Difficulties of Developing and Using Social Indicators to Evaluate Government Programs: A critical review

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Abstract
Victoria University in conjunction with Crime Prevention Victoria (CPV) received an ARC grant to investigate the relationships between crime prevention and community governance. The first task of the project was to develop a framework, linking community needs, community capacity, wellbeing and CPV interventions, which guide selection of social indicators and then compile a database of data from various sources. Among the difficulties inherent in developing social indicators are: selecting a framework to guide the development and analysis of the indicators, the difficulty of obtaining a reliable across-government comprehensive data base that would be continuously up-dated, the different contexts, policy goals and programs that indicators could serve, the significance of different definitions and contexts, applying appropriate criteria to guide the selection of the indicators, and the diversity of views about how indicators how indicators should or could be used The purpose of this paper is to describe how these issues are addressed in this project, the theoretical model that guides the selection of data from the database and how some of these difficulties are addressed.

Key words
Social indicators, crime, community wellbeing

Introduction

Social indicators are statistics which, similar to economic statistics of the national accounts, are intended to provide a basis for making concise, comprehensive and balanced judgements about the conditions of major aspects of society.

The term 'social indicator' is attributed to Bauer, who in 1966 edited "Social Indicators" a collection of essays instituted by the American Academy of Arts and Sciences to study the impact of the space program on American society. A social indicator was defined by the OECD as a 'direct and valid statistical measure which monitors levels and changes over time in a fundamental social concern' (OECD, 1976, 14). A social concern was 'an identifiable and definable aspiration or concern of fundamental and direct importance to human well-being' , (OECD, 1973). The first 24 concerns to be described by the OECD addressed eight 'primary goal areas' health, individual development through learning, employment and the quality of working life, time and leisure, command over goods and services, the physical environment, personal safety and the administration of justice and social opportunity and participation. The concerns were selected because they had policy relevance and because they were quantifiable.

The OECD uses social indicators for two purposes: first to describe social developments in OECD countries, and second to determine how effective are society and government in altering social outcomes. Indicators of social development require (OECD, 2001, p.9) 'a broad coverage of social issues. Insofar as social life requires health,

eduction, freedom to develop, resources and a stable basis of social interactions, so must the indicators reflect these various dimensions". In their 2001 publication the OECD produced comparative trend data, for 29 OECD countries, for 49 social indictors of self-sufficiency, equity, health and social cohesion.

In Australia, among the earliest references to social indicators were a paper presented by Newcome and Hartley (1975 to the World Mental Health Congress called "The Quality of Life in Australian Cities" describing the mental health or well-being of people in Sydney and Vinsom and Homel's 1976 study of 'community well-being' in which they rated 72 regions of New South Wales on indicators of disadvantage. Government interest in social indicators were first mooted in the 1976 report of the Senate Standing Committee on Social Welfare, "Through a Glass Darkly" which criticised the lack of health and welfare data in Australia and strongly advocated that an immediate high priority be given to the development of a continuing set of social indicators. By 1978 the Australian Bureau of Statistics (ABS) had published their first "Social Indicators" and interest is social indicators was being shown by a number of Australian and State government departments. In Victoria, the Department of Community Welfare Services sponsored a research project at the University of Melbourne whose purpose was to establish a social indicators data base and develop social indicators for the state of Victoria (Armstrong & Wearing, 1979, 1981).

First, this project mapped descriptive statistics of social conditions across LGAs and regions in the state. Second the researchers developed social indicators of need for each of the functional areas of service delivery, and then derived funding formulae, based on need, for the allocation of resources to various regions.

In general, these early attempts at using indicators to evaluate the impact of government programs were of limited value because the indicators were too far removed from the activities of the programs they were intended to evaluate. For example social indicators of crime were of limited value in assessing the results of the activities of a social programs providing services, such as counselling, even though their longer term aim was to reduce crime. Most of the indicator reports in the 70s and 80s were mainly descriptive and produced according to the major functional service provision roles of government departments, such as health, housing, education, etc. The loftier aims of developing a comprehensive system of social accounts that would included non-economic descriptions of well-being and provide a report on the state of the nation that could be used for setting social goals or establishing the impact of government programs, were met to only a limited degree.

Evaluators therefore first turned to mapping the program logic of programs and then to measuring performance in terms of outputs and targets. Although outputs showed what programs were delivering, such as the numbers of clients seen or trends in the occurrence of truancy, they still did not demonstrate whether the programs were having an impact i.e. what were the outcomes for society.

With the introduction of "new public management" (Armstrong, 1998) and the application of strategic management and performance indicators (Auditor General, Victoria 2001) Agencies were required to focus programs on government priorities and to set and link program objectives to government objectives. Programs began to have a 'whole-of-government' focus. The government objectives represented the desired outcomes for society such as improved well-being, health, etc. Standards and benchmarking, in health, education, crime, etc, with other states became possible (Productivity Council) In this environment, social indicators again emerged as the means of measuring not individual programs, but social outcomes to which programs activities could be linked.

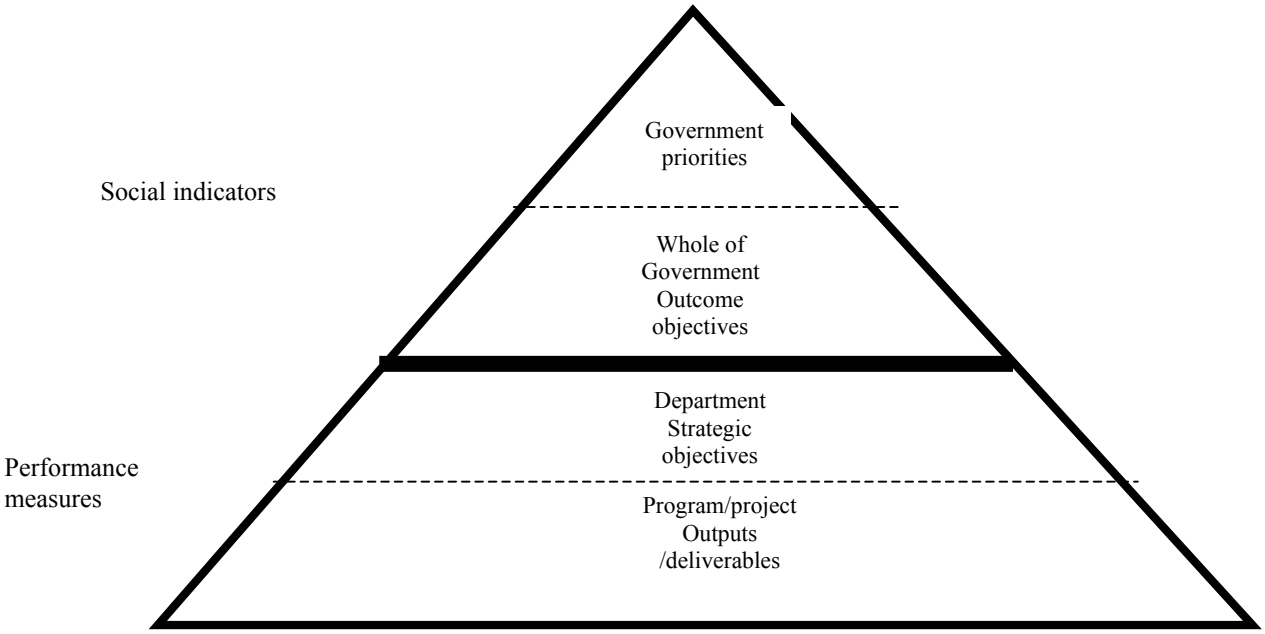

Figure 1. Uses of social and performance indicators

Although performance indicators are used to measure program activity or results, social indicators 'cannot be used to evaluate whether a particular social programme is effective. Rather, indicators can be used to assess whether and how the broad thrust of policy is addressing important social issues' (OECD, 2001, p.9). This does not mean that some indicators do not measure individual program outcomes, but rather that when indicators are used at a society level they are usually termed "social indicators".

Some of the differences between performance and social indicators is shown in table 1. In general performance indicators evaluate specific projects and programs while social indicators are directed towards larger social goals. However, they are not exclusive and booth suffer from similar limitations. For example crime or poverty are multifaceted problems that need to be addressed by the combined efforts of, for example, police, human services and education and infrastructure. Even when all resources are combined to achieve agreed specific objectives, performance indicators will be developed for each Agency's program contribution to their objectives. Sometimes a program outcome, for example the reduction of crime, could be seen as a performance indicator for the Department of Justice programs and also as a social indicator used by the State. In the latter case indicators of the contribution of the combined efforts of various stakeholders to the overall program objective could be best described as social indicators .

Table 1. Different Uses of Performance and Social Indicators

Evaluation target	Social indicators	Performance indicators
Establishing social goals	Social indicators	
Whole-of-government approaches to common problems	Social indicators	
Identifying community needs	Social indicators	
Identifying emerging social problems	Social indicators	
Achievement of program outcomes	Social indicators	Performance indicators
Organisational/strategic performance	Social indicators	Performance indicators
Performance of specific programs		Performance indicators
Performance monitoring of program inputs/processes/activities		Performance indicators
Achievement of program outputs		Performance indicators

Social indicators have their problems: Among the difficulties inherent in developing social indicators are:

- Selecting a framework to guide the development and analysis of the indicators;
- the difficulty of obtaining a reliable across-government comprehensive data base that would be continuously up-dated;
- the different contexts, policy goals and programs that indicators could serve;
- different definitions, and contexts;
- appropriate criteria to guide the selection of the indicators; and
- the diversity of views about how indicators should or could be used.

Some of these are described below in relation to a project funded by an ARC grant, which Victoria University in conjunction with Crime Prevention Victoria (CPV) received, to investigate the relationships between crime prevention and community governance. Among the principles on which CPV (2002, p.14) based its crime prevention strategies is the recognition of the multi-causal nature of crime and "adherence to an evidence-based approach, so that available resources may be effectively directed to proven programs in high need areas, that meet local priorities in the most cost effective manner" and "rigorous evaluation of existing projects and programs using systematic and rigorous techniques to learn about their success as well as the contexts and mechanisms which contribute to their success".

The first task of the evaluation of community governance project was to develop a framework that would guide the selection of indicators for the study.

A Framework

Salvaris (Salvaris, 2001) reviews various frameworks that are used to guide the selection of indicators. He notes that some communities develop indicators within frameworks of sustainability, others use frameworks describing a healthy community, quality of life or local democracy. An associated approach is the framework developed by the Australian Bureau of Statistics to guide the measurement of social capital (Australian Bureau of Statistics, 2002a, 2002b)

Examples from the OECD show different frameworks used for different purposes. For example, the set of education indicators published by the OECD (2000) in Education at a Glance structured the indicators into three groups: context, inputs (including expenditure) and outputs. Indicators on science and technology used to benchmark knowledge-based economies have been grouped globalisation and economic performance and competitiveness to The Environment Directorate uses a different set of environmental indicators under the "PSR" framework, which in turn is a variant of an approach used by the UN Committee for Sustainable Development: "Human activities exert *pressures* on the environment (indicators of energy, transport, pollution, etc) and affect its quality and the quantity of resources (*state*) (indicators of air, water, health, etc); society responds to theses changes through environmental, general economic and sectoral policies and through changes in behaviour (*societal response*)" (OECD,2001, p.9). The most recent publication "Society at a Glance" lists 30 social indicators which fit broadly into this framework.

In our study the selection of social indicators is guided by a framework (Figure 2), based on previous research that underpins crime preventions policies and strategies, links community needs, community capacity, wellbeing and CPV interventions. The framework (Armstrong et al 2002a) describes the relationships between CPV strategies, their impact on the attributes of communities, (dysfunctional, needs, capacity) and longer term impact on crime and community well being.

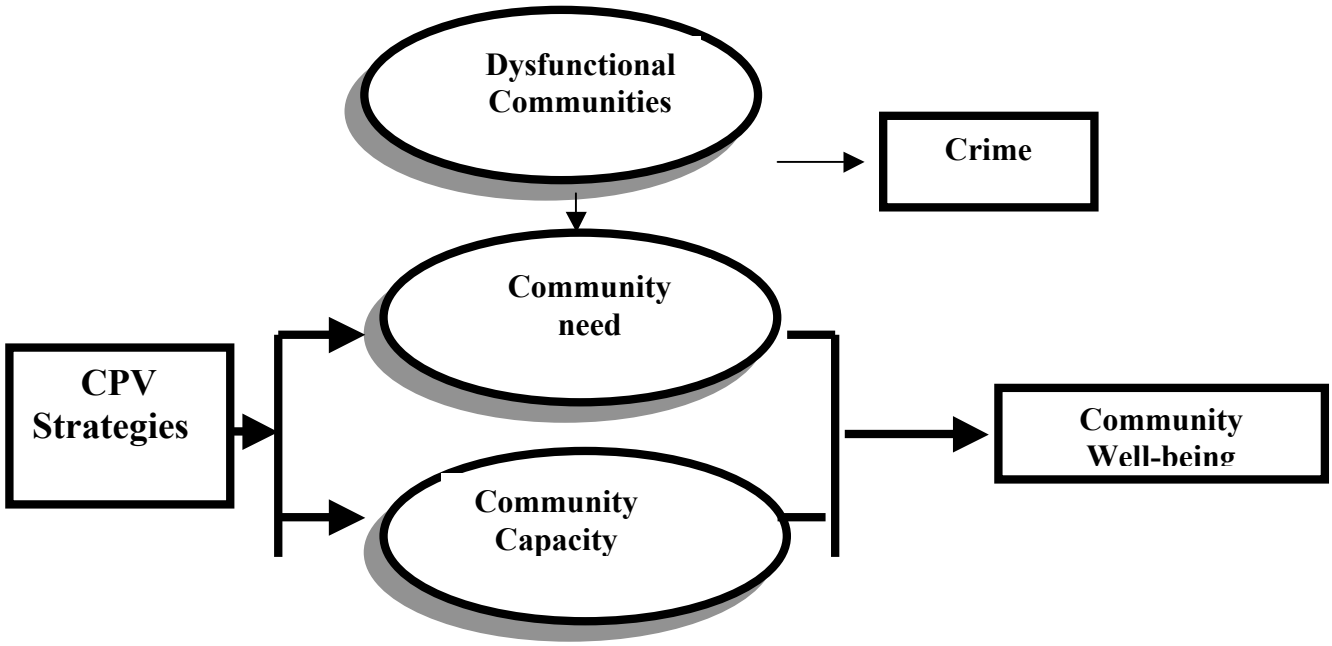

Figure 1. Theoretical Framework (Source Armstrong et al 2002)

The framework illustrated in Figure 1. suggests that dysfunctional communities have high levels of community need and that this is reflected in high levels of crime which has a negative effect on Community well-being. CPV strategies can address community need and/or promote community capacity. The second task was to develop a data base from which the social indicators and measures of the constructs in the framework could be operationalised and measured.

The difficulty of obtaining a reliable across-government comprehensive data base

In the past, and still in some quarters, government Departments operated in isolation (the silos) and were reluctant to share their data which is regarded (rightly) as their intellectual property base. Most social data is confidential and there is always a danger of confidential information that is allowed into other hands inadvertently becoming public. Secondly, most department data is now linked directly to strategic planning and performance (and often to interstate if not international benchmarks, for example student standards in education). In other cases, private sector service partners can request withholding information for 'commercial in confidence' reasons. Departments are sensitive about their performance being made public without adequate explanations.

Another problem is "ownership". If a coordinated database is established, who owns the data and what safeguards its future use? In the case of CPV's data base, raw data is managed within the Department under a Memorandum of Understanding which safeguards and restricts its use.

Finally, the content of the data base is limited to data collected by Departments for other purposes. This does not always meet the requirements of the research and so often alternative "proxy' indicators must be used.

The different contexts, policy goals and programs that drive the collection of data

Because data is collected by different Departments, comparative data is difficult to obtain as Agencies often use different districts for aggregation. Some use Local Government Area data which is also used by the Australian Bureau of Statistics. Others, for example, police, use their divisions and education use areas serviced by schools. In general, our study took LGAs as the standard aggregated measure. Trying to compare performance means making assumptions about 'means' or 'averages' or adjusting figures from one agency by the estimates of the number of people who would be 'in' or 'out' of the LGA.

A related problem is when the population in an LGA is not heterogeneous, i.e. there are wealthy and poorer neighbourhoods within the same LGA. This would be true of suburbs such as Fitzroy and Frankston.

In many cases programs for crime prevention are targeted at a specific neighbourhood or location. A safety program suggesting ways of preventing fires in the home may be delivered to an elderly citizens group or lighting

may be put in place to light up a dark area in a shopping centre that was a venue for undesirable loiterers. In these cases it is hard to get statistics relating to the changes in crime rates in these specific locations and therefore difficult to bring hard evidence to support an evaluation.

Different definitions

The use of different definitions of constructs can lead to results that produce conflicting results. Some of the difficulties in definitions is illustrated by reference to the OECD (2001, p.62) discussion of the definition and measurement of relative poverty. Because what is meant by "a decent standard of living" varies across countries and over time, and across countries and over time, there is no widely agreed measure of poverty across countries. The OECD approach was to look at relative poverty defined as existing when a family income was below one half of the median income. "The richer the country, the higher the low-income-poverty line. This may seem counter-intuitive. On the other hand, it does capture well the idea that what really matters is not just subsistence but also the ability to participate in mainstream society."

Our tasks are to measure each of the constructs in our framework. In each case we are drawing on previous research to define our entities. For example, based on previous research (Armstrong, 1983), need is defined in our project as a combination of factors such as socio-economic status, income disadvantage, and health, education, crime statistics and values such as tolerance of violence and gender stereotyping which have been shown to be associated with community disadvantage and dysfunction .

Another problem is the meaning given to constructs such as community. Does community refer to the locale covered by a local neighbourhood watch association or does it refer to the network of associations formed by the members of a particular neighbour interest group? In our mobile society a school community can be drawn from areas across Melbourne. In crime prevention, an initiative such as improving access lighting in a shopping centre may have a very local impact or it may address the concerns of a multitude of shoppers from many different localities. In our study we restricted our definition to the local covered by the ABS defined LGA because the data available could be linked to this area.

The criteria for selection of the indicators and measures

The performance management and reporting framework of the Victorian Auditor General (Victoria, 2001) targets "high level government desired outcomes, and the establishment of improved linkages to corporate planning and business planning processes, and ensure the allocation decisions are made in the context of the Government's strategic policy directions". Of relevance to our project is the "desire to encompass the activities of the wider public sector" (p.vii) and to identify outcomes that meet government policy objectives and triple bottom line measures of department objectives.

These types of measures are useful in identifying Whole-of-Government approaches and the impact, i.e. the outcomes from government programs. Their limitations are that because they do not look at causal relationships between input and processes, they are unlikely to assist program implementers to improve their programs.

Our project direction is dictated by the purpose of CPV policy: to reduce crime. However, our project also offers an opportunity to explore the relationships between some of the assumptions underlying the development of crime prevention programs, in this case, community governance and crime. The first part of the project is to develop community profiles using the social indicators. Our intention is that qualitative information obtained in focus groups will inform the latter stages of the project. A previous paper outlines the various measures for each of the constructs in the framework.

Various criteria have been proposed for evaluating the worth of indicators (Finance, 2001; Rossi & Gilmartin, 1980; Victoria, 2001)(Department of Treasury and Finance, Auditor) The criteria used in this study are (Table 2).are validity, relevance, appropriateness, robustness, and manageability,

Threats to ***construct, predictive, convergent or face validity*** can occur in a number of ways. Since it is not always possible to directly measure a construct, indirect indicators will sometimes be substituted leading to gaps between the indicator construct and the measure. In other cases, composite indices are used to measure the constructs. For example, community well-being can be measured by a combination of individual perceptions and access to resources. Situations can occur where a change in the indirect indicator can take place without a corresponding change in the indicator under consideration or other factors (for example, an event such as the Olympic Games or an individual horrific crime) can impact on people's perceptions. The indicators can be *leading, coincident, or lagging* relative to the occurrence of a problem. The rate of truancy among students is a lagging indicator. By the time it is included in the research analysis, it may have been reduced in the schools represented in a particular community. A related issue is fluctuations in statistics associated with the timing of data collection figures due to

cyclical variations (Do more crimes by young offenders occur in summer?) Program outcomes are also affected by time. Many impacts, such as the adult consequences of interventions with youth, are expected to affect individual and social wellbeing in the long term***. Timeliness*** is therefore a major issue. In our study we are utilising the latest data available based on annual statistics. The validity of the measure of the indicator is also affected by the quality of the data collection and the representativeness of the population under investigation.

"A social indicator should be simple enough to be interpreted by a general user and the public, even if its theoretical foundation and measurement methodology can be understood only by specialists. For example, the percentage of high school graduates who have achieved a particular skill proficiency (such as writing a job application) may be more understandable to the public than the mean scores of these students on tests related to that skill" (Rossi & Gilmartin, 1980)p.41). ***Relevance*** or the face validity of an indicator is important if users are to regard the indicator as credible. Our indicators are based on previous research and the experience of crime prevention practitioners.

If this research is to make a difference, i.e. make a significant contribution to the management of crime prevention policies and practices, the focus must be ***appropriate,*** that is indicators selected for investigation inform government priorities. A problem here is when a change of priority or a change of government policy means that the constructs of interest have changed and data may not have been collected for the item of interest. Appropriateness also refers to the ability of indicators to reflect a balanced view of what are often complex issues and relationships: for example, how well the crime indicator in our study reflect the occurrence of crime or the indicator of dysfunctional communities reflect dysfunction which is due to such diverse causes.

Robustness refers to stability of the indicators over time and the availability of data to measure trends, whole-of-government objectives and benchmark against others. In our study we use multivariate statistics and reliability

Table 2. Criteria used to assess performance indicators and measures.

Criterion	Definition	Checklist
Validity	The extent to which the indicator reflects the concept it is intended to.	Does the indicator behave the way it is expected in relation to the other variables in the model? (construct validity) Does the measure correctly predict some situations that would be caused by or coincide with the phenomenon being measured (predictive validity)? Do other measures of the construct move approximately in unison over time (convergent validity)?
Relevance	A clear logical relationship between the indicator and the construct being measured	Does face validity suggests that the indicator measures crime, community dysfunction, wellbeing, etc?
	Consistent	Does the indicator measures the same activity • On each occasion? • in all locations?
	Clearly communicates what is being measured	Can users understand and use the indicator?

Appropriateness	Reflects the Government's priorities and allocation of resources	Does indicator reflect government priorities? Outcomes form the CPV programs?
		Do the indicators provide a balanced view addressing different aspects of:
		• crime
		• dysfunctional communities
		• community capacity
		  • Community well being
		  • CPV Strategies

	Relationships	Do they reflect the constructs addressed in research questions and relationships hypothesised prior to analysis?
Robustness	Trend data over time	Is data • Reliable? • Available for more than one year? • Stable over time?
	Benchmarked against others	Are the variables: • Reported for other States? • Comparable with other countries?

		Can reports be presented on whole-of-government programs
Manageability	The data are available and the research team has the capacity to analyse and report the data	Is infrastructure in place to collect/obtain/report the data?
		What multivariate statistical analysis is used to test the model?
	The preparedness of departments to accurately measure and report their performance in relation to the indicators/measures.	Are controls in place to ensure data captured in information systems is accurate? What reliance is placed on information from external sources?
	The capacity of CPV to implement the findings.	What communication is there with the research team, CPV and practitioners?

coefficients in the analysis of the data. We are corresponding with researchers in other States, New Zealand, Canada and France with the purpose of providing a sound basis for replication and comparison.

Manageabilty refers to the ability to the research team to obtain and analyse the data and the ability of CPV to implement the findings of the study. The research team includes two members from CPV among whose responsibilities are obtaining the data, liaison with other Departments and between the research team and CPV. Regular meetings are held with practitioner representatives who may have an interest in the findings. Major stakeholders, Police, Local government and service providers are represented on the Project Advisory Committee.

Note that the first stage of the study does not examine how well or why programs and projects they are performing as they do. This is not an issue in the present project because we are not assessing performance but in this stage of our project using statistical modelling to examine the assumptions underlying the framework which lie behind the development of many CPV programs.

How indicators could or should be used

The idea of using social indicators in knowledge-based-organizations is motivated by the assumption that the strategic direction of an organization will be driven and disciplined through organised feedback on performance from colleagues and citizens/clients/customers.

The Victorian Government's strategy (Auditor General Victoria, 2001) is in keeping with this approach in which Government determines priorities, directing each department's resources to address the priority, setting performance targets that include financial and social indicators, and reporting performance against the targets. Often in a whole-of-government approach, as is required in responses to complex problems such as crime prevention, this process is intended to coordinate activities from various departments, each with its own specialisation, but working together to achieve a common objective. The metaphor is often given of a symphony orchestra in which the 'score' tells each of the players when to come in and make their contribution. An example in crime prevention is the strategy directed at reducing youth crime by contributions from education to reduce truancy, human services to address drug problems and police to ensure regulation.

Barber (2002), Chief Adviser to the UK Prime Minister, in a recent address in Melbourne talked of the UK focus on "delivery' of programs and illustrated how indicators could be used to project a desired path of responses as well as monitor their results. This information provided a stimulus for taking action.

A difficulty with this approach is that government priorities may change with a change of government, or even a change of minister, and changing the direction of Departments is costly. Social indicators collected to monitor achievement of the old priorities and programs may be inappropriate for the new directions. In addition to interpretation made difficult by factors associated with a changing environment, a related problem is what constitutes success. On paper, programs are successful when indicators show that targets are met. However, not meeting targets is not necessarily unsuccessful as there are often multiple objectives some of which may be successful but about which data may not be collected.

This also raises the issues of goal displacement (where getting the indicators right become an end in themselves rather than the real program objectives) and the relative weight given to quantitative and qualitative indicators. My experience suggests that both are necessary. Quntitative says "what" is happening, qualitative indicators show "why" it is happening.

One of the problems of indicators is that they tend to show the results but not the costs of the actions. For example, reducing dependence on welfare may simply mean changing the criteria for eligibility. Increased

productivity may mean better service but could be the result of reducing the number of staff with a consequent fall in the quality of services. For Departments, success in one area may have implications that mean failure in others. For example, achieving targets in reducing crime, may make the targets for courts and police difficult to achieve.

Related to this is the ease of measuring outputs but the difficulty of demonstrating changes in outcomes over relatively short time periods. Crime reduction may take a generation as the new generation becomes aware of alternative opportunities.

Another difficulty is that of disentangling the causes of the change in an indicator. Sophisticated modelling is required to disentangle the contributions of different programs and even then the causes may be external to the initiatives or the model.

Another problem is that although social indicators can identify social goals and targets, their original limitation remains. They are of little value in informing program people on the ground about their performance and for this performance indicators will still be required.

A new problem emerges in managing whole-of-government programs across government organizations and the partnerships with the private sector to which the Victorian Government is committed (Department of Treasury and Finance, 2000). What kind of management structure is required to manage joint projects? A good deal of good will and trust is required for cooperation, allocation of funds and sharing of the success or failure of initiatives. This suggests a need for a new model of management that is unlike the traditional hierarchical bureaucratic structure.

Another problem of a different kind is that to be effective there must be open disclosure of performance, i.e. of the indicators and yet interpretation by uninformed people can often draw wrong conclusions. For example, does an increase in crimes of violence mean that there has been an increase in crime, an increase in reporting of crime or an increase in policy activity in this area?

There is also a normative element in the use of indicators. In the Victorian Social Indicators project (Armstrong & Wearing 1981) it was found that funding formulae based on level of need could not be used as the sole basis for allocation of funds because of political constraints. For example, a high need by the elderly, evident in the Southern suburbs because of the high numbers of retired people, was totally rejected by people in the Western suburbs who saw the southern suburbs as 'wealthy' and undeserving.

What is success or of 'value' in program delivery depends very much on the values of those who make the judgement (Henry, 2002). The level of outcome can be individual, family, community or society. Individuals may gain at the expense of families or some groups can be made better off, but society as a whole may benefit from a particular policy. Henry, (2000) proposes that the indicators chosen as the basis for judgements about program success be justified by the process used to obtain them, i.e. through values inquiry.

Another problem was determining the priorities between the different types of needs. In the example above, who needed more assistance: the country regions with high education needs or the Western Regions where the needs focus was on youth. These decisions are value decisions that indicators can inform decisions but it is *people* who make the decisions.

Conclusion

Evaluation has traditionally focussed on the design, inputs, outputs, and more recently on processes involved in single program implementation. Recognising that social problems are complex and 'dirty", and that the best ways of achieving value for the public purse requires a whole-of-government approach has directed attention to the development of indicators that could measure a more global view, the outcomes of programs and their contribution to government priorities. The uses and abuses of indicators has been soundly critised (Guthrie, 1993; Winston, 1998). However, as Alice in Wonderland said "If you do not know where you are going, how do you know when you get there?"

The purpose of this paper has been to explore how one research project for crime prevention Victoria is developing social indicators to address the relationships between some of the constructs upon which crime prevention policy and practices are based. Despite the difficulties imposed on research studies that use social indicators to examine policy issues, it is clear that evaluators have much to gain by trying to understand the social problems confronting society and to explain the *raison d'etre* behind the assumptions on which program interventions are built.

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