

GLOBALIZATION, LOCALIZATION, AND STATISTICS*: Policies Towards Poverty Reduction and Sustainable Development

*Mustafa Dinc
Development Data Group
The World Bank*

INTRODUCTION

At the Millennium Summit in September 2000, the United Nations and its member states reaffirmed their commitment to working toward a world in which sustaining development and eliminating poverty would have the highest priority. The resulting Millennium Development Goals (MDGs) have been endorsed by 189 countries. These goals are an outcome of agreements and resolutions resulting from conferences organized by the United Nations during the past decade and have been commonly accepted by the international development community as a framework for measuring development progress. Even though all international development institutions and their members have endorsed the MDGs, they are ambitious and difficult to achieve. They require mobilizing significant resources at the national and international levels, as well as intellectual and technical support from national and international development agencies, academia, and research institutions worldwide. The purpose of this chapter is to discuss, in the light of MDGs, the interwoven structure of poverty reduction activities and sustainable economic development efforts by policymakers in developing countries, particularly at the local level, and importance of subnational statistics for successful programs in these endeavors.

The MDGs comprise 18 targets and 48 indicators. When possible, the targets are given as quantified, time-bound values for specific indicators. The goals focus the efforts of the development community on achieving significant, measurable improvements in people's lives. They establish yardsticks for measuring results, not just for developing countries, but also for donor countries that help fund development programs and for the multilateral institutions that help countries implement them. The first seven goals are mutually reinforcing and are directed at reducing poverty in all its forms. The last goal—global partnership for development—is about the means to achieve the first seven.

The MDGs have created awareness and helped global attention focus on the fight to eliminate abject poverty from the world, which in turn underscored the importance of statistical data for measuring and monitoring progress. These statistical data are derived from national statistical systems and are only as good as the capability of the system. Furthermore, effective statistical systems are not used just to monitor progress toward the

* Prepared for the Developing and Strengthening System of Intergovernmental Fiscal Relations and Fiscal Decentralization A Joint Conference of World Bank Institute and Korea Development Institute, Seoul, Korea, July 21~23, 2003.

MDGs, but also underpin sustainable development by providing the basis for rational decisionmaking, economic management, and efficient allocation of scarce resources.

In developing efficient national statistical systems, countries need to pay attention to the level of sectoral and spatial aggregation of relevant statistics for policymaking. Development practitioners are well aware that a rising tide does not necessarily lift all boats, and almost all countries exhibit significant economic and social variations among regions. These variations, in turn, have forced local governments to take greater responsibility for delivering and financing public services. This trend has resulted in programs to reform local governments that include devolving more spending and tax activities to them. Central to this trend and to ensuing reform programs are the anticipated allocative and managerial efficiency gains in the provision of public services that are essential for people's well-being, and also critical for attaining greater equity, both among different groups of society and different parts of the country. Most analysts anticipate that these achievements will significantly contribute to reaching the MDGs.

An important aspect of the trend toward greater local responsibility for delivery of public services is that local governments are becoming more responsible for developing policies and programs tailored toward addressing the poverty problem. Hence subnational governments' competence in designing public policies and delivering public services is crucial in influencing the level of poverty. The literature on fiscal decentralization presents evidence that the quality of local services, especially health and education, is highly correlated with the incidence of poverty (see, for example, Bird and Rodriguez 1999). A common characteristic in many countries is that local governments often lack the full institutional and managerial capacity to carry out their new responsibilities. The lack of the information and statistical data they need for better policymaking and monitoring is another critical problem local and subnational governments face. Despite the increasing demand for statistics, national and international efforts to develop appropriate and sustainable statistical capacity still fall short at both the national and subnational levels.

The next section discusses the incidence of poverty and points out the importance of subnational statistics in fighting poverty. The following section evaluates sustainable development in the context of regionalization and localization, and its link to subnational statistics. The problems of national statistical systems at both the national and subnational levels are discussed in the fourth section. The final section concludes the chapter.

POVERTY REDUCTION AND SUBNATIONAL STATISTICS

The need for subnational demographic, social, economic, and fiscal data is becoming more evident at a time when subnational governments are involved in the broader national and global objectives of poverty reduction. Subnational statistics are needed not only to monitor progress in poverty reduction, but also for ex ante policy formulations of subnational governments. Compilation of the subnational data on demographic, social, economic, and fiscal indicators informs central governments of the tasks ahead, especially in relation to designing an effective intergovernmental system, while at the

same time it allows quantification of a region's specific needs for assistance. It also permits monitoring of local governments as they work to achieve national policy objectives of reducing poverty and improving living standards.

Another important factor that makes subnational statistical data imperative is the change in development practitioners' understanding of the definition and measurement of poverty. They now recognize that poverty is a complex and multidimensional issue and is not defined only by income or consumption. Defining poverty has been an exercise involving significant debate among scholars and policymakers, because the definition determines the relevant public policies for eliminating poverty as well as for measuring and monitoring the results of previous actions. The definition of poverty now includes access to services (education, health, clean water, and so forth); access to and productivity of assets (natural, social, human, physical, and financial capital); interaction with existing structures and processes (policies, markets, service delivery, participation); and vulnerability (trends, shocks and seasonal variations) (World Bank 2000).

Poverty can simply be defined as a situation in which a person or a family is unable to maintain an adequate level of living by the standards of their society or does not have sufficient resources to pay for the essentials of life: food, shelter, and medical care. It can also be defined as not having some minimum standards that are needed to live comfortably or safely (Jennings 1994, Devine and Wright 1993, Burton 1992, and Chalfant 1985). The relative deprivation definition, that is, the failure to attain living standards that are customary in the society, views poverty not only in terms of material goods, but also in terms of the psychological effects on individuals who do not have certain resources that the people around them have. The basic principle underlying this approach is that the poor see affluence all around them and assess their situation or position in relation to both basic needs and the wealth in society as a whole (Gray 1978).

These discussions suggest the existence of three basic approaches to the definition and measurement of poverty: absolute, relative, and subjective (Dinc 1995).

The absolute approach defines poverty as either income or consumption below some certain level that represents a minimum standard for the poor. The disadvantage of this approach is that it is difficult to establish an objective minimum that is applicable over a long period or across divergent population groups. It requires adjusting the list of minimum necessities for different regions or population groups and for different time periods.

The relative approach defines poverty as a proportion of the median income or consumption of the rest of the society. This approach involves distribution of income and equity issues. It assumes that everyone has a right to share and use the wealth of a nation generated by society as a whole. The disadvantage of this approach is that it represents a moving target for policy assessments and requires designing income redistribution programs that are difficult, sometimes controversial, to carry out, particularly in developing countries.

The subjective approach relies basically on the opinions of those who believe themselves to be poor. This definition is based on surveys that use households' own assessments of the minimum or sufficient amounts of income or consumption that they need and involves both absolute and relative definitions of poverty. The minimum or sufficient amounts of income or consumption reflect the absolute side; what other people own reflects the relative side.

Regardless of the definition, each country has an official poverty line that sets a threshold that defines the poor as those whose total family cash income falls below a specified monetary amount. This official poverty level is adjusted annually for inflation. In recent years international development agencies adopted US\$1 and US\$2 poverty measures for cross-country comparisons. Even though the official definition and measurement of poverty has been heavily criticized, such an absolute standard provides a fixed benchmark that can be used to evaluate progress over time (Dinc 1995).

Among the many criticisms, the following are the more convincing. The first criticism relates to the consumption patterns of the poor. Experts do not agree on the right basket to represent the needs of the poor. In other words, what is a necessity and what is a luxury depends on the period in time and the social conditions of the society in which the poor live. The goods people consume are likely to change over time, and the definition of the minimum necessities is likely to change as well (Ruggles 1990, Devine and Wright 1993).

The official poverty line is based on cash income, and some argue that this may cause the mismeasurement of poverty, because overall wealth or assets—physical, financial, and human—are not taken into account (Haveman 1987, Oliver and Shapiro 1990, Burton 1992, Jennings 1994). For example, a relatively wealthy family with a small amount of current income might be classified as poor. Similarly, a migrant worker family with money income above the poverty line, but with little access to housing above substandard levels would be classified as nonpoor, yet an equivalent family with slightly less income but a rent-controlled apartment would be defined as poor.

In-kind transfers generally are not taken into account and, therefore, may exaggerate estimates of poverty. The argument here is that if the noncash benefits of the poor were counted, the number of poor might be much lower (Friedman and Friedman 1979, Gilder 1981 and Murray 1982, 1988).

The use of a single national poverty standard overlooks regional differences. The cost of living is substantially different in various regions and cities of a country, in particular, the cost of living is generally higher in the larger cities where the poor tend to be concentrated. A single national poverty standard understates the extent of poverty in higher-cost cities and overstates it in lower-cost cities and rural areas (Devine and Wright 1993, Jennings 1994).

Characteristics and Trends of Poverty

One of the key dimensions of poverty is that it is a spatial phenomenon, and location and context determine the nature and composition of poverty. Therefore an understanding of the scope of poverty requires knowing where the poor are concentrated and how they maintain their livelihoods. Hence when measuring poverty the definition of the location of the poor, production, and consumption patterns and an understanding of the complex structures of poor households resulting from seasonal migration and links with urban and rural households requires special attention.

In the 1950s and 1960s, in both developing and industrial countries, most of the poor tended to concentrate in rural areas and small towns. Since the 1980s, rapid urbanization has reversed this trend in most countries, and the poverty rate in large cities has increased significantly; however, in many developing countries, particularly in Africa, rural poverty is still more serious than urban poverty.

Recent studies (Baker and Grosh 1994; Bigman and Fofack 2000; Christiaensen, Demery, and Paternostro 2002; Fofack 2002; Minot and Baulch 2002) have demonstrated that in most countries poverty is spatially concentrated. Extreme poverty in inaccessible areas with unfavorable terrain often coexists with relative affluence in more favorable locations close to major cities and markets. Information about the spatial distribution of poverty is of interest to policymakers and researchers for a number of reasons. First, it can be used to quantify suspected regional disparities in living standards and identify which areas are falling behind in the process of economic development. Second, it facilitates the targeting of programs whose purpose is, at least in part, to alleviate poverty through efforts such as providing education, health, credit, and food aid. Third, it may shed light on the geographic factors associated with poverty, such as mountainous terrain or distance from major cities.

In Africa, for example, researchers found that economic policy reforms (improving macroeconomic balances and liberalizing markets) have been conducive to reducing poverty, but that location mattered significantly for poverty reduction strategies. By virtue of their sheer remoteness, some regions have been left behind when growth picks up. In the Philippines, for instance, the nature and dynamics of determinants of poverty have been influenced by the spatial location of households, and the postdevaluation growth period did not significantly alter the pattern of determinants of poverty.

India is one of the most important examples for demonstrating the importance of the spatial aspect of poverty. How much India's poor have shared in the economic growth unleashed by economic reforms in the 1990s has been extensively debated. Investigators have found that India probably maintained its 1980s rate of poverty reduction in the 1990s, but that performance across states exhibited significant diversity. India's overall economic growth in the 1990s did not spread to those states where it would have had the highest impact on poverty. States with relatively low levels of initial development and human capital were not well suited to reducing poverty in response to economic growth (Datt and Ravallion 2002). This finding shows that achieving higher aggregate economic

growth is only one element of an effective strategy for poverty reduction. The sectoral and geographic composition of growth is also important, as is the need to improve existing human and physical capital.

Causes of Poverty

The causes of poverty may be explained by two approaches. The first approach assumes that poverty is a supply problem or an individual problem. The second approach argues that poverty is a demand or a structural problem.

Supply-Side Theories

The various versions of supply-side theories argue that poverty is a supply problem that reflects the lack of marketable skills on the part of the poor. In a competitive environment workers' training, knowledge, and work ethic will determine whether people climb out of poverty or stay mired at the bottom of the economic ladder (Kelso 1994). According to the supply-side theories, people are poor because

- They are uneducated, unprepared, and do not have adequate skills to hold a job
- They are unmotivated and dependent on welfare
- They lack the social and cultural values and work ethics that are common in the mainstream of society
- They suffer from a greater number of broken families and out-of-wedlock births.

HUMAN CAPITAL THEORY. This theory focuses on education and training. According to this approach, people are poor primarily because of a lack of education, training, or job skills, and the lack of human capital prevents economic mobility. This theory presumes that the economic system is effective for anyone who is properly skilled and educated, and that poverty can therefore be prevented and significantly reduced if people can obtain the skills necessary for the jobs available (Schiller 1976, Levin 1977, Haveman 1987, Devine and Wright 1993, Kelso 1994, Jennings 1994).

The evaluation of education programs in relation to poverty is based on two criteria: first, the total impact of the program on reducing poverty; and second, the program's relative efficiency in comparison with other alternatives, that is, its cost-effectiveness.

Education, technological and economic change, and poverty are closely related. Technological or structural changes in the national or regional economy may make workers' skills outdated. Therefore a large number of people may find themselves unemployed, and new participants in the workforce may face difficulties finding a decent paying job (Wilson 1987, Jennings 1994, Fitzgerald 1993).

CULTURAL AND MORAL EXPLANATION. This theory of poverty stresses the importance of individuals' attitudes and motivations and argues that improper social and work attitudes, including a lack of moral standards, limited cultural attributes, or particular personal dispositions explain poverty and its persistence among some groups.

This approach is the most controversial of poverty theories (Lewis 1965, Banfield 1970, Gilder 1981, Mead 1992, Burton 1992).

CONTROL THEORY. This theory states that cultural values and, in some cases, supervision and even coercion, are necessary to maintain the cohesion and smooth functioning of society. Proponents of this theory argue that if individuals and groups pursue only their self-interest in relationships, the danger exists that the social structure of society may be harmed. Control theory assumes that people are pushed from behind by their values rather than pulled from the front by the possibility of economic gain (Kelso 1994). In other words, people's actions are determined more by their internal gyroscopes than by their calculations of economic gain.

EXCHANGE THEORY. This theory argues that the willingness of the poor to become better-trained workers depends heavily on the economic payoffs of acquiring additional skills. The motivational problems of the poor are thus purely economic in nature. The theory assumes that individuals will try to maximize their future gains by choosing among the options open to them (Kelso 1994). If individuals are rational, economic actors constantly trying to maximize their self-interest, then the behavior of the poor is nothing more than a rational response to limited work opportunities.

STRAIN THEORY. Strain theory argues that the poor have internalized the values of the larger society, which stress achievement and accumulation, but cannot realize their goals because of the highly stratified nature of the economy. Strain theory assumes that all people are equally socialized into a set of values that stress achievement and success. It also holds that people engage in undesirable actions only when they are unable to realize their culturally induced goals (Burton 1992). The actions of the poor are thus merely a consequence, rather than a cause, of their difficulties in finding meaningful employment opportunities.

FAMILY STRUCTURE EXPLANATION. This is another popular explanation for poverty among the supply-side theories, and argues that the incidence of poverty is closely related to family structure. The breakup of two-parent families affects the size of the poor population through its impact on the workforce and the future earnings of family members. In many cases divorce or separation forces women who have little formal job training or work experience into the labor market. This change in status obviously has a negative impact on the economic prospects of children. The children are also likely to remain in poverty longer because of the devastating impact of single parent homes on their psychological and economic well-being. Furthermore, poverty may occur simultaneously with a household transition, because household resources are divided and economies of scale are lost after the split (Bane 1986, Jennings 1994, Kelso 1994).

LACK OF ENTREPRENEURIAL SKILLS. This approach points out that entrepreneurial skills are a crucial factor in upward mobility and argues that a group's tendencies to start businesses is important in achieving financial success (Sowell 1983, 1981). The underlying rationale behind this approach is that if people do not have the necessary skills to find a job and are also without entrepreneurial skills, they will most

likely become poor. Even poor people who do have entrepreneurial skills can experience upward mobility and get out of poverty, which means that learning how to fish and catching your own is always better than getting a few fish from someone else every day.

In theory, this may sound like a feasible way for the poor to achieve upward mobility, but in reality it is difficult, if not impossible, because several factors need to be in place to establish and run a successful enterprise, such as access to information and markets and the availability of financial, physical and human capital.

Demand-Side Theories

Demand-side theories emphasize the importance of structural factors, including social, institutional, and economic factors, as the causes of poverty, and argue that poverty is essentially a demand problem. The problems of the poor are a result of the lack of jobs that pay enough. That is, the makeup of the economy is the key variable in determining how much opportunity is available for the poor to escape poverty. In this view, certain patterns of large-scale socioeconomic arrangements and changes cause poverty and prevent its alleviation (Goldsmith and Blakely 1992). According to demand-side theories, people may become poor because of

- Macroeconomic changes and cyclical fluctuations
- Changes in the structure of the economy that affect low-skilled people disproportionately
- The insufficiency of the minimum wage to maintain an adequate quality of life
- Discrimination (racial, religious, gender).

MACROECONOMIC EXPLANATIONS. A slowdown in job growth because of cyclical fluctuations in the economy makes it difficult for the poor to get out of poverty. In many developing countries the biggest obstacle to eliminating poverty is that the economy seems unable to generate enough jobs to employ the poor (Danziger and Gottschalk 1985). Another important fact is geographical mismatch. In most cases cyclical changes may not have their anticipated effects because the nationwide economic expansion generally does not spread evenly around the country. In many countries the extreme poor have been bypassed by the expansions of previous decades (Wilson 1988, Kasarda 1988). Thus what is important is not whether the overall economy prospers, but whether that prosperity has found its way to the poor in different regions of the country.

CHANGES IN THE STRUCTURE OF THE ECONOMY. These generally occur on three fronts in both industrial and developing countries: technological changes, locational changes (decentralization), and deindustrialization.

These changes have brought about regional transformations of industry and have been accompanied by urban restructuring. With rapid changes in technology and transportation costs, most industrial firms have moved to new locations to exploit cheaper production factors (Kasarda 1988, Wilson 1988, Katz 1989, Goldsmith and Blakely 1992 and Jennings 1994). In a global sense, the relocation of firms may have created new opportunities for people in these new locations, mostly in developing countries and

regions, but at the same time, it has caused the loss of manufacturing jobs and growing unemployment in their previous regions. In addition, relocated firms tend to employ fewer workers in their new locations by adopting new production technologies.

Another important impact of the transformation of major metropolises from centers of goods processing to centers of information processing has been a major shift in the skill requirements for employment (Kasarda 1988). The replacement of low-skilled manufacturing jobs by high-skilled positions has made it difficult for those left behind to find jobs in their neighborhoods. In addition, the out-migration of firms and jobs has made it difficult for the poor to commute given their limited means of transportation.

LOW WAGES EXPLANATION. This theory argues that low wages and the lack of jobs at adequate wages might be two of the most important causes of poverty. One of the key factors this approach emphasizes is that the officially set minimum wage may not be sufficient to provide the means for a decent living, and therefore does not give people enough incentive to work (Kolko 1962, Blustone 1969, Levitan and Shapiro 1987, Devine and Wright 1993, Jennings 1994).

Given that in a market economy wages are determined by both demand and supply, looking for a better explanation in terms of the wage issue is imperative. For example, although any decline in demand for labor will keep wages from rising, supply factors, particularly workers' inability to increase productivity, will also prevent wages from rising. The assumption here is that if workers can increase their productivity, employers will be able to pay employees higher wages without increasing the prices of their goods and services. Therefore the key to improving wages is to increase productivity (Kelso 1994).

DISCRIMINATION EXPLANATIONS. Discrimination as an explanation of persistent poverty is among the most hotly debated theories. This explanation argues that the underlying driving force behind any form of economic restructuring is social rather than technical, because corporations want to avoid hiring minorities, and hence they try to avoid areas where minorities are concentrated (Squires 1994). This theory also argues that in many countries education, housing, and insurance and mortgage lending practices are based on racial, religious, and other discriminatory considerations. These practices, in turn, may create a vicious circle for the poor.

Understanding the Complexity of Poverty

The foregoing discussions demonstrate that from its simple definition to its causes, poverty is a complex and multidimensional issue. To understand poverty, its root causes, and locational concentration and to develop sound poverty reduction programs a significant amount of information is clearly needed. Our understanding of the spatial nature of poverty is determined by the availability of subnational data and other relevant information. A lack of data about a population's socioeconomic characteristics, about the levels and characteristics of public expenditure, and about poverty at the local level hampers efforts to design policies to address the root causes of poverty.

Availability and accessibility of reliable and timely data at the national and subnational levels concern the supply side of the issue, and depend greatly on the capacity of the statistical system that produces them. In many cases, however, the demand for national and subnational data by users is as important as the availability of data. The demand for data at the national, regional, and local levels is closely linked to the availability of local analytical and decision-making capacity. Therefore, governments at the national and local levels need to understand why statistics are important in fighting poverty and need to recognize the value of an effective and efficient statistical system along with the local capacity to analyze data.

GLOBALIZATION AND LOCAL ECONOMIES

The world economy has been undergoing unprecedented changes in terms of its organization, composition, integration, and interdependency. In recent decades the expansion of market boundaries and the reduction or elimination of trade barriers have brought new opportunities to regional industries, while simultaneously exposing them to increased competition from both domestic and foreign producers. Within the context of an increasingly integrated world economy, regional economies have become increasingly crucial for national economies, and in some cases dominate the national economy from a leading technology or entrepreneurial perspective. This trend is recognized as producing spatially decentralized but economically functional regions. The rise of regional economies as the building blocks for international competitiveness has been widely recognized by scholars across the world. Furthermore, competition and cooperation among these dynamic regions will likely dictate the future more than nation states themselves (Haynes and Dinc 2000).

As the private sector is the driving force behind economic growth and development in a market-oriented economy, given the current globalizing and increasingly borderless economic environment, creating a business climate in which all agents of society can interact efficiently and effectively is crucial. Such an environment will help countries retain and expand existing businesses and attract new investments, all of which will help generate new jobs and income. New jobs and income, in turn, will become the best remedy for alleviating poverty. New investment decisions by both domestic and foreign firms entail a lengthy process, and in most cases involves considerable research, particularly in terms of where these new investments will be located. The availability and accessibility of subnational information will shorten the decisionmaking process and reduce its costs significantly, and the resulting evidence-based investment decisions will be much more accurate.

Regional and Local Economic Development

Industries continue to decentralize to advantageous locations. The composition of intra- and interregional economic systems continues to show strong specialization but significant and continued interdependency. New manufacturing methods, including flexible manufacturing, just-in-time production, short and niche-specific production, and

customer-focused production, increase sensitivity to markets in most sectors, while information technology makes responses to that sensitivity increasingly global. To take advantage of these new production technologies effectively, rapid response is required in the production chain, all the way from suppliers to customers. Rapid response means that hard infrastructure, including telecommunications and information systems, become increasingly central to the support of efficient high-end services (Haynes and Dinc 2000). The result is that interdependency across regions in terms of interregional trade increases the interdependency of regions on each other's infrastructure support. Congestion in Bombay means a delay in production in Tokyo, which in turn means that the access to a new market in the Netherlands may be lost to a competitor.

Such regions are increasingly polycentric rather than monocentric, and despite the best efforts of planners and urban policymakers, they continue to expand and decentralize to lower residential, and even lower employment, densities. In support of these regions, communication and transportation technologies continue to enable lateral growth across the flattened regional periphery rather than in the traditional hierarchical, monocentric, radial fashion of the past (Haynes and Dinc 2000). Terms such as globalization, restructuring, decentralization, organizational flattening, corporate downsizing, consumer focus, flexible manufacturing, the agile organization, networked production, the virtual corporation, and the information economy are all not only indicators of this new pattern, but also part of our daily lives.

Having different economic endowments, in a competitive environment regions have taken an increasingly active role in economic development policy via local, state, or provincial governments to restructure and improve their economies. Many of these policies involved some kind of low-interest loans, tax breaks, industrial recruiting, assistance in labor force training, hard and soft infrastructure provision, or a combination of other traditional economic development tools (Dinc and Haynes 1999). In that sense, to develop and support sound development policies, an understanding of the region's economic, cultural, and social structure is necessary.

Industrial Structure

Local and regional policymakers need to understand the industrial structure of their regions, that is, which sectors are the leading sectors in terms of volume of activity, output, or share of labor demand and which sectors are growing or declining regionally and nationally. For example, in the short term an industrial sector in a particular state may be "leading" in terms of volume of activity, value added, or share of labor demand, but if it is not operating efficiently compared with the same sector in other regions, sooner or later it will become uncompetitive and begin to wither away from external competition. Alternatively, a less dominant sector may be a better candidate for growth and development because of its competitive efficiency (Dinc and Haynes 1999).

Policymakers also need to understand how much a given industry, firm, or regional economy or the nation can increase its output without absorbing additional resources, thereby improving its competitive status. In that sense, efficiency becomes an important

control parameter for assessing the utilization level of inputs in the production process. Just as the viability of firms in a long-term competitive environment depends heavily on their efficiency, the overall efficiency or productivity of the economy of countries, states, or localities determines the general well-being of their people.

Another important issue related to efficiency and productivity is regional infrastructure. When designing, locating, and building infrastructure, focusing on its reproductive capacity is essential (Lambooy 1985). Such reproductive capacity is related to investment not simply in human capital and local research and development, but in the capacity to produce or reproduce that capital and expand research and development, so investment in and maintenance of institutions with these reproductive roles and the utilization of these institutions will generate the capacity to absorb and adapt to change. Thus investigators hypothesize that regional centers that have high levels of investment in, or a historically long-term pattern of support for, institutions with this role of generating reproductive capacity will do better than centers that have a thinner veneer of development.

Still another perspective is directly related to factors of production, and hence to efficiency and productivity. Realignment will be continual with respect to growth within regional systems of complex modern societies responding to underutilization of capital or human resources whether government policies intervene or not. In terms of capital and human resources, the scale of access to undervalued resources is important, as is the ability to either transform those resources into factors of production or use those resources in substituting for higher-cost production factors elsewhere. This substitution relates both to an urban center's region, that is, its character, resources, and factor utilization levels, and its ability to engage in labor capital substitution (Haynes and Dinc 2000). Government policies can be seen as a complement to these changes, easing transformations and maintaining investments for the future.

Social and Cultural Structures

Policymakers should know whether the social and cultural structures of the region or local community complement and support economic development programs. Local culture and political leadership need to have the economic strategy or the political will to implement a successful regional development process that will close the gap between the lagging region and the nation. Furthermore, the pattern of massive transfers from central governments to these peripheral regions has not been a successful strategy socially, politically, or economically. Hence regional and local policymakers need to pay close attention to these issues and to include them in their models.

Forms of government and political culture are closely related. The characteristics of political institutions develop in such a way as to coincide with the cultural characteristics of the local population (Higgins and Savoie 1995). This relationship has led, for example, to the recognition that all federal systems develop a flexible, nonlegalistic arrangement labeled cooperative federalism within which interactions between the core state and the region take place. Despite designs to the contrary, these federal systems are modified over time to fit the regional cultures they link together. For example, the original

Canadian Constitution (the British North American Act) designed a centralized federal system, but because of cultural cleavages and a highly dispersed regional system, Canada has evolved into one of the most decentralized federations in the world. In contrast, in the United States an intentionally highly decentralized federal system was designed, but has evolved into a much more centralized system. This is only to say that culture matters and is reflected in the political and economic base of regionalism.

Local and Regional Leadership

A region's economic base and successful strategies of inclusion and of building bases for managing economic change have a close relationship. Effective leadership is a dynamic process driven by an interactive local elite. If the local or regional leadership is dominated by a single individual, corporation, or even a single economic sector, however, such dominance will lead to defensive strategies of consolidation, growth through risk spreading, and market force insulation. Such dominance may lead to increased regional vulnerability and decreased responsiveness to new trends and changing global economic dynamics (Friedrichs 1986, 1987). The opposite would be, therefore, that diversity, range, and variety of regional economic leadership drawn from a wide economic base would produce strategic flexibility and more rapid responses to global trends and challenges.

Human Capital

Human capital can be broadly defined as the accumulation of knowledge and skills, and is seen as a major contributor to the well-being and living standards of individuals who possess it. The level of human capital or education determines not only lifelong earnings of individuals, but also contributes to the general well-being of the society (Dinc 1999). In such a globalized, interdependent, borderless economy, human capital becomes a central differentiating asset between different regions and localities. It is an asset that is mobile, responsive to price differentials in wages, and, in the short run, this demographic reality is only augmentable at the margins. The quality of human capital is not simply a function of formal education and on-the-job training, even though that is extremely important. The quality of human capital is also related to occupation and work experience in an industrial structure. The capacity of human capital for retraining and acceptance of innovation is centrally important. The quality of human capital is also a function of age and gender within a specific cultural context that is often reflected in participation rates, but that differs from one region to the next (Haynes and Dinc 2000).

The rapid pace of technological development demands an increased input of human capital with more skills and knowledge and of related supporting capital investment. The highly competitive international and interregional economic environment forces firms to adopt new production techniques and to improve the productive efficiencies of their workers.

Environmental Issues and Local Economic Development

Environmental regulations and increasing public awareness have two important impacts on regional economies. First, heavy regulations could force firms to relocate into unregulated regions or nations, resulting in high unemployment in the regulated region. Second, sometimes exaggerated environmental problems may prevent useful investments. In such cases, both the region and the nation lose.

Many analysts sometimes have too much confidence in the Coase theorem, which states that market forces will internalize the externalities. However, no existing theorem guarantees that even a perfect market will lead to sustainable development and the preservation of life support systems (Haynes and Dinc 2000). Regional and local policymakers should increase the realism and relevance of their studies by incorporating ecological economic approaches to address growing evidence of environmental problems.

Public Sector and Regional Development

One consequence of public sector interventions is that they strengthen urban centers as the location of governmental decisionmaking, even if the purpose of intervention is quite the opposite. The quaternary sector cushions local and regional systems from the broad spectrum of changes in the global economy. This cushioning generates a basis for continued growth and steady, and sometimes high, returns on service-related investments. Under recent circumstances that have encouraged and led the shift to the service and information economy, the quaternary sector has supplied strong growth leadership in capital regions. Difficulties lie ahead, however, for regional and local policymakers in terms of resolving the division of decisionmaking between markets and the public sector, as well as between central government and local governments (Harris 1995).

Dealing with the Issues of Regional and Local Economic Development

The issues discussed in the previous paragraphs are at the core of regional dynamics in the 21st century, and they require coordination and collaboration among relevant parties to develop problem-solving methodologies for dealing with them. They will require theory and application to go hand in hand, which requires continuing training of local and regional policymakers as well as of other stakeholders. In this changing and globalizing economic environment, if regional and local policymakers cannot develop and adopt new ways to deal with problems, they will not be able to keep pace with this rapidly changing world.

In addition, dealing with existing and potential problems, and developing and implementing economic development programs necessitates significant amount of data and information at the regional and local levels. It is imperative, then, that the policymakers at the local and regional levels and the officials of the statistical system should develop close collaboration to determine what is needed.

STATISTICAL SYSTEMS¹

As seen in the previous sections, poverty reduction activities and sustainable development programs requires significant amount of statistical data and information along with the capacity to analyze and use them in decision making. Three major means of collecting and producing data are available at both the national and sub-national levels. The first is a formal process for statistical data collection that includes censuses and various surveys. The second is an administrative data collection (or production) system, which consists of line ministries and relevant agencies that collect data from the users of services including health and education services, and public revenue and expenditure data. The third is a system of participatory appraisal and qualitative processes that mainly complement the previous two. Of course, some other information systems and processes can be employed in the production of relevant data, such as environmental and land information systems, early warning and monitoring systems, and vulnerability assessment and mapping.

To some degree almost all countries employ these means to collect and produce data, though perhaps not systematically. Many countries do not collect subnational statistics systematically, and hence they are not available to the public. As noted earlier, to alleviate poverty and to develop sound local and regional economic development policies and programs, collecting, analyzing, and disseminating subnational statistics is essential. Local and regional policymakers must have the necessary capacity to use such data in their policymaking efforts.

Principal Elements of a National Statistical System

Subnational and national data are needed for policy formulation and evidence-based decision making at the national, regional, and local levels. National statistical systems, generally central statistical offices, are responsible for collecting, processing, and disseminating statistical data by using existing human, physical, and organizational resources. The data produced by national systems support policy formulation and decision making by governments, businesses, citizens, and other local actors. In this process, where possible, subnational data enter the national statistical system following review by the central statistical office, which standardizes subnational data to produce consistent, national datasets. In addition to compiling and disseminating data, an important function of the national statistical system is to agree on standard definitions and methods of data collection and to provide opportunities for the exchange of information between national and international statistical agencies.

The nature and organization of national statistical agencies vary according to the political system, the demand for data, and the organization of local and central governments. In decentralized systems, separate agencies have independent mandates to gather and disseminate statistics in particular areas. Even in highly centralized systems, responsibilities may be divided. Central banks, for example, usually collect data on

¹ This section heavily draws from my earlier unpublished work and reports on the subject. I also benefited from unpublished work by Graham Eele, Misha Belkindas and Neil Fantom.

money and banking and may be responsible for other areas, such as the balance of payments. Line ministries may compile and disseminate data derived from their administrative processes. Hence, a national statistical system is generally a network of agencies whose activities are coordinated by legislation, administrative practices, and professional standards to avoid data discrepancies.

Official statistics, that is, those produced by statistical systems operated and financed by governments, have a dual role. First, they must serve governments' needs for efficient administration and management, as well as for longer term policymaking. Second, they must also serve the public's need to monitor the activities of government. To be effective, statistical systems must have legitimacy backed up by legislation that provides safeguards of confidentiality for the providers of raw data and assurances of integrity and accessibility for users.

The Challenges Facing Developing Countries

Many national statistical systems are caught in a vicious cycle, in which inadequate resources restrain output and undermine the quality of statistics, while the poor quality of statistics leads to lower demand, and hence fewer resources. In most countries, subnational statistics are not even collected because of a lack of resources and inadequate capacity. Sustainable improvements to the statistical systems of developing countries require programs to increase both the demand for and the supply of statistics. In other words, the cycle must be broken, encouraging countries to develop the capacity to conduct sophisticated statistical activities reflecting their own agenda and to make better use of these data in managing their development programs.

In many developing countries, especially the poorest, statistical systems are under stress and are underperforming. They are unable to generate the data at the national and subnational levels that are needed to monitor government activities and support effective policymaking. Among the reasons for systemic failure are

- Budget cuts
- Inadequate investment in new technology, computing, and communications
- Poor performance of statistical system
- Overdependence on donor finance
- Lack of training, career development, and motivation of statistical staff
- Inadequate feedback from users of statistical data
- Ineffective institutional framework, leadership, and management
- Lack of interest on the part of policymakers and government officials.

What Is Needed?

Developing countries have a long way to go and much more work to do to improve the quality of their statistics. The international development agencies' involvement in sustainable economic development and poverty reduction creates an important opportunity for the improvement of statistical systems of developing countries. Working together with international partners through networks such as Partnership in Statistics for

Development in the 21st Century (PARIS21), countries can formulate programs to increase the capacity of their statistical systems. Such a concerted program should include all the following elements to succeed:

- Building demand and country ownership
- Assessing needs
- Engaging in strategic planning
- Making better use of existing data
- Training and new tools
- Funding investments in statistics
- Seeking international cooperation.

Building Demand and Country Ownership

One of the most important factors to break the vicious cycle is to increase the demand for data at the national, regional, and local levels. Ownership is central to increasing the demand for statistics. Once governments at the national and local levels understand why statistics are important and recognize the value of an effective and efficient statistical system, investments in statistics are likely to be sustained. Any attempt to build capacity and increase the supply of data must take into account how demand is changing and what needs to be done to strengthen the capacity of governments and the private sector to use data effectively. Another important step is to disseminate the data and help statistical managers in developing countries use it in their interactions with policymakers, politicians, and other data users.

Even when the demand for improved statistics is clear, donors and government decisionmakers often do not know which problems to tackle first or how to take advantage of available technical and financial resources. This requires collaboration between donors and recipient countries. These collaborative efforts should provide countries with needed information on best practices and help with assessing needs, measuring existing capacity, identifying gaps in data production, and setting up a statistical master plan linked to the national development plan.

Assessing Needs

The purpose of needs assessment activities is to identify both short- and longer term interventions to develop and strengthen the collection, processing, and dissemination of national and subnational statistics. Needs assessment also includes determining needed improvements in the use of existing data. The emphasis will be on improving the supply of data to meet the needs that have been identified for both policymaking at both the national and subnational levels. The data generated by national statistical systems must meet reasonable standards, hence needs assessment activities should include the review of such standards. Needs assessment activities should bring together suppliers and users of the data, and during the process all key stakeholders need to be consulted (the key stakeholders include central and regional statistical offices, local governments, representatives of civil society institutions, and universities).

The strategy is built on two main building blocks. The first is the assessment of current and anticipated future demands for data that will be needed for poverty reduction and sustainable development strategies. The second is the assessment of the strengths and weaknesses of the existing national statistical system in terms of national and subnational statistics collection. In particular, the strategy should build on existing strengths, address specific weaknesses, and identify the important tradeoffs between what is desirable and what is feasible.

Before starting the needs assessment activities, an evaluation instrument (minimum required benchmarks) that will provide guidelines in assessing the needs should be developed. By setting the baseline for evaluation, these benchmarks will also allow countries to identify progress throughout the project. In addition, clearly defined benchmarks can also be used as a self-evaluation tool for the participant countries.

Needs assessment activities should include the following:

- *Preparation of a needs assessment report:* The purpose here is to ascertain the current situation and to assess the strengths and weaknesses of the statistical system in subnational statistics collection. It also determines whether the statistical system provides the data needed for poverty monitoring at the local level. The report sets goals and targets, which specify what the system is going to achieve within an agreed timeframe and a cost structure. It also includes priority action areas to achieve the targets, including the training needs of local policymakers in the use of data. In addition, the report should include mechanisms to monitor progress and to keep all stakeholders informed.
- *Needs assessment workshops:* A needs assessment workshop should be held to discuss the draft needs assessment report before finalizing it. The participants at the workshop are policymakers and users of data at the national and local levels, staff from statistical agencies, and other stakeholders. The goal of the workshop is not only to discuss the draft needs assessment report, but also to facilitate the interaction between data collectors and data-users and sensitize all stakeholders to the importance of statistical data for better policymaking. The sharing of the needs assessment report is essential for achieving sustainability. It stimulates public debate on and broadens the understanding of development issues, and it enhances transparency and accountability in the development process. It also strengthens public support for efforts to improve local government management structures, facilitates collaboration among the many parties involved in the process, and improves the quality of coordination between different projects in the field.

An important issue to be taken into consideration at an early stage of the needs assessment activities is the timeframe to be used for the strategy. Although concentrating on short-term needs of data users at all levels is important, many statistical activities take place over a longer cycle. To deal with both aspects, following a sequenced information strategy the report should address both short- and long-term needs accordingly. In general, the short-term focus will be on meeting the immediate data needs for poverty reduction, mainly by making better use of existing data systems and helping to improve

dissemination and analysis. Improving existing data systems by reducing delays in publications, by strengthening analysis, and by widening dissemination can help to improve the image and public standing of the statistical system, which will help build a constituency for more investment in the future. In the longer term, the emphasis should be more on making appropriate investments to develop new data systems and to address constraints in human resources, equipment, and management systems.

Engaging in Strategic Planning

Once the needs assessment activities have been completed and the needs assessment report has been finalized, countries should develop their own statistical master plans, including a subnational statistical component. Even though the master plan will build on the needs assessment activities, its goals and targets will be medium and long-term improvements of the statistical system. These activities should ultimately result in a sustained increase in statistical capacity in developing countries, financed mainly by national budgets and supplemented where needed by donor funds. Development of statistical master plans should

- Involve all stakeholders, including donors
- Use internationally accepted frameworks for prioritizing statistical activities
- Move from a project approach toward program funding for statistics
- Develop mechanisms for regular consultations between stakeholders.

Making Better Use of Existing Data

The use of existing data involves both the demand and supply sides of statistical data. In many cases, the needed information may already exist or could be generated by existing data systems at relatively low cost instead of planning a new survey or other data collection exercise. Many countries have collected data that has never been analyzed, or even processed. Unlocking existing data, which could at least partly meet users' demands, could generate significant information.

The demand side involves national and local policymakers making greater use of available data, and includes designing a training program for policymakers. This program would provide data users at both the national and local levels with a broad base of contemporary knowledge in the use of existing subnational data for better policymaking and management. Training areas for the data users should be determined during the needs assessment activities, and the design of the training program should be based on the recommendations of the needs assessment report and statistical master plan. More likely, the training program may include standard analytical methods that are data driven and will expose data users to innovative approaches at the intersection of economic, social, and spatial analyses, giving participants a flavor of intersectoral linkages central to effective local government management.

Training and New Tools for Data Collection and Analysis

Statistical processes and tools, perhaps more than anything in the field development, lend themselves to broad application, often with only minor regional or country adaptation. Data collection activities are not cheap—especially large-scale surveys and censuses—and many of them must be paid for from government budgets already under considerable strain. Thus the use of proven methodology and tools developed by the World Bank and other agencies and based on the latest information and communication technology is both cost-saving and effective, and many countries could be helped to take advantage of these opportunities.

Training activities should focus on improving the skills of relevant staff at central and regional statistical offices that are required to undertake activities to achieve short- and long-term goals identified in the needs assessment report and statistical master plan. The focus of the training will most likely be on collecting, processing, and disseminating subnational statistics and will include, but not be limited to, training on

- The design issues of subnational statistical systems
- The coordination and implementation of fieldwork and data collection processes
- The use of monitoring mechanisms over time
- The use of various quick surveys and related techniques in subnational statistics
- The use of administrative data as a data collection method and coordination and collaboration with other relevant agencies
- The development and implementation of quick surveys for checking the accuracy of administrative data
- The analysis and use of existing data
- The use of various dissemination methods with an emphasis on the use of the Internet as a dissemination tool.

Given the rapid growth of Internet access across the world because of the increasing availability of service providers and declining service costs, the Internet has become an important tool for data dissemination. Therefore developing training programs to improve the skills of relevant staff in this area is imperative.

Financing for Statistics

Financing the activities of the national statistical system is essentially each country's own responsibility, and funds should be allocated from the national budget, but for poor countries to make substantial improvements in their statistical systems, significant external financial resources will be needed. At the Monterrey Conference on Financing for Development, participants agreed that increased resources for development and poverty reduction should be targeted at countries with effective policies and institutions. The resulting Monterrey Consensus thus puts strong emphasis on strengthening the institutions of government. The ability to provide regular, reliable data on the economy and the well-being of the population is an important indicator of good policies and institutions. Disseminating good data increases transparency and promotes accountability. It also complements important processes such as budget management and auditing.

Therefore countries that commit themselves to meaningful reforms of their statistical systems, accompanied by well thought out plans and commitment at the highest level of government, should receive increased support from the World Bank and its partners in networks such as PARIS21.

Working with the International Community

Managers of national statistical systems should maintain close relationships with international agencies and network that are involved in statistical work, because further work is needed to develop frameworks and standards and update existing ones. The International Monetary Fund's general data dissemination system and the data quality assessment framework, as well as other established frameworks for economic and financial statistics, are valuable tools, but they need to be used regularly to develop expertise in developing countries. As countries take more control over the development of their statistical systems, and as the international community becomes more reliant on their outputs, having agreed-upon processes and standards for describing how statistical systems operate and the extent to which they follow good practice will become increasingly important.

In general, better coordination among the main international organizations and data producers and managers in countries is needed to sustain a well harmonized, internationally agreed set of data, which is up-to-date, easily accessible, and complete with metadata and other documentation. The coordination of the statistical activities of the United Nations and its specialized agencies, such as the United Nations Educational, Scientific, and Cultural Organization and the World Health Organization, and other international organizations, such as the International Monetary Fund and the World Bank, takes place in a number of forums, with the United Nations Statistical Commission as the highest governing body. Day-to-day coordination issues, however, are generally left to managers and officers-in-charge to sort out and to agree on implementation details. This process has worked well, but would benefit from more formal recognition and better channels of communication.

CONCLUSION

Poverty reduction; sustainable national, regional, and local economic development; and statistical data are interwoven components of overall government efforts in improving people's well-being. Governments at all levels share the responsibility of creating an enabling business environment and providing required public services to maintain sustainable development and reduce poverty. Developing policies and programs for this purpose greatly depends on governments' knowledge about their jurisdictions. Such knowledge is only possible if the national statistical system has the capacity to collect, process, and disseminate timely and good quality data at the national and subnational levels.

Without a well functioning statistical system with strong country ownership, producing reliable and timely statistical data would not be possible. A lack of good data will, in turn,

prevent the development of sound policies and programs for economic development and poverty reduction and, hence, poor countries will not be able to break the vicious cycle they have been desperately trying to escape. An important factor to break this vicious cycle is the local analytical capacity to use the available data, which represents the demand side of these interwoven activities. This requires close collaboration between local data users and relevant statistical agencies.

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