# INTRODUCTION: INFORMATION, KNOWLEDGE AND POWER[1]

Susanna Davies

## 1 INTRODUCTION

The idea that 'knowledge itself is power'[2] is not new; but at the global level, this dictum is now truer than ever, as a result of rapid advances in information technology in the North. Increasingly, knowledge (including the capacity to create it) is becoming a key economic input which, at the extreme, supersedes land, capital and labour in importance. The revolution in information technology and communications has direct implications for the South and for development studies: not only in obvious ways (e.g. in the generation of statistics and satellite images); but also in less predictable ways, notably the emergence of participatory methods for data collection and analysis. Participatory techniques, just like changes in more conventional sources of information, are in part a result of - and dependent on - the international communications revolution.

Innovation in information is not intrinsically bad, but it is driven by the North and by northern agendas. Drawing together work carried out at IDS and elsewhere, this Bulletin explores the implications of this change for development. It focuses on the ways in which information is - or is not - used in decision-making which affects development policy, planning and practice. Progress in information **provision** is what informs the emphasis of this Bulletin on the **use** to which the product of this growth industry is put. Our concern is with a sub-set of information: that is, with information **collected by and available to 'us' about poor people in developing countries.** Most such information is in the public domain and is intended primarily to inform public action. Outsiders' (development agencies, practitioners, researchers) access to and command over such information has greatly increased in recent years, as has that of states in developing countries (albeit often to a lesser extent). But it does not follow that the use to which information is put leads to more effective public action.

Three connected sets of issues are explored in this Bulletin: conceptual questions about the relationship between information, knowledge and power; case studies of the use, misuse and abuse of information in the public sphere in a range of development contexts; and a tentative exploration of how barriers to effective information use might be broken down.

This Introduction sets the scene by examining current attitudes towards the generation and use of information in public policy making for development, as well as recent attempts to use more participatory, process-driven approaches informed by a desire to close the gap between 'them' and 'us'. It then argues that information use is determined by the underlying political economy within which development policy and public action take place. Each actor generates and uses information in a self-interested way within this context. These actors include: bilateral and international donor agencies, non-governmental organizations, researchers and other development professionals and private sector agents. Sometimes, but often not, they operate in collaboration with Southern governments and professionals. When it is Northerners who are using information about Southern 'beneficiaries', the relationship is essentially hierarchical. This process is repeated within developing countries between powerful elites and weaker groups. It is therefore very difficult to understand how and why information is generated and used in the public domain of development without an appreciation of the political and economic context within which it is happening. Issues about how information is collected, how good its quality is or how much of it exists, do not alter the fundamental hierarchical relationship between 'them' and 'us', although as several of the articles in this Bulletin argue, attempts are being made to overturn it.

Relevant theory and literature on the use of information are disparate and span many disciplines.

[1] My thanks to many of the contributors to this Bulletin, to Mick Moore and to William Outhwaite for their comments on earlier drafts; also to Jake Ross and to Karim Hussein for their invaluable research assistance.

[2] Francis Bacon, Religious Meditations. Of Heresies.

Simply taking the example of contributions to this Bulletin, it is clear that those concerned with issues of information use approach it from many different starting points and so perceive it in a multiplicity of ways. Decisions about development policy, planning and practice are taken in a range of institutional, political, social and economic contexts. The types of information which feed these decision-making processes cover a wide spectrum: from very specific detail about how households or communities behave; to broad assessments of changes in global phenomena. Some of the information discussed is accurate, some is highly imperfect either due to incompleteness or because the truth has consciously been distorted. Some is collected to inform policy-making, in other cases the objective is to check or control what people are doing. Identifying common issues in this broad area is not easy, but as the articles in this Bulletin show, there are a number of recurring themes which characterize the use of information by 'us' to inform public action which will affect 'them'. The most important of these are as follows:

• The **production of information has sky-rocketed** in recent years, both as a consequence of advances in information technology and its greater accessibility and as a result of the development of participatory techniques for data collection. Hi-tech information generation can, however, lead to excessively complex and costly (and inappropriate and impractical) methodologies for data collection. Equally, participatory methodologies may generate information that is no more usable than that derived from conventional techniques.

• The **ability to produce information** which is potentially useful to decision-makers **has far outstripped their capacity to use it.** Increasingly, the problem is less that we do not know what is happening, than that available information is not acted on or used in a manner that appears consistent with stated policy objectives.

• The **quantity of information available is rarely deemed adequate**. The adequacy of information for policy and political purposes is itself a highly contested and political issue, involving multiple and conflicting interests. The 'inadequate data' argument is used to delay decisions, but on the other hand, there are numerous development professionals who make their livings from generating and processing information and who will always argue that what is available is insufficient.

• The **quality of information** - often described in terms of accuracy - **is a central barrier to its use**, although 'accuracy' masks a variety of reasons for failure to exploit it: inappropriate and poorly implemented methodologies for collection; credibility; and the fabrication of lies and propaganda.

• **Information has chameleon-like qualities and is infinitely malleable**, meaning different things to different user groups and being exploited in a multiplicity of ways. Objectivity is hard - perhaps impossible - to achieve, despite the attention paid to its pursuit; alternatively, objectivity is not genuinely sought.

• Related to this is the tendency for **information to mirror the perceptions of those who collect and use it.** It reflects inherent biases and prevailing power structures, unless these are explicitly and successfully tackled in techniques for collection and use. This is rarely achieved.

• **What the 'value' of information means,** how it is measured and its role in society **is increasingly questioned.** What kind of information, based on what assumptions, is legitimate? And who's reality counts?

• Underlying these quality issues is the question of **who owns information.** Ownership of information confers a sense of impartiality or reflected interests in the eyes of the owner; whereas information which belongs to others (even though it may be publicly available) is frequently assumed to be biased and therefore unusable.

• **Access to information is highly uneven and control over knowledge is a source of power.** The transmission of knowledge 'is not based on simple communication channels, conduits or linkages, it involves human agency and occurs within socially and politically constituted networks of different actors, organizations and institutions' (Scoones and Thompson 1993: 12).

Underlying these themes is the relationship between information, knowledge and power. Before turning to this, it is useful to consider why information generation for development has increased so dramatically in recent years and the implications of this growth for its use.

## 2 INFORMING DEVELOPMENT OR DEVELOPING INFORMATION?

Belief that lack of information has been an obstacle to development planning is widespread, an idea fuelled by new doctrines requiring new types of information. This has led to an ever-increasing demand for more information. Promoting environmental sustainability requires information about natural resource degradation; famine prevention needs early warning systems; 'Health for All by the Year 2000' demands indicators of safe water and food availability, as well as of more standard health issues; and participatory development needs local people's views to fulfil its mandate. There have been three responses to this perceived information gap. The first has been to improve the supply of data and the efficiency and scope of its conversion into information and its subsequent dissemination. The second has been to implicitly approach information 'as if it were a "silver bullet" [and to treat it] as useful in and by itself, in disregard of the processes for collection, analysis and feedback that determine its effectiveness in planning and implementation.' (de Kadt 1989: 504). The third has been to use lack of information as a justification for inaction: decisions cannot be made because not enough is known.

On the data supply side, greatest energies have been directed towards developing more appropriate (i.e. participatory, interdisciplinary, accurate and rapid) techniques for data collection. Recent innovations in data collection for development purposes have been characterized by the rise of participatory techniques and the demise of the formal survey, and of the dominance of Cartesian reductionism, or 'the practice of breaking a problem down into discrete components, analysing these separate parts in isolation from each other, and then reconstructing the system from the interpretation of the parts' (Kloppenburg 1991: 16). Taking a more holistic approach to data collection and the generation of information should make it more useful to decision-makers operating in the real world, because critical linkages between the component parts of complex problems and the relationships between different actors involved will be included in the analysis. Involving the same people in the generation of information that will inform decisions affecting their livelihoods should make the use of that information more practical. But all too often, more appropriate information has not resulted in greater use of it.

Information technology has revolutionized data processing and analysis, the rapidity with which information can be disseminated to almost any corner of the world, and hence who has access to it. As Richards argues in this Bulletin, there are many hidden spin-offs - some positive, some negative - from the infiltration of information technology into remote parts of the developing world, including the use of violent western 'entertainment' videos to provide role models for child soldiers in Africa. Better and faster information flows should facilitate the exploitation of information in decision-making. But there are many obstacles to this process, which echo some of those blocking the use of knowledge derived from participatory data collection methodologies. It is these which undermine the ability of information to act as a silver bullet: in other words, not only to be self-targeted towards the right place at the right time; but also to have an intrinsic value.

First amongst these barriers is the tendency to generate information for its own sake - or the 'more-information-is-good syndrome' (Gow and Morss 1985: 176) - precisely because it can now be done much more rapidly than in the past. The generation of too much information can be as unusable as too little, especially if it is not explicitly tied to specific decision-making tasks. Linked to this is the idea of methodological fetishism, seeking - via ever more sophisticated techniques for data collection and schemes for combining and weighting different kinds of data - to resolve conflicts inherent in the use of information. While new methodologies may produce better information, they cannot resolve the power play which determines how it will be used. Methodological advances should not, however, be overstated. Many remain inappropriate to the task at hand and to the resources available. As Eele argues in this Bulletin, the methodologies used in government statistical departments in many African countries are frequently inappropriate and unworkable.

Second, is the danger of creating the illusion of knowledge: if data have been extensively analysed and attractively presented in novel ways, information can appear more truthful and less incomplete than it is. Information generated both by information technology and by participatory methodologies can fall into this trap. The use of statistics to lie is well-known. As Hulme, for example, shows in his article in this Bulletin, the incidence and severity of

a particular drought can be greatly distorted according to the reference period chosen. Less accepted is how newer, apparently more multi-dimensional forms of information, generated via participatory methodologies can fall (or be put) into the same trap. Vulnerability maps, for example, can be misleading because they are visually easy to understand, despite the fact that they mask huge complexities (e.g. seasonal and intra-community differences); and show only what is known - at worst, what is not known thus ceases to exist.

Third, as more data and information are generated, technological barriers to entry rise. In the case of computers, it is obvious that those who do not have access to the necessary hardware (or indeed to a power supply), or who are not computer literate, are excluded. Less obviously, participatory methodologies can also be highly skill intensive, requiring expert facilitators and, crucially, people who can interpret the data generated for use by decision-makers and feed them into a planning process which is usually geared to quantitative and aggregated information. Although villagers themselves may potentially be the best facilitators in participatory exercises, the critical transmission of the knowledge gained invariably requires access to those who can 'translate' local knowledge into a language or form that decision-makers will respond to.

Fourth, insufficient information can become an 'escape hatch' for public decision-makers. They can avoid responsibility for inaction, especially if those who make policy choices (on the basis of information) are institutionally separate from those who implement policy (Clay and Schaffer 1984). Thus, in the case of food emergencies, Cutler (1985: 15) argues that: 'the establishment or strengthening of food crisis information systems becomes an escape route - agencies argue that they cannot act decisively until they have more and better information. Without being carefully linked to a defined and mandated response system, the early warning information systems become ends in themselves.' Yet as Buchanan-Smith, Davies and Petty show in their article in this Bulletin, even defined and mandated response systems which exist on paper, and at times even in practice, can fail to trigger timely response if there are political gains to be had from delay. Apparently institutional barriers are not always the result of inadequate institutional capacity, but sometimes of vested interests in the misuse of information.

## 3 THE PROVISION AND USE OF DATA, INFORMATION AND KNOWLEDGE

As a starting point in understanding the failure to use information to inform public action, it is helpful to distinguish between terms which tend to be employed interchangeably - data, information and knowledge - and the uses to which they are put:

- **data** refer to raw (unanalysed) material (facts and figures), at times collected by an information system;
- **information** refers to analysed data, often presented in a form that is specifically designed for a given decision-making task, and transmitted to/ received by decision-makers;
- **knowledge** refers to the subsequent absorption (often, but not always, by reading), assimilation, understanding and appreciation of that information;
- **use of data** refers to the process of transformation of raw data into information;
- **use of information** refers to the process of transmission and reception of information;
- **use of knowledge** refers to acting on the contents of the information received (or actively deciding not to).

This categorization builds on Machlup's (1979) distinction between the use of information ('the process of transmission and reception') and knowledge ('the object or contents delivered'). The key distinction for our purposes is between the use of information and the use of knowledge. The latter only occurs once the process of acting on the contents of the information received is underway.

There is, of course, an assumption of linearity in such a distinction and in real life, the transition from data to information to knowledge is a much more circuitous and iterative process. The distinction is nevertheless a useful initial means of differentiating between the generation of information and what happens to it once it becomes absorbed into the decision-making process. Using information alone is not synonymous with that information having an impact on a decision that is reached. A clear example emerges from the article in this Bulletin by Buchanan-Smith, Davies and Petty on famine early warning systems. Dramatic improvements in both the generation of data and the use of information have made it possible to **predict** many drought-induced famines. A failure to use the knowledge provided in famine early warning reports means that famines are not **prevented.**

What data and information are about, and what kind of decision-making task knowledge is to be used for, are of central importance in exploring the reasons why information is not used. Types of information used by 'us' about 'them' to inform public action are increasingly varied, as the articles in this Bulletin indicate. The predominance of quantitative information is being reduced by acceptance of the validity of qualitative data. The tyranny of the written word is to some extent being undermined by the use of visual media and oral dissemination.

Linked to these changes in the type of information we have access to are changing perceptions about the nature of the systems being examined and the problems which arise from their operation. Positivism in social science and empiricism in natural science presuppose that 'the systems under scrutiny are, or at least can be, perfectly described' (Mearns 1991: 26). Increasing evidence shows that, in contrast, most systems are highly complex and variable, characterized by uncertainty and unpredictability. 'Reductionist science is not an appropriate method for dealing with every kind of problem. It is useful for 'tame' problems that can be effectively bounded, and about which adequate and unambiguous information is available. These problems can be thought of as closed systems.'(Miller 1985, cited in Mearns 1993: 29) Most of these closed systems are artificially constructed or perceived as such and can be illustrated by the example of activities which take place within a building, into and out of which all movements and other communications are controlled. ' "Wicked" problems, by contrast, represent open systems: they are complex, ill-defined and difficult to bound, and information about them is commonly incomplete and ambiguous' (*ibid.*). Most of the problems confronting development planners in the public domain are of a wicked nature. Thus farming or livelihood systems are not buildings to which access is controlled, but are critically influenced by a myriad of external and invading factors. Such systems, in turn, mean that information needs are complex and knowledge about them will of necessity be incomplete. Whether information is part of a stable or unstable, closed or open and simple or complex system or environment determines the ways in which it is used. The reflexivity or circularity of social knowledge further exacerbates the tendencies of unstable, open and/or complex systems: 'new knowledge ... does not simply render the social world more transparent, but alters its nature, spinning it off in novel directions' (Giddens 1990: 153). In other words, our 'scientific' interpretation of the social world at any one moment influences the way people see the world and thus actually changes it. This change can occur whether or not the initial knowledge is correct.

Data and information used to inform public development policy and practice are usually generated either by formal information systems or by one-off exercises and, increasingly, via more informal (often participatory) channels. Although some of the articles in this Bulletin discuss less structured ways of generating information, formal information systems - however imperfect - remain a major source of information used by developing country governments and donors. These systems are at once **processes** (the provision of information for use in decision-making) and **organizations** (the actual structure and operation of a system which collects information about a given set of issues).

Modelling information systems necessitates oversimplification of the complex flows and relations which determine information provision and use of knowledge. Such models can be useful tools for separating out organizational characteristics of systems and for an initial ordering of process functions undertaken by it. They cannot, however, replicate the dynamic nature of open systems. As Lucas argues in this Bulletin, information systems tend to be designed according to what information is needed for rational decision making. In fact, a much more appropriate question is what the real nature of the decision making process is and at what point information might have an actual impact on decisions taken. This presupposes a much more flexible type of information system, given that it is very hard to design a (closed) information system that is appropriate to a moving (open) target. The stability or instability of the institutional context within which information systems operate is central to whether and how information and knowledge are used. Further, as de Kadt argues in this Bulletin, no matter at what level information systems operate, they tend to be arranged to meet the requirements and capacities of the most central authority involved. This conflicts with the growing recognition that information needs to be flexible enough to reflect and be relevant to local differences; and that appropriate use is likely to occur at a decentralized level.

In information systems analysis, use of information tends to be considered either in a narrowly

economistic manner, or in terms of the institutional framework within which information is used. Whilst recognizing the presence of 'politicization' as an obstacle to effective operation of that system, such analyses tend to marginalize the role of political factors as peripheral and distorting variables, which - it is held - can often be corrected by more sophisticated methodologies for data collection and analysis or by minor institutional adjustments. The conversion of information into knowledge is generally regarded as an expected outcome of the proper functioning of the information system.

## 4 KNOWLEDGE, DECISION-MAKING AND POWER IN THE PUBLIC DOMAIN

### 4.1 What do 'we' mean by knowledge about 'them'?

Western perceptions of what constitutes real knowledge have evolved in modern (post-Renaissance) history from a positivist or rationalist approach, based on the assumption that it is possible to be certain of what is known and that only one reality exists; towards a realist approach which shifted the emphasis towards an appreciation that things exist independently of our ability to perceive or measure them. The assumptions of positivist, western scientific approaches to knowledge have been widely criticized (see Scoones and Thompson 1993 and Pretty in this Bulletin). The essence of the critique is the rejection of the positivist assumption 'that sees knowledge as a tangible stock, body or store to be tapped, extracted and documented ... [and suggests that] the process of knowing should be seen as interactive, value-bound and context-determined, rather than detached, value-free and independent of context' (*ibid.*: 9).

Whereas modernist approaches to knowledge sought to 'get a better grip on a complex, but nevertheless singular reality', post-modernism has moved one step further, recognizing 'how different, fragmentary realities may actually coexist' (Mearns 1991: 2). This has led to the gradual - and as yet incomplete - emergence of more participatory 'learning paradigms' which challenge rationalist and modernist thought drawing on a diverse range of disciplines and areas of inquiry. In so doing, they affirm individuals and their differences, and the necessary coexistence of multiple perspectives; are pluralist in that they allow individuals and groups to participate in decision-making; recognize knowledge to be contextual in time and location, and thus as having limited transferability; and see the future as being uncertain and indeterminate, dependent on current contextual decisions (Pretty and Chambers 1993).

There are at least three distinct schools within participatory approaches to knowledge advocated for use in development planning. The first of these is the 'transfer of technology' approach, proponents of which 'emphasize the rational nature and sophistication of rural people's knowledge and believe that knowledge can be blended with or incorporated into formal scientific knowledge systems' (Scoones and Thompson 1993: 3). The second, 'farmer first' approach has built on the earlier one to incorporate cultural as well as technical local knowledge, although it is recognized that if such knowledge is removed from its context and forced into existing foreign and scientific categories, it runs serious risks of misinterpretation. The third, emerging 'beyond farmer first' approach argues that 'knowledge, which emerges as a product of the discontinuous, inequitable, discursive and non-discursive interactions between different "actors" and "networks" through which different types of information are communicated and legitimated, and between which there is often serious lack of understanding, is seen as being fragmentary and diffuse' (*ibid.*: 6). Pretty in this Bulletin identifies five crucial differences between these emerging paradigms and positivism, in the context of sustainable agriculture. In many respects, such approaches are not new and long have been the concern of anthropologists and sociologists in particular. What is new is the emerging legitimacy of the information they provide, although it is still questioned by many. Yet, as Pretty argues in this Bulletin, the trustworthiness of information generated by a learning approach can be as great as - indeed greater than - that of information derived from positivist assumptions.

Realists, less singular in their view of knowledge than positivists, are nevertheless sceptical about the scope of such paradigms. They continue to judge what knowledge means according to whether it more or less fits with their perception of reality, without presupposing that such reality is as narrow as positivism would have us believe. Furthermore, it is of crucial importance to recognize that people will actively seek to hide and distort information in pursuit of self-interest. Realists criticize the

beyond farmer first' approach on the grounds that it amounts to little more than an 'anything goes' view of knowledge and is naive about the ways in which people manipulate information.

Yet participatory learning and realist approaches are not necessarily mutually exclusive. Indeed, they cannot be in the context of using knowledge to inform public action. Realists can accept the premises of advocates of the 'beyond farmer first' approach (or of 'post-modernism for development'), but argue that if the knowledge generated by methodologies based on such assumptions is to be of use to those making public policy, encouraging participation has a clear (if at times hidden) agenda. It only serves a purpose if those participating can (eventually) agree on what happens in the real world. If all continue to believe in individual and conflicting realities, no consensus can be reached, rendering the use of all these differing sources of knowledge in decision-making impossible.

Furthermore, it is not always the case that subjective perceptions are the most appropriate in the sphere of public decision-making and action. As Greeley argues in this Bulletin, a single objective income-based indicator can promote a policy focus on the material needs of the poorest which, according to almost all theories of human need, have primacy over other aspects of well-being. Use of an absolute and objective poverty measure allows comparability and empowers through appeal to a rights-based analysis of the distributional impact of public policy, whereas subjective indicators of well-being may be much less influential or persuasive. Asserting the invalidity of convential poverty-line based measures of poverty because they fail to encapsulate subjective perceptions of well-being misses the essential point that raising incomes is instrumental in poverty reduction.

Despite the apparently unbounded potential of a learning paradigm approach, there is a danger that precisely because it claims infinite capacity to accommodate differing realities and contexts, it can be a new religion, claiming to answer all needs but failing practically to meet many of them. As Kloppenburg (1991: 540) warns, replacing one orthodoxy - however all-encompassing - with another is not the answer: 'The problem ... [is one] of creating the conditions in which these separate realities can inform each other'. Practicality dictates that all generation and use of information in the public domain necessitates some ordering of priorities, some acceptance of the relative worth of different information and some recognition that not all realities are of equal stature. In order to create the conditions in which separate realities inform each other, participation has to be exercised: not simply to generate information; but critically to try and implement the reversals in the status quo implicit in new learning (and doing) paradigms.

These differing approaches to what constitutes knowledge have direct implications for the relationship between knowledge and power. Thus, 'the criteria of what constitutes knowledge, what is to be excluded and who is designated as qualified to know involve acts of power' (Foucault 1971, cited in Scoones and Thompson, 1993: 9). The value ascribed to particular types of knowledge tends to reflect prevailing hierarchies and power structures, although within these there are opportunities for the powerless to exercise influence; and for the powerful to have incomplete control. Nevertheless, even within participatory approaches, it is still 'us' deciding which is the preferred mode of knowledge. No amount of sophisticated techniques for generating information can change this. Moreover, it is very hard for 'us' in the North to cope with the idea that our current ideology of what constitutes knowledge is not the correct one for both North and South. As Goetz, for example, argues in this Bulletin, there is a tendency to assign superiority to the knowledge western women produce about women in development, thus projecting their privileged identity as a reference point for the rest of the world in culturally destructive ways.

### 4.2 How 'we' use knowledge about 'them' to inform public decision-making

The central difficulty in assessing the use of knowledge in development policy is a lack of understanding about how 'we' take public decisions which will affect 'their' lives. What information is (as opposed to should be) used for in the public domain is rarely explored in any depth in this context. Decisions about public policy are critically influenced by resource availability, the pursuit of (institutional and individual) self-interest and the need to minimize the adverse consequences of other actors' actions on the outcome of a decision taken. Knowledge is therefore but one of the elements used to take decisions.

There are few case studies of information use in development which have sought simply to plot what happens to that information once it enters

a decision-making cycle, in order to see what is used and how. It is often taken as given that if **information** exists, it will automatically feed the decision-making process. Actual use of **knowledge** in decision-making about development policy is invariably explained deductively and retrospectively: the information existed which enabled the decision-taker to convert it into knowledge and make a given choice. It is implicitly presumed that the derived knowledge will be used in a manner consistent with stated policy objectives. As many of the articles in this Bulletin show, this is often not the case. Several of the case studies resonate with the conceptual rejection of decision-making in large, complex (public) bureaucracies as being essentially rational and means-ends related. Critics of this rationalist view argue instead that decision-taking and policy making have very little order at all: it is a matter of actors coping with an impossible overload of information and (latent) choices, by dealing with what they are forced to in such a way as to minimize immediate effort and problems. In this 'garbage can' view of decision-making processes 'intention is lost in context-dependent flows of problems, solutions, people and choice opportunities' (March and Olsen 1989: 14). In contrast, Röling in his article in this Bulletin, identifies a much more co-operative kind of decision-making process in which social actors who hold a stake in the management of a given resource or system can coalesce around shared interests, forming a platform for integral decision-making.

Making public policy decisions can be conceptualized as a continuous cycle of identifying problems, formulating alternative solutions, analysing options, deciding, implementing decisions, observing the results, evaluating the situation, and then continuing to deal with new or existing problems. Both information and knowledge are potentially useful at all stages of this cycle, and the process is iterative in that some stages may be repeated based on information and knowledge gained at a later stage (FAO 1986). This cycle can be analysed as a purely technical process, which is implicit in much information systems analysis; as a psychological process (referred to in Chambers' article in this Bulletin); as an economic process; or as an essentially political process either within institutions (as Edwards', Goetz' and de Kadt's articles describe) or within a wider context (Leach and Fairhead's article).

There is an extensive economic literature on the market value of information in decision-making, in which information systems are broadly similar to a production process. Like any production process, an information system is justified in terms of the **use** to which its product (information) is put, although estimating the net benefit of information collection and use is more of an art than a science (see Lucas' article in this Bulletin). The most important use is reducing the uncertainty implicit in decision-making (Riemenschnieder and Bonnen 1979). Information in the public domain is not normally associated with such market values although, as Eele in this Bulletin argues, developing country governments are frequently expected to bear the costs of providing information - to both the private sector and to donor agencies.

Many of the articles in this Bulletin show that differential access to 'public' information between actors involved in policy-making means that not all are able to use that information optimally. Thinking within the new institutional economics helps to explain this: as Baland and Platteau (1993: 15) have argued, 'a major revolution occurred in recent economic thinking when economists questioned their standard assumption that information is public and perfectly (symmetrically) distributed amongst agents'. Within this new institutional economics framework, information is viewed as part of transactions costs 'that is, supervision and policy costs arising from asymmetric information' (*ibid.*: 14). And as a result, 'information, now understood as a private good, becomes part of the agents' private endowment and an important source and instrument of power in economic transactions: for their own benefits, agents seek to influence the others' decision by hiding, partially revealing, distorting or manipulating the pieces of information relevant to them' (*ibid.*: 16). Decision-makers therefore need to use the knowledge provided in order to reduce transactions costs, including those incurred in generating the information. They may also seek to exclude others from having access to that information if free-riding on available information reduces the bargaining position of the actor who has paid for the information in the first place.

People working in information systems in developing countries are generally all too aware of the political manipulation of the information they provide. Yet the political dimension of information use is inadequately addressed both in conventional models of information systems and in economic explanations of the value of information in decision-

making. At worst, it is ignored; at best, it is added as an asystemic, inconvenient afterthought. In evaluations of actual systems, political considerations are frequently sidelined, or seen as necessary but uncontrollable evils, which institutional fixes struggle to overcome. Alternatively, methodological and data fetishism take over: more and more comprehensive data, collected in more appropriate ways, can somehow cancel out the political value of information. In fact, the reverse is almost certainly true: as data become more comprehensive and accessible, so conflicts of interest intensify over the messages they relay and the uses to which they are put. This, in turn, implies the need for institutional arrangements which allow and encourage the discussion of and negotiation over information and knowledge.

Information can be conceptualized as a political tool, both reflecting existing hierarchies and playing a critical role in the allocation of resources between competing interest groups. As such, it is a means of exercising power. Thus, as Leach and Fairhead argue in this Bulletin, the perpetuation of a hundred year myth of environmental degradation in West Africa's forest-savannah transition zone is explained, in part at least, by the attempts of powerful groups to maximize 'green' investment (the objectives of which have been set by colonial powers and post-colonial donors) into the area.

Political theories of decision-making developed in the context of international relations make a useful distinction between three schools. The first of these is the realist or power politics school in which decisions are made to narrowly optimize self-interest and power within an essentially anarchic system. The second is a behaviourist school in which decisions are taken as a result of systematic interactions between human actors in the system. These can (theoretically) be measured and modelled. The third, structuralist school is based on the assumption that all actors in a system are subject to a set of systemic rules or laws which determine how they will take decisions. Behaviour is thus not the result of human action but of systemic patterns and controls. A further 'decision-making approach' has the potential to combine elements of all three schools, beginning with a decisional outcome and then analysing retrospectively the multiple variables which contributed to it (e.g. context and time constraints; the organization of actors; the process of how decisions were made, the actual outcome and its value implications). Such an analysis retrospective and, in stark contrast to economic decision-theory, emphasizes outcomes not predictive capacities (see, for example, Smith 1987).

If information has a political value, it does so in the context of what White (1993: 2) has called a broad 'power-based' view of political analysis, as opposed to a narrower 'state-based' view limited to the state and the formal political system. A power-based approach defines ' "political" analysis in terms of the nature, distribution and exercise of power in society as a whole' and refers to 'the process whereby power is mobilized and exercised to achieve individual, institutional or collective goals by means of co-operation, conflict, domination, exploitation, coercion and the like' (*ibid.*). Actors exercise power via the use of knowledge in both a behavioural sense (gaining as much as possible from use of a piece of knowledge, possibly to the detriment of other actors); but also in a structural sense (using knowledge in a way that is possible given their underlying position of dominance or subordination relative to other actors). As Goetz in this Bulletin shows, both behavioural and structural gender biases determine the kind of information which bureaucrats will use and the ways in which they do so. Conventional measures of worth, for example, cannot take adequate account of the diversity of women's value and so information about this is marginalized due to a preference for information that is more consistent with prevailing ideologies.

Another manifestation of the political value of information is via the idea of the self-deceiving state (Chambers 1992), in which the information systems and flows set up by the state tend to perpetuate self-deception by those in power. This is often conveniently inadvertent, but then frequently tacitly connived in. Thus Chambers argues in this Bulletin that power and self-deception are causally linked, with the result that the powerful (be they countries, institutions or individuals) are always better able to use knowledge to reinforce their position of dominance over the weak, albeit via a self-sustaining system of self-deception and misinformation. This self-deception does not, therefore, conflict with self-interest. Rather, there is no need for the powerful - in pursuing their interests - to understand what the poor experience. Instead, information needs to come up from the bottom which justifies existing policies.

Participatory methodologies have raised a number of questions which implicitly - but rarely explicitly - address the structural and behavioural dimensions of political power relations underlying the use of knowledge, including: whose reality counts, who owns and who controls information? Yet advocates of participatory methodologies are largely silent about the political implications for those who **benefit** from the status quo, whether in terms of their reality counting, of their current ownership of and control over information, or ultimately of their loss of control via the empowerment of weak groups through participatory information generation and participatory use of knowledge. If a power-based approach to the value of information is adopted in seeking to answer the question 'whose reality counts?', the response is implicit in the idea that users of knowledge exercise power to maximize their own self-interest. It is a self-serving reality that counts, whether or not this is at variance with the reality of the intended beneficiaries of the decision to be taken.

Case studies which explicitly address the political use of knowledge are to be found in the disciplines of political anthropology and sociology, as well as in 'state-based' (as opposed to 'power-based') political analyses. Various articles in this Bulletin explore the use of information both in a 'state-based' way and in a 'power-based' way.

## 5 BARRIERS TO THE USE OF KNOWLEDGE

Failure to use information in decision-making is generally attributed either to an inability to convert relevant, accurate data into information in time for decision-makers to use it (e.g. in the case of lengthy statistical surveys); or to an under-estimation of the resource implications of the conversion process, resulting in it not being done at all. It is also argued that those who receive information first in decision-making structures (generally members lower down the hierarchy), have the task of selecting information to pass up, so as to avoid decision-makers from being swamped with too much information. If this selection process is inadequate, decision-makers do not receive the information they need. Alternatively, a much more chaotic system prevails, as described above.

Failure to use knowledge, on the other hand, is explained either by the information provided being inappropriate to decision-makers' needs (there is no useful knowledge that can be gleaned from it); or by institutional arrangements which are inadequate for the optimal exploitation of information (decision-makers are prevented from deriving knowledge from potentially useful information).

These obstacles mask a complex web of barriers to the use of information and knowledge. What is meant by appropriateness of information (its potential for conversion into usable and useful knowledge) depends on the user concerned. The issue of appropriateness for what purpose is important. Public information is not gathered simply for its intrinsic value, but also as a means of controlling, checking on and monitoring others. Typically, censuses and other formal state surveys in developing countries are perceived (often correctly) by people as being a means of control. Each actor's definition of appropriateness will vary depending on the interests use of knowledge seeks to protect or pursue. Furthermore, there may be differing perceptions of appropriateness between providers and users of information, which exacerbate the inappropriateness of knowledge. Although both are concerned with accuracy, for example, the user of knowledge may be prepared to sacrifice some accuracy for the sake of timeliness; whereas the producer of information might tend to do the reverse.

Much public information used for development planning and policy is inappropriate because of the form in which it is presented and the ways in which it is - or is not - disseminated. The printed word and accompanying statistics are still perceived by the North to be the most influential form of information (i.e. the most likely to be converted into knowledge and then used) in the development process. Other forms have, of course, always predominated in much of the developing world, especially in cultures which are primarily oral. The revolution in communication technology has fuelled oral culture especially via radio and, to a lesser but significant extent, television. But most information systems persist in promoting written cultures, however irrelevant they may be. This irrelevance has direct implications for the use of information: if written information is not culturally regarded as being influential, it will be marginalized in institutions, unless explicit steps are taken to reverse the 'default' mode of the culture in question. Furthermore, research results produced by 'us' about 'them' are all too often unavailable in places

where they can have access to them so the option of using knowledge does not even present itself.

The appropriateness of information for conversion into useful knowledge is frequently questioned only once knowledge has **not** been used. Lack of appropriateness becomes a means of justifying retrospectively the failure to use knowledge. To tackle the reasons why knowledge is not used, the question of what is appropriate and to whom needs to be posed at the outset (i.e. before data are collected). This necessitates a rejection of the idea that information is somehow objective and infinitely exploitable by multiple users. Instead, it needs to be defined in terms of the interests which its exploitation will serve or undermine.

Institutional barriers are of central importance in explaining to the failure to use knowledge; although they can, at times, refer implicitly to the exercise of power by competing groups in decision-making. As de Kadt argues in this Bulletin, action resulting from the use of knowledge does not occur because information systems are not properly embedded in necessary institutional arrangements. Ascribing **all** obstacles to the lack of political will or the exercise of political power risks diverting attention away from real institutional and technical issues. A balance needs to be struck between all three types of obstacle: presently, too much emphasis is certainly placed on technical issues, and too little on power issues. Attention to institutional questions falls somewhere in between.

The starting point for tackling institutional barriers to the use of knowledge is that information collection needs to be integrated into other institutional structures in order to bring about better development practice. A strategy of integration - and the implied aim of meeting multiple objectives - does, however, run the risk of failing to serve any one of these objectives perfectly. One way to minimize this is to decentralize the generation and use of information so that the task is more manageable than a national, integrated approach implies. As de Kadt argues in this Bulletin, it is highly likely that decentralization is a necessary prerequisite for knowledge to be used in ways that are locally sensitive and appropriate. Some institutions (Edwards in this Bulletin cites the case of non-governmental organizations), may have institutional cultures which are apparently more appropriate to forging the information-knowledge-action link. And there are ways of fostering more appropriate institutional climates. Yet it is clear that there are major barriers to information use even when prevailing cultures seem to be conducive to optimally exploiting knowledge. These relate to issues of hidden dominant cultures, institutional structure and organizational blockages, question marks over legitimacy and representativity, the need to appeal to a multiplicity of audiences, and difficulty in linking micro to macro levels.

Related to institutional barriers to information use is the question of accountability for the failure to use knowledge. Lack of accountability in use of knowledge in public policy is due, in part, to the separation of decision-makers from intended beneficiaries. Unlike the example of private sector information networks - the optimal use of which has direct implications for the profitability of the firm in question - in the public domain, interests are far more diffuse and the gains to be had from realising them much harder to identify. It is not possible in an objective sense to ascribe responsibility to particular actors for not using information that is in the public domain.

## 6 CONCLUSIONS AND WAYS FORWARD

Explanations of why knowledge is not used in development policy, planning and practice do not adequately address the exercise of power between different actors. Neither information, the use to which it is put (its conversion into knowledge), nor the exploitation of that knowledge is ever neutral, however objective the data on which it is based may be. The neutrality of knowledge is undermined by the political context within which data are generated and information is analysed, transmitted to and used by decision-makers. The pursuit of different interests in the exploitation of knowledge by various actors who are party to it, or excluded from it, and conflicts between these interests is an outcome of these forces. Obstacles arising from inappropriateness or institutional arrangements are mitigating factors in this power play. Thus it is less the case that knowledge is power, than that **the use of that knowledge is an expression of power.**

Conversely, the inability to use knowledge is an expression of impotence. Thus, it cannot be assumed that those who receive information are able to respond. Suggestions that information should be

made available to local people, for example, often take insufficient account of the fact that they may be unable to use the information for want of resources. They are impotent in converting information into knowledge. Government and donor agency decision-makers may also be impotent if resources are unavailable or may misuse knowledge in the pursuit of self-interest. Thus 'information is power only to the extent that it is **potentially** enabling' (de Kadt 1989: 507). Information and knowledge may also be powerful when used to disable others. The impotence of being unable to use knowledge is distinct from the active choice not to act on information received, which is the misuse of knowledge. The abuse of knowledge, in contrast, is the active conscious distortion of information in pursuit of particular interests.

There are many innovative and exciting changes taking place in the sphere of information generation to inform public action in developing countries. Most of this is occurring in the context of 'us' finding out about 'them'. This Bulletin addresses both constraints to the use of knowledge derived from that information and suggests ways of over-coming them, or at least minimizing some of their costs; as well as recognizing why the failure to use knowledge serves the interests of certain groups. In this debate, the following issues are central to improved use of knowledge:

• **The limits to methodological fetishism**: no amount of improvement in methodologies for data collection and information generation - whether hi- or low-tech - can overcome barriers to the use of knowledge, in isolation from attempts to tackle the underlying power issues which determine how knowledge is used. Methodologies need to focus on use of knowledge **before** addressing questions of data collection and information generation.

• **How is knowledge used, misused and abused in decision-making**: until we have a clearer idea of how decisions are made and the potential or actual roles (both positive and negative) that knowledge can play in that process for different types of actors in different socio-political, bureaucratic and institutional contexts, it is unlikely that issues of appropriateness can be tackled.

• **The exercise of power through the use and misuse of knowledge**: far greater attention needs to be paid to how knowledge is used as a means of exercising power in public policy-making in developing countries. Seeking to bury the exercise of power under institutional explanations will not resolve the question. Issues of whether and how hierarchies can be broken down and systemic change be promoted need to be explored.

• **Specific institutional arrangements may facilitate the optimal use of knowledge**. These include: decentralization; integration; shared responsibility; greater accessibility; optimal specialization; and using information technology to reduce rather than build up barriers.

• As information and knowledge become increasingly complex and accessible, there is an **urgent need to foster institutions and other fora in which ideas can be discussed and negotiated over**, in order to maximize their utility to decision-makers in the public domain.

## REFERENCES


Baland, J.M. and Platteau, J.P., 1993, 'Are economists concerned with power?', **IDS Bulletin**, Vol 24 No 3: 12-20

Chambers, R., 1989, 'The state and rural development: ideologies and an agenda for the nineties', **IDS Discussion Paper**, No 269, Brighton: IDS

Chambers, R., 1992, 'The self-deceiving state', **IDS Bulletin** Vol 23 No 4: 31-42

Clay, E.J. and Schaffer, B.B., 1984, 'Introduction - room for manoeuvre: the premise of public policy', in E.J. Clay and B.B. Schaffer (eds), **Room for Manoeuvre: an Exploration of Public Policy in Agriculture and Rural Development**, London: Heinemann

Cutler, P., 1985, 'The use of economic and social information in famine prediction and response', Report to the Overseas Development Administration, Food Emergencies Research Unit, London School of Hygiene and Tropical Medicine, September

FAO, 1986, 'Food and agricultural statistics in the context of a national information system', **FAO Statistical Development Series**, No 1, Rome: FAO

Foucault, M., 1971, 'The order of discourse', in R. Young (ed.), **Untying the Text; a Post-structuralist Reader**, London: Routledge and Kegan Paul

Giddens, A., 1990, **The Consequences of Modernity**, Cambridge: Polity Press

Gow, D.G. and E.R. Morss, 1985, 'Ineffective information systems', in D.G. Gow and E.R. Morss (eds), **Implementing Rural Development Projects: Lessons from AID and World Bank Experiences**, Boulder: Westview

de Kadt, E., 1989, 'Making health policy management intersectoral: issues of information analysis and use in less developed countries', **Social Science and Medicine**, Vol 29 No 4: 503-514

Kloppenburg, J., 1991, 'Social theory and the de/reconstruction of agricultural science: Local knowledge for an alternative agriculture', **Rural Sociology**, Vol 56 No 4: 519-48

Machlup, F, 'Uses, value and benefits of knowledge', in D.W. King *et al.* (eds), **Key Papers in the Economics of Information**, New York: American Society for Information Science, Knowledge Industry Publications

March, J.G. and Olsen, J.P., 1989, **Rediscovering Institutions: The Organizational Basis of Politics**, New York and London: The Free Press

Mearns, R., 1991, 'Environmental implications of structural adjustment: Reflections on scientific method', **IDS Discussion Paper**, No 284, Brighton: IDS

Miller, A., 1985, 'Cognitive styles and environmental problem-solving', **International Journal of Environmental Studies**, Vol 26: 21-31

Pretty, J.N. and Chambers, R., 1993, 'Towards a learning paradigm: new professionalism and institutions for agriculture', **IDS Discussion Paper**, No 334, Brighton: IDS

Riemenschneider, C.H. and Bonnen, J.T., 1979, 'National agricultural information systems: design and assessment, in M.J. Blackie and J.B. Dent (eds.), **Information Systems for Agriculture**, London: Applied Science Publishers

Scoones, I. and Thompson, J., 1993, 'Beyond farmer first - rural people's knowledge, agricultural research and extension practice: towards a theoretical framework', mimeo, International Institute for Environment and Development, London

Smith, S., 1987, 'Paradigm dominance in international relations: The development of international relations as a social science', **Millennium: Journal of International Studies**, Vol 16 No 2: 189-206

White, G., 1993, 'Editorial introduction: towards a political analysis of markets', **IDS Bulletin**, Vol 24 No 3: 1-3

# REVIEW BOOKS RECEIVED

Mike Speirs and Ole Olsen, 'Indigenous integrated farming systems in the Sahel', **World Bank Technical Paper** 179, Africa Technical Department Series, Washington D.C.: The World Bank, 1992

Aderanti Adepoju (ed.), **The Impact of Structural Adjustment on the Population of Africa: The Implications for Education, Health and Employment**, UNFPA in association with James Currey, London, and Heinemann, New Hampshire, 1993

Shawki Barghouti *et al.* (eds), 'Trends in agricultural diversification: regional perspectives', **World Bank Technical Paper** 180, Washington D.C.: The World Bank, 1992

Ennio Rodríguez, **Costa Rica: A Development Path in the 1990s**, Ottawa: The North-South Institute, 1993

Jaime de Melo and Arvid Panagariya, **The New Regionalism in Trade Policy: An Interpretive Summary of a Conference**, Washington D.C.: The World Bank, 1992

Janet H. Momsen (ed.), **Women and Change in the Caribbean: A Pan-Caribbean Perspective**, London: James Currey in association with Ian Randle, Jamaica, and Indiana University Press, Bloomington, 1993

**Guatemala: Transition from Terror?** London: Catholic Institute for International Relations, 1993

Philippine Rural Reconstruction Movement, 'An ecosystem approach to sustainable development: a case study in the province of Bataan', **Philippines Development Briefing** 5, London: Catholic Institute for International Relations, April 1993

Jagdish Bhagwati, **India in Transition: Freeing the Economy**, Oxford: Clarendon Press, 1993

Harald D. Frederiksen, 'Water resources institutions: some principles and practices', **World Bank Technical Paper** 191, Washington D.C.: The World Bank, 1992

William S. Saint, 'Universities in Africa: strategies for stabilization and revitalization', **World Bank Technical Paper** 194, Africa Technical Department Series, Washington D.C.: The World Bank, 1992

Manuel Zymelman (ed.), 'Assessing engineering education in sub-Saharan Africa', **World Bank Technical Paper** 197, Africa Technical Department Series, Washington D.C.: The World Bank, 1993

John L. Newman and Paul J. Gertler, 'Family productivity, labor supply, and welfare in a low-income country', **Living Standards Measurement Study Working Paper** 87, Washington D.C.: The World Bank, 1992

Syed Nawab Haider Naqvi, **Development Economics: A New Paradigm**, New Delhi/Newbury Park/London: Sage Publications, 1993