

## Making a difference: a role for the responsible international statistician?

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[*The address of the President, delivered to The Royal Statistical Society on Wednesday, June 20th, 2001*]

**Summary.** This presidential address explores how statisticians can exploit their skills and expertise effectively to ensure that development strategies are pro poor and pro equity. Many papers in statistical journals have addressed the work of national official statisticians but few have examined the work of statisticians in international, supranational or bilateral agencies. This paper attempts to redress this imbalance by highlighting some of the dilemmas facing international statisticians. It aims to raise consciousness of the role of statisticians employed in an international context, to explain some of the constraints under which they work, to address principles which ought to govern the activities of statisticians generally and to evaluate the relevance of such principles to international statisticians in particular.

**Keywords:** Code of ethics; Codes of practice; Comparability; Components of quality; Data access; Data dissemination; Declaration on ethics; Development; Ethical principles; Globalization; Good practice guidelines; Harmonization; International statistics; League tables; Metadata; Official statistics; Overseas aid; Professional codes; Quality assurance; Standards; Statistical capacity building; Statistical indicators

Excuse me, friends, I must catch my jet—  
I'm off to join the Development Set;  
My bags are packed, and I've had all my shots,  
I have travellers' checks, and pills for the trots.

The Development Set is bright and noble,  
Our thoughts are deep and our vision global;  
Although we move with the better classes,  
Our thoughts are always with the masses.

In Sheraton hotels in scattered nations,  
We damn multinational corporations;  
Injustice seems so easy to protest,  
In such seething hotbeds of social rest.

We discuss malnutrition over steaks  
And plan hunger talks during coffee breaks.  
Whether Asian floods or African drought,  
We face each issue with an open mouth.

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We bring in consultants whose circumlocution  
 Raises difficulties for every solution—  
 Thus guaranteeing continued good eating  
 By showing the need for another meeting.

The language of the Development Set  
 Stretches the English alphabet;  
 We use swell words like ‘epigenetic’,  
 ‘Micro’, ‘Macro’, and ‘logarithmic’.

Development Set homes are extremely chic,  
 Full of carvings, curios and draped with batik.  
 Eye-level photographs subtly assure  
 That your host is at home with the rich and the poor.

Enough of these verses—on with the mission!  
 Our task is as broad as the human condition!  
 Just parry to God the biblical promise is true:  
 The poor ye shall always have with you.

*The Development Set*  
 (Coggins, 1993)

## 1. Introduction

It is becoming something of a tradition for a Royal Statistical Society (RSS) presidential address to refer to previous addresses. My immediate predecessors dealt *inter alia* with the importance of statistics in scientific research, evidence-based policy and official statistics. These issues are very pertinent to my theme and this paper extends consideration of them into the international domain, thereby allowing me to take advantage of my unusual position as a President living outside the UK and working for an international organization.

My purpose is to describe for an eclectic but technically informed audience the particular features of work in international statistics and the complex statistical, political and ethical issues facing the international statistician. However, the conclusions drawn are more widely applicable and relate to the responsibilities of all of us in our dual roles as specialists in our particular fields as well as citizens of the world.

My concern for ethics and associated codes of conduct in the realm of international statistics is a natural extension of an important preoccupation for the RSS during my term as President, namely achieving the publication of a new UK code of practice to govern National Statistics.

## 2. The international context

### 2.1. Governance

What do we mean by ‘governance’ when applied to the international realm? What are some of its desirable attributes if our aim is to manage successfully the transition from an international to a global world? These are questions addressed by the Secretary-General of the United Nations in his report to the Millennium Assembly of the United Nations (Annan, 2000). He argues that for the good of people throughout the world and for the sake of our common aims we must help to strengthen the capacity of individual states to govern effectively and to help them, in our ‘fluid, highly dynamic and extensively networked world’, to develop a deeper awareness of their dual role in the global world. This duality recognizes that each state not only bears responsibilities in

relation to its own people but also collectively shares responsibility for the whole planet. The thrust of the Secretary-General's report is that decision-making structures through which governance is exercised internationally must reflect the broad realities of our times.

'Better governance means greater participation coupled with accountability. Therefore, the international public domain—including the United Nations—must be opened up further to the participation of the many actors whose contributions are essential to managing the path of globalisation.'

This leads him to argue that the more integrated global context demands a new degree of policy coherence and he regrets that formal institutional arrangements often lack the scope, speed and *informational* capacity to keep up with the rapidly changing global agenda.

These concerns are echoed in a recent speech of Clare Short in which she expresses the view that (Short, 2001)

'In a globalising world we need the UN more than ever before. If globalisation is to be managed with equity, we need stronger international institutions; and we need to enhance the authority of the United Nations and the moral case for progress for the whole of humanity for which it stands.'

The main objectives of the United Nations are

- (a) to provide a forum for member states to come together to share information, to co-ordinate activities, to pursue common actions and to conduct negotiations,
- (b) to transform relations between states and the methods by which the world's affairs are managed by introducing principles and norms into international relations and
- (c) to serve the peoples of the world by affirming the dignity and worth of individuals together with their fundamental rights and by seeking to achieve social progress as measured by better standards of life and freedom from want and fear.

The purposes and principles of the United Nations are set out in its Charter and in the Universal Declaration of Human Rights. Their relevance has increased as peoples become interconnected in new ways and the need for collective responsibility at the global level is more widely felt. There is a recognition that the United Nations alone can have little effect on the serious problems facing mankind but must work in concert with the rest of the international community.

This paper considers the role of statisticians working within this international environment and examines how they can contribute towards improving the quality of people's lives particularly in the developing world.

## 2.2. Globalization

Globalization is often hailed as offering the solution to disparities and in some countries it has indeed brought about faster economic growth with associated rises in living standards. However, these advances have been restricted to relatively few countries and have been distributed unevenly within these countries.

As the United Nations report referred to above identifies,

'an imbalance has emerged between successful efforts to craft strong and well-enforced rules facilitating the expansion of global markets, while support for equally valid social objectives, be they labour standards, the environment, human rights or poverty reduction, has lagged behind... globalisation must mean more than creating bigger markets'.

A global economy has *the potential* to advance social inclusion.

Multinational companies occupy a critical position in the world at the start of the new millennium. On the one hand, they can use their profits and influence to bring about improvements such as the \$750 million grant from the Bill and Melinda Gates Foundation to deliver vaccines

and to support vaccine research in the poorest countries of the world. On the other hand, they can adopt a blatantly exploitative approach such as that stated by Monsanto in its 'Strategy paper on water' (Monsanto, 1991):

'The business logic of sustainable development is that population growth and economic development will apply increasing pressure on natural resource markets. These pressures, and the world's desire to prevent the consequences of these pressures if unabated, will create vast economic opportunity—when we look at the world through the lens of sustainability we are in a position to see current—and foresee impending—resource market trends and imbalances that create market needs. We have further focussed this lens on the resource market of water and land and there are markets in which there are predictable sustainability challenges and therefore opportunities to create business value. . . . Monsanto's Water and Aquaculture business, like its seed business, is aimed at controlling vital resources necessary for survival—converting them into a market and using public finances to underwrite the investments. A more efficient conversion of public goods into private profit would be difficult to find. . . . The right to water is the right to life.'

Consideration of the power which can be wielded by multinational companies has led Shiva (2001) to conclude that

'Globalisation is not merely a geographic phenomenon which is tearing down national barriers to capital. Globalisation is also tearing down ethical and ecological limits on commerce. As everything becomes tradable, everything is for sale—genes, cells, plants, seeds, knowledge, water and even pollution. Life has lost its sanctity as living systems become the new raw material, the new sites for investment, the new locations for manufacture.'

### *2.3. The scale of the development problem*

Economic and social gains over the last half-century mean that some of us enjoy a standard of living that is far superior to that experienced in the past. Yet many people remain desperately poor. Half the world's population still must manage on less than \$2 a day and 1.2 billion on less than \$1. Unless we increase and co-ordinate our efforts the situation will deteriorate. The world's population recently reached 6 billion, having quadrupled since the beginning of the 20th century, and is forecast to reach 8 billion by 2025 with almost all the additional people living in the very poorest of countries. Currently eight out of 10 people live in the less-developed countries where fertility rates range from 5.6 children per woman in sub-Saharan Africa, through 4.5 in the Arab States and North Africa to 2.9 in Latin America and the Caribbean. 113 million children have no access to schooling and 880 million people, two-thirds of them women, are illiterate. A quarter of the world's children are unprotected against polio, diphtheria, whooping-cough, measles, tetanus and tuberculosis. They are 10 times more likely to die of these diseases than children who are protected by vaccines.

The latest estimates from UNAIDS of the effect of the acquired immune deficiency syndrome (AIDS) pandemic are horrifying: at the end of 2000 there were estimated to be 36.1 million people living with the human immunodeficiency virus (HIV) or AIDS, of which 5.3 million were new infections during the previous year. AIDS, a disease predominantly of the poor, deepens and spreads poverty. 96% of the people infected live in the developing world and 70% are in sub-Saharan Africa. Worldwide it is estimated that 13.2 million children under 15 years of age were orphaned by AIDS by the end of 1999, of whom 12.1 million lived in sub-Saharan Africa, compared with 9000 in western Europe. Such children are much less likely to go to school and are more likely to be malnourished than non-orphans. Will they be able to escape poverty? According to the World Health Organization (2000) AIDS caused 20.6% of all deaths in Africa in 1999, twice the percentage of any other single cause.

These few statistics illustrate the magnitude of the inequalities that we face.

Although the extent of the poverty seems to be insurmountable, these figures should be viewed against a background of almost unbridled expenditure on weapons and consumer inessentials by developed countries. Focusing on education, my own area of interest, the United Nations Educational, Scientific and Cultural Organisation (UNESCO) Institute for Statistics (2000a) has drawn attention to the following.

- (a) Since 1945 an estimated US\$8 trillion has been spent on nuclear weapons worldwide, but the estimated public expenditure on education represents less than 0.5% of this.
- (b) According to some estimates the world would need to spend an additional US\$7 billion a year to provide primary education for those children who are not currently in school. This is less than the amount spent annually on cosmetics in the USA or on ice-cream in Europe.
- (c) The price of one ballistic submarine (US\$1453 million) would double the education budgets of 18 poor countries with 129 million children to educate.

#### *2.4. Information and communications technologies*

Alongside globalization, the increasing penetration of information and communications technologies (ICTs) is also presented as a means of eradicating poverty. Indeed, as the example of India shows, ICTs can generate employment and wealth within a developing country, provided that there is foreign investment, economic liberalization and a pool of technically educated people. However, ICTs can only deliver benefits if an adequate telecommunications infrastructure is available and if people have access to equipment and training. Fewer than 6% of people worldwide own a computer and there are more computers in the USA than in the rest of the world put together. 94% of all Internet users live in the 40 richest countries and 30% of Internet users have a university degree. It would cost the average Bangladeshi more than 8 years' income to purchase a computer compared with 1 month's salary for the average American. There are more telephones in Tokyo than in the whole of Africa and more than half the people in the world have yet to make their first telephone call.

For developing countries, which are always characterized by a shortage of trained teachers (a problem that is exacerbated in some countries by the ravages of AIDS on the teaching profession), new modalities must be sought to overcome deficiencies in the provision and quality of education. In this context, ICT is important not only as a means of linking the underprivileged into the global economy but also as a means of delivering education to them.

#### *2.5. Models of development*

##### *2.5.1. Beyond the Washington consensus*

The term 'Washington consensus' was coined by John Williamson in a seminal publication (Williamson, 1990). He argued that there was tacit agreement between senior US economic officials and the Bretton Woods institutions (the International Monetary Fund and the World Bank) concerning the principles for the reform of economic policy. The areas covered were

- (a) fiscal discipline leading to deficit reduction,
- (b) the use of public expenditure to promote high growth and income redistribution,
- (c) privatization of state undertakings,
- (d) liberalization of interest rates, exchange rates and trade,
- (e) the encouragement of foreign investment,
- (f) the removal of barriers to free competition,
- (g) tax reform with lower marginal rates and a broader tax base and
- (h) secure property rights.

The agreement was

‘an attempt to distil which of the policy initiatives that had emanated from Washington during the years of conservative ideology had won inclusion in the mainstream rather than being cast aside once Ronald Reagan was no longer on the political scene’

(Williamson, 1999). Although originally proposed in relation to Latin America the consensus was taken to apply to all developing countries.

Although accepting the basic tenet that the key to a country’s rapid economic development lies not only in its natural resources but also in its economic policies, there are increasing concerns about the Washington consensus including the following.

- (i) It takes too little account of the importance of developing human capital. (Perhaps the only resource that is equitably distributed around the world is the human mind. The utilization of this reservoir of human capital to its full creative potential must surely be at the heart of any international development programme.)
- (ii) It pays too little attention to the ‘social dimensions’ of development, including issues of equity.
- (iii) Economic development should be balanced by its sustainability and sensitivity to the environment. (Regrettably, issues of inequity between the developed and developing worlds have been rendered immeasurably more serious by the recent unilateral renunciation by President Bush of any commitment to the Kyoto declaration on emissions. This demolishes any hope that the USA, with the most powerful economy in the world, will, during this Presidency at least, show an appreciation of the responsibilities of the developed world in relation to the degradation of the environment. And it is the less-developed countries which are more threatened by global warming than the developed ones, nearly all of which are in the more temperate zones.)
- (iv) It disregards the fact that the efficient application of policy is as important as the policy itself.

Questions are increasingly being asked about the premise implicit in the consensus that growth can be limitless. Although beyond the scope of this paper these are very relevant to the systems that statisticians need to devise to understand and measure development (see Comeliau (2000) and Stiglitz (1998)). (It should be noted that these discussions are not new and that many earlier papers debate the assumption of limitless growth—see for example Currie (1981).) Opinions differ sharply on how growth relates to a reduction in poverty. However, most would agree that sustainable growth is a necessary condition for reducing poverty but that national policy and the institutional framework are critical to whether, in practice, growth is equitable and raises the conditions of the poorest people. As a World Bank study notes ‘gender inequality slows growth and makes policies less effective and gender equality enhances development’ (World Bank, 2000).

Branislav Gosovic in a hard-hitting article (Gosovic, 2000) despairs that the current definition of ‘globalization’ and its evaluation have been monopolized by a small number of actors with global reach, power and ambitions who are inspired by ‘neo-liberal ideological premises’. He is concerned that contemporary processes and phenomena are being explained through the dominant conceptual framework which amounts to ‘intellectual totalitarianism’ and results in a growing intellectual subservience of the countries of the south. He argues that several terms which used to be the mainstay of the United Nations’s work have now virtually disappeared from official usage, such as ‘equity’, ‘self-reliance’ and even ‘national sovereignty’ (though he points out that this particular term is still acceptable for developed countries).

‘Developing countries should not be content with the role of passive, naïve, or ignorant consumers of

attractively packaged constructs coming from the North. They must become properly equipped and sophisticated interlocutors and negotiators in the public arena (including the market place), *inter alia*, by understanding how the industrial North functions and how it promotes, intelligently and often ruthlessly, its own interests. They must reconquer intellectual space and build the necessary capabilities for this purpose, which includes training and building awareness among new generations and reviving and fostering their intellectual ferment and capabilities in their institutions of higher learning. They must reject an entirely one-way and highly asymmetrical relationship with the North, which emerged during the 1990s.'

### 2.5.2. *Symmetrical relationships*

Fortunately there is plenty of evidence that many of the providers of aid in the north, both bilateral and multilateral organizations, are speaking a new language of symmetry. The President of the World Bank has accepted the need to listen to recipients (Wolfensohn, 1995):

'To be a good partner we must be ready to listen to criticism and to respond to constructive comment. There is no place for arrogance in the development business.'

The Department for International Development White Paper ('Eliminating world poverty') (Department for International Development, 1997) speaks of a 'new aid paradigm with better co-ordination of international funding and technical assistance agencies, new modalities of delivering co-operation'. 'A more equal and respectful relationship' is the aspiration of the Swedish Ministry for Foreign Affairs (1997). The word 'ownership' has become a standard term in the language of development. It will be important to monitor whether the development aid that is provided to countries on the basis of the new bilateralism according to agreed criteria and shared values will be more effective than the earlier northern dominance model.

Discussion is needed about how statisticians might help to turn this rhetoric into reality. The influential publication *Adjustment with a Human Face; Protecting the Vulnerable and Promoting Growth* (Cornia *et al.*, 1987) provides an exemplar analysis of the adverse economic development and consequent stabilization and adjustment policies that were experienced by the majority of developing countries in the 1980s and how these affected vulnerable groups especially children in terms of their health, welfare and economic circumstances.

It has been suggested that this new paradigm will not remove selectivity in the choice of countries or projects to be supported, but that different criteria will need to be developed to choose the 'new partners' (Dower, 1998). Dower suggests that the preconditions are likely to include pro-poor economic growth strategies, pro-democracy and pro-human rights policies, pro-gender and pro-equity policies and a pro-environmental sustainability commitment. Such criteria may differ from agency to agency, thus complicating partnerships involving several agencies. Kenneth King points out in the introduction to *Changing International Aid to Education* (King, 1999) that Japan would include the crucial requirement of self-help within any list of priorities, as evidenced by the comment that 'serious self-help efforts by developing countries are the most important element in development's success' (Japan's Ministry of Foreign Affairs, 1997). The formulation and coherence of selection criteria will be one of the many challenges facing the international statistician involved in informing decisions about aid.

### 2.6. *Development goals*

In 1995 development Ministers from the member countries of the Organisation for Economic Co-operation and Development (OECD) Development Assistance Committee (DAC) determined to review past experiences and planning policies into the next century. The resulting report, *Shaping the 21st Century: the Contribution of Development Co-operation* (Organisation for Economic Co-

operation and Development, 1996), presented their vision for development progress. They formulated a broad strategic framework aimed at realizing a limited number of quantitative goals by the year 2015. The report included seven specific goals, which have become known as the international development goals, and argued that the achievement of these would be of profound significance for future generations. The goals were drawn from a series of United Nations conferences on key themes: education (in Jomtien, 1990), children (in New York, 1990), the environment and development (in Rio de Janeiro, 1992), population and development (in Cairo, 1994), social development (in Copenhagen, 1995) and women (in Beijing, 1995). The seven are, however, only a subset of the goals agreed at these other conferences.

The international development goals have been endorsed by 77 African, Caribbean and Pacific countries as part of the Cotonou agreement and by the OECD–DAC, World Bank and International Monetary Fund.

The use of these goals is explained in World Bank (2001):

‘Poverty is a multi-dimensional phenomena (*sic*), encompassing inability to satisfy basic needs, lack of control over resources, lack of education and skills, poor health, malnutrition, lack of shelter, poor access to water and sanitation, vulnerability to shocks, violence and crime, lack of political freedom and voice. So when we want to look at what happens to poverty, we look at a number of indicators and compare them over time and across countries. . . . Because they are measurable the goals can help in identifying where progress is exceeding expectations or falling behind.’

In September 2000 149 Heads of State at the United Nations Millennium Summit endorsed the *Millennium Declaration* (United Nations, 2000a). Section III of this declaration (‘Development and poverty eradication’) includes a set of goals which closely resemble the international development goals. However, there are some key differences, relating to the exclusion of a reproductive health goal (as a result of very difficult negotiations lasting nearly a month), the inclusion of a goal concerning disease (aiming to halt and then to reverse the spread of HIV–AIDS, malaria and other diseases by the year 2015) and another relating to ‘cities without slums’ (aiming to achieve ‘a significant improvement in the lives of 100 million slum dwellers by 2020’). These are known as the ‘Millennium declaration goals’.

In addition section IV of the declaration includes a further set of goals concerning environmental conditions. The *Millennium Declaration* also has various other resolutions which are framed as goals. However, not all of them are easily turned into measurable targets, e.g. ‘to provide special assistance to children orphaned by HIV/AIDS’, ‘to develop strong partnerships with the private sector’, ‘to implement strategies that give young people everywhere a real chance to find decent and productive work’ and ‘to encourage the pharmaceutical industry to make drugs more widely available’.

### 3. The role of the international statistician

#### 3.1. *Generic activities of an international statistician*

An international statistician’s activities might cover some or all of the following:

- (a) the tracking of international development aid and charitable giving;
- (b) monitoring the effectiveness of aid and evaluating the success of different aid paradigms;
- (c) the collection and dissemination of cross-nationally comparable data, guardianship of these databases and support of, and consultation with, users;
- (d) the analysis and interpretation of cross-national data;
- (e) special methodological and technical projects including the development of statistical concepts;

- (f) the development and maintenance of international classifications, and standardized procedures to promote comparability of data;
- (g) technical capacity building and other support for users and producers of data within countries;
- (h) establishing and sharing good practice in statistics, supporting activities which improve the quality of data and avoiding the need for countries to start from first principles;
- (i) advocacy for evidence-based policies.

These activities may be conducted within an international organization like UNESCO, a supra-national agency such as Eurostat or on behalf of a bilateral agency such as the Department for International Development. To give a flavour of UNESCO's role, Richard Hoggart, who became Assistant Director-General in 1970, wrote (Hoggart, 1978)

'UNESCO is also a world resource centre, a complex of information banks, a set of clearing houses—to use the language of modern information services. On a scale no other organisation can quite match (except for some national institutions within the two major powers, and they do not quite have UNESCO's catholicity) it collects facts from all over the world, in all aspects of what it calls its "areas of competence". It sets out to standardise those facts so that they are uniformly and internationally available; it then circulates them, and thus keeps in motion a great swirl of publications—statistical abstracts, up-dated annual year-books, periodic returns, comparative statistics—and a seemingly endless succession of scholarly meetings where this information is analysed, interpreted in new ways and then set in motion across the world again.'

### 3.2. *Development indicators*

#### 3.2.1. *Translating goals into indicators*

Considerable work has taken place in a variety of forums to translate development goals into indicators. At a specific level much of this work has been carried out within specialized agencies of the United Nations. For example within UNESCO the six target dimensions of the 'Education for all' initiative of the World Conference on Education in 1990 were transformed into 18 indicators. A global, regional and national structure was created to collect data for monitoring these 18 education indicators and a report was written for the '10 years on' conference in Senegal in April 2000 (United Nations Educational, Scientific and Cultural Organisation Institute for Statistics, 2000b). The conference reaffirmed the original goals and added new ones, and set new target dates. UNESCO, through the Institute for Statistics, is currently assessing the appropriate adjustments to the indicators and the implications for collecting data.

As well as sets of indicators developed in response to specific world conferences, other sets have been created for particular publications such as the various world reports including the influential human development report of the United Nations Development Programme.

Some efforts at developing a cohesive set of indicators should be noted. For example within the Task Force on Basic Social Services for All, the World Health Organization, United Nations International Children's Emergency Fund and United Nations Population Fund have reached a consensus about a short list of indicators on reproductive health and maternal mortality for global monitoring and are collaborating on field testing.

#### 3.2.2. *A common framework for indicators*

At a more general level, the United Nations is developing a common framework for development assistance (known as the United Nations development assistance framework). The framework incorporates a review of the measures to translate the commitments made by countries at the global conferences into country level action plans following consultations on national priorities,

the identification of key indicators and data collection, and implementation, monitoring and evaluation. Thus a set of 'common country assessment indicators' has been developed.

In addition the United Nations Statistical Commission has developed a minimum national social data set to provide a focus for achieving a manageable set of core indicators of progress in social development.

The foregoing attempts to make some sense of this maze of indicator initiatives but it is not surprising that the Economic and Social Council of the United Nations requested that a committee be established to address concerns about the proliferation of statistical indicators and the demands that this was placing on national statistical systems. This committee's report argues for a coherent set of priority indicators (United Nations, 2000b). In addition the United Nations Statistical Commission in March 2001 set up a 'friends of the chair' group under the leadership of Professor Tim Holt to examine different indicator sets and to make recommendations on consolidation and co-ordination. However, there are some who believe that the problem of inconsistencies between sets of indicators would be solved if only we were all to rally behind the millennium goals and to use these to determine a definitive set of indicators.

In his rallying call at the conference on development indicators convened by the World Bank on March 19th, 2001, Mark Malloch Brown, Administrator of the United Nations Development Programme said

'We have an unprecedented global consensus around the international development goals—or the Millennium targets. . . . We now have every right to put these targets at the centre of development strategy. . . . This is the moment to build up a new global poverty rating system, linked directly to the targets, that will help mobilise government and civil society, business and labour, activists and policymakers, and the public of North and South alike in a global race to halve poverty by 2015. . . . It must be a sober, statistically sound, annualised assessment of results and progress at the country and global levels that will inform governments and international organisations and seize the attention of policy makers because of its focus and credibility—a Standard and Poor's or Moody's of poverty rating. Obviously that is a huge, complex methodological and statistical challenge.'

There is indeed a growing body of opinion that the most important role for international statisticians is the collection of data to construct key development indicators and their dissemination for monitoring purposes.

### 3.2.3. *How important are indicators?*

The high level political significance that is attached to the development goals is to be welcomed by statisticians and can hopefully be turned to the advantage of weak statistical systems throughout the world. Since the batteries of indicators are dependent on achieving responses from as many countries as possible, with keen attention being paid to the poorest countries, the gaps in data can be highlighted and resources sought to assist those countries to collect the relevant data. The data are certainly very powerful for advocacy purposes and enable the international community to co-ordinate actions. In addition the targets can be very useful for accountability.

Although recognizing the value of indicators and warmly welcoming initiatives to reduce the multiple sets of indicators into a priority selection, they should not be regarded as encapsulating the whole contribution of statistics to the problems of development. The dangers are twofold.

Firstly indicators should not be imbued with more meaning than is justified by their content. Mark Malloch Brown might have fallen into this trap when he noted that (Malloch Brown, 2001)

'In Brazil, President Cardoso has targeted a \$7.4bn anti-poverty programme at the 14 states with the lowest Human Development Index. In Madyha Pradesh, India, the chief minister, Digvijay Singh, recently described to me how he governs by his human development index.'

These uses of the human development index (HDI) conflict with the report by the Human Development Report Office of the United Nations Development Programme to the 32nd United Nations Statistical Commission which states that

‘As the HDI is a summary proxy of human development achievement, measuring the HDI gives information only on the average progress in the components of the HDI. It has always been maintained by the Human Development Report Office that to study human development achievement in more detail, various human development indicators need to be considered individually.’

Secondly, to reduce the role of statistics to mere monitoring and advocacy is to ignore their value in formulating evidence-based policies. Work on indicators should therefore be complemented by support for statisticians to develop rich databases about the state of societies at a fundamental level. There is an impression that the priority indicators are the only statistical outputs that a country needs even for its own governance.

#### 3.2.4. *Attributes of indicators*

Goals chosen without any reference to their measurability or other attributes are often, through the mechanism of world conferences, endorsed by countries before statisticians have had an opportunity to consider characteristics such as the following.

- (a) Are they realistic?
- (b) Can they be measured?
- (c) Will they show enough change over time to be valuable as yardsticks?
- (d) Are relevant bench-marks in place?
- (e) Are they universal and do they make sense in different parts of the world?
- (f) Are they coherent with what has been used before?

After such ‘declarations’, goals cannot easily be changed. Sometimes the translation of goals into indicators is not viewed as a statistical process at all—statisticians being perceived simply as technicians who take indicators as given and organize the data collection but do not have any relevant expertise with respect to the creation, determination or definition of indicators. Too rarely is there recognition that conceptual development and fieldwork are needed to develop reliable indicators. Since indicators are often expressed in terms of change over time (e.g. halving adult illiteracy), the unquestioned assumption that there are adequate base-line data can be very problematic.

The selection of appropriate goals is critical since ideally they should be realistic and achievable. It has been proposed that countries should be stretched to achieve them but if they are too difficult to reach this is detrimental since it perpetuates a sense of failure. It is not easy to see how this can be managed with a set of identical indicators for all countries of the world, which are of course at very different stages of development. Sceptics of the development indicators programme often cite the fact that indicators have been produced as a result of world conferences over many years and all the targets have consistently been missed.

Because of the need to collect the same data for all (or a large group of) countries the indicators must reflect the lowest common denominator. However, inertia in the system, together with anxiety that no changes should be made to the agreed set of indicators, has an unfortunate consequence in that countries are not allowed to grow in their statistical expertise. It can dissuade countries from developing new indicators and entrench the selection made at a particular point in time. Incidentally changing an indicator is often confused with ‘changing the goalposts’ even though the indicator may have been a very inadequate proxy for the goal.

Concerns are often expressed about the burden of data collection on countries, and the

implication drawn that the use of priority indicators reduces this burden. Certainly international agencies should be moderate in their requests for data (as noted later in this paper), should consult extensively with countries and provide a justification for their requests. However, the implication that the concentration on priority indicators greatly reduces the burden is misleading since calculating many of the indicators may also require a large amount of data. Stressing the disadvantages of data collection (the burden) rather than the value of the data creates a vicious spiral. Experience shows that financial, political and institutional support for statistics is generated when they are used extensively and are seen to make a difference to the quality of policy decisions. Under these circumstances, users both inside and outside Government will be important and persuasive allies in the fight for their continued collection.

Many problems are inherent in the focus on development indicators, some of which are specific to the development context whereas others are generic to the issue of indicators. (For an excellent article on the use of indicators in a related field see Levitas (1999).)

### 3.2.5. *Presentation and use of indicators*

How indicators are presented can be a cause for concern. They are often stripped of their essential metadata which countries and agencies have been at great pains to collect and which are essential for informed use. Many indicators are defined as rates with the numerator and denominator coming from different sources and even different agencies within countries. This can result in incompatibilities in the data and significant errors in the resulting indicators. Moreover a change to either the numerator or denominator (which can happen when a census is carried out, for example) can mean that the indicator changes markedly only because of measurement error.

Indicators can be easily fed into league tables of countries. The media triumph of the United Nations Development Programme HDI has encouraged other agencies to create league tables with their own selection of indicators. Such tables are prone to the same misinterpretation as identified by Goldstein and Spiegelhalter (1996) and Holt (1998) in relation to tables of institutions (e.g. schools, universities or hospitals). The reasons are similar—the lack of appropriate contextualization of outcome indicators, the inadequate specification of the statistical models and conceptual problems in devising measures of ‘value added’, the fact that the value added is assumed to be meaningful, despite the fact that input and output data are often measured in different units, and the failure to take account of uncertainties in the data. However, international league tables often suffer from additional problems in that data from very different countries are incorrectly assumed to be of equivalent quality, and key indicators may be manipulated or withheld by countries to alter their ranking with detrimental effects on the quality of the data (a problem which is especially acute when a high level of attention is given to particular league tables). Furthermore such league tables sometimes use composite indicators which have been created by combining data across totally different topics. It is debatable whether the creation of these league tables is a statistical exercise, but the fact is that it is widely perceived as such and this can affect the ability of statisticians to establish credibility for data. International statisticians have sometimes been reluctant to elaborate on the limitations of league tables because they can see that the media and political attention given to leagues tables raises the profile of development.

Studying one indicator at a time in development research is likely to be misleading since poverty is multidimensional. Multiple deprivation (such as the strong correlation between a lack of education and a lack of many of the other basic conditions for an adequate life) is of vital interest in targeting disadvantage. Since most of the current indicators can only be used to examine such relationships at the national level, the ecological fallacy is also a risk. Even though nations are of widely differing sizes and many of them have very decentralized decision-making,

the emphasis is mostly on indicators at the national level, implying that the nation is the only relevant unit of analysis. This is despite the fact that many decisions are made at a subnational level and that large variations exist across many countries. The focus on nations concentrates on totals or averages whereas it is often the distribution within countries that is of interest. Inequality in the world is badly underestimated through an overemphasis on national data.

Ironically the focus on national rates affects the targeting of aid. For example the greatest apparent progress towards development targets could be achieved by concentrating resources on small countries which will have a tendency to fall at the extremes in the indicator rankings. In contrast, if one chose instead to target resources where they are needed by the largest number of people, the opposite strategy might be adopted, namely concentration on the largest countries with development problems (China, India, Nigeria etc.). A more careful consideration needs to be given to the relevance of particular types of indicators to aid allocation especially as the emphasis is moving towards selecting countries to receive aid according to judgments about where it can be used most effectively. As indicated above it is possible to envisage some cases where the nation is the relevant unit of analysis and others where the individual adult or child would be more appropriate.

However imperfect they may be at reflecting the goals, indicators have gained credence and the fact that they are inevitably an oversimplification becomes conveniently forgotten. Any issue which is not measured by an indicator is seen as unimportant and conversely any issue with an associated indicator is automatically assumed to be important. As Chambers (1997) quotes:

Economists have come to feel  
What can't be measured, isn't real.  
The truth is always an amount  
Count numbers, only numbers count.

Indeed among the most debilitating characteristics of poverty is a loss of dignity which affects the capacity to escape from the cycle of deprivation but is not susceptible to quantification.

In addition to the quantitative goals identified for economic well-being, social development and the environment, the OECD report recognized the importance—and the difficulty—of measuring some issues such as democratic accountability, the protection of human rights and the rule of law.

### 3.3. *International comparability*

#### 3.3.1. *Purpose of comparability*

A significant role of the international statistician is to foster the collection of comparable data across nations, the main objectives being

- (a) to enable countries to gain a greater understanding of their own situation by comparing themselves with others, thus learning from one another and sharing good practice—

‘They [cross-national measures] help to reveal not only intriguing differences between countries and cultures, but also aspects of one’s own country and culture that would be difficult or impossible to detect from domestic data alone’ (Jowell, 1998),

- (b) to permit the aggregation of data across countries to provide a global picture, thus enabling the design of international initiatives informed by evidence, and
- (c) to provide information for purposes of the accountability of nations and for the assessment, development and monitoring of supranational policies (see Section 5.1.1 later).

Although collecting comparable data is difficult, Jowell argues that the measurement problems encountered are not a sufficient reason for abandoning cross-national research because of their

growing importance due to globalization and moves towards cross-national governance. Instead he argues for circumspection in their analysis and a resistance to drawing 'heroic conclusions on the basis of unexpected national variations in the answers to a single question'. He outlines some practical rules for mitigating some of the problems in relation to comparative research. These are laudable aims but as a statistician working in UNESCO, a community of 189 nations, I find it difficult to see how all of them can be achieved (e.g. 'Social scientists should undertake not to interpret data relating to a country about which they know little or nothing', 'Analysts of cross-national data should resist the temptation to compare too many countries at once' and 'Cross-national surveys should ideally be confined to the smallest number of countries consistent with their aims'). However, the call to analyse data while taking account of the appropriate context, to provide access to full methodological information for each nation and to suspend belief in any major country differences discovered before determining whether they result from differences in methodology or the interpretation of methodology are all very important lessons for international statisticians. As Jowell (1998) points out all 'quantitative surveys depend for their reliability on a sort of principle of equality or equivalence' and thus the problems are not unique to cross-national studies.

### 3.3.2. *Models for achieving comparability*

There are substantially different models of collecting cross-national data. These include

- (a) the (fortunately discredited) 'safari method' whereby international researchers visit countries to collect the data that they need, withdraw the data to an industrialized country and analyse them there with a limited appreciation of the context of the data,
- (b) the collaborative model as exemplified by the International Social Survey Programme in which a research team comprising participants from all the countries jointly design the key aspects of the study,
- (c) precollection harmonization whereby representatives of the countries are consulted to resolve differences in their methodologies in advance of the data collection and the work is mediated by an international or regional statistical agency (this is the model employed by Eurostat in relation to much of the cross-European data) and
- (d) *post hoc* harmonization in which countries collect data independently with the data being later reanalysed in the light of comparative research.

Obviously it is desirable to involve national experts who have an understanding of the individual data sets and their context and valid interpretation. However, this is expensive and may not always be the best use of scarce resources. A compromise model can be to work in regional teams which collaborate closely and then to attempt *post hoc* harmonization of the data across the regions. This can be more efficient because countries can more easily and cheaply share expertise, they have a greater understanding of one another's situation, they are more likely to share common problems and to find similar relevant solutions, there may be reduced diversity of language, the 'leading country' in a region may help the others and they may have a common identity. But the regional model also has disadvantages in that it is more difficult for the leading countries in a region to develop and learn, and it can mean that the global picture is lost. Partitioning the world can lead to a fragmentation of policies and a lack of appreciation of the interdependence of countries. For example it can be argued that equity and sustainability within the poorest countries cannot be achieved without a fundamental rethinking of northern consumption and expenditure. Allocating countries to homogeneous clusters also reduces the opportunity to explore exciting differences which emerge when comparing across a heterogeneous group (for an example of heterogeneous

comparisons in the field of education see Colclough (2001), who has carried out a study comparing the very different primary education systems in Anglophone and Francophone Africa).

### 3.3.3. *Problems in achieving comparability*

The problems involved in collecting comparable data are similar to those outlined in Section 3.2 on indicators: that the need for cross-national data leads to the acceptance of the lowest common denominator; that it fosters inertia in the system by making revisions difficult (the problem of making the methodologies relevant for the strongest countries as well as those at the ‘trailing edge’); that it is vital to be sensitive to the burden of data requests on countries; that cross-national data may not be specific to national needs, thereby making it more difficult to involve users of national data and distorting national agendas. For example, in primary education, data harmonized internationally are of less value nationally because age ranges for primary education vary among countries: it may cater for children who are 5–11 years old in one country and 5–9 years old in another. Thus internationally harmonized primary education statistics will not necessarily correspond to the picture recognized in a particular country.

James Wolfensohn, President of the World Bank, in his 1998 annual meetings speech suggests the need for a more integrated approach to development based on a framework articulated and owned by the country itself (Wolfensohn, 1998). He notes the wide acceptance that countries are now in the drivers’ seats both owning and directing the development agenda, with the comprehensive development framework being essentially a blueprint rather than something to be applied to all countries in a uniform manner. He suggests that this could argue for countries to determine their own data needs (and their own outcome indicators which they would select and track) and he concludes that this would be inconsistent with a centralist approach. Ownership is an important counterbalance to the financial dominance of the north.

Cross-national comparative analysis is an important statistical tool but it also brings risks—frequently politicians or senior civil servants are dismayed by the relative results for their countries and tend to blame the messenger rather than examining the message. An escape for statisticians is to direct the blame onto the methodology. No cross-national study can be perfect as far as comparability is concerned and it is only too easy to find reasons why the data should not be taken seriously. An outcome of this unhappy state of affairs is the withdrawal from cross-national research of those countries which achieve disappointing results, and occasionally a more catastrophic effect on the career of the national statisticians involved. However, some statisticians manage to turn poor comparative results to their advantage, using them as a ‘rallying call for more resources’ (Norman Bradburn in private conversation). International statisticians, while being sensitive to the situation and concerns of their peers in national agencies, should fight for the transparency of comparative data and should not collude in their suppression when the data are uncomfortable. Transparency should, of course, extend beyond the data themselves to cover information about the methodology.

The harmonization of data collection is necessary but not sufficient to generate valid cross-national data. Full access to the individual components is also essential. For example within Europe access to the cross-national sources can be hampered by a lack of unified legislation on confidentiality and data protection. These problems are discussed by Jenkins (1999).

### 3.4. *International classification of data*

The collection of comparable data must be conceptually well anchored and is heavily dependent on the use of standardized classifications of key variables. A major part of an international statistician’s work is the development and maintenance of such classifications. Without such

activities ‘comparability is only skin deep’ (Church, 1996). Moreover the consultation that is necessary to develop classifications is expensive and time consuming and, even when standard classifications are employed, differences between countries can be an artefact of the data collection method or can reflect the administrative system of which they are a product and thus may not be ‘real’.

Hoggart (1978) discusses UNESCO’s work in standard setting and establishing international norms, and concludes that

‘the hardest of all the Organisation’s work is in inching towards norms on issues which cannot avoid bringing ideologies into play. Before that point is reached there is a great range of “normative” work to be done of an extremely valuable kind, work scarcely known except in the professional circles to which particular Declarations, Recommendations or Conventions apply.’

Despite great scepticism about the value of such agreements—‘it is the States themselves, whose delegations agree to the creation of such instruments, who sign them, and then subsequently violate them’—Hoggart none-the-less expresses his belief in the incremental approach to ‘collective legitimisation’ (a term used by Padelford and Goodrich (1965)).

According to Malaguerra (2000):

‘Classification activities have been of prime importance. . . not because of some imagined obsession amongst statisticians with order but because of an indispensable need for coherence in the statistical description of economic and social realities. . . It is thanks to the universality of this language that information from Sweden or Portugal, Australia or Mexico, can express the same economic and social phenomena in a comparable way. . . To be effective, a statistical language must be developed systematically so that different kinds of norms are compatible and relations can be established between different information.’

Holt (1998) argues that

‘it is rare for the concepts that we strive to measure to be driven by a well defined theoretical construct. When conceptual clarity is lacking, statistical integrity can nevertheless be enhanced by adherence to international standards. . . The very fact that such standards are agreed internationally is both a guide and a support for national statisticians producing statistics whose interpretation may be politically sensitive.’

Although both Malaguerra and Holt are right with respect to the importance of developing strong international standards and classifications, there is a mismatch between the expectations that are placed on international statisticians in this regard and the resources that many of them have at their disposal which often means that the standards are insufficiently researched and based on inadequate consultation.

## **4. Principles of international co-operation in statistics**

### *4.1. Improving the quality of international and national statistics*

#### *4.1.1. Defining quality*

Quality is defined in International Standards Organisation standard ISO 8402 as ‘the totality of features and characteristics of a product or service that bear on its ability to satisfy stated or implied needs’.

One role of statisticians, whether national or international, is to improve the quality of data collected. However, the term ‘quality’ as applied to official statistics is not easily defined, being comprised of many components including

- (a) validity,
- (b) reliability,

- (c) relevance to policy,
- (d) potential for disaggregation,
- (e) currency,
- (f) punctuality,
- (g) coherence across different sources,
- (h) clarity and transparency with respect to known limitations,
- (i) accessibility and affordability,
- (j) comparability through adherence to internationally agreed standards,
- (k) consistency over time and space and
- (l) efficiency in the use of resources.

The optimum combination of these components is dependent on the use to be made of the data. Data that are acceptable for one purpose might be inadequate for another and, since most data are used for many different purposes, the process of determining 'fitness for purpose' is extremely complex and requires wide consultation. Inevitably the trade-offs to balance the different components of quality will mean disappointing some users. National statisticians try to meet the needs of as many users as possible through flexible presentations of the data. However, international statisticians have more difficulty in doing so because they do not have direct control over the data sources and resultant quality, and because their users are dispersed, more diverse in their requirements and more difficult to consult.

#### 4.1.2. *Achieving quality*

International statisticians are constrained in what they can do about the quality of data that they receive and since the expectations of users are often unrealistically high these constraints must be honestly expressed. According to Seltzer (1994): 'The international support network is best seen as just that and not as an international strike force for statistical correctness'. So what options are available?

*4.1.2.1. Ensure that good practices are employed within the international agencies.* These practices should include openness about the collection, processing and analytic methods employed especially in relation to estimation and imputation procedures. (The importance of quality assurance in the work of the international agencies was recently brought into sharp focus by a report of the Friends of the Chair of the Statistical Commission on an Assessment of the Statistical Criticisms made of the Human Development Report to the 32nd Session of the United Nations Statistical Commission (United Nations Statistical Commission, 2001a). This addressed such issues as the importance of mentioning in accompanying text any uncertainties in forecasts or projections, the need for time series to be provided on a comparable basis, the importance of building in-house expertise and using advisory or review bodies, the value of closer co-operation with the suppliers of key data, the strengthening of quality control procedures and the inclusion of source information for all statements based on statistical evidence. The Human Development Report Office found the report to be 'constructive and forward-looking' (United Nations Statistical Commission, 2001b). They state that they

'are committed to achieving high standards of rigour and professionalism and agree with the Friends of the Chair that considerations of popularity, effect and trust, impose a special burden on the Human Development Report Office to adhere to the highest standards of good statistical practice'.

This is being achieved through the establishment of a statistical advisory panel, the appointment of a senior advisor on statistics and a review of the use and presentation of statistics in the report.)

4.1.2.2. *Develop a framework for the delivery of information on the quality of data.* There is legitimate concern about the spurious accuracy of data which has come to be known as the ‘professional culture of precision’. As Thomas Mayer relates, we

‘act like the person who, when asked about the age of the Amazon river, replied that by now it is one million and three years old, because three years ago he was told that it was a million years old’

(Mayer, 1993). 50 years ago Arynness Joy Wickens, in her presidential address to the American Statistical Association, urged statisticians to provide the public with

‘a clear description of the general nature and limitations of statistics, with a simple measure of their accuracy if it can be measured and a warning if it cannot’

(Wickens, 1953).

The initiatives of the Statistics Department of the International Monetary Fund to develop a framework for assessing the quality of data are receiving much attention. The work is designed to complement the quality dimension of the Fund’s special data dissemination standard and the general data dissemination system

‘to focus more closely on the quality of data provided by countries to the IMF that underpin the institution’s surveillance of their economic policies, and to assess even-handedly the quality of the information provided as background for the IMF’s Reports on the Observance of Standards and Codes’

(Carson, 2000).

4.1.2.3. *Adopt the principle of ‘no surprises’.* National statisticians should be made aware if data have been altered in any way in advance of international publication, thereby giving them (where feasible) the opportunity to comment on the changes. (There are those who argue that under no circumstances should international statisticians publish any data which have not been approved by the appropriate authorities within countries. This view is held for two reasons: one that ‘filling in data gaps’ discourages countries from investing in statistical systems which provide the complete set of data; the other that this right of veto is a key element of ‘data ownership’. However, there is an inherent conflict between this right and the need to provide better estimates in cases where the national data are known to be wrong especially if it is suspected that they have been politically manipulated.)

4.1.2.4. *Share data and information, including metadata and methodologies, across international agencies.* In current jargon, this might be described as ‘joined-up international government’. It reduces the burden on countries of responding to requests for data and subsequent clarifications and enables the creation of harmonized cross-national data sets minimizing problems caused by contradictory data sources. (Though good progress has been made under the auspices of the United Nations Advisory and Co-ordination Committee on Statistical Activities to reduce the duplication of requests for data, it has not been entirely eliminated. One of the obstacles to the co-ordination is the decentralization of statistical activities within many international agencies so that surveys and other statistical activities are often carried out by staff who do not work in the statistical unit. Sharing metadata across agencies and collaborating in data processing are not yet a universally accepted practice and the mantra ‘collaboration on input, competition on output’ has not proved helpful.)

4.1.2.5. *Strive nationally and internationally to improve public confidence in the integrity and independence of data.* ‘Public trust is the crucial test for the quality and integrity in official

statistics' (Garonna, 2000). The influential report of the Royal Statistical Society (Moore, 1991) made a powerful case for strengthening public confidence:

'If statistical information is not seen to come from an authoritative, independent source, it loses its value as a currency of public debate and confidence in the debate itself will be eroded'.

*4.1.2.6. Consult countries about data collection.* It is important that the data requested from countries are consistent with, and anticipate changes in, their national priorities as well as take account of their capabilities to meet the requests. (However worthy this principle, it is in reality expensive and time consuming especially for truly international agencies to develop effective means of consultation and inevitably a degree of tokenism is rife. Statisticians in regional agencies dealing with more homogeneous groupings of countries are better able to take account of the views of their national counterparts.)

*4.1.2.7. Be temperate in what data are requested.* There is a danger that the sheer number of data collection exercises undertaken by international agencies could overwhelm some countries' capabilities to respond. Therefore each new initiative must be subject to careful scrutiny and there must be periodic reviews of existing activities. (However, this can be difficult for the international statistician who wishes to be responsive to the wide range of reasonable demands for cross-national data.)

*4.1.2.8. Identify 'key statistics'.* A possible means of addressing the problems resulting from the wide variation between countries' statistical capacities is to prioritize international demands so that those with limited resources may concentrate on key data collections.

*4.1.2.9. Embed data requests within programmes of relevant statistical capacity building.* Countries' abilities to respond to international requests for data should be assessed and help provided through programmes of capacity building. These should include the identification of national centres of excellence, so that statisticians may share their experiences and good practices. This exchange of information is needed especially in relation to the capture and communication of metadata (information about quality) and can be facilitated through handbooks focusing on quality issues — an example of which is Statistics Canada (1992).

*4.1.2.10. Minimize revisions to international surveys, classifications and methodologies.* This inevitably conflicts with the need to obtain data that are relevant to current needs, and achieving a balance between revisions and continuity is made difficult by countries' different stages of statistical development. For example the UNESCO Institute for Statistics is under pressure from statisticians in some developed countries to revise the 1997 international standard classification of education (United Nations Educational Scientific and Cultural Organisation, 1997) which many countries are still in the process of implementing.

*4.1.2.11. Engage in partnerships with both users and producers of data within countries.* The objectives are to develop a greater understanding of the significance of continuous improvement in statistical work, to examine ways in which quality might be assured especially through the organization of national statistical systems and to forge national commitments to provide quality data. In addition national statisticians should be assisted in improving their user focus and communication skills.

#### 4.1.3. Responsibility for quality

Notwithstanding the importance of these principles international and national statisticians must be sensitive to each others' positions. Differences in perspectives are illustrated by a discussion at the 1998 European Conference of Director-Generals of Statistics between an international and a national statistician on the quality of the European statistical system (ESS). Yves Franchet, the Director-General of Eurostat, outlined the quality initiative launched by Eurostat in 1996 to improve performance across all aspects of Eurostat's activity. He went on to claim that the longer-term goal was to secure the benefits of a quality approach through its extension to the whole of the ESS, though he acknowledged the following 'special features of the European Statistical System which can affect the applicability of management models or solutions':

- (a) the lack of a unified command structure within the ESS;
- (b) the frequent absence of pricing, charging or commercial markets which affects relationships with the main suppliers and users of data;
- (c) the failure to incorporate concepts of the quality of data into many areas of ESS output;
- (d) the absence of external independent tests to judge the quality of data products;
- (e) the complexity of the roles played by the different data suppliers, data users, competitors etc.

Franchet (1999) concluded that 'the challenge may be large and daunting, but conversion of the ESS into a high performance quality organisation will make the effort worthwhile'.

In the discussion Johan Allen of the German Statistical Office acknowledged that (Allen, 1999)

'the quality of statistical results is crucial to the credibility of European statistics and hence to their image as a supplier of the information on which EU policy decisions of far reaching importance will be based',

but argued that

'the subsidiarity principle is one of the corner-stones of our European Statistical System and gives the NSIs a central role'.

His tenet was that joint efforts to achieve high quality statistical results must not turn into *de facto* supervision of the national statistical institutes by Eurostat. He asserted that

'because of the complexity and the independence of the partners involved, the transfer of management concepts to the whole of European statistics can succeed only in certain selected aspects and if responsibility rests with the Member States ("bottom up")... The quality reports suggested by Eurostat are a means to an end and must not become an end in themselves.'

Essential to the process of improving the quality of international data is the professional expertise of the staff who are involved in the international agencies. Clare Short in a speech presented in February 2001 to the Rockefeller Foundation argued that (Short, 2001)

'we must ensure that we recruit the best leaders... the UN should introduce procedures to ensure open and competitive processes for the selection of its top management... the brightest and the best, not just the politically connected... to meet the challenges of the new century'.

Many agencies have neglected their own staff training and development, and have placed too little emphasis on the employment of qualified and motivated staff. To date numerical aptitude has been assumed to be the sole qualification needed within statistical departments. It is critical that international agencies accept the need for a cadre of professional statisticians and that statistical expertise is given due recognition. According to Garonna (2000):

‘In the professional profile of a public statistician rigorous principles and sound management skills should be balanced with technical expertise and a solid research background in probability, applied social science, quantitative methods etc.’.

## 4.2. *Developing the statistical skills base in countries*

### 4.2.1. *The importance of capacity building*

‘The process of development is not primarily one of expanding the supply of goods and services, but of enhancing the capabilities of people’ (Sen, 1984). Capabilities are, Sen argues, directly valuable in a way that possession of primary goods cannot be since they are evidently a means to more human ends.

In November 1999 at the launch of ‘Partnerships in statistics for development for the 21st century’ initiative (PARIS21) (described in more detail later), Short (1999) celebrated the ‘unprecedented level of agreement’ about the targets for development, but expressed her

‘worry that, if we do not improve our statistical capacity in developing countries, this great opportunity will be lost. Five years from now we could see the international community locked into a collaborative, output driven system that measures progress against our 21 agreed indicators year on year, country by country. Or, if we lack the statistics we need, the whole credibility of the 2015 strategy will crumble. We can then go back to all the old rhetoric and mutual blame of development failure and many of the poorest countries could become permanently marginalised from the massive wealth production that globalisation is bringing.’

The aim of statistical capacity building should be to help countries to become self-reliant, both financially and institutionally, so that they acquire the expertise to determine their own data needs and priorities, to collect these data, to interpret and use them effectively, to undertake research, problem solving and problem formulation, and to sustain these capacities.

Capacity building should not be confined to the staff of the national statistical institutes but should also take account of the needs and circumstances of statisticians in line ministries or local government who often play a critical part in data collection yet can be more vulnerable to political interference in their work and often do not see themselves as part of a professional community. Although there is an apparent acknowledgement of this, in practice almost all statistical capacity building focuses on the staff of national statistical institutes.

The development of a professional identity for statisticians can be a very valuable aspect of technical assistance. Consideration should also be given to ways in which researchers and policy analysts might be helped to access, utilize and value their own country’s data. Much more attention should be given to renewing and sustaining strategic centres of potential excellence in the developing world, which have been depleted by over 20 years of the south-to-north brain drain.

PARIS21—an initiative of the World Bank, the International Monetary Fund, OECD and the United Nations—was launched in Paris at the end of 1999. It aims to build statistical capacity as the foundation for effective development policies by helping to develop well-managed statistical systems that are appropriately resourced. In the longer term it hopes to promote a culture of evidence-based policy making and monitoring in all, but especially poor, countries to improve transparency, accountability and the quality of governance. These laudable aims now deserve to be made concrete by means of a positive action plan backed by appropriate funding.

Toczynski (1998) writes that

‘there is no exaggeration in stating that Polish official statistics owe their transformation and successes to a large extent to the co-operation we had with foreign statistical services... The assistance is mainly of a methodological nature, involving training statisticians, providing programmes, materials and handbooks, conducting training courses etc.’

#### 4.2.2. *Models of capacity building*

In September 1997 a workshop held in the Netherlands brought together donors and recipients of technical co-operation in statistics to discuss which models of assistance are most helpful. The outcome was a very useful proposal for ‘guiding principles for good practices in technical co-operation in statistics’ (by Tony Williams and Ronald Luttikhuizen) which was subsequently discussed and adopted by the United Nations Statistical Commission. These guidelines (United Nations, 1998) address the fact that there are responsibilities on the part of the recipients—particularly in relation to their commitment to the assistance, the availability of motivated staff and their absorption capacity—as well as the donors, to ensure that full consultation takes place and that they have a clear grasp of the country’s needs and priorities in order to design appropriate assistance. Karlsson (1997) argues that capacity, like democracy, cannot be created from the outside and that ‘essentially it is formed by internal dynamics’.

There is no single valid model of technical assistance but different models work in different circumstances. Alongside the above guidelines, the following issues are also important for technical capacity building to achieve the goal of empowering statisticians in the developing world.

- (a) Technical assistance must be fully integrated with the infrastructural needs of the recipients to ensure sustainability—examples abound of training being dependent on equipment, software or other facilities which are not available to the recipients.
- (b) Methods and infrastructure must be appropriate—but this should not be confused with ‘inferior’. Although the assistance needs to be sensitive to the circumstances of the recipient, ‘cheap’ solutions can turn out to be more expensive in the long run (this is especially true of the use of ‘home-made’ software).
- (c) Consideration should be given to involving not only the providers but also the users of statistics in the assistance programme. In many developing countries the relationship between users and producers of data is weak and a strengthening of this link could help to improve the quality and relevance of the data as well as underlining the case for the continued support of data collection. Aid must help to ensure that the policy dialogue is informed by statistical evidence.
- (d) Technical assistance can be more effective long term if it concentrates on the system which produces the data rather than on particular data sources, though there is also a need for focused help in specialized areas.
- (e) Although the main priority should be given to meeting the national needs for data, it can be very helpful if those providing the assistance can help countries to meet the international demands for data where this can be achieved without distorting the national agendas.
- (f) It is important to ensure the quality, skills and motivation of the individuals providing the assistance since the transfer of knowledge may not be their highest priority. Among the complaints from recipients are that consultants often concentrate on carrying out the statistical tasks themselves rather than training their counterparts, that they may have little aptitude for training, that they block the local counterparts’ career progress, that they are not insufficiently sensitive to local circumstances and think that ‘one size fits all’.
- (g) Concerns are sometimes expressed about the motives and quality of consultants. According to Hancock (1992) a disproportionately large number of elderly people act as consultants thereby either supplementing their pensions or increasing them by taking hardship posts together with the associated overseas allowances which raise their incomes in their final years before retirement. Some people who cannot find established positions in

their own countries can nevertheless secure lucrative contracts overseas with international agencies.

- (h) Too much capacity building takes place without goals being agreed in advance and with 'individual experts being dispatched with only vague terms of reference' (USAID, 1980). This results in the lack of a framework and systems for the evaluation of technical assistance from both the donor and the recipient perspective. The literature is peppered with case-studies but it is not clear that mechanisms are in place to learn from past experience, especially that of other agencies.
- (i) Thinking laterally, the provision of statistical assistance does not have to be via a highly paid consultant visiting the developing country. Other ways of delivering assistance include short-term training courses and workshops held in individual countries or regionally, secondments of key staff from recipient countries, fellowship schemes, paired assistance or professional mentoring ('each one, teach one' as an African colleague put it), manuals or other training materials including information technology systems and the development of supportive networks.

#### 4.2.3. *Difficulties in capacity building*

A recurring theme of the country participants at the workshop in the Netherlands was the high cost of international consultants. The anguish caused by the fact that a consultant might be paid 20 times more than the staff being assisted can be very destabilizing. This concern is evident in the development literature. Hirschman called the high cost of experts 'troublesome' and argued that trained nationals living abroad might be willing to assist their own countries (Hirschman, 1967). Jaycox writes of the deleterious effect on professionalism in developing countries of the tendency to use expatriate technical assistance to solve all kinds of problems. He called for the creation of a 'demand for professionalism in Africa' (Jaycox, 1993).

Within the statistical community the effective use of regional mechanisms for capacity building is being explored. Other statisticians in the same region may be a more appropriate source of help—their costs would not be as high, they probably have a greater understanding of the needs and environment of those they are helping and collaborative relationships can be sustained long term. Similarly basing expert staff in a region can allow them to forge effective and enduring relationships with their local counterparts. (The UNESCO Institute for Statistics has two staff based in Harare and one in Dakar working respectively with Anglophone and Francophone countries in Africa.) However, particular care must be taken to avoid long-term dependence and to ensure that expatriate statisticians are withdrawn at the appropriate time.

Tung *et al.* (1999) argue that past development efforts on education statistics have

'led to heavy reliance, sometimes near total dependency, on foreign experts and imported turnkey solutions, which has often resulted in ignoring the importance of directly involving national producers and consumers of statistical services. In this mode, development co-operation has often been narrowly technical and therefore self-limiting.'

They describe problems of redundancy, incompatibility and even a mutually corrupting dependence between the providers and receivers of statistical assistance. They speak powerfully of the 'graveyard of collapsed, abandoned and outdated systems'.

A more radical approach would be to provide the statisticians in developing countries with untied funds and to allow them to choose how to spend the money. As explained in Lucas (1993) this would give the statistician in the developing world more power since, as paymaster, there would be no need to worry about trespassing on the goodwill of the 'professional':

'The fee confers the opportunity to avail myself of professional services and imposes on the

professional a contractual obligation to do his best. Fees, although they seem to weaken the claim that professional services are rendered disinterestedly and not subject to distortion by self-interested considerations, do serve to ensure that those services are not rendered as a favour, but subject to stringent standards of professional obligation with some regard to the rights of the individual concerned.'

### 4.3. *Sharing data*

#### 4.3.1. *The importance of sharing data*

There is widespread recognition of the importance of exploiting, in social research and analysis, the rich data resources of official agencies in particular but also academic and commercial organizations. However, the facilities for accessing data in the developing world are very poor. Under the headings 'Massive research, most of it little known, much of it little used' and 'Secrecy precludes learning from experience' Samoff (1999) writes that such restricted access significantly reduces the quality and utility of studies, making them irrelevant to national policy, planning and programmatic decisions. He argues that errors of interpretation and inappropriate methodologies may escape notice through insufficient critical review and that the effective use of the results will be more difficult to achieve if access to the studies is not encouraged.

International statisticians must understand the importance of giving access to data in electronic form (alongside conventional published material) and, where legal constraints permit it and operational procedures can be devised, to individual level data as well as to the aggregate data. They must also help statisticians in the developing world, both users and producers, to reap the benefits of sharing data. These benefits can be seen in terms not only of efficiency through the direct exploitation of the data but also of altruism, with existing data sets being used for educational and training purposes as well as knowledge transfer. The creation of a community of skilled users, who will help to improve the quality, credibility and visibility of the data, can directly benefit the data provider. It will reduce the response burden, which, as mentioned elsewhere in this paper, is of particular concern to developing countries.

#### 4.3.2. *Fostering the sharing of data*

We need to create a culture in our institutions and in our societies more generally in which data sharing is the norm.

A prerequisite for this is a climate of openness in which the criticism of data collection or analysis is factual and temperate, with data being used responsibly. Even within the academic social science sector in the developed world there are pockets where the culture of data sharing is not accepted perhaps because primary researchers are concerned that they might not receive formal credit for data sharing and that other academics might generate earlier or better publications from their secondary research. The institutional reward system for research needs to be examined to identify and remove such barriers to sharing. It is unfortunate that developing countries are being encouraged to move from a collegial higher education system to a system that is more competitive without a full understanding of some of the disbenefits, which could be especially acute in countries with limited resources.

To counteract the effects of competitiveness, the funders of social and economic research and professional organizations in the developed countries have developed data policies. For example some are requiring grant recipients and those who publish data to place them and accompanying documentation in the public domain. This permits a more careful peer scrutiny of research as well as encouraging secondary use of data. In the future the wider sharing of data may also facilitate meta-analysis, the social and economic fields having been slow to advance in overview studies

such as those taking place in clinical fields. But the main reasons for developing data policies must be to ensure that *deliberate replication* is encouraged but *ignorant duplication* does not happen, and to exploit investments in data. The impetus for these moves is partly due to the pressure on research budgets which means that more effective use must be made of existing data.

It is crucial to communicate and explain the rights of data providers and to ensure that they receive proper recognition but also to argue, within various political and institutional settings, for low cost or free access for the use of data in scientific research and teaching because it is in the public interest for data to be used in this way.

The case that data resources for social researchers are analogous to large expensive pieces of equipment for physical scientists was accepted by the European Union for the fifth framework programme of funding. Despite this growing recognition of the value of data there are many areas of the world in which data are simply not available for research purposes, because of a poor infrastructure and limited expertise in data handling but also because of the weak links between Government officials and academics. This must be of concern since the effect is a widening gap between the developed and the poorer countries in analytic skills which exacerbates the disparities.

The development of endogenous capabilities is an effective deterrent to the brain drain. The UNESCO report on the World Summit for Social Development states that

‘Alongside the action to enhance national and regional capabilities for higher education and scientific and technological training, it is also essential to promote both basic and applied scientific research and the dissemination of its results’

(United Nations Educational, Scientific and Cultural Organisation, 1996). Developing analytic skills within countries which are complementary to those within the international agencies is essential to partnership (discussed later) and access to information is a necessary prerequisite. The capacity of countries to attract and retain high level professionals is critical. As an international community of statisticians we must examine and try to reduce the barriers which prevent countries from acquiring and maintaining a cadre of statistical experts.

#### 4.3.3. *Facilitating access to data*

Support must be given to enhance access to information and communication technologies and to ensure that wider use is made, by researchers in the countries concerned, of the data which have been generated with the very precious resources of the country. The lack of preservation facilities and expertise means that a small trickle of valuable data is often lost, and the lack of accepted systems for the involvement of academics means that even the few existing data are not exploited. The lessons that electronic data are not a finite exhaustible resource and that their value is increased, not diminished, by their use have not yet been learnt in much of the developing world.

The access to data must include access to the raw material from the numerous externally funded development projects. According to Sack (1999): ‘Knowledge and information are, in many respects, the life blood of development work’. Too much of the knowledge regarding development projects has remained with the international agencies with little access to it by the countries themselves. As a consequence of the lack of involvement of national experts, the context specificity of development is often ignored and data are misinterpreted.

Efforts by existing data archives to transfer their ‘know-how’ and technology to poorer nations are to be applauded but need better co-ordination and financing. Hooimeijer (2000) argues that

‘The digital revolution has reshaped social reality through the use of new information technologies

which in turn foster cultural and economic change. One of the basic transformations is the move towards flexible forms of self-organisation and multi-level governance.'

He believes that this poses a new challenge to social scientists to widen and deepen the knowledge base of these entities, and that to do so

'we need to *upscale the infrastructure* of the social sciences to the *international* level. ... Social scientists are being called on to co-operate in an international setting. The need for more universally valid concepts requires replicating research in various national contexts, as contexts do matter.'

#### 4.3.4. *Barriers to sharing resources*

Hooimeijer addresses some of the cultural, legal, organizational and financial barriers which stand in the way of sharing resources. He points out that the interplay between the different barriers differs widely between countries but he is not in favour of international solutions, arguing instead that individual countries should determine their own practice. However, he is willing to be prescriptive in some areas—for example in arguing that, to reduce the financial barriers to data access, the 'expenses engendered by data collection should be regarded as a sunk cost'.

At the same conference but coming from the very different field of the Human Genome Organisation, Professor G. J. B. van Omen stresses the need to prevent a technological gap in the world and to ensure that 'we reap the profits of our insights on a balanced world wide scale' (van Omen, 2000). He feels that this is important in the light of fierce debate on the public *versus* private issues and commercial development, which impacts on less-privileged populations. He goes on to argue that the establishment of standards (with respect to the use of the data from the human genome project) which are both ethically and morally acceptable, must be approached with great caution and should involve many more parties than just western scientists, industrialists and policy makers.

#### 4.4. *Partnership in development*

The Development Assistance Committee of the OECD stresses that we are in a

'new era of shared human progress in the 21st Century. ... based upon an increasingly clear vision of partnership—of mutual interests and mutual responsibilities'

(Organisation for Economic Co-operation and Development, 1996). They argue that

'effective partnerships need to place a premium on knowledge of local circumstances and the freedom to act flexibly in a manner which is responsive to local conditions'.

After citing many examples of different types of partnership (in politics, business, the family, social spheres, sports and education), Richard Sack in a chapter entitled 'Making partnership work' argues that 'the most powerful motive for the partnership is self-interest' (Sack, 1999a, b). Although Sack is right to recognize the importance of each partner's gaining from the relationship, surely the preferred partnerships are those with shared goals, based on trust and mutual respect and where the aims are long term and humanitarian: 'A partnership is a relationship characterised by roles, responsibilities, rights, obligations, and accountabilities'. There must be clarity in the understanding of these concepts:

'They may be based on law, shared ethical standards, rules and/or conventions derived from long experiences of working together for common objectives'.

Respect and trust must be established between the partners. The nature and success of the partnership depends in part on how individuals work together, and how the constraints of working within other institutional settings are communicated to each other. Although institutions change

slowly the fast turnover of individuals within institutions and poor institutional memory can put relationships under strain. (Of relevance here is the discussion in point 3.3 of the International Statistical Institute's declaration on professional ethics (International Statistical Institute, 1986) about communicating ethical principles to colleagues.)

President Diouf of Senegal (in a speech delivered at the Association for the Development of Education at the Africa biennial meeting in Dakar, 1997) points out that it is necessary to ensure

'mutual recognition of each partner's institutional and self-interests, expectations, problems, sovereignty, and cultures. It is maintained through common experience, permanent communication, and proximity, which facilitate mutual understanding . . . In order to progress from the aid relationship to partnership, the first step lies in redefining the status and roles of those involved in a way that truly recognises and accepts the equal dignity and responsibility of both partners, above and beyond differences in their cultures and levels of development. The type of partnership we should promote cannot be founded on a vertical relationship based on authority, constraint, the imposition of a balance of power, substituted sovereignty and the transposition of models or on the other side of the same coin, paternalism and condescension. Instead it should be founded on conditions such as authentic dialogue in a horizontal relationship in which the actors recognise each other as equals and participate in an exchange considered mutually useful and enriching by both parties because of their very differences.'

International statisticians need to develop a capacity for listening and an understanding of the cultures and social processes which determine the movements of the real world. It should not be assumed that there is a common understanding of development goals. An important purpose of partnership must be to achieve more collectively than can be achieved separately.

Codes of practice can be valuable in guiding the work of international statisticians in development partnerships and also serve as public statements about the importance of a particular issue. For example the following policy framework developed by the Canadian International Development Agency (1984) on engendering development makes explicit the need to take gender issues into account:

- (a) to support the objectives and initiatives of women in developing countries;
- (b) to achieve a greater understanding of the potential roles for women in developing countries;
- (c) to increase the participation of women in design, implementation and evaluation of development projects;
- (d) to include women in Canadian International Development Agency programmes and projects in proportion to their existing participation rates in the target groups;
- (e) to work in partnership with recipient Governments to close economic gaps between women and men in their countries;
- (f) to emphasize strategies to assist women in generating income, including a reduction of demands on their time and energy from household work and food production;
- (g) to support special women's programmes linked to overall development where special efforts are required.

Interestingly James Wolfensohn, President of the World Bank, in a recent letter to Kofi Annan, United Nations Secretary-General, proposes that 'we must adhere to what might be called common guiding principles for development partnership'. Indeed he goes further by saying that (Wolfensohn, 2001)

'For economic growth to lead to sustainable development, we should strive to make its benefits equitable. Equal rights for all, regardless of race, sex, language or religion, should be guaranteed.'

## 5. Dilemmas and principles

### 5.1. *National sovereignty versus national accountability*

#### 5.1.1. *Monitoring aid*

A theme running through this paper has been the tension between a respect for national sovereignty and the importance of ensuring access to national data of integrity. In particular data are a vital part of the system of accountability in relation to the use of overseas development aid. Considerations of a political nature (establishing or maintaining alliances, sustaining political blocs or spheres of influence and ensuring votes in international organizations) are yielding to development issues such as good governance, reducing inequalities in society, social development and promoting the rights of the citizen. Concerns that aid can bolster inefficient, corrupt, elitist Governments that suppress the human rights of their own people have led to a focus on aid as a lever to effect improvements, especially in human rights.

According to Elkan (1995): 'Conditionality has been used not only to improve economic efficiency and performance, but also as a way to promote civil liberties'. These new objectives bring responsibilities for the international statistician because data of integrity are required so that donors can judge whether the aid is being used effectively for these purposes. This can result in a conflict between national sovereignty and external auditing exacerbated by the fact that it may be in countries' short-term interests to manipulate the data to win more aid. It is vital that data on the use of aid are trusted in the richer nations to counter 'aid fatigue'. The goal should be transparency in relationships.

As Rodwin and Schon (1994) discuss, yesterday's certainties about 'how to develop' are put into question as they do not seem to have worked. The theoretical and conceptual void that they identify is badly in need of statistical expertise to ensure that relevant data are collected and appropriately analysed to enable the identification of successful strategies in the future. They argue for a culture of modesty in which we work together to try to improve the quality of life for the poorest peoples across the world. Cassen and Associates (1994) question whether a significant proportion of aid has ever been subject to evaluation, and they discuss the statistical difficulties that are inherent in disentangling the effects of aid activities from the 'milieu of policies and circumstances in which they are conducted'. They also tackle difficult conceptual and statistical issues such as defining success, assessing the absorptive capacity of countries, examining the disincentives of aid and measuring the fungibility and sustainability of aid.

#### 5.1.2. *Effect of legislation*

An increase in cross-national legislation has led to international disputes about which organizations have the right to determine appropriate methodologies for the collection of data and the policy for their publication. The nature of the relationship between national and international (or supranational) agencies is changing in this new context. Christopherson (1998) questions whether, in the light of the need to judge compliance with Maastricht criteria, publication and evaluation of the relevant data should be the responsibility of national statistical offices, Ministers of Finance or Eurostat. (According to the Maastricht Treaty of 1992, 'inflation shall be measured by means of the consumer price index on a comparable basis, taking into account differences in national definitions'. The treaty stipulates that 'the criterion on price stability shall mean that a Member State has a price performance that is sustainable and an average rate of inflation, observed over a period of one year before the examination, that does not exceed by more than one and a half percentage points that of, at most, three performing Member States in terms of price stability'.) Christopherson asks

‘should national statistical offices report directly to Eurostat or to ministers of finance? Should Eurostat be entitled to publish all the figures and the aggregated results before DGII in the European Commission and before the commissioner in charge?... There are no clear answers to these questions, but a lack of a clear rule of the game would be disastrous.’

Holt addresses the same issue, highlighting the use of a panel of adjudicators who are statistical experts in member states’ statistical offices and central banks who make their judgments public:

‘The arrangement seeks to ensure that statistical judgements take precedence over the political outcome’.

He points out that the effect of the Commission’s rejecting the panel’s adjudication is unknown.

### 5.1.3. *Effect of globalization*

Globalization is changing the way that we live and work with each other and this is resulting in increased interdependence. Although globalization is a universal phenomenon its consequences are not the same across the world. When viewed as a carrier of values, cultures and ways of life, it may be viewed as another form of colonialization and can result in the loss of national traditions and uniqueness.

The effects of globalization outlined in Section 2.2 (such as pollution, the activities of multinational corporations, increased mobility and the exploitation of ICTs for distance learning) call into question the continued relevance of national boundaries for many of the processes studied by the international statistician. Nor is it appropriate to address fundamental issues such as human rights at a purely national level.

According to Keuning (2000):

‘Probably the best answer to the challenge globalisation puts to statistical offices is to do what companies do: they form all kinds of world-wide alliances and re-distribute tasks among the constituent partners in order to save costs and to increase productivity, we should follow suit and think much more seriously about an international network of NSIs, National Central Banks and international statistical offices, which collect the data where it is most appropriate, share the information with each other (with a guarantee as to their confidentiality!) and perhaps specialise in accordance with local circumstances and expertise.’

Is this right? Is the pooling of nationally gathered data the correct strategy or is a radical reappraisal of the international statistical system required to obtain a more comprehensive global picture? Do we overemphasize the national?

## 5.2. *Fundamental principles of official statistics*

### 5.2.1. *Background*

Official statistics are essential for obtaining a transparent picture of societies and how they are developing across the world. They also serve as a basis for the efficient and appropriate implementation of political decisions and for the effects of these decisions to be monitored. In recognition of the importance of establishing national statistical institutes which are capable of providing data of integrity, in 1992, the ‘Fundamental principles of official statistics’ were adopted by the Conference of European Statisticians (United Nations, 1992). These principles were devised in part to assist in the creation of national statistical institutes in the new environment of post-communist eastern and central Europe underpinning the moves to more democratic systems.

The principles now need to be viewed within the context in which ‘the promotion of democracy is, today, universally recognised as an absolute value’ (Sobhan, 2001). Sobhan, from the

Bangladesh Centre for Policy Dialogue, speaks passionately about the emerging polarization between a narrow elite and a deprived majority:

‘Unfortunately the reality of democracy in Bangladesh is that it has increasingly become a rich man’s game. I emphasise the term rich “man”, not rich “woman”.’

He argues that, unless we open up a debate about how to build more just organizations, the development agenda will remain a therapeutic process rather than a serious commitment to eradicate poverty.

Nevertheless the fundamental principles have served (Holt, 1998) to

‘foster a common understanding about the importance of statistical integrity, raised consciousness, and in doing so strengthened the international bonds. In addition to the countries in transition, others have also been prompted to look afresh at their own frameworks of statistics to see how they stand up to scrutiny against the principles.’

These principles originated in Europe but have also proved useful in other parts of the world as demonstrated by their adoption by the United Nations Statistical Commission in 1994. As Seltzer (1994) explains

‘The Fundamental Principles, United Nations handbooks and similar materials were designed to aid statisticians, politicians, and the public in each country to build a useful, impartial and reliable statistical system. Although individual national statisticians might themselves invoke the Fundamental Principles or a United Nations handbook to protect the integrity of the statistical system when it is subject to domestic threats, the same statisticians may well react defensively if they are seen as the subject of some sort of international investigation.’

However Toczynski (1998) argues that

‘the fundamental principles are clear enough to everybody, but statisticians would be in a better position if they had stronger and clearer international support’.

He argues that

‘the essence of the transformation [of official statistics in Poland] consists in shaping the profession of statistician, professional ethics and the integration of this professional group. The question is how to shift from the attitude “to have a job in statistics” to “to be a statistician”.’

The international agencies, together with national and international statistical societies such as the RSS and the International Statistical Institute, play an important role in promoting adherence to the fundamental principles and in providing a supportive forum where national statisticians can share their concerns and solutions. In particular it is critical to create an environment in which statisticians can debate the tensions between some of the principles—for example Carson (1998) draws attention to the criterion of ‘practical utility’ embedded in the first principle which could be viewed as conflicting with the ‘international comparability’ of the ninth principle. Since, to date, the principles tend to be familiar only to statisticians in national statistical institutes, there is a need to extend their influence to statisticians working in line ministries who are often more exposed to political pressure in relation to their work. This is consistent with the eighth principle which argues in favour of co-ordination between statistical agencies to achieve consistency and efficiency.

The principles have been written to be broadly applicable to national statistical institutes and it is therefore perhaps inevitable that they are not very demanding. As Christopherson (1998) states ‘the UN principles are fine but they are not sufficient’. He argues for a *modus operandi* to protect the integrity, independence and reliability of statistical services in an environment in which there is a ‘necessary and unavoidable political aspect to the work’. He discusses ways in which the independence of the management of the statistical services should be enshrined in statistical

legislation, and safeguarded as for the judicial system, through direct accountability of the head to Parliament, as well as ensuring financial independence. He also argues for the establishment of a scientific board with the freedom to publish its views. In these comments he echoes the proposals put forward in the RSS 1990 report 'Official statistics: counting with confidence' (Moore, 1991).

Interestingly, Christopherson also discusses the rights of national statistical offices to work with international and other national statistical organizations:

'It should be the right of every national statistical office to apply international statistical standards based on the opinion of its scientific council without interference of the government. At the same time it should be the obligation of the office to apply international standards if they have been approved by the organisations to which the country belongs.'

### 5.2.2. *Relevance of the principles to international statistics*

To what extent are the principles relevant to the work of international statistical offices? This interesting and important question is addressed in Brünger and Longva (1998) though they overstate the independence of national statistical offices. Their assertion that national production and dissemination

'takes place under the umbrella of professional independence for official statisticians, guaranteeing that all choices during this process are based strictly on scientific considerations and [are] non-partisan'

reflects an aim rather than the reality in many countries and disregards interference which occurs in the statistical work of many national agencies.

Brünger and Longva make the case that international statistics 'have assumed an importance which equals, if not surpasses in certain areas, that of national products'. They point out that in some areas, such as purchasing power parities, it is not possible to calculate national figures without integrating data from other countries. Having charted the growing importance of international data, they rue the fact that within the international agencies 'statistics is still treated as an instrument for the other tasks of the organisation' and not 'as a multi-purpose and multi-user activity in its own right as in the case for national statistics in a modern society'. They highlight deficiencies in important elements such as impartial access, professional independence with regard to decisions on methods and concepts, full documentation of sources, methods and the rules governing decision-making. They argue that the mismatch between the national level and the 'unchanged' frameworks of international agencies has escaped attention.

There is certainly justification for their criticism of the international agencies though they ignore developments which have taken place. An example of an attempt to improve the integrity and policy relevance of statistics within an international agency has occurred at UNESCO: the UNESCO Institute for Statistics has been established as a functionally autonomous institute with its work enshrined in statutes which spell out that the Institute exists to serve a broad range of users inside and outside UNESCO, the policy and programme of the Institute being overseen by an expert board comprising six elected members from member states and six appointed for their expertise by the Director-General, with the Institute's Director being appointed on the recommendation of an independent board following an open competition.

These changes were precipitated by a report on the work of the former Division of Statistics which was very critical of UNESCO's role in the collection and dissemination of education statistics (Guthrie and Hansen, 1995). That report speaks of 'ten years of retrenchment' and the 'limited resources [which] have sapped the capacity of the Division of Statistics to carry out its mission' and identifies the need to liberate the Division of Statistics from 'stultifying bureaucratic

practices'. It recognizes the importance of investment in human resources and argues for UNESCO to address ways of enhancing its attractiveness to professional statisticians. As Snorrason (1998) points out

'professional freedom may not be very meaningful if it is not backed up by sufficient budgetary appropriations or other sources of funds for exercising that freedom and carrying out its functions'.

The report on UNESCO discusses at length the principles and practices of a statistical agency, drawing heavily from the National Research Council report by Martin and Straf (1992) (recently updated (Martin *et al.*, 2001); an excellent guide to the principles underlying an effective statistical agency, covering relevance to policy issues, credibility among data users and trust among data providers).

Many of the criticisms of Brünger and Longva are valid, most notably the following:

- (a) more data are available in some international agencies than are published;
- (b) public access to data is often not simultaneous with the access for privileged users;
- (c) international agencies are not skilled at handling requests for data in ways which minimize the burden on countries;
- (d) the specification of, and access to, metadata leaves much to be desired;
- (e) the international statistical system is rather slow at reacting to policy needs;
- (f) there is a lack of a systematic attempt to find out what users want;
- (g) knowledge of the fundamental principles is not widespread;
- (h) rules governing the work are seldom made explicit.

In particular they note one of the most fundamental problems namely that the lack of institutional specificity for statistics within most international organizations results in a muddling of statistics with policy-oriented work. In addition to the points made by Brünger and Longva (1998), the lack of institutional specificity for statistics often leads to confusion about who has authority to collect statistical material so that, even where the statisticians are behaving responsibly, others in the agency may duplicate data collection, carry out poorly researched statistical enquiries or exacerbate problems of response burden. In the national context there is a clear distinction between the output of the statistician and the political interpretation. In the international domain these two forms of communication are often blurred, with speeches by heads of international organizations citing statistics which have not been quality assured.

Brünger and Longva (1998) give some practical steps to bring about improvements in the way that international statisticians discharge their responsibilities. They propose that statistical work should be clearly distinguished from other work, and the procedures codified. They argue that national statistical institutes should become more involved in the production and dissemination work of international organizations in a mutually beneficial way beyond the transmission of national data as inputs, suggesting that these national institutes could become involved as redissemulators of international data, thus taking greater responsibility for them. Although appreciating the authors' rationale, this surely applies only to the strongest national statistical offices.

Brünger and Longva fail to acknowledge that international statisticians do have a forum—the United Nations Advisory and Co-ordination Committee on Statistical Activities—where they can air common problems which arise in their work and share possible solutions. Over the last few years, the agenda of this committee has included the sharing of data across agencies, the circumstances in which data received from countries might be published, difficulties caused by the publication of different sets of international data on population, publications policies, the citation of data and quality assurance in the work of international agencies. This committee provides an

annual report to the United Nations Statistical Commission to facilitate communication with Directors of national statistical agencies.

### 5.3. *Ethics and codes of practice*

#### 5.3.1. *The need for ethical frameworks*

The fundamental principles focus on statistical systems and methods, whereas as international statisticians we need also to be sensitive to the ethical issues in connection with what we choose to measure. According to Sen (1989):

‘While the tendency to avoid facing foundational questions is quite common, it is more a reflection of escapism than a demonstration of uncanny wisdom. Ultimately policies have to be justified in terms of what is valuable and how various policies may respectively enhance these valuable things. There is no escape, therefore, from considering both the question of what is fundamentally valuable and the question of what instruments enhance these things best.’

International statisticians must confront *ethical issues* arising out of the concept of development. For example agreement is needed on what is a ‘just society’ and how to define ‘basic needs’. The statistician’s claim of neutrality is misleading—we can hold a personal view on what is best but still make an impartial professional evaluation. Applied ethics, whereby statisticians identify ethical issues, clarify assumptions and apply ethical principles, have an important role in development statistics.

We cannot assume that statistics will always be used for benign let alone beneficial purposes, as illustrated by the proposal in 1991 of Lawrence Summers, then the World Bank’s Chief Economist, which suggested that the World Bank should encourage more migration of pollution to the less-developed countries. He made this case on three grounds: the economic costs of the effect on mortality and morbidity are lower there, ‘countries in Africa are vastly underpolluted, their air quality is probably vastly, inefficiently high compared to Los Angeles or Mexico City’ and ‘the concern over an agent that causes prostate cancer is obviously going to be much higher in a country where people are going to get prostate cancer, than in a country where under-five mortality is 200 per thousand’. A fuller account of this in Vandana Shiva’s chapter in Hutton and Giddens (2001) makes chilling reading.

All of us, regardless of our chosen professions, have a duty as members of the human race to exploit our skills, expertise and opportunities in pursuit of justice and human rights. Many international statisticians are involved in monitoring violations of such rights. Is there not a responsibility beyond merely publishing the bald statistics? Perhaps equally applicable to statisticians is the statement in the recently issued British Medical Association handbook (British Medical Association, 2001) that doctors cannot merely document abuse but must challenge it. This issue was a dominant topic at the Montreux conference of the International Association for Official Statistics on ‘Statistics, development and human rights’ in September 2000 (<http://www.iaos2000.admin.ch>).

Fellegi and Brackstone (1999) argue that openness about the methods and operations is a prerequisite for building confidence in statistics. They further propose that a statistical agency which shows

‘a balanced and open approach to the measurement of its own performance can only serve to strengthen [its] reputation for objectivity and impartiality—even when some performance measures are not as positive as we would like’.

A broader but related issue is whether statisticians accept responsibility for acknowledging the limitations of quantitative information. As statisticians do we overemphasize the quantitative? Richer sources of material might be created if statisticians were to appreciate more readily that

quantitative material alone provides a partial picture and to work in partnership with social scientists to add qualitative detailed research to the quantitative frame. International statisticians should be generally more willing to enter into discussions about the strengths and limitations of their studies. One of the criticisms is that we oversimplify and are unwilling to tackle the complexities of the real (and messy) world. According to Chambers (1997):

‘Reductionism is reducing the complex and varied to the simple and standard. Its method is to focus on parts instead of wholes. Yet many professionals seem driven compulsively to simplify what is complex and to standardise what is diverse. Status, promotion, and power come less from direct contact with the confusing complexity of people, families, communities, livelihoods and farming systems, and more from isolation which permits safe and sophisticated analysis of statistics. It is the reductionist, controlled, simplified and quantified construction which becomes a reality for the isolated professional, not that other world out there. Deprivation and poverty come to be defined not by the varied and changing wants and needs of the poor but by the standardised and static wants and needs of the professionals.’

### 5.3.2. *The personal dimension*

The foregoing has been concerned largely with ethics at the institutional level, but there is, of course, a vitally important personal dimension to be considered when examining professional ethical responsibilities. According to the United Nations International Civil Service Advisory Board (1965):

‘Integrity, while perhaps not subject to exhaustive and precise definition, must be judged on the basis of the total behaviour of the person concerned. Such elementary personal or private qualities as honesty, truthfulness, fidelity, probity and freedom from corrupting influences, are clearly included. For the international official, however the UN Charter also required integrity as a *public* official, and especially as an *international* public official.’

The challenge for managers of statisticians within international organizations must be to retain a sense of mission among their staff—the belief that they can ‘make a difference’—while ensuring that they temper this with realism. Hoggart (1978) discusses the damage that can be caused to the morale of staff working in an international organization like UNESCO:

‘they are no longer starry-eyed, whatever the depth of idealism with which they entered the Organisation. No-one intelligent enough to do the work competently could remain naively optimistic.’

Jowell (1986) in his comprehensive overview of the value of codes of professional ethics for statisticians calls the idealism ‘statistical zeal’ (after Burgess (1947) and Brown (1952)) but warns against the ‘crusading view of research as an instrument of social change’ as this leads to many of the most dubious ethical decisions. This paper remains the most challenging of discussions on the topic of statistical ethics, and, although some parts will be of limited value to some statisticians, it includes much of relevance to every individual, irrespective of the environment in which he or she is employed. It should be compulsory reading for all statisticians embarking on international work, not least because it highlights the tensions, even inherent conflicts, between the different goals, it sensitizes statisticians to the issues, informs the debate, advocates the discussion of ethical dilemmas and encourages openness in relation to the decisions.

In a multicultural environment it is even more important to be explicit about one’s own motives and values. A transparency of interests should be a significant goal, combined with a healthy dose of respect for the values and ideas of one’s counterparts. This cannot be achieved quickly as mutual trust and understanding take time to build but they are important investments for future collaboration.

In a similar vein, Jowell makes an overwhelming case for *educational* codes of ethics ‘to ensure

that individual ethical decisions are informed by professional experience, not governed by professional authority'. He argues that the case against *regulatory* codes is overwhelming, especially because of the cultural and political differences between countries, but also because of 'major variations between practice and convention'. An international regulatory code would have to be so qualified for it to be widely acceptable that it would be undemanding and its utility destroyed. Jowell goes on to argue that the utility of an international *aspirational* code would be even more difficult to discern though it might induce a 'momentary inspirational glow'. Critics of the 'Fundamental principles of official statistics' might claim that this is exactly what has happened to the code. Certainly attempts to make it more prescriptive have been unsuccessful.

### 5.3.3. *The role of statistical societies*

In 1985 the International Statistical Institute adopted the 'Declaration of professional ethics' (International Statistical Institute (1986); <http://www.cbs.nl/isi/ethics.htm>) described in Jowell (1986). In April 1993 the RSS Council ratified a code of conduct 'to define the behaviour expected of RSS Fellows practising in everyday professional life' (Royal Statistical Society (1993); <http://www.rss.org.uk/about/conduct.html>). This is a very different document from that adopted by the International Statistical Institute, focusing in particular on the 'profession' of statistics with an emphasis on the 'good standing of Statistics and Statisticians' but with little attention paid to the positive contributions that statistics can make to society. Perhaps the time is ripe for a review of the efficacy of both the International Statistical Institute's declaration and the RSS code of conduct. It would be valuable to know in what circumstances they have been used and whether either of them has provided wise counsel. It would also be useful to know to what extent students of statistics are being exposed to discussions of the ethical principles which underpin statistical work, and whether the ethical codes are used in such teaching. Statisticians striving to work ethically in difficult international conditions should form part of any review team.

It may be helpful to examine the initiatives of the medical profession in this regard. A recent handbook (British Medical Association, 2001) states that the teaching of ethics in UK medical schools has improved since the regulatory body for medicine, the General Medical Council, recommended in 1993 that it should form part of the core curriculum, but that great variations in the quality of ethics teaching exist and that there is a shortage of good materials and experienced teachers. The handbook recommends that anonymous case histories would be excellent material for educational purposes. The same would surely apply to statistics.

## 6. Conclusion

Statistics can serve to benefit society, but, when manipulated politically or otherwise, may be used as instruments by the powerful to maintain the *status quo* or even for the purposes of oppression. Statisticians working in international contexts, usually employed by international, supranational or bilateral agencies, face a range of problems as they try to 'make a difference' to the lives of the poorest people in the world. One of the most difficult is the dilemma between open accountability and national sovereignty (in relation to what data are collected, the methods used and who is to have access to the results). International statisticians work in contexts which are changing markedly because of increasing globalization and new modalities of development co-operation and partnership. In adapting to these changes they should be more open about their dilemmas so that the statistical community can support them in helping the poor. Ethical frameworks, codes of

practice and codes of conduct are in need of a fundamental review to provide better guidance so badly needed in international statistics.

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## Vote of thanks

**R. N. Curnow** (*University of Reading*)

President, immediate Past-President, Fellows and guests: the presidential address that we have just heard is so wide ranging and on such an important and often neglected subject that it deserves all my time as a proposer of the vote of thanks. However, we must also record the gratitude of the Society to the President for all her work during her 2-year term as President. My term is sufficiently recent that I do know the demands made on the President. I was recently retired and with few other responsibilities. Professor Lievesley, in contrast, has had the immense responsibilities of having recently become Director of the United Nations Educational, Scientific and Cultural Organisation Institute for Statistics in Paris with the worldwide responsibilities and the travelling that this involves. Despite this, she has become fully involved in the multiple activities of the Society described in its annual report. We have been especially fortunate, even if it is not entirely coincidental, that Denise has been in office during the preliminaries to and the start of the implementation of the changes in the organization of UK National Statistics. The Society's role as a critical friend to our statistical colleagues in the Government service is not always easy even when the emphasis is on friend rather than critic and our contributions to the debates have generally been to encourage ambitions already held by our colleagues. Denise has been firm as well as understanding in formulating and presenting our views and her approach has earned respect for her and for the Society.

Now I can turn to the presidential address. The Royal Statistical Society (RSS) attempts to ring the changes by electing into office as President people with differing expertise and enthusiasms. This preserves the broad base of the Society, encourages new initiatives and highlights interrelationships within our discipline. This evening's address challenges the Society to recognize and become more involved in the international statistical scene, particularly in the developing world. We have not been sufficiently involved as a Society either in providing support to individual Fellows with these interests or to the overseas statistical institutions themselves. Why is this? We may feel that the International Statistical Institute is the responsible

body. As individuals we may be overwhelmed by the scale of the social and economic problems of the developing world. The President provides horrifying statistics about education and health, setting these against the expenditure by 'developed countries' on weapons and consumer inessentials. On threats to health, I would want to add the burgeoning campaigns by the tobacco companies to replace falling sales in the UK and USA with increased cigarette sales in Africa and Asia. Against the frightening scale of the problems, we must set the real opportunities for our profession stressed by the President that will 'make a difference'. Change will come through improved data collection, analysis and presentation and through impressing aid agencies and national policy makers with the relevance and usefulness of statistics in the identification of need and in the monitoring of the effectiveness of policies. Even small increments of progress can, in developing countries, make an immense difference to the quality of the lives of many people.

I am struck by the similarity with experience in other fields of some of the problems outlined by the President. For example, there is the need for a 'healthy dose of respect' and a 'culture of modesty'. It was not until the 1960s or 1970s that those of us involved in agriculture in the developing world fully appreciated the accumulated technical wisdom of subsistence and cash farmers, the key parts played by women in agriculture and the need to recommend farming practices that take full account of economic and social factors. Advice that ignores the realities of the local economic and social environment, such as the need, in the absence of adequate banking facilities, for income to be generated at particular times of the year to pay for education, has rightly been scorned and those giving the advice side-lined. I also recognize the tendency to collect data without adequate thought or resources being available to extract the valuable information in those data, incidentally a point also made in the UK context by Andrew Dilnot in his recent Beveridge Lecture.

Again on similarities, I note the President's comments on the importance of in-house expertise, on the gaps between academics and official statisticians, and on the problems that arise when poor statistical work within Government offices by non-statisticians damages our efforts. All these difficulties have featured in our discussions about UK National Statistics and in several of our responses to consultations by the UK Government.

Where do I see major differences?: first, in the remoteness of the determination of objectives, often by an international organization that may not have the same priorities as the national government; second, the President emphasizes that targets need to be achievable if they are to be effective but different countries start from a different base level; third, the tendency to concentrate on the measurable and hence to reduce the importance of matters such as the loss of dignity, civil liberties, justice and human rights; fourth, the greater importance of recognizing variation in conditions within countries and the implications of the 'ecological fallacy'; finally, there are the political and sometimes commercial constraints on international access to national data.

The President's comments on the human development index are clearly important. The distorting effects of concentrating on the overall index rather than recognizing the importance of making advances in the component items is clear. We must avoid the tendency to reduce several incompatible dimensions to a single meaningless dimension.

I hope that the RSS will rise to the challenge presented to us tonight. We need to work with the International Statistical Institute and other supranational organizations to provide support to our statistical colleagues in countries where they may have insufficient recognition and resources and are sometimes in a difficult political environment. The RSS should continue for as long as necessary to provide opportunities for examination and professional qualifications. We should continue to encourage and support statistical groups and organizations providing the relevant training and specialist advice. The RSS's plans for continuing professional development must take account of the special needs of our overseas Fellows, particularly those in developing countries where they may be working in relative isolation and without access to appropriate learning and training opportunities. We should also encourage, to mutual benefit, more exchange arrangements between national statistical organizations.

Before being more formal, on behalf of the Society, thank you, Denise.

I have great pleasure in proposing the vote of thanks to Professor Lievesley for her work as President and for her important and challenging address this evening.

**A. F. M. Smith** (*Queen Mary, University of London*)

President, Past-President, Fellows and guests: First, I should like to echo Professor Curnow's expression of gratitude to the Past-President for all her efforts on behalf of the Royal Statistical Society over the past 2 years. Over and beyond the astonishing range of its own internal activities, the Society continues to be a serious and influential player on the national and international scene and the outreach role of the President is an ever more important one. Professor Lievesley has carried out this presidential role with great

distinction—while never hiding her own passionate convictions and concerns. And those passionate convictions and concerns are much in evidence in this evening's presidential address, whose themes take many of us, as statisticians, into unfamiliar and challenging territory.

The Past-President has reviewed the potential for statisticians to 'make a difference' on the international scene, with primary emphasis on the developing world. And, in so doing, she has exposed us to a range of fascinating problems that inextricably combine statistical, ethical and political challenges. There is no doubt that the international statistician operates for the most part in an enormously more complex and sensitive advisory and decision-making environment than most of us are used to.

Issues around the construction, use and interpretations of performance indicators seem particularly daunting. We have seen in our own backyard over the past 4 years the problems that have arisen from trying to map the performance of a complex and politically sensitive entity like the National Health Service into an indicator based on waiting list numbers. Discussion of real issues regarding the health of the nation disappeared off the agenda, while every form of trickery and chicanery in the statistical book was employed to preserve the health of the indicator itself. If this can happen in the supposedly mature and stable political culture of the UK, under the watchful eye of the Royal Statistical Society, one is led to wonder what hope is there for the statistical indicator business in the developing world?

More generally, the added value that most of us assume to flow from evidence-based policies and interventions is crucially dependent on delivery infrastructure. A key element of the recently established Economic and Social Research Council Centre for Evidence Based Social Policy and Practice in the UK is that of dissemination of findings to practitioners, who themselves inhabit a highly structured professional world, overseen by national and local government agencies and professional bodies. The underlying premise of the Centre model is that evidence only acquires value when owned and acted on by the relevant policy or decision makers. In the UK, the historical lack of close connectivity between what we might call the 'evidence producers' and the 'practitioners' is perceived to have led to the existence of vast quantities of wasted, unused research (much of it statistical) on the one hand, and unchanged and unchallenged bad practice on the other. By analogy, are international agencies not in danger of wastefully providing statistical resource, which simply cannot deliver added value on the ground because an internal delivery infrastructure of the appropriate level and scale is not there?

Coggins's 'Development Set' doggerel and Hoggart's image of international statistics in perpetual motion provide little comfort. Perhaps they, like some of us, are troubled by a faint politically incorrect voice, far from centre stage, that insists on asking 'does it make any difference?'.

By her personal and professional example, Professor Lievesley does much to convince us that such scepticism is unwarranted and unworthy—and I have great pleasure in seconding the vote of thanks to her for her address this evening.

The vote of thanks was passed by acclamation.