What Makes a Good "Policy Paper"?
Ten Examples

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Introduction

Many research reports contain interesting data, but fail to draw policy-relevant conclusions from them, or to present their conclusions in a compelling fashion. Some of the most common shortcomings are:

- drawing implications that are not based on the data. (Sometimes, the recommendations could have been written before the project was undertaken.)

- misinterpreting data to draw unwarranted conclusions (e.g. if the data show that Option A is 0.1% more costly than Option B, this does not mean that Option B is clearly preferable. It means that the two options cost essentially the same and that the choice should be made on other grounds.)

- providing generic recommendations that could pertain to almost any problem (e.g. "The government should provide subsidized credit...")

- burying worthwhile conclusions here and there within the report, rather than distilling them in a concluding section.

- drawing vague conclusions ("policy makers should take these findings into account when making decisions...") or not drawing policy implications at all.

This paper analyzes a sample of ten articles from the environmental economics literature that are particularly good in drawing policy recommendations or policy implications from empirical data. Each article is summarized in terms of structure and content, and the things that make it particularly effective are discussed. The paper concludes by summarizing some of the elements of an effective policy paper.

Sidebar:
Policy recommendations vs. policy implications

A policy recommendation is a statement that makes a specific proposal for action. (E.g. "Agency X should do the following ..."). Policy implications also interpret data in ways that are useful to policymakers, but without specifying precisely what should be done. A (fictitious) example of a policy implication is:

"Our research shows that the damages from air pollution in Manila are much greater than those from water pollution."

The statement *suggests* that the government should devote more attention to air pollution, but it does not recommend any specific measures.

How useful this policy implication would be depends on the context. If the finding is surprising, and the government is currently ignoring air pollution, then simply pointing out the seriousness of the problem could be very useful. But if everyone already accepts that air pollution is more serious, it is not so useful.

There is, of course, a gray area between the two. In the example above, the authors could have added "... therefore the government should devote more resources to reducing air pollution". That is a recommendation. But it is not a very specific one - it does not recommend increasing the tax on gasoline by 35% or requiring that all new power plants use hydro-electricity instead of coal.

Policy implications are often presented in an "if ... then ..." format. Sometimes a recommendation can be phrased as an implication to make it seem less "aggressive". E.g.:

"Because Option A will cost $ 1 million more than Option B, the government should adopt Option B."

vs.

"If the government chooses option A, the cost will be $ 1 million higher."

The working hypothesis of this review was that the most important factor in producing policy-relevant results is a good research question. If you don't ask a good question, you won't come up with anything interesting. It is hoped that these examples will suggest some good questions and approaches to research that others could emulate.

The ten articles were culled from a sample of 400. At each EEPSEA biannual workshop since 1993, a set of 25 background papers were provided to workshop participants - a total of about 400 by November, 2001. Each set of background papers was collected over the previous six months from journal articles, gray literature and media reports in environmental economics.

The author scanned the titles of these 400 items and found that 40 had policy-oriented titles. The remainder appeared to report data; to describe recent events; or to demonstrate a methodology – but not to make explicit policy recommendations. This small number was something of a surprise, since the 400 items had been selected for their practical value to a group of applied environmental economists. Theoretical and methodological pieces were already greatly under-represented, relative to what one would find in the average academic journal. In spite of this, only 10% of the sample were obvious policy papers! So the tendency among researchers to forego policy analysis seems to be more the rule than the exception.

Of the 40 pieces with policy-relevant titles, only 30 proved to have actual policy relevance on closer examination. Those that did not displayed weaknesses such as the following:

- "conclusions" that were actually hypotheses, and were not supported by data.
- models that used only algebra and no data. (This is a valid form of research, but is unlikely to be persuasive to policymakers.)
- vague recommendations ("it all depends...", "more research is needed...", "it's all very complex...").
- something important missing in the exposition of the research process that undermines the report's credibility (e.g. no description of the methodology).

Of the 30 policy-relevant papers remaining, ten were selected to provide a good range of research questions and styles of research. They were judged to be effective examples of policy analysis, not because they were known to have actually had policy impact but because the reviewer found them to be persuasive. In other words, "If I were a policymaker, I would understand this paper; find it credible; get a clear idea of what action needs to be taken; and be persuaded that the recommendations are sensible".

The ten papers are discussed in turn below.

Ten Examples

Hans Binswanger, "Brazilian Policies that Encourage Deforestation in the Amazon". World Development, V. 19, # 7, 821-829, 1991 (8 p.)

This was one of the first studies to look at the impact of "economy wide" policies on the environment. Before this, many people had claimed or assumed that deforestation in Brazil was caused by logging for the timber trade or that people were clearing land to raise cattle and exporting the beef to North America ("the McDonald's Connection").

Binswanger recognized that indeed some of the land that had been cleared was used for cattle grazing. But was this strictly a market failure – the market not recognizing possibly higher-value uses of the land -- or did policy failures also contribute to it? By looking at a broad range of macroeconomic conditions and policies, he saw that many had indirect and unintended effects on land use.

For example, Brazil had a long history of hyperinflation. One of the few safe places to put your money was land, which was sure to increase in value. Agriculture and livestock raising was also encouraged by government policies. Acquiring title to land in remote areas is largely a matter of clearing land and squatting on it. The squatter is entitled by law to claim an area three times the size of the area he or she cleared of forest. So people cleared as much land as they could - more than they had any use for. Income from agriculture and livestock was exempt from income tax. And so on.

In a very short article, Binswanger reviews half a dozen policies that unintentionally encourage forest clearing. This article had a lot of influence. It redirected people's attention away from the obvious, proximate causes of deforestation to the deeper, underlying causes. It generated a lot of interest in looking at economy-wide policies in other countries. And it had influence in Brazil. A couple of years later, many of these subsidies and incentives for land clearing had been removed. Of course, we can't be sure the article was responsible for that, but it probably contributed to it.

Discussion

The strongest feature of the article is its clear and concise analysis of the impact of government policies. Because the analysis is so clear, it's very easy for him to draw policy recommendations - he simply recommends that these harmful policies be abolished. The weak point of the paper is that, because it it's so brief (eight pages) there's no description of his research methodology. It's not clear how one goes about

this style of research. How do you formulate hypotheses about what the policy failures might be? It seems to require a certain amount of background knowledge and good intuition.

But the fact that he already did this research gives us an advantage. If we want to look at the underlying causes of deforestation in an Asian country, we could see if similar policies are in place. For example, the requirement that clearing forest makes it easier to obtain legal title to it is very common. Of course, some of the conditions that prevailed in Brazil in the 1980s don't apply here and now – and there are probably many policies in Asian countries that weren't relevant in Brazil. But at least previous work like Binswanger's can give us a starting point.

It could even give us ideas about the causes of environmental degradation in other areas. For example, why are mangroves being converted to shrimp aquaculture when everybody knows that within a few years the aquaculture will collapse? Is it just because the short-term profits are so high? Or do perverse government policies, like the ones Binswanger describes, also play a role?

That's where surveys of previous literature can be particularly helpful in designing a research project. Doing a literature survey isn't just a formality to make sure that nobody else has done exactly the same study that we're planning to do. One of the most important purposes of the literature review is to give us ideas and hypotheses for our own research.

The research question this paper addresses is *"Why do people engage in environmentally damaging behaviour?"* Or *"What are the underlying causes of environmentally damaging behaviour?" "What are the relevant market failures and policy failures?"*

Mike Rock and Jean Aden, "Initiating Environmental Behavior in Manufacturing Plants in Indonesia". Journal of Environmental and Development, V. 8 # 4, 357-375, Dec. 1999 (18 p.)

The purpose of this study was to find out what factors lead Indonesian firms to undertake pollution abatement and other environmentally-friendly behavior.

The article begins by explaining its purpose and hypothesis; then explains the sample selection (one city); describes the survey design and survey procedure; and performs a multiple regression analysis. The results are explained in layman's terms with footnotes explaining the statistical tests used.

The study identified plant-level environmental behaviors and measured the extent of exposure of plants to regulatory, community, and market pressures and government incentives designed to get plants to install pollution control equipment. Statistical findings show that plant characteristics, regulatory actions, community and market pressures, and government incentives all influence whether a plant invests in pollution control, whether it engages in environmental management, and the extent of environmental management practices. But it also found that only characteristics of plants (size and sector) influence the level of pollution abatement expenditure. Furthermore, the level of abatement, even by firms that do it, is very low.

The authors find these results puzzling and offer some possible explanations. One is that firms carry out some preliminary/preparatory measures for pollution control, in response to regulatory, community and market pressures. But they will not spend substantial amounts of money to reduce pollution unless they have to. The survey found that only 13% of plants had experienced any direct community pressure and only 2% had experienced any pressure from buyers. Furthermore, although a large share of plants had received warnings from the government about emissions exceeding standards, the government agency in question has no power to legally forced plants to clean up. The authors conclude that until community pressure and government enforcement have some "teeth", firms are unlikely to spend much on pollution control. They recommend that government agencies begin by increasing their capacity to monitor and enforce. Once the capacity is established, the government should increased the legal power of the environmental protection agency.

Discussion

The paper provides a clear and complete, step-by-step report on the research process, from initial hypothesis to conclusions - all in 18 pages. An abbreviated version of the survey questionnaire is attached. The discussion of regression results is made intelligible by reminding the reader what the model's terms stand for. In other words, the reader is not expected to remember what the CP or GMW mean; the authors provide explanations (community pressure, government regulatory measures) in the text.

As in many real-world research situations, the results of the statistical analysis are ambiguous and a bit puzzling. The authors provide a reasonable interpretation and defensible policy recommendations from it, while leaving open the possibility of other interpretations.

This paper asks *"What factors affect environmental behavior?"* and *"What policy measures could be taken to affect those factors?"*

Randall Bluffstone, "Reducing Degradation of Forests in Poor Countries When Permanent Solutions Elude us: What Instruments Do We Really Have?". Environment and Development Economics, 295-317, 1998. (22 p.)

This paper acknowledges that the basic/long-term causes of deforestation in developing countries are difficult to address in the short run, then describes some of those causes and the difficulties associated with them.

Given that, and the author's statement that 80% of the timber cut in developing countries is used for fuelwood, he compares two "demand side" policies that would reduce the use of fuel wood: a) policies to reduce the price of kerosene; and b) policies to encourage the use of fuel-efficient woodstoves. He assess the effects of these policies on deforestation in Nepal.

Neither policy had been implemented in Nepal. The author's purpose was to find out what would happen *if* they were implemented. He used a model to simulate the effects of the two policies and ran the model using real data from Nepal. The results were as follows:

In order to get a substantial number of people to switch from wood to kerosene, a subsidy of 80% would be needed (i.e. to reduce the retail price from Rs. 67 per litre to Rs. 13). This is because the vast majority of the population uses fuelwood and would require a subsidy. (A study in Pakistan found households with incomes as high as $18,000 per year using fuelwood). The annual cost per household would be $160 per year.

Providing households with fuel-efficient woodstoves free of charge would cost about $4.50 per household per year, including various distribution and administration costs.

Both policies would reduce fuelwood collection by about one-third.

The author points out that, a priori, we should expect the stove option to be superior. The kerosene subsidy reallocates labour within the economy from fuelwood collection to the activities that pay for the subsidy. The stove, on the other hand, is technical progress; it has the effect of *increasing* the household's labour endowment, rather than just reallocating labour.

Other considerations:

There is an income threshold at which people switch from wood to kerosene. People in the highest income brackets already use kerosene because they find that its convenience is worth the higher cost. If a subsidy is provided, those people will

receive it, without producing any effect on deforestation. People just below the threshold would receive a much larger subsidy than they actually need to switch (a rent, if you wish). People at the very bottom of the income ladder might not switch even with an 80 percent subsidy, and if you don't switch, you don't get a subsidy. So there is some inefficiency, as well as a regressive equity effect, in this policy.

Fuel-efficient stoves have a secondary benefit – they also improve indoor air quality. On the other hand, they break and have to be replaced every two or three years.

Discussion

This paper is effective for several reasons:

- It clearly establishes its policy relevance early on (i.e. because the fundamental causes of deforestation are hard to tackle, we need to look for short-term second-best measures). It promises something practical.

- Because it assesses something hypothetical, it has to use models. But it uses real data, not just algebra, so it's more persuasive.

- The Results section uses a few key numbers and presents them well.

- It shows a clear difference in cost-effectiveness between two policies and explains why (labor re-allocation vs. technical progress).

- It explains why a subsidy is costly and inefficient (because of the threshold effect).

The main weakness of the paper is that it does not explain why such an obviously efficient strategy has not been adopted. Why don't people buy stoves themselves if they're so cheap? If the stoves break, why don't entrepreneurs design and sell better ones?

This paper is an example of ex ante policy appraisal - assessing a set of hypothetical policies before they are implemented, and comparing them. The questions it asks are *"Which of two policies would be better?"* and *"What are the economic fundamentals of each that affect their performance?"*

Paul Ferraro and David Simpson, "The Cost-effectiveness of Conservation Payments". Land Economics V. 78 # 3, 2002 (18 p.)

This paper introduces the hypothesis that it is more cost-effective to make direct payments to individuals or groups that protect ecosystems than it is to sponsor development projects that produce commercial outputs and ecosystem protection as joint products. The latter approach is the current conventional wisdom and includes things like ecotourism, biodiversity prospecting, nontimber forest product extraction and selective logging. It describes some direct payments initiatives that are actually operating now.

It then uses an algebraic model, which confirms the initial hypothesis. It finishes with an empirical example – a beekeeping project – that plugs real data into the model. Beekeepers set up beehives at the edge of the forest. The bees collect nectar and pollen from plants in the forest and the beekeeper sells the honey. The project managers have a choice of paying the beekeepers directly to preserve a given area of forest, or subsidizing beekeeping, perhaps by providing free boxes. (Precisely how the subsidy would work is not explained in the paper.)

When the model is run using real costs of labour, capital, honey and so forth, it is found that the subsidy approach costs about 12 times more than the direct payment approach. Beekeepers increase their profits by 30% under the subsidy approach and by only 10% under the direct approach. However, the cost savings from the direct approach are so large that the donor could afford to provide a transfer to make up for the foregone 20% profit increase.

The paper then discusses some of the implementation problems of both approaches and finds that they do not differ very much. Finally, it asks why donors favor the direct approach, even though it costs so much more. The reasons seem to be things like the belief that it promotes development; that projects are more visible than payments; that they provide demonstration effects; and so on. The authors provide counterarguments to each.

Discussion

The strongest point of this paper is that its hypothesis and conclusions go against current conventional wisdom. So it is likely to attract attention – it is more likely to be published in journals and attract readers than a paper that argues the same thing as a lot of other papers. Another strong point is the final section, which analyzes the motives of donors for favoring the more costly approach and provides counterarguments to it. Here the authors go beyond providing specific policy recommendations – they anticipate some of the debate that might result and provide some ammunition for people who might advocate the authors' point of view.

The weakest point in the paper is that, although the model is not complex, neither is it easy for a non-economist to understand. The argument could have been strengthened if they had provided a verbal, intuitive explanation of why the model produces the results it does, the way the Bluffstone paper does.

This paper is also an example of *ex ante policy appraisal*. It asks the additional question *"Why do policymakers prefer the current policy?"*

W. Magat & Kip Viscusi, "Effectiveness of the EPA's Regulatory Enforcement: The Case of Industrial and Effluent Standards". Journal of Law & Economics, V. XXXIII, 331-359 October, 1990 (30 p.)

The purpose of this study was to find out how effective the US Environmental Protection Agency's regulations about water pollution have been. Before this study, a number of people had looked at the effectiveness of various health and safety regulations in the US (for example, laws requiring the use of seatbelts) but there had been few studies of environmental regulations. So the authors decided to do one and to compare the effectiveness of the EPA's regulations to that of health and safety regulations.

They start the paper by looking at previous studies of health and safety regulations. Then they explain how they went about doing their study, including sampling procedures; steps they took to avoid biases in sampling; and limitations of the study. Third, they describe how the regulations operate, both de jure and de facto (i.e. how they are supposed to work and how they really work). Then they describe the data they collected, which measure the relationship between EPA inspections and pollution discharges of pollution.

They then report their findings:

- Discharges of pollution are inversely related to inspection rates. (I.e. the more frequently the inspections, the less pollution is discharged.) Each inspection results in roughly a 20% percent decrease in discharges.

- There is no "rebound" effect - discharges don't increase again after the inspection.

Next they do an "exploratory" cost-benefit analysis using benefit transfer and find that benefits greatly exceeded costs ($42,000 vs. $330 per inspection).

Their conclusion was the EPA regulations were effective and would probably pass a cost-benefit test. Regulations of the Occupational Safety and Health Administration (OSHA) are very strict but loosely enforced. Studies have shown that OSHA's regulations have very little impact. The authors conclude that the EPA approach – having moderately demanding standards but enforcing them strictly – is much more effective. This is a very practical observation – something a regulator can use.

Discussion

Of all the papers surveyed, this is probably the closest to the format used in EEPSEA Research Reports. It provides a clear and complete description of the purpose, methods and conclusions. It could serve as a good model for authors.

It also makes very good use of literature review. By looking at the OSHA regulations and contrasting them with EPA's, it is able to put the EPA's performance in context - to show how it compares to OSHA's. More important, it gives the authors a clue as to *why* EPA's regulations are effective – it seems to be because their standards are feasible and their inspection rates are higher. If they hadn't looked at the OSHA regulations, they probably couldn't have drawn that conclusion.

This paper is an example of (ex post) policy evaluation – assessing a policy after it has been operating for some time to see how effective it has been, and comparing it with other policies that operate differently. The research questions are *"Is this policy effective?"* and *"If so, why?"*

S. Dasgupta, et al, "Water Pollution Abatement by Chinese Industry: Cost Estimates and Policy Implications". World Bank Working Paper, May 1996 (11 p. plus tables)

This paper begins with a very short problem statement (3 sentences), which mentions that a new plant-level database provides information about the cost of abating industrial water pollution in China. The paper makes use of this database to estimate abatement cost functions; assess the economic efficiency of current regulations; and simulate the impact of an emissions charge system. A one-page background section describing China's industrial pollution problems follows; then a page describing the data base; and three pages on analytical methods. The findings are presented in three pages. The main conclusions are re-stated in four bullet points.

Those conclusions are:

- Cost variations between firms are large (up to 30:1), so potential cost savings from market-based instruments are large.

- Tightening standards would create significant costs. A benefit estimate would be needed to make the decision, but a priori it seems that switching to the highest standard is not justified.

- Emission charges as low as $1 per ton would induce significant abatement.

- Switching from the current levy system (which has a maximum allowable emission level plus a fine for excess emissions) to a conventional emissions charge would reduce abatement costs by 73%.

Discussion

The main strengths of the paper are its brevity and clarity. The authors use considerable ingenuity to extract very sharp policy conclusions from a large amount of data. Each of the four bullet-point conclusions includes one or two numbers, expressed in terms that are easy to understand.

If the paper has a weakness, it may be in the problem statement. Because it is so brief, it gives the impression that the authors started with a database and then proceeded to "mine" it to see what conclusions they could come to. It's hard to tell whether the authors had sharp research questions in mind from the start or whether they are simply very good at seeing patterns in data.

Furthermore, a careful reading shows that the tables appear to incomplete; it does not seem possible to derive the results from these data alone. In general, the paper is stronger on presentation than on detailed analysis.

This paper asks *"What are the potential savings from a policy change?"* and *"How does the current policy compare to a hypothetical policy?"* As such, it includes both ex ante and ex post policy assessment.

Mateen Thobani, "Water Markets: Why, When, and How to Introduce Tradable Water Rights". World Bank Research Observer, V. 12 # 2, 161-179, August 1997 (18 p.)

Thobani first describes the problem of water scarcity and discusses the political feasibility problems of introducing market-based instruments to deal with it. (In

other words, it explains why MBIs have not often been adopted.) It lists the shortcomings of informal water markets; provides a list of existing laws in some countries that have water trading; and mentions the effects that water trading has had in those countries. From the above, it lists the minimum necessary conditions for water trading to succeed. Finally, based on Chile's experience, it provides guidelines for introducing water trading. These guidelines deal with political as well as technical obstacles, e.g.:

- begin with an information campaign
- assign initial water rights to current users, to avoid conflict
- auction off new rights.

Discussion

The main strength of the paper is that it is practical, non-technical and easy to understand. There are no numbers or tables at all. It emphasizes political and administrative obstacles to policy reform, and how to overcome them in order to achieve the advantages identified by economic theory.

Among the questions this paper asks are *"What experience have various countries had to date with a particular policy change?"* and *"What are the minimum conditions needed to make the policy work?"*

(A similar article is Magda Lovei, "Phasing Out Lead from Gasoline: World-wide Experience and Policy Implications". World Bank Environment Department Paper # 40, August 1996.)

K. Choe, D. Whittington, and D. Lauria, "The Economic Benefits of Surface Water Quality Improvements in Developing Countries: A Case Study of Davao, the Philippines". Land Economics V. 72 # 4, 519-37, Nov. 1996 (18 p.)

This study used the contingent valuation method and travel cost model to estimate the economic value people place on improving the water quality of the rivers and sea near their community. The two valuation methods provided very similar results: both found that the willingness to pay for improved water quality was very low, both in absolute terms and as a percentage of household income.

Although residents do suffer damages from water pollution created by lack of wastewater treatment, there are few externalities – most of the damages are suffered by the residents themselves. They are aware of these damages and take measures to avoid them. They feel that they have lost valuable recreational opportunities and are

concerned about possible food contamination but they do not seem to feel that these are as serious as problems like solid waste.

While many contingent valuation studies (including some by the authors) have shown a high willingness to pay for improved water quality in specific cases, this study did not. Any projects that incurred substantial costs to improve water quality – and relied on contributions from local residents to pay them – would probably fail.

Discussion

The use of two valuation methods that provided very similar estimates increases the credibility of the study.

The contingent valuation method, properly applied, involves close contact between researchers and the community and provide some insights into attitudes and motivations – i.e. not only how much people are willing to pay, but why.

The study's conclusion – that willingness to pay is too low to provide a basis for project financing – is a valuable one. This "negative finding" (which may well have surprised the researchers) is by no means a mark of failure for the study. It could be extremely valuable in avoiding a wasted investment and allowing those funds to be used more productively elsewhere.

This study asks *"Do a project's beneficiaries have sufficient willingness to pay to finance the project?"*

(A comprehensive review that summarizes findings from many countries is World Bank Water Demand Research Team, "The Demand for Water in Rural Areas: Determinants and Policy Implications". World Bank Research Observer Vol. 8 # 1,47-70, Jan. 1999)

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Ken Chomitz, "Evaluating Carbon Offsets from Forestry and Energy Projects: How Do They Compare?" World Bank Discussion Paper, n.d (2000?), Kchomitz@worldbank.org. (24 p.)

This paper discusses the merits of using forestry or energy projects in developing countries as ways to offset increases in carbon emissions. Both kinds of projects have been discussed in negotiations about carbon trading as a way to reduce the costs of avoiding climate change. The conventional wisdom is that forestry projects are much more difficult to operationalize. Five reasons are offered including additionality (It is hard to know how much forest would have been preserved in the

absence of an agreement); baseline measurement; leakage (What is the "business as usual" scenario in the absence of the project?); and others.

Chomitz takes each of these five criteria in turn and compares forestry and energy projects for each. In other words, how does the problem of additionality affect energy projects? How does it affect forestry projects? Is it true that additionality is a much bigger problem for the latter?

In each of these five sections, he finds that there are no major differences between energy and forest projects – though there can be big differences between projects within each sector.

Discussion

Like some of the author's other papers (e.g. "Domestic Benefits of Tropical Forests", World Bank Research Observer, V.13 #1, Feb. 1998), this paper is likely to attract attention because it disputes conventional wisdom. It does not provide specific policy recommendations but it does have clear policy implications. The implication is that forest projects do offer possibilities for carbon trading and these possibilities should not be neglected.

The questions this paper addresses are: *"How big a problem or opportunity does this phenomenon present?"* and *"How much priority should policymakers give it?"*

(A paper with a similar purpose is Z. X. Zhang "Estimating the Size of the Potential Market for All Three Flexibility Mechanisms under the Kyoto Protocol". Asian Development Bank contract TA-5592-REG, Nov.1999.)

EEPSEA/WWF, Indonesia's Fires and Haze: The Cost of Catastrophe. ISEAS/IDRC, 1999 (book:145 p.; summary: 6 p.; press release: 1 p.)

This study estimated the total value to humans and ecosystems from the 1997 fires and haze. These were disaggregated by impact and by countries suffering the damages. The results were disseminated aggressively and quoted widely in the international press. No research was conducted into the causes of the fire – only their impacts. The study was done in a few weeks, using "back of the envelope" methods.

Discussion

One of the strengths of the study is the disaggregation of impacts. It showed that the largest damages by far from the haze were to people's health, not to business as previous media reports had implied. It also showed that 85% of the damages were suffered by Indonesia itself, giving the country a strong incentive to avoid future fires.

The main damage estimates were summarized in two simple tables. Numbers were rounded off where possible. The main figures were accompanied by readily understandable comparisons. The total damages were compared to those of previous environmental disasters, like the Exxon Valdez in Alaska. Damages in individual countries were compared to alternative uses of those resources. (Indonesia's damages were equivalent to its entire foreign aid receipts that year. Malaysia's damages were equivalent to the cost of creating and maintaining a protected area.) These comparisons increased the "quotability" of the findings. Many readers commented that they made the findings much more understandable.

Because the study did not examine the causes of the forest fires, the authors could not cite original research as a basis for policy recommendations. However, anticipating that the study would draw many questions about what should be done, the authors surveyed existing literature about the causes of the fires and recommendations that had been made about better forest management. A summary of this literature, with appropriate citations, was included in the book. The authors could therefore legitimately respond to questions about what should be done – and base their response on solid research.

The main impact of the study was to increase awareness of the problem. Even without the recommendations, simply attracting attention appears to have had some impact. A number of agencies cited the EEPSEA study when financing forest protection projects.

The main questions this study asked were *"How big is this environmental problem?"* and *"Who does it affect?"*.

Conclusions

What can these examples tell us about the elements of a good policy paper? The most important ones seem to be a good research question, and a good presentation of the findings.

The examples asked a variety of questions:

1. *What are the underlying causes of environmental behavior?*
   - Binswanger on Brazil's deforestation
   - Rock & Aden on Indonesian polluters

2. Policy assessment

   a) Ex-ante appraisal: *How well would a new policy perform, with respect to effectiveness, efficiency, equity, or other criteria?*
   - Bluffstone on Nepal cookstoves
   - Ferraro & Simpson on forest payments
   - Dasgupta on abatement costs

   b) Ex-post evaluation: *How well does an existing policy perform with respect to those criteria?*
   - Magat & Viscusi on EPA regulations
   - Dasgupta on abatement costs

   c) *What are the minimum necessary conditions for successful implementation of a policy?*
   - Thobani on water trading

   d) *What lessons or guidelines can a comparison of policy experiences (cross-country or within a country) provide?*
   - Thobani on water trading

3. *What is the potential for financing of an innovation (WTP)?*
   - Choe et al on water quality Philippines

4. *How big is a problem or opportunity? Which should get priority?*
   - Chomitz on carbon projects
   - EEPSEA on fires & haze

One of the points Daniel Bromley made in his 2000 evaluation of EEPSEA was that – like most of the environmental economics literature – EEPSEA tends to have a

lot of projects that involve valuation, but few that deal with Question 1. But Question 1 is probably more useful to policymakers. Valuation by itself can't really provide much guidance to decision makers.

(Projects of type 4 sometimes work like "smoke bombs". Smoke bombs makes a big noise and attract a lot of attention, even though they have no real force. Sometimes a project will do nothing more than attract attention to a problem, leading somebody else to figure out to fix it. But for that to happen, you usually need a big environmental problem and a very flashy smoke bomb. Those conditions are not met very often, and one can't design a strategy for achieving impact from research around smoke bombs.

Unfortunately, while there are many examples of valuation studies, there are fewer examples of research that identify the underlying market and policy failures behind environmental problems. This kind of research also relies more on intuition and open-ended questions than it does on techniques that can be learned in textbooks.

One form of valuation which can be directly applied to policy problems is # 3. Here the intention is to find out if people really are willing to pay for a specific environmental change – so that the change can be made to occur. Often people want to assess willingness to pay for an abstract environmental quality – like the existence value of a tropical forest. But it may be difficult or impossible to identify a credible payment vehicle – a means by which people can translate their potential willingness to pay into actual payments. This is not just an inconvenient methodological problem. That situation is telling us that the research is unlikely to have any policy impact. Even if we can "trick" people into giving a value, it will not be possible to get them to make actual payments. In that case, the environmental improvement will not be financed and nothing will change. That kind of research is not very useful.

At least one article came up with a "negative" finding – that people were *not* willing to pay for a particular environmental improvement. That study was not a failure. Far from it – that information is extremely useful to decision makers. In such cases, researchers should not be tempted to "massage" the data until it supports a more "positive" conclusion.

Similarly, the articles most likely to attract attention were the ones with counter-intuitive findings – ones that challenge conventional wisdom. Such papers are (by definition!) exceptions. It is not easy to come up with novel hypotheses. But it is certainly worth the effort to try.

Many of these examples made very effective use of literature review. The purpose of the literature review was not simply to eliminate the possibility that someone else had done a similar study. Rather the authors gained a wealth of

information about cases and country experiences that they could not have investigated on their own. This made it possible for them to put their own findings into a comparative context and to draw policy conclusions that they could not have drawn otherwise.

Policy assessments that look at distributional effects ("Who would be affected and by how much?") and the feasibility of implementing policy measures were particularly effective. The paper by Ferraro & Simpson on forest payments explained why the status quo is favored; anticipated objections to the policy change proposed; and provided counter-arguments.

What techniques did these authors use to *present* their arguments effectively?

First of all, they saw their task as exactly that – presenting an argument, rather than presenting data. They saw the purpose of their research as attempting to answer a question. Data are only a means to answering that question. The value added of a good research report lies in the interpretation of data – not in the data themselves.

The papers that used models explained why the models produced particular results. They explained the economic logic behind the model – why it makes sense that one policy would be more costly or have different distributional effects than another. Models that seem like "black boxes" are unlikely to be of much interest to readers.

Even the simplest models will be more effective if accompanied by a short verbal explanation. If a model shows that the internal rate of return on a project is x %, what does that mean? Policymakers look first for recommendations and only later for the figures that support the recommendations.

In general, the most effective papers were brief, clear and had a self-contained section of conclusions and recommendations. A reader could get a full understanding of what the authors recommend (and why) by reading only that section of the report. In practice, that is exactly what most readers do – only a minority of readers actually read an entire report cover to cover. The percentage of policymakers who do so is even smaller. That may be unfortunate, but it is reality.

These articles are all very economical in the use of numbers. Most use only a few, striking numbers and a couple used no numbers at all. Numbers were usually rounded off to the nearest whole number or at most to one decimal point. Comparison figures were used, to make the numbers more understandable. Tables were few and simple.

If we look our sample of thirty effective policy papers and compare them to EEPSEA Research Reports, the difference is striking:

		Sample RRs
Length	21 p.	60 p.
# of tables	3	25

That brings to mind another characteristic of effective writers – they put themselves in the reader's shoes. They ask themselves "If I were to read this report, what would I look for in it? Where would I look for it?"

There is a big difference in the way communicators like journalists and policy analysts think about writing, and the way academics think about it. It's obvious that journalists structure their articles differently – they put the conclusion first, then the supporting information, and then the background. Academics do it the other way around. But there may be something more fundamental going on as well.

For journalists, writing is a "verb". When they write, they imagine themselves communicating to an audience – passing a message to someone the way you might throw a ball. They notice where the person's hands are and throw the ball to them at the right speed so that they can catch it .

But for most academics, writing is like a noun. Writing is the process by which we create a report. The report is not so much a means of communication as a medium for storing data. Once we've spent all that time and effort collecting information, we want to make sure that it's all safely stored away. It's almost as if final reports are a way to preserve the data for future generations. A thousand years from now, archaeologists will excavate our office, find those reports in our filing cabinets, and say "Thank God for EEPSEA!"

But we're not writing for archaeologists – we're writing for policymakers who live in the "here and now". We need to keep them in mind when we write. If we can do that, maybe we won't have to wait a thousand years to find someone who's interested in what we have to say!

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