Money-metric

Many organisations in the geomatics field, surveyors included, have committed themselves to the Millennium Development Goals. Goal 1 is to 'eradicate extreme poverty and hunger' in the world, a very laudable initiative! The praiseworthy aspirations total eight, and are to be achieved by 2015, with 1990 as baseline. Not only are goals defined, but also a set of indicators that make possible measuring and monitoring the accomplishments. The list is long and includes quantifiable indicators such as proportion of population living on less than $1(PPP) per day, Gross Domestic Product (GDP) growth rate per employee, share of the most poor in national consumption, and proportion of employed people living on less than $1 (PPP) per day.

Purchasing Power

PPP here does not mean Public Private Partnership, but Purchasing Power Parity, a measure developed nearly a century ago and used by economists to compare living standards in different countries. Just multiplying the price of goods and services with official exchange rates shows imperfections because the latter reflect international market value of a currency rather than what indigenous people can buy with their money on the local market. A better way to compare living standards is to look at purchasing power: how much must be paid for a reference basket of goods and services and do people in a given country earn enough to buy it. For example, if the basket costs $6 in the US and 1,150 Naira in Nigeria, than the PPP exchange rate is 192 Naira to one dollar rather than 120 Naira to a dollar, the official exchange rate.

Reference Point

As a surveyor confronted with such indicators, I find myself stymied by one big question: how accurately and reliably to measure all these indicators. And obviously I am not the only one! Economists too are questioning the appropriateness of the measures used by the World Bank in creating poverty statistics that are widely used in policy analysis and assessment. Sanjay G. Reddy, assistant professor of economics at Barnard College, Columbia University, who has worked extensively as a consultant for development agencies and international institutions including the World Bank, believes the estimates cannot identify with "any reasonable accuracy the level, distribution or trend of global poverty". He says the approach is flawed. And that is because it is not based on a defined concept of human wellbeing but is rather a money-metric method which requires, as any measure carried out on a ratio scale, a natural origin as absolute reference point.

One Dollar

A monetary value was attached to this reference point, called the International Poverty Line (IPL), from a survey conducted in thirty-three countries in the mid-1980s. A person is considered 'poor' if their level of consumption falls below this line. An IPL of one dollar per day, at 1985 PPP prices, was introduced by the World Bank in 1990 based on the common-sense appeal that one dollar per day matched fairly well the poverty line of some of the poorest countries in the mid-1980s.

Commodity Irrelevance

In geomatics terms IPL constitutes a datum, and, as with geodetic reference systems and height datums, transformations are necessary to bring countries into line not only over space but also over time. Here the base year is 1985, and the main transformation parameters for bringing the datums together are based on PPPs. PPP conversion factors transfer the IPL into national currency units (NCU), and then national consumer price indices transform the NCUs through time. Reddy criticises the determination of these parameters on the grounds that the representative consumption basket contains too many general goods and services as opposed to the foodstuffs needed by the poor for them to escape absolute poverty. Services such as haircutting are cheap in poor countries, but are unlikely to play a substantial role in the consumption pattern of the poor because they mutually serve themselves, while food is expensive. Hence PPP determination suffers from commodity irrelevance.

Subjective

As a result, according to Reddy, estimated numbers of people living in extreme poverty are systematically rated too low. Of course, the determination of poverty statistics can never be as objective and accurate as angles, distances and coordinates determined by surveyors, because there is no universal standard for what constitutes poverty and there is such for defining the metre. Every society has its own views on what represents a minimum standard of living. This differs around the world and is thus place-dependent; in one part of the world the eating of meat may be felt to be a necessity, while in other parts it might be a huge luxury.

Error Analysis

An inability to accurately determine the parameters describing a phenomenon does not necessarily imply the impossibility of providing measures regarding its (in)accuracy and reliability. Particularly when measurements are mapped on a ratio scale, and that is what the money-metric approach of poverty assessment does, proper error statistics can be calculated anyway. So it is astonishing that, as a professional group, surveyors rashly accept figures completely devoid of considerations concerning errors when these figures stem from institutions such as the World Bank. And that while any surveyor trying to deliver distances, angles or coordinates without thorough error analysis and associated statistics, would be sent straight back to school. Or worse, lose his licence.

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