAC use of a rational and visible process, thus exposing the nature of the decision to the public gaze, led to its demise. Industry groups were hostile to it as a result of the final decision, and the environment movement had always been divided on its worth.

It lacked support in Cabinet and was left unfunded and with no matters referred to it after ongoing inquiries on Forests and the Coastal Zone.

Another interpretation was given by Kannegieter (1991) who placed much reliance on the wording of the Prime Minister's press statement that "the effect of mining on the Jawoyn people, and to a lesser extent on the environment, outweighs any economic benefit". The conclusion drawn from this statement was that

> *"Hawke could have made his decision on Aboriginal grounds alone, but by including the risk of damage to the environment he signalled that the government considered the level of environmental risk as unacceptable, even though the risk had been described by the Resource Assessment Commission (RAC) as low. The decision highlights the difficulties in determining what risk to the environment is acceptable."*

What is highlighted is that the level of risk to the environment deemed to be acceptable, changed, and changed quickly with time. Thus, even if any formalised risk assessment had been undertaken based on perceived risk, the results would have been out of date as soon as they were printed. To the public, the perceived risk to the environment grew with time and continued to grow as the conservation groups mounted their campaign.

Technically, the decision was made on the Aboriginal issue, but in reality it is unlikely that the issue would have reached the prominence that it did without the support of the conservation groups.

The conclusion from this case study is that the views of the community change, sometimes rapidly. As a consequence, the views of Governments must change. All of the formalised risk assessments undertaken for the Coronation Hill project dealt with the technical risks, and there was no systematic attempt to deal with the perceived risk, and its variation with time, in a formal assessment of the political process.

Quantifying sovereign risk

The above case study was presented with the questions:

1. Could a formalised risk assessment procedure have predicted the probability of a negative outcome?
2. Is it possible to systematise or quantify those factors which lead to the risk of a new project being disallowed or severely constrained?

Issues such as these are being examined by the Australian Centre of Advanced Risk and Reliability Engineering (ACARRE). In the belief that the answer to the second question is yes, the centre is in the process of devising a matrix to examine the risks associated with development projects and has produced a list of those factors which may lead to the risk of a new project failing. Their objective is similar to that of the risk analysis of Table 10.1 — it is to look at all the risk factors that could affect decision making on the project. We applied the Centre's method to the Coronation Hill project as it would have been scored during the preparation of the environmental impact statement.(Table 10.2) The risk score on safety and environment came to 8.44 (out of a possible 100), a score that is low enough that one would assume that the project would go ahead.

Our view is that in the case of Coronation Hill, no formalised procedure would have predicted a high probability of a negative outcome. The above method provides guidance for quantifying the probability of a negative outcome. If the risk scores are treated literally then one could assign a probability of failure on environmental grounds (based on the a-priori judgement of a risk analyst) to be 0.08.

Table 10.1 Coronation Hill Risk Shortlisting Study Using ACARRE Approach

Type of influence	Source of Risk	SCORE	Threat to Concept Viability	Tech, Stnd	Safety/ Envir.	Timing	Costs
Severity of Impact	Potential for major impact on technical standard	1	1	1			
	Potential for major impact on safety / environment	4	4		4		
	Potential for major impact on timeliness of project	1	1			1	
	Potential for major impact on project costs	2	2				2
TOTAL SEVERITY SCORES			8				
AVERAGE SEVERITY SCORES (A)			2	1	4	1	2
Likelihood of impact	Novelty / originality of technology	1	1	1	1	1	1
	Uncertainty of contractor capability	3	3	3	3	3	3
	Environmentally sensitive location	6	6		6	6	6
	Volatility of relevant legislation	2	2		2	2	2
	Political or social sensitivity of project	6	6			6	6
	Political or social volatility	2	2			2	2
	Uncertain industrial relations climate	1	1			1	1
	Uncertainty of sources of finance	1	1			1	1
	Complexity of technology	1		1	1	1	1
	Complexity of hardware	1		1	1	1	1
	Complexity of "software"	1		1	1	1	1
	Hazardous materials (Type and Qty)	3			3		
	Hazardous processes / operations	1			1		
	Uncertain supply of critical equipt / services	1				1	1
	Complexity of financing	3				3	3
	Complexity of proj. organisation / 3rd party reliance	3				3	3
	Large tasks on or near critical path	2				2	2
TOTAL LIKELIHOOD SCORES			22	7	19	34	34
AVERAGE LIKELIHOOD SCORES (B)			2.75	1.40	2.11	2.27	2.27
RISK SCORES (A x B)			5.50	1.40	8.44	2.27	4.53

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