2012/2013 PHILIPPINE HUMAN DEVELOPMENT REPORT

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Message

Empowered lives.
Resilient nations.

SINCE 1990 when the first global Human Development Report (HDR) came out, many have embraced the HD concept, but the discourse persists as the quest for HD continues. UNDP's advocacy for human development (HD) has led to the subsequent production of regional and national HDRs, thus enabling the discussions on human development to take root in country- and region-specific contexts.

Following the discipline of its global and regional counterparts, national HDRs provide the same rigor of analysis, which we now find in the Philippine Human Development Report (PHDR). As in previous editions, this 7th Philippine Human Development Report (2012-2013 PHDR) offers yet another development perspective, "Geography, " critical to the attainment of human development for the people of Philippine archipelago. The road to human development is filled with multidimensional barriers and challenges. To understand the path to human development, since 1994 the PHDRs have tackled diverse themes such as gender, education, employment, peace and security, and institutions. The past PHDRs have earned their reputation as important references to development leaders and practitioners of the country with their in-depth analysis and concrete suggestions.

The 7th edition of the PHDR takes on the spatial dimension of human development. "Geography is a deep determinant of human development," states the 2012/2013 PHDR. Throughout the report, it argues that human development takes place in physical space that is to a large extent fixed. But socioeconomic and human factors can influence each other and may lead to different human development outcomes.

The PHDR looks into the spatial patterns in the development of the Philippines and how these affect human development. For a country of 7,107 islands with diverse topographic and climatic attributes and greatly challenged by physical connectivity, the Report brings to our attention the development variations brought about by this geographic influence. The PHDR provides a perspective on the geographic conditions affecting local outcomes; the opportunity costs of not fully taking the element of distinctiveness into account in the pursuit of human development; and the institutional responses needed to address the challenges and opportunities of geographical realities within and beyond administrative boundaries.

It provides expert analyses on the functionality of human spaces and the interplay of social and economic processes affecting the community and the development of its people. The Report also provides a reflection on regional development and integration in empowering or disempowering local people in attaining full human development.

As a useful reference in development planning, this Report is especially dedicated to the local governments and their leaders to assist them in reviewing policies and interventions to maximize their efficiency in accordance to geographical uniqueness. For one, understanding geography and its impacts on human development pathways, could unveil solutions to the issue of rising inequality and disparity of urban and rural areas.

UNDP is the key advocate of human development upholding that "people are the real wealth of a nation." HD champions the creation of an enabling environment for people to enjoy long, healthy, and creative lives. Far greater than the accumulation of assets and financial wealth, human development should be the core means and the ultimate goal of development efforts.

On this note, the Human Development Network (HDN) deserves another feather in its cap for capturing the perspective of geography and human development in such an innovative and convincing manner. Indeed, the Philippines, which has started to demonstrate high economic growth, but is constantly challenged by its geographical diversity and deep-rooted inequality, will greatly benefit from the recommendations of this 7th edition of the PHDR.

Thank you and Mabuhay!

TOSHIHIRO TANAKA
UNDP Country Director

Message

THE 7th Philippine Human Development Report with the theme "Geography and Human Development" comes at a time when the government is updating the Philippine Development Plan (PDP), 2011-2016 with an eye toward paying greater attention to the spatial and sectoral dimensions of growth in the pursuit of more inclusive outcomes.

The updating also has an eye toward an examination of institutional arrangements between administrative layers of government in order to better align local and national development plans. This is critical if short- and medium-term gains are to take root and carry the country forward into the longer term.

It is auspicious therefore that the Report, in articulating the role of geography in influencing the quality and pace of human development, has made the following key points:

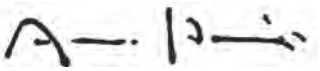
- Geography explains a significant portion of the variations in life expectancy, education, per capita income, and poverty incidence across the Philippines. It is a profound determinant of human development, intrinsically linked to the latter through human health, agricultural prospects, access between locations, and specific political institutions.
- Past policy and institutional arrangements have failed to adequately address the implications of local geography and have resulted in significant costs to human development.
- Human development costs arise from a national organizational structure that arranges sectors or agencies as vertical silos and, within each agency, by programs. Such arrangement is incompatible with the integrated, ecosystem-based governance that local geography demands.
- Large inefficiencies and foregone benefits result from the well-intended but misguided notion that the uniform dispersion of production across space will lead to growth that

is more evenly spread out and therefore more equitable.

■ Nonetheless, a geographical convergence of living standards can take place and must remain a prime objective. In short, spatially uneven, unbalanced growth is compatible with inclusive human development.

■ The challenge of geography requires the delivery of basic and social services that is integrated and locally anchored—most crucially at the provincial level.

We appreciate the lessons documented in the 7th PHDR, are challenged by them, and look forward to how they will inform development policies and programs and resource allocation priorities of both the national and local governments moving forward.



ARSENIO M. BALISACAN
Secretary of Socioeconomic Planning

Foreword

THE *Philippine Human Development Report 2012/2013* discusses the crucial role of place and space in human development. The crux of the issue is suggested in the epigraph from Rizal: some are fortunate enough to be helped and made happy by their place of stay—indeed, they may even have the luxury of choosing it. Others, on the other hand, are simply condemned by their circumstances to endure it.

Part I of the Report demonstrates how the Philippines' diverse, fragmented, and hazard-prone geography poses huge challenges to human development. Distance, land form, climate, and natural hazards are significant obstacles to people's access to health, to education, and their ability to obtain a sustainable and productive living. Besides natural factors, economic growth itself is a process that by its nature creates geographic unevenness and inequality, even while existing social and political barriers can frustrate people's efforts to better their own lot.

The human development view of geographical differences is straightforward: differences in location should *not* translate into differences in human opportunities. This implies, first and foremost, that the fundamental means needed to build human capabilities must be made available irrespective of location. Access to basic education and to primary health, in particular, should be "spatially blind." Second, recognizing that economic growth and wealth-creation are not uniformly spread but inevitably create basins of attraction, e.g., cities and mass markets, affording access to incomes and livelihood opportunities must entail "spatially connective" or market-integrating infrastructure that facilitates the bidirectional movement of goods and people.

In the limit, human development presupposes people's freedom to leave areas of low opportunity in pursuit of better prospects. What matters is that such decisions are taken not out of desperation or under duress but as free choices from among a set of humane alternatives. Even as the Report recognizes the geographic unevenness entailed by growth—and therefore the inevitability of leading and lagging areas—it points to the possibility of reconciling this with equal human opportunities: "Uneven, unbalanced growth is not incompatible with inclusive human development."

Measured against these, the spatial dimensions of current public policy are unfortunately wanting and unresponsive. The bias for centralization in many government programs leads to a one-size-fits-all approach that fails to account for local conditions affecting the population. Disease-specific national health campaigns pass over neglected tropical diseases that are rampant in some localities. Agricultural programs focus on specific crops rather than on farmers whose activities are varied and actually span several crops. Reforms and regulation of transport and access are undertaken piece-meal, according to the specific mode of transport, rather than being informed by the larger picture of travel across various modes of transport.

What prevails in all these is an emphasis on objects and categories—some particular disease, special crop, or favored transport mode—rather than on actual people and the places they inhabit. This unresponsive framework is reinforced by a "silo"-complex in many national agencies themselves, which splits responsibilities among non-overlapping (and therefore non-cooperating) bureaucracies organized along the same technocratic lines of categories rather than people. Finally, the combined failure of national vision and denial of local responsibility leads to the dissipation of resources that is the "divide-by-*N*" syndrome—the dissipation of public resources in duplicative infrastructure and programs in disregard of scale, synergy, and the conscious integration of larger markets.

The Report instead advocates giving provinces the greatest leeway to define their own priorities and providing the resources to achieve them. Not all of today's provinces represent optimal divisions from the viewpoint of geography and ecosystems (especially since sheer political considerations have influenced recent province-creation, particularly in Mindanao). But provinces are currently still the most practicable level of political authority that can give full weight to the specificity and diversity of local conditions, even as it is capable of adopting a viewpoint comprehensive enough to adopt programs that exploit potential economies of scale and scope. It is provinces and provincial leadership that can potentially respond to the differing needs of leading and lagging areas, e.g., between urban areas and peripheries—as well as provide the connections needed to foster healthy symbiotic relations between them.

Current laws and planning and budgeting practices, however, paradoxically constrain provincial governments from performing this integrative function. Rather than expand the role of planning among provinces, current laws instead reduce their jurisdictions by ripping out the most developed urban areas; tax bases and tax powers are circumscribed; provincial spending responsibilities are overextended yet sorely underfunded; in the meantime parochial political pressure is accommodated for even greater subdivision of jurisdictions. The Report argues that serious geographical obstacles to human development can never be adequately addressed without giving full rein to province-level planning and fiscal responsibility—with the democratic accountability that entails. To this end, future legislation is clearly needed to change the current city-centric emphasis of devolution and redefine the powers of local governments accordingly. The Report is being issued at what the Human Development Network believes is an opportune moment, when there is increasing interest in revisiting the Local Government Code (1991) after more than two decades of implementation. Even without legislation, however, a good deal can already be accomplished by expanding the role of provinces and province-level concerns in the design of programs and the choice of projects by national-level planning, fiscal, and line agencies.

Part II of the Report analyzes the record of provincial progress in human development over the longer period 1997-2009.

While a slow but steady improvement is evident in indicators of human development for the country as a whole, this masks the highly variable performance among provinces throughout the period. Global economic crises, such as those

which engulfed the country in 1997-2008 and 2008-2009 are crucial factors explaining the larger trend, although the record also illustrates how improvements in non-income measures of human development can occur notwithstanding conjunctural variations in income. More important, however, is the sometimes volatile fluctuations in the human development indicators in some provinces. Especially worrisome are the prospects for provinces that have some of the lowest HDIs to begin with, but which in addition are locked in the vicious circle of falling incomes and falling health and education outcomes (Agusan del Sur, Lanao del Sur, Maguindanao, Sulu, Tawi-Tawi, and Zamboanga Sibugay).

The long view also reveals rises and falls in the achievements of even erstwhile high-achievers in human development. The reasons for this can be varied, but a possible reason illustrates a point made in the theme chapter: mobility and migration can change the composition of a locality's population in many ways. Without foresight and adequate preparation, in-migration into a highly developed area can ultimately create problems in health, education, and even incomes e.g., through congestion, pollution, and the emergence of slums. On the other hand, outmigration of the skilled, educated, and youthful will certainly erode the record of the areas they leave behind.

What is clear is that the depth, variety, and implications of such local experiences can be adequately understood and addressed only by the political authorities and communities directly concerned. Indeed the collation and computation of a subnational series of the Human Development Index (HDI) and other indicators underscores the continuing advocacy of the Human Development Network (HDN) to link achievements in human development with geographical political responsibility. This returns to the theme chapter's message, therefore: under current arrangements, there is no effective political authority or responsibility for monitoring and understanding the record of human development at a comprehensive geographic scale, namely at the level of a province with all its cities and farms, all its leading and lagging areas, its entire population engaged in all types of economic activities, and its entire health and education delivery system.

This Report, therefore, is addressed to political leaders at all levels but especially to the people to whom the former are responsible and must be held to account. By issuing this volume, the Human Development Network hopes both leaders and people will recognize the challenge geography poses to human development—so that they will change the institutions that stand in the way of an effective response.

EMMANUEL S. DE DIOS
President
Human Development Network

Acknowledgments

THIS Report represents two and a half years' worth of work, a fact reflecting the nature of the topic, the most complex and multifaceted addressed by the Human Development Network (HDN) so far.

The process included two inception workshops in January and March 2011; a series of public forums to review an original set of background papers in August 2011; and further workshops in October 2011 and March 2012, before a different approach was adopted in July 2012.

At the same time, the National Statistical Coordination Board (NSCB) and HDN studied the updated global methodology for the Human Development Index (HDI) and discussed its applicability to the Philippines. An interim methodology for this volume was agreed upon and presented to the NSCB Executive Board in February 2012. Computations were subjected to a rigorous process of replication before the 2009 HDIs for provinces were disseminated in a joint NSCB-HDN Forum on 10 December 2012. The statistical annex included in this volume presents back-computations of the HDI to 1997 using the updated methodology for comparability.

The HDN Executive Committee expresses its sincere thanks to all the individuals who collaborated at various stages of the process, as participants, discussants, reviewers, writers, research associates, and staff assistants. Special thanks for their time, patience, and commitment is extended to the following:

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Abbreviations

ABRP	Agriculture Bureaucracy Restructuring Plan
ADB	Asian Development Bank
AEZ	Agro-ecological zone
AFMA	Agricultural and Fisheries Modernization Act
AFMP	Agricultural and Fisheries Modernization Plan
AIP	Annual Investment Plan
A.O.	Administrative Order
APECO	Aurora Pacific Economic Zone and Freeport Authority
APIS	Annual Poverty Income Survey
ARMM	Autonomous Region in Muslim Mindanao
ASEAN	Association of Southeast Asian Nations
ASEZA	Aurora Special Economic Zone Authority
AusAID	Australian Agency for International Development
BAS	Bureau of Agricultural Statistics
BHS	Barangay health station
BOI	Board of Investments
B.P.	Batas Pambansa
CAAP	Civil Aviation Authority of the Philippines
CAR	Cordillera Administrative Region
Comelec	Commission on Elections
DA	Department of Agriculture
DALY	Disability life years
DBM	Department of Budget and Management
DENR	Department of Environment and Natural Resources
DepEd	Department of Education
DILG	Department of Interior and Local Government
DOF	Department of Finance
DOH	Department of Health
DOTC	Department of Transportation and Communications
DPWH	Department of Public Works and Highways
E.O.	Executive Order
FAO	Food and Agriculture Organization
FBT	Foodborne trematode infection
FIES	Family Income and Expenditure Survey
GAA	General Appropriations Act
GDD	Growing Degree Days
GDI	Gender-related Development Index
GDP	Gross Domestic Product
GII	Gender Inequality Index
GNP	Gross National Product
HDI	Human Development Index
HDN	Human Development Network
HDR	Human Development Report

HIV	Human Immunodeficiency Virus
HPI	Human Poverty Index
HUC	Highly urbanized city
IHDI	Inequality-adjusted Human Development Index
IPA	Investment promotion agencies
IRA	Internal Revenue Allotment
IRR	Implementing rules and regulations
JMC	Joint Memorandum Circular
LFS	Labor Force Survey
LGC	Local Government Code
LGU	Local government unit
LSA	Local spatial autocorrelation
MDA	Mass drug administration
MDG	Millennium Development Goal
MIGEDC	Metro Iloilo-Guimaras Economic Development Council
MO	Manila Observatory
MOOE	Maintenance and other operating expenses
MPI	Multidimensional Poverty Index
NAMRIA	National Mapping and Resource Information Authority
NCR	National Capital Region
NDHS	National Demographic and Health Survey
NEDA-ICC	National Economic and Development Authority's Investment Coordination Committee
NGA	National Government Agency
NRRDMC	National Disaster Risk Reduction and Management Council
NSCB	National Statistical Coordination Board
NSO	National Statistics Office
NTD	Neglected tropical diseases
PAGASA	Philippine Atmospheric, Geophysical, and Astronomical Services Administration
PCI	Per capita income
PDP	Provincial development plan
PDPFP	Provincial Development and Physical Framework Plan
PEF	Peace and Equity Foundation
PEZA	Philippine Economic Zone Authority
PHDR	Philippine Human Development Report
PhilMIS	Philippine Malaria Information System
PIDS	Philippine Institute for Development Studies
PLPEM	Provincial/Local Planning and Expenditure Management Guidelines
PPA	Philippine Ports Authority
PPFP	Provincial physical framework plan
PSU	Primary sampling unit
PSY	Philippine Statistical Yearbook
R.A.	Republic Act
RHU	Rural health unit
Ro-ro	Roll-on, roll-off
RPT	Real property tax
SAFDZ	Strategic Agriculture and Fisheries Development Zone
SEZ	Special economic zone
STH	Soil-transmitted helminth infection
UNDP	United Nations Development Programme
UNDP HDRO	UNDP Human Development Report Office
UPSE	University of the Philippines School of Economics
WB	World Bank
WHO	World Health Organization

Philippine Provinces

Geography and Human Development in the Philippines

[Ibarra:] *"Gayunman, mahal ko ang ating bayan, tulad ninyo, hindi lamang dahil sa tungkulin ng lahat ng tao ang magmahal sa bayang pinagkakautangan niya ng buhay at pagkakautangan marahil ng kanyang huling hantungan, hindi lamang dahil gayon ang itinuro sa akin ng aking ama, kundi dahil Indio ang aking ina, at dahil nabubuhay dito ang lahat ng pinakamagaganda kong alaala, mahal ko siya dahil utang ko sa kaniya at uutangin ko pa ang aking kaligayahan!"*

"At ako, dahil utang sa kaniya ang aking kasawian," bulong ni Elias.

—from Rizal's *Noli me Tangere*[1]

Why geography?

HUMAN *development* is defined as the process that widens the range of people's choices, the most critical of which are "to lead a long and healthy life, to be educated and knowledgeable, and to enjoy a decent standard of living. Additional choices include political freedom, guaranteed human rights, and self-respect" [UNDP 1990].

Past volumes of the *Philippine Human Development Report* since 1994 have successively monitored the progress of human development across the country's regions and provinces, examining the state of gender and development, basic education and employment, as well as the impact of armed conflict. Beyond that, the report of 2009 sought to explain the pace of policy reform itself, observing that progress in human development depends on institutions, i.e., formal laws and regulations as well as unwritten codes and norms of social acceptance and opprobrium: "Deeper than policies and larger than individuals, it is the institutions that structure behavior which matter deeply for whether human development advances or not" [HDN 2009].

What has yet to be taken fully into account, however, is that human development takes place in *physical space*. People locate themselves in spaces differentiated by elevation and slope, landform and rock cover, temperature and precipitation, accessibility, and exposure to natural hazards. These natural factors, at the very least, combine to influence initial land potential and land use, the burden of disease, settlements patterns—and, ultimately, health, livelihood, and standards of living. Geography, in short, is a deep determinant of human development.

Within the Philippines, physical space is unusually diverse. "Seldom does a territory as small as the Philippine Archipelago possess so many varied and unusual characteristics" [WS 1967].[2]

The archipelago comprises 7,107 islands, spanning 1,850 km. of ocean surface from north to south, with a total land area of about 300,000 sq. km. and a coastline 235, 973 km. long. Islands are relatively small, with mountainous interiors and narrow coasts, although larger ones feature a broad array of hills, plateaus, and plains. Approximately 65 percent of the land area is considered uplands, but there are also extensive lowlands on the largest islands.

The country lies in the humid tropics, but temperatures and precipitation are not uniform: temperatures in the lowlands are not found in the highlands while annual precipitation can range from a low of 965 mm. in some southern places to over 4,265 mm. along certain eastern shores. Climatic variety is further heightened by alternating cycles of drought and flood[3] as well as by typhoons which do not strike all areas equally.

International research finds that geography plays a role in explaining the different rates of recent economic growth across countries [GSM 1999; Sachs 2003; AJR 2001, 2002; Easterly and Levine 2003; and RST 2002]. The obvious question then presents itself: does geography also play a part in shaping local incomes and outcomes within a country like the Philippines?

Table 1.1 strongly suggests that it does. It summarizes how much of interprovince variation in human development outcomes (as described in **Part II**) is explained by factors related to geography. Column 2 of the table indicates that variations in climate, slope, elevation, sea- or landlockedness "explain" some 25 percent of variation in life expectancy across provinces; 37 percent of the variation in mean years of schooling; and 32 percent of the variation of per capita income across provinces. It also explains 47 percent of variation in the incidence of provincial income poverty. Altogether, as much as 34 percent of variation in provincial HDIs is associated with varying geographic factors.

Additional consideration must be given, however, to *spatial dependence* in provincial incomes and outcomes. Spatial dependence occurs when observed values of some variable for one location seem to be related with the values of adjacent locations. Hence, a location may have a high value of the variable and neighbors with high values as well, or it may have a low value and low-value neighbors for a given variable. Another pattern may be that a place differs from its neighbors, having a low value of the variable while its neighbors show high values (or vice versa). The point is that clusters might be observed in the spatial arrangement of variables beyond what might be expected from chance alone.

Table 1.1 Variation in provincial indicators explained by geography* (in percent)

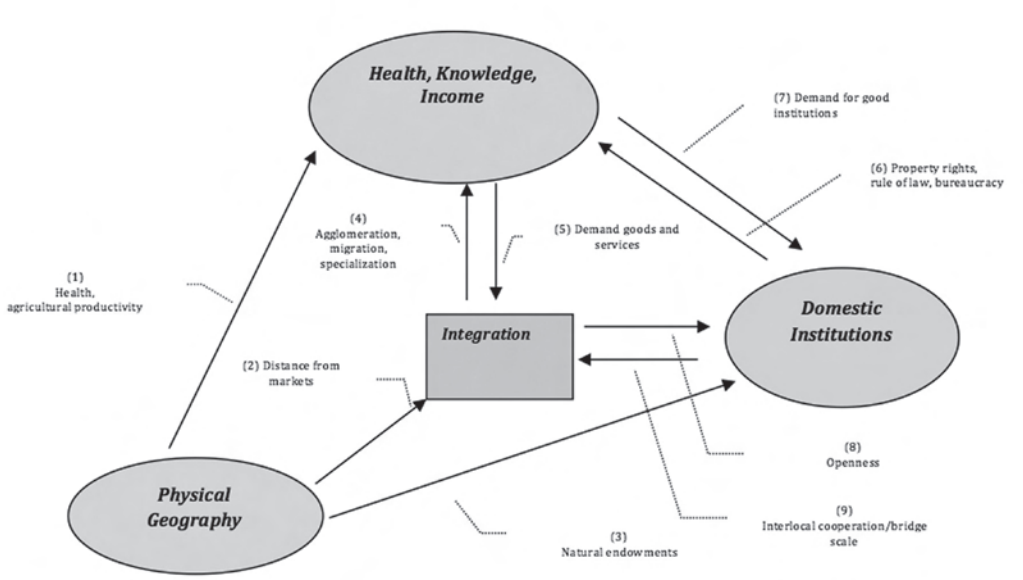
Indicator (Dependent variable)	Geographic factors*	Geographic factors plus neighborhood effects**
Life expectancy (2009)	24.7	42.4
Mean years of schooling (2008)	36.6	41.4
Per capita income (2009)***	31.6	40.2
Income poverty incidence (2009)	47.2	54.2
HDI 2009	34.3	44.7

* Explanatory variables: climate type, slope, elevation, whether sea/landlocked. No other factors are controlled for.
** Square of the correlation of the actual Y and predicted Y. A proxy measure for goodness-of-fit in spatial lag models
*** In PPP NCR 2000 pesos

As is evident from **Maps 1 and 2**, such clusters of spatial dependence can be observed for per capita income and HDI [**Box 1.1**]. Metro Manila, Cavite, Rizal, Bulacan, Pampanga, and Benguet share similarly high values with their neighbors; call these "hot spots." Meanwhile, Sulu and Tawi-Tawi are locations with low values and have neighbors that are similarly situated; these are "cold spots." Mountain Province and South Cotabato are outliers: the former has low values but high-value neighbors, while the latter has high values but low-value neighbors. When such *neighborhood effects* are statistically controlled for, the associations presented in Column 2 of Table 1.1 improve by an average of 13.28 percentage points or 46 percent. More detailed results are presented in Column 3 of Table 1.1.

Neighborhood effects also matter through time [Mapa et al. 2013]. After controlling for demographic and political variables, spatial dependence is positively implicated in the behavior of average income growth rates of provinces between 1988 and 2009 [**Maps 3 and 4**]. On average, a 1 percentage point increase in the growth of per capita income of neighboring provinces

Figure 1.1 Linking geography and human development



Source: Adopted from Rodrik and Subramanian [2003]

is associated with a 0.5 percentage point increase in the growth of per capita income of the home province.

Some locations exhibit strong local neighborhood effects over the period: provinces in the Autonomous Region in Muslim Mindanao (ARMM), for example, and a number of other provinces in Mindanao (Bukidnon, Lanao Norte, Sultan Kudarat) are cold spots. On the other hand, Romblon and Marinduque are hot spots. Eastern Samar, Mindoro Occidental, and Zambales have low values but high-value neighbors.

That geography matters is not to say that it defines an "inescapable destiny." Indeed, Table 1.1 suggests that large portions of the variation in provincial incomes and outcomes are still unaccounted for by geographical conditions. Moreover, Box 1.1 suggests that while neighborhood effects are important, these may depend on something more than just being "near" or "far from" a specific location. In other words, while physical geography may be fixed, socioeconomic outcomes need not be.

We therefore need to know the following: through what channels does geography affect local outcomes? What are the opportunity costs of not fully taking conditions *in situ* into account in the pursuit of human development? How can institutions better ensure that challenges and opportunities presented by local geography are addressed or leveraged?

How does geography influence human development across the Philippines?

There are three routes by which geography may be linked to incomes and outcomes [**Figure 1.1**]: directly, through its effect on human health and agricultural productivity (Arrow 1); indirectly, through its influence on distance and the extent of market integration (Arrow 2); and indirectly again, through its influence on the quality of domestic institutions (Arrow 3).

These links are not always unidirectional, however. For instance, being integrated into markets can raise a locality's incomes by encouraging specialization and the diffusion of technology (Arrow 4); but conversely, trade can be the result (rather than the cause) of increased productivity (Arrow 5). Better institutions can raise incomes by facilitating more investment (Arrow 6), but better institutions can also evolve from a direct demand for them due to a wealthier, more educated, or more empowered citizenry (Arrow 7). Better institutions can also evolve as increasing integration creates pressure for more openness (Arrow 8).

Box 1.1 Spatial dependence in HDI components

SPATIAL dependence occurs when observations of one location depend on the values of other locations. A location may have a high value and high-value neighbors, or a low value and low-value neighbors, for a given variable. Or it may have a low value and high-value neighbors, or the reverse. The point is that clusters are observed in the spatial arrangement of variables that is beyond what is to be expected by chance alone.

Spatial autocorrelation can be measured using Moran's Index [Moran 1950]. The range of possible values for Moran's *I* is from -1 to 1, where a positive value indicates that across all geographic units, similar values are more likely than dissimilar values between neighbors, and vice versa.

Moran's *I* for indicators of human development and for poverty incidence are presented in Box Table 1. All have a positive value, which means that across all provinces, similar values between neighbors (high-high or low-low) are more likely than dissimilar values. With the exception of expected years of schooling, all values are statistically significant. (The same results are generated for earlier years.)

Box Table 1 Moran's indices for HDI components and poverty incidence

Variable	Moran's *I*	SD	z-stat	p-value*
Life expectancy 2009	0.363	0.078	4.803	0.000
Mean years of schooling 2008	0.363	0.078	4.821	0.000
Expected years of schooling 2008	0.096	0.078	1.394	0.163
Per capita income 2009 (in NCR 2000 pesos)	0.367	0.078	4.893	0.000
HDI 2009	0.433	0.078	5.684	0.000
Poverty incidence 2009	0.544	0.079	7.044	0.000

* Two-tailed test

Moran's *I* gives us a single global result for the whole data set. However, it does not provide information on the characteristics of spatial clustering. A graphical analysis that aids in this is Moran's scatterplot. Moran's scatterplot lies in four quadrants, each quadrant representing a specific kind of spatial association between the home province and its neighbors with respect to a variable of interest. Home values are on the horizontal while spatially weighted averages of neighbors' values are on the vertical.

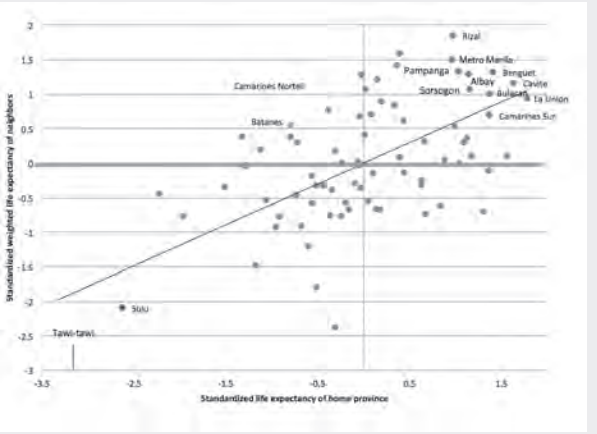
- Provinces in Quadrant I (HH) have high values and high-value neighbors.
- Provinces in Quadrant III (LL) have low values and low-value neighbors.
- Provinces in Quadrant II (LH) have low values and high-value neighbors.
- Provinces in Quadrant IV (HL) have high values and low-value neighbors.

In addition, measures of local spatial autocorrelation (LSA) help identify pockets of localities where the considered phenomenon is extremely pronounced [Oliveau and Guilmoto 2005]. Provinces with significant local spatial autocorrelation in Quadrant I are known as "hot spots." Those in Quadrant III are known as "cold spots." Provinces in Quadrants II and IV are potential spatial outliers.[1]

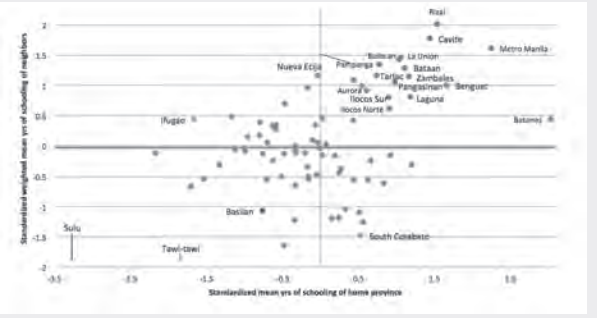
Box Figures 1 to 5 are Moran's scatterplots for each of the variables, highlighting hot spots, cold spots, and spatial outliers.

1 Oliveau and Guilmoto [2005] (http://iussp2005.princeton.edu/abstracts/51529).

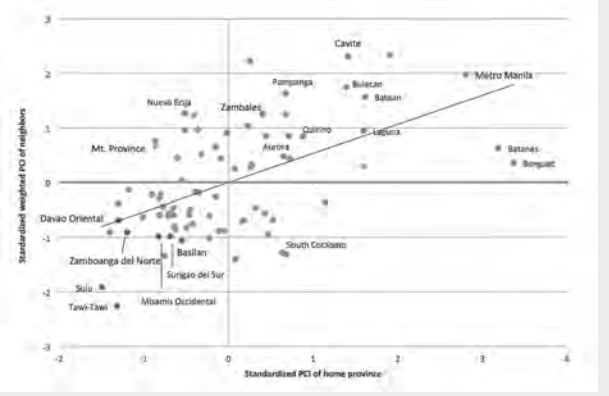
Box Figure 1 Life expectancy (2009)
Observed home values vs. spatially weighted average of neighbors



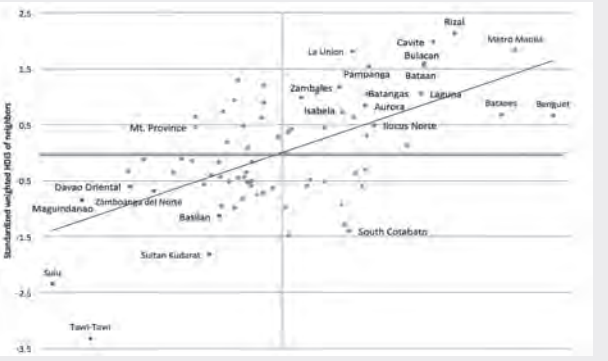
Box Figure 2 Mean years of schooling (2008)
Observed home values vs. spatially weighted average of neighbors



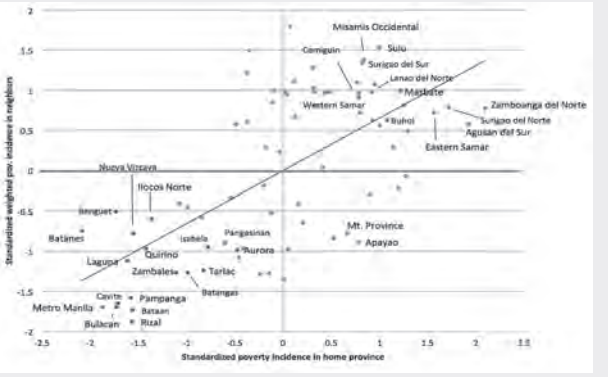
Box Figure 3 Per capita income
Observed home values vs. spatially weighted average of neighbors



Box Figure 4 HDI (2009)
Observed home values vs. spatially weighted average of neighbors



Box Figure 5 Poverty incidence (2009)
Observed home values vs. spatially weighted average of neighbors



Human health

Geography and health are intrinsically linked. Where persons are born, live, study, and work directly influences their health experiences. This is due to the air they breathe, the food they eat, the viruses they are exposed to, and the health services they can access [Drummer 2008].

The range and intensity of diseases, especially vector-borne ones,[4] are affected by natural conditions such as climate and topography [Gallup and Sachs 2000]. Such diseases contribute significantly to the disease burden in tropical countries, which on average have per capita incomes only a third of those of nontropical countries [Gallup 2000]. Cross-country studies indicate that environments conducive to disease—as represented by the prevalence of malaria—have significant negative effects on economic performance [Cartensen and Gundlach 2006; and GS 2000].

Ill health can be expected to contribute to impoverishment. It has been estimated that malaria is responsible for around 46 million disability-adjusted life years[5] (or DALY), i.e., years of healthy or productive life lost due to illness, disability, and premature death. The estimated total burden on households can go up to a catastrophic 32 percent of annual income for the very poor.[6] Schistosomiasis, on the other hand, is responsible for anywhere between 3 million and 70 million DALY.

The costs of these and other chronic illnesses involve the direct monetary costs of mitigating and managing recurring sickness and the opportunity costs of lost schooling or work for the ill or those who care for them. These costs can have longer-term implications on a household's economy—its assets, income levels and consumption patterns, debt, and livelihood sustainability—as well as on an individual's cognitive development, education levels, and lifelong capabilities [Russel 2004]. The chronic inflammatory process associated with long-term schistosomiasis, for example, contributes to anemia and undernutrition, which can lead to growth stunting, poor school performance, low work productivity, and continued poverty [King 2010].

Malaria is the ninth leading cause of morbidity in the Philippines and is found in 58 out of 80 provinces, with nearly 14 million people at risk [DOH 2011].[7] Most of the country's malaria cases occur in forested, swampy, hilly and mountainous regions in Luzon and Mindanao, and among upland subsistence farmers, forest related workers, indigenous peoples, and migrant agricultural workers. Schistosomiasis is endemic in 1,230 barangays across 28 provinces, with approximately 12 million at risk and 2.5 million directly exposed. Surpassed only by tuberculosis and malaria in prevalence, transmission of schistosomiasis is highly dependent on the distribution of its intermediate snail host, which in turn is highly dependent on annual rainfall patterns and local topography [Belizario et al. 2007; and Blas et al. 2004]. Rice fields, streams, and creeks are potential breeding grounds, and irrigation systems can transport hosts into previously nonendemic areas [Leonardo 2012]. Farmers, fresh water fishermen, and children are especially vulnerable.

Four other "neglected tropical diseases" (NTDs) are endemic to the Philippines and need to be accounted for [**Maps 5 to 8**]. Like schistosomiasis, these NTDs do not cause instant death but "chronic disabilities and deformities that hamper the growth and development of children, as well as the productivity of adults."[8] The four are (a) lymphatic filariasis (elephantiasis or *tibak*), the second leading cause of permanent and long-term disability in the country, endemic in 43 provinces and infecting about 645,000 persons [DOH 2011]; (b) soil-transmitted helminth infections or STH (e.g., hookworm, tapeworm) which infect about 66 percent of preschool children, 67 percent of school-age children, and up to 43.1 percent of the general population at the provincial level;[9] (c) foodborne trematode (FBT) infections, the full extent of which is still unknown but whose prevalence at the barangay level has been observed to be as high as 36 percent;[10] and (d) leprosy. Women and children living in remote areas or without access to effective health care are most commonly at risk to NTDs.

The individual and household socioeconomic impact of NTDs is, sadly, understudied.[11] One rare attempt to quantify local effects in four endemic barangays in Leyte province estimated the productive days lost per schistosomiasis-infected person per year to be 45.4 person days, with the disease peaking among the 10-19 age group [Blas et al. 2006].[12] Filariasis is estimated to account for $4.4 million in annual losses from decreased

productivity and increased costs of care.[13]

There are no estimates for the local impact of STH, but international evidence indicates it could deal a severe blow, especially at the most vulnerable stage of life. Results from rigorous impact evaluations of benefits from school-based mass deworming are telling: in the short term, a reduction of absenteeism by 25 percent and an additional year to the average child's education (if dewormed throughout elementary school); in the long term, a 34 percent reduction in work days lost to illness, a 12 percent increase in hours worked, and an improvement in wage earnings (21-29 percent) [JPAL 2007; and Baird et al. 2011]. School-based mass deworming has in fact been described as "the most cost-effective way to increase school participation (of all the alternatives that have been rigorously evaluated)" as well as "one of the most cost-effective ways to improve health" known [JPAL 2007].

Are malaria and NTD disease burden associated with low levels of human development, and does it matter for the disparities observed across the country? There is evidence for saying, yes. A positive and significant correlation exists between the overlapping *occurrence* of diseases, on the one hand, and poverty incidence, on the other [PEF 2011].[14] That is, the presence of greater variety of tropical diseases in a province over the last five years is associated with a higher incidence of income poverty; less variety is associated with lower poverty incidence. Put differently, tropical diseases tend to overlap one another in areas where the incidence of income poverty is higher [**Map 9**]. It is surprising, however, that no strong correlation exists between the recorded prevalence of any *one* disease and an array of provincial or municipal poverty indicators.[15]

The direction of causation may go either way. On the one hand, the correlation depicted in Map 9 may indicate the cumulative negative effects on human productivity and income that results from chronic parasitic infections (of any type), which often co-occur.[16] On the other hand, it could reflect the obvious point that poorer communities are less able to eliminate or control diseases when these occur, or that poor living conditions (e.g., inadequate environmental sanitation, poor personal hygiene) facilitate the transmission of certain parasites.

While the latter interpretation is fair, it would be mistaken to conclude that rising incomes *per se* are sufficient to take care of these health threats—an inference that removes the problem from its physical context. In fact, closer examination suggests that the overlapping occurrence of diseases is more strongly associated with geography than with poverty incidence. In particular, geography "explains" twice the percentage of variation in the occurrence of overlapping diseases than does income poverty [**Table 1.2**].

Table 1.2 Variation in disease count* per province explained (in percent)

Correlate	Adjusted R^2
Income poverty incidence (2009)	13.31
Geography (climate, sea locked, landlocked)	26.76

* PEF [2011]
Source: Author's computation

Why the weak correlations between poverty and specific NTDs? This may be an artifact of poor or incompatible data.

First, survey-based poverty data may not be representative at a scale with enough detail to differentiate specific ecological conditions associated with vector-borne diseases. Community-based poverty data (i.e., down to the barangay level), if available, may provide a better resolution, but then the quality of available disease data to correlate it with is quite poor. The latter is attributable to how information is collected by local public health services, which utilize more passive forms of community surveillance and which may be limited by manpower, resources, and accessibility of endemic sites (typically far from health centers).[17] Skilled local health personnel who might provide accurate diagnostic services are also in short supply. One assessment showed that only 58.5 percent of the positive schistosomiasis specimens were correctly read by field microscopists [Belizario et al. 2007]; in another, the extent of misdiagnosis of an FBT ranged from 16 to 25 percent [Belizario et al. 1997]. Reinfection is also not fully accounted for [Belizario et al. 2004]. In short, there may be gross underreporting as well as misdiagnosis.[18]

Data available at national repositories are also of uneven quality. Malaria, whose reduction is an explicit Millennium Development Goal (MDG), and filariasis, whose elimination was declared a priority by the World Health Assembly in 1997, seem to be handled by programs that are relatively stable in terms of funding, strategy, and protocols. Schistosomiasis, STH, and FBT have not been as fortunate, however.[19] Schistosomiasis still has no clear control strategy despite the availability of effective control tools [Belizario et al. 2007], and STH seems to be saddled with coordination problems in program implementation (e.g., the coverage of public school-based deworming in 2011 was only 70 percent) and data storage (available STH data are regional and of vintage 2004). No database exists for FBT although a first national baseline for FBT is scheduled for 2013 [Hernandez, personal communication].

Poor disease data also seem to be a direct result of the inadvertent breakdown of the public health information system after the devolution of health services in 1991. What used to be a coherent management information system that flowed from barangay health stations (BHS) to municipal-level rural health units (RHU), to district and provincial health offices, then further up to the regional and national levels, was cut in two places: between the RHUs and districts and between the province and regional centers [**Box 1.2**].

That gathering better data is a crucial first step is demonstrated by the fact that when data from a 2005-2008 schistosomiasis survey were used, whose design attempted to factor in the focal and nonrandom nature of the parasite across provinces, a positive association with income poverty did emerge [**Table 1.3**]. The stronger association with geography still remained, however, and revealed a sharper picture, one which supported questions about the validity of the traditional profile of a schistosomiasis endemic province [Leonardo et al. 2012].[20] Links with hydrological (e.g., irrigation) and socioeconomic (e.g., fertilizer trade) connectivity were also highlighted as was its co-occurrence with STH and FBT infections.

Even so, the focal and nonrandom nature of the parasite *within* provinces may still not have been captured by the survey.[21] The derived prevalence for Agusan del Sur was only 3.9 percent, far lower than the derived prevalence of 31.8 percent from a survey in two municipalities of the same province surveyed at about the same time [Belizario et al. 2007]. The result of such underreporting at the scale where it counts is not just an underestimation of the magnitudes of the disease, but an inattention to its *locations*, which then become the basis for policymaking, planning, and fund allocations.[22]

Table 1.3 Variation in schistosomiasis prevalence explained* (in percent)

Correlate	Adjusted R^2
Income poverty incidence (2009)	5.41
Geography (climate, elevation, sealocked, landlocked)*	15.67

* Schistosomiasis prevalence from Leonardo et al. [2012]
Source: Author's computation

Threats to human health are site-specific and have potentially large human development costs. But their full extent is under-appreciated. These threats have spatial peculiarities indicating that rising incomes alone will not suffice in their control or elimination. Important intrasectoral and intersectoral spillovers are also involved in their persistence—i.e., spillovers in the prevalence of different diseases, cross-disease control, environmental health, and agricultural interventions—as well as in their impacts, e.g., across health, education performance, and livelihood. Spillovers must be taken into account in considering any public health approach.

The implication is that actions must be direct and integrated—locally. Integrated because this is what efficiency demands, in the light of spillovers; and locally integrated, not only for practical reasons[23] but because provinces have the most at stake in seeing integration succeed. Currently, however, provinces have little to do with the planning for or delivery of quality basic quality health services (as discussed further below). Moreover, national-level agents interpret "integration" as "co-implementation" across disease control programs [Hernandez, personal communication], an interpretation that at best aims to reduce operational waste and save on costs across vertically organized national health programs.

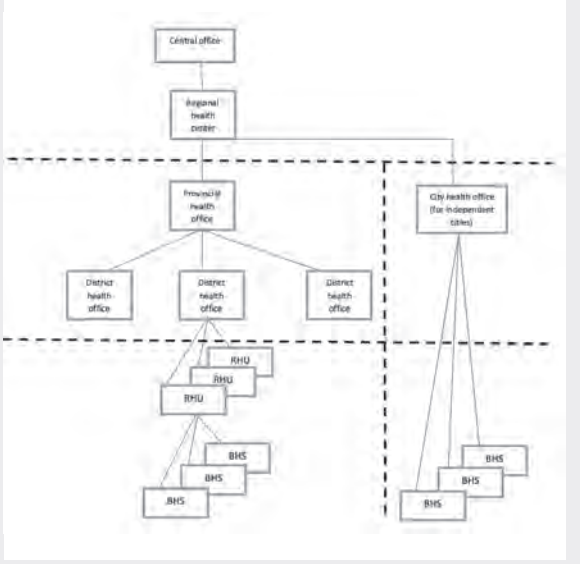
But integration can entail and achieve far more if

Box 1.2 A disjoint public health information system

THE health system set up in the 1960s featured a flow of information from barangay health stations (BHS) to the central office of the Department of Health consistent with a centrally managed public health system [Box Figure 6]. When health services were devolved to local governments in 1992, the information links were severed (bold, dashed lines): between rural health units (RHU) and health offices in the districts and provinces, and between district/province offices and the DOH's regional offices and central office.

Health services of independent cities—both charter and highly urbanized—function independently of the province they are geographically located in and health information is not necessarily shared.

Box Figure 6 Assignment of health functions and health information links



hard and strategic choices are made to internalize intra- and intersectoral spillovers within and across localities. Beyond the possible savings for national programs, an integrated approach can potentially deliver improved education results, higher adult productivity, overall local growth, and human development.

Agricultural productivity

Geography is directly tied to agricultural prospects through landforms, topography, temperature, and precipitation, which combine to determine climate and soil types. Geography thus has its greatest impact at low levels of development, when traditional agriculture dominates a local economy [Gallup 2000]. In the Philippines, the incidence of income poverty is three times greater among agricultural households than among all other households combined; two of every three income-poor persons depend directly on agriculture for employment and sustenance. The low incomes observed primarily reflect low productivity.

Of the many features of Philippine geography, variation in precipitation has a particularly "profound effect" upon the distributional patterns of the natural vegetation, the quality of tropical soils, and even the cultural landscape [WS 1967:46]. Based on the distribution of rainfall in the country, four broad climate types can be delineated [**Map 10**]. But variations can still occur within each type because of such factors as elevation. Climate and parent-soil material give the Philippines a wide range of soils, some of which are very rich and some quite poor.[24] Crops in turn are selected on the basis of water availability (e.g., rice versus corn), and crop choice determines cropping systems and associated cultural patterns.

Everything else being equal, climate and soils determine an area's agricultural prospects, i.e., its comparative advantage or disadvantage with respect to types of crop. The implications of a broad range of natural variation can therefore be critical for an agriculturally oriented population.

As an illustration, **Map 11** presents one possible mapping of agro-ecological zones (AEZs) across the country based on temperature, moisture, slope,

elevation, and soil order. Methodologically, temperature and moisture indices were combined to define seven agro-climatic zones, which were in turn cross-tabulated with four agro-edaphic zones defined from combinations of topography and soil order categories [**Box 1.3**]. The combination produces 26 categories for the Philippines' AEZs, providing an "ecology-based division of space," emphasizing "general suitability for agriculture or potential for agriculture" [Manila Observatory 2012]. The shares of each of the resulting AEZs in total land area range from 0.07 to 19.53 percent, with the three largest shares going to zones characterized by "critical soils requiring intensive management."[25] Indeed, 53 percent of the soils across the Philippines are such critical soils.

It is important to note that these AEZs do not claim to imply a specific crop or development potential in the sense of the "best use" of land [Ibid.]. Further layers of information are required for this purpose.[26] Map 11 is simply one picture of relative *terrestrial* conditions at the meso level, based on biophysical conditions measured over a long period.

Nonetheless, at least one important point is revealed: there is a wide variety of AEZs across the country which, even when deliberately limited to a manageable number,[27] do not neatly correspond to administrative divisions. That is, there may be AEZ homogeneity across an area like the Central Plain of Luzon, or AEZ heterogeneity within an island or a province, such as in Negros Oriental or Eastern Samar. In fact, types of AEZ are not uniformly distributed across space, implying that "strategic" areas for specific agriculture may not be either. It is not even clear that all administrative divisions have an area that is "strategic" agriculturally.

On this basis alone, it can be argued that if land-based agricultural prospects are to be realized, then no "one-size-fits-all" approach to production and farm management will work. Instead, a wide range of technology and approaches must be made available through highly customized agricultural extension services that can be matched with individual farms [Ponce 2006].

Unfortunately, governance of the agricultural sector is currently unable to afford extension services of this kind. Rather, extension services are highly centralized and perfunctorily conceived, with practically no budget for the development of extension skills among local government personnel or extension facilities, or the improvement of organizational management [Ponce 2006]. Meanwhile, the sector continues to invest heavily in the provision of "production support" in the form of subsidized seeds, fertilizers, machinery, and post-harvest facilities—which are basically private goods—whose allocation across local governments has little rational basis.

The failure to provide customized extension services to help local farms respond to varied biophysical conditions causes the persistently large variability in rice yield per hectare within and between production environments (i.e., irrigated, rain-fed, upland). This variability is seen in **Table 1.4**, which shows average gaps in rice yields across the country and the factors that have been identified as explaining such gaps.

The table indicates that yield gaps are about five tons per hectare in the wet season to about six tons per hectare in the dry season, with about one-third accounted for by the failure to address micronutrient, pest, and crop management problems; another third due to the failure to address macronutrient deficiencies and water problems; and the final third because of the failure to work around fixed factors such as weather, soil texture, and hydrology (flooding). The opportunity cost of this last category is thus a 25 percent increase in yield per hectare foregone. Overall, the opportunity cost of failing to provide customized extension services can amount to a 150 percent increase in yield foregone.

More fundamentally, the undue focus on rice at the expense of other important crops and sources of protein—the explicit pursuit of *rice self-sufficiency* itself—reflects a disconnect between the overarching goals of human development and its institutional embodiment in the agricultural sector. Basically, sector goals miss the mark by focusing on rice self-sufficiency at all costs—rather than on cost-effective food security. This misdirected focus on production rather than on farm incomes then becomes translated into inappropriate strategies, i.e., strategies that are overly centralized, vertically organized by commodity, and dominated by rice. It is ultimately reflected in faulty budget allocations, such as allocations for production inputs rather than for technology and other public goods.

Even Republic Act 8435, the Agricultural and Fisheries Modernization Act (AFMA), defined food security as "availability, adequacy, accessibility, and affordability of food supplies at all times" but went on to emphasize "sufficiency in our staple food, namely rice and white corn," which subsequently eclipsed all other concerns of the law.[28] Coherence and focus in an agency's operations require coherence and clarity in its organization, something that has so far eluded the Department of Agriculture (DA), however [**Box 1.4**].

The commodity approach to agriculture is especially disconnected with realities on the ground if one notes that local farmers are typically engaged in a multi-commodity activity [**Table 1.5**] designed mainly to minimize risk, a strategy that provides "access to a secure food source in times of climatic adversity" [Bankoff 2007]. This disconnect is bound to be magnified by the impacts of climate change.

The commodity approach also neglects fisheries, particularly municipal fisheries, and of coastal resource management more generally. Municipal fisheries account for 85 percent of fisheries employment, and their contribution to total fisheries production in terms of both volume and value has dropped progressively in recent years [AFMP 2010]. Fisherfolk suffer the highest poverty incidence among nine basic sectors, i.e., 41.4 percent in 2009, an increase from 35 percent in 2003 and a figure higher than for farmers (36.7 percent) and the general population (26.5 percent).[29]

The proximate cause of this deterioration seems to be overfishing brought about by coastal area degradation, among others, which in turn is linked to what is done on land and often in the name of agricultural development (e.g., clearing of mangroves for fish or shrimp ponds and other agro-industrial ventures). Fishery resources provide the most important source of protein for most people, and coastal ecosystems provide the breeding and feeding grounds for marine life. However, their critical role in people's health and economic well-being does not seem to count for much, even within that sector.[30]

That the current approach to agriculture is far from the mark is not hard to see. Between 2001 and 2010, rice support claimed 47 percent of the budget of P52.8 billion (excluding irrigation).[31] During the same period, however, self-sufficiency in rice even declined by 10 percentage points from 91.29 percent to 81.27 percent [**Figures 1.2** and **1.3**]. In 2011, rice claimed an even larger slice of the pie (52.4 percent), and a sharp percentage point increase in the self-sufficiency ratio was recorded. However, the latter was achieved only by holding down imports to one-third its level in 2010 and then drawing down the country's rice stocks—an unsustainable strategy.[32] Conversely and unsurprisingly, support to subsectors where poverty incidence is much higher, such as fisheries and coconut, was crowded out [**Figure 1.4**], and potential reductions in overall poverty incidence—if approaches had been more crop-neutral—were foregone [**Figure 1.5**].[33]

In short, the "single commodity–production" focus has been costly, has undermined food security, and has ultimately been antipoor [Paris and Antiporta 2006].

As in the case of health, an integrated area approach is needed in order to raise farm productivity and improve food security. The dawning realization of the effects of climate change is a further reason to seriously doubt the effectiveness of the current crop-based, centralized approach to agriculture, and indeed of current planning practice in general [**Box 1.5**]. The nature of agriculture requires planning along agro-ecological zones which, in an archipelagic context, must also include marine ecosystems as well as forests, water, and other natural resources that are

Table 1.4 Average rice yields across the Philippines

Average grain yield (t/ha/season)*		Constraints and their opportunity costs (in terms of yield increase)	
Wet season	Dry season	Constraints	Opportunity cost
8.13**	10.17**	Seed quality, climate	
6.51	8.13	Fixed factors such as variety, climate, soil texture, hydrology (e.g., flooding)	25%
4.88	6.10	Macronutrients deficiencies and water problems	33%
3.25	4.07	Soil micronutrient deficiencies, pests and crop management problems	50%

* Average across hybrid seeds, certified seeds, and good seeds
** Maximum attainable yield fluctuates from year to year by +- 10 percent.
Source: Table 3.2, Sebastian et al. [2006]

Box 1.3 Conceptual framework for developing agro-ecological zones

AS a background paper for this volume, the Manila Observatory was invited to formulate an "Ecology-based spatial framework for an alternative HDI analysis." A definition of agro-ecological zones (AEZs) was cited by way of example (taken from http://harvestchoice.org) followed by the question: Given the geographic variation found across the country, can an ecology-based division of space such as the AEZ concept be more useful for reporting HDIs and informing policy? The study was to include a definition of AEZs or an alternative ecology-based spatial framework relevant to the Philippines as well as an accompanying technical discussion of variables and limitations.

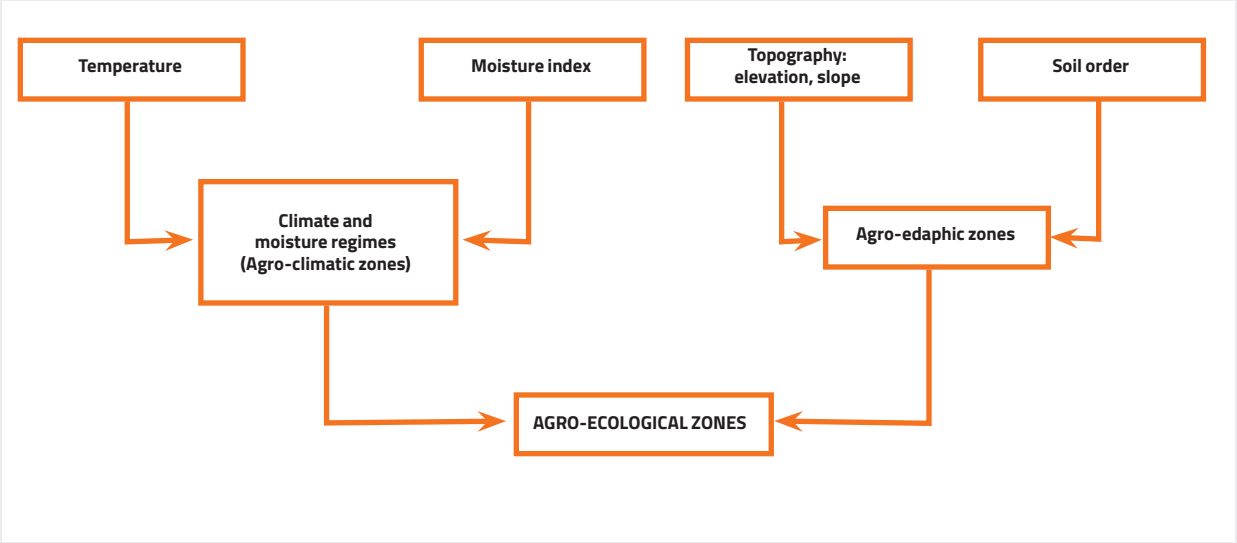
The conceptual and methodological framework finally proposed by the Manila Observatory is presented in Box Figure 7. It focused on merging what were called "agro-climatic" and "agro-edaphic" zones. "A preliminary set of variables for each type of zone was selected and then combined in map form. The choice of this preliminary set of variables was mainly determined by their availability in shapefile format, which is proprietary to ArcView/ArcGIS. The results are transboundary AEZs spanning the country" [Manila Observatory 2012:7].

For agro-edaphic variables, lowland and upland areas were generalized using the criteria of up to 100 m elevation for lowland areas, while three slope classes were specified based on the 1991 classification of the Food and Agriculture Organization or FAO: level to gently undulating (0-8 percent), rolling to hilly (8-30 percent), and steeply dissected to mountainous (> 30 percent). Soil order definitions found in the 2011 Encyclopædia Britannica were used and groupings were guided by Bationo et al. [2006].

For the agro-climatic variables, monthly mean values for relevant variables from the Climatic Research Unit Time-series dataset version 3.1 (CRU TS3.1) were used.

The full set of maps and technical notes, along with comments from reviewers, can be downloaded from the HDN website (http://www.hdn.org.ph).

Box Figure 7 AEZ framework



central to the viability of agricultural assets. Planning clearly cannot be done on a per-crop or per-commodity basis—again a vertically organized approach—nor by municipalities, which are too small geographically to horizontally integrate important components. Instead, this points to the province as the planning domain, supported by national services organized along functional (research and development, extension, and regulation) lines.

Accessibility and market integration

The nature of geographic advantage in economic terms changes over time [Gallup and Sachs 1999]. As an economy develops and expands into manufacturing and services, geographical advantage may no longer come from agricultural productivity but from *distance* or access to markets. Distance here refers to something more than physical (or straight-line) distance. It is the ease or difficulty by which labor moves, goods are transported, and capital flows and services are delivered between two locations [WB 2009].[34] Access to places with the greatest economic density or highest market potential—i.e., *leading* places—is crucial for trade and for the competitiveness of an area's industry and services. *Lagging* areas are typically economically distant from such leading places.

Topography and landforms help determine how accessible an area can be [Gallup 2000]. International studies have found that coastal regions or regions linked to coasts by ocean-navigable waterways are strongly favored in development relative to interior regions, while landlocked economies are disadvantaged even if located the same distance from the coast as interior areas of coastal regions.[35]

The selection of Manila as the economic center and administrative capital of the Philippines is consistent with this story: its harbor and the commercial position of its port with respect to the China trade were of greatest interest to the Spanish conquistadors. Manila's position as a natural transportation center for both overland and water-based connections to important parts of the archipelago also made it a strategic choice [WS 1967].

What currently makes the rest of the Philippine provinces or municipalities more or less distant, however, involves more than just having a coast or not. Being in an archipelago, 65 out of 80 provinces, covering 82.7 percent of cities and municipalities, do have coasts. But these provinces include island provinces, such as Batanes and Romblon, as well as provinces on the far eastern side such as Quirino, Quezon, Eastern Samar, and Surigao del Sur, where access is likely to be seasonal or time-intensive. Not all coastal areas, moreover, feature good natural harbors.

Land transportation networks—with a view to their quality and distribution between and within localities—have received much attention as critical to explaining

Table 1.5 Farmers/farmer operators by type of activity (2002)

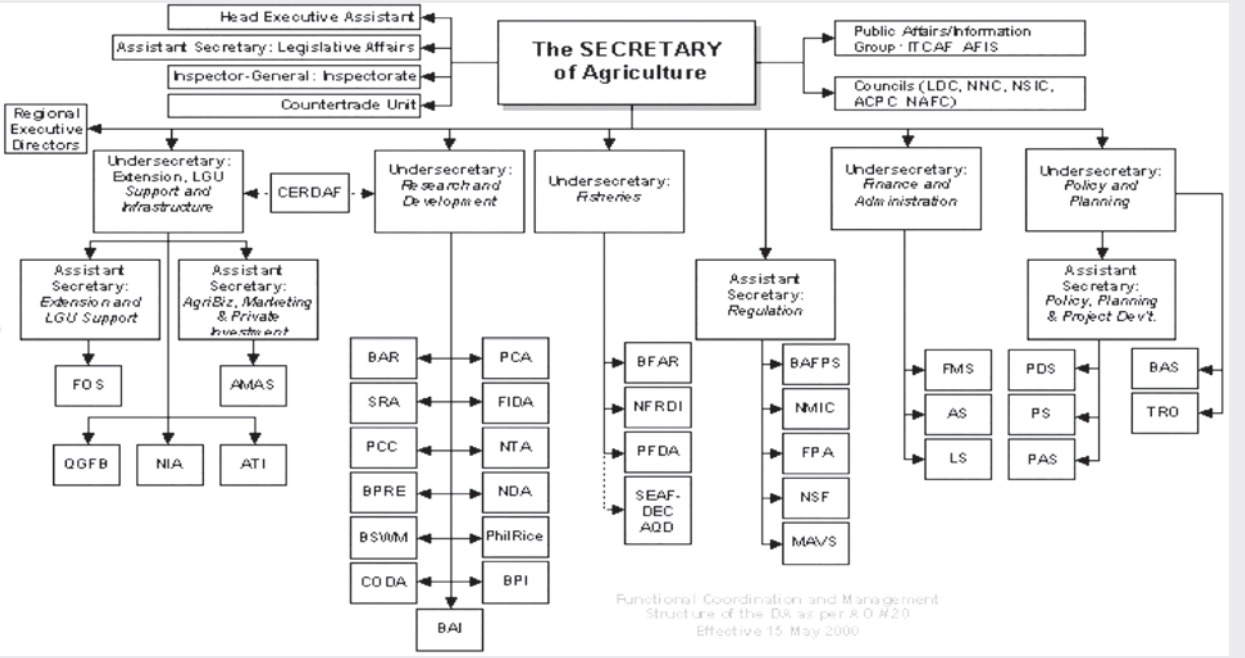
Crop farming	Number of farmers	Share to total farmers*
Rice	2,152,289	44.9
Corn	1,460,318	30.4
Sugar	167,923	3.5
Coconut	2,607,825	54.4
Mango	1,975,946	41.2
Banana	2,286,597	47.7
Pineapple	140,058	2.9
Rubber	38,190	0.8
Coffee	273,156	5.7
Livestock and poultry raising	**Number of growers**	**Share to total growers****
Cattle	924,631	22.5
Carabao	1,525,195	37.1
Hogs	2,058,950	50.1
Goat	659,771	16
Horse	228,013	5.5
Other livestock	66,011	1.6
Chicken	3,465,235	84.3
Duck	437,790	10.6
Other poultry	31,419	0.8

* Total number of crop farmers is 4,796,995
** Total number of growers is 4,112,840
Shares exceed 100% in both cases owing to multiple activities.
Source: Abad Santos and Piza [2009], based on Census of Agriculture 2002, National Statistics Office

Box 1.4 What does DA really look like?

THE organizational chart on the website of the Department of Agriculture (DA) is not the operative organizational chart of this government agency. The chart online looks like this:

Box Figure 8 Published DA organizational chart



Source: http://www.da.gov.ph/index.php/2012-03-27-12-02-11/organizational-chart

This structure is not consistent with the list of officials also found on the website, however. When asked about the mismatch between the published chart and the list of officials, DA administrative personnel presented another chart, which did not help either since it still did not reflect the officials on the website.

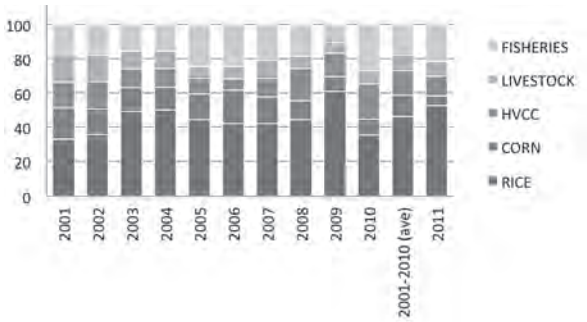
At least three other charts can be found (i.e., in David et al. [1992] and Tillah [2011]).

All structures are cosmetic versions of each other in any case, suffering the same malaise—they are organized based on commodities that have been dominated by rice. That this has severely hindered the performance of the sector was pointed out at least 20 years ago [David et al. 1992] and repeatedly since. David et al. [1992] proposed a new institutional structure, to no avail.

development disparities across the archipelago therefore. In their 1967 study of the Philippines' regional geography, Wernstedt and Spencer observed:

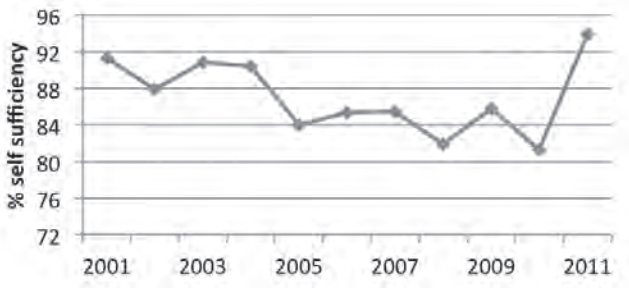
> Perhaps nothing heightens regional economic differences more than the unevenness of distribution of facilities for land transport. As a nation, the Philippines has an overall road density that approximates the average road density for the world as a whole; however the densities of these facilities vary considerably through the archipelago. Whereas the road mileages of the provinces on the Central Plain of Luzon reach a density only slightly less than that of the United States average, the road networks on Palawan and in many parts of Mindanao, particularly in the provinces of Agusan, Cotabato, and Zamboanga del Sur are practically nonexistent [pp. 303-304].

Figure 1.2 Allocation of agriculture banner program spending, excluding irrigation (2001-2011)



Sources: Budget Division, DA; and Abad Santos and Piza [2009]

Figure 1.3 Self-sufficiency ratios in rice (2001-2011)



Source: BAS

Wernstedt and Spencer cite the region they call the *Cagayan Valley* for example—lands west of the Sierra Madre Mountains and east of the Cordillera Central in Cagayan and Isabela, as well as valley portions of Nueva Vizcaya and the Mountain Province[36]—which, despite having the soil resources, the large expanses of level land, and a climate favorable for agriculture, was underpopulated and underdeveloped in comparison with other prime agricultural regions. The Spanish tobacco monopoly, the isolation of the valley during Spanish times, and the presence of vacant lands closer to the economic centers in west and central Luzon contributed to the relatively slow population growth in the valley [WS 1967]. However, interregional and intraregional communication and transportation facilities remained inadequate even by the 1960s.[37] "The lack of a good regional highway network has seriously retarded the settlement of the Cagayan Region" [WS 1967:320].

In contrast, the region Wernstedt and Spencer earlier called the "Ilocos Coast" (comprising Ilocos Norte, Ilocos Sur, La Union, and parts of the Abra River valley) had steep slopes, thin soils, strongly seasonal precipitation, and limited arable land but was relatively advanced socioeconomically compared to most other parts of the Philippines. This was "probably owing to a greater population density and a lesser emphasis upon agriculture." Notably,

> In spite of its eccentric location in the far northwestern corner of the island of Luzon, the transportation network of the Ilocos coast region is reasonably well integrated into the island's transportation system ... The major transportation artery serving the region is the north-south route, Highway 3, enters southern La Union from Manila and the Central Plain ... All of the important urban centers of the region except those in Abra Province lie along, or close by, this major north-south highway ... Highway 3 is concrete-surfaced throughout its length in the two southern provinces of La Union and Ilocos Sur, and here it is one of the finest highways in all of the Philippines ... Bulk interregional transportation demands are provided for by the Manila-North Railroad [WS 1967:338-339].

The direction of causality as between the maturity of the Ilocos economy and its more developed land transportation network is unclear. At any rate, both historical "accident" and natural geographic advantage will have played a part. The Ilocos region was already densely populated in the late 1500s when first organized into a province by the Spanish, a full 200 years before the Spanish took an earnest interest in Cagayan as a production center for the tobacco monopoly [**Table 1.6**]. Early population density and production diversification would have fuelled local economic activity, increasing productivity, trade and incomes earlier on; the tendency of the Ilocano to emigrate and remit savings back home would have also helped.[38]

All else being equal, however, Ilocos would have been a more attractive place for the Spanish in any case, since its settlements were situated on narrow coastal lowlands and were economically close to larger markets in Manila via the central plains of Luzon. By contrast, the Cagayan Valley was accessible only by a

Box 1.5 Natural hazard and climate change

THE Philippines is one of the world's natural hazard "hot spots." Lying along the Pacific Rim of Fire and within the northwest Pacific basin, the Philippines is highly earthquake prone, has 23 active volcanoes, and is visited by an average of 20 typhoons a year, eight of which make landfall.

Remarkable or destructive typhoons are "one of the greatest natural calamities that may occur in any place" and can be distinguished from the "more ordinary variety of tropical cyclones" which are responsible for much of the rain that makes the climate conducive to agriculture [Bankoff 2003:41].[1] In any case, the loss of life and property caused by tropical cyclones and their related phenomena are greater than any other natural hazard in the Philippines (Ibid.).

Hazards epiphenomenal to those above include landslides, slope failures, severe flooding, and storm surges—abnormal rises in sea levels as typhoons approach the coastline—which are triggered by tropical cyclones, and other non-climate change-induced phenomena such as lahar flows and tsunamis, which are triggered by earthquakes and volcanic eruptions. Droughts, which occur every four or so years, are associated with the lack of tropical cyclones.

Has exposure to natural hazards mattered to local growth and human development? It is hard to say. Over the 16-year period from 1985-2010, monetary losses in infrastructure and agriculture associated with natural hazard-induced disasters is estimated to be P316.3 billion [Box Figure 9]. On a year-to-year basis, however, this represents only 2.92 percent of national government expenditures and 0.54 percent of GDP on average, peaking at 12.02 percent and 2.49 percent in 1990, respectively [Box Figure 10].

In human terms, losses due to displacement and death are overwhelming. Reportedly, 157.94 million people were affected by natural hazard-induced disasters from 1985 to 2011—with typhoons accounting for the greatest share—of which 57, 227 people were killed, injured, or missing [Box Figures 11 and 12]. Reports may be overstated given that they are typically the basis for disaster fund transfers from donors and the national government. However, there could also be underreporting of injuries by households in marginal areas.

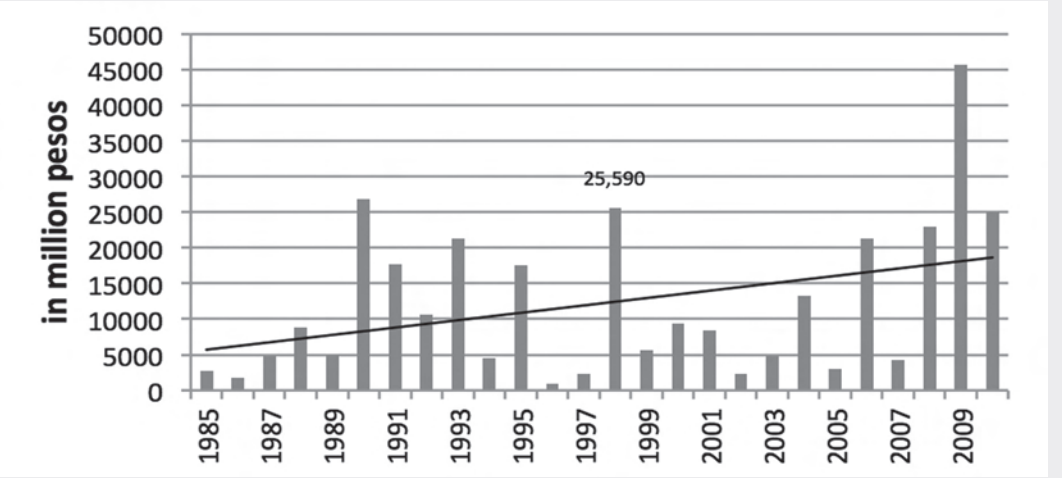
That said, it may be impossible to attribute specific damage to natural hazards, much less determine what could have been (or can be) without them. Natural hazard is a "frequent life experience" in the Philippines. A "normalization of threat" is evident in human coping mechanisms such as the design of churches and homes (e.g., Batanes), local agricultural systems (multicropping, land fragmentation), relocation and migration (e.g., of Ilocanos), including cultural coping practices (e.g., bayanihan, bahala na) [Bankoff 2007].

Moreover, "there are no such things as 'natural disasters'" [Bankoff 2010]:

> Hazards are natural events, occurring more or less frequently and of greater or lesser magnitude, but disasters are not. What makes a hazard into a disaster depends primarily on the way a society is ordered ... Vulnerable people are at risk not simply because they are exposed to hazards but also because they have been made marginal in some way.

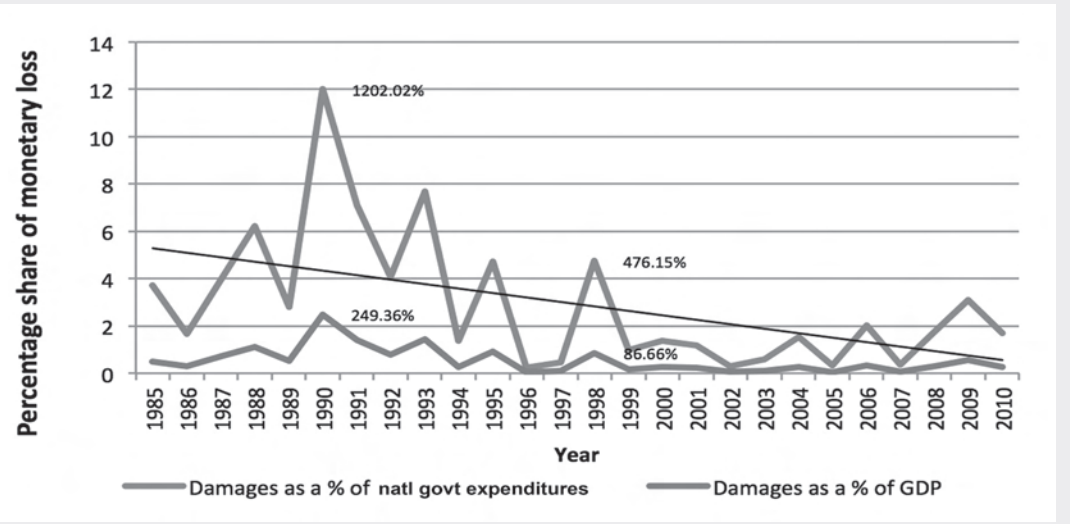
In other words, while hazards are an integral feature of Philippine geography, disasters "further require the presence of human settlement and endeavor" [Bankoff 2003]. Beyond greater populations, this refers to poor land use and management, deforestation, and the destruction of coral reefs and mangrove forests that act as natural breakwaters, among other practices, which push populations into marginal and degraded—more hazardous—urban and rural environments. Many of the country's provincial capitals and major cities are situated on floodplains, which are naturally fertile ground and preferred sites for settlements because they are near the source of water [Lagmay 2012]. For instance, Metro Manila itself is situated in a floodplain, as has become known since Typhoon "Ondoy" (Ketsana) in 2009. So were the communities of Bayug, Upper

Box Figure 9 Monetary cost of damages due to natural hazard induced disasters (1985-2010)



Sources: Bankoff [2003], 1985-1989; National Disaster Risk Reduction and Management Council (NDRRMC) Yearly Statistics 1990-2010

Box Figure 10 Monetary losses as a percentage of national government expenditures and GDP



Sources: GDP & expenditure, NSCB; Cost of damages, Bankoff [2003] for 1985-1989 and NDRRMC Yearly Statistics for 1990-2010

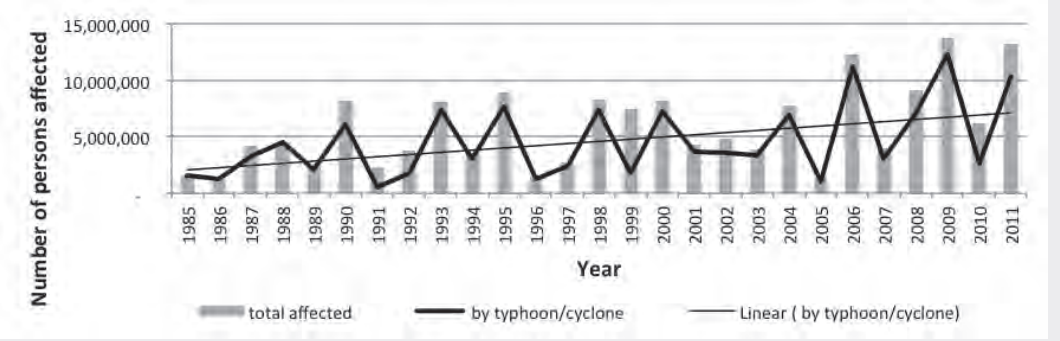
Hinaplonan, Hinaplonan, and Santiago in Iligan, which were wiped out in December 2011 by floods triggered by Typhoon "Sendong" (Washi).

The trendlines in Box Figures 9 and 12 indicate that even as the frequency of natural hazards may not be increasing, their impact on lives and property is.

Climate change-induced hazards are likely to confound local coping mechanisms and magnify the impact of poor land use and other practices on disaster risk. Two types of climate change impacts can be identified. The first involves episodic events

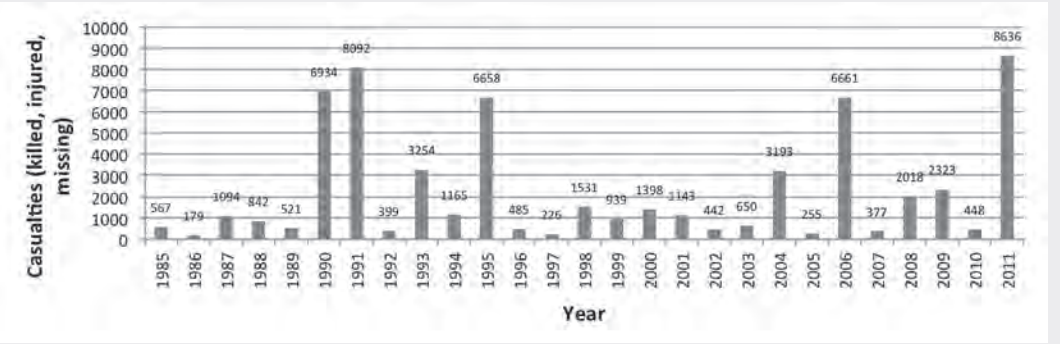
Box 1.5 Natural hazard and climate change

Box Figure 11 Number of people affected by natural hazard induced disasters (1985-2011)



Sources: EM-DAT 1985-1989; NDRRMC Yearly Statistics 1990-2011

Box Figure 12 Casualties from natural hazard induced disasters (1985-2011)



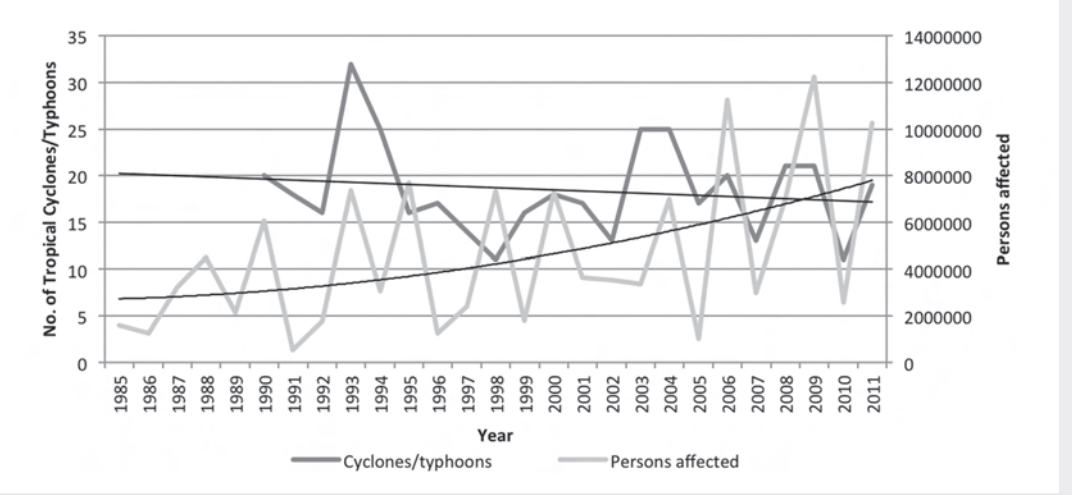
Sources: EM-DAT 1985-1989, representing deaths only; NDRRMC Yearly Statistics 1990-2011

(e.g., extreme weather events) and the second slow-onset impacts (e.g., gradual changes in precipitation and hydrology, sea level rise, ocean acidification).

Recent experience in the south may illustrate the first. Mindanao has rarely experienced typhoons in the past, but it is now experiencing more frequent and intense typhoons [Lagmay et al. 2013]. Typhoon "Pablo" (Bopha) occurred in December 2012, only a year after Sendong, but before Sendong, there was Typhoon "Nitang" (Ike) way back in 1984. Mindanaoan's unfamiliarity with intense cyclones and their epiphenomena is reflected in the large number of fatalities (Ibid.).[2]

To some degree, communities may be comforted by the knowledge that because episodic events such as these are "familiar" to the external sector (national and international agencies), well-oiled disaster response mechanisms (e.g., resource mobilization) are likely to come to their aid. The same cannot be said for responses to the second type of impacts, however. Slow-onset changes in average annual precipitation—more rainfall here, less there—will affect ecosystems and agricultural productivity in the long term, in profound ways. Because such impacts will not necessarily be accompanied by or reach the scale of severe flooding or catastrophic events, funding for response measures or anticipatory adaptive programs may not necessarily be readily available, if at all. Sea level rise will likewise impact coastal communities profoundly; water resources will be affected by salinity, land areas by increased susceptibility to erosion and storm surges. The change in the ocean chemistry will impact food chains. In the overall, risks in food and water security will be amplified.

Box Figure 13 Number of people affected by typhoons and number of incidents (1985-2011)



Sources: EM-DAT 1985-1989; NDRRMC Yearly Statistics 1990-2011

Moreover, the specific mix of climate change impacts—episodic and slow-onset—will vary from place to place, and from year to year; impacts will be nonlinear over time. High interannual variability and increasing unpredictability will be a crosscutting pattern characterizing climate change in the Philippines.

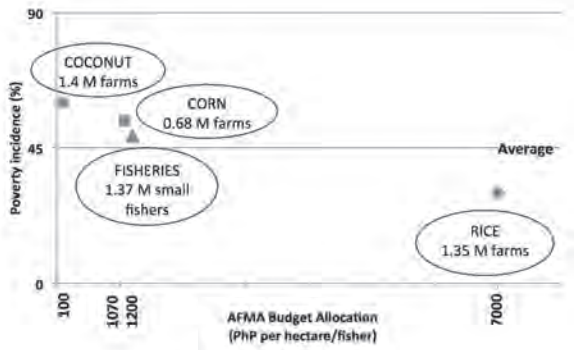
This is a compelling argument against centralized, cookie-cutter type of approaches from the national government—particularly in agriculture, the most climate-sensitive sector. Rather, the first best and, maybe, only response to nonlinearity and unpredictability is to strengthen adaptive capacities of communities—strengthening human capabilities and building on local coping mechanisms. Certain types of information, technology, and research may be best produced or financed at the national level, but the delivery and application of these public goods requires local knowledge, flexibility, and customization. Certainly, planning capacity will be critical, if not essential, to the adaptive potential of localities. In order to avoid fragmented local responses to climate change and clumsy, ineffective, one-size-fits-all national programs, interventions at the provincial level will be central to building climate change resilience at the local level.

—Red Constantino and Toby Monsod

1 PAGASA classifies tropical cyclones according to the strength of associated winds, and typhoons are the most intense type with maximum wind speed exceeding 118 kph. The three others are tropical storm (maximum wind speed from 64 to 118 kph), tropical depression (maximum wind speed up to 63 kph), and tropical disturbance.

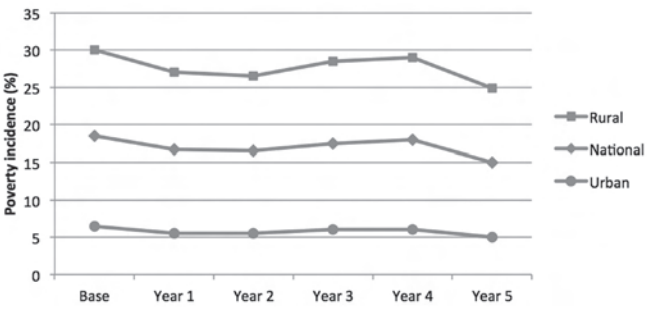
2 A total of 1,268 fatalities were attributed to "Sendong" and 1,067 to "Pablo" (with 844 missing). Authorities remarked: "We prepared. We were just simply overwhelmed (Retrieved from http://newsinfo.inquirer.net/325331/typhoon-pablo-death-toll-exceeds-1000-mark).
Though it is currently impossible to directly attribute specific extreme weather events to climate change, scientists have increasingly openly ascribed links between weather extremes and the continued increase in global average temperature. See Amadore [2005].

Figure 1.4 Sectors with worst poverty received the smallest budget



Source: AFMP Team

Figure 1.5 Simulated decline in poverty incidence under a crop-neutral R&D approach



Source: Figure 2.9, Paris and Antiporta [2006]

difficult journey over high and continuous mountain ranges, by long, stormy sea voyage westward from Aparri to Manila.

The role of good-quality roads in local growth and poverty reduction has in fact been demonstrated empirically in a number of recent studies [Llanto 2007; Balisacan et al. 2008; and Balisacan et al. 2011]. It has been shown, for instance, that everything else being equal, infrastructure investments are positively associated with the growth of local rural nonfarm employment and incomes, and they also mitigate the disadvantage of municipalities farther away from economic centers [Balisacan et al. 2011].

The type of road investment made also seems to matter differently for economic transformations: local road investments (roads in provinces, municipalities, barangays) tend to facilitate rural nonfarm income growth (mainly of nontradable services) [**Figure 1.6**] while national road investments tend to facilitate agricultural income growth, i.e., by expanding markets for tradable agricultural produce. In other words, local road networks tend to facilitate urbanization within a province while national road networks facilitate economic integration across provinces.

It is important to recognize the complementarity of both types of roads in view of the concern about a "missing middle" in the country's road network, i.e., the inadequate state of road infrastructure at the provincial level [Llanto 2007]. This is attributable to the fact that provinces receive smaller internal revenue allotments (IRA) from the national government and thus have less capacity to construct and maintain provincial roads relative to the capacity of the national government, cities, and municipalities to handle their respective roads (Ibid.).

Road networks paint only a partial picture, however. As might be expected in an archipelago, inter-island shipping facilitates 98 percent of domestic inter-island trade, roughly 80 million tons of cargo, and the movement of more than 52 million people annually [Basilio 2012]. How does this influence market integration and local growth?

Empirically speaking, the influence of the number of provincial seaports on provincial income growth is unclear [Balisacan et al. 2011].[39] It is unlikely, however, that the number of seaports themselves is material. Rather, it is the *network effects* of linking a chain of islands through ports and roads that are likely to be decisive for socioeconomic integration and growth in an archipelago.

The significance of such network effects can be gleaned from the recorded early impact of the 2003 roll-on-roll-off (ro-ro) policy reforms. Domestic shipping had long been described as inefficient and unreliable, e.g., it was more expensive to ship goods to Manila from Mindanao than it was from Hong Kong, China, and Bangkok [ADB 2010]. Cargo handling charges were identified as a major factor in the high costs of domestic logistics transportation, and studies in the 1990s recommended the roll-on-roll- off mode (in which ships ferried wheeled land vehicles across inter-island bodies of water) as the most appropriate mode of inter-island

Table 1.6 Ilocos Coast vs. Cagayan Valley in 1960

Region/Province	Area (sq. mi.)	Population	Density (Persons/sq. mi. cultivated area)	All roads km/100 sq. km. (1955)	Surfaced roads km/100 sq. km.
Ilocos Coast					
Ilocos Norte	1,313	287,335	218.9	20.92	7.50
Ilocos Sur	996	338,058	339.4	17.76	9.06
La Union	576	293,330	508.8	25.87	12.07
Cagayan Valley					
Cagayan	3,476	445,289	128.1	7.43	5.96
Isabela	4,117	442,062	107.4	4.57	3.1
Nueva Vizcaya	2,688	138,090	51.4	4.66	2.91

Source: W&S [1967], Statistical Annex

transport for the Philippines.[40]

The 2003 reforms (Executive Orders 170, 170A, and 170B) removed cargo handling charges and wharfage dues, instituted a "land meter"-based fee system, and cut transaction costs at terminals. In addition to the older Pan-Philippine Highway, established on the eastern side of the country in the 1970s and consisting of road and ro-ro connections, the "Strong Republic Nautical Highway" now includes three main systems of interconnected roads and ferry routes—the Western, Central, and Eastern "highways" [**Map 12**].

Reductions in sea transport costs have been considerable since the reforms. Transport costs for goods have reportedly been cut by as much as 68 percent relative to the costs of transporting goods via traditional or conventional shipping [**Table 1.7**]. The effects on the organization of the maritime industry [**Figure 1.7**], passenger and cargo mobility, logistics operations and strategy, and domestic tourism have also been substantial.

Just as important, the ro-ro system has opened up economic opportunities for entrepreneurs and firms in municipalities directly on or laterally connected to the nautical highway. A striking illustration is the case of the municipality of Roxas, Oriental Mindoro. The Dangay ro-ro port, which links Manila via Batangas to Panay Island and Romblon on the Western Nautical Highway, created market opportunities for the commercial, agriculture, and tourism industries in and around what was once a small town [ADB 2010]. With easier access to major markets in the north such as Manila and Batangas, and newly opened access to Panay and other areas to the south, the market base for local agriculture expanded.[41] Tourism opportunities likewise opened up, since travelers could move directly to and from Puerto Galera and Boracay Island. New investments exceeded P200 million from 2003 to 2008, and the municipality enjoyed an additional P2 million in business tax revenues per year over the same period [**Box 1.6**].

The country's archipelagic geography demands a special approach to connectivity and domestic integration [ADB 2010]. Such an approach cannot rely on roads alone or ports alone but must build on a coherent and efficient road and maritime transport network [Llanto 2007]. As the case of Roxas shows, moreover, the economic development of peripheral islands or lagging places is effectively promoted by their Interaction with and connection to leading areas [WB 2009].

Geography and domestic institutions: "divide-by-N"

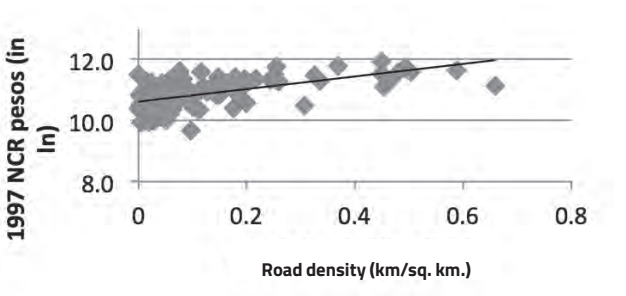
The phenomenon of leading and lagging areas within a nation is an outcome of a "striking attribute" of economic development—namely, it is seldom balanced [WB 2009].[42] Economic growth does not spread smoothly across space; spatial disparities are inevitable and reflect a dynamic system.[43] In principle, even when the underlying physical geography is homogeneous and undifferentiated, an economy can evolve a spatial structure in which activity and population are concentrated in only a few locations.[44] Concentration and imbalance can only be greater in the real world where physical space is in fact highly differentiated.

Economic density drives economic growth. Concentration facilitates specialization, trade, and scale economies. Concentrated economic activity then feeds on itself as more people and firms move closer to it to take advantage of agglomeration economies—the increasing returns to be derived from being near other people and firms. Locally, increasing concentration is manifest in urbanization; nationally, in the emergence of leading areas. By fuelling agglomeration economies, urban and leading areas become centers of innovation and growth that drive the local and the national economy. Higher density can also be a key factor in sustainability as it requires less land, reducing the impact on the physical environment [Corpuz 2012].[45]

Although economic growth may be uneven across a nation, nothing precludes the geographic convergence of living standards. Despite initial divergence, rising concentration of production is ultimately compatible with converging living standards, creating a virtuous circle.[46] Neighborhood effects or spillovers play a critical role in this process, since "a province's prosperity is sooner or later shared with those nearby" [WB 2009:2]. This in turn suggests a strategy to promote economic integration.

Policies that create fluid land markets and ensure access to basic services everywhere are fundamental, as are policies to help people and firms reduce their "distance to density." The former lays a neutral foundation for possible urbanization in some places; the latter allows the benefits of density to be more widely shared. Both are indispensable components to integration.

Figure 1.6 Local roads and rural non-agricultural income



Source: Table 11, Balisacan et al. [2011]

Rather than economic integration, however, implicit government policy has historically tended toward dispersion, which is typically invoked in the pursuit of "balanced growth" or an "equitable distribution of growth"—all of which are taken to be synonymous with *spatially uniform* growth.[47] This prevalent notion is well-intended but internally inconsistent. The premature dispersion or spreading out of economic activity, such as when production is pushed to lagging areas, inhibits agglomeration economies, discouraging the very enterprise and innovation that policymakers hope to promote. A dispersion of production in this manner amounts to dissipation and fragmentation, which is the polar opposite of economic integration.

The bias for spatial evenness and dispersion is easily discernible in the manic proliferation of airports and seaports, special economic zones, even state universities, without regard for scale economies [Medalla et al. 2007]. For instance, the country has 87 airports, including 12 "international" airports,[48] many of which are within a two-hour ride or so from each other, resulting in an annual allocation of funds so spread out as to be ridiculously small [**Box 1.7**]. There are more than 140 public ports, most of which can accommodate ro-ro ships, but 40 of these lack any traffic.[49] Even more ports (i.e., 72 more) were contracted for purchase by government in 2009 (i.e., French-designed modular steel ro-ro ports) costing P218.6 million a set. As it turns out, however, the

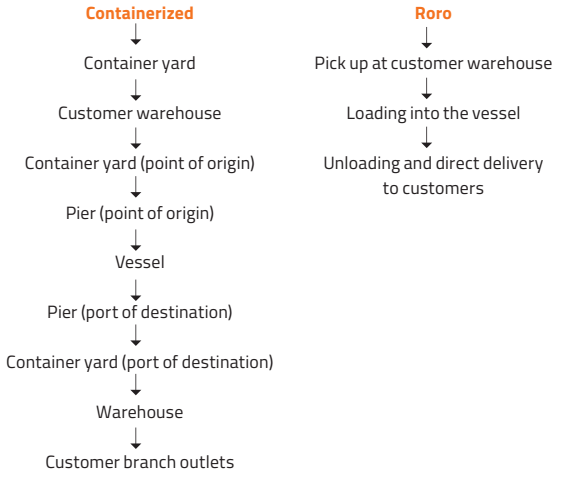
proposed sites for these modular ports either did not need or could not use them,[50] leading to the unilateral cancellation of the contract by the new administration in 2011.

The failed implementation of Strategic Agriculture and Fisheries Development Zones or SAFDZs under the Agriculture and Fisheries Modernization Act is also instructive. SAFDZ were intended as centers of development in agriculture and fisheries and were to be identified based on agro-climatic and other strategic conditions. Importantly, the zones did not need to be conform to political and administrative boundaries (Rule 6.11). The process of delineating SAFDZ was so flawed, however, as to render the whole effort useless:[51]

The delineated SAFDZ were of little practical use. The reasons for this are as follows: (1) the total delineated SAFDZ area of 10.64 million ha. with only 91 percent of all municipalities and cities participating is too big for all intent and purposes (2) the planning and implementation of integrated development activities for the various strategic development sub-zones cannot be prioritized as the potentials for specific commodities and/or agro-industrial activities have not been considered; (3) the delineated SAFDZ were not based on the criteria and guidelines stipulated by AFMA and (4) the SAFDZ as delineated cannot stand even the basic consistency and reliability tests [AFMA 2007, par. 102].

Attempts to disperse industry and generate economic mass across regions have generally not prospered. A national government policy in the 1980s sought to establish regional agro-industrial centers in every administrative region of the country and specific sites were designated in various physical framework and land use plans. However, only sites that coincided with existing industrial areas, such as in Calabarzon and Mactan, thrived; the rest failed to materialize [Corpuz 2012]. The saga of the Aurora Pacific Economic Zone and Freeport Authority (APECO) is another failed attempt [**Box 1.8**]. This experience is consistent with what has already been demonstrated internationally: the power of incentives to influence investment location is weak. Spatially targeted incentives may help exploit geographic advantages and market forces that are otherwise constrained but cannot substitute for them.[52]

Figure 1.7 Impact of reforms on the structure and operations of the maritime industry



Source: ADB [2010]

Table 1.7 Comparative cost of conventional vs. ro-ro shipping (in pesos)

Type of commodity	Traditional shipping	Ro-ro shipping	Savings (%)	Origin - Destination
Beer	30,400	13,000	57	Batangas – Calapan
Dry goods	50,000	40,000	20	Manila – Cebu
Medical kits	10,000	4,000	60	Iloilo – Bacolod / Dumaguete
Live cows	90,465	51,500	43	Guihulngan, Negros – Manila
Liquid CO2	225,000	71,664	68	Bacolod – Cagayan de Oro
Assorted fish	32,000	23,360	27	Zamboanga City – Bato, Cebu

Source: ADB [2010]

Box 1.6 Roxas, Mindoro Oriental before and after the ro-ro reforms

BEFORE

AFTER

Photos courtesy of the Office of the Provincial Governor

What Medalla et al. [2007] describe as a "mechanical and feckless dissipation of government funds across localities instead of their rational allocation to where these might have the most impact" is the "divide-by-N syndrome,"[53] and it is apparent not only in the duplication of infrastructure without regard for scale economies but also in the fragmentation of many projects across space and time "as typified by the pork-barrel allocation of legislators, e.g., bridges that lead nowhere, dirt roads interrupted occasionally by concrete paving; half-roofed schoolhouses, etc." [Medalla et al. 2007:15]. The same fragmentation is found at local levels where pork-barrel-like allocations are drawn from local development funds and given to members of the Sanggunian and municipal mayors, and from mayors to barangays (at least those aligned with mayors) [Cariño et al. 2004]. Hence, the many small projects with little or no development significance dotting towns and cities, such as waiting sheds, entrance arches, multipurpose pavements [Corpuz 2012].

It has been argued that divide-by-N results from a system where the bulk of revenues is collected nationally and only subsequently redistributed to local governments in the form of IRA using rigid formulas prescribed in the 1991 Local Government Code [Medalla et al. 2007].[54] With the matter of raising revenues effectively assigned to the national government and the allocation of shares to local governments predetermined, politicians are left to prove their worth by finding ways to channel part of what is left in the common fund back to their local constituents in the form of projects. Projects with appropriable local impact are naturally favored over interlocal or regionwide projects characterized by intangible spillovers and increasing returns across space and time (which a local unit may not have the capability to undertake in any case). The result is a fragmentation and dissipation of public resources.

Divide-by-N also underlies the predilection to carve out new political units from existing ones in a process coined as *political mitosis* [Manalo 2012]. There

Box 1.7 Divide-by-N in airports

THE country has 87 public airports: 10 international (with border control facilities), 15 "principal class 1" (used for jet services, 100-seats or more), 19 "principal class 2" (used for Prop services, 19-seats or more), 41 "community" (used for general aviation aircraft), and two military. Two principal airports have the word "international" appended to their names although they are not officially classified as such.

Many of these public airports are within a two-hour ride or so from each other as detailed in Box Figure 14. The statistics on travel time by air were computed using straight-line distance divided by a factor depending on type of aircraft/airport (i.e., 800 kph for class 1 airports, 400 kph for class 2 airports, 180 kph for community airports). Road travel times were taken from www.distancesfrom.com and other sources. Maps are from the CAAP website.

This results in an annual allocation of funds that is so spread out as to be good only for repairs and not maintenance. The average annual outlay for MOOE (maintenance and other operating expenses) per type of airport from 2008-2011 is presented in Box Table 2.

Box Table 2 Average annual MOOE per type of airport (2008-2011)

Type	No.*	2008	2009	2010	2011	2008-2011
Class 1						
Legazpi, Bacolod, Iloilo, Tacoban, Cagayan de Oro	5	11,025,605	25,824,372	36,047,031	38,637,457	27,883,616
Others	10	1,840,885	5,530,760	6,142,789	6,836,373	5,087,702
Class 2	19	809,466	3,517,004	3,595,385	4,003,915	2,981,442
Community	41	307,964	1,065,260	991,622	1,197,242	890,522
International (excluding NAIA, Subic, Clark)	7	12,668,224	21,944,127	28,563,981	26,101,597	22,319,482
Note: Total MOOE outlay	82	190,220,822	448,537,102	549,588,080	561,415,685	1,749,761,688

* Excludes NAIA, Subic, Clark, and two military airports
Source of base data: CAAP

are 80 provinces and counting, within which there are 229 congressional districts, 143 cities, and 1,491 municipalities. The number of municipalities per province ranges from five to 53, with an average of about 19. Of the 80 provinces, 30 were created after 1960; four more were created but did not come to pass.[55]

Some provinces have the oddest shapes, being former congressional districts of their "mother" province (e.g., Zamboanga Sibugay and Sarangani); some cities are simply a curiosity, more frontier than dense urban settlement (e.g., Puerto Princesa and Calbayog). But no matter how odd, such divisions do make economic sense in the context of a divide-by-N regime: transforming a congressional district into a province is one way to secure a fixed share of the tax revenue pie; converting a municipality into a city is an even better way since a city gets more IRA in absolute terms than a municipality.

The IRA formula in the 1991 Local Government Code practically encourages politicians to create new jurisdictions. However, one form of mitosis has been near-automatic in the law since the early 1980s (Batas Pambansa 51 of 1979, B.P. 337 of 1983, and the 1991 Local

Box 1.7 Divide-by-N in airports

Box Figure 14 Airport clusters

Cluster 1

From	To	By air (mins)	By road (hh:mm)
Laoag	Vigan	24	1:13
Vigan	San Fernando	36	2:00
San Fernando	Baguio	14	1:00
Vigan	Baguio	45	2:54
San Fernando	Lingayen	21	1:23
Baguio	Lingayen	18	1:24
Tuguegarao	Laoag	11	5:03
Tuguegarao	Palanan	33	NA
Tuguegarao	Cauayan	26	1:30
Tuguegarao	Bagabag	42	2:17
Bagabag	Cauayan	21	1:20
Baguio	Rosales	18	1:25
Rosales	Lingayen	14	1:00
Clark	Rosales	26	1:25

Cluster 2

From	To	By air (mins)	By road (hh:mm)
Iba	Lingayen	28	2:22
Clark	Baler	NA	2:38
Subic	Iba	22	1:00
Subic	Plaridel	21	1:30
Manila	Plaridel	15	0:49
Manila	Clark	7	1:18
Manila	Subic	7	2:15
San Jose	Mamburao	35	2:17
San Jose	Calapan	40	3:11
Calapan	Pinamalayan	18	0:45
Pinamalayan	Wasig	17	1:00
San Jose	Wasig	17	1:23

Cluster 3

From	To	By air (mins)	By road (hh:mm)
Naga	Daet	23	1:19
Naga	Legazpi	5	1:22
Naga	Sorsogon	35	2:04
Legazpi	Virac	14	NA
Legazpi	Bulan	18	1:35
Legazpi	Sorsogon	12	0:51
Bulan	Sorsogon	13	0:49

Cluster 4

From	To	By air (mins)	By road (hh:mm)
Kalibo	Antique	22	2:28
Caticlan	Antique	26	2:10
Iloilo	Antique	12	1:34
Kalibo	Roxas	3	1:07
Kalibo	Iloilo	7	2:13
Iloilo	Bacolod	4	1:20+
Iloilo	Roxas	7	1:45

Cluster 5

From	To	By air (mins)	By road (hh:mm)
Tacloban	Ormoc	11	1:30
Tacloban	Hilongos	33	1:51
Tacloban	Maasin	40	2:25
Tacloban	Catbalogan	23	1:20
Tacloban	Calbayog	22	2:15
Tacloban	Catarman	30	3:14
Tacloban	Borongan	23	2:51
Tacloban	Guiuan	27	3:00
Tacloban	Biliran	24	1:45
Calbayog	Catbalogan	14	0:59
Calbayog	Catarman	10	1:03
Hilongos	Maasin	63	0:33
Borongan	Guiuan	26	2:30
Ormoc	Hilongos	26	1:05

Cluster 7

From	To	By air (mins)	By road (hh:mm)
Cagayan de Oro	Iligan	18	1:19
Cagayan de Oro	Butuan	9	2:34
Cagayan de Oro	Camiguin	19	2:30+
Iligan	Pagadian	30	1:59
Iligan	Malabang	20	1:44
Butuan	Surigao	18	1:40
Surigao	Siargao	12	3:30+

Cluster 6

From	To	By air (mins)	By road (hh:mm)
Zamboanga	Siocon	29	1:47
Zamboanga	Ipil	38	1:58
Siocon	Liloy	24	2:18
Ipil	Siocon	16	1:30
Liloy	Ipil	12	0:50
Dipolog	Liloy	31	1:52
Dipolog	Ipil	41	2:38
Dipolog	Ozamis	24	2:12
Dipolog	Pagadian	7	3:39
Pagadian	Ozamis	19	1:28
Pagadian	Ipil	32	1:39
Pagadian	Liloy	31	2:28
Pagadian	Malabang	23	1:08

Cluster 8

From	To	By air (mins)	By road (hh:mm)
Butuan	Tandag	15	2:27
Butuan	Bislig	42	1:54
Cotabato	Malabang	18	1:03
Tandag	Bislig	33	2:02
Tandag	Surigao	21	2:40
Davao	Mati	24	3:29
Davao	Bislig	47	2:59
Davao	Allah Valley	43	2:56
Davao	Cotabato	12	3:05
Davao	Tambler	10	2:20
Tambler	Allah Valley	17	1:11
Tambler	Cotabato	32	2:34

+ By ferry or fastcraft

Box 1.8 APECO

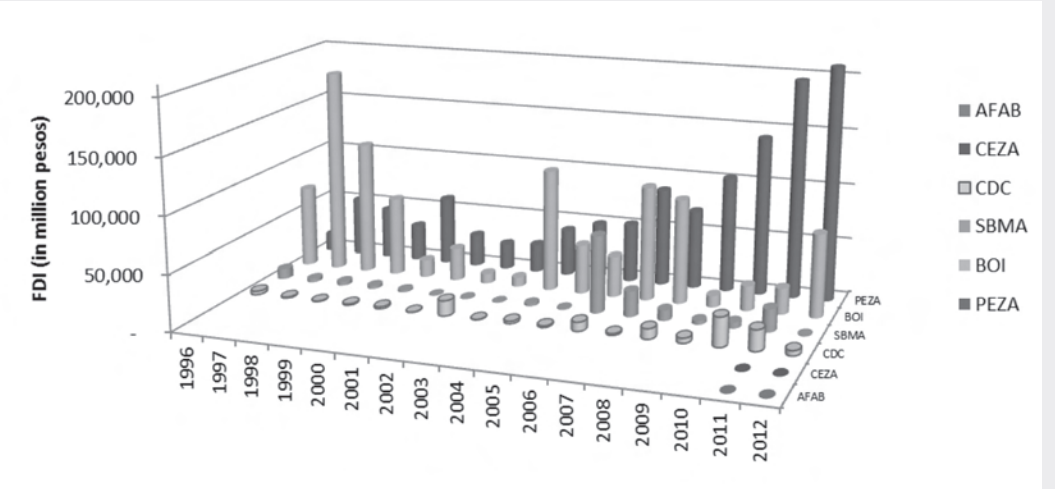
THE Aurora Pacific Economic Zone and Freeport Authority (APECO) is a 12,923-hectare special economic zone and freeport being constructed in the municipality of Casiguran, Aurora. It was first created in 2007 through Republic Act 9490 as the 500-hectare Aurora Special Economic Zone Authority (ASEZA) and later expanded 25-fold into a freeport through R.A. 10083 now covering agriculture and forest lands on the San Ildefonso Peninsula. APECO aims to be "a globally competitive, technologically advanced economic zone in the Pacific Northeast Sea Board working towards a renowned business community characterized by unified perspectives on green revolution and world-class innovation."[1]

Between 2008 and 2012, APECO received P915.8 million from the national government.[2] Another 1.94 billion was spent on projects (e.g., 1.2-km. airstrip, port improvement, paving and rehabilitation of the Baler-Casiguran Highway, flood control) under the budgets of the Department of Transportation and Communications (DOTC), Civil Aviation Authority of the Philippines (CAAP), Philippine Ports Authority (PPA), and Department of Public Works and Highways (DPWH) during the same period.[3]

Yet, as of April 2013, APECO had no comprehensive master plan, corporate long-term financial plan, operations plan, or comprehensive land use plan and had only "conceptual plans" [NEDA 2013]. Neither did it have feasibility studies relating to projects envisioned in it (for instance, the airstrip did not have a feasibility study), nor have conceptual plans been synchronized with plans of the province or of other municipalities. The absence of a master plan and land use plan drove local stakeholders to question the economic rationale and optimal use of the San Ildefonso Peninsula [NEDA 2013].[4]

To date, the work done on the Baler-Casiguran road has reduced travel time from six to hours to three to four hours. However, there is still no noticeable economic activity at APECO; announced projects remain non-operational.[5] There have been no regular flights within the P142 million APECO airstrip since 2008, and only two flights used it between January and November 2012. The ro-ro wharf, which was completed in 2008 as part of the nautical highway at the request of the local government, was envisioned to attract investments to the area but is currently being used by navy patrol boats [NEDA 2013].

Box Figure 15 Performance of freeports, BOI and PEZA (1996-2012)



Note: Data submissions of AFAB and CEZA started in 2010 and 2011, respectively.
Caution is advised in the analysis of the time series.
Source of data: NSCB

In the overall, the power of income tax holidays and other fiscal incentives to influence the location of foreign and domestic investments within the Philippines has been shown to be weak [Reside 2007].[6] Specifically, incentives from neither the Board of Investments (BOI) nor Philippine Economic Zone Authority (PEZA) have played strong roles in determining the regional pattern of investments. Instead, what matter to location decisions are the quality of the labor force, size and strength of the market, and infrastructure.

The policy implications are striking—rather than waste resources providing ineffective investment subsidies, each region in the country would be better off if the Philippine government streamlined fiscal incentives, raised a sufficient amount of taxes and then procured the productivity-enhancing public goods (access to good education and infrastructure) that really mattered more for investment and investors [Reside 2007:7].

Even weaker is the performance of freeports. Box Figure 22 shows the relatively poor performance of four freeports from 1996 to 2012. Featured are the Authority of the Freeport Area of Bataan (converted from the Bataan Export Processing Zone in 2009), Cagayan Special Economic Zone and Freeport (created in 1995), Clark Freeport Zone, and Subic Bay Freeport Zone, relative to the BOI and the PEZA. Other freeports, i.e., Poro Point Freeport Zone (created in 1993) and the Zamboanga City Special Economic Zone Authority and Freeport (1995), have not submitted reports to the National Statistical Coordination Board (NSCB).

It should be noted that since 1995 at least, the Department of Finance (DOF) has asked for a rationalization of fiscal incentives and a moratorium on the creation of freeports in the country. APECO was created despite this.

1 Retrieved from http://www.aurorapacific.com.
2 "Comparative Data on Appropriation, SARO, and NCA Releases, CYs 2008, 2009, 2010, 2011 and 2012," prepared by Athena Igarta, OIC Finance, and noted by the President and CEO of APECO. Appropriations were for the lot acquisition for the APECO corporate campus, construction of the campus, acquisition rights for San Ildefonso Peninsula, APECO Site Development (Planning/Design) package, and a Nayon Kalikasan Housing Project ("The Inconvenient Truth about APECO," Task Force Anti-APECO," 30 April 2013). For 2013, an allocation of P353.5 million to APECO was included in the National Expenditure Program.
3 This includes the 1.66 billion Baler-Casigurann Highway funded by loans from the Korean Economic Development Cooperation fund [TFAA 2013].
4 Apparently, the creation of the ASEZA in 2007 did not benefit from any Senate hearing, floor debate, or NEDA study to justify it in 2007. Its expansion into APECO in 2009 also did not undergo any prior study by NEDA; only one Senate hearing in September 2009 lasting 30 minutes was held.
5 For instance, the Casiguran Mariculture Park Project [TFAA 2013].
6 Fiscal incentives include income tax holidays, tax deductions, tax credits, and other fiscal inducements provided by governments in the expectation that they are necessary to attract foreign and domestic direct investments [Reside 2007].

Government Code). A city which reaches a minimum population of 200,000 and an annual income of no less than P50 million automatically qualifies as a "highly urbanized city" (HUC), a designation which grants it legal and fiscal independence from the province where it is geographically situated.[56] That is, once grown to a certain size, a city becomes the peer of its mother-province as a first-level administrative unit, no longer under its administrative supervision and not required to share tax revenues with it, and directly supervised only by the President. Voters of an HUC no longer participate in provincial elections (Rule XII, Article 59, IRR). Upon the conversion, neither the HUC nor its mother province is required to cooperate with the other.[57] There are currently 35 highly urbanized cities.

Removing a leading place from a province once it reaches is a certain size[58] effectively penalizes a province that demonstrates urbanization and agglomeration—a perverse and incoherent outcome from a development standpoint. It is as irrational as removing a central business district from a city's jurisdiction.[59] For it is precisely the agglomeration economies embodied in a city that drives growth; without assurance of coordination in land-use or the delivery of basic services (e.g., from drainage and waste disposal to security, transportation management, and disaster-risk reduction) across localities, the longer-term growth of the province—and the growth of the urban system itself—could be crippled.

If there were effective mechanisms and capacities

in place to cross borders and to bridge scale when warranted, fragmentation of this sort would not in itself be undesirable. As it is, however, mechanisms for interlocal or metropolitan integration are mostly *ad hoc* or nonexistent and need not include the province.[60]

Divide-by-N is consistent with political exchange that is "personal and primarily local" which in turn has roots in the country's difficult geography and colonial history [de Dios 2007].[61] At the time, communities were relatively small and spread out, transportation and communications infrastructure absent or primitive, and the central authority relatively weak and disinclined to develop a progressive internal Philippine economy [WS 1967]. By the late 19th century, however, Spain's continuing inability and disinterest in a progressive internal economy, "despite growing pressures from outside traders, commercial influences and maturing Filipino cultural patterns," produced strains in its control of the country, culminating in a change of political institutions at least on the national level [WS 1967:297].

In more recent history, larger market forces have also played a part in tempering the monopolistic and counterproductive tendencies associated with hegemonic local political clans in some localities, allowing for better development outcomes relative to other localities where such market forces were absent.[62] When people obtain access to better education and health and become more closely integrated with remunerative market opportunities, their locational and occupational choices expand. Many examples show that such an empowered and productive citizenry can discipline retrograde political behavior in their localities, whether by "voice" or by "exit" (e.g., through elections or migration). Ending geographic isolation in terms of both human development and economic opportunities is a powerful means to lay the foundations for better institutions.

What has been learned? What are the implications?

The argument of the preceding sections has been extended, but may be distilled into six key points.

- Philippine geography is diverse, fragmented, and hazard-prone. Geography explains a significant portion of the variation in life expectancy, education, per capita income, and poverty incidence across areas of the country. It is a deep determinant of human development, intrinsically linked to the latter through human health, agricultural prospects, access between locations, and specific political institutions.

- Past policy and institutional arrangements have failed to adequately address the implications of local geography and have caused significant costs to human development. These are in the form of lost adult productivity and healthy days, missed school attendance, substandard agricultural yields, food insecurity, forfeited agglomeration economies, and lost growth. It leads, in short, to foregone achievements in human capabilities, market expansion, and living standards at local levels.

- Human development costs arise from a national organization that is arranged as vertical silos by sector or agency and, within each agency, by program. The arrangement is incompatible with the integrated, ecosystem-based governance that local geography demands.

- Large inefficiencies and foregone benefits arise from the well-intended but misguided notion that the uniform dispersion of production across space will lead to growth that is more evenly spread out and therefore more equitable. The "divide-by-N" syndrome is also expressed in political fragmentation. It is vital to recognize, however, that growth by its nature will be spatially uneven so that "resisting the forces of unbalanced growth … is tantamount to fighting economic growth itself" [WB 2009:259].

■ Nonetheless, a geographical convergence of living standards can take place and must remain a prime objective. In short, spatially uneven, unbalanced growth is compatible with inclusive human development.

■ The challenge of geography requires a delivery of basic and social services that is integrated and locally anchored—most crucially at the province level. Empowering provinces to take on this role is therefore a policy priority. Capable and competent provinces, as will be discussed below, are also crucial to operationalizing a policy to promote the economic integration of lagging and leading areas, a key to reducing disparities in living standards.

The rest of this section discusses various policies that flow from the preceding analysis. These fall under two categories: those that promote economic integration and those that empower provinces.

Promoting domestic integration

That growth will be uneven challenges prevailing assumptions and biases—among our people and leaders alike—regarding the nation's vision for inclusive growth. Is inclusive growth to be equated with balanced and spatially uniform growth? Is it fundamentally wrong to allow economic activity to be concentrated in just a few places? How much spatial unevenness in economic activity should be tolerated? Is there an implicit bias against economic density, urbanization, or the growth of megacities? Is there an implicit bias against migration from rural to urban areas? Should growth strategies focus on places or on people?

Economic integration also implies policies that seek to integrate lagging with leading areas. At bottom, the aim is to reduce the distance of people, especially the poor, to economic opportunities *wherever the latter may be found*. This is not the same as "bringing jobs to the people," which is easily misunderstood literally as promoting industry in lagging provinces, an altogether different policy objective. The first is concerned with the welfare of people, the second with the fate of places. Put this way, promoting domestic integration is clearly to be understood as being rooted in *human* development, not locational development.

Promoting domestic integration means action on two geographic scales: within provinces and across provinces. The province level affords the best vantage point for monitoring and facilitating inclusive integration of rural and urban areas. The integration of leading and lagging provinces, on the other hand, is a national-level task.

The *2009 World Development Report* provides a useful framework that can be adapted to Philippine conditions and used to outline a mix of "spatially blind" policies, "spatially connective" policies, and "spatially focused" policies—in short, institutions, infrastructure, and incentives—depending on current conditions within provinces or across provinces. *Institutions* in this context refer to policies or regulations that are "spatially blind in their design and universal in their coverage." These include correcting land market distortions and providing essential services to build human capital such as basic education, health care, water and sanitation. *Infrastructure* refers to investments that are "spatially connective such as roads, railways, airports, harbors, and communication systems that facilitate the movement of goods, services, people, and ideas." Finally, *incentives* refer to spatially targeted programs such as slum upgrading or relocation and location-based fiscal incentives [WB 2009:22-23].

The shape of policies to encourage rural-urban integration will depend crucially on the level of urbanization within each province. As urbanization expands its scope, the challenge of integration increases, and with it, also the number of needed policy instruments [WB 2009:215-229]. These can be differentiated as follows:

■ *For provinces where urbanization is just beginning*, i.e., those with urban shares of less than 25 percent or so, the challenge has only one dimension: how to facilitate a natural rural-urban transformation, that is, how to facilitate density. Because one cannot know how and where greater density will first emerge, policy should be neutral between rural and urban places, and core policy instruments should be spatially blind. Policies that favor one productive activity over others should be avoided. The local government's priorities should instead be the provision of basic and social services everywhere, no matter the cost of reaching distant places; efficient operation of land markets; and securing of human life

and property rights. In this manner, although some areas in the province may ultimately be "left behind" in the process of urbanization, their populations need not be disadvantaged. Inclusive development in this context takes the form of ensuring improved education, health, water, sanitation, and security for all.

- *For areas with intermediate urbanization,* i.e., when urban shares are somewhere between 25 and 75 percent, managing a portfolio of places entails a twofold challenge: enabling density and reducing congestion. Rapid growth in some places is bound to create congestion at some point. Apart from spatially neutral institutions, therefore, spatially connective infrastructure in and around city centers is needed to address congestion (by reducing distance). Investing in transport connectivity is especially important; urban transport and urban land management determine the shape of the city while urban mobility is important for the poor. Coordinating connective policies and infrastructure between cities is also strategic at this stage.

- Finally, *when urbanization has advanced to a high degree*, the strategy should emphasize livability, creativity, and urban social integration. The challenge then becomes threefold: how to build density, how to reduce distance, and how to reduce within-city divisions as posed by informal settlements. This also makes a further instrument necessary—spatially focused policies (e.g., slum upgrading)—even as it presumes that the first two are already in place. Without the prerequisite investments in institutions and infrastructure—to better govern land and housing markets, to make social and basic services widely accessible, to connect the core to the periphery—targeted actions may only succeed in deepening divisions and creating new slum areas.

How does this apply to actual conditions? The unevenness of urbanization across the country is striking [**Map 13**]. Reflecting an overall level of urbanization of only 45.3 percent, most provinces are still in the early stages of urbanization: 46 out of a total of 80 provinces and Metro Manila, or 51 percent, have urban population shares of less than 25 percent.[63] These include provinces in the Bicol (V), Western (VI) and Eastern Visayas (VIII), and Cagayan Valley (II) regions. Thirty-five provinces, or 42 percent, are in the intermediate stage, such as Cavite, Pampanga, Davao del Sur and Norte, Cebu, and Misamis Oriental. Two areas, NCR and Rizal, are highly urbanized, with urban shares greater than 75 percent, while Laguna and Bulacan, with 72 and 71 percent urbanization, respectively, are approaching those levels.

The gist of the framework is proper attention to the sequence of policies. There may be pressure to undertake programs to address informal settlements in the highly urbanized cities of Cebu, Mandaue, and Lapu-Lapu, for example, even though urbanization in Cebu province as a whole is still not quite advanced. However, removing bottlenecks in local land and housing markets, providing basic amenities and social services regardless of location, and improving connective infrastructure (e.g., intra-urban public road and systems) province-wide are necessary preconditions. These can facilitate the efficient substitution of land for capital (i.e., building up) and make coherent suburban development feasible, decongesting central places. Without these preconditions, direct interventions to integrate slums into the broader urban economy through upgrading or re-housing are likely to be costly and unsustainable.

The consequences of failing to anticipate these problems are in turn already evident in the negative example that is Mega Manila [**Box 1.9**], the country's most important economic agglomeration. Here, the absence of a larger spatial and political perspective has led an amorphous multiregional sprawl of work and residential places that are poorly interconnected and are a daily existential torment that its inhabitants must endure.

The framework also underscores the distortions that result from imposing sectoral policies across the country regardless of conditions *in situ*. One example is the policy requiring all jurisdictions to identify lands for socialized housing and resettlement; another is the policy requiring developers of proposed residential subdivision projects to develop an area for socialized housing equivalent to at least 20 percent the total subdivision area or total subdivision housing cost. Such regulations are out of place and premature in predominantly rural provinces. Instead of creating fluid markets for land and housing, such policies are likely to choke them, restricting supply,

driving up prices, and derailing what might have been more inclusive future outcomes.

Map 13 makes it clear why facilitating inclusive rural-urban transformation is best done at the province level. The process is dynamic and uneven. It involves a portfolio of municipalities and cities closely interacting with each other. Provincial leaders can in principle observe economic interdependence across areas and mobilize on a scale comprehensive enough to permit both rural-urban and interurban linkages [WB 2009]. Institutions like land markets and property rights will obviously depend on policies from the national center (e.g., the titling regime and housing finance regulations). But much can be done to reduce transaction costs in land markets and secure property at local levels as well. Given the country's complex and varied geography, it would be foolhardy for a national government to attempt to sequence and calibrate policies within each of the 80 provinces.

Integrating leading and lagging provinces

The point bears repeating: economic integration aims to reduce the distance between people and economic opportunities, wherever the latter may be found. On a national scale, the policy mix will depend critically on relative poverty incidence and population densities, that is, on which places are poor and where poor people are. It will depend as well as on the strength of political or social barriers to mobility and other market forces. More specifically, the following cases can be distinguished [WB 2009:241-245]:

In lagging areas that are sparsely populated, or where there are only low concentrations of the poor, the integration challenge is one-dimensional—reducing economic distance. The most potent mechanism for doing so is promoting labor mobility. Policies that are universal and do not discriminate geographically can handle much of the task, their objective being to promote human capabilities. In effect, what are portable investments in people will allow them to move closer to better economic opportunities if they should so choose. More education, for example, reduces economic distance for individuals, who as a result become better informed of and better qualified for wider employment possibilities. This is evident in the fact that migrants tend to be better educated than their counterparts who remain in their region of origin.[64]

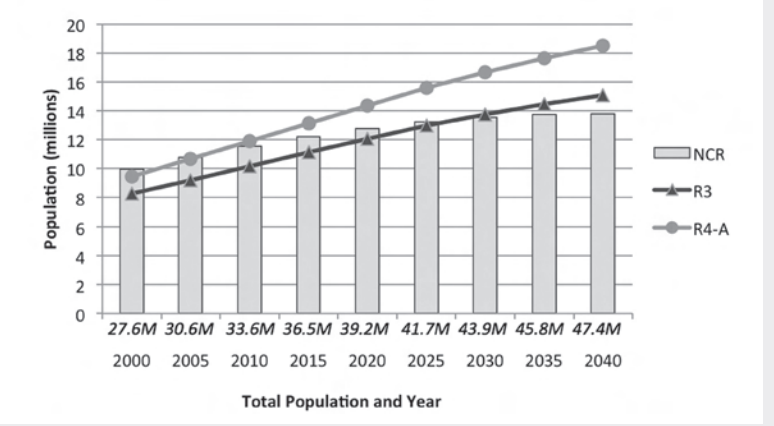
In lagging areas that are densely populated, and where the poor are highly concentrated, a different approach is required. Apart from the universal in-place provision of services that enhance human capabilities, economic integration requires spatially connective infrastructure, such as land and water transport networks that link lagging to leading areas. Doing so does not always require large capital outlays. As the ro-ro experience demonstrates, significant gains in connectivity can be reaped simply by policy changes that directly address bottlenecks and cut transaction costs. Market access will naturally attract firms that value agglomeration benefits to locate in leading areas (serving lagging area markets from farther away). But activities that do not exhibit agglomeration economies such as agriculture, agroprocessing, and labor-intensive manufacturing can flourish in lagging areas as long as these are effectively connected with important markets and main supply chains. Bicol and Nueva Ecija are examples of provinces in this category.

Finally, *where lagging areas are densely populated with high political or social barriers to mobility*, a third instrument—spatially focused incentives—to encourage production in lagging areas may be warranted. This tool set should be carefully considered, however, and applied only after the first two—spatially blind institutions and connective infrastructure—are in place. International experience suggests that such locational incentives are more likely to succeed where lagging areas have good geography (access to markets) and human capital. Indeed, studies of incentives in the Philippines suggest that incentives only weakly influence patterns of regional investment within the Philippines [Reside 2007:7]. Instead, investments have invariably "gravitated towards regions with stronger and richer economies, better infrastructure and greater levels of functional literacy—factors that, compared to incentives, are more fundamental inducers of investment" [Reside 2006:77].

Box 1.9 Decongesting Metro Manila: Integrating Mega Manila

METRO Manila is a dream that never came true. The only thing real about Metro Manila today is its politically defined boundary. These lines place the metropolis within an imaginary parenthesis—with Central Luzon (Region III) in the north and Calabarzon (IVA) in the south. In reality, these three enormous political conglomerations feed off each other. Collectively, they form the single largest economic hub of the Philippines. Unfortunately, mutual dependence has not spawned synergy.

Box Figure 16 Metro Manila, Central Luzon, and Calabarzon population estimates



Source: NSCB

Metro Manila's population of between 11.5 million and 12 million has begun to edge toward a plateau. The National Statistical Coordination Board (NSCB) projects that this will settle at around 13.7 million by 2040.

In contrast, Region IVA's population has overtaken Metro Manila's, soaring according to current estimates from between 13 million and 14 million toward a 2040 projection of 18.5 million. It can arguably claim to be the Philippine region with the largest population today. Region III has followed suit. Currently estimated of between 10 million and 11 million, its population is projected to grow to 15 million by 2040.

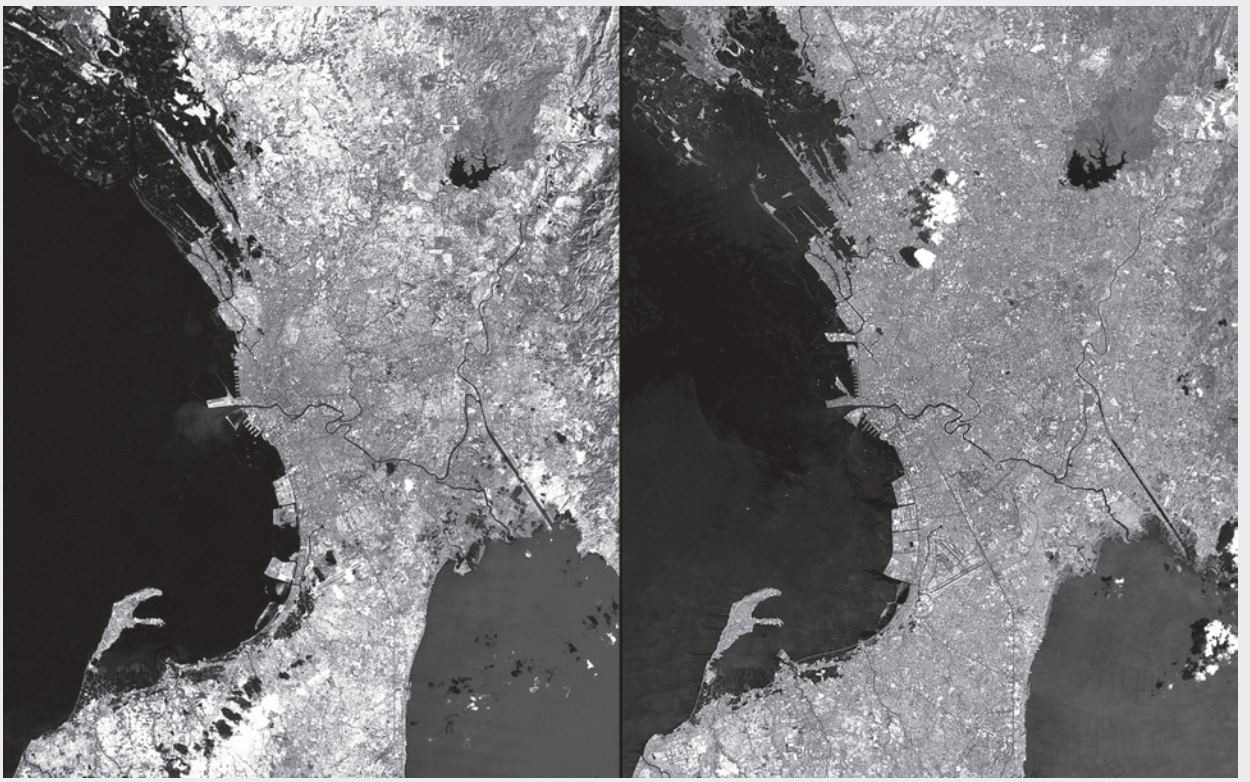
As a bundle, the population of these three geographies is projected to rise from between 33 -34 million today to 47 million by 2040. In a number of internationally circulated documents, this triregional bundle has already been referred to as "Mega Manila." Seeing how daytime population within Metro Manila leaps each working day, it becomes obvious that Mega Manila is the reality that must be dealt with.

If the situation we face today is to be kept in check, then Regions III and IVA must be part of the strategic management solution for the National Capital Region (NCR). Geographical silos are untenable.

Metro Manila is not sustainable. It is certainly not self-sufficient. It is entirely dependent on areas outside its political boundaries. As urbanization has advanced, the ecosystem services necessary to sustain Metro Manila have retreated. The region does not grow its own food. Its water comes primarily from outside. Most of its electricity is generated elsewhere. The fossil fuel that powers its vehicles comes from overseas.

In 2012 it was estimated that Metro Manila's nighttime population, i.e., 10 million, swelled by 40 percent in the day, to at least 14 million. Anyone and anything is free to come in and out of the capital region. Is it any wonder, therefore, that its roads and highways are constantly choked with traffic? Its airport is too small. Its ports are outdated. It is flood prone. Its mass transit system is disjointed. Despite all this, programs aimed at decongestion are half-hearted, often reactive, and rarely strategic or visionary.

NASA Satellite Images of Metro Manila, January 1989 and April 2012



Note: Dramatic expansion of built-up areas (gray areas) between 1989 and 2012

Over the last five decades, we have seen a pattern of development in some parts of the metropolis that seems to point to one possible solution for NCR. As Manila expanded, people moved to Quezon City and San Juan, then Makati, then Parañaque and Alabang, and now to Santa Rosa, Laguna—all looking for a better quality of life.

Unfortunately, stellar examples are few and far between. Emerging more as enclaves, rather than forward-thinking urban development programs, these did not help to substantially improve the scope and quality of urban growth. The sorry state of NCR's connective infrastructure clearly shows that we have not been viewing and managing the urban system at the appropriate scale, and we in the private sector have done even less to abide by the few laws that exist.

Rather than wait for natural disasters to fuel forced relocations, wouldn't it make much more sense to proactively facilitate the growth of livable cities outside Metro Manila? Many areas in Regions III and IVA are fertile ground for wise, more livable development. Rather than staring at our navels and trying to figure out how to deal with the Godzilla we have created, investments to ensure the uniform provision of quality basic health, education, water, sanitation, and energy supplies as well as investments in strategic connective infrastructure will facilitate inter-urban mobility, decongestion, and the coherent interaction between settlements, towns and cities in Mega Manila.

The national government projects that Philippine population will leap from 100 million to 140 million in the next 35 years or so. If we embrace the need for climate-smart cities that are carefully planned with adaptation and resiliency in mind, we should act more affirmatively to get a sustainable grip on our food, water and energy supplies, create the infrastructure for decongestion, integration and livable settlements, and spread climate risk. More than a social challenge, this is an economic strategy. Ultimately, it will exert a significant influence on our trajectory toward sustained national competitiveness in a climate-defined future.

—Jose Ma. Lorenzo Tan

An application of the framework is illustrated in **Maps 14a** and **14b**. The former indicates places that are relatively poor (or lagging) while the latter indicates where poor people are concentrated in the Philippines. For instance, Eastern Samar and Bicol are both relatively poor, but there is a greater concentration of poor people in Bicol.

Besides Eastern Samar, other examples of provinces which are lagging and relatively sparsely populated are Zamboanga del Norte, Agusan del Norte, and Davao Oriental. On the other hand, Nueva Ecija is like Bicol—lagging and more densely populated. Provinces in the ARMM and Cordillera Administrative Region (CAR) come to mind as lagging areas facing potentially high divisions, although the two regions are by no means densely populated (in which case, promoting economic integration by increasing factor mobility—the first category policies—could apply). If a third instrument is considered, however, it would be important that divisions are not inadvertently deepened, such as by creating special enclaves of development with different rules and laws for land or labor. In other words, internal divisions may be a significant short-term constraint to integration, but lessening those divisions should be the longer-term objective of integration [WB 2009:245].

It is important to stress that transformations occur on two levels, and that therefore conditions (and categorizations) are not static. Lagging places that are currently sparsely populated are not being written off (i.e., doomed to being a source of migrants). Rather, these places are likely to be where rural-urban transformations are at an early stage and provinces are presumably focusing on creating conditions (provision of social services, improved land administration) to enable economic concentration. In which case, investments in human capabilities would reinforce provincial actions even as they would also enable labor mobility. If the province continues to lag while density grows in some places, the integration challenge would be redefined and another set of instruments may be warranted. In point of fact, out-migration from these areas is likely to be happening, and restrictions will do little to curb it. Investing in human capabilities will improve the quality of migration and bring about greater social returns for both receiving and sending areas.[65]

In the overall, two things must be noted. First, that policy options in all situations begin with the building of unifying institutions, most especially the universal provision of basic and social services—investments to expand human capabilities. This is the foundation, the necessary condition, for optimizing succeeding policy instruments to facilitate integration. Second, that a strong province is crucial to the story—not only for the effective delivery of basic services (as earlier argued) but to facilitate domestic integration and, ultimately, inclusive human development.

The province: The weakest link

Given the idiosyncrasies of local geography, on the one hand, and the need for a sizable and comprehensive response, on the other, one would have thought that an administratively strong province would be recognized as the obvious key to promote inclusive human development and economic integration. It is paradoxical and incongruous, therefore, that the province is in fact the weakest link among the layers of government under the current system.

A major indication that cards are stacked against provinces is the persistent lack of synchrony and coordination between national and local priorities. By devolving some sectoral functions and programs to local governments, the Local Government Code (LGC) of 1991 sought (and partly succeeded) to address this lack of congruence.[66] But a number of factors cause the problem to persist:

- Many service delivery functions and programs remain with national government agencies. In addition, certain sections of the LGC, i.e., Sections 17 (c) and (f), allow national government agencies to continue implementing devolved services, as long as these are covered by the national budget, other special laws, or executive orders and the like, creating what amounts to a "two-track delivery mechanism," especially for health and agriculture [Llanto 2012].

- Provincial authority over important services even under the LGC is highly circumscribed. It is certainly inadequate if the province is to decisively undertake the functions of intersectoral and intrasectoral integration in the vital spheres already identified. (Box 1.10 illustrates

Table 1.8 Tax assignment for provinces, cities, municipalities, barangays

Tax base	Provinces	Cities	Municipalities	Barangays
Transfer of real property	X	X		
Business of printing and publication	X	X		
Franchise	X	X		
Sand, gravel, and other quarry resources	X	X	*	*
Amusement places	X	X	*	
Professionals	X	X		
Real property	X	X	*	*
Delivery vans and trucks	X	X		
Idle lands	X	X		
Business		X	X	X
Community tax		X	X	*

*Shares in the proceeds of levy of provinces
Source: Llanto [2012]

the assignment of devolved functions in health and agriculture).

■ Weak linkages in the multilevel development planning system prevent the effective provincial priorities from being integrated into higher-level plans. Some years ago it was already observed that:

> National sectoral agencies clearly respond more to the imperatives of their own agencies and their programs and projects are probably not viewed by provincial planners as being responsive to provincial development priorities. For this reason, the non-integration of national sectoral concerns in the PDP (provincial development plan) is not surprising. Conversely, provincial development priorities are not viewed as binding to the NGAs (national government agencies) that operate at the provincial level. Indeed, there is little accountability to the provincial planning system if national government agencies place a higher premium on programs and projects that are typically articulated by their central offices. At the same time, investment proposals identified at the provincial level often have no concrete and reliable connections to national sectoral policy concerns and priorities. Since national funds get allocated through the sectors, strategic investment proposals defined at the provincial level have little chance of being implemented [Cariño et al. 2004:64].

Procedural guidelines issued in 2007 partly addressed this disconnect and promoted the vertical harmonization of plans. But a good deal of improvement is still possible in terms of consistency and integration within the multilevel and multisectoral hierarchy of plans [Corpuz 2012].[67] A local chief executive put it even more bluntly by saying that the 2011-2016 national investment program is "totally unresponsive" to local preferences ["Roundtable Discussion" 2012:107].

The actual influence of the Provincial Development and Physical Framework Plan (PDPFP) on investment and budgeting decisions at the provincial level is unclear. Before 2007, only 15 to 30 percent of the programs, projects, and activities identified and listed in provincial plans were given budgetary outlays.[68] This is unlikely to have improved significantly since. Also, the 2013 "bottom-up budgeting" for 600 poor municipalities, which involved those submitting priority projects directly to parent departments, bypassing the province and region, while well-intentioned, has effectively recentralized budgeting, negating efforts to empower the PDPFP as a policy document.[69]

■ Provincial plans are frequently only partially implemented, if at all, owing to the provinces' heavy reliance on the Internal Revenue Allotment and the

Box 1.10 Devolved functions in health and agriculture

THE effective control of vector-borne diseases, by their nature, requires scale. For that matter, the delivery of quality care for personal care—e.g., surgery, broken bones—also requires scale which is brought about by a high volume of cases; costs decline as many cases share fixed costs involved in standby facilities. A province is well positioned to provide this but has neither the opportunity nor incentive to do so under the current health governance system [Box Table 3].

Box Table 3 Devolved health functions

Province	Municipal/City	Barangay
1 Health services through hospitals and other tertiary health services	**1** Implementation of programs and projects on primary health care, maternal and child care, and communicable and noncommunicable disease control services **2** Access to secondary and tertiary health services **3** Purchase of medicines, medical supplies, and equipment **4** Construction and maintenance of clinics, health centers, and other health facilities Cities also undertake health services provided by provinces	**1** Health services through the maintenance of barangay health stations

Source: Capuno [2008], Table 2

Box Table 4 Devolved agricultural functions

Province	Municipal/City	Barangay
1 Extension and on-site research services and facilities **2** Assistance in the orgnaization of farmer's and fisherman coops and other organizations	**1** Extension and on-site research services and facilities **2** Quality control of copra **3** Improvement or development of local distribution channels **4** Communal and other small-scale irrigation **5** Water and soil resource conservation projects **6** Enforcement of fisheries laws in municipal waters including conservation programs	**1** Distribution of planting materials Operations of farm produce buying stations

Source: Tillah [2011, citing David n.d.]

Likewise, the role of provinces is highly circumscribed in agriculture as seen in Box Table 4. Municipalities however are assigned tasks that have spillovers and require scale, e.g., onsite research facilities, local distribution channels, water conservation, fisheries conservation.

Box 1.11 Toward a more robust, inclusive, resilient Philippine agriculture

THE Philippines' inability to reduce rural poverty has been attributed chiefly to its traditional top-down commodity approach to agriculture development. This approach is characterized by an overemphasis on rice, the mediocre participation of farmers and fisherfolk in program development, high program inefficiency, lack of transparency, and lack of accountability.

By focusing on a few nationally selected commodities that are not necessarily central to the livelihood of the poor, the government disregards the fact that small farmers produce multi-commodities to minimize the risks of total farm failure. It has also failed to optimize the use of resources that the poor have. All told, the government's agriculture modernization program has bypassed the poor.

The effects of the commodity approach have been deleterious. It has distorted the priorities of key policy instruments central to agriculture development: research and development, extension, and regulation. With the budget of the Department of Agriculture (DA) in the last three decades heavily tilted toward salaries and wages (roughly 75 percent) and national commodity programs, especially rice, agencies have had little resources left to discharge their core functions: strategic and policy research, planning, and midstream and downstream research and regulation.

As well, commodities and production environments central to the productivity of the small producers such as root crops, tropical fruits outside of mango, white corn, ducks, municipal waters, and the uplands have not received the proper attention and resources in the areas of research, development, and extension.

In addition, the country's fragmented extension system, in which the province has no real authority over municipalities and cities, has impeded effective planning by agro-ecological zones (AEZs). The Agriculture Fisheries Modernization Act mandates government to use these zones as planning domain to effectively build more resilient livelihoods, accelerate agribusiness development, expand employment opportunities, develop economies of scale especially among small producers, build partnerships between small and large producers, and effectively link government investment to the zone strategic plans.

After all, the need for agriculture infrastructure, such as irrigation and farm-to-market roads, as well as for research, development, and extension is not defined by political boundaries but by the common needs of farmers and fisherfolk within an agro-ecological zone.

The province's scope of responsibility and authority makes it the most viable administrative and political unit to use AEZs to modernize agriculture. The continued use of political boundaries below the provincial level unnecessarily fragments agriculture development, resulting in sub-optimal use of government resources and hindering modernization.

To make agriculture development truly work for the poor, the DA needs to be restructured: its agencies and programs must be simplified and organized along functions to achieve system efficiency, avoid conflict of interest, and focus on the essentials of development. The reorganized DA should transform its programs to those that are highly decentralized and producer- and area-focused with local government units (LGUs) in the lead and agriculture support services, especially extension, organized and managed along development zones at the provincial level. This would be in keeping with the principles of New Public Management, in which the DA should steer and the LGUs should row.

—Eliseo R. Ponce

Provincial Development Fund.[70] This points to the fundamental problem of weak fiscal capacity and autonomy of provinces, which stems from the severe mismatch between revenue and expenditure assigned to provinces under the LGC [Llanto 2012; and Manasan 2006, 2007]. Indeed, the tax base of provinces is smaller relative to that of the city. Among other things, provinces cannot levy local business taxes [**Table 1.8**].[71] On the other hand, compensating resource transfers going to provinces are much less than the expenditures devolved to them [**Table 1.9**].[72] Further, it is central government that controls the major sources of tax revenue [Llanto 2012].[73]

The dependence of provinces on IRA "creates opportunities for greater control by the central government, contrary to the vision of local governments being able to respond to local needs and to match local outputs with local preference" [Llanto 2012]. But addressing this problem is where current discussions typically hit a wall.[74] On the one hand, changing the IRA distribution formula without an increase in the aggregate IRA share is a zero-sum game and is bound to be resisted by losing LGUs [Manasan 2007]. On the other, the national government itself is likely to be averse to increasing the aggregate IRA share of local governments (from the current 40 percent to, say, 45 or 50 percent) even if the increment is used for performance-based grants. Increasing the aggregate IRA share, just like assigning more revenue-productive tax bases to provinces (tax decentralization), is likely to be viewed as surrendering control to local counterparts—a highly contentious and political matter even in other jurisdictions.[75]

In the best case, empowering provinces must include the following:

- Reform legislation to strengthen the role of provinces in the planning, implementation, and oversight in the provision of services for health and agriculture, as well as other public goods in their geographic domains. This should include the possibility of reassigning to provinces (and away from municipalities and cities) key health and agriculture-related functions that require integration and scale [**Boxes 1.11 and 1.12**].

- The above should be matched by legislation assigning larger tax bases to provinces. For various reasons this is superior to merely increasing the mandated local government share (IRA) in national revenue. Tax decentralization from central government will go some way toward matching the larger responsibilities and expenditure assignments given to provinces. It will improve local accountability, even as intergovernmental transfers must be redesigned to help close disparities in fiscal capacities [Manasan 2007].

- National government agencies must be reoriented or restructured to better align their activities with rural-urban transformations and inclusive human development on the ground. Specifically, a reorganization of the Department of Agriculture is long overdue and requires only action from the executive branch. The Department of Health's health service agreements and investment plans with provinces also need to be evaluated with respect to their impact on the ability of provinces to promote health through more appropriate intersectoral approaches. It may also be a useful interim measure to subject the use of non-IRA funds for devolved functions (e.g., central agency funds for programs and projects to be implemented in a province) to provincial government control [Llanto 2012].

- A formal mandate should give provinces the lead role in facilitating rural-urban, interurban, and metropolitan integration efforts within their geographical jurisdictions. This includes arrangements involving highly urbanized cities. (An even more straightforward approach is to keep HUCs as component cities of their home provinces, and prevent the artificial mitosis of populated or economically dense areas.) Even without legislation, the President, by executive order, can designate and capacitate provinces in this leading function on a case-to-case basis.

Note that the scope of cooperation required for economic integration need not be too wide or ambitious. What is fundamental is broad but purposive coordination in the provision of basic services such as health, water, sewerage and sanitation, and disaster response, most or all of which require cross-border action as well as oversight to ensure that all households

are served regardless of location and cost. The same is a prerequisite to enduring responses to climate change and the maintenance of watersheds.[76]

Ranged against this agenda are inertia and vested interest. There is, on the one hand, a growing recognition that the peculiar shape of Philippine devolution—laid down by the Local Government Code more than two decades ago—now needs to be revisited to repair past defects as well as recalibrate arrangements in response to new challenges and changing times. On the other hand, powerful interests have become encrusted around the status quo. Some of those in national agencies are loath to surrender their prerogative of disposing over great resources. This comes from either fear of losing political influence or a genuine doubt regarding the intent and capabilities of provincial leaderships. Other levels of local government that have benefited from the current system will also oppose a reallocation of resources and responsibilities. For them, being subsumed to large-area objectives and more strategic considerations will be viewed as an erosion of hard-won parochial autonomy. It also means a larger sphere of competition for political dynasties and other actors that have hitherto dominated politics in smaller areas. Even for impartial participants, a world beyond "divide-by-N" will seems inconceivable and strange.

Despite the inherent difficulties and daunting prospects of implementation, however, institutional and even political reform that fully recognizes the demands of geography must be placed on the table. This Report contends that no effort can claim to address human development in the Philippines without seriously confronting the challenge posed by locational unevenness and geographical imperatives. The response to that challenge is a further test of the collective will and the maturity of the country's democratic processes. It is a paradox but true that the geographic diversity and unevenness can be adequately addressed only by communities and leaders who can transcend those geographic and political differences themselves and instead adopt the more inclusive viewpoint—that of human development. ■

Table 1.9 Distribution of IRA and devolved expenditures

LGU	Mandated share in IRA (%)	Cost of devolved services (%)
Province	23	37
City	23	5.7
Municipality	34	38.5
Barangay	20	18.8

Sources: Manasan [2007]; Llanto [2012]

Box 1.12 Integrated approach to NTD control: Can we do better?

NEGLECTED tropical diseases (NTD) include parasitic infections such as soil-transmitted helminth (STH) infections, schistosomiasis (SCH), lymphatic filariasis (LF), and foodborne trematode (FBT) infections found in varying degrees in many areas of the Philippines. Ignored by government and public health authorities for generations, they are now targeted for control, if not elimination, due to scientific breakthroughs and unprecedented support from philanthropy.

STH infections remain as one of the most important causes of morbidity especially in pre-school and school age children and is one of the major causes of malnutrition, absenteeism and poor school performance. SCH is a cause of anemia, gastrointestinal, liver, lungs and central nervous system disease while FBTs cause gastrointestinal and pulmonary disease. LF is a cause of disfiguring disease. All infections can co-occur with or cause other states of poor health in affected communities. Their effects amount to losses in productivity and human development.

For the first time in history, anthelmintic tablets are being procured by government or donated by pharmaceutical and other entities. Preventive chemotherapy by way of mass drug administration (MDA) is recommended for morbidity control of STH infections and SCH as well as for elimination of LF. However, MDA coverage rates in the country generally remain low with a seeming oversupply of drugs due to underutilization. The greatest challenge is still the delivery and administration of the drugs to a high percentage of the target population.

Disease prevalence and incidence rates need to be better described, preferably with the use of advances in diagnostic tools, information, and communications technology. Obsolete national guidelines and policies need to be updated, probably even strategically being positioned as part of poverty alleviation efforts.

National guidelines and policies for control and elimination of these diseases in the Philippines advocate for an integrated approach, but operationalization at subnational levels (regional, provincial, city, municipal, and barangay) needs to be better defined to be more responsive in a decentralized health system.

Delivery of a safe and effective combination of anthelmintic tablets to targeted populations like preschool and school-age children can be made more simple and efficient, and at the recommended coverage rate of 85 percent, if national health and disease control policy is implemented by local health units championed and coordinated at the provincial level in collaboration with public schools. Intersectoral collaboration among health, education, social welfare and development, agriculture, water and environment sectors, among others, to develop and implement more effective tools and approaches for control and elimination also needs to be pursued.

Partners and collaborators at national and local levels need to be better engaged from conception to evaluation. People in communities need to be the focus of bolder and more creative social mobilization efforts.

The Philippines can certainly do better. The War on Worms (WOW) campaigns initiated by the University of the Philippines Manila demonstrates a local government unit-led and coordinated school-based and school teacher-assisted strategy approach. More than simple orientation, delivery of drugs, MDA implementation, and collation of MDA coverage reports, the WOW approach involves considerable emphasis on advocacy, capacity building, social mobilization, monitoring, and evaluation of more than just MDA coverage, making champions of local government and health units as well as school districts and divisions. Studies show significant reductions in morbidity at the municipal (Biñan, Laguna), city (Cebu), provincial (Aklan, Antique, Capiz, Guimaras), and regional (Western Visayas) levels associated with the approach. The WOW model is replicable across the country.

NTD control in the country has been much better supported in the last few years but there is a need to ensure and secure adequate and continuing support to sustain control/elimination efforts. It may be time to hear from the national leadership a declaration of an all-out "War on Worms."

—Vicente Y. Belizario Jr., MD, MTM&H

Notes

1 National Artist Virgilio S. Almario's 2011 translation.

2 This section draws heavily from Wernstedt and Spencer (henceforth WS 1967,) except where indicated.

3 This is connected with the warm (El Niño) and cold (La Niña) phases of the Southern Oscillation, which give rise to anomalies in rainfall, wind, and temperature. Rainfall may drop below 10 percent of the annual average during a warm episode but exceed that amount by as much as 80 percent during a cold episode [Bankoff 2003:129].

4 In the language of epidemiology, *vectors* are organisms that transmit infections from one host to another.

5 DALY is the accepted way of ranking diseases according to their economic impact. The figures cited are from Hotez et al. [2010], who explain that the wide range for schistosomiasis reflects alternative disability weights assigned by different investigators. King [2010] suggests a realistic floor estimate of 13 to 15 million DALY lost due to schistosomiasis.

6 Based on the dozen or so studies reviewed by Russell [2004].

7 DOH, malaria control program, dated May 16, 2011 (Retrieved from http://www.doh.gov.ph/node/1072.html) and schistosomiasis program, dated October 11, 2011 (Retrieved from http://www.doh.gov.ph/content/schistosomiasis-control-program.html).

8 WHO Representative Office Philippines, "Neglected Tropical Diseases in the Philippines" (Retrieved from http://www.wpro.who.int/philippines/areas/communicable_diseases/mvp/story_ntd/en/index.html). WHO classifies 14 chronic tropical infections as NTDs. At one point malaria and TB were considered neglected, but are now well funded. Malaria and TB also occur in temperate countries.

9 Belizario et al. [2010] and personal communication.

10 Belizario et al. [2004]. The exact species of intestinal flukes (worms) in the Philippines has not been definitively established, but they are not uncommon. In the study, observed prevalence rates ranged from 16 to 36 percent in villages in Monkayo, Compostela Valley. Different species of FBT have also been confirmed in Davao del Norte, Siargao Island, Sorsogon, and Zamboanga del Norte [personal communication]. Leonardo [2008, 2012] also reports prevalence rates between 0 and 27.5 percent for Luzon, Visayas, and Mindanao.

11 Malaria has received more attention. International evidence indicates that sick adults can lose 1–5 days per malaria episode, depending on severity, and the number of episodes over a year can range from 0 to 5 per individual and from 0 to 11 per household, concentrated in the rainy season when opportunity costs of lost time is greatest [Russell 2004].

12 Circa 1983 and 1984. After one year of treatment, person days lost went down to four. The study did not benefit from randomized control groups, however, so results are likely to be positively biased.

13 This is an oft-cited estimate (e.g., WHO website) although the source of the estimate and its vintage can no longer be traced. A current estimate may be obtained by using a DOH [2002] prescribed formula for annual productivity loss—i.e., number of days lost x minimum daily wage, where number of days lost is equal to the number of people with microfilaremia x 0.34 (percent with lymphangitis) x 3.5 (number of attacks per year) x 3 (duration of attacks in days). Assuming 645,232 people infected and a minimum wage of P205/day, the estimated loss today would be P47.2 million per year.

14 Diseases included were malaria, schistosomiasis, filariasis, STH, leprosy, and dengue.

15 Administrative data per disease per province were correlated with poverty incidence in 2006 and 2009, HDI 2006, high school graduation ratio, basic enrollment rates, and agricultural employment. Disease prevalence per municipality was correlated with municipal income poverty incidence, access to safe water, sanitation, and school attendance in five provinces, i.e., Eastern Samar, Palawan, Sarangani, Agusan del Norte, and Camarines Norte.

16 For instance, schistosomiasis, STH, and foodborne parasitic diseases co-occur often [Belizario et al. 2004 and 2007; Zhou et al. 2008; and Leonardo et al. 2012].

17 Passive case finding is dependent on people who develop symptoms and present themselves for medical attention. In contrast, active case finding involves systematically looking for cases of disease or latent infection in groups known or thought to be at higher risk of infection.

18 Zhou et al. [2008] remark that the national prevalence data for schistosomiasis for the last five years may be significantly underestimated because only around 10 to 20 percent of individuals in endemic areas were examined.

19 A resolution on the elimination of schistosomiasis was issued in May 2012 by the World Health Assembly (WHA 65.21).

20 For instance, whether it mattered for a province to be located in climate zone III or IV.

21 Stratified two-stage systematic cluster sampling was employed which ensured that endemic provinces were included while nonendemic provinces were randomly selected. Provinces were used as primary sampling units and barangays as secondary sampling units. Barangays, however, were selected randomly.

22 Indeed, Leonardo [2012] advocates more intensive local surveys to "unveil the more detailed situation of the endemic areas" and "identify 'hot spots' of the disease."

23 Referring to the "logistic difficulty of providing disease control services and surveillance in a country of several thousand islands" from the center [Kron et al. 2000].

24 The Philippines' soil base ranks among the more fertile and varied among areas in the tropics because of coralline limestone and volcanic materials which occur extensively (and which provide good parent materials for fertile soil development) as well as its climate, whose influence on soil formation does not operate in the same way in all parts of the country [WS 1967].

25 "Critical soils requiring intensive management" are defined as "soils located in uplands, that is, greater than 100 m of elevation, with level to gently undulating (0-8 percent), rolling to hilly (8-30 percent) and steeply dissected-mountainous (>30 percent) regions, belonging to the soil orders of Acrisols-Arenosols and Andosols-Nitosols."

26 For land resource appraisal and more advance applications in natural resource analysis and land-use planning, additional layers of information, such as an inventory of land use, and other factors such as land tenure, land availability, nutritional requirements of human and livestock populations, infrastructure and costs and prices, would be needed [FAO, retrieved from http://www.fao.org/docrep/W2962E/w2962e-03.htm]. Hazard maps would also be needed.

27 If agro-edaphic zones were not generalized and collapsed into four, there could have been more than 150 AEZs arising from the logical combination of an original 24 agro-edaphic and seven agro-climatic zones.

28 Ponce [personal communication]. The lack of any rationale criteria in the allocation of budgets, resulting in the bias for rice, was often mentioned in the AFMA Review Final Report [2007: v]: "There must be sound criteria in the use of resources: market-orientation, and social rates of return. This is to correct the disproportionate allocation to rice to the detriment of other crops." The report also said: "So far, irrigation (primarily for rice) had the largest budget share at 30 percent but in fact, rice comprised less than 30 percent of farms, 17 percent of gross value added in agriculture and fisheries, and 17 percent of gross farm value. In the process, development of deserving farm products was stifled" [p. viii].

29 National Statistical Coordination Board (NSCB) (Retrieved from http://www.nscb.gov.ph/pressreleases/2012/PR-201206-SS2-01_pov2009.asp).

30 This disconnect between agriculture and municipal fisheries is illustrated in the "divergence in principles" between the AFMA and the Fisheries Code as argued in Batongbakal [2002].

31 Around P69.8 billion was allocated to irrigation, which is primarily for rice in any case.

32 Briones and Galang [2013]. Total inventory fell from 3.4 million to 2.6 million tons, with National Food Authority (NFA) stocks dropping from 1.7 million to 1 million tons, from the start of 2011 to 2012. The authors point out that at this rate, total stocks could fall to 1.5 million tons by end-2013, or only 12 percent of domestic demand, below the 17 percent level recommended by FAO.

33 From 2003 to 2009, the number of food poor individuals also went up by 7.2 percent (or 637,500), and food poverty incidence declined by just 0.3 percentage points (from 11.1 to 10.8) [NSCB].

34 Economic distance is generally related to straight-line distance between two locations and the physical features separating them but is not synonymous with it. Adverse physical geography generally increases economic distance [WB 2009].

35 Gallup and Sachs [1999]. That landlocked economies are disadvantaged vis-a-vis internal regions of coastal economies could be because of extra costs involved in cross-border migration, in coordinating cross-border infrastructure, and other possible impositions by coastal economies on landlocked economies for military/economic reasons.

36 The regions identified by Wernstedt and Spencer [1967] are differently delineated from the current administrative regions which first came into existence only on September 24, 1972 (Presidential Decree 1) and which have since been reconfigured a number of times.

37 Highways were poorly surfaced, secondary roads passable only during dry weather, and road connections to main arterials, even from short distances away, were limited. The rivers of Cagayan Valley did not help the problem significantly because most of them were not navigable. The development of deepwater ports along the north coast of Luzon was also severely restricted by climate and the relatively shallow coastal waters

38 "The Ilocano, faced by a lack of arable land after the middle of the nineteenth century and only a small amount of land that can be irrigated, has chosen to seek his livelihood in non-agricultural pursuits, or his attentions have been focused outside the region … The Ilocano has become one of the prime sources of Filipino migrants who continue to supply the economic deficit of the home-resident population by the steady remission of savings … Fishing, salt-making and textiles play relatively important roles in the economy of the region, providing funds to purchase sufficient amounts of food, mainly rice, from other areas in the Philippines" [WS 1967:341].

39 The number of seaports (interacted with the dummy variable indicating coastal provinces) is significantly and negatively associated with agricultural income growth, a puzzling result in light of an earlier finding on the positive effects of national roads on agricultural income growth, according to Balisacan et al. [2011].

40 Like "bridges over oceans," the ro-ro system carries rolling stock without requiring cargo handling service. In contrast, the traditional load-on/load-off (lo-lo) system or conventional liner system involves shipping goods in containers that are on- and off-loaded by cranes and other dock equipment. This involves cargo handling fees and wharfage dues paid by the shipper.

41 Shifting from the conventional weight and commodity-based rate structure to a land meter -based fee system was especially significant for agriculture, which is rated as the lowest class and is shipped as the lowest priority under conventional shipping policy.

42 Unless otherwise indicated, this section draws heavily from the *World Development Report 2009* which describes the geographic transformations needed for development, drawing on insights from economic history and a generation of research across a number of subdisciplines, e.g., industrial organization, urban economics, international trade, and economic geography [WB 2009].

43 A hierarchy of density arises at any geographic scale and is an enduring feature of economic development well-known to urban specialists and location theorists since J.H. von Thünen. Places are described by size and rank, related to scale and function; settlements of different sizes complement each other. Thus "hierarchy reflects a dynamic system … the growth or decline of one center affects other centers" [Corpuz 2010].

44 More generally, highly differentiated spatial patterns of economic activity (e.g., cities, hubs and spokes, international division of labor between industry and agriculture) can emerge based on forces such as increasing returns to scale, agglomeration economies, transport costs, and product differentiation. See the "new geography" literature, e.g., Krugman [1996], and Fujita and Mori [2005].

45 Corpuz cites the case of Hong Kong, which has one of the highest density urban core areas but also a very large area (about 82 percent of total land area) devoted to parks, agricultural/forest and undeveloped land as well as one of the most efficient mass transportation systems in the world. Concentrating the population into a high density urban core increases the feasibility of a high capacity mass transit service and can provide generous recreational and open spaces that benefit the larger region therefore.

46 Spatial disparities in per capita product and consumption first rise then fall with level of development [WB 2009:87].

47 The regional dispersion of industries, particularly in less developed areas, is actually explicit in the "industrial clustering strategy" of the country [PIDS 2008:13].

48 Only 10 are actually rated as international airports.

49 In other words, market forces did not pick these places (Retrieved from http://maritimereview.ph/2011/08/ppa-breaks-silence-stresses-no-need-for-the-modular-ro-ro-port-project/).

50 Of the 72 proposed sites, 19 already had complete port facilities, and 47 only needed a ro-ro ramp. Most of the sites were also on open sea coastlines even though the modular ports required sheltered areas with waves not exceeding 3 m. As revealed in a 2011 government review, a number of issues listed by the Technical Board of the National Economic and Development Authority's Investment Coordination Committee (NEDA-ICC) were not addressed prior to the 2009 contract signing, including economic and financial viability studies per port/port site [DOTC, personal communication]. The Philippine Ports Authority (PPA) also observed that to build another 72 ports would "be wasting money because nobody will use them" (See article cited in preceding footnote).

51 This is not to say that there were no objections to the SAFDZ concept as contemplated. See, again, Batongbakal [2002].

52 Chapter 8 of WB [2009] summarizes lessons, i.e., where spatially targeted incentives did succeed in supporting economic growth, "markets picked the places and government speeded up the pace" (South Korea); incentives of this sort are more likely to succeed when they exploit advantages in natural and economic geography rather than try to offset them (China, India).

53 This term and concept are due to the economist and National Scientist Raul V. Fabella and appears in Medalla, Fabella, and de Dios [2007].

54 This explanation draws heavily from Medalla et al. [2007].

55 Maranaw from Lanao del Sur, the division of Isabela and Quezon into two provinces each, and the creation of Shariff Kabunsuan in Mindanao.

56 Section 29, R.A. 7160, and Rule II, Article 12, Administrative Order 270 (IRR). Cities meeting the prescribed minimum requirements have to apply for classification and be declared by the President as highly urbanized cities (HUC). The conversion must then be ratified in a plebiscite by the HUCs qualified voters.

57 Independent component cities, i.e., cities whose charters prohibit their voters from voting for provincial elective officials, are also independent of the province. There are five independent component cities: Dagupan (Pangasinan), Naga (Camarines Sur), Cotabato City (Maguindanao), Santiago (Isabela), and Ormoc (Leyte).

58 Note that size is not always synonymous with economic density. The Local Government Code (LGC) allowed the creation of component cities from municipalities or clusters of barangays for as long as the proposed city had a minimum average annual income of P20 million for the last two years and 150,000 residents, regardless of land area. Thus the odd case of Puerto Princesa, the second largest city in terms of land area (2,381 sq. km.), now a highly urbanized city, but the least dense among all cities at 93.5 people per sq. km. In 2001, R.A. 9009 raised the income threshold for the conversion into a city to P100 million for the last two years based on 2000 constant prices.

59 A central business district, or a set of them, anchors a city's spatial and economic structure, e.g., it dominates the land market and influences the geography of a city such that the location of other land uses and transportation linkages are oriented toward it [Corpuz 2012].

60 For instance, the Metro Iloilo-Guimaras Economic Development Council (MIGEDC), formalized by E.O. 559 in August 2006, includes the mayor of Iloilo City as chairperson, provincial governor of Guimaras as co-chair, five municipal mayors of surrounding towns as members, and the president of the League of Municipalities of Guimaras also as member, but excludes the provincial governor of Iloilo. The council is charged with "formulating, coordinating and monitoring programs, projects and activities for the acceleration of economic growth and development" in their jurisdictions "in support of the Mega-Region Development Strategy of the National Government" [E.O. 559], which begs the question, How does the province, which has administrative supervision over the five municipalities and articulates the provincial development plan, fit in?

61 Practices included the auction of provincial and municipal level government posts as well as the granting of exclusive rights to engage in commerce while working for government for a fee, called *indulto de comercio*, effectively turning governorships into franchises. These practices were in place from the late 1500s to mid-1800s [Veneracion 1986].

62 This is suggested by the markedly different development outcomes in, say, Cebu City and Danao City, both of which feature long-dominant political clans. See de Dios [2007:179-185].

63 The NSCB classification for 2010 uses the new definition of urban areas approved through NSCB Resolution No. 9, series of 2003, on October 13, 2003. A barangay is urban if it has *either* (i) a population size of 5,000 or more; (ii) at least one establishment with a minimum of 100 employees; *or* (iii) five or more establishments with 10 to 99 employees, and five or more facilities within the two-kilometer radius from the barangay hall. Otherwise it is classified as rural.

64 This is the case for overseas migrants which can be seen from an analysis of labor force surveys [G. Ducanes, personal communication].

65 The agglomeration literature suggests that human capital earns higher returns where it is plentiful. The migration of skilled labor therefore adds to agglomeration benefits more than to congestion costs in places of choice. Migrants are also rarely disconnected from their homes, remitting not only capital but information and technical assistance, and, "when a place is ready," ideas, links to leading markets, and the like. With the right policies, sending places can capture these benefits for faster growth and convergence [WB 2009: 158-159].

66 The 1991 LGC was designed to address the problem of a highly centralized political and administrative system. It embodies a decentralization policy begun in 1972 whose goal is "to bring government planning and decisionmaking closer to the grassroots with a view towards addressing more effectively local-level needs" [Cariño et al. 2004].

67 For instance, Joint Memorandum Circular 1 (JMC) series of 2007 providing guidelines on the harmonization and synchronization of local planning, investment programming, budgeting and expenditure management, and revenue administration, and promoting interface and complementation across levels of government. It also sought to clarify responsibilities among the DILG, NEDA, DBM, DOF, and the LGUs relative to local planning, investment programming, and the rest. The JMC is ambitious, a step forward, but specific implementing mechanisms are not yet in place place and what actually happens is far from what is advocated [Corpuz 2012 and personal communication]. Another is the Provincial/Local Planning and Expenditure Management Guidelines (PLPEM) issued by the NEDA in 2007 which, among others, merged the provincial development plan and provincial physical framework plan. Implementation has been uneven, however, and the logic it advocated has not cascaded down to municipalities/component cities (e.g., comprehensive development plans and land use plans of cities/municipalities remain under JMC 1 2007.)

68 Corpuz [2012] citing Cariño et al. [2004]. In the latter, it was further observed that "the (provincial development plan) hardly mattered when it came to the identification and actual implementation of provincial projects and in influencing development planning and implementation in general" (par. 163).

69 According to Budget Undersecretary Mario Relampagos ("Roundtable Discussion" 2012:98), bottom-up budgeting is intended to demonstrate the central government's support for lower class municipalities whose priority projects might otherwise "get lost along the way." In the 2013 National Expenditure Program, P2.002 billion was allocated for "Programs/projects Under the Bottom-up Budgeting."

70 The LGC requires that at least 20 percent of the IRA be set aside to fund development projects. This fund, otherwise known as the 20 percent Development Fund, is the source of pork-barrel-like allocations at the provincial level (e.g., to vice governor, sanggunian or council members, mayors).

71 Local business taxes are one of two LGU taxes that produce significant revenue. The other is the real property tax (RPT). However, the maximum tax rate a province can levy for RPT is lower than the maximum rate cities and municipalities can levy, and the share of provinces in the proceeds of the RPT is smaller (35 percent) than that of cities (70 percent) and municipalities (40 percent) [Cariño et al. 2004].

72 It has also been observed that the IRA formula is regressive across LGUs of the same level. For instance, it favors the financially more capable cities [Llanto 2012; and Manasan 2007]. The distribution formula itself does not take into account the diversity of needs or inherent differences in tax bases, which is tantamount to distributing resources equally among LGUs, rich or poor alike (Ibid.). Municipalities are also disadvantaged, first, because the IRA share to them is divided up between many units and, second, smaller municipalities (third class and lower) do not have much of a tax base to begin with.

73 Low tax effort has also been identified as a contributory factor.

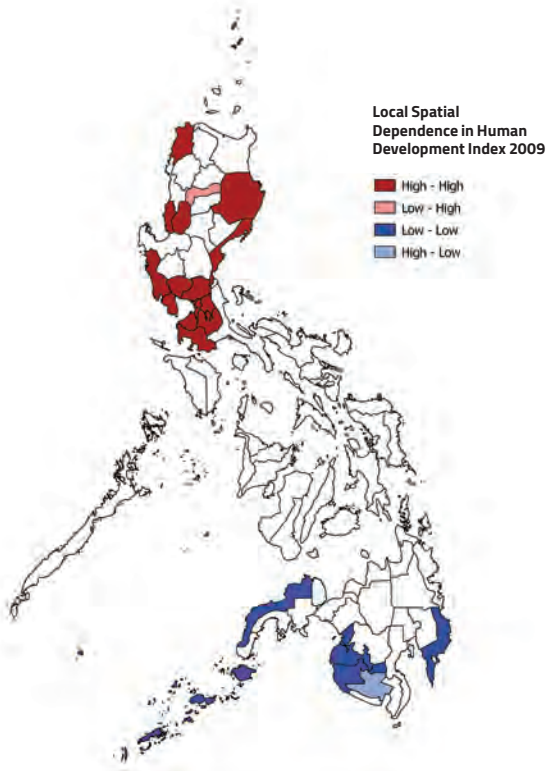
74 Albay governor Joey Salceda was adamant that any conversation that mentions IRA has been and will continue to be a useless one ["Roundtable Discussion" 2012: 97].

75 Llanto [2012:51] cites other authors on this. For instance, it is argued that tax decentralization could erode the efficacy of fiscal policy as a national instrument or the ability of central government to meet redistribution and stabilization objectives. Ultimately, tax assignment in practice is the result of political bargaining and compromise based on the country context.

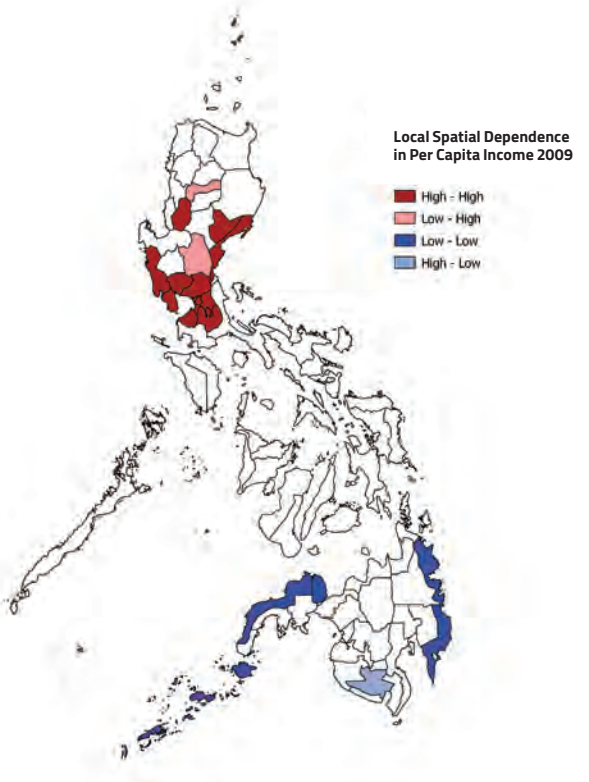
76 Innovative efforts along these lines include the Strategic Intervention and Community-Focused Action towards Development (SICAD) by the provincial government of Oriental Mindoro, which synchronizes the implementation of development programs of the provincial government, attached agencies of the national government, including other convergence initiatives, and the private sector. Also, the well-known the disaster risk management institutions of Albay [Espinas 2012], interlocal public-private sector efforts for the Sta. Rosa Watershed [Tongson 2011], and the Marikina Watershed Environs Integrated Resource Development Alliance [Tuano and Sescon 2012]. It is important that the coordination of resource management and climate change adaptation at higher scales complement—and not replace—"homegrown and tradition-based" community resource management and coping mechanisms, however [Luspo 2012].

Maps

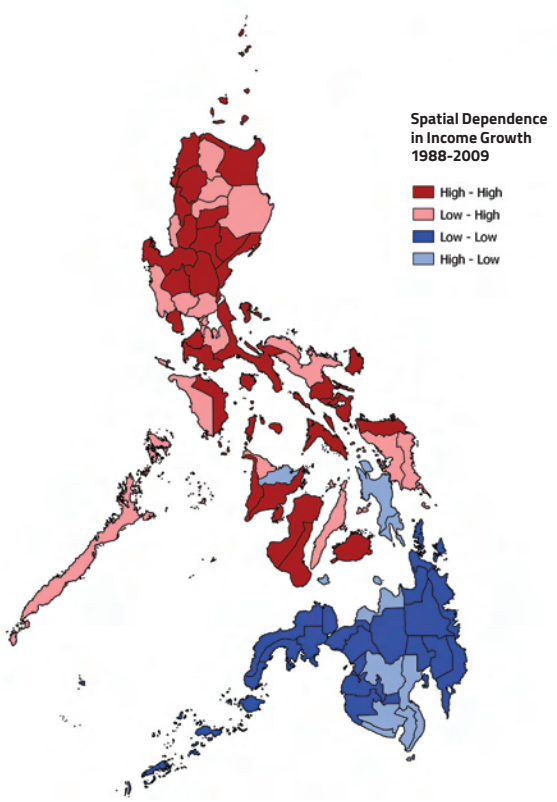
Sources of maps
Map 1: Author's computation
Map 2: Author's computation
Map 3: Mapa et al. [2013]
Map 4: Data from Mapa et al. [2013]
Map 5: PEF [2011], with DOH and WHO
Map 6: PEF [2011], with DOH and WHO
Map 7: PEF [2011], with DOH and WHO
Map 8: PEF [2011], with DOH and WHO
Map 9: PEF [2011]
Map 10: http://kidlat.pagasa.dost.gove.ph/cab/statfram.htm
Map 11: Shuttle Radar Topography Mission (SRTM) version 4 (February 2000); National Aeronautics and Space Administration (NASA) and U.S. Geological Survey (USGS); Philippine Biodiversity Conservation Priorities; Regional Climate Systems; Manila Observatory; and National Mapping and Resource Information Authority (NAMRIA) base map
Map 12: Basilio [2012], acknowledging USAID and The Asia Foundation
Map 13: Data from National Statistical Coordination Board
Map 14: Data from NSCB
Map 15: Data from HDN
Map 16 Data from HDN
Map 17: Data from HDN
Map 18: Data from HDN



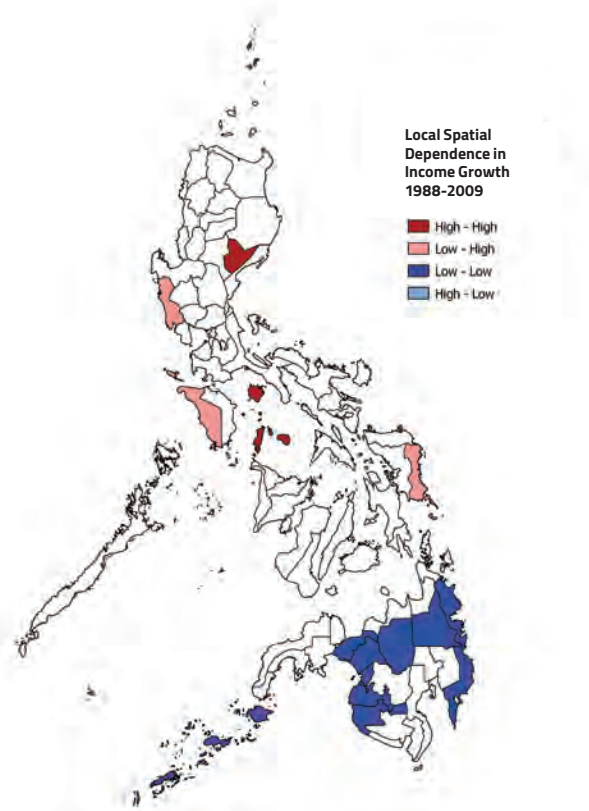
Map 1



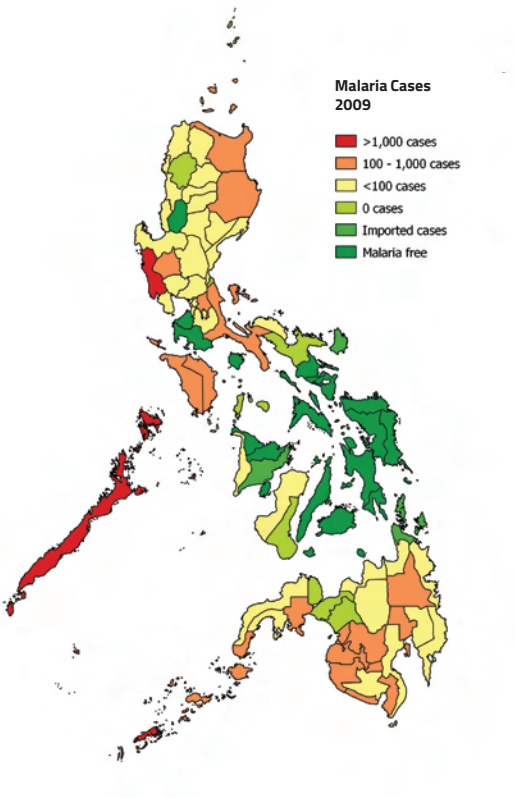
Map 2



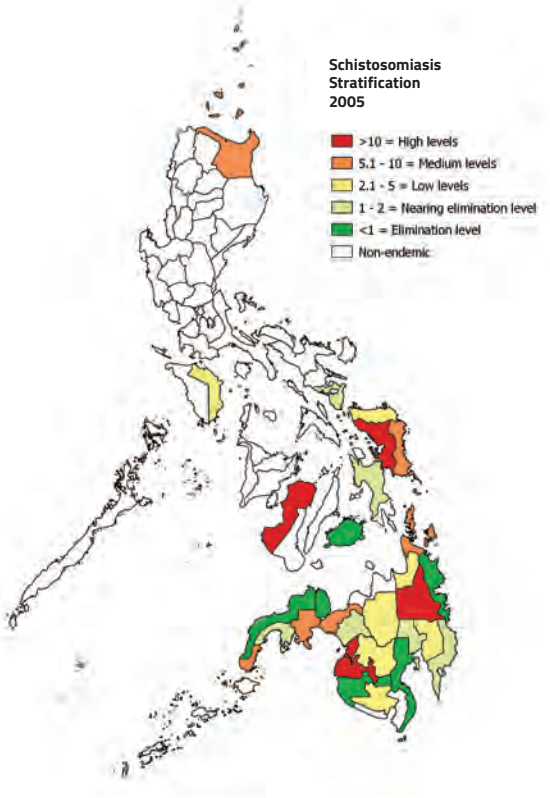
Map 3



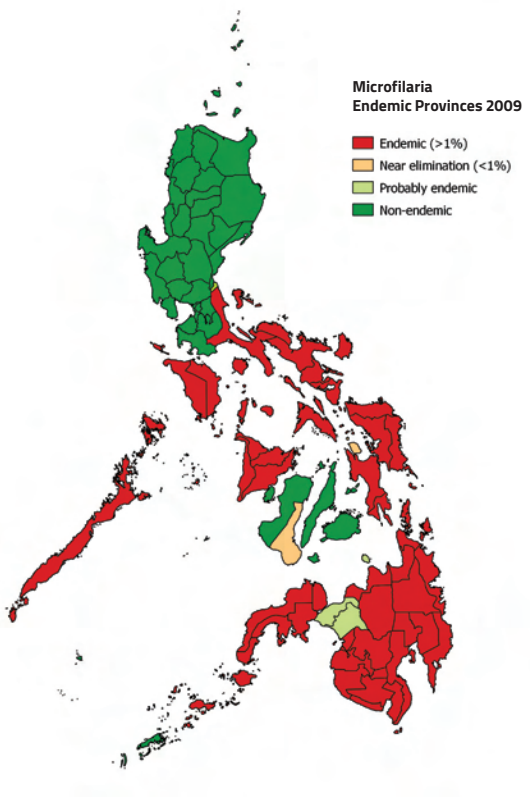
Map 4



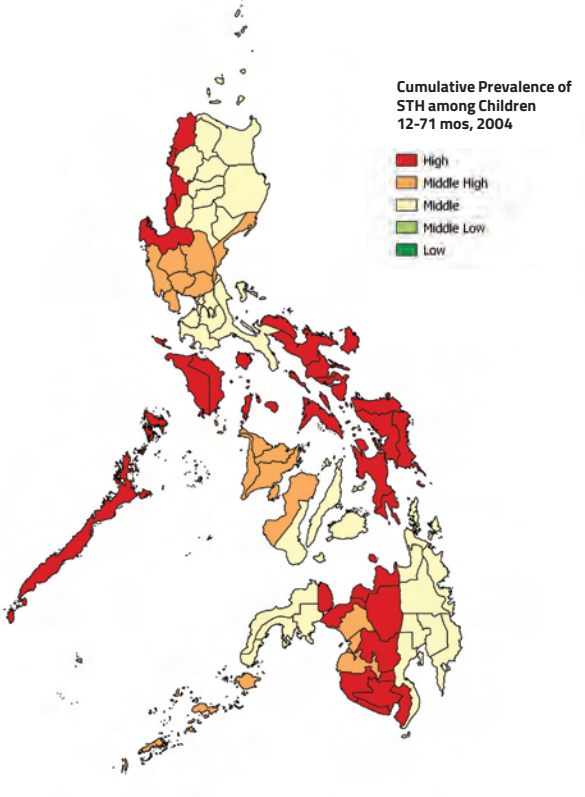
Map 5



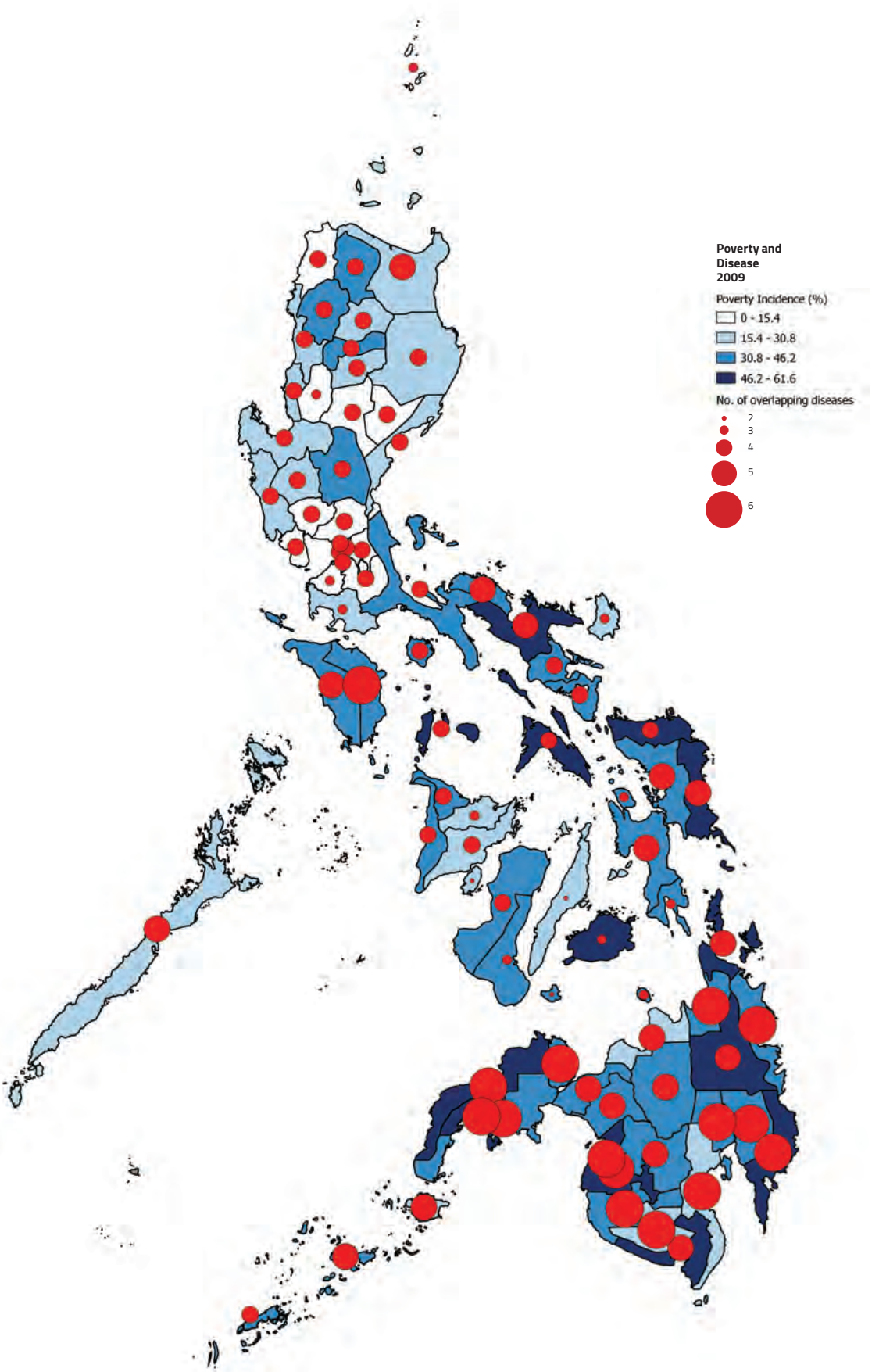
Map 6



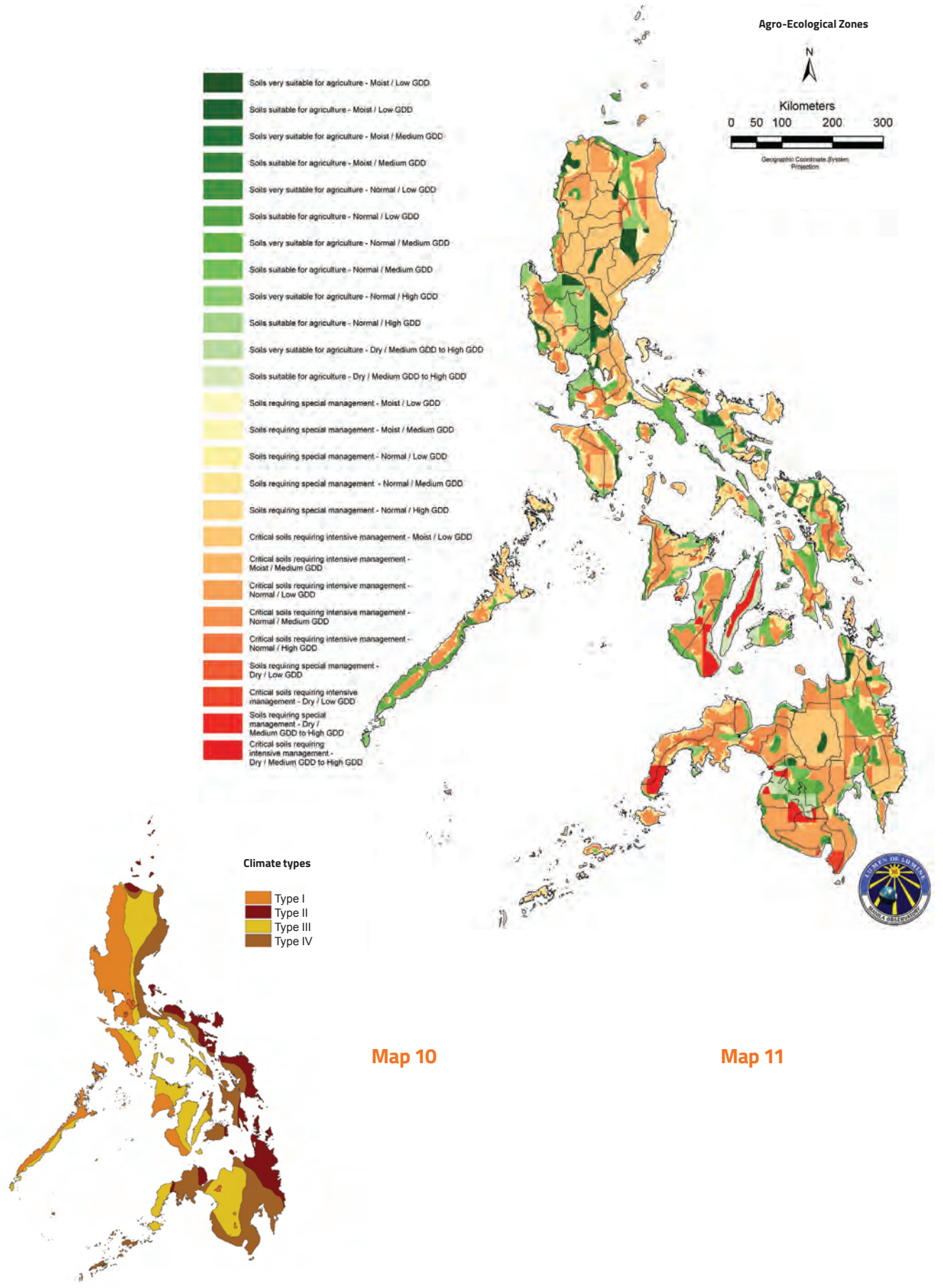
Map 7



Map 8


Poverty and
Disease
2009
Poverty Incidence (%)
0 - 15.4
15.4 - 30.8
30.8 - 46.2
46.2 - 61.6
No. of overlapping diseases
2
3
4
5
6

Map 9

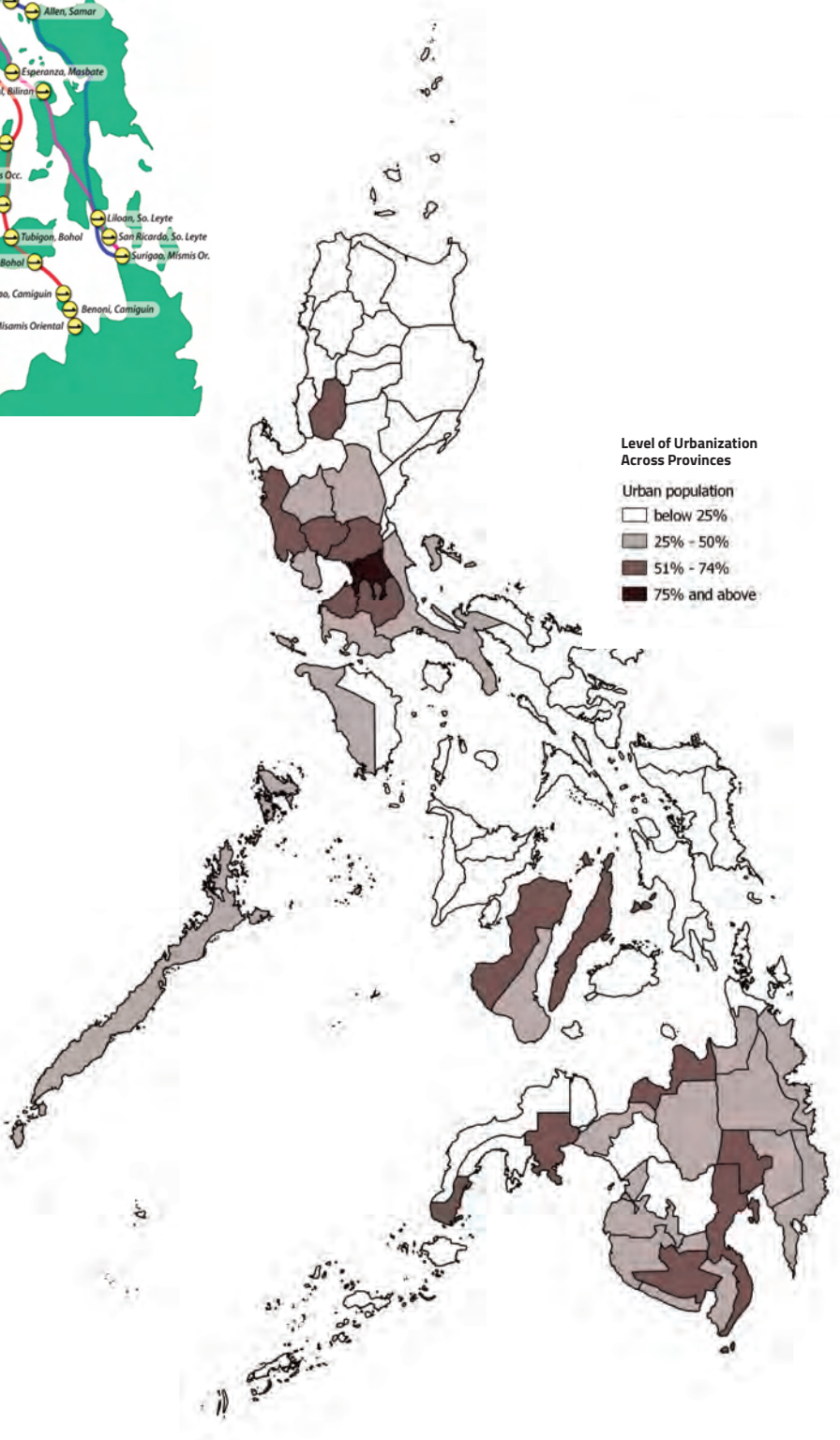

Agro-Ecological Zones
N
Kilometers
0 50 100 200 300
Geographic Coordinate System
Projection
Soils very suitable for agriculture - Moist / Low GDD
Soils suitable for agriculture - Moist / Low GDD
Soils very suitable for agriculture - Moist / Medium GDD
Soils suitable for agriculture - Moist / Medium GDD
Soils very suitable for agriculture - Normal / Low GDD
Soils suitable for agriculture - Normal / Low GDD
Soils very suitable for agriculture - Normal / Medium GDD
Soils suitable for agriculture - Normal / Medium GDD
Soils very suitable for agriculture - Normal / High GDD
Soils suitable for agriculture - Normal / High GDD
Soils very suitable for agriculture - Dry / Medium GDD to High GDD
Soils suitable for agriculture - Dry / Medium GDD to High GDD
Soils requiring special management - Moist / Low GDD
Soils requiring special management - Moist / Medium GDD
Soils requiring special management - Normal / Low GDD
Soils requiring special management - Normal / Medium GDD
Soils requiring special management - Normal / High GDD
Critical soils requiring intensive management - Moist / Low GDD
Critical soils requiring intensive management - Moist / Medium GDD
Critical soils requiring intensive management - Normal / Low GDD
Critical soils requiring intensive management - Normal / Medium GDD
Critical soils requiring intensive management - Normal / High GDD
Soils requiring special management - Dry / Low GDD
Critical soils requiring intensive management - Dry / Low GDD
Soils requiring special management - Dry / Medium GDD to High GDD
Critical soils requiring intensive management - Dry / Medium GDD to High GDD
Climate types
Type I
Type II
Type III
Type IV

Map 10

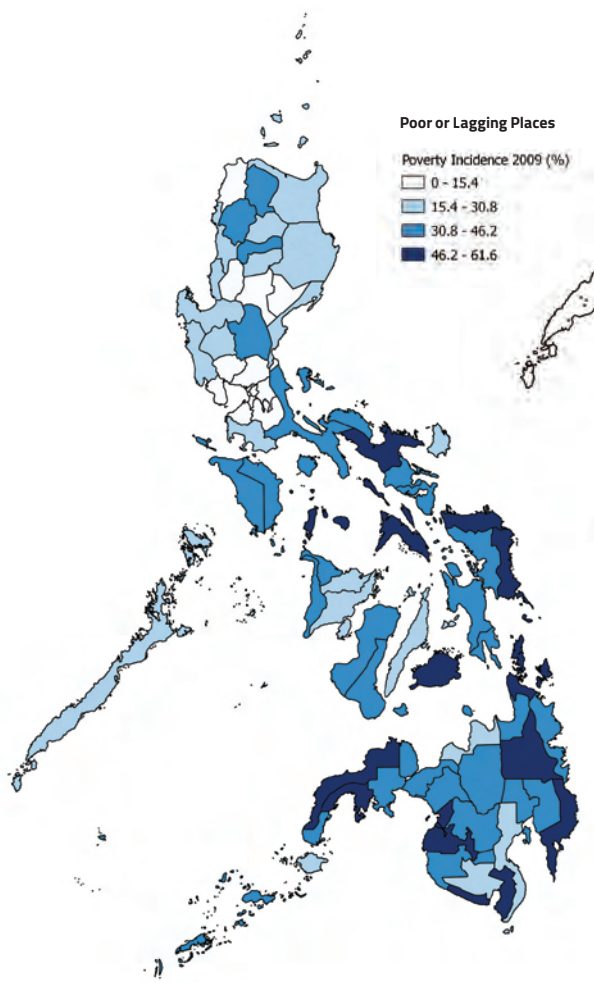
Map 11


Strong Republic
Nautical Highway
PAN-PHILIPPINE HIGHWAY (1970)
WESTERN NAUTICAL HIGHWAY (2003)
CENTRAL NAUTICAL HIGHWAY (2008)
EASTERN NAUTICAL HIGHWAY (2009)
Batangas City, Batangas
Calapan, Or. Mindoro
Roxas, Or. Mindoro
Caticlan, Aklan
Masbate City, Masbate
Cawayan, Masbate
Naval, Biliran
Dumangas, Iloilo
Bacolod, Negros Occ.
Tubigon, Bohol
Jagna, Bohol
Dumaguete, Negros Or.
Dapitan, Zamboanga del Norte
Pilar, Sorsogon
Allen, Samar
Esperanza, Masbate
Liloan, So. Leyte
San Ricardo, So. Leyte
Surigao, Mismis Or.
Mambajao, Camiguin
Benoni, Camiguin
Balingoan, Misamis Oriental

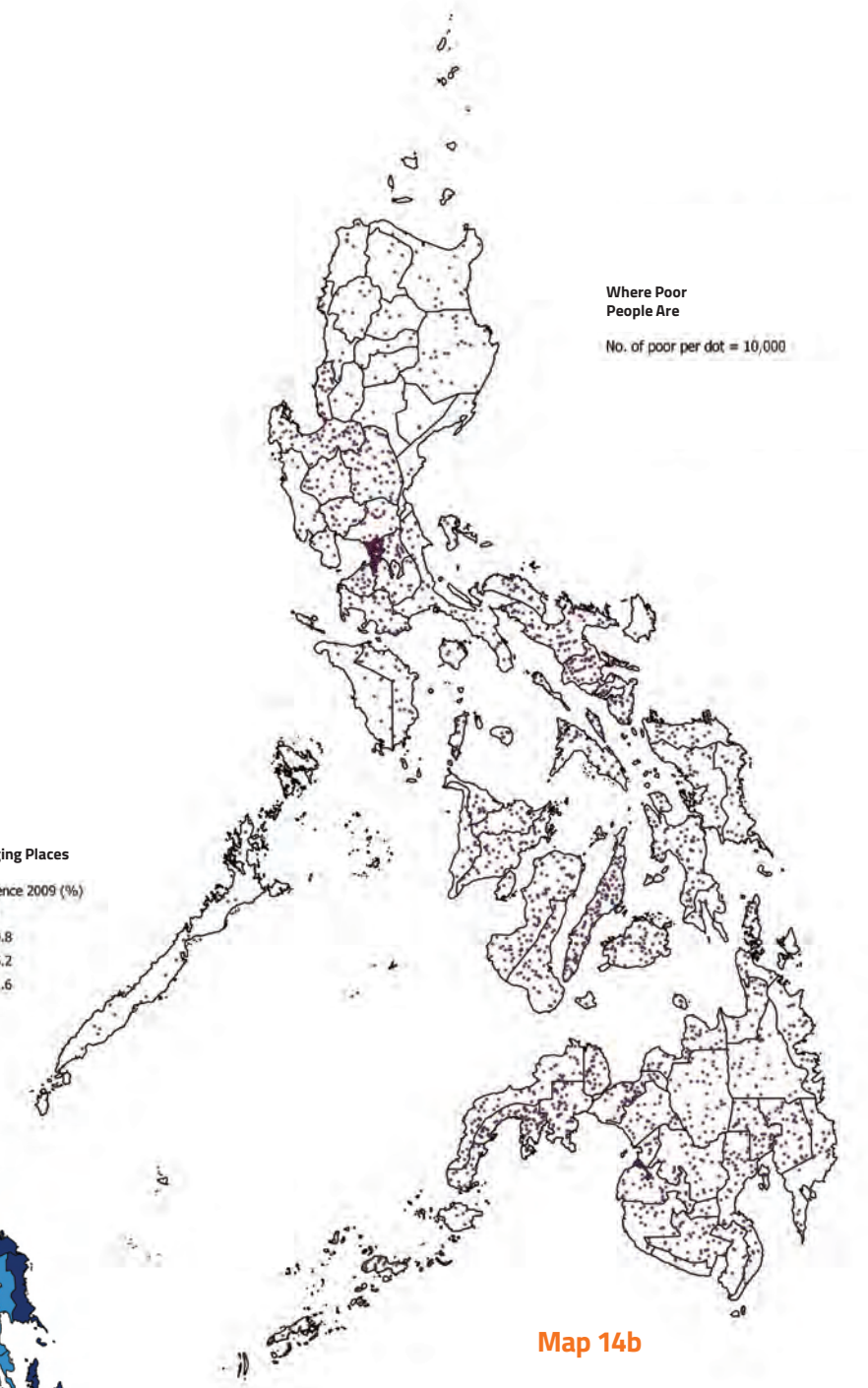
Map 12


Level of Urbanization
Across Provinces
Urban population
below 25%
25% - 50%
51% - 74%
75% and above

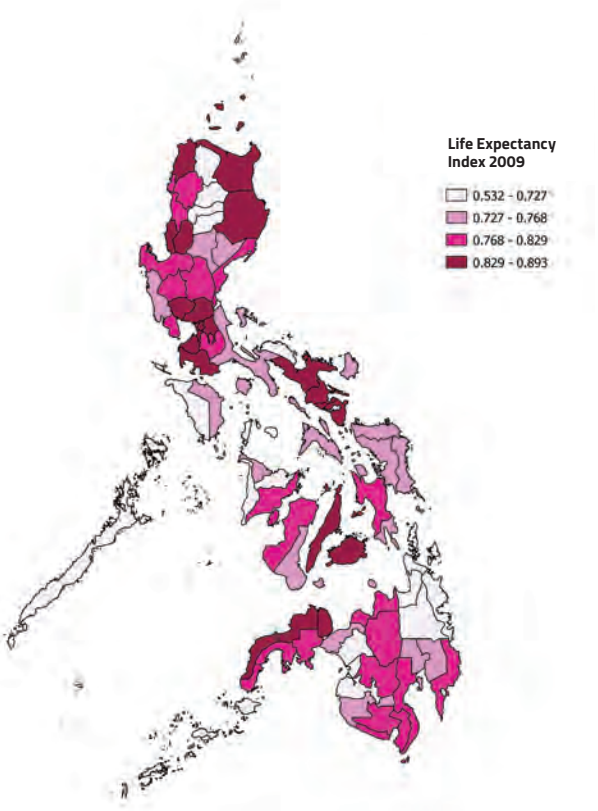
Map 13



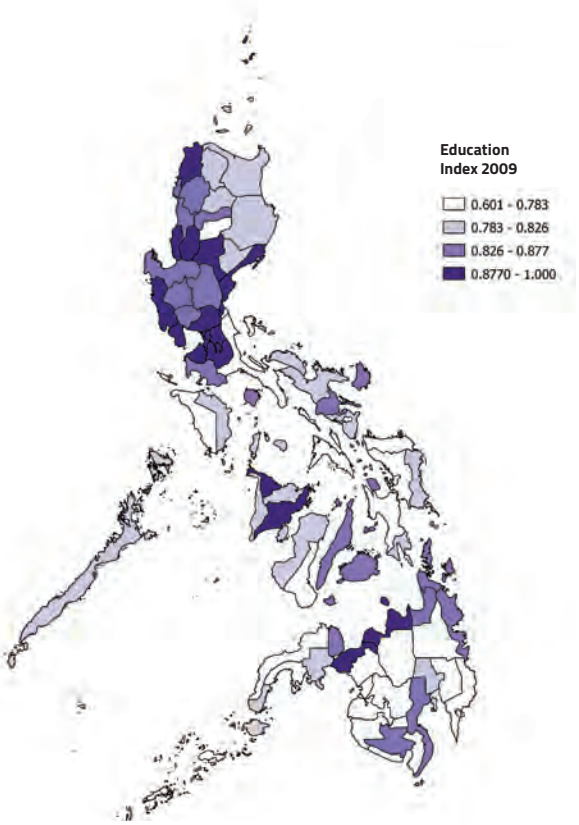
Map 14a



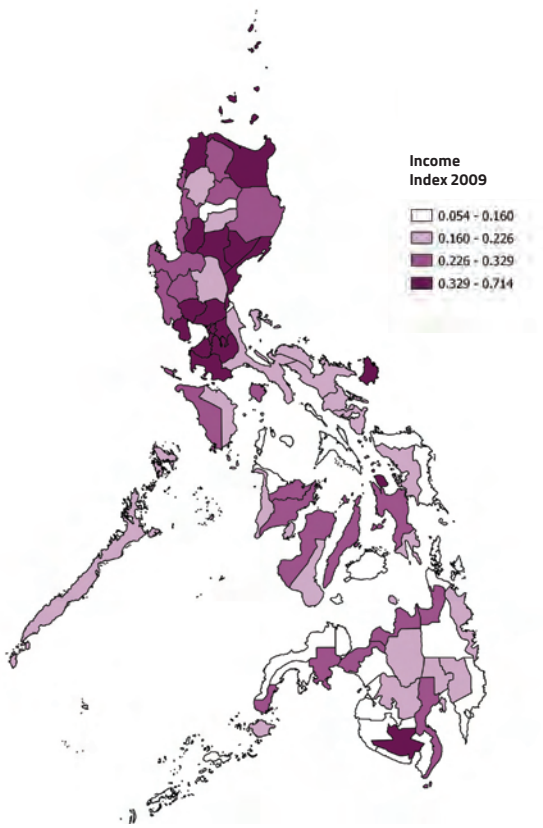
Map 14b



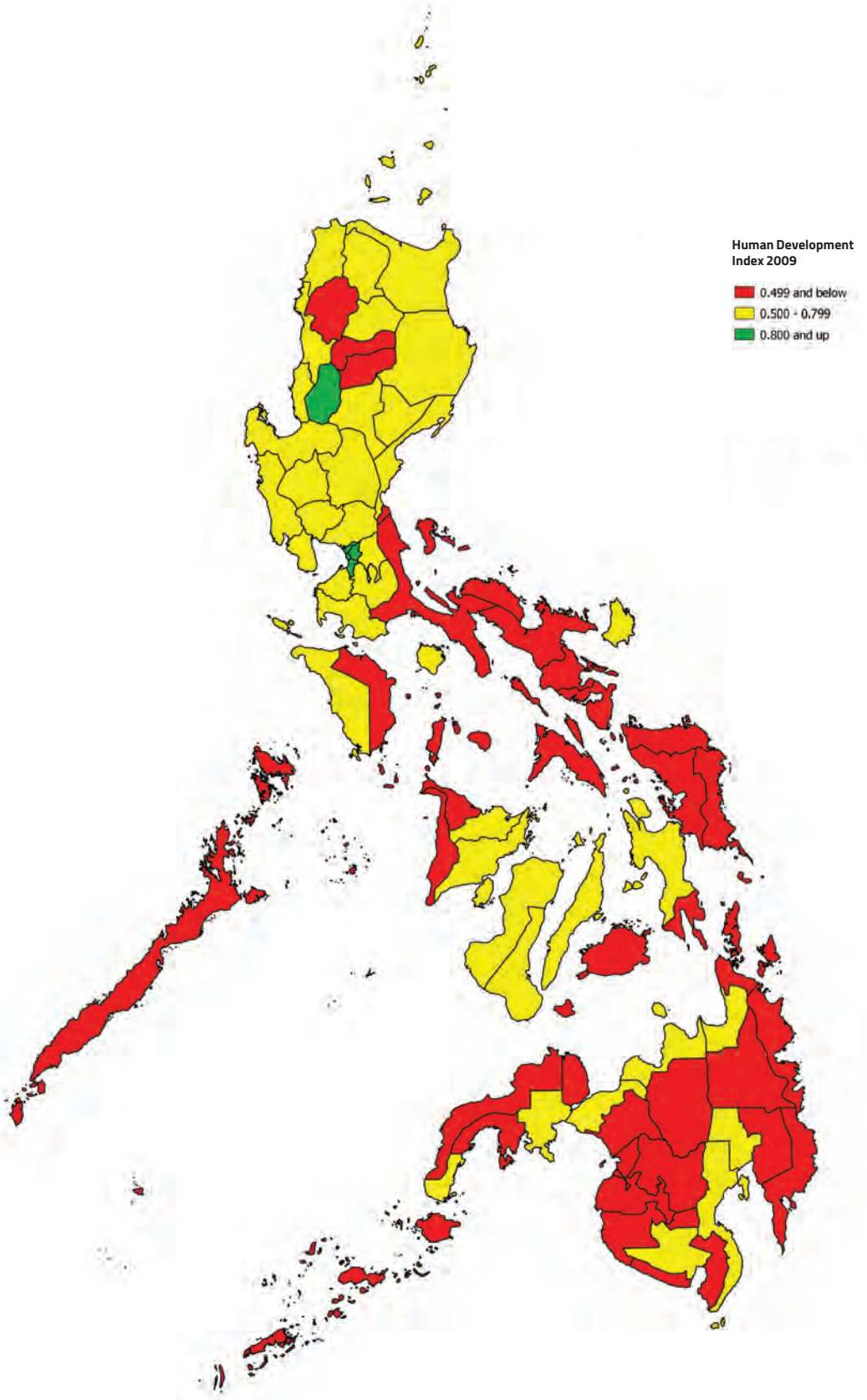
Map 15



Map 16



Map 17


Human Development Index 2009
0.499 and below
0.500 - 0.799
0.800 and up

Map 18

II Human development in Philippine provinces: 1997-2009

kaginhawaan (Tagalog), *gin-awa* (Ilokano)
masalese (Kapampangan),
kasanggayahan (Naga Bikol Sorsogon)
humugaway (Cebuano Bukidnon)
kasangyangan (Tausug Badjao)
ayahay (Cebuano Suriganon), *maupay* (Waray)
well-being (English)[1]

TWO crises serve as bookends to the period covered by this chapter: the 1997 Asian financial crisis and the 2008 global economic recession. Income-based measures of progress make it evident these were trying times.

The year after the 1997 Asian financial crisis hit the Philippine economy, per capita gross national product (GNP) fell by 2.6 percent while unemployment rose to 9.6 percent from 7.9 percent the previous year. Adverse weather leading to a drop in agricultural production and a surge in food prices contributed to the decline [Datt and Hoogeveen 2003; and Lim 2000]. Datt and Hoogeveen [2003] estimated that the impact on the Philippines of both the Asian financial crisis and the El Niño weather disturbance was a 5 percent reduction in living standards and a 9 percent increase in poverty incidence.

Figure 2.1 Relationship between per capita income and HDI (1997-2009)

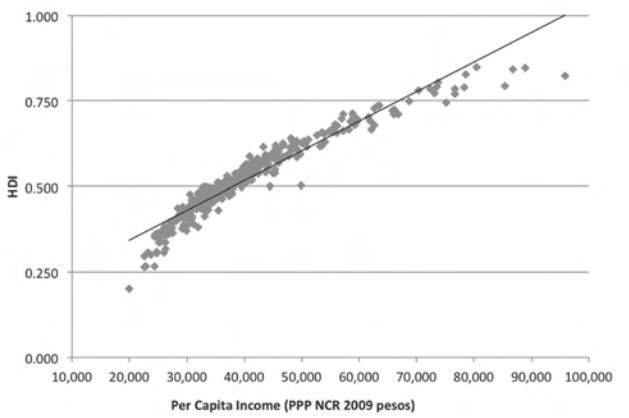
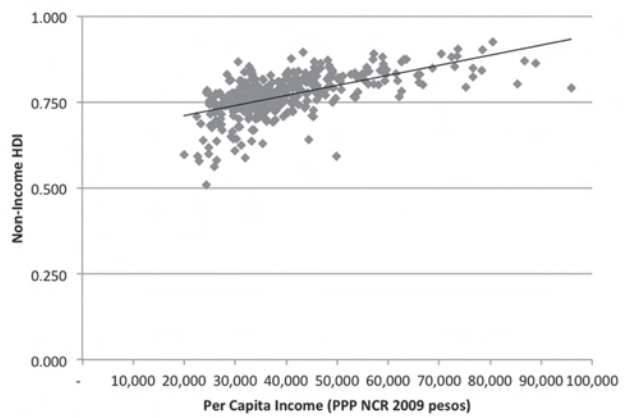


Figure 2.2 Relationship between per capita income and non-income HDI



In 2009, a year after the onset of the U.S. and European recession, Philippine GNP per capita growth slowed down to 1 percent from more than 4 percent the previous year. GDP per capita fell by 1.1 percent. These results were influenced by a spike in food prices in late 2007, which continued until early 2008 [Balisacan et al. 2010].

In both instances, the economy recovered its lost production after a few years.

The Asian financial crisis underscored the massive welfare losses that result from an unstable macroeconomic environment [Reyes et al. 1999]. It was in this context that Congress passed Republic Act 8425, or the Social Reform and Poverty Alleviation Act.

This experience was to be repeated in the last quarter of 2008, when the collapse of the U.S. housing mortgage bubble turned into a global economic crisis. Administrative Order 21 issued by the President in 2011 provided a set of revised implementing rules and regulations for R.A. 8425 strengthening support for the implementation of flagship programs and the sectoral representation process of the National Anti-Poverty Council created under the law.

What is evident is a process of strengthening the democratization of governance structures in the country that accompanied economic and social reforms. Apart from R.A. 8425 ensuring sectoral representation in the anti-poverty arena, two pieces of legislation enacted in the 1990s are notable. R.A. 7160, the Local Government Code, and R.A. 7941, the Party-List System, sought to decentralize political power away from the national government and the elite political class.[2] As the theme chapter shows, however, it remains an open question how far these initiatives have succeeded in establishing a governance structure conducive to the achievement of human development goals in the provinces.

This chapter presents consistent estimates of the human development index (HDI) from 1997 to 2009 using the latest estimation methods established by the Human Development Report Office of the United Nations Development Programme (UNDP HDRO). The HDI is a summary measure of human development, measuring the average achievement in three basic dimensions: a long and healthy life, knowledge, and a decent standard of living. It is motivated by the principle that income alone cannot faithfully reflect the basic dimensions of human development. Income is a means toward human development, not an *end*.

An extended time-series of the HDI at the subnational level is made available here for the first time, making it possible to assess longer-term human development gains and losses in specific geographical areas. The Gender-related Development Index (GDI), whose estimation has been adjusted following the new HDI method, will also be discussed.

The UNDP introduced two new measures in the

Figure 2.3 Relationship between per capita income growth and change in HDI (1997-2009)

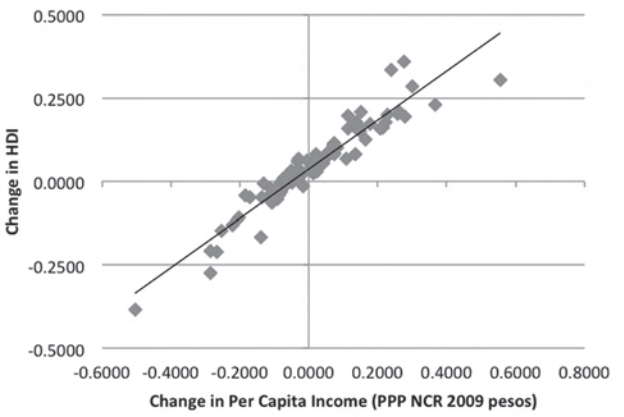
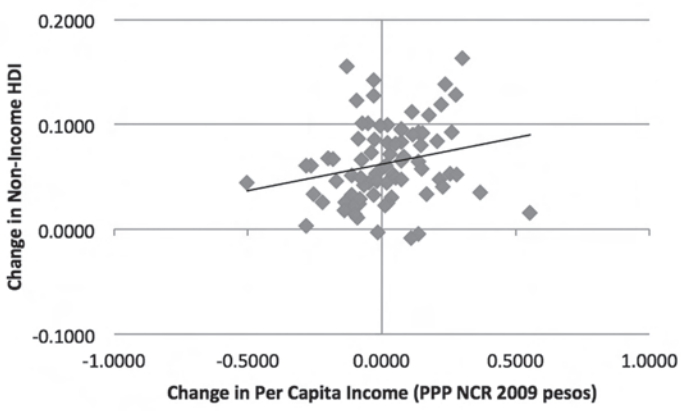


Figure 2.4 Relationship between per capita income growth and change in non-income HDI (1997-2009)



global *Human Development Report* of 2010. The first is called the Inequality-adjusted Human Development Index or IHDI. Only the 2009 figures for IHDI are reported in this chapter owing to data limitations associated with one of the components.

The second measure, the Gender Inequality Index (GII), is meant to replace the GDI. Unfortunately, however, it has not been possible at this time to produce province-level estimates for the GII because data are unavailable for several components. Instead, suggestions will be made regarding how this new measure can be adapted for computation in the Philippines.

Changes to the estimation of the human development index reflect improved understanding and better information in data collection and statistical methods. In this chapter, as in the past volumes of the PHDR, the HDI has been estimated taking into account updates in the method of computation. As already noted in *PHDR 2008/2009*, there were also changes in 2003 with the data collection for the Family Income and Expenditure Survey (FIES), which is the dataset used for estimating incomes, one of the components that make up the HDI, at the provincial level.

Income growth and human development

Before discussing the performance of the provinces over the period covered, we first look at the usefulness of using the HDI as an alternative measure for the well-being of nations compared to per capita income.

It is tempting to presume that since income is a component of the HDI, and because health outcomes and education often vary with income, then the two measures are very closely correlated and therefore little additional information can be obtained from the composite index. **Figure 2.1** indeed shows a strong correlation between provincial per capita income in constant NCR 2009 pesos plotted on the horizontal axis and provincial HDI plotted on the vertical axis. Removing income from the HDI and plotting that against per capita income also shows a strong correlation, though with greater variation, as shown in **Figure 2.2**. **Figure 2.3** also shows a strong relationship between changes in per capita income and changes in HDI.

But this is as far as strong correlations go. Once the comparison is made between *changes* in income with *changes* in non-income HDI, practically no correlation can be found [**Figure 2.4**].

This last result is consistent with studies reported in the *2010 Human Development Report* showing weak

association between income growth and other changes in the quality of life indicators such as health, education, and political freedoms, or with the Millennium Development Goals [Easterly 1999; and Bourgignon et al. 2008 as cited in UNDP 2010]. In other words, the HDI data of the Philippine provinces behave similarly with those of the rest of the world.

The *2010 HDR* looked separately at health and education and explained the absence of an association. The drivers for health achievements are typically due to technological innovations [UNDP 2010]. In the Philippines, increases in average life expectancy are partly explained by declines in mortality rates that are due to improvements in health status. There has been a slow decline in infant mortality rates and maternal mortality rates as well as a decline in the prevalence of communicable diseases, although noncommunicable diseases appear to be on the rise [Romualdez et al. 2011].

Educational achievements around the world may also be due to changing social ideals, parents' aspirations for their children, as well as the massive expansion of public education [UNDP 2010]. Mass education was introduced in the Philippines during the first half of the 20th century even before the country received political independence. This long history has inculcated "a deep regard" for education [DepEd 2008] both among households and in political discourse. This is arguably one reason that the country's educational achievements were for many years precociously sustained notwithstanding diminished economic performance.

In the last few decades, however, the country's challenge has been one of sustaining that broad access to basic education and improving its quality. Public provisioning, which is affected by revenue, which in turn depends on economic performance, is crucial to the expansion and increase in the quality of education. Even so, significant leads and lags can be expected before purely economic factors affect non-income aspects of HDI.

Progress and variability in provincial HDIs and their components

Maps 15 to 18 provide an overview of the geographical distribution of the HDI and its components for 2009. For the HDI, provinces with high human development (> .799) are in green, those with medium human development (0.500 to 0.800) in yellow, and those with low human development (<0.500) in red. For component indices—Life expectancy, Education and Income—provinces with very high scores have the darkest colors while those with the lowest scores have the lightest colors.

Before discussing the progress in provincial HDIs as a whole, it is useful first to discuss their progress with respect to the individual components of HDI in order to gain an insight into underlying trends.

Life expectancy index by province shows a stable upward trend promising sustained progress in the future [**Figure 2.5**]. Only Zambales and Surigao del Norte regressed in this component.

For Zambales, the biggest drop occurred between 1997 and 2000, going down from 68.7 years to 66.4 years.3 Since 2000, however, Zambales has slowly but steadily improved in life expectancy going up to 68.3 in 2009. If this trend continues, then the province should soon recover its 1997 level.

Surigao del Norte's story is similar, but its rate of recovery has been much slower. In 1997 life expectancy in Surigao del Norte was 66.8 years; in 2000 it dropped to 64 years.[4] This slightly improved to 64.1 years in 2003 and to 64.4 years by 2009, but Surigao del Norte still has far to go before it can recover its life expectancy in 1997.

Several provinces saw declines in the life expectancy index between 1997 and 2000, but their recoveries were rapid because these declines were minimal. The largest gainers were Misamis Occidental (61.1 percent), Cagayan (55.8 percent), Zamboanga del Norte (53.2 percent), Benguet (53.0 percent), La Union (49.0 percent), Cavite (46.8 percent), Isabela (46.5 percent), Bukidnon (45.9 percent), Sorsogon (45.1 percent), and Albay (43.9 percent) [**Table 2.1**].

Table 2.2 lists provinces in the top and bottom 10 of the life expectancy index for 1997 and 2009 showing

the life expectancy at birth in years. In 1997, Pampanga showed the highest life expectancy (71.9 years), followed by Batangas (71.0), Bulacan and Rizal (70.1), Ilocos Norte and La Union (70.0), Nueva Ecija and Cebu (69.8), and Cavite (69.3). (By comparison, it was 68.8 for Metro Manila.)

New provinces appeared on the top 10 list for 2009. This time it was La Union with the highest life expectancy (76.4 years), followed by Cavite (75.8), Misamis Occidental (75.4), Benguet (74.8), Bulacan (74.6) Camarines Sur and Ilocos Norte (74.6), Cagayan (74.3), Isabela (73.8), and Sorsogon (73.7).

The bottom 10 provinces in 1997 were Ifugao (59.8), Surigao del Sur (59.7), Western Samar (59.6), Mt. Province (59.4), Kalinga (59.2), Basilan (58.9), Lanao del Sur (53.8), Maguindanao (52.4), Sulu(49.0), and Tawi-Tawi (46.8). In 2009, almost the same set of provinces were in the bottom 10, except for Surigao del Sur and Western Samar, which were replaced by Apayao and Palawan. The bottom 10 provinces were Mt. Province (63.7), Apayao (63.5), Palawan (63.2), Basilan (62.7), Kalinga (62.6), Ifugao (61.7), Lanao del Sur (59.7), Maguindanao (58.5), Sulu (56.8), and Tawi-Tawi (53.6).

Improvements in life expectancy are noteworthy, considering that total health expenditure even fell slightly as a share of gross national product between 2005 and 2007, from 3.4 percent to 3.2 percent, according to the Philippine National Health Accounts produced by the NSCB. Private sources of funds constitute most of health spending with out-of-pocket expenditures increasing their share from 49.2 percent in 2005 to 54.3 percent in 2007. But part of this trend could also reflect improvements in the direction and utilization of health funds.

The education index also shows improvements for most provinces but with greater variability than life expectancy [**Figure 2.6**]. Twenty-two provinces fared more poorly in 2009 than in 1997. The 10 that experienced the biggest declines were Tawi-Tawi (down 60.3 percent), Maguindanao (57.9 percent), Zamboanga del Norte (55.5 percent), Sulu (50.4 percent), Lanao del Sur (32.9 percent), Catanduanes (30.5 percent), Mt. Province (28.3 percent), Sultan Kudarat (27.7 percent), Capiz (25.5 percent), and Ifugao (22.4 percent) [**Table 2.3**]. The HDI for Catanduanes, North Cotabato, Capiz, Ifugao, and Mt. Province increased during this period despite the declines in their education index as both the mean years of schooling and the expected years of schooling in these provinces decreased during the period covered.

At the other end of the performance scale, the largest gainers were Batanes (100.0 percent), Benguet (74.1 percent), Bohol (37.3 percent), Siquijor (35.0 percent), La Union (33.3 percent), Eastern Samar (33.3 percent), Nueva Vizcaya (29.9 percent), Lanao del Norte (29.8 percent), Bataan (29.6 percent), and Camiguin (28.5 percent). These provinces already had high levels of educational achievement in 1997.

Benguet's performance is especially notable when compared to its neighboring provinces, Ifugao and Mt. Province, that saw losses in educational achievements. Benguet's expected years of schooling for 2008 at 14 years surpassed even Metro Manila's expected years of schooling at 12.9 years (which was lower than its value in 1998 at 13.2 years).

Per capita incomes do not correlate with mean years of schooling in Philippine data, a result consistent with global results [UNDP 2010]. However, household surveys such as the Annual Poverty Income Survey (APIS) indicate that in 2004 and 2007, the high cost of education and the affordability of schooling expenses were among the most frequently cited reasons for 6- to 17-year-old children dropping out before completing high school [Alba 2010]. Income shocks also contributed to children dropping out of school [Albert et al. 2012].

The lack of access to quality educational services, especially publicly provided ones, can also explain poor educational achievements of the country [World Bank and AusAID 2012; Albert et al. 2012; and Alba 2010]. Differences in performance across provinces must be studied in greater detail, since most analyses of the education sector are undertaken at the national level. While some studies point to regional differences, efforts to explain these are not undertaken in detail, except for broad statements about the extent of poverty or the presence of armed conflict in a particular region.

In relation to fiscal decentralization, the activities of local government units for the education sector are limited to those undertaken by the Local School Board that manages the portion of real estate tax collection earmarked for education, so that responsibilities

for public provisioning clearly lie with the national government [Diokno 2012].

Figure 2.7 shows trends of the income index across provinces, and the variability in the performance of this component can be clearly seen, while **Table 2.4** shows gainers and losers for the income index. Almost half of the provinces saw their income indices decline between 1997 and 2009. The largest drops in income index were in Batanes (down 182.7 percent), Tawi-Tawi (45.0 percent), Rizal (31.0 percent), Laguna (19.2 percent), Basilan (19.2 percent), Quezon (15.9 percent), Zamboanga del Norte (15.0 percent), Batangas (13.1 percent), Maguindanao (13.0 percent), and Davao Oriental (12.6 percent).

The juxtaposition of some of the poorest and some of the richest provinces may at first appear paradoxical. The large declines for the troubled Mindanao provinces are particularly disconcerting considering their levels of income in 1997 were already low to begin with. On the other hand, these are more readily comprehensible because of perennial problems of conflict and human insecurity in these areas [HDN 2005].

By contrast, the drops in index for Rizal, Laguna, and Batangas—already among the top 10 provinces with the highest income indexes in 1997—may involve more complex factors. First, drops in the indices of relatively well-off regions may well have been exacerbated by their greater exposure to deep global financial crisis and recession beginning in late 2008. Balisacan et al. [2010] point to large output declines in the manufacturing sector owing to the global economic crisis, which affected Metro Manila and surrounding provinces where industrial concentration is greatest. Further relevant factors include the increase in population in those provinces, as commercial and industrial activities attract migrants, and the higher-than-average rise in prices they experience.

On the other hand, the largest gainers over the 12-year period were Benguet (37.0 percent), Biliran (27.3 percent), Catanduanes (18.6 percent), Nueva Vizcaya (18.0 percent), Cagayan (16.7 percent), Quirino (16.2 percent), South Cotabato (15.5 percent), Occidental Mindoro (11.6 percent), Aurora (11.5 percent), and Leyte (11.3 percent). Several of these top performers also began with low values in 1997 but managed to post large gains over the same period despite economic crises.

The variability in provincial income indices partly reflects how the effects of the crises have been distributed across the country or, conversely, how some provinces may have been shielded from them. It is very difficult to attribute effects with precision, however, without further investigation of the distributional consequences of economic crises in the Philippines. Existing studies often look at the effects of crises on household income distribution. Provinces are seldom, if ever, a unit of analyses.

The overall impact of these differing levels of achievement on education, health, and purchasing power across provinces is reflected by the HDI. **Figure 2.8** shows a line graph of all 78 provinces with HDIs computed at three-year intervals between 1997 and 2009. Definite progress will be noted, but there is no clear upward path for all provinces. Instead, high variability in provincial performance is observed during the period covered. The path to progress varies, and not all succeed in sustaining their levels of human development.

Figure 2.9 shows different groups of provinces. Each group started at nearly the same level of human development in 1997, but the figures show how their paths diverged, with provinces ending up at widely different levels of human development 12 years later.

Twenty-five of the 78 provinces saw their HDI levels in 2009 fall below their 1997 levels. The 10 showing the biggest losses were Tawi-Tawi (38.9 percent), Zamboanga del Norte (19.5 percent), Maguindanao (19.2 percent), Batanes (19.0 percent), Basilan (17.2 percent), Davao Oriental (17.2 percent), Rizal (16.4 percent), Quezon (16.2 percent), Aklan (11.4 percent), and Batangas (9.6 percent). Declines in HDI were due mostly to declines in the income and education components of the index [**Table 2.5**].

The rest of the provinces showed gains. The largest improvements were registered in Benguet (46.0 percent), Biliran (28.4 percent), Cagayan (27.7 percent), Nueva Vizcaya (22.5 percent), Catanduanes (22.4 percent), Quirino (21.6 percent), South Cotabato (20.4 percent), Aurora (20.0 percent), Bohol (19.8 percent), and Eastern Samar (17.0 percent). The good results were due to improvements in life expectancy and income. This is especially true for Biliran and Catanduanes, where declines in their education index were clearly offset by

improvements in the two other components of HDI, even using a geometric mean that limits these compensatory changes.

In 1997, the top 10 provinces were Batanes (0.822), Rizal (0.772), Benguet (0.721), Laguna (0.710), Cavite (0.690), Batangas (0.665), Bataan (0.662), Bulacan (0.657), Pampanga (0.650), and Zambales (0.629) [**Table 2.6**]. These provinces had high levels of achievement in life expectancy and in education.

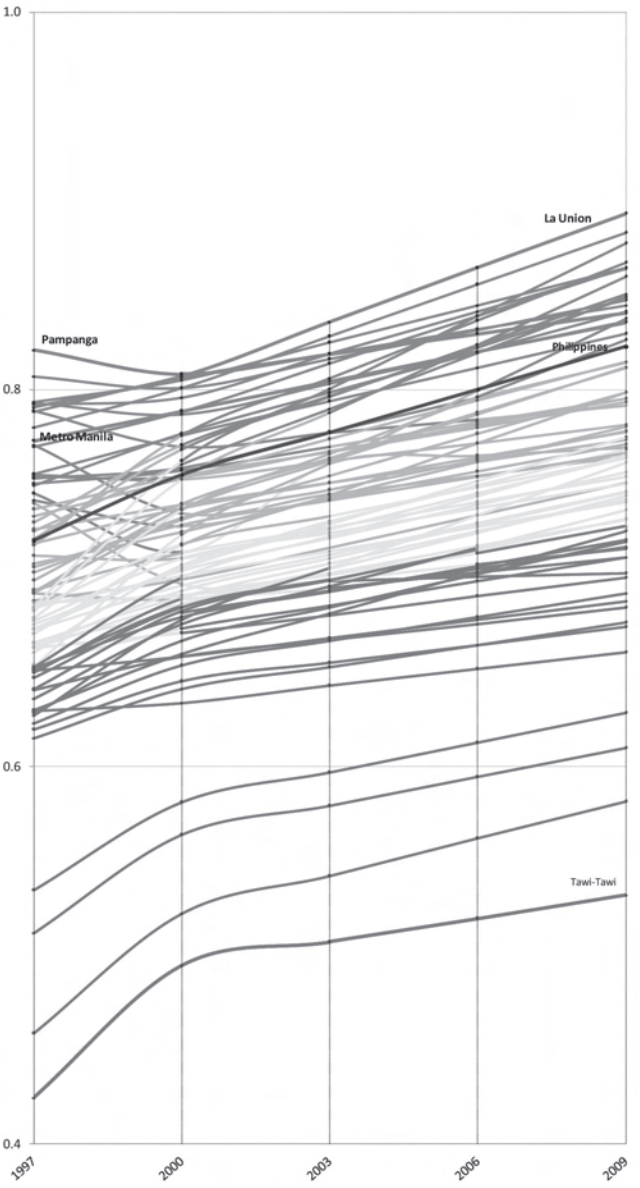
In 2009 the list of top provinces remained almost the same except for two changes [**Table 2.7**]. The top-ranked province was Benguet with an HDI of 0.849, followed by Batanes (0.789), Rizal (0.734), Cavite (0.709), Bulacan (0.699), Bataan (0.698), Laguna (0.695), two new entrants, Nueva Vizcaya (0.678) and Ilocos Norte (0.641), and Pampanga (0.634). These provinces also showed high levels of achievement in the health and education components of the HDI.

The bottom 10 provinces in 1997 had HDIs comparable to countries in the global report with low human development. These were Mt. Province (0.411), Siquijor (0.407), Sarangani (0.378), Agusan del Sur (0.369), Romblon (0.363), Northern Samar (0.357), Bohol (0.354), Masbate (0.340), Eastern Samar (0.338), and Sulu (0.318). For 2009, a different set of provinces was found at the bottom. These were Romblon (0.428), Lanao del Sur (0.416), Masbate (0.406), Zamboanga del Norte (0.384), Sarangani (0.371), Davao Oriental (0.356), Agusan del Sur (0.354), Tawi-Tawi (0.310), Maguindanao (0.300), and Sulu (0.266).

Both sets of provinces at the bottom in 1997 and 2009 showed very poor performance in the income component of the HDI even as their health and education components can be considered of medium-level achievement. Sulu's HDI of 0.266 was almost as bad as those of Niger (0.261), Democratic Republic of Congo (0.239), and Zimbabwe (0.140). The HDI values of Philippine provinces traversed almost the entire range of HDI values found in the global reports.

The changes in the HDI ranking between 1997 and 2009 are captured in [**Figure 2.10**]. A province's rank in 2009 is indicated by the filled dot and the rank in 1997 by the hollow dot. The closer a dot is to zero, the higher the rank. If the filled dot is above the hollow dot, then the province's rank in 2009 is lower than its rank in 1997.

Figure 2.5 Life expectancy index by province (1997-2009)



Half of the provinces saw their rank worsen in 2009. Sulu was the only province that did not change ranks, only because it was the bottom province in 1997 and still was in 2009. The rest of the provinces saw their HDI rank improve over the 12 years covered by this chapter.

Economic crises demonstrate the volatility of income growth as a measure of progress. There is also the difficulty of translating incomes into outcomes, of which there are multiple channels dependent on a variety of factors such as institutional structures, revenue generation capacity, spending patterns, opportunity

Table 2.1 Largest gainers and losers in life expectancy index between 1997 and 2009

Life expectancy index	1997	2009	Gap improvement (%)
Largest gainers			
Misamis Occidental	0.685	0.877	61.1
Cagayan	0.682	0.860	55.8
Zamboanga del Norte	0.653	0.837	53.2
Benguet	0.717	0.867	53.0
La Union	0.791	0.893	49.0
Cavite	0.780	0.883	46.8
Isabela	0.721	0.851	46.5
Bukidnon	0.679	0.826	45.9
Sorsogon	0.725	0.849	45.1
Albay	0.729	0.848	43.9
Largest losers			
Zambales	0.771	0.764	-2.8
Surigao del Norte	0.740	0.702	-14.3

Table 2.2 Top and bottom provinces in life expectancy (1997 and 2009)

Top provinces	Life expectancy at birth (years) 1997	Top provinces	Life expectancy at birth (years) 2009
Pampanga	71.9	La Union	76.4
Batangas	71.0	Cavite	75.8
Bulacan	70.1	Misamis Occidental	75.4
Rizal	70.1	Benguet	74.8
Ilocos Norte	70.0	Bulacan	74.6
La Union	70.0	Camarines Sur	74.6
Nueva Ecija	69.8	Ilocos Norte	74.6
Cebu	69.8	Cagayan	74.3
Cavite	69.3	Isabela	73.8
Zambales	68.7	Sorsogon	73.7
Bottom provinces	**Life expectancy at birth (years) 1997**	**Bottom provinces**	**Life expectancy at birth (years) 2009**
Mt. Province	63.7	Ifugao	59.8
Apayao	63.5	Surigao del Sur	59.7
Palawan	63.2	Western Samar	59.6
Basilan	62.7	Mt. Province	59.4
Kalinga	62.6	Kalinga	59.2
Ifugao	61.7	Basilan	58.9
Lanao del Sur	59.7	Lanao del Sur	53.8
Maguindanao	58.5	Maguindanao	52.4
Sulu	56.8	Sulu	49.0
Tawi-Tawi	53.6	Tawi-Tawi	46.8

sets, and even the weather. Human development and the capabilities approach compel us to look directly at what matters. The HDI values range over a broader set of indicators beyond what income has to offer and permit an appreciation of progress defined by fundamental requirements of human life.

Progress can also be assessed by undertaking a comparison of provincial ranking revealing how some provinces managed to achieve high human development outcomes without having high levels of income. **Figure 2.11** shows a comparison of provincial ranking in HDI with per capita income (PCI) rank. The filled dot represents the HDI rank of the province and the hollow dot the per capita income rank of the province in 2009. The closer to zero the dot is, the higher the rank of the province. If the filled dot is above the hollow dot, then the HDI rank is lower than the per capita income rank. The provinces are ordered according to the rank difference between PCI rank and HDI rank.

Thirty-five provinces had an HDI rank lower than their per capita income rank in 2009. That is, these provinces performed better when the basis of comparison was per capita income.

Thirty-three provinces had an HDI rank higher than their per capita income rank in 2009. For these provinces relative achievements were better when comparison was based on the HDI. These provinces can be said to be achieving progress with a bias for human development.

More than half of these 33 provinces had per capita income ranks below the median, which means these provinces had very low per capita incomes. Despite this low level, they were able to outperform other provinces because they achieved more in the health and education components of the HDI. Twelve provinces did not change their ranks.

A final comparison to be made is of the growth

Figure 2.6 Education index by province (1997-2009)

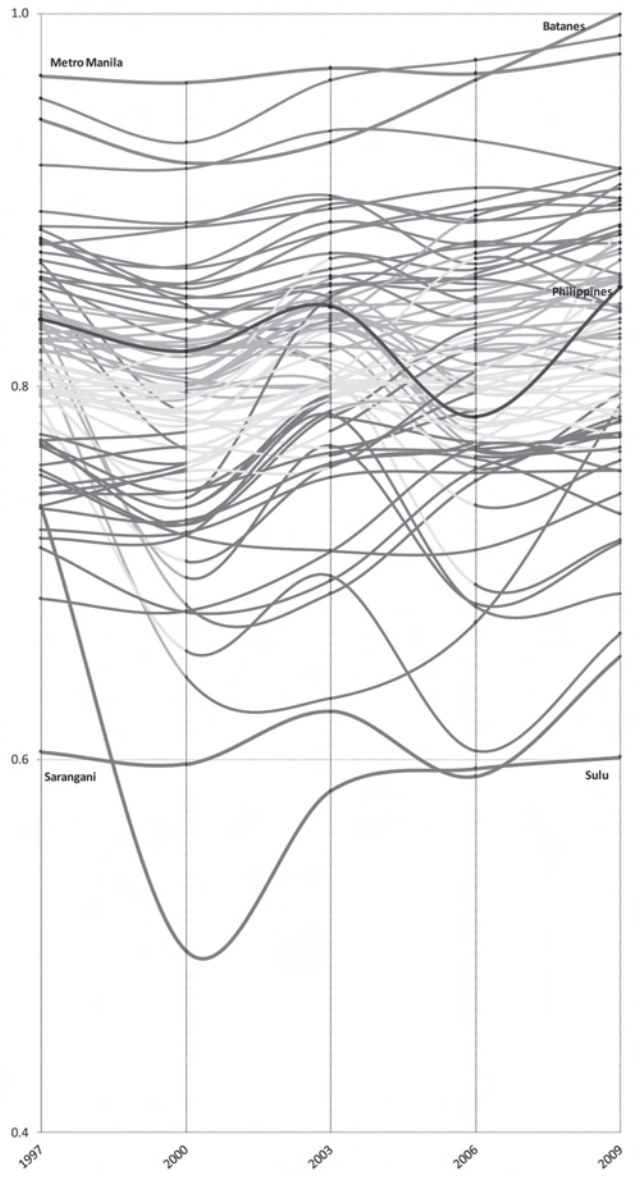


Table 2.3 Largest gainers and losers in education index between 1997 and 2009

Education index	1997	2009	Gap improvement (%)
Largest gainers			
Batanes	0.943	1.000	100.0
Benguet	0.954	0.988	74.1
Bohol	0.736	0.834	37.3
Siquijor	0.796	0.868	35.0
La Union	0.846	0.897	33.3
Eastern Samar	0.734	0.823	33.3
Nueva Vizcaya	0.830	0.881	29.9
Lanao del Norte	0.825	0.878	29.8
Bataan	0.857	0.900	29.6
Camiguin	0.884	0.917	28.5
Largest losers			
Ifugao	0.781	0.731	-22.4
Capiz	0.840	0.800	-25.5
Sultan Kudarat	0.828	0.781	-27.7
Mt. Province	0.866	0.828	-28.3
Catanduanes	0.878	0.841	-30.5
Lanao del Sur	0.836	0.782	-32.9
Sulu	0.735	0.601	-50.4
Zamboanga del Norte	0.818	0.717	-55.5
Maguindanao	0.789	0.667	-57.9
Tawi-Tawi	0.823	0.716	-60.3

trends of HDI and per capita income between 1997 and 2009. The comparison of trends provides us with a sense of trajectories for the provinces over 12 years.

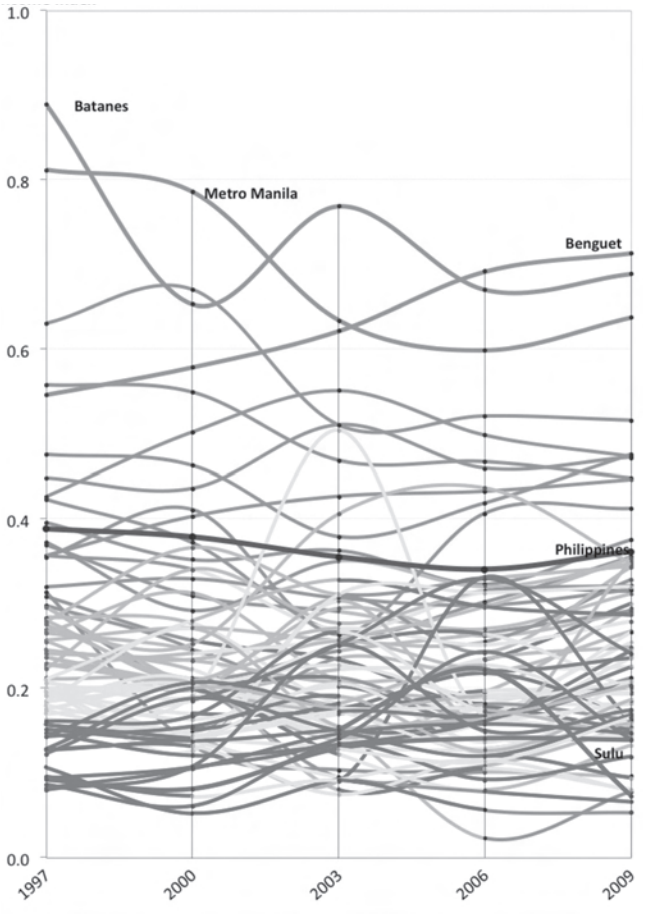
Following Ranis et al. [2000], we classify provinces into four types according to the combination of HDI growth and income growth. Provinces with HDI growth coupled with income growth may benefit from a virtuous cycle of development, where income and human development reinforce each other.

Where income has declined along with human development, however, provinces are said to be experiencing a vicious cycle of development. Provinces where per capita income grew but exhibited poor HDI performance are said to have a lopsided development in favor of income growth. Provinces where human development improved but saw per capita income decline have a biased progress in favor of human development. **Figure 2.12** plots the provinces accordingly, and a quadrant can be drawn with the origin located at the values of the national average per capita income growth (-4.3 percent) and HDI growth (4.5 percent). **Table 2.8** provides the list of provinces in each type.

Table 2.4 Largest gainers and losers in income index between 1997 and 2009

Income index	1997	2009	Gap improvement (%)
Largest gainers			
Benguet	0.547	0.714	37.0
Biliran	0.192	0.412	27.3
Catanduanes	0.201	0.350	18.6
Nueva Vizcaya	0.356	0.472	18.0
Cagayan	0.226	0.356	16.7
Quirino	0.255	0.376	16.2
South Cotabato	0.223	0.343	15.5
Occidental Mindoro	0.170	0.266	11.6
Aurora	0.270	0.354	11.5
Leyte	0.210	0.300	11.3
Largest losers			
Davao Oriental	0.184	0.081	-12.6
Maguindanao	0.174	0.066	-13.0
Batangas	0.424	0.348	-13.1
Zamboanga del Norte	0.213	0.094	-15.0
Quezon	0.298	0.186	-15.9
Basilan	0.314	0.182	-19.2
Laguna	0.559	0.474	-19.2
Rizal	0.631	0.516	-31.0
Tawi-Tawi	0.364	0.078	-45.0
Batanes	0.890	0.690	-182.7

Figure 2.7 Income index by province (1997-2009)



Forty-two provinces can be said to have gone through a virtuous cycle of progress. Meanwhile, 27 provinces had the opposite experience undergoing a vicious cycle. The stronger the links between economic growth and human development, the more pronounced the positive or negative cycles tend to be based on analysis of country-level data [Ranis et al. 2000].

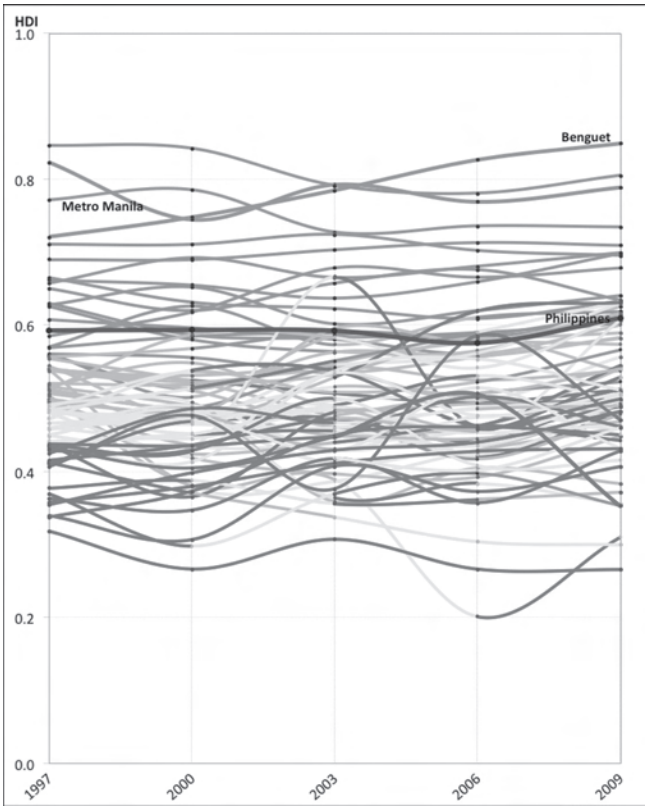
Eight provinces saw performance that was lopsided for income growth, and no province had a lopsided performance for human development. In these last two sets of provinces, linkages may be weak. In provinces with good income growth, there is likely to be difficulty translating means into outcomes.

It will be particularly important to determine how increases in household incomes can support public spending to improve human development outcomes.[5] Although none of the provinces showed lopsided performance in favor of human development, Ranis et al. [2000] found that in countries where human development is high, complementary resources that facilitate income growth may not be present. This latter group emphasizes the possibility of improving human development outcomes even when income performance is poor. Indeed, the paths to progress are varied.

Two questions follow. Can such growth paths be sustained? How does a province move from any of the three quadrants experiencing one or a combination of declines toward a virtuous cycle of development?

Again, following Ranis et al. [2000], the 12-year

Figure 2.8 Human Development Index by province (1997-2009)



period is split into two medium-term periods of six years each: from 1997 to 2003 and from 2003 to 2009. Provinces are classified accordingly, and the movements between quadrants can be noted.[6] Table 2.8 gives the list of provinces by type of improvement in each period.

Ten provinces—Agusan del Norte, Benguet, Biliran, Bohol, Cagayan, La Union, North Cotabato, Occidental Mindoro, Quirino, and South Cotabato—stayed within the virtuous quadrant from first period to the second period. These provinces sustained their virtuous progress. Five provinces—Agusan del Sur, Batanes, Maguindanao, Misamis Occidental, and Tawi-Tawi—stayed within the vicious quadrant throughout the two periods. Another five provinces—Camarines Norte, Lanao del Norte, Mt. Province, Surigao del Norte, and Western Samar—remained in the PCI-lopsided quadrant displaying continuous per capita income growth for both periods. There were no provinces in the HD-lopsided quadrant for both periods.

There are provinces whose performance needs to be understood better. One group comprises 11 provinces[7] that began with a virtuous cycle of progress that turned into a vicious cycle in the second period. Two provinces, Pampanga and Sulu, began with a PCI-lopsided progress in the first period, and moved into a vicious cycle by the second period. This result is consistent with Ranis et al. [2000] where all countries that had a PCI-lopsided cycle were unable to sustain this performance over the longer term.

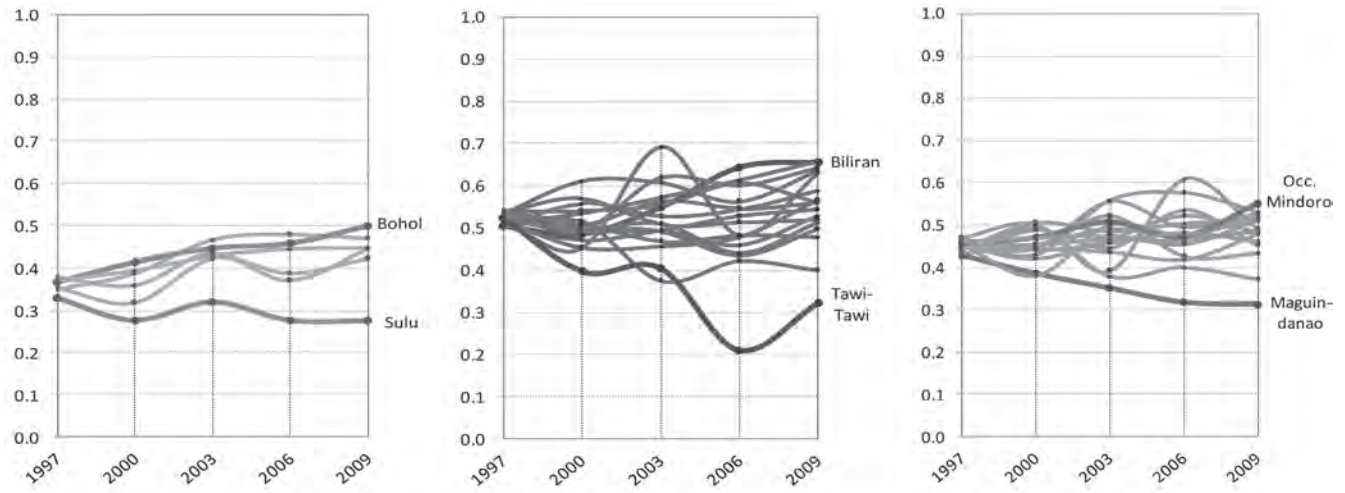
Another group of provinces ended up in the PCI-lopsided quadrant during the second period coming from outside of it in the first period. Eight provinces—Albay, Cavite, Isabela, Masbate, Northern Samar, Romblon, Sorsogon, and Southern Leyte—saw their human development achievements deteriorate even as they sustained their per capita income growth. Meanwhile, the provinces of Abra, Camiguin, Catanduanes, Davao del Norte, Eastern Samar, Ifugao, Laguna, Lanao del Sur, Negros Occidental, Nueva Vizcaya, and Tarlac seemed to encounter difficulty in converting means into sustainable achievements in human development.

On the other hand, 11 provinces saw an improvement, starting from the vicious cycle quadrant and seeing growth in per capita income in the second period. These were Aklan, Antique, Batangas, Davao Oriental, Nueva Ecija, Oriental Mindoro, Palawan, Quezon, Rizal, Sarangani, and Zamboanga del Norte.

The third group is composed of provinces that found themselves in the virtuous cycle quadrant in the second period. Nine provinces—Aurora, Bulacan, Camarines Sur, Capiz, Cebu, Iloilo, Leyte, Pangasinan, and Zamboanga del Sur—moved from the PCI-lopsided quadrant in the first period to the virtuous quadrant in the second period. This movement appears to indicate an ability to use incomes to support human development achievements.

Even more impressive is the performance of 12 provinces that began in the vicious cycle quadrant in the first period and managed to move to the virtuous quadrant in the second period. Moving from vicious to virtuous was extremely rare in the cross-country analysis by Ranis et al. [2000]. When seen in combination with the reverse movement from the virtuous quadrant to the vicious quadrant (involving 11 provinces) discussed earlier, questions must be raised on the leaps made by a

Figure 2.9 Different paths from similar starting points (1997-2009)



considerable number of provinces. Why can the virtuous path not be sustained? What factors contributed to the movement from vicious to virtuous? What is clear at this stage is the volatility of the achievements. Further explorations in-depth are clearly needed.

Provincial GDIs mimic provincial HDI performance

The Gender-related Development Index or GDI accounts for gender-based differences in the human development. It has the same components as the HDI, but the component indices are adjusted for inequality in achievements between males and females. The GDI measures achievements for males and females as well as the disparity in achievements between the two. The greater the disparity in achievements between the sexes, the lower the GDI. Any gender-based inequality suffices to make GDI lower than HDI. In other words, it discounts HDI values for gender-based inequalities.

Refinements in the computation of the GDI were made essentially to align it with the HDI and make the two comparable. The sources of data, differing benchmarks by gender, and the method of computation are discussed in detail in the Technical notes. It also important to note that some data required for the computation of GDI are not available for certain provinces, namely, Apayao, Aurora, Batanes, Camiguin, Capiz, Guimaras, Nueva Vizcaya, Siquijor, Surigao del Sur, and Tawi-Tawi. As a result, these provinces have not been included and do not appear in the GDI rankings.

Figure 2.13 shows a comparison of the provincial ranking of HDI and GDI for 2009. The hollow dot represents the GDI rank of the province while the filled dot represents the HDI rank. If the hollow dot is below the filled, then that province's rank improved, indicating that gender-based inequality is less serious in that province compared to others.

Thirty-six provinces saw an improvement in ranking using the GDI indicating their relatively lower gender-based inequalities. In other words, human development achievements are more evenly distributed between males and females in these provinces. The largest rank improvement was by Sultan Kudarat (up by 13 in the rankings), Abra and Western Samar (12), Surigao del Norte (10), Eastern Samar (9), Bohol (7), Lanao del Sur and Zamboanga del Norte (6), and Iloilo and Northern Samar (5).

There was no change in ranking for seven provinces while the rest saw their provincial rankings go down. The largest drop in ranking was by Basilan and Agusan del Norte (down by 15), followed by Ilocos Norte (14), Compostela Valley (13), North Cotabato (11), Quezon, Oriental Mindoro, and Misamis Occidental (7), and Pangasinan, Davao del Norte, Catanduanes, and Antique (6).

Figure 2.14 shows the GDI trends between 1997 and 2009. Twenty-five provinces saw their GDI in 2009 fall below their 1997 levels. Improvements between 1997

Table 2.5 HDI gainers and losers between 1997 and 2009

HDI rank		Province	Gap improvement			
1997	2009		HDI (%)	Life expectancy index (%)	Education index (%)	Income index (%)
Largest HDI gainers and comparative gap improvements						
3	1	Benguet	46.0	53.0	35.0	18.0
44	13	Biliran	28.4	12.6	-12.9	-8.0
41	12	Cagayan	27.7	55.8	74.1	27.3
14	8	Nueva Vizcaya	22.5	22.5	12.1	0.9
40	20	Catanduanes	22.4	24.7	13.7	1.4
34	17	Quirino	21.6	32.4	20.5	5.0
32	19	South Cotabato	20.4	20.9	9.1	-1.3
28	14	Aurora	20.0	38.8	25.0	8.4
76	53	Bohol	19.8	36.7	23.8	6.8
78	64	Eastern Samar	17.0	27.5	18.8	4.3
Largest HDI losers and comparative gap improvements						
6	11	Batangas	-9.6	20.8	-1.2	-13.1
31	63	Aklan	-11.4	22.8	14.6	-11.7
21	52	Quezon	-16.2	20.5	-12.9	-15.9
2	3	Rizal	-16.4	21.0	-2.8	-31.0
56	74	Davao Oriental	-17.2	38.8	-10.4	-12.6
24	62	Basilan	-17.2	15.9	-12.4	-19.2
1	2	Batanes	-19.0	14.3	100.0	-182.7
69	78	Maguindanao	-19.2	20.1	-57.9	-13.0
43	72	Zamboanga del Norte	-19.5	53.2	-55.5	-15.0
36	77	Tawi-Tawi	-38.9	18.7	-60.3	-45.0

and 2009 were demonstrated by Benguet, which saw GDI levels increase by 44.8 percent, followed by Biliran (31.4 percent), Cagayan (30.1 percent), Northern Samar (25.2 percent), Bohol (19.2 percent), (25.5 percent), Marinduque (19.0 percent), Eastern Samar (18.6 percent), Zamboanga del Sur (15.0%), Quirino (15.0 percent), and Bulacan (15.0 percent). The largest declines in GDI between these two years were exhibited by Basilan (down 35.9 percent), followed by Davao Oriental (20.1 percent), Ilocos Norte (13.9 percent), Oriental Mindoro (12.7 percent), Aklan (11.5 percent), Quezon (11.1 percent), and Zamboanga del Norte (9.2 percent), Antique (8.8 percent), Maguindanao (6.6 percent), and Palawan (6.4 percent). [**Table 2.9**]

Tables 2.10 and 2.11 show the top and bottom provinces for GDI in 1997 and 2009. The top provinces for GDI in 2009 were Benguet (0.800), Rizal (0.700), Laguna (0.667), Bulacan (0.665), Bataan (0.663), Cavite (0.662), Cagayan (0.634), Biliran (0.625), and Iloilo (0.618), and Batangas (0.616). The same provinces were at the top in 1997, except for Bataan, Batangas, Ilocos Norte, and Misamis Oriental. The equally distributed education and life expectancy indices of these provinces were especially high.

The bottom provinces for GDI in 2009 were Basilan (0.313), Agusan del Sur (0.332), Sulu (0.337), Maguindanao (0.348), Davao Oriental (0.356), Compostela Valley (0.358), Zamboanga Sibugay (0.383), Sarangani (0.408), Romblon (0.422), and Masbate (0.424). Six of these provinces were also in the bottom in 1997, except for Camarines Norte, Bohol, Eastern Samar, and Northern Samar. The equally distributed income and education indices of these provinces were relatively much lower bringing the

Table 2.6 HDI top and bottom provinces (1997)

HDI rank		Province	HDI	Life expectancy index	Education index	Income index
1997	2009					
Top provinces						
1	2	Batanes	0.822	0.663	0.943	0.890
2	3	Rizal	0.772	0.793	0.919	0.631
3	1	Benguet	0.721	0.717	0.954	0.547
4	7	Laguna	0.710	0.736	0.872	0.559
5	4	Cavite	0.690	0.780	0.886	0.476
6	11	Batangas	0.665	0.807	0.859	0.424
7	6	Bataan	0.662	0.754	0.857	0.448
8	5	Bulacan	0.657	0.793	0.838	0.426
9	10	Pampanga	0.650	0.821	0.843	0.397
10	23	Zambales	0.629	0.771	0.876	0.370
Bottom provinces						
71	68	Mt. Province	0.411	0.623	0.866	0.128
72	57	Siquijor	0.407	0.688	0.796	0.123
73	74	Sarangani	0.378	0.699	0.604	0.128
74	76	Agusan del Sur	0.369	0.630	0.746	0.107
75	70	Romblon	0.363	0.650	0.797	0.092
76	69	Northern Samar	0.357	0.651	0.743	0.094
77	54	Bohol	0.354	0.749	0.736	0.081
78	72	Masbate	0.340	0.663	0.686	0.086
79	65	Eastern Samar	0.338	0.636	0.734	0.082
80	80	Sulu	0.318	0.459	0.735	0.096

overall value of their respective GDIs down.

Figure 2.15 shows the changes in GDI ranking between 1997 and 2009. The filled dot indicates a province's rank in 2009 and the hollow dot its rank in 1997. The closer the dot is to zero, the higher the rank. If the filled dot is below the hollow, then the province's rank improved between 1997 and 2009.

Thirty-one provinces saw rank improvements between these two years. The biggest improvements were by Biliran (up by 40), Cagayan (32), Marinduque and Bohol (28), Occidental Mindoro (23), Eastern Samar (22), Abra (18), Southern Leyte (17), and Camarines Sur and Northern Samar (16). Meanwhile, 26 provinces saw their ranking fall, led by Basilan (down by 37), Oriental Mindoro (30), Quezon and Aklan (27), Davao Oriental (24), Zamboanga del Norte and Antique (23), Palawan (17), and Ifugao (14).

We can also examine at the performance of the provinces according to each component of the GDI. For life expectancy, most provinces saw improvements in their equally distributed life expectancy indices between 1997 and 2009 [**Figure 2.16**], with 32 provinces seeing increases of more than 20 percent between 1997 and 2009. The 10 provinces with the biggest improvements saw an increase of their equally distributed life expectancy indices by more than 40 percent. These were Zamboanga del Norte (65.6 percent), Cagayan (63.9 percent), La Union (60 percent) Isabela (50 percent), Benguet (47.2 percent), Ilocos Norte (46.8 percent), Western Samar (45.3 percent), Albay (45 percent), Sorsogon (43 percent), and Abra (42.6 percent) [**Table 2.12**].

Table 2.7 HDI top and bottom provinces (2009)

HDI rank		Province	HDI	Life expectancy index	Education index	Income index
1997	2009					
Top provinces						
3	1	Benguet	0.849	0.867	0.988	0.714
1	2	Batanes	0.789	0.711	1.000	0.690
2	3	Rizal	0.734	0.836	0.917	0.516
5	4	Cavite	0.709	0.883	0.901	0.449
8	5	Bulacan	0.699	0.864	0.884	0.446
7	6	Bataan	0.698	0.795	0.900	0.476
4	7	Laguna	0.695	0.793	0.895	0.474
14	8	Nueva Vizcaya	0.678	0.750	0.881	0.472
11	9	Ilocos Norte	0.641	0.864	0.882	0.345
9	10	Pampanga	0.634	0.840	0.871	0.348
Bottom provinces						
66	70	Lanao del Sur	0.416	0.628	0.782	0.146
77	71	Masbate	0.406	0.745	0.754	0.119
43	72	Zamboanga del Norte	0.384	0.837	0.717	0.094
72	73	Sarangani	0.371	0.812	0.655	0.096
56	74	Davao Oriental	0.356	0.812	0.689	0.081
73	75	Agusan del Sur	0.354	0.725	0.765	0.080
22	76	Zamboanga Sibugay	0.353	0.780	0.775	0.073
36	77	Tawi-Tawi	0.310	0.532	0.716	0.078
69	78	Maguindanao	0.300	0.610	0.667	0.066
79	79	Sulu	0.266	0.582	0.601	0.054

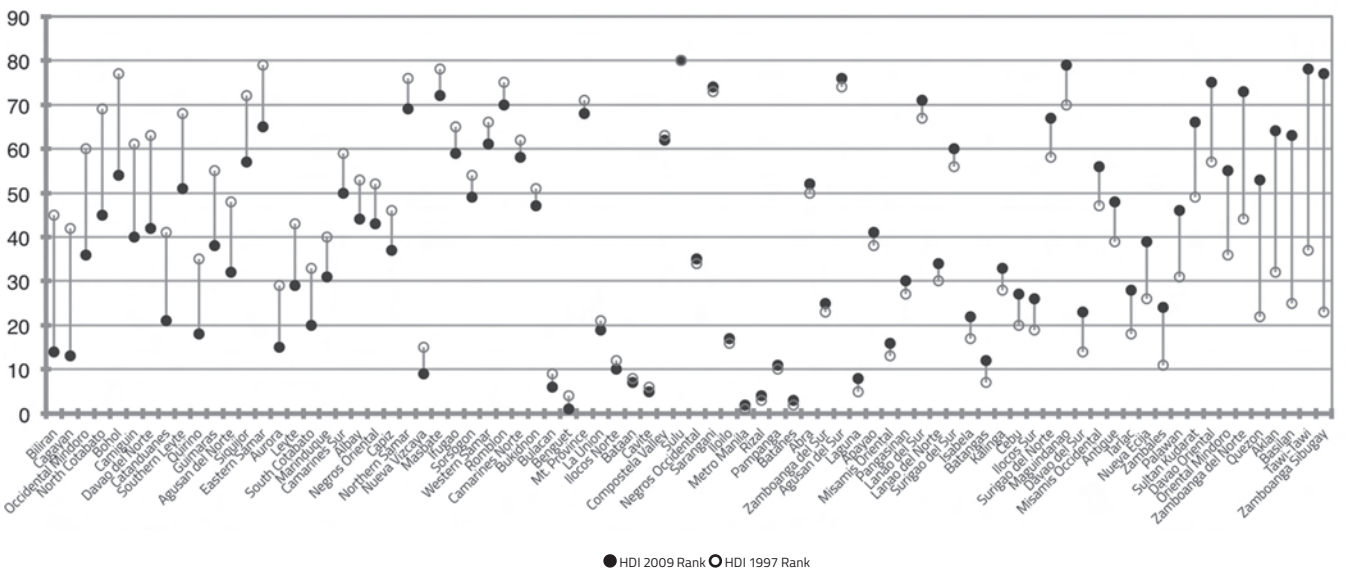
Only eight provinces saw declines, of which Palawan had the biggest, dropping by 16.4 percent. The other provinces were Pangasinan (down 7.7 percent), Nueva Ecija (7.6 percent), Ifugao (6.1 percent), Davao del Sur (5.6 percent), Agusan del Norte (2.3 percent), Quezon (0.5 percent), and Tarlac (0.4 percent).

Meanwhile, 20 provinces saw declines in their equally distributed education indices [**Figure 2.17**], where it will be recalled that women on the national average had the advantage. The largest declines were in Maguindanao (down 61.3 percent), Zamboanga del Norte (57.6 percent), Sulu (52.6 percent), Catanduanes (42.8 percent), Mt. Province (35 percent), Lanao del Sur (31.8 percent), Sultan Kudarat (31 percent), Ifugao (23.9 percent), North Cotabato (20.5 percent), and Quezon (14.3 percent) [**Table 2.13**].

Mean years of schooling among males declined between 1997 and 2009 in these provinces except for Mt. Province and Catanduanes. Female achievements in mean years of schooling also declined, except for Catanduanes. Expected years of schooling for males in these provinces also decreased during this period except in Lanao del Sur. Females also saw a decrease in their expected years of schooling. There was no change in Ifugao and Catanduanes, and there was an increase in Lanao del Sur and Sulu.

Mean years of schooling for females were higher than males even in the bottom provinces, but the gap was getting smaller, except in Zamboanga del Norte where the female advantage became bigger. In Sulu males had the advantage

Figure 2.10 HDI rank by province 1997 and 2009



in mean years of schooling while Maguindanao showed equality between the two sexes. Both instances deviated from the average phenomenon where females normally had the advantage on this measure.

In Lanao del Sur and Mt. Province, the advantage switched from males to females between 1997 and 2009. Females had the advantage in expected years of schooling in all these provinces, with the female advantage becoming smaller in Quezon, North Cotabato, Lanao del Sur, Zamboanga del Norte, and Maguindanao. Meanwhile, the female advantage in expected years of schooling increased in Ifugao, Sultan Kudarat, and Mt. Province. In Catanduanes and Sulu, the advantage that males had in 1997 was lost so that females in 2009 had higher expected years of schooling.

Improvements in the equally distributed education index between 1997 and 2009 were registered in Benguet (87.6 percent), Bohol (38.2 percent), Eastern Samar (33.5 percent), Lanao del Norte (30.6 percent), Bataan (30.2 percent), Bulacan (29.4 percent), Marinduque (28.5 percent), and Iloilo (26.1 percent) [Table 2.13]. Mean years of schooling increased for both males and females between 1997 and 2009. Expected years of schooling also increased for these provinces, except for Iloilo. Expected years of schooling for females increased only for Bohol, La Union, and Eastern Samar.

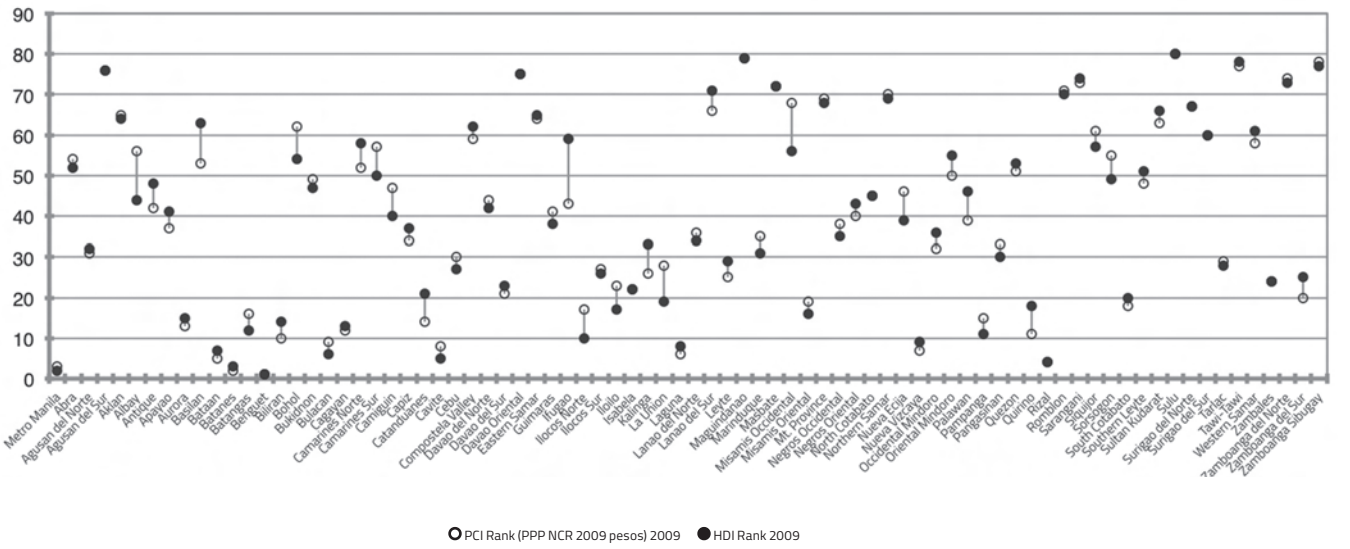
In seven of these provinces, the advantage in mean years of schooling switched from males to females between 1997 and 2009. In Bohol and La Union, however, the switch was the reverse: from female advantage in 1997 to male advantage in 2009. As for expected years of schooling, females retained their advantage over males during the period but with a smaller gap. In Lanao del Norte and Bulacan, the female advantage in expected years of schooling was lost although the gap between the two sexes was now smaller.

Higher achievements for females in mean years of schooling must be further assessed as to whether these achievements help these provinces achieve other human development outcomes as implied in the work of Ranis et al. [2000]. Then there is the issue, yet again, of sustaining these achievements over the long run.

Finally, consider the equally distributed income index shown in **Figure 2.18**. Thirty provinces saw this index in 2009 fall below their 1997 levels. The largest declines were by Basilan (down 24.7 percent), Ilocos Norte (19 percent), Aklan (13.5 percent), Davao Oriental (13.2 percent), Oriental Mindoro (11.3 percent), Zamboanga del Norte (10.9 percent), Antique (10.7 percent), and Misamis Oriental (8.8 percent). These declines are not as large as the declines in the equally distributed education index, however, or the declines in the equally distributed life expectancy index [**Table 2.14**].

Provinces with the largest improvements in the

Figure 2.11 Rank comparisons of HDI and per capita income (2009)

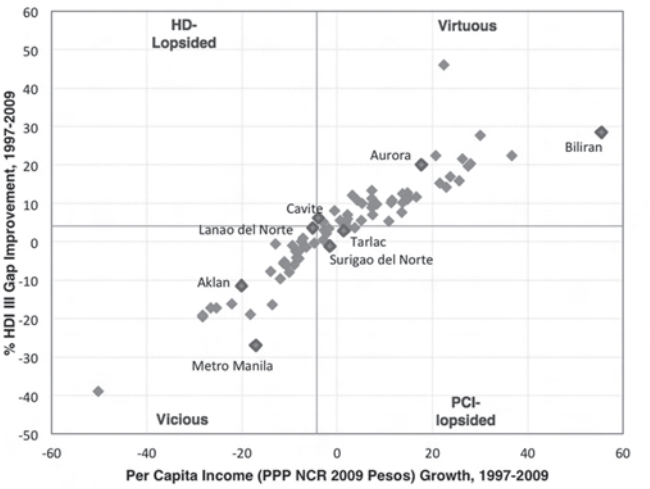


equally distributed income index were Benguet (36.5 percent), Biliran (27.4 percent), Cagayan (17.8 percent), Northern Samar (13.4 percent), Marinduque (11.5 percent), South Cotabato (11.1 percent), Zamboanga del Sur (11.1 percent), Occidental Mindoro (9.6 percent), Bohol (8.9 percent), and Eastern Samar (8.4 percent). These improvements were also not as great as those of the equally distributed education index or those of the equally distributed life expectancy index.

The *2010 Human Development Report* introduced a new measure to account for gender-based inequalities. The components of the Gender Inequality Index or GII are reproductive health, empowerment, and the labor market. The first two components are considered to be particularly critical for assessing women's opportunities and outcomes.

The Philippines' GII was computed at 0.623, and the country ranked 78th out of 137 countries for which data were available in 2010. This figure improved to 0.427 in 2011 raising the Philippines' rank by three steps. The smaller the GII, the lower the inequality measured by the GII [Box 2.1].

Figure 2.12 Provinces by type of improvement between 1997 and 2009



Note: Origin of quadrant at -4.30, 4.09 represents Philippine average values

Table 2.8 List of provinces by type of improvement (1997-2009, 1997-2003, 2003-2009)

Province	1997-2009	1997-2003	2003-2009
Abra	PCI-lopsided	Virtuous	Vicious
Agusan del Norte	Virtuous	Virtuous	Virtuous
Agusan del Sur	Vicious	Vicious	Vicious
Aklan	Vicious	Vicious	PCI-lopsided
Albay	Virtuous	Virtuous	PCI-lopsided
Antique	Vicious	Vicious	PCI-lopsided
Apayao	PCI-lopsided	Vicious	Virtuous
Aurora	Virtuous	PCI-lopsided	Virtuous
Basilan	Vicious	Vicious	Virtuous
Bataan	Virtuous	Vicious	Virtuous
Batanes	Vicious	Vicious	Vicious
Batangas	Vicious	Vicious	PCI-lopsided
Benguet	Virtuous	Virtuous	Virtuous
Biliran	Virtuous	Virtuous	Virtuous
Bohol	Virtuous	Virtuous	Virtuous
Bukidnon	Virtuous	Vicious	Virtuous
Bulacan	Virtuous	PCI-lopsided	Virtuous
Cagayan	Virtuous	Virtuous	Virtuous
Camarines Norte	Virtuous	PCI-lopsided	PCI-lopsided
Camarines Sur	Virtuous	PCI-lopsided	Virtuous
Camiguin	Virtuous	Virtuous	Vicious
Capiz	Virtuous	PCI-lopsided	Virtuous
Catanduanes	Virtuous	Virtuous	Vicious
Cavite	Virtuous	Virtuous	PCI-lopsided
Cebu	Virtuous	PCI-lopsided	Virtuous
Compostela Valley	NA	NA	Virtuous
Davao del Norte	Virtuous	Virtuous	Vicious
Davao del Sur	Vicious	Vicious	Virtuous
Davao Oriental	Vicious	Vicious	PCI-lopsided
Eastern Samar	Virtuous	Virtuous	Vicious
Guimaras	Virtuous	Vicious	Virtuous
Ifugao	Virtuous	Virtuous	Vicious
Ilocos Norte	PCI-lopsided	Vicious	Virtuous
Ilocos Sur	Virtuous	Vicious	Virtuous
Iloilo	Virtuous	PCI-lopsided	Virtuous
Isabela	Virtuous	Virtuous	PCI-lopsided
Kalinga	PCI-lopsided	Vicious	Virtuous
La Union	Virtuous	Virtuous	Virtuous
Laguna	Vicious	Virtuous	Vicious
Lanao del Norte	Vicious	PCI-lopsided	PCI-lopsided
Lanao del Sur	Vicious	Virtuous	Vicious
Leyte	Virtuous	PCI-lopsided	Virtuous
Maguindanao	Vicious	Vicious	Vicious
Marinduque	Virtuous	Vicious	Virtuous
Masbate	Virtuous	Virtuous	PCI-lopsided
Metro Manila	Vicious	Vicious	Virtuous
Misamis Occidental	Vicious	Vicious	Vicious
Misamis Oriental	Vicious	Vicious	Virtuous
Mt. Province	Vicious	PCI-lopsided	PCI-lopsided
Negros Occidental	Virtuous	Virtuous	Vicious
Negros Oriental	Virtuous	Vicious	Virtuous
North Cotabato	Virtuous	Virtuous	Virtuous
Northern Samar	Virtuous	Virtuous	PCI-lopsided
Nueva Ecija	Vicious	Vicious	PCI-lopsided
Nueva Vizcaya	Virtuous	Virtuous	Vicious
Occidental Mindoro	Virtuous	Virtuous	Virtuous
Oriental Mindoro	Vicious	Vicious	PCI-lopsided
Palawan	Vicious	Vicious	PCI-lopsided
Pampanga	Vicious	PCI-lopsided	Vicious
Pangasinan	PCI-lopsided	PCI-lopsided	Virtuous
Quezon	Vicious	Vicious	PCI-lopsided
Quirino	Virtuous	Virtuous	Virtuous
Rizal	Vicious	Vicious	PCI-lopsided
Romblon	Virtuous	Virtuous	PCI-lopsided
Sarangani	Vicious	Vicious	PCI-lopsided
Siquijor	Virtuous	Vicious	Virtuous
Sorsogon	Virtuous	Virtuous	PCI-lopsided
South Cotabato	Virtuous	Virtuous	Virtuous
Southern Leyte	Virtuous	Virtuous	PCI-lopsided
Sultan Kudarat	Vicious	Vicious	Virtuous
Sulu	Vicious	PCI-lopsided	Vicious
Surigao del Norte	PCI-lopsided	PCI-lopsided	PCI-lopsided
Surigao del Sur	Vicious	Vicious	Virtuous
Tarlac	PCI-lopsided	Virtuous	Vicious
Tawi-Tawi	Vicious	Vicious	Vicious
Western Samar	Virtuous	PCI-lopsided	PCI-lopsided
Zambales	Vicious	Vicious	Virtuous
Zamboanga del Norte	Vicious	Vicious	PCI-lopsided
Zamboanga del Sur	Virtuous	PCI-lopsided	Virtuous
Zamboanga Sibugay	NA	NA	Vicious

Note: Origin of quadrant at -4.30, 4.51 represents Philippine average values

Box 2.1 The Gender Inequality Index and its application in the Philippines

THE Gender Inequality Index or GII has three components that are deemed critical for evaluating the achievements in human development for women. These are reproductive health, empowerment, and labor market participation.

The indicators for reproductive health component are maternal mortality rates and adolescent fertility rates. Empowerment is measured by women's share of parliamentary seats and women's share of population (aged 25 and over) with at least a secondary education. Labor market participation is measured by the female labor force participation rate.

These indicators are independent of a country's level of development ensuring that only gender-based inequalities are measured by the index. The GII is constructed such that it is a discounted value of the HDI, where a value close to 0 reflects no inequality and a value close to 1 reflects complete inequality.

Another characteristic of the GII is that it reflects the strength of complementarities across the components. The stronger the correlation among the components, the worse the inequality that the index measures [UNDP 2010].

It is not possible to compute for province-level GIIs chiefly because of missing data. There is no data issue with female labor force participation rates because the quarterly Labor Force Surveys conducted by the National Statistics Office (NSO) redesigned the household sampling in 1996 to allow for reliable estimates at the province and key city geographic level. Educational attainment at the secondary level or higher is also easy to obtain from a variety of survey-based sources.

The indicator on women's share of parliamentary seats needed for the empowerment component may need to be replaced since provinces have a limited number of congressional districts, although it is clear that using this original indicator can be easily produced. An alternative indicator might be the share of women in elective local government positions from the provincial level and below. The Commission on Elections (Comelec) should be able to provide this dataset.

The more difficult set of measures is for reproductive health. The main data source is the National Demographic and Health Survey (NDHS), which is not regularly conducted. The latest survey was undertaken in 2008 and the one before that in 1998. In addition, the sampling design is nationally representative, but it is not intended to provide provincial level estimates. It is recommended that the NDHS be conducted more frequently and adjustments be made to allow for province-level estimates.

Exploring other methodologies for estimating these two indicators is also needed. For example, Yabut and Bautista [2007] provide indirect estimates of maternal mortality rates based on civil registry data (noting well-known limitations) and the latest Census of Population. Their paper provides estimates for each region; it is likely that they can provide estimates at the province level as well.

Similar explorations may be considered for adolescent fertility rates.

Figure 2.13 HDI rank and GDI rank by province (2009)

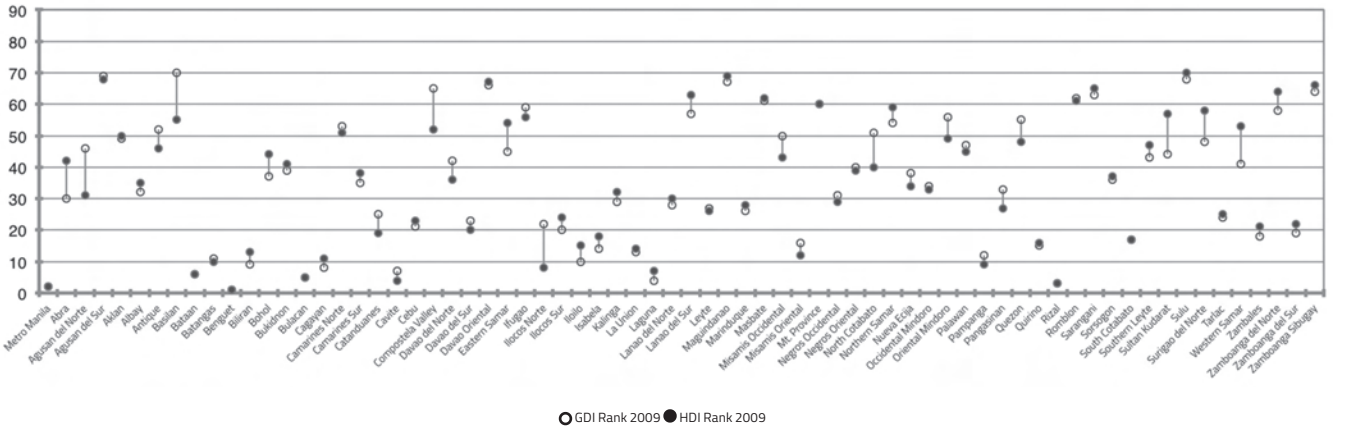
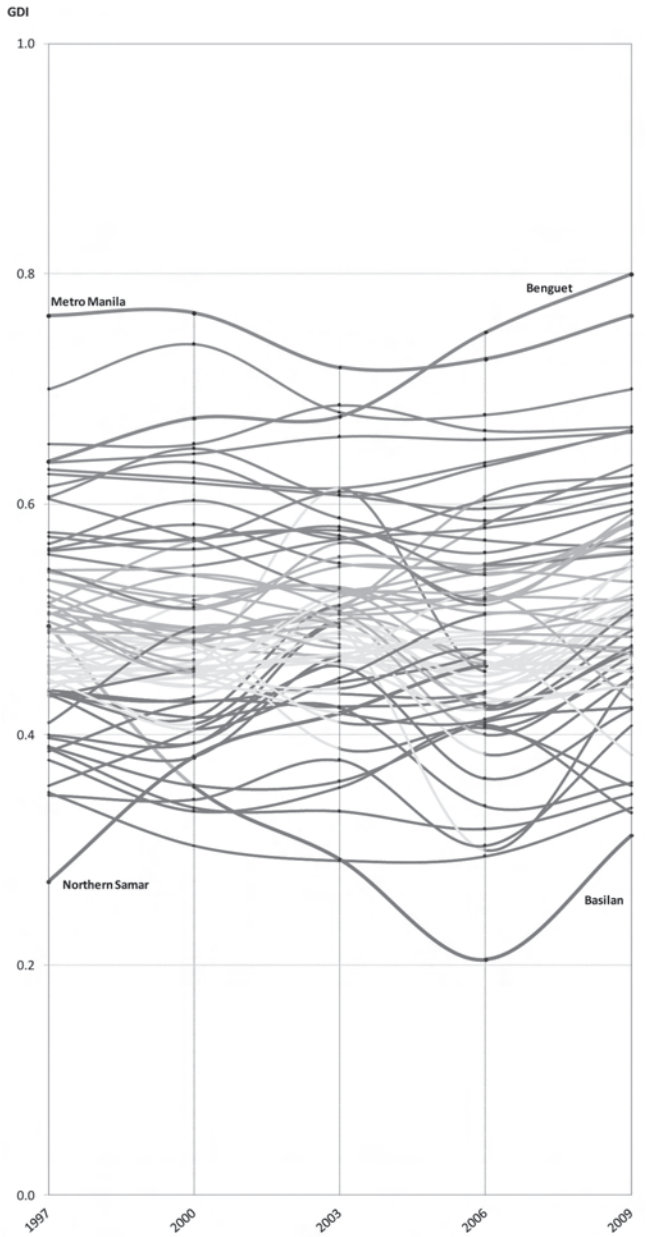


Figure 2.14 Gender Development Index by province (1997-2009)



Significant losses in HDI due to inequalities

The HDI measures an average value for a given population. Its value declines when human development achievements are concentrated only among some groups of people while there is sustained deprivation in others. The 2010 Human Development Report introduced the "Inequality-adjusted HDI" or IHDI to capture the uneven distribution of human development across a population.

The IHDI has the same three components as the HDI—health, education and income—and it represents the losses in human development due to inequalities in these components [**Box 2.2**]. In other words, where no inequality exists, IHDI will be equal to HDI. A loss is measured in the presence of inequality because a proportion of the population has yet to attain the average HDI value.

For the Philippines with a medium level of human development and an HDI value of 0.644 in 2011, the estimated loss to human development is equivalent to 19.9 percent when accounting for the presence of inequality. The IHDI for the Philippines in 2011 was at 0.516, which is lower than its HDI.

Provincial IHDI have been estimated only for the single year 2009. **Figure 2.19** shows a comparison of the HDIs of each province with their IHDIs. The IHDIs are represented by the red dots and the HDIs by the blue dots. The difference indicates the losses to human development in each province due to inequality.

As expected, IHDI values were always less than the HDI values. Provinces in Figure 2.19 are ordered according to the size of the difference between HDI and IHDI.

Fifty of the 80 provinces incurred at least a 50 percent loss in HDI due to inequalities while the rest of the provinces had losses of almost a quarter of the HDI values. This clearly shows the gravity of the inequality in the Philippines. The 10 provinces with the largest losses were Sulu (declining by 77.8 percent), Maguindanao (74.4 percent), Tawi-Tawi (73.5 percent), Zamboanga Sibugay (73.5 percent), Agusan del Sur (70.4 percent), Davao Oriental (69.0 percent), Sarangani (68.7 percent), Zamboanga del Norte (68.6 percent), Lanao del Sur (66.5 percent), and Masbate (65.6 percent). [**Table 2.15**]. Many of these provinces had very low HDIs to begin with and the added presence of inequalities was an aggravating factor.

The 10 provinces with the smallest losses in their HDI values due to inequalities were were Ilocos Norte (decreasing by 43.7 percent), Pampanga (43.0 percent), Nueva Vizcaya (41.5 percent), Bataan (39.4 percent), Laguna (38.4 percent), Bulacan (37.9 percent), Cavite (36.7 percent), Rizal (35.8 percent), Batanes (29.4 percent), and Benguet (26.9 percent). Most these provinces also had some of the highest HDI levels [**Table 2.16**].

Table 2.9 Largest gainers and losers in GDI between 1997 and 2009

GDI rank		Province	Gap improvement			
1997	2009		GDI	Equally distributed life expectancy index	Equally distributed education index	Equally distributed income index
Largest GDI gainers and comparative gap improvements						
3	1	Benguet	44.8%	47.2%	87.7%	36.5%
48	8	Biliran	31.4%	22.1%	-4.9%	27.4%
39	7	Cagayan	30.1%	63.9%	24.6%	17.8%
69	53	Northern Samar	25.2%	20.6%	11.9%	13.4%
64	36	Bohol	19.2%	32.6%	38.2%	8.9%
53	25	Marinduque	19.0%	21.7%	28.5%	11.5%
66	44	Eastern Samar	18.6%	33.9%	33.5%	8.4%
30	18	Zamboanga del Sur	15.0%	11.6%	20.6%	11.1%
22	14	Quirino	15.0%	39.8%	10.6%	6.5%
8	4	Bulacan	15.0%	35.8%	29.4%	6.7%
Largest GDI losers and comparative gap improvements						
29	46	Palawan	-6.4%	-16.4%	-7.4%	-2.6%
63	66	Maguindanao	-6.6%	29.2%	-61.3%	-5.9%
28	51	Antique	-8.8%	18.4%	1.8%	-10.7%
34	57	Zamboanga del Norte	-9.2%	65.6%	-57.6%	-10.9%
27	54	Quezon	-11.1%	-0.5%	-14.3%	-7.7%
21	48	Aklan	-11.5%	24.8%	19.3%	-13.5%
25	55	Oriental Mindoro	-12.7%	9.4%	-5.6%	-11.3%
7	21	Ilocos Norte	-13.9%	46.8%	0.1%	-19.0%
41	65	Davao Oriental	-20.1%	14.9%	-12.9%	-13.2%
32	69	Basilan	-35.9%	14.0%	-13.9%	-24.7%

Another way to view performance is to see how each province's rank changed after accounting for inequality. **Figure 2.20** shows a comparison of the HDI and IHDI ranking for all provinces. As before, the filled dots are the rank values for HDI, and the hollow dots are the rank values for IHDI. If a hollow dot is below a filled dot, then the province improves its ranking when accounting for inequalities.

Rank improvements indicate that despite the losses in HDI, the extent of inequality in that province is still better than in the other provinces. Twenty-nine provinces experienced improvements in their ranking despite the presence of inequalities. The provinces in this group were Zambales (whose rank went up by 5), Sorsogon (4), Aklan, Camarines Sur, Compostela Valley, Negros Occidental, Quezon, and Quirino (3), and Palawan and Albay (2).

Rank declines, on the other hand, indicate that the province's level of inequalities is worse than in the others. Twenty-five provinces saw their ranking fall further. The declines were led by Biliran (down by 7 in the ranking), Antique, Ifugao, and Negros Oriental (5), South Cotabato and Catanduanes (3), Mt. Province, Bohol and Bukidnon (2) [**Tables 2.17 and 2.18**].

Figure 2.21 is a stacked-bar graph of the absolute values of the losses in life expectancy, education, and

Table 2.10 GDI top and bottom provinces (1997)

GDI rank		Province	GDI	Equally distributed		
1997	2009			Life expectancy index	Education index	Income index
Top provinces						
1	3	Rizal	0.700	0.752	0.925	0.493
2	4	Laguna	0.653	0.706	0.877	0.449
3	1	Benguet	0.637	0.722	0.960	0.374
4	7	Cavite	0.636	0.744	0.893	0.388
5	6	Bataan	0.630	0.731	0.866	0.396
6	11	Batangas	0.626	0.766	0.865	0.371
7	22	Ilocos Norte	0.616	0.742	0.885	0.355
8	5	Bulacan	0.606	0.761	0.845	0.346
9	16	Misamis Oriental	0.605	0.717	0.901	0.342
Bottom provinces						
60	61	Romblon	0.400	0.649	0.804	0.122
61	52	Camarines Norte	0.398	0.651	0.796	0.121
62	60	Masbate	0.389	0.655	0.690	0.131
63	66	Maguindanao	0.388	0.498	0.796	0.148
64	36	Bohol	0.386	0.731	0.741	0.106
65	68	Agusan del Sur	0.378	0.623	0.746	0.116
66	44	Eastern Samar	0.356	0.612	0.742	0.100
67	67	Sulu	0.350	0.476	0.741	0.121
68	62	Sarangani	0.347	0.703	0.609	0.098
69	53	Northern Samar	0.272	0.638	0.751	0.042

income due to inequalities in each of these components. Provinces are ordered first by the loss due to income inequality, followed by education inequality and, finally, by life expectancy inequality.

For almost all the provinces, the losses due to inequality in education exceeded those due to inequalities in income and health. There were 17 provinces where losses due to income inequalities were higher than losses due to education and health inequalities. In Camiguin and Misamis Occidental, the losses due to inequalities in life expectancy exceeded the losses due to inequalities in education and income.

Concluding remarks

On three different measures of human development, Philippine provinces demonstrated a wide and variable range of trends over 20 years between 1997 and 2009, closely resembling global trends of country achievements in human development. More than two-thirds of Philippine provinces demonstrated progress in human development over this period.

At the same time, the gap between the province with lowest HDI and that with the highest increased in 2009 (Sulu's HDI of 0.266 and Benguet's HDI of 0.849) compared to 1997 (Sulu's HDI of 0.318 and Batanes' HDI of 0.822). As mentioned earlier, in a global comparison,

Table 2.11 GDI top and bottom provinces (2009)

GDI rank		Province	GDI	Equally distributed		
1997	2009			Life expectancy index	Education index	Income index
Top provinces						
4	1	Benguet	0.800	0.853	0.995	0.603
2	2	Rizal	0.700	0.800	0.922	0.464
3	3	Laguna	0.667	0.777	0.900	0.424
9	4	Bulacan	0.665	0.847	0.890	0.390
6	5	Bataan	0.663	0.748	0.906	0.429
5	6	Cavite	0.662	0.779	0.908	0.410
40	7	Cagayan	0.634	0.883	0.832	0.347
49	8	Biliran	0.625	0.715	0.859	0.397
13	9	Iloilo	0.618	0.812	0.912	0.318
6	10	Batangas	0.616	0.815	0.862	0.332
Bottom provinces						
44	58	Ifugao	0.441	0.594	0.732	0.198
52	59	Mt. Province	0.430	0.632	0.833	0.152
62	60	Masbate	0.424	0.720	0.760	0.140
60	61	Romblon	0.422	0.696	0.815	0.132
68	62	Sarangani	0.408	0.783	0.657	0.133
41	65	Davao Oriental	0.356	0.752	0.692	0.087
63	66	Maguindanao	0.348	0.645	0.671	0.097
67	67	Sulu	0.337	0.573	0.605	0.111
65	68	Agusan del Sur	0.332	0.688	0.768	0.069
32	69	Basilan	0.313	0.657	0.795	0.059

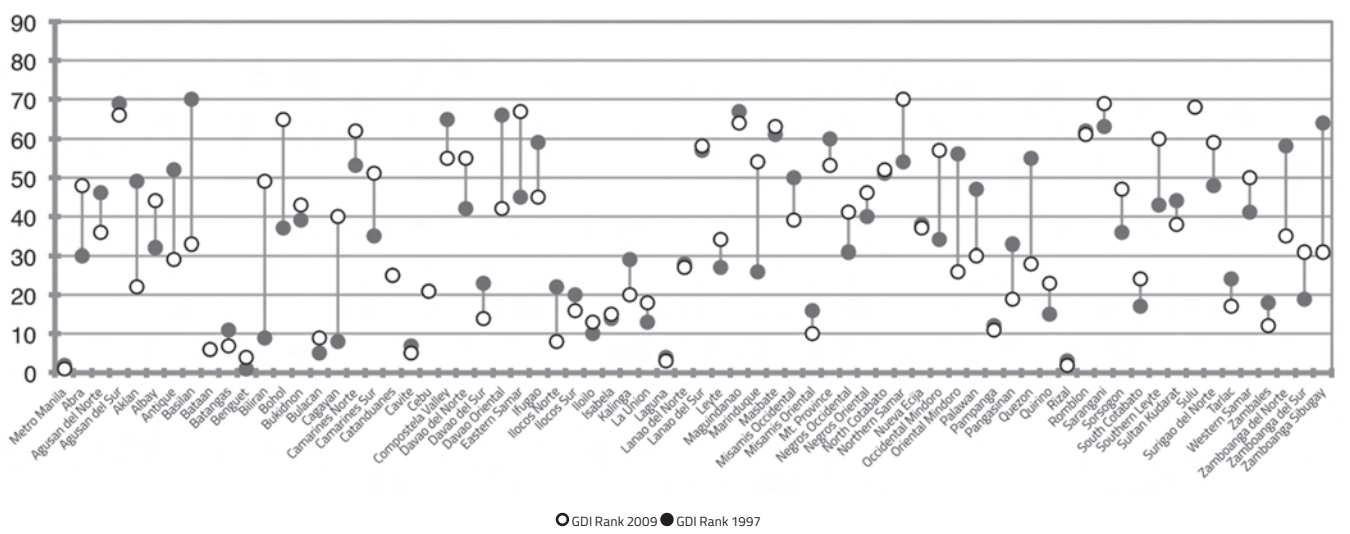
Sulu's achievements lie somewhere between Burundi's HDI of 0.282 and Niger's HDI of 0.261 in 2010. Burundi and Niger were ranked 166th and 167th in the HDI country rankings for 2010 out of 169 countries for which the HDI was computed.

Benguet's HDI lies between Austria's HDI of 0.851 and Singapore's HDI of 0.846 in 2010, both of which were classified as having very high human development and ranked 25th and 27th in the global HDI rankings. The Philippines as a whole was classified as having medium human development with its HDI of 0.638 in 2010 and was ranked 97th out of 169 countries.

How human development achievements of Philippine provinces change in the presence of inequalities can be measured by the GDI and the IHDI. These measures provide an indication of the distribution of human development achievements in a particular province. The GDI accounts for differences between males and females, recognizing that opportunities and outcomes can differ systematically between the two genders. The HDI value is discounted by the presence of gender-based inequalities. This is true for all provinces.

Females generally had an advantage over males for achievements in life expectancy and education. Males, on the other hand, had an advantage over females in achievements measured by their share of earned incomes. The GDI closely follows the progress and variability exhibited by the HDI because the components of both indicators are mirror images of each other. A new index, the GII, has been proposed that responds

Figure 2.15 GDI rank by province 1997 and 2009



to the limitations of the GDI, but its computation at the province level is hindered by the lack of data.

A new measure, the Inequality-adjusted HDI, has been proposed to account for the uneven distribution of human development achievements across a population regardless of the cause of inequality. This measure was computed for the Philippine provinces for 2009. All the provincial IHDIs were lower than their HDI values. Inequality may be so much worse in some provinces than others that their ranking in achievements would go down due to the discounting. The gap between the HDI and IHDI was considerably wider than the gap between HDI and GDI.

Even with new measures accounting for inequalities, it is still not possible to describe the combined effect of overall inequality and gender-based inequalities. Additional work needs to be done if other bases for discrimination, exclusion, and marginalization are taken into account in measuring achievements in human development.

Above all, these measures are a reminder that income growth as a measure of progress provides at best an incomplete picture of the possibilities for improving the well-being of people. Even when incomes are highly variable, increasing life expectancies are possible. This has been the case for almost all provinces, especially for females.

Improvements in educational achievements were also demonstrated although higher family incomes can contribute to even greater achievements. For example, Aklan, a province with low human development, saw a large decline in the income index between 1997 and 2009 but still managed modest growth in the education index for the same period. At a level of high human development, Metro Manila and some adjacent provinces saw large drops in income coinciding with growth in the education index for the same period. While there is much to celebrate in educational achievements, the losses to human development due to the unequal distribution of educational achievements remain a major concern.

Volatility of incomes and vulnerability to poverty

Variable progress in human development was heavily influenced by the volatile changes to household incomes in the Philippines over the period. The volatility of household incomes indicates how difficult it can be to sustain income increases over longer periods of time. This implies, in turn, a vulnerability of households and individuals to income poverty.

Esguerra [2010] discussed the increasing concern of workers about their employment security with seven out of 10 survey respondents in 2005 to the question about worrying over losing their jobs providing affirmative answers, a figure higher than the same survey conducted

Figure 2.16 Equally distributed life expectancy index (1997-2009)

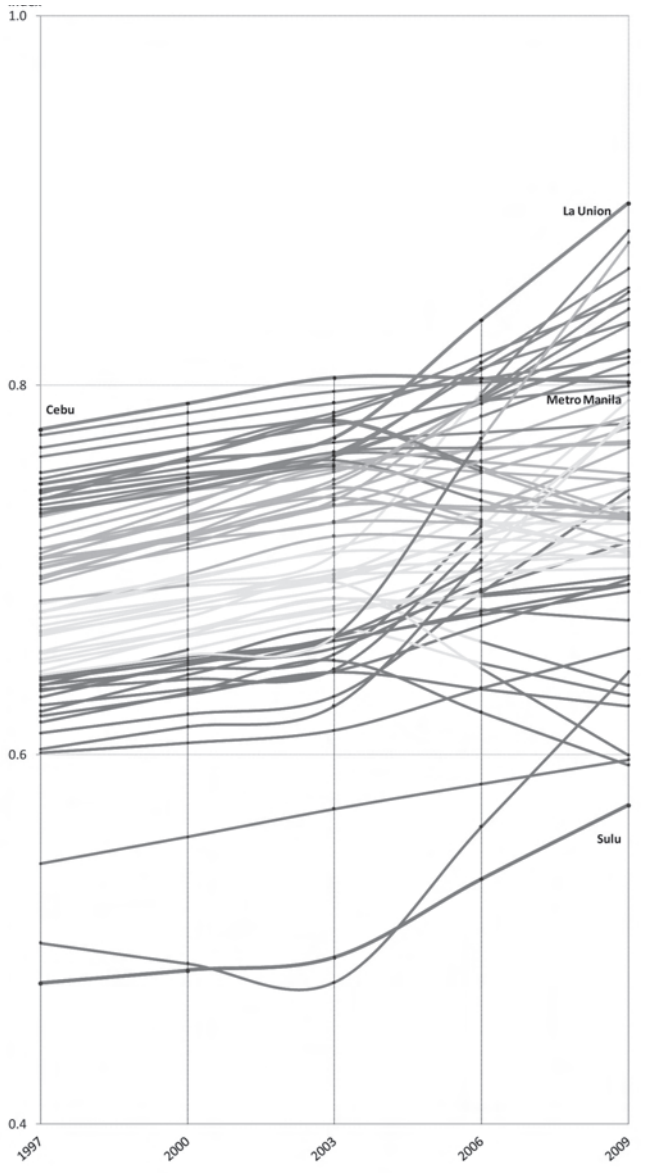


Table 2.12 Largest gainers and losers in equally distributed life expectancy index between 1997 and 2009

Equally distributed Life expectancy index	1997	2009	Gap improvement
Largest gainers			
Zamboanga del Norte	0.643	0.877	65.56
Cagayan	0.677	0.883	63.90
La Union	0.747	0.899	60.01
Isabela	0.701	0.850	49.95
Benguet	0.722	0.853	47.19
Ilocos Norte	0.742	0.863	46.79
Western Samar	0.603	0.783	45.33
Albay	0.711	0.841	44.95
Sorsogon	0.706	0.833	43.03
Abra	0.638	0.792	42.60
Largest losers			
Tarlac	0.731	0.730	-0.41
Quezon	0.711	0.710	-0.49
Agusan del Norte	0.645	0.637	-2.28
Davao del Sur	0.741	0.727	-5.60
Ifugao	0.617	0.594	-6.10
Nueva Ecija	0.749	0.730	-7.57
Pangasinan	0.735	0.715	-7.72
Palawan	0.656	0.599	-16.39

in 1997. The year 1997 was the year of the Asian financial crisis, and by 2005 most of the countries in Southeast Asia had recovered from that shock. Employment growth was erratic during this period [Esguerra 2010].

The long period under consideration calls attention to the differing vulnerability of provinces to external shocks, depending on their economies' degree of exposure to global markets. It is no accident many of the more urban, commercial, and industrial provinces—including those with already high levels of human development—experienced larger income setbacks than their poorer counterparts as world conditions deteriorated. The challenge, however, is how to ride out such volatilities without sacrificing hard-won gains in human development. This points to the importance of social protection and public safety nets, which the more affluent areas can certainly afford.

Another lesson to be gleaned from the record is the need to account for mobility and migration. The theme chapter points out that people do move in response to opportunities and should be encouraged to do so. This also means, however, that their provinces of destination may confront new challenges in sustaining standards of health, education, and employment for a growing population.

This is another reason that areas that have previously

Figure 2.17 Equally distributed education index (1997-2009)

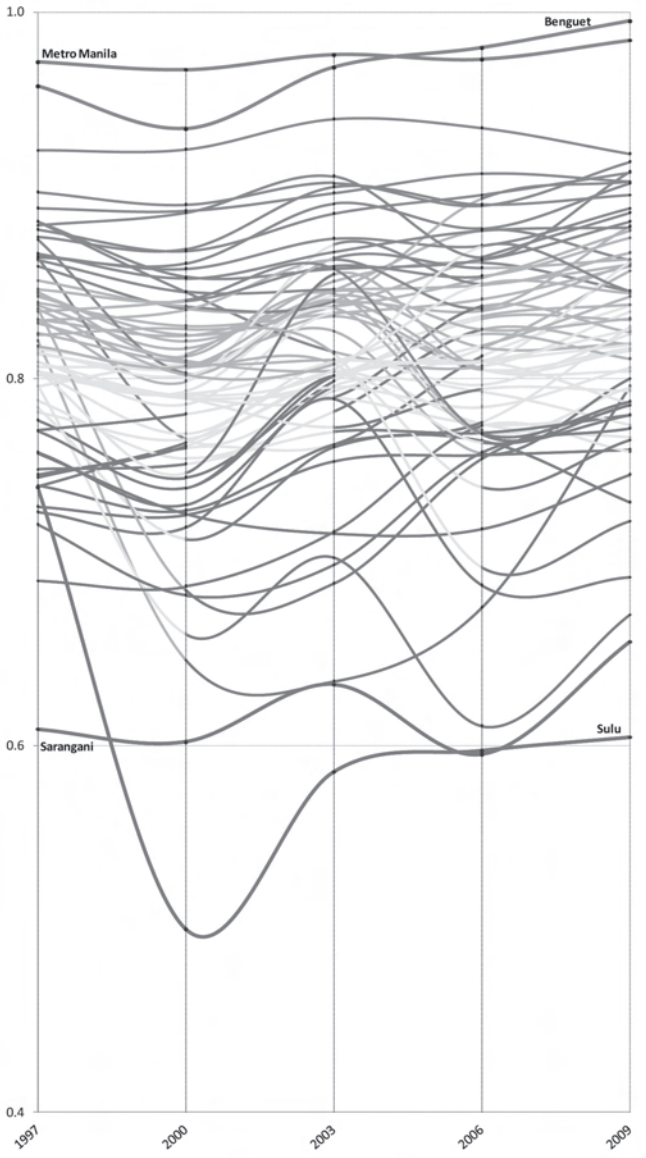


Table 2.13 Largest gainers and losers in equally distributed education index between 1997 and 2009

Equally distributed Life expectancy index	1997	2009	Gap improvement
Largest gainers			
Benguet	0.960	0.995	87.66
Bohol	0.741	0.840	38.18
La Union	0.854	0.908	36.86
Eastern Samar	0.742	0.828	33.46
Lanao del Norte	0.832	0.883	30.58
Bataan	0.866	0.906	30.17
Bulacan	0.845	0.890	29.43
Marinduque	0.809	0.864	28.48
Iloilo	0.881	0.912	26.08
Zambales	0.884	0.913	25.00
Largest losers			
Quezon	0.814	0.787	-14.30
North Cotabato	0.806	0.767	-20.49
Ifugao	0.784	0.732	-23.88
Sultan Kudarat	0.836	0.786	-30.96
Lanao del Sur	0.838	0.786	-31.81
Mt. Province	0.876	0.833	-34.97
Catanduanes	0.886	0.837	-42.80
Sulu	0.741	0.605	-52.60
Zamboanga del Norte	0.824	0.722	-57.58
Maguindanao	0.796	0.671	-61.30

achieved notable levels human development cannot afford to be complacent but must continuously adjust their priorities to changing circumstances. Sustaining or maintaining threshold levels of income and social services requires a policy package that reduces the occurrence of income shocks, provides a cushion when these occur, stabilizes sources of income, and induces income recovery and the return to growth.

At the province level, there are fewer policy options available to reduce income shocks and provide stability. These are either generally macroeconomic concerns whose formulation and implementation are centralized in national institutions. Nor can such policies be sensitive to provincial concerns as well as to those over inequality, especially when policy instruments involve the management of aggregate demand and the components of the gross domestic product and national income.

Further complicating the picture is the fragmentation of real authority at the provincial level (as pointed out by the theme chapter), where province-level decisionmaking is hollowed out by the concentration of resources and power among highly urbanized cities. The theme chapter suggests, however, that province-level planning and responsibility may prove more adept in responding to specific conditions, as well as

Figure 2.18 Equally distributed income index (1997-2009)

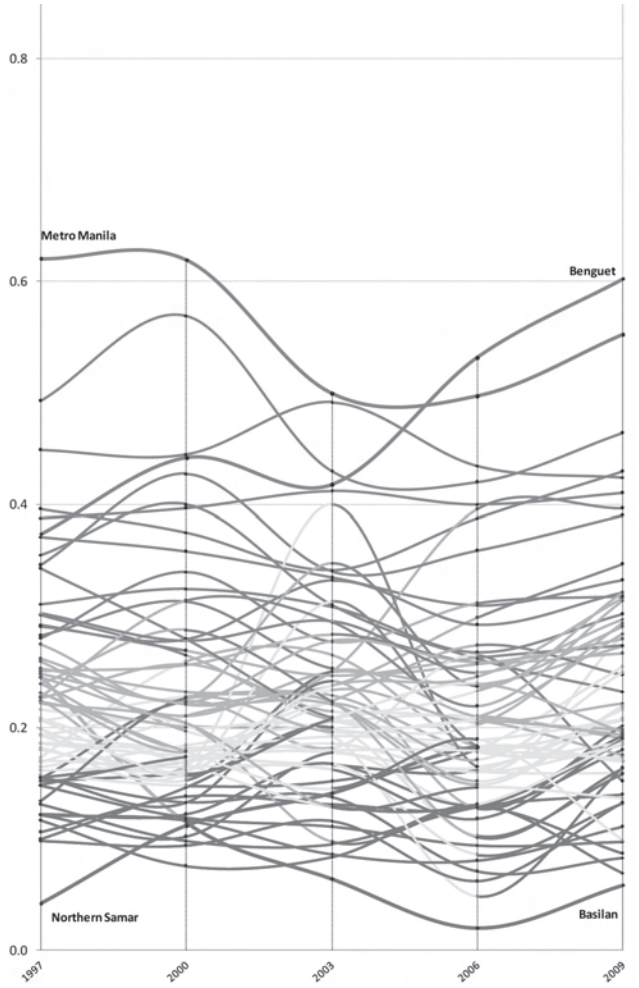


Table 2.14 Largest gainers and losers in equally distributed income index between 1997 and 2009

Equally distributed Life expectancy index	1997	2009	Gap improvement
Largest gainers			
Benguet	0.374	0.603	36.54%
Biliran	0.169	0.397	27.38%
Cagayan	0.205	0.347	17.81%
Northern Samar	0.042	0.170	13.36%
Marinduque	0.157	0.254	11.55%
South Cotabato	0.228	0.314	11.10%
Zamboanga del Sur	0.231	0.317	11.08%
Occidental Mindoro	0.170	0.250	9.60%
Bohol	0.106	0.186	8.93%
Eastern Samar	0.100	0.175	8.39%
Largest losers			
Batangas	0.371	0.332	-6.13%
Quezon	0.223	0.164	-7.67%
Misamis Oriental	0.342	0.285	-8.81%
Antique	0.253	0.173	-10.68%
Zamboanga del Norte	0.222	0.137	-10.88%
Oriental Mindoro	0.248	0.163	-11.31%
Davao Oriental	0.194	0.087	-13.24%
Aklan	0.259	0.159	-13.51%
Ilocos Norte	0.355	0.232	-19.00%
Basilan	0.245	0.059	-24.69%

Box 2.2 The Inequality-adjusted Human Development Index

RECOGNIZING that human development is not distributed evenly across a population, a new measure was introduced to capture the disparities in achievements. This is the Inequality-adjusted Human Development Index or IHDI.

The HDI is an average and the IHDI summarizes the inequality in each of the HDI dimensions. The IHDI's method of construction, however, is unable to capture the experience of overlapping inequalities when people experience multiple inequalities.

To measure the IHDI, the inequality across each dimension is first computed based on the Atkinson measure of inequality that takes the ratio of the geometric mean of the indicator to its arithmetic mean (also known as the arithmetic-geometric inequality) placing an emphasis on the lower end of the distribution. The result is then applied to the mean value of the indicator giving the inequality-adjusted values of each of the dimensions.

The IHDI is then computed as the geometric mean of these inequality-adjusted dimensions. The geometric mean is useful for comparisons that involve normalization of indicators with varying scales because it accounts for the impact of scale differences on normalization procedures unlike the arithmetic mean [See Technical notes].

Table 2.15 Top 10 provinces with the largest losses in HDI due to inequalities

Province	HDI 2009	IHDI 2009	Overall loss (%)
Sulu	0.266	0.059	-77.8
Maguindanao	0.300	0.077	-74.4
Tawi-Tawi	0.310	0.082	-73.5
Zamboanga Sibugay	0.353	0.105	-70.4
Agusan del Sur	0.354	0.107	-69.8
Davao Oriental	0.356	0.110	-69.0
Sarangani	0.371	0.116	-68.7
Zamboanga del Norte	0.384	0.120	-68.6
Lanao del Sur	0.416	0.139	-66.5
Masbate	0.406	0.140	-65.6

Table 2.16 Top 10 provinces with the smallest losses in HDI due to inequalities

Province	HDI 2009	IHDI 2009	Overall loss (%)
Benguet	0.849	0.621	-26.9
Batanes	0.789	0.556	-29.4
Rizal	0.734	0.472	-35.8
Cavite	0.709	0.449	-36.7
Bulacan	0.699	0.434	-37.9
Laguna	0.695	0.428	-38.4
Bataan	0.698	0.423	-39.4
Nueva Vizcaya	0.678	0.397	-41.5
Pampanga	0.634	0.361	-43.0
Ilocos Norte	0.641	0.361	-43.7

in mobilizing resources on a sufficiently large scale to create an impact.

Among the policy challenges, therefore, is for national institutions to incorporate analytical as well as policy approaches that take into account the unequal effects of macroeconomic policies at the subnational levels. A further need is for better delineation of authority among local units themselves, to facilitate effective decisionmaking with a larger scope that takes externalities and cross-boundary problems into account. The nature of economic governance at the local level and its responsiveness to changes in macroeconomic signals needs to be better understood if volatility of incomes is to be minimized and income insecurity is reduced.

Figure 2.19 HDI and inequality-adjusted HDI (2009)

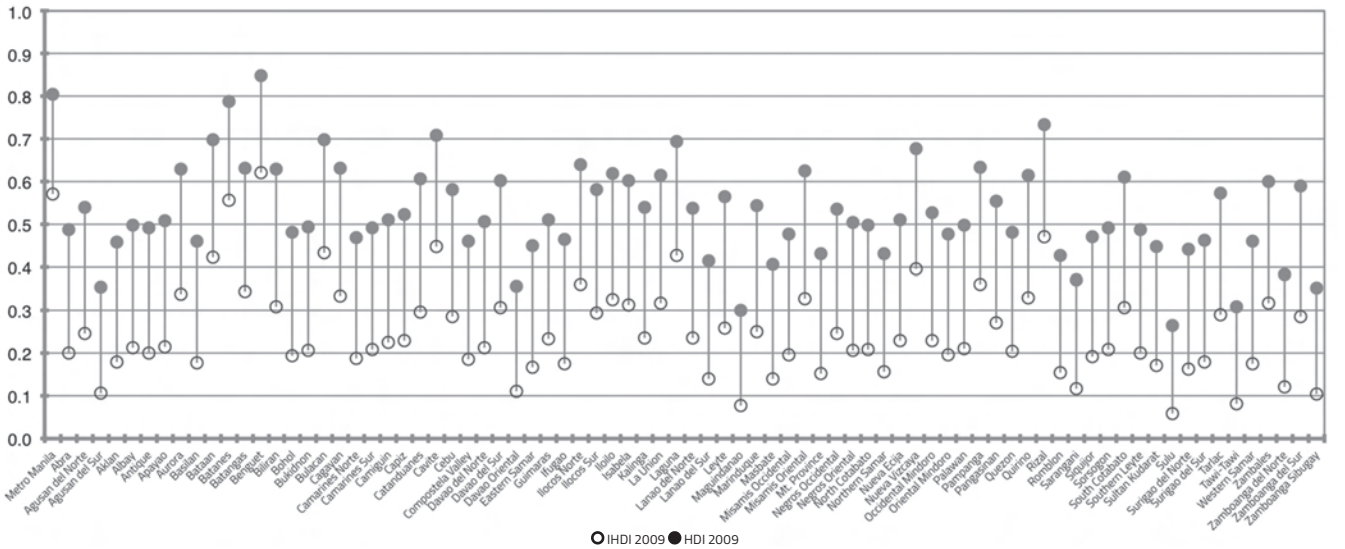


Table 2.17 Top 10 provinces with rank improvements in the presence of inequalities

Province	HDI 2009	IHDI 2009	Overall loss (%)	HDI 2009 rank	IHDI rank	Change in rank
Zambales	0.600	0.317	-47.1	23	18	5
Sorsogon	0.492	0.209	-57.6	48	44	4
Aklan	0.460	0.179	-61.0	63	60	3
Compostela Valley	0.461	0.185	-59.7	61	58	3
Camarines Sur	0.491	0.208	-57.6	49	46	3
Quezon	0.482	0.205	-57.5	52	49	3
Negros Occidental	0.537	0.246	-54.2	34	31	3
Quirino	0.616	0.329	-46.5	17	14	3
Palawan	0.498	0.210	-57.7	45	43	2
Albay	0.498	0.214	-57.1	43	41	2

Table 2.18 Top 10 provinces with rank declines in the presence of inequalities

Province	HDI 2009	IHDI 2009	Overall loss (%)	HDI 2009 rank	IHDI 2009 rank	Change in rank
Bukidnon	0.494	0.206	-58.3	46	48	-2
Bohol	0.482	0.194	-59.8	53	55	-2
Western Samar	0.461	0.176	-61.8	60	62	-2
Mt. Province	0.432	0.152	-64.9	67	69	-2
South Cotabato	0.612	0.307	-49.9	19	22	-3
Catanduanes	0.606	0.297	-51.0	20	23	-3
Negros Oriental	0.504	0.207	-59.0	42	47	-5
Antique	0.493	0.200	-59.4	47	52	-5
Ifugao	0.465	0.176	-62.2	58	63	-5
Biliran	0.630	0.309	-51.0	13	20	-7

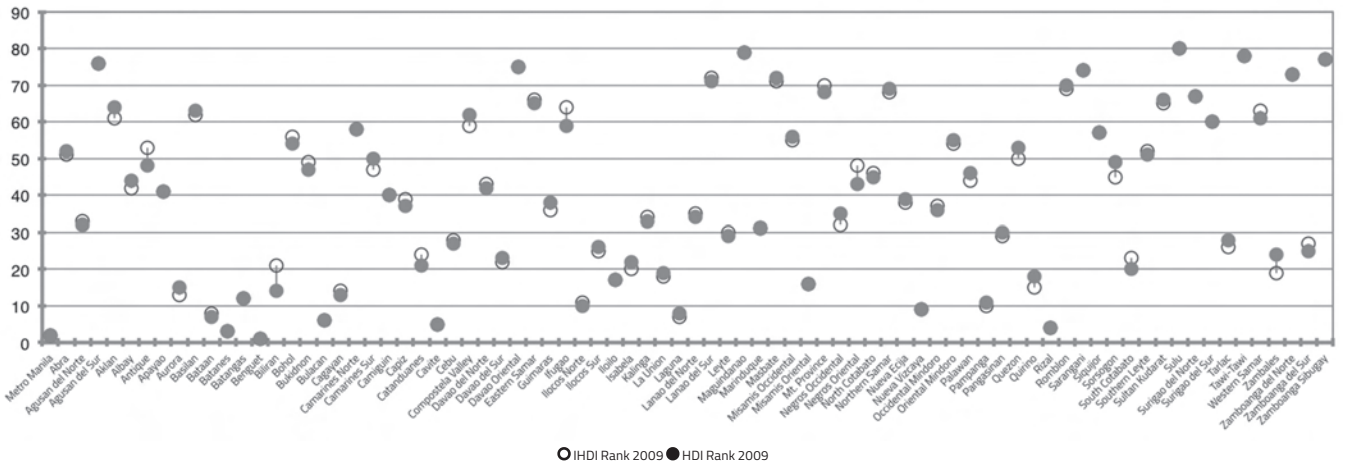
Increased life expectancy and burdens of care

Progress as evidenced by increased life expectancy is to be celebrated, but this quality of life indicator brings new challenges to sustaining human development outcomes. This significant increase in life expectancy will be reflected in a change to the demographic profile in the Philippines involving a larger share of the elderly although this has been a slow process for the country [Ogena 2006].

Though the demographic shift has not yet occurred, it is helpful even now to take a longer view of the effects of this shift on the burdens of care for the elderly in addition to caring for the youth (considering the slow decline in fertility rates of the country). Extended kinship systems have thus far been helpful in providing care for household members. Public provisioning through institutionalized care, social welfare, health insurance, and pension systems is not yet robust enough to respond to the needs of an aging population.

Cruz et al. [2007], using panel data from the 1996 Philippine Elderly Survey and the 2000 Philippine Follow-Up Survey on the Elderly, found that "(f)emales are more likely to outlive males but can expect to live a greater part of that remaining life in a state of functional

Figure 2.20 Provincial ranking by HDI and IHDI (2009)



impairment" [p. 41]. These researchers also found that living in urban areas shortens life expectancy and increases the likelihood of poorer health status for both sexes. These estimates show the likely disability burdens that can come with a demographic shift.

Ogena [2006] already raises some of the potential issues if the country continues to rely on household members, especially daughters, to provide care. Each province will enter this shift at different points in time given the current diversity of health outcomes across provinces. Local governments that are able to anticipate these needs will be in a better position to sustain progress in human development.

Qualitative achievements in education and female advantages

Access to education in the Philippines is high although there is much room for improvement. Estimates of out-of-school youth are high, and dropout rates are a source of concern for both public primary and secondary school levels [Albert et al. 2012; and Alba 2010].

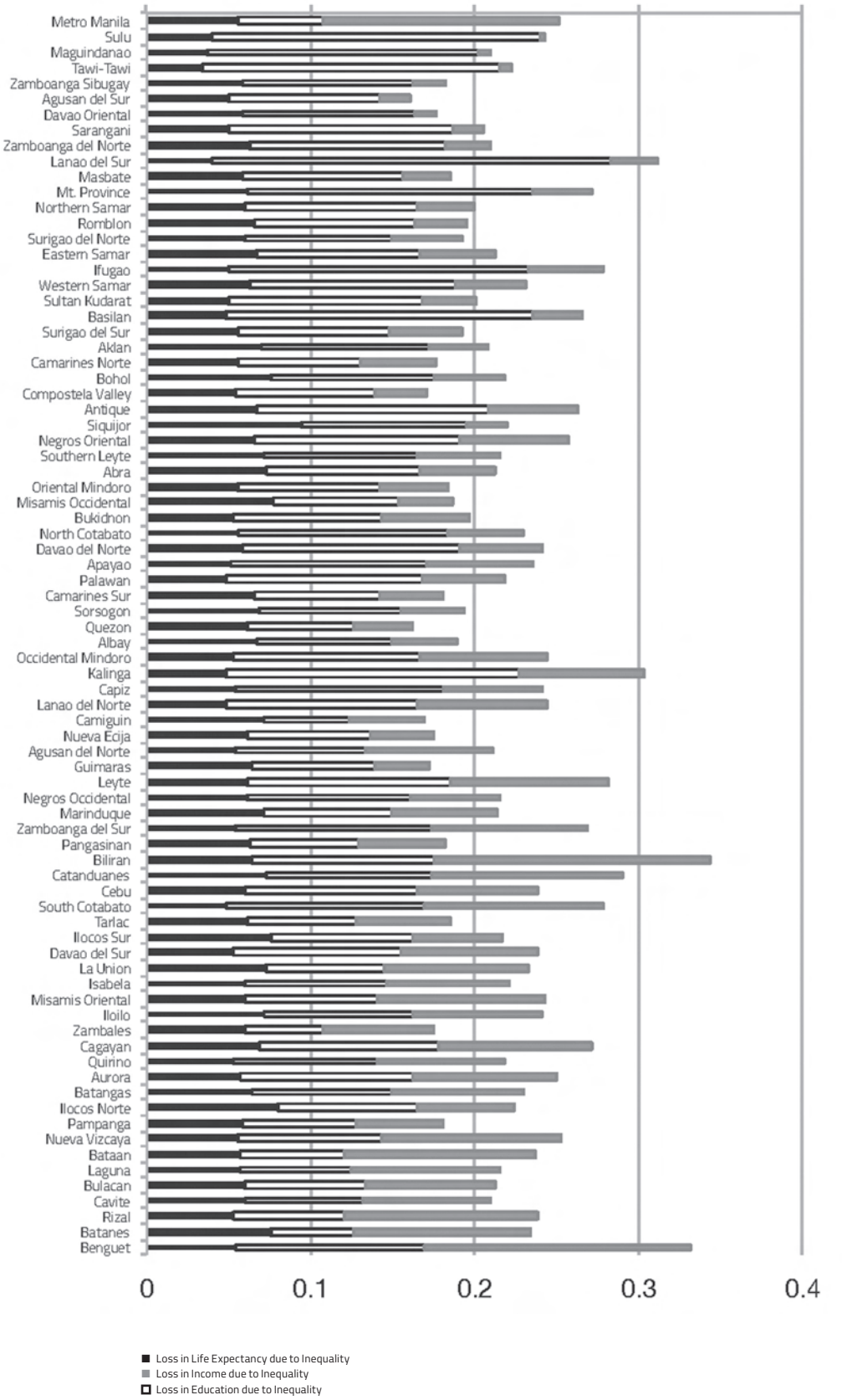
Alba [2010] also raises concerns over the outcomes of basic education with the inability of the public school system to close the education deficits. Children lag behind the expected years of schooling for their age by 0.5 to 1.5 years. These educational deficits increase as children reach the working age of 15 years, a shift believed to be related to the pressure for children to contribute to household income. The HDI and related measures need to be adjusted at some point to accommodate the interest in capturing qualitative aspects of educational achievement, particularly since more than 50 provinces have educational indices that are very high (0.8 and above).

On many types of educational indicators such as school participation rates, years of schooling, literacy and functional literacy rates, and scores in achievement tests, girls outperform boys [Albert et al. 2012]. This is consistent with the GDI data discussed above with females typically having higher expected mean years of schooling than boys.

As far as the labor market is concerned, however, as well as the ability to earn incomes, higher educational investments in females or by females do not translate into any other advantage over boys in activities subsequent to schooling. Female labor force participation rates are usually lower than for males.

The GDI data above show that males have higher shares of earned income. Others have pointed to the presence of gender wage differentials and the concentration of females in low-earning occupations or in low-value added industries [Alba 2010], indicating that educational achievements are not enough to remove the labor market advantages of males over females. While many may praise the achievements of females in education, questions remain about what other human development outcomes are promoted by these educational achievements that fail to be reflected in the labor market or in political representation.

Figure 2.21 Losses in life expectancy, education, and income due to inequalities by province (2009)



Statistical systems in a democratic society

Besides monitoring progress in the provinces, improvements to existing measures and the addition of new measures contribute to the ongoing democratization process of the Philippines. Democratization also entails political expression. The opportunities and achievements for human development also need to be democratized or more evenly distributed across provinces and within provinces.

Human development and its associated measures of progress can become the substantive content of the democratic institutions that are continually being strengthened in the Philippines. The decentralization of finances, devolution of government functions, and strengthening of local governance can be supported by these statistical measures because these measures essentially describe the quality of the lives that people lead in each of the provinces.

The information provided by the measures of human development is evidence of the effectiveness of development policies, or the lack of it. It can help decisionmakers, policymakers, and citizens identify the areas where resources need to be directed. Tracking progress over time enhances monitoring and evaluation processes. Most importantly, public officials are made more accountable. The measures are themselves transparent and open to criticism and yet flexible enough to accommodate improvement and adaptation to local circumstances and specific needs.

Enhancing the information system of a democratic society requires a reliable and accessible statistical system. The Philippine statistical system must match the political decentralization and devolution processes of the nation if it wishes to fulfill this role in Philippine society.

Inequality and movements for justice

Deprivation and injustice "lie at the heart of armed conflict" in the Philippines, the *2005 Philippine Human Development Report* wrote. This statement refers in particular to the "communist and Moro insurgencies" that have succeeded in mobilizing people toward an armed struggle to establish an alternative state system.

Kirkvliet [2010], in agreement, wrote that insurgencies in the Philippines are more about "injustice, deprivation, exploitation, and repression than they are about communism and Moro nationalism" and argues that these should be called "insurgencies for justice." This is the same reason there may be a broader base of support for the peace process.

Mobilization in pursuit of justice is broader than the insurgencies just discussed. These include social movements supported by labor unions, nongovernmental organizations, church-based groups, and other civil society organizations engaged in struggles involving mass demonstrations and rallies in protest against various aspects of inequality and injustice. Many of these organizations have also pursued a legislative agenda. These processes have been a slow (sometimes very slow) whittling away of the political and economic privileges of the elite that in time is expected to serve justice.

In identifying instances of injustice, there is a need to evaluate specific features and characteristics beyond a recognition of differences and into an admission that an inequality exists. Confronted by that inequality, a further assessment must be made whether that inequality is, in fact, an injustice that therefore warrants social attention and public action.

In the discussions of HDI, the GDI, and the IHDI, the poorest provinces of the Philippines are also among the most unequal. The linkages between inequality and injustice in the context of decentralization and devolution of governance structures, however, still need to be analyzed more deeply.

Successful political mobilization, both armed and unarmed, has relied upon the people's immediate experiences of injustice to persuade them to actively engage with institutions that perpetrate injustices in hopes of eventually transforming the very same institutions. It is the same pursuit of justice that ultimately undergirds the democratic ideals of the Filipino nation and which motivates its people's thirst for human development. ■

Notes

1 Paz [2008].

2 For example, Article II, Section 23, Article XIII, Sections 15 and 16, 1987 Constitution of the Republic of the Philippines.

3 Zambales' life expectancy at birth was 57 years in 1990 and 65.4 years in 1995.

4 Life expectancy at birth for Surigao del Norte was 63.8 years in 1995.

5 Ranis et al. [2000:204] find that an important mechanism through which the ratio of social expenditures to total public expenditures affects human development (represented in the econometric exercise by improvements in life expectancy) is the female primary enrollment rate, which in turn the authors attribute to "the impact on household behavior of female income, knowledge, and control within the household."

6 There was a change in sampling methodology for the FIES in 2003. Splitting into two periods allows for comparison of data within the same sampling frame. The challenge lies in distinguishing between the effects of the change in sampling frame on the movement between quadrants. This issue is also relevant to a comparison between the 1997 figures that belong to the older sampling frame and the 2009 figures that belong to the new sampling frame.

7 These are Abra, Camiguin, Catanduanes, Davao del Norte, Eastern Samar, Ifugao, Laguna, Lanao del Sur, Negros Occidental, Nueva Vizcaya, and Tarlac.

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Technical notes

THE Human Development Index (HDI) is a summary measure of human development. It measures the average achievement in a country in three basic dimensions of human development: *longevity* or a long and healthy life, access to *knowledge*, and a decent *standard of living*. These dimensions are measured by a set of indicators that are aggregated into indices.

Since its inception in 1990, the HDI has gone through a number of refinements—either a change in the indicator used to measure each dimension or a new functional form on how the index is computed. These changes are usually driven by measurement improvements, conceptual considerations, and relevance.

In 2010, a new set of modifications to the HDIwere introduced in the global *Human Development Report* (*HDR*) [**Table 1**]. First, three of the four indicators were replaced to better reflect outcomes. Access to knowledge is now measured by mean years of schooling and expected years of schooling. Unlike the previous knowledge indicators (i.e., literacy rate and gross enrollment rate), these new indicators are more frequently available, have broader coverage and better discriminatory power.

Mean years of schooling, the years in school of people ages 25 years and above, is a stock variable measuring the education of adults. Expected years of schooling, or the average number of years children (ages 6-24) are expected to attain in adulthood if enrollment rates stay at their current levels, measures the education of children.The latter recasts enrollment information into years of schooling, so that the education index is now framed as a measure of years of schooling, an outcome variable, which gives equal weight to current and future generations.

Standard of living is now measured by gross national income (GNI) per capita, replacinggross domestic product (GDP) per capita. The GNI includes net transfers and better capturesan individual's command over resources.

A second modification is the use of the geometric mean instead of the arithmetic mean in aggregating the indicators. This new functional form addresses the flaw of the previous linear aggregation formula. The arithmetic mean treats dimensions as perfect substitutes. That is, the rate at which one dimension can offset another is constant, so that regardless of the level of achievement, the level of priority to be given to a dimension does not change. In contrast, the geometric mean assumes complementarity across dimensions. The higher the level of achievement in one, the less it can compensate for the others.

Table 1 Methodological refinements

Aspect	Global HDI		Local HDI	
	Old	New	Old	New
Indicators				
Longevity (L)	Life expectancy at birth	Life expectancy at birth	Life expectancy at birth	Life expectancy at birth
Knowledge (K)	▪ Literacy rate ▪ Gross enrollment rate	▪ Mean years of schooling ▪ Expected years of schooling	▪ High school graduate ratio ▪ Basic education enrollment rate	▪ Mean years of schooling ▪ Expected years of schooling
Standard of living (Y)	Real per capita GDP (PPP US$)	Real per capita GNI (PPP US$)	Real per capita income (1997 NCR pesos)	Real per capita income (2009 NCR pesos)
Aggregation	Arithmetic mean of the dimension indices $1/3(I_L+I_K+I_Y)$	Geometric mean of the dimension indices $(I_L \times I_K \times I_Y)^{1/3}$	Arithmetic mean of the dimension indices $1/3(I_L+I_K+I_Y)$	Geometric mean of the dimension indices $(I_L \times I_K \times I_Y)^{1/3}$

Changes in the computation of the global HDI were adoptedto the Philippines for this Report. Mean years of schooling and expected years of schooling were used to measure access to knowledge. The dimension indices were aggregated using the geometric mean. There was no need to adjust the local measure of standard of living since real per capita purchasing power in PPP NCR pesos (i.e., nominal per capita income deflated by regional consumer price index and cost of living index), the measure used since 1994, already reflected net transfers.

The global *Human Development Report* (*HDR*) also introduced new composite indices complimentary to the HDI—Inequality-adjusted HDI (IHDI), Gender Inequality Index (GII), and the Multidimensional Poverty Index (MPI).

The IHDI takes into account the inequality in distribution of each of the HDI dimension. The GII reflects women's disadvantage in three dimensions—reproductive health, empowerment, and the labor market. The MPI is an aggregate measure of an individual's deprivation of various dimensions of health, education, and standard of living.

Only the IHDI was estimated in this Report. Lack of data support hindered the adaptation of the GII. Instead, the Gender Development Index (GDI) series was computed. An initial computation of theMPI is provided in Balisacan [2011].

Index computations

Calculating the HDI

Data sources

Indicators for each of the dimension are sourced from available secondary data collected by government agencies [**Table 2**]. These data should allow disaggregation at the provincial level.

Table 2 HDI data sources

Dimension	Indicator	Source
Longevity	Life expectancy at birth	Flieger and Cabigon [1999] Cabigon [2009]
Knowledge	Mean years of schooling Expected years of schooling	Annual Poverty Indicators Survey, NSO
Standard of living	Per capita income ▪ for local PPP adjustment ▪ for international PPP adjustment	Family Income and Expenditures Survey, NSO Regional Consumer Price Index, NSO 2009 Provincial Poverty Line, NSCB PPP conversion factor: GDP (pesos per international $) 2005=100, World Bank (World Development Indicators)

Creating dimension indices

Before the HDI itself is calculated, a performance index needs to be created first for each of the three dimensions. To calculate these dimension indices, minimum and maximum values (goalposts) are chosen for each underlying indicator. The index for each dimension is then expressed as a value between 0 and 1 by applying the general formula:

$$\text{Dimension index} = \frac{\text{actual value} - \text{minimum value}}{\text{maximum value} - \text{minimum value}}$$

The goalposts used are obtained from the global *2010 HDR*, except for three: the maximum for the combined education index and maximum and minimum for the income index for interprovince comparison. For the former index, the actual maximum value observed from 1997 to 2009 is used. For the latter index, the minimum is set at 90 percent of the actual minimum value observed while the maximum is set at 110 percent of the actual maximum value observed. This is to avoid an undefined estimate when the general formula is applied. The goalposts used in this report are shown in **Table 3**.

Table 3 Goalposts for calculating the HDI

Indicator	Maximum value	Minimum value
Life expectancy at birth, years	83.2 (Japan, 2010)	20 (global minimum)
Mean years of schooling	11.5 (Batanes, 2008)	0 (global minimum)
Expected years of schooling	14.6 (Benguet, 2002)	0 (global minimum)
Combined education index	0.925 (Batanes, 2009)	0 (global minimum)
Real per capita income, 2009 NCR Pesos (for interprovince comparison)	105,422* (based on Batanes, 1997)	17,949* (based on Tawi-Tawi, 2006)
Real per capita income, PPP US$ (for cross-country comparison)	108,211 (United Arab Emirates, 1980)	163 (Zimbabwe, 2008)

*Minimum is 90 percent of actual minimum; maximum is 110 percent of actual maximum

Indices for both subcomponents of education are first calculated before computing their geometric mean. The combined education index, is then computed by applying the general formula with minimum equal to 0 and maximum equal to the highest geometric mean observed among provinces (i.e., Batanes in 2009).

The data for Benguet are used as illustration [**Table 4**].

Table 4 HDI Dimension index computation: Benguet

Dimension index	Estimate (2009)
Life expectancy (I_L)	(74.8 – 20) / (83.2 – 20) = 0.867
Education	
▪ Mean years of schooling	(10.0 – 0) / (11.5 – 0) = 0.869
▪ Expected years of schooling	(14.0 – 0) / (14.6 – 0) = 0.962
▪ Combined education (I_K)	$[(0.869 \times 0.962)^{1/2} - 0] / (0.925 - 0) = 0.988$
Income for inter-province comparison ($I_{Y,\ 2009\ NCR\ pesos}$)	(80,431 – 17,949) / (105,422 – 17,949) = 0.714
Income for cross-country comparison ($I_{Y,\ PPP\$}$)	$[ln(2,710) - ln(163)] / [ln(108,211) - ln(163)] = 0.433$

Aggregating the dimension indices

Once the dimension indices have been calculated, the HDI is determined by computing the geometric mean of the three dimension indices:

$$\text{HDI inter-province comparison} = (I_L \times I_K \times I_{Y,\ 2009\ NCR\ pesos})^{1/3}$$
$$= (0.867 \times 0.988 \times 0.714)^{1/3}$$
$$= 0.849$$
$$\text{HDI cross-country comparison} = (I_L \times I_K \times I_{Y,\ PPP\$})^{1/3}$$
$$= (0.867 \times 0.988 \times 0.433)^{1/3}$$
$$= 0.718$$

Calculating the GDI

While the HDI measures average achievement, the Gender-related Development Index (GDI) is the adjustment of the average achievement to reflect the *inequalities* between men and women.

Data sources

Estimates for male and female are extracted from the same data sources for computing the HDI except for per capita income because the data source does not support disaggregation by gender. To obtain the per capita income estimates for male and female, population shares and income shares are computed using the Labor Force Survey (LFS) and the Annual Poverty Indicators Survey (APIS), respectively. The average provincial per capita income estimate is then prorated with the respective shares for male and female to derive the corresponding income estimates.

Due to lack of data support, 10 provinces were excluded in the computation of the GDI. These are Apayao, Aurora, Batanes, Camiguin, Capiz, Guimaras, Nueva Vizcaya, Siquijor, Surigaodel Sur, and Tawi-Tawi.

To compare GDI rank and HDI rank, the HDI ranks of the remaining provinces were adjusted to exclude these 10 provinces.

Creating gender specific dimension indices

Similar to the HDI computation, an intermediate step is to compute separate dimension indices for male and female using the same general formula but using the following minimum and maximum values [Table 5].

Table 5 Goalposts for calculating the GDI

Indicator	Maximum value	Minimum value
Male life expectancy at birth, years	82.5	19.3
Female life expectancy at birth, years	87.5	24.3
Male/female mean years of schooling	11.5 (Batanes, 2008)	0
Male expected years of schooling	14.6 (Benguet, 2002)	0
Female expected years of schooling	16.2 (Mt. Province, 1999)	0
Male combined education index	0.902 (Metro Manila, 2002)	0
Female combined education index	0.889 (Benguet, 2008)	0
Real per capita income, 2009 NCR Pesos (for inter-province comparison)	119,003 (Male in Metro Manila, 1997)	10,510* (Female in Basilan, 2006)
Real per capita income, PPP US$ (for cross-country comparison)	108,211 (United Arab Emirates, 1980)	163 (Zimbabwe, 2008)

**90% of actual value*

The maximum goalposts for the life expectancy index of both male and female were taken from the *2009 Global HDR*, while the minimum was set to maintain the difference observed between the HDI goalposts. The maximum and minimum values of all the other indices are obtained from the actual data from 1997-2009 except for the mean years of schooling for male and female, which are pegged at the maximum and minimum of the mean years of schooling for the HDI. Again, Benguet is used to illustrate the computation.

Table 6 GDI Dimension index computation for male and female: Benguet

Dimension index I	Male I_M (2009)	Female I_F (2009)
Life expectancy	(73.9 – 19.3) / (82.5 – 19.3) = 0.863	(77.6 – 24.3) / (87.5 – 24.3) = 0.843
Mean years of schooling	(9.7 – 0) / (11.5 – 0) = 0.843	(10.3 – 0) / (11.5 – 0) = 0.896
Expected years of schooling	(13.8 – 0) / (14.6 – 0) = 0.946	(14.3 – 0) / (16.2 – 0) = 0.883
Combined education	$[(0.843 \times 0.945)^{1/2} - 0] / (0.902 - 0) = 0.990$	$[(0.896 \times 0.883)^{1/2} - 0] / (0.889 - 0) = 1.000$
Income for interprovince comparison	(98,235 – 10,510) / (119,003 – 10,510) = 0.809	(62,620 – 10,510) / (119,003 – 10510) = 0.480
Income for cross-country comparison	[*ln* (3,310) – *ln* (163)] / [*ln* (108,211) – *ln* (163)] = 0.463	[*ln* (2,110) – *ln* (163)] / [*ln* (108,211) – *ln* (163)] = 0.394

Aggregating across gender groups

The male and female indices are combined in a way that penalizes differences in achievement between men and women. The formula for computing an equally distributed index EDI of dimension index I uses the harmonic mean of the gender specific indices.

$$EDI = [(Popn_F \times I_F^{-1}) + (Popn_M \times I_M^{-1})]^{-1}$$

Dimension	EDI
Life expectancy (EDI_L)	= $[0.500 \times (0.863)^{-1} + 0.500 \times (0.834)^{-1}]^{-1}$ = 0.853
Education (EDI_K)	= $[0.500 \times (0.990)^{-1} + 0.500 \times (1.000)^{-1}]^{-1}$ = 0.995
Income for interprovince comparison ($EDI_{Y,2009\ NCR\ pesos}$)	= $[0.500 \times (0.809)^{-1} + 0.500 \times (0.480)^{-1}]^{-1}$ = 0.603
Income for cross-country comparison ($EDI_{Y,PPP}$)	= $[0.500 \times (0.463)^{-1} + 0.500 \times (0.394)^{-1}]^{-1}$ = 0.426

Aggregating equally distributed dimension indices

The GDI is calculated by combining the three equally distributed indices by the geometric mean.

$$\text{GDI inter-province comparison} = (EDI_L \times EDI_K \times EDI_{Y,\ 2009\ NCR\ pesos})^{1/3}$$
$$= (0.853 \times 0.995 \times 0.603)^{1/3}$$
$$= 0.800$$
$$\text{HDI cross-country comparison} = (EDI_L \times EDI_K \times EDI_{Y,\ PPP\$})^{1/3}$$
$$= (0.853 \times 0.995 \times 0.426)^{1/3}$$
$$= 0.712$$

Calculating the IHDI

The Inequality-adjusted Human Development Index (IHDI) accounts for variations in the distribution of each dimension across the population. Each of the HDI dimension is discounted by the level of inequality measured by the Atkinson index.

The level of inequality is inversely proportional to the IHDI—as inequality worsens IHDI decreases. If distribution is uniform across the population, then the IHDI is the HDI. In this sense, the IHDI is the actual level of human development while the HDI is the "potential" level of human development that can be achieved. The difference between the two indices is the "loss" in potential human development due to inequality.

Data used in calculating the IHDI are the same as those used in computing the HDI.

Measuring inequality in underlying distributions

The Atkinson index for each dimension is computed for each dimension indicator (life expectancy, years of schooling, and per capita income) with the following formula:

$$A_X = 1 - \frac{\sqrt[n]{X_1 \ldots X_n}}{\bar{X}}$$

where $\{X_1, \ldots, X_n\}$ is the underlying distribution in the dimension of interest. For education and income, A_x is computed directly from the survey data using the survey weights. To avoid zero values that could lead to undefined estimates, transformation is applied to the raw data. A year is added to the mean years of schooling while extreme values of the 0.5 percentile on both ends of the income distribution are truncated. Inequality index for life expectancy is derived using information from the five-year interval life tables.

Adjusting dimension indices

The inequality-adjusted dimension indices, II_X, are derived by multiplying the HDI dimension indices by $(1 - A_X)$, where A_X is the corresponding Atkinson index.

$$II_X = (1 - A_X) \times I_X$$

The inequality-adjusted dimension indices for Benguet are as follows:

Inequality-adjusted dimension index	Estimate (2009)
Life expectancy (II_L)	(1 – 0.062) × 0.867 = 0.813
Education (II_K)	(1 – 0.117) × 0.867 = 0.873
Income for interprovince comparison ($II_{Y,\ 2009\ NCR\ pesos}$)	(1 – 0.228) × 0.867 = 0.610

Aggregating inequality-adjusted dimension indices

The geometric mean of the three inequality-adjusted dimension indices is the IHDI. This is calculated as:

$$IHDI = (II_L \times II_K \times II_{Y,\ 2009\ NCR\ pesos})^{1/3}$$
$$= (0.813 \times 0.873 \times 0.619)^{1/3}$$
$$= 0.671$$

Data trimming and transformation

Data trimming

The reliability of the indicators used in the estimation has always been a concern. In particular, the estimates of per capita income at the provincial level could be misleadingly higher or lower than the true average as implied by the relatively high coefficient of variation. This problem was addressed by the *trimmed means* technique in which extreme values are excluded from the sample where the estimates are drawn.

Unlike in the previous volumes, this *Report* adopted a uniform 1 percent trimming by province—that is, 0.5 percent on both ends of the sample by province is excluded. Descriptive statistics of the trimmed sample for each of the years included in the estimation are shown in **Statistical Annex I**.

Data transformation of per capita income

Per capita income in the computation of HDI represents command over resources or purchasing power. To ensure comparability, nominal per capita income has to be transformed to a value that is consistent over time and across space; in this *Report*, over the periods considered (from 1997 to 2009) and across provinces.

To address consistency over time, the nominal values are adjusted using the regional consumer price index. These real per capita income estimates are further adjusted by a cost of living index (which is simply the ratio of the province's poverty line over a numeraire province's poverty line) to make it comparable across provinces. The comparison province used is the National Capital Region (NCR). The resulting estimate is the real per capita purchasing power. ■

Statistical Annexes

Statistical Annex A1: Human Development Index 2009

HDI Rank 2009	Province	Life expectancy at birth (years) 2009	Mean years of schooling 2008	Expected years of schooling 2008	Per capita income (PPP NCR 2009 pesos) 2009	Per capita income (PPP US$) 2009
	Metro Manila	72.8	10.7	12.9	73,738	3,110
51	Abra	69.0	8.7	12.3	33,236	1,142
31	Agusan del Norte	64.2	8.9	11.5	41,363	1,359
75	Agusan del Sur	65.8	7.5	11.2	24,929	979
63	Aklan	66.9	8.7	13.1	30,867	1,112
43	Albay	73.6	8.5	12.5	32,795	1,305
47	Antique	64.9	7.3	12.8	36,229	1,227
40	Apayao	63.5	7.4	12.7	38,603	1,285
14	Aurora	70.4	8.9	12.7	48,876	1,745
62	Basilan	62.7	7.3	12.2	33,891	1,107
6	Bataan	70.2	9.4	12.4	59,593	2,449
2	Batanes	64.9	11.5	12.5	78,325	2,538
11	Batangas	73.5	8.8	12.0	48,400	1,865
1	Benguet	74.8	10.0	14.0	80,431	2,710
13	Biliran	66.2	8.1	12.2	54,031	1,729
53	Bohol	73.2	8.0	12.5	31,882	1,227
46	Bukidnon	72.2	7.7	10.7	34,897	1,211
5	Bulacan	74.6	9.3	12.1	56,993	2,246
12	Cagayan	74.3	8.0	12.2	49,069	1,646
57	Camarines Norte	65.5	8.1	10.9	33,903	1,211
49	Camarines Sur	74.6	8.2	11.7	32,702	1,184
39	Camiguin	66.0	8.9	13.6	35,388	1,368
36	Capiz	65.2	7.6	12.2	39,745	1,465
20	Catanduanes	67.8	8.5	12.1	48,545	1,755
4	Cavite	75.8	9.8	12.0	57,203	2,457
26	Cebu	73.4	8.5	11.9	42,356	1,685
61	Compostela Valley*	68.3	7.4	11.6	32,429	1,216
41	Davao del Norte	68.3	8.1	11.9	36,024	1,352
22	Davao del Sur	70.2	8.8	12.0	45,988	1,651
74	Davao Oriental	71.3	6.5	10.5	24,996	871
64	Eastern Samar	66.5	8.0	12.2	31,151	1,087
37	Guimaras	69.2	8.1	11.6	36,588	1,268
58	Ifugao	61.7	6.4	12.1	36,109	1,306
9	Ilocos Norte	74.6	9.2	12.2	48,142	1,743
25	Ilocos Sur	68.9	9.2	12.0	43,519	1,656
16	Iloilo	72.4	9.2	12.8	45,505	1,607
21	Isabela	73.8	8.2	11.7	45,668	1,463
32	Kalinga	62.6	7.1	12.9	43,656	1,374
18	La Union	76.4	9.3	12.4	43,374	1,671
7	Laguna	70.1	9.5	12.1	59,390	2,188
33	Lanao del Norte	66.2	8.8	12.7	39,063	1,326

Life Expectancy Index	Education Index	Income (NCR 2009 pesos) Index	Income (PPP) Index	HDI 2009	HDI (International) 2009	PCI rank minus HDI rank 2009
0.835	0.978	0.638	0.454	0.805	0.718	-
0.775	0.860	0.175	0.300	0.488	0.584	2
0.700	0.843	0.268	0.326	0.541	0.577	-1
0.725	0.765	0.080	0.276	0.354	0.535	0
0.742	0.887	0.148	0.295	0.460	0.579	1
0.848	0.858	0.170	0.320	0.498	0.615	12
0.711	0.808	0.209	0.311	0.493	0.563	-6
0.688	0.810	0.236	0.318	0.509	0.561	-4
0.798	0.885	0.354	0.365	0.630	0.636	-2
0.676	0.790	0.182	0.295	0.460	0.540	-10
0.795	0.900	0.476	0.417	0.698	0.668	-2
0.711	1.000	0.690	0.422	0.789	0.670	0
0.847	0.857	0.348	0.375	0.632	0.648	4
0.867	0.988	0.714	0.433	0.849	0.718	0
0.731	0.831	0.412	0.363	0.630	0.604	-4
0.841	0.834	0.159	0.311	0.482	0.602	8
0.826	0.755	0.194	0.309	0.494	0.577	2
0.864	0.884	0.446	0.404	0.699	0.676	3
0.860	0.826	0.356	0.356	0.632	0.632	-1
0.720	0.786	0.182	0.309	0.469	0.559	-6
0.864	0.814	0.169	0.305	0.491	0.599	7
0.728	0.917	0.199	0.327	0.510	0.602	7
0.715	0.800	0.249	0.338	0.522	0.578	-3
0.756	0.841	0.350	0.366	0.606	0.615	-7
0.883	0.901	0.449	0.417	0.709	0.692	3
0.845	0.836	0.279	0.359	0.582	0.633	3
0.764	0.773	0.166	0.309	0.461	0.567	-3
0.764	0.820	0.207	0.326	0.506	0.589	2
0.795	0.856	0.321	0.356	0.602	0.624	-2
0.812	0.689	0.081	0.258	0.356	0.525	0
0.736	0.823	0.151	0.292	0.450	0.561	-1
0.778	0.809	0.213	0.316	0.512	0.584	3
0.661	0.731	0.208	0.320	0.465	0.537	-16
0.864	0.882	0.345	0.365	0.641	0.652	7
0.773	0.874	0.292	0.357	0.582	0.622	1
0.829	0.906	0.315	0.352	0.619	0.642	6
0.851	0.815	0.317	0.338	0.603	0.616	0
0.674	0.796	0.294	0.328	0.540	0.560	-7
0.893	0.897	0.291	0.358	0.615	0.660	9
0.793	0.895	0.474	0.400	0.695	0.657	-2
0.731	0.878	0.241	0.323	0.537	0.592	2

Statistical Annex A1: Human Development Index 2009

HDI Rank 2009	Province	Life expectancy at birth (years) 2009	Mean years of schooling 2008	Expected years of schooling 2008	Per capita income (PPP NCR 2009 pesos) 2009	Per capita income (PPP US$) 2009
70	Lanao del Sur	59.7	6.9	12.7	30,744	952
28	Leyte	68.7	7.6	11.6	44,192	1,459
78	Maguindanao	58.5	6.3	10.1	23,742	853
30	Marinduque	68.5	8.2	12.8	39,365	1,334
71	Masbate	67.1	7.1	11.5	28,393	969
55	Misamis Occidental	75.4	8.6	12.4	30,570	1,015
15	Misamis Oriental	71.5	9.5	12.7	46,726	1,799
67	Mt. Province	63.7	7.5	13.2	30,245	1,103
34	Negros Occidental	71.4	8.1	11.6	38,599	1,251
42	Negros Oriental	68.2	7.0	11.4	37,689	1,247
44	North Cotabato	70.5	7.4	11.3	35,759	1,179
68	Northern Samar	67.0	7.3	11.8	30,171	1,072
38	Nueva Ecija	70.0	8.7	11.7	35,534	1,486
8	Nueva Vizcaya	67.4	9.1	12.3	59,270	1,866
35	Occidental Mindoro	65.3	7.5	11.4	41,257	1,421
54	Oriental Mindoro	66.8	7.7	11.6	34,295	1,204
45	Palawan	63.2	7.8	11.7	37,698	1,127
10	Pampanga	73.1	9.0	12.1	48,406	1,930
29	Pangasinan	68.6	9.3	11.9	40,208	1,518
52	Quezon	68.4	8.0	11.0	34,253	1,215
17	Quirino	68.4	8.3	11.4	50,859	1,644
3	Rizal	72.8	9.9	12.2	63,097	2,515
69	Romblon	65.9	7.8	12.0	29,603	1,064
73	Sarangani	71.3	5.8	10.6	26,376	842
56	Siquijor	67.4	8.4	13.0	31,980	1,133
48	Sorsogon	73.7	7.8	12.4	32,942	1,189
19	South Cotabato	69.1	8.8	12.1	47,972	1,677
50	Southern Leyte	67.6	7.8	11.6	35,025	1,246
65	Sultan Kudarat	67.1	7.7	11.5	31,488	1,050
79	Sulu	56.8	4.6	11.3	22,636	851
66	Surigao del Norte	64.4	8.4	12.1	30,740	1,130
59	Surigao del Sur	65.5	8.2	12.5	32,231	1,076
27	Tarlac	69.4	9.0	11.3	43,084	1,676
77	Tawi-Tawi	53.6	6.2	11.9	24,771	835
60	Western Samar	68.1	7.4	11.4	32,671	1,079
23	Zambales	68.3	9.5	12.6	45,206	1,800
72	Zamboanga del Norte	72.9	6.7	11.0	26,176	852
24	Zamboanga del Sur	69.3	8.1	11.8	46,119	1,440
76	Zamboanga Sibugay*	69.3	7.3	11.8	24,339	1,027
	Philippines	72.0	8.7	12.0	46,135	1,744

*Life expectancy of Compostela Valley and Zamboanga Sibugay is from Davao del Norte and Zamboanga del Sur, respectively.

Life Expectancy Index	Education Index	Income (NCR 2009 pesos) Index	Income (PPP) Index	HDI 2009	HDI (International) 2009	PCI rank minus HDI rank 2009
0.628	0.782	0.146	0.272	0.416	0.511	-5
0.771	0.783	0.300	0.337	0.566	0.588	-4
0.610	0.667	0.066	0.255	0.300	0.470	0
0.768	0.855	0.245	0.324	0.544	0.597	4
0.745	0.754	0.119	0.274	0.406	0.536	0
0.877	0.860	0.144	0.281	0.477	0.597	12
0.815	0.914	0.329	0.370	0.626	0.650	3
0.692	0.828	0.141	0.294	0.432	0.552	1
0.814	0.805	0.236	0.314	0.537	0.590	3
0.763	0.742	0.226	0.313	0.504	0.562	-3
0.798	0.760	0.204	0.305	0.498	0.570	0
0.743	0.775	0.140	0.290	0.432	0.551	1
0.791	0.840	0.201	0.340	0.511	0.609	7
0.750	0.881	0.472	0.375	0.678	0.628	-2
0.717	0.774	0.266	0.333	0.529	0.570	-4
0.740	0.787	0.187	0.308	0.478	0.564	-5
0.684	0.797	0.226	0.298	0.498	0.546	-7
0.840	0.871	0.348	0.380	0.634	0.653	4
0.769	0.877	0.254	0.343	0.556	0.614	3
0.766	0.783	0.186	0.309	0.482	0.570	-2
0.765	0.810	0.376	0.356	0.616	0.604	-7
0.836	0.917	0.516	0.421	0.734	0.686	0
0.727	0.808	0.133	0.289	0.428	0.554	1
0.812	0.655	0.096	0.253	0.371	0.512	-1
0.750	0.868	0.160	0.298	0.471	0.579	4
0.849	0.820	0.171	0.306	0.492	0.597	6
0.777	0.858	0.343	0.359	0.612	0.621	-2
0.754	0.794	0.195	0.313	0.489	0.572	-3
0.746	0.781	0.155	0.287	0.448	0.551	-3
0.582	0.601	0.054	0.254	0.266	0.446	0
0.702	0.842	0.146	0.298	0.442	0.561	0
0.719	0.844	0.163	0.290	0.463	0.561	0
0.781	0.840	0.287	0.359	0.573	0.617	1
0.532	0.716	0.078	0.251	0.310	0.457	-1
0.761	0.767	0.168	0.291	0.461	0.554	-3
0.764	0.909	0.312	0.370	0.600	0.635	0
0.837	0.717	0.094	0.254	0.384	0.535	1
0.780	0.815	0.322	0.335	0.590	0.597	-5
0.780	0.775	0.073	0.283	0.353	0.555	1
0.823	0.853	0.322	0.365	0.609	0.635	

Statistical Annex A2: Human Development Index 2006

HDI Rank 2006	HDI Rank 2009	Province	Life expectancy at birth (years) 2006	Mean years of schooling 2004	Expected years of schooling 2004	Per capita income (PPP NCR 2009 pesos) 2006
		Metro Manila	71.8	10.4	12.9	70,355
46	51	Abra	67.5	8.8	12.7	31,113
36	31	Agusan del Norte	63.6	8.8	12.1	37,063
71	75	Agusan del Sur	64.4	7.3	11.8	28,042
49	63	Aklan	65.8	8.4	12.7	31,784
30	43	Albay	72.0	8.1	12.3	37,016
65	47	Antique	64.1	7.3	12.4	29,950
58	40	Apayao	62.8	6.9	13.3	31,941
24	14	Aurora	68.7	8.3	10.4	43,855
63	62	Basilan	62.0	5.7	11.5	33,407
9	6	Bataan	69.4	9.2	12.1	54,618
2	2	Batanes	64.4	10.3	13.0	76,679
13	11	Batangas	72.6	8.6	12.0	45,979
1	1	Benguet	72.9	9.5	14.5	78,527
11	13	Biliran	65.3	8.1	11.7	53,538
60	53	Bohol	71.8	7.4	12.6	29,234
42	46	Bukidnon	70.3	7.4	11.1	34,742
6	5	Bulacan	73.4	9.0	11.9	55,807
14	12	Cagayan	72.1	7.9	12.4	44,406
57	57	Camarines Norte	64.6	8.0	10.8	32,023
61	49	Camarines Sur	73.0	8.2	11.8	28,455
28	39	Camiguin	65.1	8.1	14.3	41,046
34	36	Capiz	64.7	7.1	12.4	38,513
47	20	Catanduanes	66.7	7.8	11.8	32,628
4	4	Cavite	74.1	9.6	12.3	58,850
26	26	Cebu	72.6	8.1	12.1	39,964
70	61	Compostela Valley*	67.1	7.2	11.9	27,845
44	41	Davao del Norte	67.1	8.0	12.5	33,140
15	22	Davao del Sur	69.4	8.6	11.8	45,337
73	74	Davao Oriental	69.7	6.3	10.7	27,161
52	64	Eastern Samar	65.2	7.3	11.8	33,523
50	37	Guimaras	68.2	7.7	11.9	32,182
56	58	Ifugao	61.2	7.0	11.9	34,474
10	9	Ilocos Norte	73.2	8.8	12.1	46,821
27	25	Ilocos Sur	68.1	8.3	12.4	41,188
12	16	Iloilo	71.3	8.7	13.3	45,438
18	21	Isabela	72.0	7.9	11.9	44,080
51	32	Kalinga	62.0	6.8	12.2	35,128
16	18	La Union	74.6	8.9	12.8	40,913
5	7	Laguna	69.3	9.2	12.3	61,600
19	33	Lanao del Norte	65.2	8.1	12.4	46,793
68	70	Lanao del Sur	58.7	6.5	12.4	30,927
32	28	Leyte	67.8	7.5	12.5	38,349

Per capita income (PPP US$) 2006	Life Expectancy Index	Education Index	Income (NCR 2009 pesos) Index	Income (PPP) Index	HDI 2006	HDI (International) 2006	PCI rank minus HDI rank 2006
2,853	0.820	0.968	0.599	0.440	0.780	0.704	-
997	0.752	0.877	0.150	0.279	0.463	0.569	14
1,063	0.690	0.858	0.219	0.289	0.506	0.555	1
961	0.703	0.775	0.115	0.273	0.398	0.530	-1
1,025	0.725	0.863	0.158	0.283	0.462	0.561	10
1,334	0.822	0.833	0.218	0.324	0.531	0.605	8
909	0.698	0.796	0.137	0.264	0.424	0.528	-2
991	0.678	0.798	0.160	0.278	0.442	0.532	0
1,417	0.771	0.777	0.296	0.333	0.562	0.584	-2
945	0.664	0.673	0.177	0.270	0.429	0.495	-16
2,032	0.781	0.877	0.419	0.388	0.660	0.643	0
2,241	0.703	0.964	0.671	0.403	0.769	0.649	0
1,661	0.831	0.846	0.320	0.357	0.609	0.631	2
2,468	0.837	0.975	0.693	0.418	0.827	0.699	0
1,488	0.717	0.812	0.407	0.340	0.619	0.583	-1
1,036	0.820	0.808	0.129	0.285	0.440	0.573	4
1,072	0.796	0.754	0.192	0.290	0.487	0.558	-1
1,991	0.845	0.861	0.433	0.385	0.680	0.654	2
1,343	0.824	0.825	0.302	0.325	0.590	0.604	5
1,036	0.706	0.775	0.161	0.285	0.445	0.538	-1
933	0.839	0.821	0.120	0.269	0.436	0.570	7
1,410	0.713	0.899	0.264	0.332	0.553	0.597	-3
1,272	0.707	0.781	0.235	0.316	0.506	0.559	-3
1,069	0.739	0.799	0.168	0.289	0.463	0.555	5
2,370	0.855	0.907	0.468	0.412	0.713	0.684	1
1,464	0.832	0.828	0.252	0.338	0.558	0.615	2
943	0.745	0.770	0.113	0.270	0.402	0.537	1
1,123	0.745	0.832	0.174	0.297	0.476	0.569	5
1,470	0.782	0.837	0.313	0.338	0.590	0.605	3
855	0.787	0.682	0.105	0.255	0.384	0.515	0
1,016	0.716	0.770	0.178	0.282	0.461	0.537	-6
999	0.762	0.797	0.163	0.279	0.462	0.553	3
1,163	0.652	0.761	0.189	0.302	0.454	0.531	-13
1,570	0.841	0.858	0.330	0.349	0.620	0.631	2
1,452	0.762	0.848	0.266	0.337	0.556	0.601	-3
1,438	0.811	0.894	0.314	0.335	0.611	0.624	5
1,273	0.823	0.812	0.299	0.316	0.584	0.596	2
1,032	0.664	0.756	0.196	0.284	0.462	0.523	-11
1,459	0.864	0.891	0.263	0.337	0.587	0.638	10
2,128	0.780	0.889	0.499	0.395	0.702	0.650	-1
1,412	0.715	0.836	0.330	0.332	0.582	0.584	-6
824	0.613	0.749	0.148	0.249	0.408	0.485	-7
1,099	0.756	0.805	0.233	0.294	0.522	0.563	0

Statistical Annex A2: Human Development Index 2006

HDI Rank 2006	HDI Rank 2009	Province	Life expectancy at birth (years) 2006	Mean years of schooling 2004	Expected years of schooling 2004	Per capita income (PPP NCR 2009 pesos) 2006
77	78	Maguindanao	57.6	5.7	9.2	24,796
53	30	Marinduque	67.3	7.6	12.4	31,986
74	71	Masbate	66.0	7.1	11.9	26,030
38	55	Misamis Occidental	73.0	8.1	12.7	33,237
23	15	Misamis Oriental	70.2	8.9	12.7	40,303
33	67	Mt. Province	62.9	7.0	13.7	39,280
31	34	Negros Occidental	70.3	8.1	12.0	37,304
59	42	Negros Oriental	67.3	6.6	11.1	32,093
54	44	North Cotabato	69.1	7.5	10.4	32,637
64	68	Northern Samar	65.8	7.4	11.5	30,325
40	38	Nueva Ecija	69.6	8.3	11.4	34,504
8	8	Nueva Vizcaya	66.6	8.5	12.9	58,155
55	35	Occidental Mindoro	64.5	7.6	11.7	32,756
67	54	Oriental Mindoro	66.0	7.5	11.8	29,012
41	45	Palawan	62.7	7.5	12.3	37,239
7	10	Pampanga	72.4	9.0	11.7	56,179
39	29	Pangasinan	68.3	9.2	12.0	33,916
66	52	Quezon	67.6	7.5	11.2	29,219
22	17	Quirino	67.0	7.4	12.4	46,267
3	3	Rizal	71.8	9.6	13.0	63,528
76	69	Romblon	65.1	7.2	12.6	24,940
75	73	Sarangani	69.8	5.3	9.6	26,840
17	56	Siquijor	66.3	7.5	13.0	46,953
62	48	Sorsogon	71.8	7.7	12.1	28,869
29	19	South Cotabato	68.3	8.6	12.3	39,164
43	50	Southern Leyte	66.8	7.1	12.3	35,238
72	65	Sultan Kudarat	66.1	7.3	11.7	27,410
78	79	Sulu	55.5	4.5	11.2	22,883
48	66	Surigao del Norte	64.3	8.4	12.9	32,181
45	59	Surigao del Sur	64.4	8.0	12.7	33,829
20	27	Tarlac	68.7	8.8	11.7	43,940
79	77	Tawi-Tawi	52.8	6.3	10.7	19,943
37	60	Western Samar	66.3	7.0	11.8	37,844
25	23	Zambales	67.7	8.7	12.4	41,571
69	72	Zamboanga del Norte	70.5	6.6	10.5	28,432
21	24	Zamboanga del Sur	68.1	7.8	12.0	45,527
35	76	Zamboanga Sibugay*	68.1	7.2	11.7	37,428
		Philippines	70.6	7.3	12.1	44,491

*Life expectancy of Compostela Valley and Zamboanga Sibugay is from Davao del Norte and Zamboanga del Sur, respectively.

Per capita income (PPP US$) 2006	Life Expectancy Index	Education Index	Income (NCR 2009 pesos) Index	Income (PPP) Index	HDI 2006	HDI (International) 2006	PCI rank minus HDI rank 2006
774	0.594	0.605	0.078	0.240	0.304	0.442	0
989	0.749	0.808	0.160	0.277	0.460	0.552	4
805	0.728	0.768	0.092	0.246	0.372	0.516	1
981	0.839	0.845	0.175	0.276	0.499	0.581	10
1,379	0.794	0.888	0.256	0.329	0.565	0.614	4
1,336	0.679	0.820	0.244	0.324	0.514	0.565	-4
1,083	0.796	0.819	0.221	0.291	0.524	0.575	4
978	0.748	0.712	0.162	0.276	0.442	0.528	-4
961	0.776	0.736	0.168	0.273	0.458	0.538	-3
936	0.724	0.766	0.141	0.269	0.428	0.530	-2
1,306	0.784	0.812	0.189	0.320	0.494	0.589	2
1,651	0.737	0.871	0.460	0.356	0.666	0.612	-2
1,029	0.705	0.787	0.169	0.284	0.455	0.540	-5
929	0.727	0.787	0.126	0.268	0.417	0.535	-1
1,016	0.676	0.800	0.221	0.282	0.492	0.534	-5
2,027	0.829	0.852	0.437	0.388	0.676	0.650	0
1,186	0.765	0.875	0.183	0.305	0.496	0.589	5
972	0.753	0.766	0.129	0.275	0.420	0.541	-1
1,348	0.744	0.798	0.324	0.325	0.577	0.578	-8
2,375	0.820	0.932	0.521	0.412	0.736	0.680	0
818	0.714	0.797	0.080	0.248	0.357	0.521	0
764	0.787	0.591	0.102	0.238	0.362	0.480	-1
1,532	0.733	0.823	0.332	0.345	0.585	0.592	-6
944	0.819	0.805	0.125	0.270	0.435	0.563	5
1,222	0.764	0.855	0.243	0.310	0.541	0.587	1
1,089	0.740	0.779	0.198	0.292	0.485	0.552	-4
816	0.729	0.767	0.108	0.248	0.393	0.518	0
740	0.562	0.595	0.056	0.233	0.266	0.427	0
1,033	0.700	0.868	0.163	0.284	0.463	0.557	6
985	0.702	0.840	0.182	0.277	0.475	0.546	0
1,547	0.771	0.845	0.297	0.346	0.579	0.609	1
578	0.519	0.683	0.023	0.195	0.201	0.410	0
1,086	0.733	0.755	0.227	0.292	0.501	0.545	-4
1,498	0.754	0.866	0.270	0.341	0.561	0.606	-2
815	0.799	0.694	0.120	0.248	0.405	0.516	0
1,252	0.762	0.803	0.315	0.314	0.578	0.577	-5
1,117	0.762	0.763	0.223	0.296	0.506	0.556	-1
1,550	0.800	0.784	0.341	0.347	0.598	0.601	

Statistical Annex A3: Human Development Index 2003

HDI Rank 2003	HDI Rank 2006	HDI Rank 2009	Province	Life expectancy at birth (years) 2003	Mean years of schooling 2002	Expected years of schooling 2002	Per capita income (PPP NCR 2009 pesos) 2003
			Metro Manila	70.8	10.3	13.2	73,453
27	46	51	Abra	66.0	7.9	13.2	39,927
34	36	31	Agusan del Norte	63.0	8.2	12.7	38,625
74	71	75	Agusan del Sur	63.0	7.6	12.1	26,061
55	49	63	Aklan	64.7	8.2	13.4	30,783
39	30	43	Albay	70.3	8.3	12.2	33,346
40	65	47	Antique	63.3	7.5	13.2	35,978
47	58	40	Apayao	62.2	7.3	12.1	35,612
25	24	14	Aurora	67.0	8.4	12.3	40,523
72	63	62	Basilan	61.2	5.2	11.1	30,210
10	9	6	Bataan	68.5	9.0	12.6	51,148
1	2	2	Batanes	63.9	8.9	14.1	85,317
11	13	11	Batangas	71.6	8.3	12.3	48,595
2	1	1	Benguet	70.9	9.2	14.6	72,384
33	11	13	Biliran	64.4	7.5	12.1	41,023
62	60	53	Bohol	70.4	6.6	12.4	29,424
52	42	46	Bukidnon	68.4	7.1	11.5	32,772
8	6	5	Bulacan	72.1	8.5	11.9	55,281
23	14	12	Cagayan	69.8	7.2	12.6	41,267
56	57	57	Camarines Norte	63.8	8.2	12.4	31,494
53	61	49	Camarines Sur	71.4	7.4	11.8	31,052
28	28	39	Camiguin	64.2	8.4	13.3	39,907
45	34	36	Capiz	64.2	7.3	13.1	34,505
7	47	20	Catanduanes	65.6	7.6	12.5	62,086
5	4	4	Cavite	72.3	9.1	12.7	58,989
22	26	26	Cebu	71.7	7.6	12.2	41,680
65	70	61	Compostela Valley*+	65.9	7.5	11.9	29,180
31	44	41	Davao del Norte	65.9	7.5	11.9	41,327
17	15	22	Davao del Sur	68.6	8.3	12.0	45,137
75	73	74	Davao Oriental	68.1	7.2	12.3	24,973
54	52	64	Eastern Samar	64.0	6.8	12.2	33,027
63	50	37	Guimaras	67.2	6.8	12.3	30,050
44	56	58	Ifugao	60.6	6.1	13.6	37,828
12	10	9	Ilocos Norte	71.7	8.3	12.6	45,210
30	27	25	Ilocos Sur	67.4	8.3	11.9	39,357
20	12	16	Iloilo	70.1	8.4	13.4	41,466
15	18	21	Isabela	70.3	8.1	12.5	44,815
51	51	32	Kalinga	61.4	7.4	13.1	33,876
14	16	18	La Union	72.8	8.5	11.8	43,753
4	5	7	Laguna	68.5	9.2	12.6	66,192
32	19	33	Lanao del Norte	64.2	8.2	12.9	39,958
37	68	70	Lanao del Sur	57.7	5.7	12.1	44,477
35	32	28	Leyte	66.9	7.3	12.4	37,419

Per capita income (PPP US$) 2003	Life Expectancy Index	Education Index	Income (NCR 2009 pesos) Index	Income (PPP) Index	HDI 2003	HDI (International) 2003	PCI rank minus HDI rank 2003
2,592	0.804	0.971	0.635	0.426	0.791	0.693	-
1,125	0.728	0.848	0.251	0.297	0.537	0.569	4
966	0.680	0.850	0.236	0.274	0.515	0.541	0
779	0.681	0.799	0.093	0.241	0.370	0.508	1
899	0.707	0.871	0.147	0.263	0.449	0.545	5
1,068	0.796	0.838	0.176	0.289	0.490	0.578	11
989	0.685	0.831	0.206	0.277	0.490	0.541	1
972	0.668	0.785	0.202	0.275	0.473	0.524	-5
1,162	0.744	0.844	0.258	0.302	0.545	0.575	2
730	0.653	0.633	0.140	0.231	0.387	0.457	-9
1,688	0.767	0.888	0.380	0.360	0.637	0.626	0
2,252	0.694	0.931	0.770	0.404	0.793	0.639	0
1,567	0.816	0.843	0.350	0.348	0.622	0.621	1
2,001	0.806	0.964	0.622	0.386	0.785	0.669	0
1,026	0.703	0.794	0.264	0.283	0.528	0.541	-7
935	0.798	0.757	0.131	0.269	0.430	0.546	6
881	0.766	0.751	0.169	0.260	0.460	0.531	2
1,749	0.825	0.835	0.427	0.365	0.665	0.631	0
1,128	0.788	0.794	0.267	0.298	0.550	0.571	2
906	0.693	0.837	0.155	0.264	0.448	0.535	-1
905	0.814	0.776	0.150	0.264	0.456	0.550	6
1,195	0.699	0.882	0.251	0.307	0.537	0.574	4
1,032	0.699	0.814	0.189	0.284	0.476	0.545	-1
1,807	0.721	0.811	0.505	0.370	0.666	0.601	-1
2,120	0.828	0.895	0.469	0.395	0.703	0.664	2
1,369	0.819	0.803	0.271	0.328	0.563	0.599	0
847	0.726	0.784	0.128	0.254	0.418	0.524	5
1,201	0.726	0.784	0.267	0.307	0.534	0.559	-7
1,254	0.770	0.831	0.311	0.314	0.584	0.586	-2
674	0.762	0.785	0.080	0.218	0.363	0.507	3
901	0.696	0.759	0.172	0.263	0.450	0.518	-1
845	0.747	0.763	0.138	0.253	0.429	0.524	2
1,122	0.643	0.757	0.227	0.297	0.480	0.525	-8
1,313	0.819	0.855	0.312	0.321	0.602	0.608	2
1,202	0.750	0.831	0.245	0.307	0.534	0.577	3
1,188	0.793	0.883	0.269	0.306	0.573	0.598	3
1,170	0.796	0.837	0.307	0.303	0.589	0.587	2
875	0.655	0.822	0.182	0.259	0.461	0.518	-5
1,352	0.836	0.836	0.295	0.326	0.591	0.610	5
2,041	0.767	0.898	0.552	0.389	0.724	0.645	-1
1,051	0.699	0.859	0.252	0.287	0.533	0.556	-2
1,003	0.597	0.689	0.303	0.280	0.500	0.486	-19
965	0.742	0.793	0.223	0.274	0.508	0.544	2

Statistical Annex A3: Human Development Index 2003

HDI Rank 2003	HDI Rank 2006	HDI Rank 2009	Province	Life expectancy at birth (years) 2003	Mean years of schooling 2002	Expected years of schooling 2002	Per capita income (PPP NCR 2009 pesos) 2003
78	77	78	Maguindanao	56.6	6.4	11.0	26,290
60	53	30	Marinduque	66.1	7.5	13.3	30,170
69	74	71	Masbate	64.9	6.5	11.3	29,640
38	38	55	Misamis Occidental	70.6	8.3	13.1	33,412
21	23	15	Misamis Oriental	68.9	9.0	12.9	40,448
64	33	67	Mt. Province	62.1	7.3	13.7	30,319
26	31	34	Negros Occidental	69.1	7.4	12.2	40,377
68	59	42	Negros Oriental	66.3	6.9	10.5	29,638
48	54	44	North Cotabato	67.7	7.5	12.3	33,115
67	64	68	Northern Samar	64.5	6.7	12.5	29,283
36	40	38	Nueva Ecija	69.1	7.9	11.6	36,245
6	8	8	Nueva Vizcaya	65.7	8.2	12.6	62,618
42	55	35	Occidental Mindoro	63.8	7.3	12.2	36,560
49	67	54	Oriental Mindoro	65.1	7.2	11.8	34,672
41	41	45	Palawan	62.2	8.1	12.6	36,111
9	7	10	Pampanga	71.7	8.6	12.3	53,487
29	39	29	Pangasinan	68.1	8.6	12.5	38,415
46	66	52	Quezon	66.8	8.2	12.1	33,104
13	22	17	Quirino	65.6	7.4	12.4	49,746
3	3	3	Rizal	70.8	9.8	12.9	62,618
66	76	69	Romblon	64.3	7.7	13.4	28,660
77	75	73	Sarangani	68.2	5.8	9.8	26,226
73	17	56	Siquijor	65.3	7.7	12.6	25,857
43	62	48	Sorsogon	69.9	7.5	12.3	33,540
18	29	19	South Cotabato	67.4	8.7	12.2	44,842
50	43	50	Southern Leyte	65.9	7.2	12.4	33,447
70	72	65	Sultan Kudarat	65.0	8.2	12.6	27,028
79	78	79	Sulu	54.2	4.2	11.7	25,968
59	48	66	Surigao del Norte	64.1	7.3	12.8	31,196
61	45	59	Surigao del Sur	63.2	7.8	12.4	30,412
16	20	27	Tarlac	68.1	7.9	11.7	46,674
71	79	77	Tawi-Tawi	52.0	6.4	13.4	31,189
57	37	60	Western Samar	64.6	6.4	10.8	33,932
19	25	23	Zambales	67.0	9.0	13.0	43,377
76	69	72	Zamboanga del Norte	68.1	7.5	12.6	24,533
24	21	24	Zamboanga del Sur	66.9	7.4	12.3	42,178
58	35	76	Zamboanga Sibugay*+	66.9	7.4	12.3	31,190
			Philippines	69.1	8.3	12.4	45,637

*Life expectancy of Compostela Valley and Zamboanga Sibugay is from Davao del Norte and Zamboanga del Sur, respectively.
+ Mean years of schooling and expected years of schooling of Compostela Valley and Zamboanga Sibugay are from Davao del Norte and Zamboanga del Sur, respectively.

Per capita income (PPP US$) 2003	Life Expectancy Index	Education Index	Income (NCR 2009 pesos) Index	Income (PPP) Index	HDI 2003	HDI (International) 2003	PCI rank minus HDI rank 2003
705	0.579	0.698	0.095	0.225	0.338	0.450	-5
844	0.730	0.830	0.140	0.253	0.439	0.535	4
815	0.710	0.711	0.134	0.248	0.407	0.500	-3
859	0.800	0.868	0.177	0.256	0.497	0.562	11
1,206	0.774	0.901	0.257	0.308	0.564	0.599	7
907	0.666	0.833	0.141	0.264	0.428	0.527	-2
1,062	0.777	0.795	0.256	0.288	0.541	0.563	3
810	0.733	0.712	0.134	0.247	0.412	0.505	-1
870	0.754	0.802	0.173	0.258	0.472	0.538	3
813	0.705	0.765	0.130	0.247	0.412	0.511	2
1,217	0.777	0.800	0.209	0.309	0.506	0.577	3
1,607	0.724	0.845	0.511	0.352	0.679	0.599	-2
1,039	0.693	0.787	0.213	0.285	0.488	0.538	-4
1,004	0.714	0.767	0.191	0.280	0.471	0.535	-6
891	0.667	0.839	0.208	0.261	0.488	0.527	-1
1,712	0.819	0.854	0.406	0.362	0.657	0.633	0
1,164	0.760	0.863	0.234	0.303	0.535	0.583	6
983	0.741	0.829	0.173	0.276	0.474	0.554	6
1,310	0.722	0.802	0.364	0.321	0.595	0.570	-2
2,089	0.803	0.937	0.511	0.393	0.727	0.666	2
850	0.701	0.847	0.122	0.254	0.417	0.532	5
666	0.763	0.626	0.095	0.217	0.356	0.470	-3
757	0.716	0.821	0.090	0.236	0.376	0.518	4
975	0.790	0.801	0.178	0.275	0.483	0.558	4
1,248	0.750	0.858	0.307	0.313	0.583	0.586	-2
930	0.727	0.791	0.177	0.268	0.467	0.536	-2
718	0.712	0.847	0.104	0.228	0.397	0.516	2
712	0.542	0.583	0.092	0.227	0.307	0.415	-3
873	0.698	0.805	0.151	0.258	0.440	0.526	-3
773	0.684	0.819	0.142	0.239	0.431	0.512	0
1,458	0.762	0.802	0.328	0.337	0.585	0.590	-3
766	0.507	0.768	0.151	0.238	0.389	0.453	-13
876	0.705	0.696	0.183	0.259	0.448	0.503	-12
1,387	0.744	0.902	0.291	0.329	0.580	0.605	1
616	0.761	0.809	0.075	0.205	0.359	0.501	3
1,016	0.743	0.795	0.277	0.282	0.547	0.550	-3
815	0.743	0.795	0.151	0.248	0.447	0.527	-1
1,407	0.777	0.843	0.355	0.332	0.615	0.601	

Statistical Annex A4: Human Development Index 2000

HDI Rank 2000	HDI Rank 2003	HDI Rank 2006	HDI Rank 2009	Province	Life expectancy at birth (years) 2000	Mean years of schooling 1999	Expected years of schooling 1999	Per capita income (PPP NCR 2009 pesos) 2000
				Metro Manila	69.8	10.3	13.0	86,724
21	27	46	51	Abra	64.6	8.0	12.1	41,637
39	34	36	31	Agusan del Norte	62.4	8.2	11.6	35,692
78	74	71	75	Agusan del Sur	61.7	7.1	11.6	22,551
34	55	49	63	Aklan	63.6	7.8	13.5	35,262
46	39	30	43	Albay	68.7	7.9	12.3	32,662
40	40	65	47	Antique	62.5	7.0	13.2	35,748
47	47	58	40	Apayao	61.6	6.4	11.8	37,394
23	25	24	14	Aurora	65.3	8.3	11.8	40,068
72	72	63	62	Basilan	60.5	5.3	11.2	29,558
7	10	9	6	Bataan	67.6	8.5	12.4	56,078
3	1	2	2	Batanes	63.4	8.5	14.2	75,179
9	11	13	11	Batangas	70.6	8.1	12.6	50,540
2	2	1	1	Benguet	69.0	8.9	14.0	68,640
51	33	11	13	Biliran	63.5	6.8	12.5	34,729
68	62	60	53	Bohol	69.1	6.7	12.3	27,399
52	52	42	46	Bukidnon	66.5	7.0	10.7	34,515
5	8	6	5	Bulacan	70.9	8.2	11.7	61,915
28	23	14	12	Cagayan	67.5	6.7	12.0	39,061
58	56	57	57	Camarines Norte	62.9	8.0	11.5	31,270
55	53	61	49	Camarines Sur	69.8	7.5	10.8	31,525
66	28	28	39	Camiguin	63.3	8.2	12.8	28,533
53	45	34	36	Capiz	63.7	7.3	13.2	32,250
60	7	47	20	Catanduanes	64.5	7.9	13.0	29,951
6	5	4	4	Cavite	70.6	9.0	12.6	58,466
29	22	26	26	Cebu	71.0	7.5	11.9	36,485
-	65	70	61	Compostela Valley**				
62	31	44	41	Davao del Norte**	64.7	7.4	11.9	30,304
13	17	15	22	Davao del Sur	67.8	8.2	11.8	47,771
38	75	73	74	Davao Oriental	66.6	6.7	11.1	36,334
73	54	52	64	Eastern Samar	62.7	6.6	11.6	27,188
33	63	50	37	Guimaras	66.2	7.1	12.0	36,175
75	44	56	58	Ifugao	60.0	5.6	12.9	27,467
8	12	10	9	Ilocos Norte	70.3	8.3	12.4	53,928
19	30	27	25	Ilocos Sur	66.7	8.0	12.6	42,164
10	20	12	16	Iloilo	69.0	8.3	13.0	50,060
16	15	18	21	Isabela	68.5	7.7	11.6	46,802
30	51	51	32	Kalinga	60.8	6.9	13.5	40,436
18	14	16	18	La Union	71.0	8.4	11.9	41,746
4	4	5	7	Laguna	67.7	8.9	12.1	66,028
27	32	19	33	Lanao del Norte	63.1	7.9	12.6	39,408
61	37	68	70	Lanao del Sur	56.7	5.6	12.0	35,420
22	35	32	28	Leyte	66.0	6.8	12.1	42,454

Per capita income (PPP US$) 2000	Life Expectancy Index	Education Index	Income (NCR 2009 pesos) Index	Income (PPP) Index	HDI 2000	HDI (International) 2000	PCI rank minus HDI rank 2000
2,856	0.788	0.963	0.786	0.441	0.842	0.694	-
1,089	0.705	0.816	0.271	0.292	0.538	0.552	1
852	0.671	0.810	0.203	0.254	0.479	0.517	1
643	0.660	0.759	0.053	0.211	0.298	0.473	1
970	0.690	0.855	0.198	0.274	0.489	0.545	14
991	0.770	0.822	0.168	0.278	0.474	0.560	8
925	0.673	0.801	0.203	0.267	0.479	0.524	-2
948	0.658	0.726	0.222	0.271	0.474	0.506	-17
1,104	0.717	0.825	0.253	0.294	0.531	0.559	1
656	0.641	0.644	0.133	0.214	0.380	0.446	-4
1,778	0.753	0.855	0.436	0.368	0.655	0.619	0
1,892	0.686	0.920	0.654	0.377	0.745	0.620	-1
1,519	0.801	0.842	0.373	0.343	0.631	0.614	1
1,761	0.775	0.931	0.580	0.366	0.748	0.642	1
829	0.689	0.766	0.192	0.250	0.466	0.509	-2
778	0.776	0.754	0.108	0.241	0.398	0.520	5
874	0.736	0.722	0.189	0.258	0.465	0.516	-2
1,883	0.805	0.818	0.503	0.377	0.692	0.628	0
1,017	0.752	0.744	0.241	0.282	0.513	0.540	-1
852	0.679	0.800	0.152	0.255	0.436	0.517	0
871	0.788	0.749	0.155	0.258	0.451	0.534	2
805	0.684	0.852	0.121	0.246	0.413	0.523	5
908	0.691	0.818	0.163	0.264	0.452	0.531	2
826	0.704	0.844	0.137	0.250	0.433	0.529	7
1,958	0.800	0.885	0.463	0.383	0.690	0.647	0
1,071	0.806	0.786	0.212	0.290	0.512	0.568	2
835	0.707	0.781	0.141	0.251	0.427	0.518	1
1,258	0.757	0.821	0.341	0.315	0.596	0.580	0
929	0.737	0.720	0.210	0.268	0.481	0.522	-6
708	0.675	0.728	0.106	0.226	0.373	0.481	2
957	0.731	0.768	0.208	0.272	0.489	0.535	1
756	0.634	0.706	0.109	0.236	0.365	0.473	-3
1,483	0.796	0.849	0.411	0.340	0.652	0.612	0
1,219	0.739	0.836	0.277	0.310	0.555	0.576	1
1,351	0.775	0.864	0.367	0.325	0.626	0.602	1
1,164	0.768	0.789	0.330	0.303	0.585	0.568	-1
969	0.645	0.801	0.257	0.274	0.510	0.521	-7
1,221	0.807	0.835	0.272	0.310	0.568	0.593	3
1,897	0.754	0.865	0.550	0.378	0.710	0.627	0
976	0.683	0.831	0.245	0.275	0.518	0.539	-1
745	0.581	0.683	0.200	0.234	0.429	0.453	-15
1,045	0.727	0.756	0.280	0.286	0.536	0.540	-3

Statistical Annex A4: Human Development Index 2000

HDI Rank 2000	HDI Rank 2003	HDI Rank 2006	HDI Rank 2009	Province	Life expectancy at birth (years) 2000	Mean years of schooling 1999	Expected years of schooling 1999	Per capita income (PPP NCR 2009 pesos) 2000
74	78	77	78	Maguindanao	55.6	5.8	10.8	29,973
59	60	53	30	Marinduque	64.9	7.2	12.2	31,024
77	69	74	71	Masbate	63.8	6.0	11.0	23,284
50	38	38	55	Misamis Occidental	68.2	7.8	11.7	32,832
17	21	23	15	Misamis Oriental	67.6	9.0	12.6	43,507
49	64	33	67	Mt. Province	61.3	6.7	13.3	35,503
35	26	31	34	Negros Occidental	67.9	7.0	11.8	35,457
48	68	59	42	Negros Oriental	65.4	6.7	11.2	35,590
57	48	54	44	North Cotabato	66.2	7.5	12.2	30,341
71	67	64	68	Northern Samar	63.3	6.8	11.7	27,361
24	36	40	38	Nueva Ecija	68.6	7.9	11.8	38,335
12	6	8	8	Nueva Vizcaya	64.9	7.7	12.7	53,210
54	42	55	35	Occidental Mindoro	63.1	6.7	11.3	34,198
37	49	67	54	Oriental Mindoro	64.3	7.5	11.7	35,869
20	41	41	45	Palawan	61.6	7.9	11.7	45,330
11	9	7	10	Pampanga	71.1	8.4	12.0	48,797
26	29	39	29	Pangasinan	65.1	8.4	12.3	38,435
25	46	66	52	Quezon	66.0	8.0	11.4	39,504
45	13	22	17	Quirino	64.3	7.3	11.6	35,278
1	3	3	3	Rizal	69.7	9.4	12.9	76,614
76	66	76	69	Romblon	63.5	6.7	11.8	25,103
69	77	75	73	Sarangani	66.7	5.9	8.7	29,475
44	73	17	56	Siquijor	64.2	6.9	14.0	34,409
56	43	62	48	Sorsogon	68.0	7.4	12.6	30,634
14	18	29	19	South Cotabato	66.6	7.9	11.9	47,720
36	50	43	50	Southern Leyte	65.1	7.0	12.4	36,022
65	70	72	65	Sultan Kudarat	64.0	7.7	13.0	29,019
79	79	78	79	Sulu	53.0	3.4	10.4	24,312
64	59	48	66	Surigao del Norte	64.0	6.9	12.9	30,076
41	61	45	59	Surigao del Sur	62.1	7.7	11.9	35,893
31	16	20	27	Tarlac	67.5	8.0	11.5	36,327
70	71	79	77	Tawi-Tawi	51.3	5.5	12.8	31,943
67	57	37	60	Western Samar	62.8	6.1	10.9	30,546
15	19	25	23	Zambales	66.4	8.9	12.7	45,046
32	76	69	72	Zamboanga del Norte	65.7	7.7	12.6	35,721
42	24	21	24	Zamboanga del Sur**	65.8	6.9	11.4	35,652
	58	35	76	Zamboanga Sibugay**				
				Philippines	67.7	8.0	12.1	47,463

**No province is ranked 23rd and 63rd in 1997 and 43rd and 63rd in 2000 in order to make rankings comparable to later years in view of the separation of Compostela Valley from Davao del Norte in 1998 and Zamboanga Sibugay and from Zamboanga del Sur in 2001.

Per capita income (PPP US$) 2000	Life Expectancy Index	Education Index	Income (NCR 2009 pesos) Index	Income (PPP) Index	HDI 2000	HDI (International) 2000	PCI rank minus HDI rank 2000
751	0.564	0.658	0.137	0.235	0.371	0.444	-8
824	0.710	0.779	0.149	0.249	0.436	0.517	0
606	0.693	0.679	0.061	0.202	0.306	0.457	1
795	0.762	0.793	0.170	0.244	0.469	0.528	3
1,221	0.753	0.888	0.292	0.310	0.580	0.592	1
986	0.654	0.786	0.201	0.277	0.469	0.522	-5
878	0.758	0.759	0.200	0.259	0.487	0.530	10
869	0.718	0.720	0.202	0.258	0.471	0.511	-5
765	0.732	0.798	0.142	0.238	0.436	0.518	5
725	0.685	0.744	0.108	0.230	0.380	0.489	3
1,237	0.770	0.804	0.233	0.312	0.524	0.578	5
1,301	0.710	0.824	0.403	0.320	0.618	0.572	-3
923	0.682	0.726	0.186	0.267	0.451	0.509	-2
987	0.701	0.783	0.205	0.277	0.483	0.534	0
1,063	0.658	0.800	0.313	0.288	0.548	0.534	-4
1,501	0.808	0.835	0.353	0.342	0.620	0.613	1
1,103	0.714	0.847	0.234	0.294	0.521	0.562	2
1,093	0.728	0.796	0.246	0.293	0.523	0.554	0
885	0.700	0.768	0.198	0.260	0.474	0.519	2
2,382	0.787	0.917	0.671	0.413	0.785	0.668	0
707	0.689	0.740	0.082	0.226	0.347	0.486	0
720	0.739	0.597	0.132	0.229	0.388	0.466	0
900	0.699	0.818	0.188	0.263	0.476	0.532	7
844	0.760	0.802	0.145	0.253	0.446	0.536	4
1,276	0.737	0.807	0.340	0.317	0.587	0.573	0
956	0.713	0.776	0.207	0.272	0.485	0.532	-2
740	0.696	0.835	0.127	0.233	0.419	0.513	5
621	0.522	0.497	0.073	0.206	0.266	0.377	-2
803	0.697	0.787	0.139	0.245	0.424	0.512	1
870	0.667	0.794	0.205	0.258	0.477	0.515	-5
1,090	0.752	0.797	0.210	0.292	0.501	0.560	2
732	0.495	0.697	0.160	0.231	0.381	0.430	-14
753	0.678	0.679	0.144	0.235	0.405	0.477	-6
1,384	0.734	0.885	0.310	0.329	0.586	0.598	2
872	0.723	0.821	0.203	0.258	0.494	0.535	7
834	0.724	0.735	0.202	0.251	0.476	0.512	-1
1,380	0.755	0.819	0.379	0.329	0.616	0.588	

Statistical Annex A5: Human Development Index 1997

HDI Rank 1997	HDI Rank 2000	HDI Rank 2003	HDI Rank 2006	HDI Rank 2009	Province	Life expectancy at birth (years) 1997	Mean years of schooling 1998	Expected years of schooling 1998	Per capita income (PPP NCR 2009 pesos) 1997
					Metro Manila	68.8	10.2	13.2	88,967
49	21	27	46	51	Abra	62.5	8.1	12.6	34,195
47	39	34	36	31	Agusan del Norte	61.9	8.2	12.2	35,477
73	78	74	71	75	Agusan del Sur	59.8	7.2	11.1	27,305
31	34	55	49	63	Aklan	62.1	8.0	13.5	38,655
52	46	39	30	43	Albay	66.1	8.1	12.1	32,100
38	40	40	65	47	Antique	61.3	7.5	12.5	38,062
37	47	47	58	40	Apayao	61.1	7.2	11.9	39,476
28	23	25	24	14	Aurora	62.4	8.4	12.6	41,531
24	72	72	63	62	Basilan	58.9	8.4	11.4	45,395
7	7	10	9	6	Bataan	67.6	8.6	12.3	57,171
1	3	1	2	2	Batanes	61.9	8.9	14.4	95,838
6	9	11	13	11	Batangas	71.0	8.4	12.6	55,010
3	2	2	1	1	Benguet	65.3	9.3	14.1	65,756
44	51	33	11	13	Biliran	63.7	7.5	13.9	34,759
76	68	62	60	53	Bohol	67.3	6.7	11.7	25,000
50	52	52	42	46	Bukidnon	62.9	7.1	10.6	36,022
8	5	8	6	5	Bulacan	70.1	8.5	11.9	55,255
41	28	23	14	12	Cagayan	63.1	7.1	12.1	37,733
61	58	56	57	57	Camarines Norte	61.2	7.9	11.3	32,252
58	55	53	61	49	Camarines Sur	68.6	7.5	11.6	30,501
60	66	28	28	39	Camiguin	60.9	8.3	13.6	30,858
45	53	45	34	36	Capiz	63.4	7.7	13.3	34,986
40	60	7	47	20	Catanduanes	62.7	8.2	13.5	35,523
5	6	5	4	4	Cavite	69.3	9.2	12.3	59,566
19	29	22	26	26	Cebu	69.8	7.6	12.0	42,079
-	-	65	70	61	Compostela Valley**				
62	62	31	44	41	Davao del Norte	61.8	7.6	12.0	31,696
13	13	17	15	22	Davao del Sur	67.4	8.6	11.8	49,202
56	38	75	73	74	Davao Oriental	63.8	6.8	10.9	34,027
78	73	54	52	64	Eastern Samar	60.2	6.8	11.4	25,159
54	33	63	50	37	Guimaras	63.7	7.1	11.6	34,071
64	75	44	56	58	Ifugao	59.8	6.9	12.7	32,579
11	8	12	10	9	Ilocos Norte	70.0	8.8	12.6	49,049
18	19	30	27	25	Ilocos Sur	65.9	8.1	12.9	42,782
15	10	20	12	16	Iloilo	67.7	8.4	13.2	42,408
16	16	15	18	21	Isabela	65.5	7.9	11.5	45,944
27	30	51	51	32	Kalinga	59.2	7.4	12.8	44,978
20	18	14	16	18	La Union	70.0	8.6	12.0	40,454
4	4	4	5	7	Laguna	66.5	8.9	12.3	66,817
29	27	32	19	33	Lanao del Norte	60.5	8.2	11.9	41,183
66	61	37	68	70	Lanao del Sur	53.8	8.5	11.8	33,377
42	22	35	32	28	Leyte	66.8	7.1	11.2	36,358

Per capita income (PPP US$) 1997	Life Expectancy Index	Education Index	Income (NCR 2009 pesos) Index	Income (PPP) Index	HDI 1997	HDI (International) 1997	PCI rank minus HDI rank 1997
3,173	0.773	0.966	0.812	0.457	0.846	0.699	-
994	0.673	0.840	0.186	0.278	0.472	0.540	3
929	0.663	0.833	0.200	0.268	0.480	0.529	-2
855	0.630	0.746	0.180	0.255	0.369	0.493	0
1,175	0.666	0.868	0.092	0.304	0.515	0.560	4
1,060	0.729	0.825	0.107	0.288	0.460	0.558	10
1,088	0.654	0.805	0.237	0.292	0.495	0.536	-2
1,111	0.651	0.772	0.162	0.295	0.498	0.529	-6
1,248	0.670	0.857	0.230	0.313	0.537	0.565	-2
1,072	0.615	0.813	0.631	0.290	0.539	0.525	-7
1,978	0.754	0.857	0.246	0.384	0.662	0.628	-1
2,621	0.663	0.943	0.270	0.427	0.822	0.644	0
1,788	0.807	0.859	0.314	0.369	0.665	0.634	2
1,874	0.717	0.954	0.448	0.376	0.721	0.636	1
908	0.692	0.851	0.890	0.264	0.484	0.538	6
747	0.749	0.736	0.424	0.234	0.354	0.505	3
988	0.679	0.723	0.547	0.277	0.466	0.514	-7
1,833	0.793	0.838	0.192	0.372	0.657	0.628	-1
1,068	0.682	0.769	0.081	0.289	0.491	0.533	-3
956	0.652	0.789	0.207	0.272	0.438	0.519	0
917	0.769	0.779	0.426	0.266	0.441	0.542	10
942	0.647	0.884	0.226	0.270	0.439	0.536	6
1,089	0.686	0.840	0.164	0.292	0.483	0.552	4
1,066	0.676	0.878	0.143	0.289	0.492	0.556	4
2,158	0.780	0.886	0.148	0.398	0.690	0.650	0
1,301	0.788	0.798	0.195	0.320	0.558	0.586	6
972	0.661	0.794	0.201	0.275	0.435	0.524	1
1,442	0.750	0.836	0.476	0.336	0.607	0.595	0
969	0.692	0.718	0.364	0.274	0.451	0.515	-2
717	0.636	0.734	0.128	0.228	0.338	0.474	0
996	0.692	0.758	0.276	0.279	0.459	0.527	-1
996	0.629	0.781	0.157	0.279	0.435	0.515	-5
1,480	0.792	0.879	0.157	0.339	0.628	0.618	4
1,357	0.725	0.853	0.357	0.326	0.560	0.587	4
1,265	0.755	0.877	0.184	0.315	0.570	0.593	9
1,242	0.721	0.797	0.082	0.313	0.568	0.564	0
1,197	0.620	0.812	0.184	0.307	0.538	0.537	-9
1,299	0.791	0.846	0.167	0.319	0.556	0.598	9
2,076	0.736	0.872	0.356	0.392	0.710	0.631	-1
1,104	0.641	0.825	0.284	0.294	0.520	0.538	-1
746	0.534	0.836	0.096	0.234	0.429	0.471	-10
980	0.741	0.742	0.280	0.276	0.487	0.533	-1

Statistical Annex A5: Human Development Index 1997

HDI Rank 1997	HDI Rank 2000	HDI Rank 2003	HDI Rank 2006	HDI Rank 2009	Province	Life expectancy at birth (years) 1997	Mean years of schooling 1998	Expected years of schooling 1998	Per capita income (PPP NCR 2009 pesos) 1997
69	74	78	77	78	Maguindanao	52.4	8.0	11.2	33,142
39	59	60	53	30	Marinduque	65.0	7.5	12.6	36,339
77	77	69	74	71	Masbate	61.9	6.6	10.3	25,489
46	50	38	38	55	Misamis Occidental	63.3	7.9	12.4	35,115
12	17	21	23	15	Misamis Oriental	66.3	8.9	12.9	50,578
70	49	64	33	67	Mt. Province	59.4	7.6	14.3	29,163
33	35	26	31	34	Negros Occidental	67.6	7.3	11.8	38,019
51	48	68	59	42	Negros Oriental	63.2	7.1	11.6	35,113
68	57	48	54	44	North Cotabato	64.4	7.7	11.8	29,101
75	71	67	64	68	Northern Samar	61.1	6.6	12.1	26,210
25	24	36	40	38	Nueva Ecija	69.8	8.1	12.1	39,065
14	12	6	8	8	Nueva Vizcaya	62.8	8.0	12.4	49,125
59	54	42	55	35	Occidental Mindoro	62.0	7.2	11.2	32,825
35	37	49	67	54	Oriental Mindoro	63.3	7.8	11.7	38,672
30	20	41	41	45	Palawan	60.5	8.0	11.8	41,240
9	11	9	7	10	Pampanga	71.9	8.4	12.1	52,635
26	26	29	39	29	Pangasinan	67.1	8.6	12.4	39,304
21	25	46	66	52	Quezon	64.6	7.9	11.9	44,041
34	45	13	22	17	Quirino	61.2	7.6	12.0	40,285
2	1	3	3	3	Rizal	70.1	9.5	12.9	73,115
74	76	66	76	69	Romblon	61.1	7.3	12.5	26,032
72	69	77	75	73	Sarangani	64.2	6.7	7.8	29,113
71	44	73	17	56	Siquijor	63.5	7.3	12.5	28,690
53	56	43	62	48	Sorsogon	65.8	7.6	12.8	32,276
32	14	18	29	19	South Cotabato	65.4	8.7	11.6	37,467
67	36	50	43	50	Southern Leyte	63.8	7.3	11.8	30,514
48	65	70	72	65	Sultan Kudarat	62.5	8.1	12.3	35,269
79	79	79	78	79	Sulu	49.0	6.9	11.3	26,315
57	64	59	48	66	Surigao del Norte	66.8	7.3	12.7	31,228
55	41	61	45	59	Surigao del Sur	59.7	7.6	12.1	34,736
17	31	16	20	27	Tarlac	67.7	8.2	12.1	42,509
36	70	71	79	77	Tawi-Tawi	46.8	7.7	12.7	49,818
65	67	57	37	60	Western Samar	59.6	6.6	11.1	33,691
10	15	19	25	23	Zambales	68.7	8.9	12.4	50,275
43	32	76	69	72	Zamboanga del Norte	61.3	7.9	12.3	36,537
22	42	24	21	24	Zamboanga del Sur	64.7	7.6	11.2	43,851
-	-	58	35	76	Zamboanga Sibugay**				
					Philippines	65.5	8.3	12.1	48,209

**No province is ranked 23rd and 63rd in 1997 and 43rd and 63rd in 2000 in order to make rankings comparable to later years in view of the separation of Compostela Valley from Davao del Norte in 1998 and Zamboanga Sibugay and from Zamboanga del Sur in 2001.

Per capita income (PPP US$) 1997	Life Expectancy Index	Education Index	Income (NCR 2009 pesos) Index	Income (PPP) Index	HDI 1997	HDI (International) 1997	PCI rank minus HDI rank 1997
890	0.512	0.789	0.296	0.261	0.412	0.473	-12
1,096	0.712	0.807	0.320	0.293	0.494	0.552	3
722	0.663	0.686	0.152	0.229	0.340	0.471	0
921	0.685	0.825	0.309	0.266	0.481	0.532	1
1,538	0.733	0.894	0.257	0.345	0.625	0.609	-2
899	0.623	0.866	0.223	0.263	0.411	0.521	-1
1,040	0.752	0.774	0.559	0.285	0.511	0.550	4
903	0.684	0.755	0.266	0.263	0.466	0.514	-3
851	0.703	0.798	0.176	0.254	0.415	0.522	3
760	0.651	0.743	0.144	0.237	0.357	0.486	0
1,375	0.789	0.824	0.210	0.328	0.539	0.597	8
1,305	0.677	0.830	0.174	0.320	0.585	0.565	0
1,006	0.665	0.752	0.210	0.280	0.440	0.519	-1
1,208	0.684	0.798	0.086	0.308	0.506	0.552	-1
1,097	0.641	0.812	0.196	0.293	0.517	0.534	-3
1,766	0.821	0.843	0.373	0.367	0.650	0.633	0
1,237	0.745	0.862	0.128	0.312	0.539	0.585	6
1,318	0.706	0.808	0.229	0.322	0.554	0.568	-2
1,099	0.652	0.796	0.196	0.294	0.510	0.534	-4
2,459	0.793	0.919	0.127	0.418	0.772	0.672	0
833	0.650	0.797	0.198	0.251	0.363	0.507	2
824	0.699	0.604	0.281	0.249	0.378	0.472	-2
790	0.688	0.796	0.094	0.243	0.407	0.511	1
968	0.725	0.820	0.241	0.274	0.460	0.546	7
1,161	0.718	0.839	0.356	0.302	0.512	0.567	7
886	0.694	0.771	0.170	0.261	0.425	0.518	0
1,043	0.673	0.828	0.123	0.286	0.480	0.542	-2
715	0.459	0.735	0.296	0.228	0.318	0.425	-5
915	0.740	0.804	0.164	0.265	0.449	0.540	8
924	0.628	0.797	0.237	0.267	0.458	0.511	-4
1,391	0.754	0.832	0.266	0.330	0.561	0.592	6
1,213	0.424	0.823	0.213	0.309	0.503	0.476	-24
909	0.627	0.713	0.397	0.264	0.432	0.491	-10
1,684	0.771	0.876	0.244	0.359	0.629	0.624	1
968	0.653	0.818	0.192	0.274	0.484	0.527	-3
1,114	0.708	0.768	0.298	0.296	0.544	0.544	-2
1,522	0.720	0.836	0.389	0.344	0.616	0.591	

Statistical Annex B1: Gender-related Development Index 2009

	GDI 2009		GDI (International) 2009		Life expectancy at birth (years) 2009		Mean years of schooling 2008
Province	Rank	Value	Rank	Value	Male	Female	Male
Metro Manila		0.764		0.713	72.6	74.6	10.6
Abra	29	0.521	30	0.589	70.9	72.9	8.5
Agusan del Norte	45	0.475	50	0.544	57.2	67.2	8.6
Agusan del Sur	68	0.332	63	0.507	61.3	69.5	7.3
Aklan	48	0.470	35	0.571	67.4	68.8	8.4
Albay	31	0.517	18	0.611	72.0	77.9	8.3
Antique	51	0.461	47	0.547	63.4	68.0	7.0
Apayao							
Aurora							
Basilan	69	0.313	67	0.487	63.5	63.4	7.6
Bataan	5	0.663	6	0.654	66.9	71.3	9.4
Batanes							
Batangas	10	0.616	9	0.639	72.0	74.7	8.6
Benguet	1	0.800	1	0.712	73.9	77.6	9.7
Biliran	8	0.625	19	0.606	63.3	70.8	8.0
Bohol	36	0.504	24	0.595	72.4	74.7	8.0
Bukidnon	38	0.501	38	0.568	70.7	73.3	7.3
Bulacan	4	0.665	3	0.668	74.3	76.4	9.2
Cagayan	7	0.634	11	0.638	76.1	79.2	8.0
Camarines Norte	52	0.458	55	0.541	61.4	67.3	8.0
Camarines Sur	34	0.509	27	0.590	75.8	73.6	7.9
Camiguin							
Capiz							
Catanduanes	24	0.551	28	0.590	61.8	71.6	8.3
Cavite	6	0.662	4	0.664	67.8	74.3	9.7
Cebu	20	0.569	15	0.620	67.7	77.5	8.3
Compostela Valley*	64	0.358	60	0.522	63.4	69.7	7.1
Davao del Norte*	41	0.490	37	0.568	63.4	69.7	7.9
Davao del Sur	22	0.559	23	0.599	65.5	69.9	8.6
Davao Oriental	65	0.356	66	0.498	70.1	68.6	6.1
Eastern Samar	44	0.476	42	0.561	66.4	71.1	7.4
Guimaras							
Ifugao	58	0.441	62	0.511	57.7	60.9	6.1
Ilocos Norte	21	0.562	12	0.633	72.8	79.9	9.2
Ilocos Sur	19	0.570	16	0.617	67.2	73.3	9.1
Iloilo	9	0.618	10	0.638	69.6	76.7	9.0
Isabela	13	0.594	17	0.613	73.1	78.0	8.0
Kalinga	28	0.528	48	0.546	59.4	63.2	7.1
La Union	12	0.601	5	0.657	74.2	83.2	9.4
Laguna	3	0.667	7	0.651	69.5	72.3	9.3
Lanao del Norte	27	0.533	33	0.579	65.9	65.5	8.4
Lanao del Sur	56	0.443	64	0.503	55.9	63.2	7.0
Leyte	26	0.545	36	0.570	65.2	68.1	7.1

	Expected years of schooling 2008		Estimated earned income (PPP NCR 2009 pesos) 2009		Estimated earned income (PPP US$) 2009		HDI rank minus
Female	Male	Female	Male	Female	Male	Female	GDI rank+
10.7	12.9	13.0	88,470	59,499	3,731	2,509	-
8.8	12.0	12.6	35,824	30,579	1,231	1,051	15
9.1	11.3	11.7	58,529	24,425	1,923	802	-17
7.7	10.8	11.6	34,248	14,829	1,345	583	-2
9.0	12.6	13.6	38,794	22,930	1,397	826	6
8.7	11.8	13.1	39,128	26,793	1,557	1,066	5
7.6	12.2	13.9	49,621	22,878	1,681	775	-11
7.0	12.6	12.0	53,438	13,907	1,746	454	-16
9.4	12.2	12.6	70,592	48,455	2,901	1,991	0
8.9	12.3	11.8	56,741	40,110	2,186	1,545	
10.3	13.8	14.3	98,235	62,620	3,310	2,110	0
8.3	13.0	12.8	49,380	58,711	1,580	1,878	3
8.0	12.1	13.0	36,849	26,792	1,418	1,031	10
8.0	10.7	10.8	41,014	27,858	1,424	967	1
9.4	12.1	12.0	70,907	43,002	2,794	1,695	0
8.1	11.7	12.8	54,850	42,917	1,840	1,440	3
8.2	10.3	12.0	43,116	24,182	1,540	864	-3
8.4	11.3	12.1	37,833	27,281	1,370	988	8
8.6	10.6	13.2	31,935	65,707	1,154	2,375	-7
9.9	11.9	12.1	67,500	47,161	2,899	2,025	-3
8.6	11.7	12.1	50,842	33,883	2,022	1,348	3
7.7	11.7	11.6	48,722	15,535	1,828	583	-12
8.4	11.3	12.6	45,608	26,417	1,712	992	-7
9.0	11.8	12.2	59,211	32,311	2,126	1,160	-3
7.0	9.9	11.2	32,736	16,192	1,141	564	0
8.7	11.7	12.7	36,908	25,288	1,288	883	11
6.7	11.3	12.8	46,064	25,638	1,665	927	-8
9.2	12.0	12.3	70,212	26,649	2,542	965	-14
9.3	11.4	12.7	53,485	32,902	2,036	1,252	3
9.4	12.6	13.1	49,620	41,320	1,753	1,460	4
8.3	11.3	12.0	54,675	36,228	1,752	1,161	5
7.1	12.0	13.8	49,717	36,970	1,565	1,164	1
9.3	12.2	12.8	54,715	31,968	2,107	1,231	3
9.7	12.2	12.1	71,278	47,578	2,626	1,753	3
9.1	12.7	12.6	46,050	31,982	1,563	1,086	3
6.8	12.5	12.9	29,075	32,381	900	1,002	5
8.1	11.0	12.2	52,572	35,578	1,736	1,175	

Statistical Annex B1: Gender-related Development Index 2009

	GDI 2009		GDI (International) 2009		Life expectancy at birth (years) 2009		Mean years of schooling 2008
Province	Rank	Value	Rank	Value	Male	Female	Male
Maguindanao	66	0.348	68	0.472	65.7	60.6	6.3
Marinduque	25	0.545	31	0.588	61.9	75.8	7.9
Masbate	60	0.424	59	0.525	64.8	69.7	6.9
Misamis Occidental	49	0.469	41	0.561	68.9	69.7	8.3
Misamis Oriental	15	0.586	13	0.631	71.2	70.2	9.2
Mt. Province	59	0.430	58	0.530	58.1	65.4	7.5
Negros Occidental	30	0.517	34	0.573	67.6	73.1	7.8
Negros Oriental	39	0.493	45	0.552	67.6	70.2	6.8
North Cotabato	50	0.468	51	0.543	67.5	68.2	7.2
Northern Samar	53	0.456	54	0.541	61.6	72.5	7.0
Nueva Ecija	37	0.504	29	0.590	65.1	70.8	8.6
Nueva Vizcaya							
Occidental Mindoro	33	0.512	44	0.557	64.2	66.9	7.2
Oriental Mindoro	55	0.449	52	0.542	65.4	66.7	7.6
Palawan	46	0.473	61	0.517	56.5	62.9	7.6
Pampanga	11	0.610	8	0.641	70.5	74.9	9.0
Pangasinan	32	0.516	26	0.590	64.8	69.1	9.3
Quezon	54	0.451	49	0.545	64.2	69.1	7.8
Quirino	14	0.591	21	0.604	66.0	76.9	8.0
Rizal	2	0.700	2	0.675	73.3	71.9	9.7
Romblon	61	0.422	57	0.535	61.8	69.7	7.6
Sarangani	62	0.408	65	0.502	68.3	74.3	5.5
Siquijor							
Sorsogon	35	0.507	25	0.591	70.0	79.2	7.9
South Cotabato	16	0.584	20	0.606	68.3	68.2	8.6
Southern Leyte	42	0.485	39	0.563	64.8	71.6	7.4
Sultan Kudarat	43	0.477	46	0.549	66.7	70.2	7.5
Sulu	67	0.337	69	0.445	58.8	57.8	4.7
Surigao del Norte	47	0.471	40	0.562	64.0	69.9	8.1
Surigao del Sur							
Tarlac	23	0.557	22	0.602	64.7	71.2	9.1
Tawi-Tawi							
Western Samar	40	0.491	43	0.559	68.4	74.2	7.0
Zambales	17	0.582	14	0.622	66.5	68.8	9.6
Zamboanga del Norte	57	0.443	53	0.542	72.7	82.0	6.5
Zamboanga del Sur*	18	0.574	32	0.583	62.8	73.3	7.9
Zamboanga Sibugay*	63	0.383	56	0.536	62.8	73.3	7.1

*Life expectancy of Compostela Valley and Zamboanga Sibugay is from Davao del Norte and Zamboanga del Sur, respectively.
+ HDI ranks of provinces with data are adjusted for comparability

	Expected years of schooling 2008		Estimated earned income (PPP NCR 2009 pesos) 2009		Estimated earned income (PPP US$) 2009		HDI rank minus
Female	Male	Female	Male	Female	Male	Female	GDI rank+
6.3	9.8	10.5	29,663	17,781	1,066	639	2
8.5	12.9	12.9	45,386	33,336	1,538	1,130	2
7.4	11.3	11.7	34,930	21,219	1,192	724	2
8.8	12.1	13.0	38,146	22,867	1,266	759	-1
9.8	12.1	13.2	61,031	32,987	2,349	1,270	-3
7.5	11.8	14.6	38,229	22,151	1,394	808	-1
8.3	11.2	12.0	49,101	27,908	1,591	905	1
7.1	11.4	11.5	47,764	27,599	1,581	913	-4
7.6	11.0	11.8	47,106	24,054	1,554	793	-13
7.7	11.4	12.3	34,989	25,284	1,243	898	6
8.8	11.4	12.0	43,665	27,601	1,826	1,154	-4
7.9	11.1	11.5	51,496	30,509	1,773	1,051	-1
7.8	11.6	11.7	45,442	21,922	1,595	769	-8
8.0	11.7	11.8	46,810	27,840	1,400	832	-8
9.1	11.8	12.4	59,177	37,701	2,359	1,503	-3
9.2	11.7	12.2	53,580	26,762	2,023	1,011	-6
8.2	10.7	11.3	45,835	22,210	1,626	788	-9
8.5	10.7	12.8	64,989	35,600	2,100	1,151	0
10.0	12.1	12.3	74,158	52,383	2,956	2,088	0
8.0	12.1	12.1	40,123	20,376	1,442	732	-1
6.1	10.4	10.7	31,077	21,436	992	684	2
7.8	12.1	12.8	39,092	26,202	1,412	946	6
8.9	12.1	12.2	59,093	36,619	2,066	1,280	0
8.2	10.8	13.0	44,193	25,614	1,573	911	1
7.9	10.7	12.4	35,098	27,473	1,171	916	13
4.5	10.9	11.6	23,890	21,431	899	806	2
8.7	12.0	12.4	36,218	25,242	1,332	928	10
8.9	11.5	11.2	51,279	34,301	1,994	1,334	1
7.8	10.9	12.2	36,828	28,043	1,217	927	11
9.3	12.5	12.6	54,283	35,904	2,161	1,429	3
7.0	10.8	11.3	29,687	22,544	966	734	6
8.4	11.2	12.2	52,770	39,363	1,647	1,229	3
7.6	11.4	12.2	30,576	17,698	1,290	746	4

Statistical Annex B2: Gender-related Development Index 2006

	GDI 2006		GDI (International) 2006		Life expectancy at birth (years) 2006		Mean years of schooling 2004
Province	Rank	Value	Rank	Value	Male	Female	Male
Metro Manila		0.726		0.692	69.8	73.7	10.4
Abra	31	0.489	26	0.560	65.5	69.5	8.7
Agusan del Norte	37	0.470	44	0.533	59.9	67.4	8.3
Agusan del Sur	58	0.409	52	0.514	61.9	67.1	7.0
Aklan	41	0.460	35	0.547	64.0	67.5	8.4
Albay	24	0.519	17	0.592	69.3	74.6	8.0
Antique	43	0.458	48	0.522	61.1	67.3	7.3
Apayao							
Aurora							
Basilan	69	0.205	68	0.411	60.2	63.8	6.2
Bataan	5	0.636	6	0.634	66.7	72.1	9.2
Batanes							
Batangas	9	0.596	9	0.622	69.7	75.4	8.5
Benguet	1	0.750	1	0.683	70.4	75.4	9.1
Biliran	7	0.606	21	0.576	62.7	68.0	7.7
Bohol	50	0.436	31	0.555	69.9	73.6	7.5
Bukidnon	44	0.457	41	0.538	68.3	72.3	7.0
Bulacan	6	0.633	4	0.640	71.2	75.6	9.0
Cagayan	11	0.582	13	0.597	70.0	74.2	7.9
Camarines Norte	59	0.406	54	0.511	62.2	67.1	7.7
Camarines Sur	48	0.443	32	0.554	72.0	73.9	8.2
Camiguin							
Capiz							
Catanduanes	45	0.455	39	0.539	63.0	70.3	7.7
Cavite	4	0.656	3	0.657	66.4	75.1	9.6
Cebu	18	0.543	12	0.603	69.5	75.8	8.1
Compostela Valley*	64	0.338	63	0.499	62.9	69.7	6.8
Davao del Norte*	55	0.422	40	0.539	62.9	69.7	7.7
Davao del Sur	17	0.546	19	0.588	67.5	71.3	8.3
Davao Oriental	60	0.406	60	0.503	68.3	71.1	6.1
Eastern Samar	34	0.479	45	0.530	62.7	67.8	7.0
Guimaras					65.0	71.3	
Ifugao	38	0.464	50	0.522	58.5	63.8	6.7
Ilocos Norte	13	0.568	11	0.613	70.0	76.3	8.6
Ilocos Sur	15	0.548	18	0.591	64.4	71.8	8.1
Iloilo	8	0.603	10	0.616	68.4	74.2	8.4
Isabela	14	0.558	20	0.582	69.5	74.4	7.9
Kalinga	40	0.460	55	0.510	59.4	64.5	6.8
La Union	12	0.579	7	0.629	71.0	78.3	9.0
Laguna	3	0.664	5	0.639	66.5	72.2	9.2
Lanao del Norte	19	0.540	25	0.566	64.2	66.1	7.9
Lanao del Sur	51	0.432	65	0.478	56.0	61.4	6.7
Leyte	26	0.516	34	0.552	65.6	69.9	7.1

	Expected years of schooling 2004		Estimated earned income (PPP NCR 2009 pesos) 2006		Estimated earned income (PPP US$) 2006		HDI rank minus
Female	Male	Female	Male	Female	Male	Female	GDI rank+
10.4	12.8	13.1	89,636	51,750	3,635	2,098	-
8.8	11.8	13.5	34,928	27,294	1,119	875	8
9.3	11.7	12.4	49,892	23,369	1,430	670	-7
7.7	10.9	12.5	35,515	20,214	1,218	693	4
8.5	12.8	12.8	40,586	22,679	1,309	732	1
8.2	11.6	13.1	46,696	26,986	1,683	973	1
7.4	11.6	13.6	30,992	28,830	940	875	13
5.3	11.3	11.5	57,455	11,677	1,625	330	-15
9.1	11.7	12.5	64,549	45,460	2,401	1,691	2
8.7	11.5	12.5	54,097	37,759	1,954	1,364	2
9.8	14.1	14.8	104,921	51,939	3,298	1,633	0
8.5	11.1	12.4	55,494	51,674	1,542	1,436	2
7.4	12.6	12.6	38,749	19,824	1,373	702	1
7.8	11.0	11.1	46,694	22,115	1,440	682	-8
8.9	11.8	12.0	72,643	38,751	2,591	1,382	-1
7.9	11.9	13.1	51,329	37,014	1,553	1,120	1
8.2	10.0	11.3	44,994	19,272	1,456	624	-10
8.3	11.2	12.4	36,576	20,116	1,199	660	4
7.9	11.3	12.5	42,089	22,763	1,379	746	-5
9.6	12.1	12.5	74,527	43,483	3,001	1,751	-1
8.2	12.0	12.3	50,203	29,767	1,839	1,090	4
7.6	12.1	11.6	40,565	14,867	1,374	504	-3
8.2	12.4	12.7	46,863	18,946	1,589	642	-17
8.8	11.5	12.1	60,529	29,568	1,962	958	-4
6.4	10.1	11.5	33,399	20,252	1,051	637	4
7.6	11.4	12.2	37,300	29,614	1,130	898	10
7.4	11.5	12.3	39,508	28,930	1,332	976	10
8.9	11.8	12.4	63,448	29,705	2,127	996	-5
8.5	12.5	12.5	49,206	32,947	1,735	1,161	8
8.9	12.9	13.7	51,819	39,063	1,640	1,236	2
8.0	11.5	12.4	56,034	31,482	1,619	910	1
6.7	11.4	12.8	43,092	26,951	1,265	791	3
8.8	12.3	13.4	49,223	32,476	1,756	1,158	2
9.3	12.3	12.4	76,027	47,535	2,626	1,642	1
8.3	11.8	12.9	61,816	31,145	1,865	940	-3
6.3	12.3	12.7	34,320	27,576	914	734	8
7.9	11.9	13.1	46,664	29,834	1,338	855	1

Statistical Annex B2: Gender-related Development Index 2006

Province	GDI 2006		GDI (International) 2006		Life expectancy at birth (years) 2006		Mean years of schooling 2004
	Rank	Value	Rank	Value	Male	Female	Male
Maguindanao	65	0.318	67	0.423	58.5	56.7	6.1
Marinduque	36	0.472	38	0.540	62.8	71.9	7.4
Masbate	57	0.412	57	0.506	63.4	68.7	6.9
Misamis Occidental	61	0.400	49	0.522	66.0	70.1	7.8
Misamis Oriental	22	0.524	14	0.595	68.7	71.6	8.7
Mt. Province	23	0.522	28	0.558	59.6	66.2	7.0
Negros Occidental	28	0.506	27	0.559	67.2	73.2	7.8
Negros Oriental	49	0.437	53	0.513	65.8	68.7	6.4
North Cotabato	47	0.445	51	0.520	66.8	70.6	7.2
Northern Samar	42	0.460	47	0.524	61.7	69.8	7.1
Nueva Ecija	30	0.489	22	0.576	67.1	72.0	8.3
Nueva Vizcaya							
Occidental Mindoro	46	0.451	46	0.526	62.2	67.0	7.3
Oriental Mindoro	62	0.383	56	0.509	64.3	67.6	7.3
Palawan	53	0.426	61	0.502	60.1	65.2	7.4
Pampanga	10	0.585	8	0.625	69.6	75.3	9.0
Pangasinan	39	0.462	24	0.567	65.6	71.2	9.3
Quezon	67	0.300	64	0.492	64.6	70.7	7.3
Quirino	27	0.513	33	0.553	64.3	69.8	7.2
Rizal	2	0.678	2	0.666	70.5	73.2	9.8
Romblon	63	0.362	62	0.500	61.8	68.7	7.0
Sarangani	66	0.304	66	0.443	67.2	72.4	5.2
Siquijor							
Sorsogon	54	0.423	36	0.542	68.8	74.9	7.5
South Cotabato	25	0.517	23	0.571	67.2	69.3	8.4
Southern Leyte	32	0.486	37	0.542	64.0	69.6	6.9
Sultan Kudarat	56	0.413	59	0.504	64.0	68.3	7.1
Sulu	68	0.294	69	0.410	54.4	56.7	4.9
Surigao del Norte	33	0.482	29	0.557	63.7	70.5	8.0
Surigao del Sur							
Tarlac	16	0.547	15	0.594	66.5	71.0	9.0
Tawi-Tawi							
Western Samar	29	0.504	43	0.536	64.2	68.4	6.6
Zambales	20	0.539	16	0.592	66.1	69.2	9.0
Zamboanga del Norte	52	0.428	58	0.505	67.3	73.8	6.4
Zamboanga del Sur*	21	0.526	30	0.556	64.2	72.1	7.7
Zamboanga Sibugay*	35	0.473	42	0.536	64.2	72.1	7.2

*Life expectancy of Compostela Valley and Zamboanga Sibugay is from Davao del Norte and Zamboanga del Sur, respectively.
+ HDI ranks of provinces with data are adjusted for comparability

	Expected years of schooling 2004		Estimated earned income (PPP NCR 2009 pesos) 2006		Estimated earned income (PPP US$) 2006		HDI rank minus
Female	Male	Female	Male	Female	Male	Female	GDI rank+
5.4	8.8	9.6	32,454	17,184	1,013	536	3
7.7	12.0	12.6	38,070	25,477	1,177	788	9
7.4	11.8	12.1	30,525	20,863	944	645	8
8.4	11.9	13.6	49,875	17,087	1,472	504	-29
9.2	12.1	13.3	54,611	25,773	1,868	882	-2
7.1	13.5	14.1	40,320	38,128	1,371	1,297	5
8.3	11.7	12.3	48,358	26,263	1,404	763	-2
6.8	10.3	12.0	41,056	22,612	1,251	689	1
7.8	9.6	11.3	42,377	22,147	1,247	652	-1
7.6	10.9	12.2	30,634	29,989	945	925	13
8.4	11.3	11.6	43,374	25,243	1,642	955	4
7.9	11.8	11.7	41,463	23,514	1,303	739	1
7.7	11.7	12.1	39,894	17,034	1,277	545	-4
7.6	11.8	12.9	53,646	20,276	1,463	553	-18
8.9	11.2	12.1	81,625	30,988	2,945	1,118	-4
9.1	11.8	12.3	46,694	21,177	1,633	741	-6
7.7	10.9	11.6	44,480	13,294	1,479	442	-10
7.7	11.5	12.9	64,709	27,105	1,886	790	-8
9.5	12.9	13.0	83,215	43,561	3,111	1,628	0
7.5	12.3	13.1	33,943	16,429	1,113	539	4
5.3	9.0	10.3	38,237	14,156	1,089	403	0
7.9	11.6	12.6	38,743	18,710	1,267	612	-1
8.7	12.3	12.3	51,044	27,314	1,592	852	-1
7.3	12.0	12.7	42,645	27,465	1,318	849	5
7.4	11.4	11.8	33,954	20,508	1,011	610	7
4.2	11.2	11.2	29,813	16,194	965	524	1
8.9	12.4	13.3	38,992	25,224	1,251	809	8
8.6	11.4	12.1	56,828	30,361	2,001	1,069	1
7.4	11.0	12.7	43,603	31,490	1,251	904	2
8.3	11.6	13.0	52,426	30,263	1,889	1,091	1
6.8	10.2	10.7	34,272	22,274	983	639	8
7.8	11.5	12.5	62,327	28,309	1,714	779	-3
7.2	10.8	12.5	50,221	24,187	1,499	722	-6

Statistical Annex B3: Gender-related Development Index 2003

	GDI 2003		GDI (International) 2003		Life expectancy at birth (years) 2003		Mean years of schooling 2002
Province	Rank	Value	Rank	Value	Male	Female	Male
Metro Manila		0.719		0.674	67.0	72.9	10.4
Abra	20	0.528	27	0.547	60.2	66.2	7.9
Agusan del Norte	41	0.487	45	0.528	62.6	67.5	8.0
Agusan del Sur	66	0.355	61	0.483	62.5	64.6	7.4
Aklan	48	0.468	39	0.531	60.5	66.2	7.8
Albay	31	0.504	22	0.565	66.7	71.2	8.1
Antique	35	0.498	42	0.529	58.7	66.5	7.3
Apayao							
Aurora							
Basilan	68	0.292	68	0.402	56.9	64.3	5.6
Bataan	5	0.614	5	0.620	66.6	72.8	9.2
Batanes							
Batangas	8	0.608	7	0.613	67.5	76.1	8.4
Benguet	3	0.676	3	0.640	67.0	73.1	9.1
Biliran	28	0.509	50	0.524	62.0	65.3	7.2
Bohol	58	0.424	48	0.526	67.4	72.6	6.6
Bukidnon	51	0.463	52	0.518	65.9	71.4	7.1
Bulacan	9	0.607	8	0.612	68.0	74.8	8.7
Cagayan	26	0.512	29	0.543	63.9	69.1	7.2
Camarines Norte	47	0.468	41	0.530	63.0	67.0	8.1
Camarines Sur	49	0.467	33	0.538	68.3	74.3	7.3
Camiguin							
Capiz							
Catanduanes	6	0.614	13	0.589	64.2	69.1	7.4
Cavite	4	0.658	2	0.645	65.1	76.0	9.4
Cebu	19	0.546	12	0.590	71.2	74.1	7.7
Compostela Valley*+	59	0.423	55	0.509	62.4	69.8	7.3
Davao del Norte*+	27	0.511	28	0.546	62.4	69.8	7.3
Davao del Sur	18	0.548	19	0.576	69.5	72.7	8.2
Davao Oriental	63	0.388	60	0.494	66.4	73.6	7.1
Eastern Samar	50	0.464	56	0.503	59.0	64.4	6.3
Guimaras							
Ifugao	33	0.499	44	0.528	59.2	66.7	6.1
Ilocos Norte	10	0.588	10	0.593	67.1	72.8	8.4
Ilocos Sur	22	0.525	23	0.561	61.5	70.4	8.4
Iloilo	14	0.570	14	0.588	67.2	71.6	8.2
Isabela	12	0.577	20	0.572	66.0	70.8	8.1
Kalinga	43	0.479	53	0.514	59.3	65.8	7.3
La Union	15	0.569	11	0.592	67.8	73.4	8.4
Laguna	1	0.686	4	0.632	63.4	72.2	9.3
Lanao del Norte	29	0.508	30	0.541	62.6	66.7	8.0
Lanao del Sur	36	0.497	64	0.479	56.1	59.6	5.9
Leyte	32	0.504	32	0.538	66.0	71.8	7.0

	Expected years of schooling 2002		Estimated earned income (PPP NCR 2009 pesos) 2003		Estimated earned income (PPP US$) 2003		
Female	Male	Female	Male	Female	Male	Female	HDI rank minus GDI rank++
10.2	13.2	13.2	97,589	50,254	3,443	1,773	-
7.8	12.6	13.5	35,600	44,203	1,003	1,246	4
8.3	12.6	12.7	51,950	24,877	1,299	622	-11
7.8	11.8	12.4	35,250	15,852	1,054	474	-2
8.5	12.7	14.1	35,283	26,400	1,031	771	1
8.4	12.0	12.3	37,148	29,433	1,190	943	4
7.7	12.6	13.7	39,939	32,011	1,097	880	1
4.8	11.1	10.9	45,947	14,349	1,110	347	-5
8.9	12.4	12.8	63,050	38,991	2,081	1,287	3
8.3	11.8	12.9	56,859	40,439	1,833	1,304	1
9.3	14.6	14.5	104,152	40,315	2,879	1,114	-2
7.8	11.0	13.2	31,385	52,140	785	1,304	1
6.7	11.4	13.7	38,778	19,991	1,232	635	-3
7.0	10.9	12.1	40,767	24,586	1,096	661	-5
8.3	11.4	12.3	74,198	36,557	2,348	1,157	-3
7.3	12.2	12.9	53,593	28,839	1,465	788	-5
8.2	12.2	12.8	36,909	25,050	1,062	721	3
7.4	11.5	12.2	38,136	23,968	1,112	699	-2
7.8	11.7	13.3	81,244	40,923	2,365	1,191	-1
8.9	12.9	12.5	73,019	45,688	2,624	1,642	0
7.5	12.1	12.4	52,939	30,398	1,739	999	1
7.6	11.2	12.7	37,233	20,657	1,081	600	-2
7.6	11.2	12.7	52,733	29,256	1,532	850	0
8.3	11.5	12.6	60,504	29,193	1,681	811	-3
7.3	12.0	12.5	32,450	17,435	875	470	2
7.3	11.6	13.0	33,848	32,169	923	877	-2
6.0	12.9	14.4	39,442	36,178	1,170	1,073	7
8.3	12.1	13.1	51,108	38,999	1,484	1,132	0
8.3	11.5	12.6	47,131	31,654	1,439	967	4
8.5	12.9	14.0	46,725	36,070	1,339	1,034	4
8.1	12.2	13.0	50,060	39,088	1,307	1,020	1
7.5	12.7	13.5	38,689	29,097	999	751	2
8.6	11.3	12.5	52,609	34,490	1,625	1,066	-3
9.2	12.5	12.7	77,441	54,630	2,387	1,684	2
8.4	12.5	13.4	52,117	27,580	1,371	725	-1
5.4	11.5	12.4	44,793	44,167	1,010	996	-3
7.6	12.1	12.9	46,790	27,277	1,207	704	-1

Statistical Annex B3: Gender-related Development Index 2003

	GDI 2003		GDI (International) 2003		Life expectancy at birth (years) 2003		Mean years of schooling 2002
Province	Rank	Value	Rank	Value	Male	Female	Male
Maguindanao	67	0.334	67	0.412	51.2	52.8	6.7
Marinduque	55	0.445	51	0.519	63.8	67.9	7.4
Masbate	65	0.359	65	0.467	62.0	67.7	6.2
Misamis Occidental	34	0.499	31	0.539	63.2	70.4	8.1
Misamis Oriental	23	0.523	16	0.581	66.3	73.1	9.0
Mt. Province	46	0.468	40	0.530	61.1	66.9	7.2
Negros Occidental	24	0.523	24	0.552	66.8	73.4	7.3
Negros Oriental	57	0.436	59	0.494	64.1	67.3	6.7
North Cotabato	42	0.483	36	0.533	66.1	73.1	7.4
Northern Samar	61	0.419	58	0.495	61.8	67.2	6.5
Nueva Ecija	37	0.494	21	0.569	69.2	73.2	8.0
Nueva Vizcaya							
Occidental Mindoro	40	0.489	47	0.527	60.3	67.1	7.2
Oriental Mindoro	38	0.493	37	0.532	63.2	68.4	7.1
Palawan	30	0.507	38	0.531	63.7	67.4	7.8
Pampanga	7	0.611	6	0.619	68.6	75.8	8.7
Pangasinan	21	0.526	18	0.577	66.5	73.2	8.7
Quezon	39	0.492	25	0.551	64.9	72.2	8.0
Quirino	16	0.566	26	0.549	62.5	62.7	7.1
Rizal	2	0.680	1	0.654	67.6	74.4	9.9
Romblon	53	0.460	43	0.528	61.7	67.6	7.7
Sarangani	64	0.378	66	0.455	66.0	70.4	5.8
Siquijor							
Sorsogon	52	0.461	35	0.537	67.6	70.6	7.5
South Cotabato	13	0.572	17	0.580	66.0	70.5	8.6
Southern Leyte	44	0.476	49	0.524	63.1	67.7	6.9
Sultan Kudarat	60	0.419	57	0.499	61.2	66.4	8.1
Sulu	69	0.291	69	0.384	49.9	55.6	4.4
Surigao del Norte	45	0.470	46	0.527	63.5	71.1	7.2
Surigao del Sur							
Tarlac	17	0.554	15	0.581	68.3	70.8	8.0
Tawi-Tawi							
Western Samar	54	0.450	62	0.482	60.1	62.6	6.2
Zambales	11	0.580	9	0.600	65.7	69.6	9.3
Zamboanga del Norte	62	0.411	63	0.480	61.9	65.6	7.4
Zamboanga del Sur*+	25	0.519	34	0.537	65.7	70.8	7.3
Zamboanga Sibugay*+	56	0.440	54	0.512	65.7	70.8	7.3

*Life expectancy of Compostela Valley and Zamboanga Sibugay is from Davao del Norte and Zamboanga del Sur, respectively.
+ Mean years of schooling and expected years of schooling of Compostela Valley and Zamboanga Sibugay are from Davao del Norte and Zamboanga del Sur, respectively.
++ HDI ranks of provinces with data are adjusted for comparability

	Expected years of schooling 2002		Estimated earned income (PPP NCR 2009 pesos) 2003		Estimated earned income (PPP US$) 2003		
Female	Male	Female	Male	Female	Male	Female	HDI rank minus GDI rank++
6.2	10.5	11.4	33,729	18,508	904	496	1
7.6	13.2	13.4	38,288	22,329	1,071	624	-1
6.7	11.2	11.5	42,498	16,643	1,168	457	-4
8.5	12.5	13.7	38,728	28,060	996	722	0
9.0	12.7	13.1	54,785	25,504	1,634	761	-4
7.4	13.5	14.5	31,665	28,858	947	863	10
7.5	12.1	12.4	51,545	28,575	1,355	751	-1
7.1	10.1	10.9	34,006	24,951	930	682	3
7.6	11.7	13.0	40,293	25,414	1,058	667	0
6.9	11.9	13.3	36,852	21,030	1,023	584	-2
7.8	11.5	11.7	47,104	24,846	1,582	834	-5
7.5	11.7	13.0	43,257	29,092	1,229	827	-2
7.2	11.7	12.1	35,850	33,461	1,038	969	5
8.3	12.0	13.1	41,535	29,874	1,025	737	7
8.4	11.8	12.8	70,584	36,111	2,260	1,156	0
8.5	12.6	12.4	48,279	27,614	1,463	837	4
8.4	12.0	12.4	39,160	26,783	1,162	795	2
7.7	11.6	13.7	56,893	41,672	1,498	1,097	-5
9.7	12.4	13.3	78,987	45,400	2,635	1,515	0
7.7	13.1	13.9	29,358	27,988	871	830	5
5.7	9.7	10.1	32,710	18,989	831	483	3
7.5	11.7	13.3	43,955	22,023	1,278	640	-13
8.8	12.2	12.3	53,634	35,744	1,493	995	3
7.5	11.6	13.4	39,434	27,179	1,097	756	0
8.3	12.2	13.5	33,291	20,465	884	543	2
3.9	11.4	11.9	35,660	16,183	977	444	0
7.4	12.4	12.9	35,865	26,074	1,004	730	8
7.9	11.3	12.1	61,004	31,774	1,905	992	-3
6.6	9.4	12.6	38,221	29,308	987	757	-3
8.8	13.1	12.9	48,376	38,233	1,546	1,222	6
7.5	12.3	13.0	25,315	23,647	636	594	4
7.4	12.1	12.7	55,389	28,336	1,335	683	-3
7.4	12.1	12.7	40,959	20,954	1,071	548	-4

Statistical Annex B4: Gender-related Development Index 2000

	GDI 2000		GDI (International) 2000		Life expectancy at birth (years) 2000		Mean years of schooling 1999
Province	Rank	Value	Rank	Value	Male	Female	Male
Metro Manila		0.766		0.677	66.2	72.2	10.4
Abra	21	0.516	26	0.532	59.8	65.4	8.1
Agusan del Norte	36	0.478	44	0.509	61.5	66.2	8.1
Agusan del Sur	68	0.334	62	0.456	61.3	63.5	7.0
Aklan	33	0.479	28	0.528	60.0	65.8	7.7
Albay	34	0.479	22	0.545	65.5	70.2	7.8
Antique	27	0.492	37	0.515	58.3	65.7	6.8
Apayao							
Aurora							
Basilan	65	0.355	67	0.416	56.6	63.8	5.9
Bataan	7	0.622	5	0.612	65.8	71.9	8.8
Batanes							
Batangas	8	0.618	7	0.608	66.9	75.1	8.1
Benguet	2	0.675	3	0.622	65.8	71.7	8.7
Biliran	38	0.471	52	0.496	61.2	64.3	6.7
Bohol	54	0.428	42	0.510	66.5	71.5	6.5
Bukidnon	44	0.455	47	0.502	64.6	69.8	6.8
Bulacan	4	0.648	4	0.616	67.3	74.1	8.4
Cagayan	28	0.490	34	0.518	62.9	68.2	6.4
Camarines Norte	62	0.381	57	0.487	61.9	66.1	8.0
Camarines Sur	49	0.450	33	0.519	66.8	72.9	7.4
Camiguin							
Capiz							
Catanduanes	41	0.461	29	0.524	63.4	68.1	7.6
Cavite	5	0.644	2	0.631	64.4	75.1	9.2
Cebu	24	0.509	19	0.559	70.4	73.1	7.6
Compostela Valley**							
Davao del Norte**	55	0.415	48	0.499	61.4	68.8	7.2
Davao del Sur	10	0.582	13	0.578	68.1	71.6	8.1
Davao Oriental	37	0.475	39	0.513	65.0	71.7	6.6
Eastern Samar	59	0.404	61	0.465	58.5	63.7	6.1
Guimaras							
Ifugao	57	0.410	59	0.473	58.3	65.6	5.6
Ilocos Norte	6	0.636	8	0.602	66.5	72.2	8.2
Ilocos Sur	18	0.538	18	0.560	61.3	69.8	8.1
Iloilo	9	0.603	10	0.591	66.4	71.1	8.1
Isabela	11	0.570	21	0.555	64.8	69.7	7.7
Kalinga	22	0.514	35	0.517	58.7	64.9	6.8
La Union	16	0.546	14	0.576	66.9	72.7	8.6
Laguna	3	0.652	6	0.610	62.9	71.3	9.1
Lanao del Norte	39	0.465	38	0.513	61.6	65.9	7.9
Lanao del Sur	60	0.393	66	0.426	55.2	58.7	6.1
Leyte	19	0.521	25	0.532	64.4	70.2	6.7

	Expected years of schooling 1999		Estimated earned income (PPP NCR 2009 pesos) 2000		Estimated earned income (PPP US$) 2000		
Female	Male	Female	Male	Female	Male	Female	HDI rank minus GDI rank*
10.1	12.9	13.2	113,802	60,951	3,748	2,008	-
7.8	11.6	12.5	51,298	31,988	1,342	837	-2
8.2	11.0	12.3	44,384	26,306	1,059	628	-1
7.3	10.6	13.0	28,744	15,556	820	444	0
7.9	13.0	13.9	44,474	26,173	1,223	720	-3
8.0	11.8	12.7	39,640	25,596	1,203	777	6
7.2	13.3	13.0	34,812	36,738	901	951	9
4.8	11.0	11.3	39,905	18,080	886	401	-3
8.2	12.1	12.8	70,528	40,957	2,237	1,299	-1
8.1	12.4	12.9	57,646	43,841	1,732	1,317	0
9.1	13.5	14.5	91,705	43,765	2,353	1,123	0
6.8	11.8	13.0	40,371	28,675	963	684	6
6.8	11.9	12.9	33,136	21,718	941	617	5
7.2	10.5	11.0	44,045	23,935	1,115	606	1
8.1	11.6	11.8	77,957	45,813	2,370	1,393	0
6.9	11.3	12.6	49,097	28,380	1,279	739	-3
8.0	11.3	12.2	45,590	17,100	1,243	466	-12
7.5	9.8	12.2	39,905	22,336	1,102	617	-2
8.1	13.5	12.4	35,280	24,623	973	679	11
8.7	12.7	12.5	73,740	43,042	2,470	1,442	0
7.4	11.7	12.0	45,240	27,348	1,328	803	2
7.5	11.5	12.7	39,496	19,603	1,088	540	-1
8.2	11.5	12.4	58,516	36,479	1,541	961	1
6.8	10.1	11.9	45,484	26,081	1,163	667	-3
7.1	10.9	12.3	30,603	23,229	796	605	4
5.5	12.7	13.1	24,927	30,425	686	838	8
8.5	11.9	13.1	52,914	54,936	1,455	1,511	1
7.9	11.7	13.3	51,109	33,285	1,478	962	-1
8.4	12.2	13.9	60,442	39,784	1,631	1,074	0
7.8	10.8	12.4	52,870	40,476	1,315	1,007	3
6.9	13.4	13.6	45,989	34,368	1,103	824	5
8.2	11.4	12.4	51,996	31,210	1,521	913	0
8.8	11.8	12.3	86,480	46,140	2,485	1,326	0
7.9	12.2	13.2	55,162	22,814	1,366	565	-15
5.2	11.1	12.8	49,477	21,761	1,041	458	-7
6.9	11.3	13.1	53,729	30,959	1,323	762	1

Statistical Annex B4: Gender-related Development Index 2000

Province	GDI 2000		GDI (International) 2000		Life expectancy at birth (years) 2000		Mean years of schooling 1999
	Rank	Value	Rank	Value	Male	Female	Male
Marinduque	53	0.429	50	0.498	62.8	66.9	7.3
Masbate	64	0.356	64	0.445	61.2	66.8	6.2
Misamis Occidental	51	0.443	51	0.498	62.2	69.3	7.5
Misamis Oriental	13	0.569	12	0.584	65.1	71.8	8.8
Mt. Province	30	0.488	31	0.523	60.0	65.7	6.6
Negros Occidental	47	0.452	43	0.510	65.7	72.3	6.8
Negros Oriental	50	0.443	56	0.489	63.4	66.7	6.6
North Cotabato	40	0.464	36	0.515	64.6	71.4	7.3
Northern Samar	63	0.381	60	0.469	60.7	65.9	6.6
Nueva Ecija	31	0.483	17	0.561	68.1	72.2	8.0
Nueva Vizcaya							
Occidental Mindoro	52	0.433	55	0.490	59.7	66.3	6.5
Oriental Mindoro	26	0.492	27	0.528	62.5	67.5	7.5
Palawan	17	0.539	24	0.533	62.5	66.4	7.8
Pampanga	12	0.569	9	0.597	68.0	74.8	8.5
Pangasinan	20	0.520	15	0.565	65.9	72.3	8.5
Quezon	29	0.488	23	0.539	64.1	71.2	8.1
Quirino	32	0.481	45	0.504	62.0	62.6	7.1
Rizal	1	0.739	1	0.660	66.9	73.6	9.6
Romblon	61	0.393	58	0.478	60.9	66.6	7.1
Sarangani	66	0.344	65	0.434	64.9	69.6	5.9
Siquijor							
Sorsogon	42	0.459	30	0.524	66.2	69.4	7.5
South Cotabato	14	0.568	16	0.564	64.8	69.5	7.6
Southern Leyte	25	0.493	32	0.522	62.4	66.8	6.9
Sultan Kudarat	48	0.451	46	0.503	60.5	65.6	7.7
Sulu	69	0.304	69	0.364	49.7	55.0	3.8
Surigao del Norte	43	0.457	40	0.512	62.4	69.5	6.8
Surigao del Sur							
Tarlac	23	0.510	20	0.555	67.5	70.1	8.0
Tawi-Tawi							
Western Samar	58	0.405	63	0.455	59.4	61.9	6.0
Zambales	15	0.561	11	0.586	64.9	68.6	9.1
Zamboanga del Norte	35	0.479	41	0.511	61.2	64.9	7.6
Zamboanga del Sur**	45	0.455	53	0.495	64.4	69.4	6.7
Zamboanga Sibugay**							

* HDI ranks of provinces with data are adjusted for comparability
**Compostela Valley and Zamboanga Sibugay were part of Davao del Norte and Zamboanga del Sur, respectively

	Expected years of schooling 1999		Estimated earned income (PPP NCR 2009 pesos) 2000		Estimated earned income (PPP US$) 2000		HDI rank minus GDI rank*
Female	Male	Female	Male	Female	Male	Female	
7.0	11.6	12.9	40,927	21,508	1,087	571	-2
5.9	9.9	12.4	28,416	18,066	740	470	3
8.0	11.3	12.1	43,396	21,778	1,051	527	-8
9.2	12.3	13.0	52,550	33,924	1,475	952	2
6.8	11.9	16.2	31,281	40,119	868	1,114	12
7.2	11.4	12.5	48,749	21,717	1,207	538	-16
6.7	10.4	12.3	47,391	22,974	1,158	561	-9
7.8	11.6	13.1	35,430	24,755	894	625	9
6.9	11.7	12.0	35,935	18,330	952	486	-2
7.8	11.6	12.0	53,437	23,325	1,724	753	-10
7.0	10.6	12.1	44,515	22,767	1,202	615	-6
7.5	11.3	12.3	41,374	29,770	1,139	819	7
8.0	11.6	11.9	55,899	33,769	1,310	792	1
8.2	11.8	12.2	65,952	31,194	2,029	960	-2
8.4	11.8	12.8	48,346	27,591	1,387	792	3
7.9	11.0	11.9	53,697	24,886	1,485	688	-7
7.5	10.8	12.4	32,778	38,112	823	956	7
9.2	12.4	13.5	93,365	59,586	2,903	1,853	0
6.4	11.4	12.4	29,612	20,684	834	583	5
6.0	8.4	9.0	40,575	16,191	991	395	-6
7.3	12.1	13.0	37,286	23,861	1,027	657	6
8.1	11.4	12.4	58,159	36,664	1,555	980	-2
7.0	11.9	13.0	40,835	30,874	1,084	819	7
7.8	12.3	13.9	31,689	26,134	808	667	9
3.0	10.2	10.7	28,322	20,217	724	517	0
7.1	12.6	13.1	33,954	26,136	907	698	13
7.9	11.2	11.8	42,845	29,678	1,286	891	5
6.3	10.1	11.7	37,610	22,743	927	560	0
8.7	12.5	12.8	56,522	32,363	1,736	994	-2
7.8	12.5	12.7	43,762	26,419	1,068	645	-6
7.0	10.9	11.8	47,715	23,525	1,117	551	-8

Statistical Annex B5: Gender-related Development Index 1997

	GDI 1997		GDI (International) 1997		Life expectancy at birth (years) 1997		Mean Years of Schooling 1998	
Province	Rank	Value	Rank	Value	Male	Female	Male	Female
Metro Manila		0.764		0.682	65.4	71.5	10.3	10.1
Abra	47	0.454	45	0.520	59.5	64.7	8.1	8.1
Agusan del Norte	35	0.489	40	0.522	60.3	64.9	8.1	8.3
Agusan del Sur	65	0.378	62	0.480	60.0	62.4	7.1	7.4
Aklan	21	0.525	24	0.553	59.6	65.3	7.9	8.2
Albay	43	0.460	26	0.546	64.3	69.2	8.0	8.2
Antique	28	0.505	33	0.530	58.0	64.9	7.4	7.5
Apayao								
Aurora								
Basilan	32	0.494	54	0.507	56.4	63.3	8.2	8.5
Bataan	5	0.630	4	0.620	65.0	70.9	8.9	8.4
Batanes								
Batangas	6	0.626	5	0.620	66.3	74.2	8.3	8.5
Benguet	3	0.637	3	0.621	64.6	70.2	9.1	9.5
Biliran	48	0.453	52	0.511	60.3	63.4	7.5	7.4
Bohol	64	0.386	60	0.493	65.6	70.4	6.6	6.7
Bukidnon	42	0.461	53	0.510	63.3	68.3	7.0	7.3
Bulacan	8	0.606	7	0.612	66.6	73.3	8.6	8.4
Cagayan	39	0.476	38	0.524	61.9	67.3	6.9	7.2
Camarines Norte	61	0.398	58	0.498	60.8	65.2	7.8	8.0
Camarines Sur	50	0.445	35	0.528	65.4	71.6	7.5	7.5
Camiguin								
Capiz								
Catanduanes	24	0.513	22	0.557	62.6	67.2	7.9	8.5
Cavite	4	0.636	2	0.634	63.7	74.2	9.2	9.1
Cebu	20	0.534	18	0.575	69.5	72.2	7.7	7.6
Compostela Valley**								
Davao del Norte**	54	0.436	47	0.517	60.3	67.8	7.3	7.8
Davao del Sur	13	0.561	14	0.581	66.7	70.6	8.4	8.8
Davao Oriental	41	0.464	49	0.515	63.5	69.7	6.7	7.0
Eastern Samar	66	0.356	65	0.458	58.0	62.9	6.5	7.1
Guimaras								
Ifugao	44	0.458	51	0.512	57.4	64.5	6.5	7.4
Ilocos Norte	7	0.616	9	0.606	65.8	71.6	8.8	8.9
Ilocos Sur	15	0.556	17	0.576	61.0	69.2	8.0	8.3
Iloilo	12	0.565	12	0.586	65.6	70.5	8.4	8.4
Isabela	14	0.559	21	0.558	63.6	68.6	7.8	8.1
Kalinga	19	0.534	27	0.535	58.0	64.1	7.3	7.6
La Union	17	0.542	13	0.583	66.1	71.9	8.5	8.6
Laguna	2	0.653	6	0.616	62.5	70.4	9.1	8.7
Lanao del Norte	26	0.506	28	0.533	60.6	65.0	8.2	8.2
Lanao del Sur	57	0.435	64	0.465	54.4	57.7	8.3	8.7
Leyte	33	0.490	42	0.521	62.8	68.7	6.8	7.4

Expected Years of Schooling 1998		Estimated earned income (PPP NCR 2009 pesos) 1997		Estimated earned income (PPP US$) 1997		HDI rank minus GDI rank*
Male	Female	Male	Female	Male	Female	
13.0	13.4	119,003	59,646	4,245	2,127	-
12.1	13.0	44,884	23,495	1,304	683	-4
12.0	12.5	41,365	29,043	1,083	760	6
10.0	12.0	35,304	18,822	1,105	589	-2
13.5	13.1	39,383	37,903	1,197	1,152	7
11.5	12.8	41,247	23,182	1,362	766	3
11.8	13.4	39,836	36,229	1,139	1,036	5
11.2	11.6	62,046	28,242	1,465	667	-10
11.8	12.9	70,131	43,787	2,426	1,515	1
12.2	13.0	69,159	41,471	2,248	1,348	-1
13.7	14.5	92,193	36,583	2,627	1,042	-1
13.9	14.6	23,130	47,799	604	1,249	-9
10.8	12.7	31,593	18,449	944	551	2
10.4	10.9	46,384	24,970	1,272	685	2
11.4	12.4	72,974	37,168	2,420	1,233	-1
11.7	12.7	49,029	25,995	1,388	736	-3
10.9	11.8	46,329	18,675	1,374	554	-9
10.7	12.9	38,361	21,931	1,153	659	0
14.0	13.2	39,540	31,249	1,186	938	11
12.2	12.5	78,116	41,148	2,830	1,491	0
11.8	12.2	54,464	29,357	1,683	907	-3
11.6	12.7	40,462	21,771	1,241	667	-1
11.4	12.2	66,193	31,338	1,940	919	-1
10.1	12.0	41,465	26,191	1,180	746	7
11.2	11.8	31,683	17,310	903	493	2
12.5	12.8	29,203	36,492	893	1,116	11
11.5	13.8	50,079	48,044	1,511	1,450	3
12.2	13.9	46,712	38,485	1,482	1,221	1
12.7	13.5	49,338	35,479	1,471	1,058	1
10.7	12.5	53,455	38,060	1,445	1,029	0
11.7	13.9	52,703	36,989	1,403	985	6
11.6	12.5	49,184	31,137	1,579	1,000	1
12.2	12.3	88,247	46,426	2,742	1,443	1
11.3	12.7	52,600	28,946	1,410	776	0
11.2	12.3	41,993	24,886	939	557	0
10.6	12.0	41,956	30,535	1,131	823	4

Statistical Annex B5: Gender-related Development Index 1997

	GDI 1997		GDI (International) 1997		Life expectancy at birth (years) 1997		Mean Years of Schooling 1998	
Province	Rank	Value	Rank	Value	Male	Female	Male	Female
Maguindanao	63	0.388	66	0.454	51.5	55.0	8.0	8.0
Marinduque	53	0.439	43	0.521	61.8	65.8	7.5	7.4
Masbate	62	0.389	63	0.467	60.5	65.9	6.6	6.6
Misamis Occidental	38	0.477	39	0.523	61.1	68.2	7.8	8.1
Misamis Oriental	9	0.605	10	0.603	63.8	70.5	8.7	9.1
Mt. Province	52	0.440	44	0.521	58.9	64.4	6.8	8.4
Negros Occidental	40	0.468	34	0.528	64.5	71.2	7.2	7.5
Negros Oriental	45	0.456	56	0.502	62.8	66.0	6.9	7.2
North Cotabato	51	0.445	46	0.520	63.1	69.7	7.4	8.1
Northern Samar	69	0.272	68	0.441	59.6	64.6	6.4	6.8
Nueva Ecija	36	0.488	19	0.573	67.1	71.2	8.0	8.1
Nueva Vizcaya								
Occidental Mindoro	56	0.436	55	0.506	59.1	65.5	7.3	7.2
Oriental Mindoro	25	0.511	25	0.547	61.8	66.5	7.7	7.9
Palawan	29	0.504	31	0.531	61.2	65.3	7.9	8.1
Pampanga	10	0.576	8	0.607	67.4	73.9	8.5	8.3
Pangasinan	18	0.541	16	0.580	65.3	71.3	8.7	8.6
Quezon	27	0.506	23	0.554	63.4	70.2	7.9	7.9
Quirino	22	0.519	30	0.531	61.4	62.4	7.4	7.8
Rizal	1	0.700	1	0.654	66.1	72.7	9.6	9.3
Romblon	60	0.400	57	0.502	60.1	65.6	7.5	7.2
Sarangani	68	0.347	67	0.452	63.8	68.7	6.6	6.9
Siquijor								
Sorsogon	46	0.455	29	0.532	64.8	68.1	7.5	7.6
South Cotabato	23	0.514	20	0.560	63.6	68.6	8.5	8.9
Southern Leyte	59	0.410	59	0.497	61.8	66.0	7.0	7.5
Sultan Kudarat	37	0.481	32	0.531	59.9	64.8	7.9	8.3
Sulu	67	0.350	69	0.424	49.5	54.3	6.9	6.9
Surigao del Norte	58	0.434	50	0.514	61.3	68.0	7.0	7.6
Surigao del Sur								
Tarlac	16	0.543	15	0.581	66.6	69.4	8.3	8.2
Tawi-Tawi								
Western Samar	49	0.448	61	0.484	58.7	61.1	6.3	6.9
Zambales	11	0.571	11	0.595	64.1	67.6	9.1	8.7
Zamboanga del Norte	34	0.490	41	0.522	60.6	64.3	7.7	8.0
Zamboanga del Sur**	30	0.498	36	0.525	63.1	68.0	7.4	7.8
Zamboanga Sibugay**								

*HDI ranks of provinces with data are adjusted for comparability
**Compostela Valley and Zamboanga Sibugay were part of Davao del Norte and Zamboanga del Sur, respectively.

Expected Years of Schooling 1998		Estimated earned income (PPP NCR 2009 pesos) 1997		Estimated earned income (PPP US$) 1997		HDI rank minus GDI rank*
Male	Female	Male	Female	Male	Female	
10.6	12.0	45,071	20,854	1,210	560	-3
11.4	13.7	51,215	21,217	1,545	640	-19
9.4	11.2	28,856	21,980	818	623	5
11.9	13.0	44,348	25,520	1,163	669	2
12.5	13.4	60,981	39,541	1,854	1,202	2
13.8	15.3	23,164	35,331	714	1,089	9
11.4	12.3	52,406	23,073	1,434	631	-10
11.1	12.1	45,677	24,592	1,175	632	0
11.1	13.0	34,462	23,163	1,008	677	8
12.1	12.2	39,903	13,033	1,158	378	-4
11.4	12.9	54,395	23,634	1,914	832	-13
10.6	12.1	41,396	23,258	1,269	713	-5
11.4	12.1	44,404	32,542	1,387	1,017	7
11.4	12.3	52,763	28,894	1,404	769	-2
12.0	12.3	72,893	31,256	2,446	1,049	-2
12.0	12.8	46,376	31,879	1,460	1,004	6
11.1	12.8	61,349	26,256	1,836	786	-8
11.6	12.6	41,113	39,351	1,121	1,073	9
12.4	13.3	96,529	48,907	3,246	1,645	0
11.1	14.2	31,710	20,026	1,015	641	4
7.3	8.5	40,280	16,703	1,140	473	-6
12.2	13.5	41,765	22,594	1,252	677	1
11.3	12.2	44,788	29,616	1,388	918	6
11.3	12.1	40,765	20,044	1,184	582	-1
11.7	13.0	42,289	27,618	1,250	817	5
11.6	11.0	32,803	19,821	891	539	2
12.3	13.2	40,768	21,431	1,195	628	-9
12.1	12.1	53,095	31,653	1,738	1,036	-1
10.4	12.1	37,740	29,327	1,018	791	7
12.5	12.5	66,218	33,445	2,219	1,121	-2
11.9	12.7	43,475	29,191	1,152	773	4
10.6	11.8	60,012	27,140	1,525	690	-10

Statistical Annex C: Poverty incidence, depth and severity 1997-2009

HDI Rank 2009	Province	Incidence				
		1997	2000	2003	2006	2009
	Metro Manila	2.5	3.4	3.8	6.7	4.0
51	Abra	50.4	39.8	36.2	46.3	43.3
31	Agusan del Norte	37.2	36.1	33.5	32.4	34.2
75	Agusan del Sur	57.8	59.7	59.4	54.6	57.1
63	Aklan	35.7	37.1	44.0	46.1	46.6
43	Albay	48.6	46.2	45.0	45.2	44.0
47	Antique	42.5	36.8	48.7	49.0	39.3
40	Apayao	25.5	24.8	18.9	42.5	43.2
14	Aurora	24.2	30.1	34.6	32.8	24.2
62	Basilan	9.6	31.0	33.2	38.0	27.5
6	Bataan	8.4	10.4	11.3	15.1	9.6
2	Batanes	0.0	0.0	9.0	0.0	0.0
11	Batangas	10.3	11.7	20.9	20.3	18.6
1	Benguet	10.7	6.9	8.3	5.5	5.8
13	Biliran	34.8	38.6	45.4	33.2	35.6
53	Bohol	57.8	61.5	46.9	53.0	47.9
46	Bukidnon	38.7	43.0	45.4	42.5	40.9
5	Bulacan	4.2	4.3	7.0	8.5	6.8
12	Cagayan	27.7	25.7	25.4	24.6	20.3
57	Camarines Norte	43.8	54.1	54.8	47.7	41.8
49	Camarines Sur	45.7	44.0	49.3	51.8	47.2
39	Camiguin	37.7	49.1	41.6	43.5	44.6
36	Capiz	38.8	50.3	38.8	35.7	27.4
20	Catanduanes	40.9	47.7	36.2	46.1	28.5
4	Cavite	5.6	8.1	8.0	8.6	6.5
26	Cebu	32.0	36.0	32.5	32.9	28.9
61	Compostela Valley	-	-	44.7	43.1	36.2
41	Davao del Norte	39.2	45.8	33.2	41.0	33.8
22	Davao del Sur	25.6	21.8	27.4	26.1	24.5
74	Davao Oriental	50.0	38.5	53.1	53.2	52.9
64	Eastern Samar	65.2	58.4	45.2	51.9	53.8
37	Guimaras	30.3	21.4	46.1	28.0	20.5
58	Ifugao	56.5	55.6	33.0	31.6	28.9
9	Ilocos Norte	20.3	11.9	20.8	17.5	12.4
25	Ilocos Sur	26.5	23.5	26.8	22.5	17.4
16	Iloilo	32.3	29.8	31.9	25.8	27.5
21	Isabela	28.1	24.3	23.4	24.6	21.3
32	Kalinga	29.1	28.8	40.1	47.2	25.9
18	La Union	33.9	31.8	25.3	27.5	30.2
7	Laguna	6.2	6.2	9.1	7.3	7.9
33	Lanao del Norte	38.2	46.1	47.1	42.5	44.9
70	Lanao del Sur	15.7	16.0	26.4	35.3	45.2
28	Leyte	36.4	40.2	41.1	38.0	34.0
78	Maguindanao	30.4	42.5	53.8	53.5	50.0

Depth					Severity				
1997	2000	2003	2006	2009	1997	2000	2003	2006	2009
0.4	0.6	0.7	1.4	0.7	0.1	0.2	0.2	0.4	0.2
17.1	12.4	9.4	14.7	13.7	8.0	5.1	3.4	6.2	5.5
12.4	12.4	11.1	9.9	9.9	5.4	5.9	4.9	4.2	4.0
22.5	23.0	22.0	20.3	21.7	11.0	10.9	10.6	9.9	10.5
9.7	10.5	13.2	13.6	13.4	3.5	4.1	5.1	5.1	5.1
16.9	13.6	14.7	14.3	12.3	7.2	5.4	6.3	6.0	4.8
12.4	9.8	15.0	14.6	11.0	5.1	3.7	6.4	5.6	4.0
7.6	5.7	3.9	15.4	12.1	3.1	1.9	1.1	6.6	4.2
5.2	8.2	9.7	11.2	4.5	1.6	3.3	3.7	4.6	1.1
1.4	6.0	6.8	7.8	3.7	0.3	1.8	1.9	2.4	0.8
1.6	1.8	3.3	3.0	1.8	0.5	0.4	1.2	0.9	0.4
0.0	0.0	1.8	0.0	0.0	0.0	0.0	0.4	0.0	0.0
2.6	2.5	5.0	5.4	4.5	0.9	0.8	1.7	2.1	1.6
2.1	1.4	1.6	1.1	1.3	0.7	0.4	0.4	0.3	0.5
8.6	11.1	13.3	8.5	9.5	3.1	4.7	5.4	3.2	3.8
22.4	24.8	16.6	20.5	15.8	11.3	12.0	7.6	9.9	7.0
11.8	14.1	17.2	14.5	13.1	4.9	5.9	8.4	6.4	5.8
0.7	0.6	1.3	1.7	1.2	0.2	0.2	0.3	0.5	0.3
6.0	5.3	5.7	5.6	4.7	1.9	1.6	1.9	1.9	1.7
14.0	16.8	19.8	14.0	9.4	5.8	7.1	8.9	5.5	2.9
12.4	14.7	17.0	17.4	12.5	4.7	6.3	7.5	7.4	4.7
11.5	13.2	12.5	14.5	8.2	4.6	5.1	5.2	6.2	2.3
10.0	14.5	10.8	8.6	8.0	3.5	5.7	4.1	2.9	3.4
11.5	15.8	9.6	13.8	8.6	4.3	6.7	4.1	5.2	3.9
1.3	1.6	1.3	1.5	1.1	0.4	0.6	0.4	0.4	0.3
10.9	12.3	11.0	10.7	8.9	5.0	5.8	5.1	4.7	3.9
-	-	16.2	13.3	8.8	-	-	7.7	5.7	3.1
13.5	15.3	11.5	12.7	11.4	6.3	6.8	5.4	5.4	5.7
6.4	6.3	8.1	8.2	7.5	2.2	2.5	3.3	3.4	3.1
17.2	11.7	18.0	15.7	13.9	7.7	4.6	7.9	6.3	4.9
24.1	18.6	14.8	19.8	18.9	11.5	7.6	6.3	9.6	8.4
7.0	5.0	14.5	6.2	4.3	2.5	1.6	5.9	1.8	1.2
17.8	17.4	8.8	7.5	8.3	7.2	7.3	2.9	2.7	3.4
4.8	2.6	4.2	4.5	2.7	1.7	0.8	1.2	1.6	0.9
6.1	5.9	8.3	5.1	3.2	2.1	2.1	3.5	1.6	0.9
9.9	8.0	10.5	7.0	6.4	4.3	2.9	4.7	2.7	2.2
7.2	6.1	5.7	6.1	4.7	2.5	2.1	2.0	2.1	1.6
6.0	8.5	11.8	17.0	7.4	1.9	3.6	4.7	7.5	2.7
11.0	8.5	6.7	8.1	9.0	4.8	3.6	2.6	3.1	3.6
1.2	1.0	2.0	1.8	1.3	0.3	0.2	0.6	0.6	0.3
13.6	15.8	16.7	14.5	14.5	6.3	7.0	7.7	6.3	6.3
2.8	1.9	7.3	8.0	10.0	0.8	0.4	2.8	2.4	3.1
11.2	11.9	12.5	11.5	8.7	4.5	5.0	5.0	4.8	3.1
6.5	12.7	15.6	15.8	12.6	2.0	5.2	6.0	6.2	4.4

Statistical Annex C: Poverty incidence, depth and severity 1997-2009

HDI Rank 2009	Province	Incidence				
		1997	2000	2003	2006	2009
30	Marinduque	35.8	42.4	46.3	42.8	34.9
71	Masbate	60.0	65.2	54.8	56.1	54.0
55	Misamis Occidental	39.8	46.5	45.8	46.6	45.2
15	Misamis Oriental	31.8	32.6	34.2	36.7	30.4
67	Mt. Province	49.6	39.0	49.3	42.7	46.3
34	Negros Occidental	29.8	38.6	30.9	32.1	31.6
42	Negros Oriental	38.2	43.6	53.8	51.7	41.9
44	North Cotabato	50.0	48.0	33.3	35.3	33.1
68	Northern Samar	58.6	56.6	48.4	55.7	50.6
38	Nueva Ecija	22.0	19.6	25.5	33.7	31.0
8	Nueva Vizcaya	12.2	11.4	6.6	11.5	8.9
35	Occidental Mindoro	32.9	35.2	43.2	46.5	36.2
54	Oriental Mindoro	25.0	36.4	33.8	45.6	34.9
45	Palawan	25.2	22.6	39.5	38.9	28.8
10	Pampanga	5.2	9.2	8.2	6.2	8.8
29	Pangasinan	32.7	31.2	27.6	33.9	24.1
52	Quezon	26.8	30.8	34.6	44.4	32.3
17	Quirino	31.7	28.2	23.7	12.9	12.3
3	Rizal	5.1	3.8	5.2	8.1	9.5
69	Romblon	59.5	65.6	46.4	55.2	52.9
73	Sarangani	45.5	49.0	48.1	44.6	52.0
56	Siquijor	55.9	40.7	57.8	23.9	38.0
48	Sorsogon	39.2	47.7	38.5	48.4	39.9
19	South Cotabato	33.1	36.8	30.6	30.5	29.6
50	Southern Leyte	43.7	39.1	46.0	35.1	43.3
65	Sultan Kudarat	35.1	49.0	50.2	49.3	45.5
79	Sulu	46.9	48.4	34.6	47.1	45.6
66	Surigao del Norte	45.6	44.1	53.0	53.6	57.3
59	Surigao del Sur	42.7	39.0	48.8	44.1	45.1
27	Tarlac	23.0	28.3	16.1	24.7	19.6
77	Tawi-Tawi	9.3	26.7	31.4	63.3	38.4
60	Western Samar	41.3	47.2	42.0	44.9	44.7
23	Zambales	19.4	19.9	17.7	28.2	17.9
72	Zamboanga del Norte	47.9	53.3	66.2	62.3	61.6
24	Zamboanga del Sur	29.9	39.9	38.6	32.3	30.4
76	Zamboanga Sibugay	-	-	57.0	47.4	49.5
	Philippines	26.5	28.4	27.7	29.3	26.3

Depth					Severity				
1997	2000	2003	2006	2009	1997	2000	2003	2006	2009
10.2	9.6	10.6	12.7	8.9	3.9	3.1	3.5	5.0	3.1
19.9	21.5	21.9	19.3	15.0	8.6	9.3	10.9	8.5	5.5
12.3	14.6	13.7	15.6	14.1	5.4	6.1	5.6	6.8	5.6
10.5	10.6	11.4	13.4	10.7	4.9	4.7	5.2	6.6	5.0
19.6	13.4	18.4	14.3	14.7	9.0	6.2	8.6	5.9	6.1
7.9	10.8	8.1	8.6	7.6	2.9	4.1	3.0	3.1	2.6
11.2	14.1	22.2	18.2	12.6	4.5	6.6	11.6	8.4	5.0
19.9	15.0	9.7	10.8	9.9	9.8	6.3	3.9	4.4	4.0
23.4	21.0	14.0	20.5	15.0	11.9	9.7	5.3	9.6	6.0
5.2	3.1	5.8	8.5	8.7	1.7	0.8	1.9	3.0	3.3
3.8	2.4	1.4	2.3	1.5	1.4	0.7	0.5	0.7	0.4
8.3	9.4	13.5	15.8	10.4	3.0	3.5	5.8	6.8	3.9
7.5	11.9	10.2	14.9	9.5	2.9	5.1	4.2	6.7	3.7
6.1	5.8	11.0	11.6	8.0	2.1	2.1	4.2	4.9	3.3
0.8	1.9	1.2	0.9	1.7	0.2	0.5	0.3	0.2	0.5
9.1	8.4	7.1	9.4	5.8	3.6	3.1	2.7	3.6	2.1
7.3	9.4	8.9	11.9	7.0	2.6	3.7	3.3	4.3	2.3
8.9	8.4	4.5	2.5	2.9	3.6	3.2	1.2	0.7	0.9
1.1	0.8	1.1	1.3	2.0	0.4	0.3	0.3	0.5	0.6
19.2	23.5	14.2	17.9	13.8	8.0	10.7	5.6	7.5	5.4
15.6	18.6	16.2	12.4	14.4	6.9	9.2	7.2	4.5	5.4
19.6	11.8	17.6	8.6	6.9	8.8	4.7	6.7	3.6	2.0
12.4	13.4	10.9	13.4	10.3	4.9	4.8	4.2	4.9	3.6
10.1	10.0	9.4	8.7	9.1	4.3	3.7	4.0	3.5	3.8
11.9	10.9	12.6	9.3	11.1	4.2	3.9	4.6	3.5	4.1
8.9	10.9	13.6	14.1	10.9	2.8	3.5	4.8	5.3	3.8
9.4	9.1	7.6	9.8	7.8	2.6	2.4	2.6	2.9	1.9
14.7	13.0	16.7	17.4	17.6	6.5	5.1	6.9	7.5	7.3
14.2	11.6	13.7	13.2	13.1	6.4	4.6	5.2	5.3	5.0
5.5	8.5	3.9	6.0	4.5	2.2	3.7	1.3	2.1	1.6
1.1	5.3	5.7	19.5	9.4	0.3	1.5	1.4	7.6	2.9
12.9	12.6	10.7	13.6	14.1	5.1	4.5	3.8	5.4	5.8
6.1	5.2	4.0	6.9	5.0	2.5	1.8	1.3	2.7	1.8
16.9	22.0	31.5	27.0	23.0	8.1	11.6	17.8	14.7	11.0
8.6	13.6	13.3	10.6	8.8	3.4	6.3	6.3	4.6	3.5
-	-	21.2	13.6	15.2	3.3	3.5	10.1	5.4	6.3
7.9	8.5	8.4	8.7	7.2	3.3	3.5	3.6	3.6	2.8

Statistical Annex D: Inequality-adjusted Human Development Index 2009

HDI Rank 2009	Province	HDI 2009	Atkinson Index			Inequality Adjusted HDI (IHDI) 2009	
			Life expectancy	Education	Income	Value	Overall Loss due to inequality, %
	Metro Manila	0.805	0.066	0.053	0.227	0.571	29.1
51	Abra	0.488	0.095	0.108	0.259	0.201	58.9
31	Agusan del Norte	0.541	0.078	0.094	0.290	0.245	54.6
75	Agusan del Sur	0.354	0.068	0.121	0.238	0.107	69.8
63	Aklan	0.460	0.093	0.116	0.238	0.179	61.0
43	Albay	0.498	0.079	0.096	0.233	0.214	57.1
47	Antique	0.493	0.094	0.176	0.255	0.200	59.4
40	Apayao	0.509	0.074	0.148	0.271	0.215	57.7
14	Aurora	0.630	0.072	0.119	0.248	0.337	46.4
62	Basilan	0.460	0.071	0.236	0.166	0.178	61.4
6	Bataan	0.698	0.071	0.070	0.244	0.423	39.4
2	Batanes	0.789	0.106	0.050	0.157	0.556	29.4
11	Batangas	0.632	0.077	0.097	0.232	0.345	45.5
1	Benguet	0.849	0.062	0.117	0.228	0.621	26.9
13	Biliran	0.630	0.088	0.134	0.405	0.309	51.0
53	Bohol	0.482	0.090	0.118	0.275	0.194	59.8
46	Bukidnon	0.494	0.064	0.121	0.273	0.206	58.3
5	Bulacan	0.699	0.069	0.084	0.175	0.434	37.9
12	Cagayan	0.632	0.080	0.131	0.266	0.334	47.1
57	Camarines Norte	0.469	0.077	0.095	0.252	0.188	59.9
49	Camarines Sur	0.491	0.076	0.093	0.235	0.208	57.6
39	Camiguin	0.510	0.097	0.057	0.231	0.226	55.7
36	Capiz	0.522	0.077	0.157	0.241	0.229	56.2
20	Catanduanes	0.606	0.096	0.120	0.334	0.297	51.0
4	Cavite	0.709	0.068	0.079	0.172	0.449	36.7
26	Cebu	0.582	0.071	0.126	0.262	0.286	50.9
61	Compostela Valley	0.461	0.072	0.109	0.193	0.185	59.7
41	Davao del Norte	0.506	0.077	0.160	0.249	0.214	57.8
22	Davao del Sur	0.602	0.066	0.119	0.260	0.307	49.0
74	Davao Oriental	0.356	0.072	0.153	0.157	0.110	69.0
64	Eastern Samar	0.450	0.092	0.121	0.300	0.167	62.9
37	Guimaras	0.512	0.083	0.093	0.152	0.233	54.4
58	Ifugao	0.465	0.075	0.250	0.224	0.176	62.2
9	Ilocos Norte	0.641	0.093	0.096	0.170	0.361	43.7
25	Ilocos Sur	0.582	0.099	0.098	0.189	0.295	49.3
16	Iloilo	0.619	0.086	0.099	0.253	0.326	47.4
21	Isabela	0.603	0.070	0.107	0.237	0.313	48.2
32	Kalinga	0.540	0.073	0.223	0.262	0.237	56.2
18	La Union	0.615	0.081	0.081	0.299	0.318	48.3
7	Laguna	0.695	0.072	0.075	0.191	0.428	38.4
33	Lanao del Norte	0.537	0.067	0.133	0.327	0.235	56.2
70	Lanao del Sur	0.416	0.064	0.311	0.191	0.139	66.5
28	Leyte	0.566	0.080	0.158	0.318	0.259	54.3

		Inequality Adjusted Life Expectancy Index 2009		Inequality Adjusted Education Index 2009		Inequality Adjusted Income Index 2009	
	Difference from HDI rank	Value	Loss due to inequality, %	Value	Loss due to inequality, %	Value	Loss due to inequality, %
	-	0.780	6.6	0.927	5.3	0.493	22.7
	1	0.701	9.5	0.767	10.8	0.130	25.9
	-1	0.645	7.8	0.764	9.4	0.190	29.0
	0	0.675	6.8	0.672	12.1	0.061	23.8
	3	0.672	9.3	0.784	11.6	0.113	23.8
	2	0.781	7.9	0.776	9.6	0.130	23.3
	-5	0.644	9.4	0.666	17.6	0.156	25.5
	0	0.637	7.4	0.690	14.8	0.172	27.1
	2	0.741	7.2	0.780	11.9	0.266	24.8
	1	0.628	7.1	0.604	23.6	0.152	16.6
	-1	0.738	7.1	0.836	7.0	0.360	24.4
	0	0.635	10.6	0.950	5.0	0.582	15.7
	0	0.782	7.7	0.774	9.7	0.268	23.2
	0	0.813	6.2	0.873	11.7	0.551	22.8
	-7	0.667	8.8	0.720	13.4	0.245	40.5
	-2	0.765	9.0	0.736	11.8	0.115	27.5
	-2	0.774	6.4	0.664	12.1	0.141	27.3
	0	0.804	6.9	0.810	8.4	0.368	17.5
	-1	0.791	8.0	0.717	13.1	0.261	26.6
	0	0.665	7.7	0.711	9.5	0.136	25.2
	3	0.798	7.6	0.738	9.3	0.129	23.5
	0	0.657	9.7	0.864	5.7	0.153	23.1
	-2	0.661	7.7	0.674	15.7	0.189	24.1
	-3	0.683	9.6	0.740	12.0	0.233	33.4
	0	0.823	6.8	0.829	7.9	0.372	17.2
	-1	0.785	7.1	0.731	12.6	0.206	26.2
	3	0.709	7.2	0.688	10.9	0.134	19.3
	-1	0.705	7.7	0.689	16.0	0.155	24.9
	1	0.742	6.6	0.754	11.9	0.237	26.0
	0	0.754	7.2	0.584	15.3	0.068	15.7
	-1	0.668	9.2	0.723	12.1	0.106	30.0
	2	0.713	8.3	0.734	9.3	0.181	15.2
	-5	0.611	7.5	0.549	25.0	0.161	22.4
	-1	0.783	9.3	0.797	9.6	0.287	17.0
	1	0.697	9.9	0.788	9.8	0.237	18.9
	0	0.758	8.6	0.817	9.9	0.235	25.3
	2	0.791	7.0	0.728	10.7	0.242	23.7
	-1	0.625	7.3	0.619	22.3	0.217	26.2
	1	0.821	8.1	0.824	8.1	0.204	29.9
	1	0.736	7.2	0.828	7.5	0.383	19.1
	-1	0.682	6.7	0.761	13.3	0.162	32.7
	-1	0.588	6.4	0.538	31.1	0.118	19.1
	-1	0.709	8.0	0.659	15.8	0.205	31.8

Statistical Annex D: Inequality-adjusted Human Development Index 2009

HDI Rank 2009	Province	HDI 2009	Atkinson Index			Inequality Adjusted HDI (IHDI) 2009	
			Life expectancy	Education	Income	Value	Overall Loss due to inequality, %
78	Maguindanao	0.300	0.061	0.247	0.125	0.077	74.4
30	Marinduque	0.544	0.094	0.091	0.264	0.250	54.0
71	Masbate	0.406	0.078	0.130	0.242	0.140	65.6
55	Misamis Occidental	0.477	0.087	0.089	0.229	0.197	58.8
15	Misamis Oriental	0.626	0.074	0.088	0.310	0.327	47.7
67	Mt. Province	0.432	0.088	0.210	0.253	0.152	64.9
34	Negros Occidental	0.537	0.075	0.123	0.233	0.246	54.2
42	Negros Oriental	0.504	0.087	0.169	0.289	0.207	59.0
44	North Cotabato	0.498	0.069	0.169	0.230	0.209	58.1
68	Northern Samar	0.432	0.080	0.135	0.256	0.157	63.7
38	Nueva Ecija	0.511	0.077	0.089	0.192	0.230	55.1
8	Nueva Vizcaya	0.678	0.075	0.099	0.232	0.397	41.5
35	Occidental Mindoro	0.529	0.073	0.148	0.291	0.230	56.4
54	Oriental Mindoro	0.478	0.075	0.111	0.222	0.197	58.8
45	Palawan	0.498	0.071	0.150	0.222	0.210	57.7
10	Pampanga	0.634	0.070	0.078	0.153	0.361	43.0
29	Pangasinan	0.556	0.082	0.076	0.207	0.271	51.3
52	Quezon	0.482	0.079	0.084	0.189	0.205	57.5
17	Quirino	0.616	0.070	0.107	0.209	0.329	46.5
3	Rizal	0.734	0.063	0.074	0.228	0.472	35.8
69	Romblon	0.428	0.090	0.121	0.237	0.155	63.7
73	Sarangani	0.371	0.062	0.208	0.193	0.116	68.7
56	Siquijor	0.471	0.127	0.115	0.149	0.193	59.0
48	Sorsogon	0.492	0.080	0.106	0.223	0.209	57.6
19	South Cotabato	0.612	0.063	0.141	0.317	0.307	49.9
50	Southern Leyte	0.489	0.095	0.118	0.259	0.201	59.0
65	Sultan Kudarat	0.448	0.067	0.150	0.214	0.172	61.7
79	Sulu	0.266	0.067	0.334	0.055	0.059	77.8
66	Surigao del Norte	0.442	0.085	0.106	0.292	0.163	63.1
59	Surigao del Sur	0.463	0.078	0.108	0.273	0.180	61.0
27	Tarlac	0.573	0.078	0.079	0.200	0.289	49.6
77	Tawi-Tawi	0.310	0.065	0.252	0.103	0.082	73.5
60	Western Samar	0.461	0.082	0.163	0.260	0.176	61.8
23	Zambales	0.600	0.078	0.053	0.217	0.317	47.1
72	Zamboanga del Norte	0.384	0.074	0.167	0.289	0.120	68.6
24	Zamboanga del Sur	0.590	0.069	0.147	0.293	0.287	51.4
76	Zamboanga Sibugay	0.353	0.074	0.135	0.263	0.105	70.4
	Philippines	0.633	0.075	0.103	0.231	0.336	46.9

		Inequality Adjusted Life Expectancy Index 2009		Inequality Adjusted Education Index 2009		Inequality Adjusted Income Index 2009	
	Difference from HDI rank	Value	Loss due to inequality, %	Value	Loss due to inequality, %	Value	Loss due to inequality, %
	0	0.572	6.1	0.503	24.7	0.058	12.5
	0	0.696	9.4	0.778	9.1	0.180	26.4
	1	0.687	7.8	0.657	13.0	0.090	24.2
	1	0.801	8.7	0.784	8.9	0.111	22.9
	0	0.755	7.4	0.834	8.8	0.227	31.0
	-2	0.631	8.8	0.654	21.0	0.105	25.3
	3	0.753	7.5	0.706	12.3	0.181	23.3
	-5	0.697	8.7	0.617	16.9	0.161	28.9
		0.743	6.9	0.632	16.9	0.157	23.0
	1	0.684	8.0	0.671	13.5	0.104	25.6
	1	0.730	7.7	0.765	8.9	0.162	19.2
	0	0.694	7.5	0.794	9.9	0.363	23.2
		0.664	7.3	0.660	14.8	0.189	29.1
	1	0.685	7.5	0.700	11.1	0.145	22.2
	2	0.636	7.1	0.677	15.0	0.176	22.2
	1	0.781	7.0	0.803	7.8	0.295	15.3
	1	0.706	8.2	0.811	7.6	0.202	20.7
	3	0.705	7.9	0.717	8.4	0.151	18.9
	3	0.712	7.0	0.724	10.7	0.297	20.9
	0	0.784	6.3	0.849	7.4	0.399	22.8
	1	0.661	9.0	0.711	12.1	0.102	23.7
	0	0.761	6.2	0.519	20.8	0.078	19.3
	0	0.655	12.7	0.767	11.5	0.137	14.9
	4	0.781	8.0	0.733	10.6	0.133	22.3
	-3	0.728	6.3	0.738	14.1	0.235	31.7
		0.682	9.5	0.700	11.8	0.145	25.9
	1	0.696	6.7	0.663	15.0	0.122	21.4
	0	0.542	6.7	0.400	33.4	0.051	5.5
	0	0.643	8.5	0.752	10.6	0.104	29.2
	0	0.663	7.8	0.753	10.8	0.119	27.3
	2	0.720	7.8	0.774	7.9	0.230	20.0
	0	0.497	6.5	0.536	25.2	0.070	10.3
	-2	0.698	8.2	0.642	16.3	0.125	26.0
	5	0.705	7.8	0.860	5.3	0.244	21.7
	0	0.775	7.4	0.597	16.7	0.067	28.9
	-2	0.726	6.9	0.696	14.7	0.228	29.3
	0	0.722	7.4	0.670	13.5	0.054	26.3
		0.761	7.5	0.708	17.0	0.278	23.1

Statistical Annex E1: Inequality in consumption (Share in consumption) 1997-2009

HDI Rank 2009	Province	Poorest 10%					Poorest 20%			
		1997	2000	2003	2006	2009	1997	2000	2003	2006
	Metro Manila	2.3	2.3	2.6	2.4	2.6	5.5	5.5	6.3	5.9
51	Abra	1.8	2.0	2.5	2.5	2.6	4.5	4.9	5.9	6.0
31	Agusan del Norte	2.3	2.1	2.2	2.4	2.1	5.5	5.3	5.3	5.9
75	Agusan del Sur	2.3	3.1	2.5	2.3	2.7	5.4	7.0	5.7	5.6
63	Aklan	2.6	2.6	2.9	3.0	3.3	6.0	6.2	6.9	6.7
43	Albay	2.5	2.6	2.3	2.1	2.7	5.8	6.3	5.4	4.8
47	Antique	2.0	2.6	2.2	3.0	2.6	5.2	6.2	5.1	7.0
40	Apayao	2.5	3.0	4.1	2.8	2.8	6.2	7.4	8.8	6.2
14	Aurora	2.8	2.4	2.4	2.1	2.7	6.9	5.9	5.4	4.6
62	Basilan	3.3	4.1	4.3	3.4	4.4	7.7	9.6	9.3	7.8
6	Bataan	2.7	2.8	2.6	2.5	2.9	6.5	6.5	6.7	6.2
2	Batanes	2.4	3.3	1.8	3.1	3.6	5.4	7.1	5.1	6.4
11	Batangas	2.6	2.9	2.5	2.4	2.5	6.5	7.0	5.9	6.1
1	Benguet	2.3	2.4	2.2	2.2	2.2	5.6	6.1	5.6	5.6
13	Biliran	2.9	2.7	2.1	2.0	1.7	6.8	6.1	4.9	4.7
53	Bohol	2.4	2.6	2.5	2.3	2.4	5.8	5.8	6.0	5.2
46	Bukidnon	2.3	2.1	2.0	2.1	2.3	5.7	5.2	4.9	5.3
5	Bulacan	3.4	3.3	3.1	2.9	3.0	8.2	7.8	7.5	6.9
12	Cagayan	3.2	3.2	2.8	2.6	2.4	7.4	7.5	6.5	6.2
57	Camarines Norte	2.6	2.4	2.3	2.8	3.1	6.4	5.9	5.2	6.2
49	Camarines Sur	2.9	2.4	2.5	2.8	2.8	6.9	5.7	5.8	6.5
39	Camiguin	2.7	2.8	2.5	2.2	3.1	7.0	6.9	5.5	5.1
36	Capiz	2.9	2.8	2.7	2.7	2.1	6.4	6.1	6.3	6.1
20	Catanduanes	2.7	2.4	1.6	2.5	1.6	6.3	5.5	3.7	5.9
4	Cavite	2.9	2.8	2.9	2.8	3.1	7.2	6.7	6.7	6.7
26	Cebu	1.9	2.0	1.9	2.1	2.1	4.7	5.1	4.9	5.3
61	Compostela Valley	-	-	2.4	3.1	3.2	-	-	5.9	7.1
41	Davao del Norte	2.2	2.5	1.7	2.5	1.9	5.7	6.3	4.4	6.0
22	Davao del Sur	2.2	2.2	2.1	2.1	2.1	5.3	5.6	5.2	5.2
74	Davao Oriental	2.5	2.4	3.0	3.2	3.9	5.9	5.7	7.2	7.3
64	Eastern Samar	2.8	3.1	2.4	1.5	2.4	6.3	6.7	5.7	4.0
37	Guimaras	3.3	3.1	2.9	3.8	3.9	7.6	7.8	6.4	8.2
58	Ifugao	2.6	3.0	2.9	3.0	2.6	5.6	6.6	6.6	7.4
9	Ilocos Norte	2.4	2.7	3.0	2.5	2.9	5.9	6.4	6.8	6.3
25	Ilocos Sur	2.6	2.5	2.3	2.9	3.2	6.3	6.3	5.9	6.8
16	Iloilo	2.1	2.1	2.0	2.3	2.5	5.2	4.8	5.0	5.5
21	Isabela	2.4	2.4	2.6	2.6	2.5	5.7	5.6	6.0	6.2
32	Kalinga	2.7	2.3	2.7	2.3	2.4	6.3	6.0	6.4	5.1
18	La Union	2.1	2.2	2.3	2.4	2.2	4.9	5.8	5.6	5.9
7	Laguna	2.6	2.7	2.3	2.6	2.9	6.3	6.5	5.8	6.4
33	Lanao del Norte	1.8	1.9	1.8	1.7	2.0	4.4	4.6	4.2	4.1
70	Lanao del Sur	4.3	4.5	2.4	3.8	3.4	10.0	10.1	5.7	8.5
28	Leyte	2.5	2.0	2.3	2.3	2.2	5.9	4.8	5.5	5.4

	Richest 20%					Richest 10%				
2009	1997	2000	2003	2006	2009	1997	2000	2003	2006	2009
6.1	55.5	53.9	50.3	50.1	49.7	41.6	39.2	35.1	34.0	33.9
6.2	62.8	58.5	52.0	52.9	52.2	48.7	42.1	35.9	37.7	35.8
5.1	53.1	50.9	49.3	50.3	57.0	37.1	35.6	32.0	33.9	41.4
6.2	55.4	47.1	53.6	52.3	49.6	38.7	30.6	37.4	37.0	34.3
7.1	50.6	49.4	50.3	50.2	50.9	33.1	32.4	35.7	32.5	35.8
6.3	56.4	52.7	55.2	59.3	51.1	39.6	35.2	40.1	44.3	34.8
6.2	58.7	51.5	59.0	50.3	51.8	43.3	35.6	42.5	34.0	34.0
5.9	48.5	46.0	38.9	49.9	50.6	33.3	31.2	23.2	33.1	35.3
6.0	48.1	50.4	47.5	58.7	49.0	32.5	34.3	32.6	42.4	31.4
9.6	49.0	41.4	41.2	49.7	46.4	36.1	26.7	26.5	38.0	32.6
6.7	49.4	48.5	46.0	47.6	48.4	33.3	33.0	29.9	30.8	32.5
9.5	58.0	45.0	43.3	37.2	38.7	43.0	28.3	15.1	17.1	30.0
6.1	47.1	45.1	49.2	47.7	49.3	31.3	29.4	33.5	30.9	33.9
5.8	50.9	46.9	48.1	50.3	48.5	35.4	30.9	30.7	34.6	32.9
4.2	50.4	50.7	58.5	60.6	63.7	36.6	35.7	40.7	42.8	47.9
5.6	51.2	57.8	50.8	53.0	54.2	35.6	42.3	35.2	36.2	38.7
5.7	55.7	57.8	55.1	55.6	53.2	40.0	42.9	39.0	39.5	36.6
7.2	41.9	43.3	42.8	44.8	44.3	26.9	27.3	27.1	28.8	28.6
5.9	46.6	46.8	51.1	51.4	53.0	30.7	31.5	35.7	35.6	36.9
7.3	53.1	55.8	60.0	56.1	53.2	38.9	40.2	46.3	41.2	40.4
6.5	50.2	55.0	54.0	51.1	50.8	35.3	40.1	38.3	34.8	35.1
7.5	45.4	51.1	51.8	56.0	49.2	31.1	36.3	34.3	39.8	31.3
5.4	53.9	56.0	52.3	55.4	54.0	38.9	40.4	37.0	40.6	39.6
3.9	51.7	57.1	68.6	60.1	63.0	34.7	43.7	57.3	48.0	45.4
7.3	43.6	44.9	45.3	45.7	43.6	27.9	29.0	29.3	30.1	27.5
5.3	53.1	50.8	52.6	51.2	51.8	36.9	34.8	36.1	34.1	34.7
7.5	-	-	47.8	45.7	47.3	-	-	31.9	30.6	32.4
5.2	51.0	49.1	58.9	48.8	50.5	36.2	32.8	45.2	32.3	34.5
5.2	52.7	50.3	51.9	49.6	51.3	36.0	33.3	35.8	32.7	35.4
8.9	51.6	53.6	47.2	47.9	44.2	35.6	37.0	32.1	32.3	30.3
5.5	55.0	54.6	55.1	65.6	56.9	41.1	40.2	39.0	51.8	40.6
8.5	45.4	46.8	48.3	43.2	43.2	31.0	32.2	33.6	28.8	28.1
6.6	57.2	52.3	48.3	48.5	48.1	39.1	37.5	32.2	31.5	32.6
7.1	52.7	47.7	47.1	48.2	43.7	38.5	30.7	30.4	31.9	27.7
7.3	51.6	49.7	49.3	52.2	46.3	35.3	33.4	32.6	36.7	30.4
5.8	52.3	56.9	53.8	53.0	51.8	35.1	40.4	37.7	36.6	35.1
5.9	53.6	54.0	51.3	51.2	54.5	36.2	37.5	35.6	34.6	39.4
5.9	49.8	48.2	49.3	57.0	52.7	32.2	32.4	31.4	41.0	35.5
5.1	53.3	52.0	52.7	50.3	55.9	35.6	35.9	37.8	34.7	41.5
6.8	46.1	46.6	48.3	47.5	45.4	29.9	30.9	32.6	31.6	29.1
4.8	56.0	59.5	63.2	62.6	57.6	39.8	43.0	46.6	45.6	40.1
8.0	38.5	39.9	50.5	43.5	48.3	25.5	25.0	34.1	27.7	33.1
5.1	52.5	59.0	56.2	55.9	60.8	36.5	42.5	40.9	40.6	46.4

Statistical Annex E1: Inequality in consumption (Share in consumption) 1997-2009

HDI Rank 2009	Province	Poorest 10%					Poorest 20%			
		1997	2000	2003	2006	2009	1997	2000	2003	2006
78	Maguindanao	3.7	2.7	3.5	3.5	4.0	8.3	6.6	7.7	8.0
30	Marinduque	2.7	3.3	3.2	2.6	2.7	6.3	7.6	7.2	6.4
71	Masbate	2.9	3.4	2.1	2.6	3.3	6.7	7.6	5.0	6.1
55	Misamis Occidental	2.2	2.4	2.5	2.3	2.9	5.5	5.9	6.0	5.6
15	Misamis Oriental	1.5	2.0	1.9	1.7	1.7	3.9	4.9	4.9	4.3
67	Mt. Province	2.7	2.1	2.3	2.4	2.8	5.9	5.1	5.3	5.4
34	Negros Occidental	2.7	2.6	2.5	2.8	2.8	6.4	6.1	6.1	6.5
42	Negros Oriental	2.4	2.0	1.9	2.1	2.3	5.8	5.2	4.5	5.2
44	North Cotabato	2.4	2.7	2.7	2.8	2.6	5.4	6.4	6.8	6.7
68	Northern Samar	2.2	2.3	3.2	2.2	3.0	5.4	5.7	7.2	5.2
38	Nueva Ecija	3.1	3.7	3.3	3.0	2.8	7.3	8.5	7.6	7.0
8	Nueva Vizcaya	2.6	2.7	2.4	2.4	2.5	6.8	6.6	5.6	5.9
35	Occidental Mindoro	3.1	2.7	1.8	2.5	2.4	7.2	6.6	4.2	5.5
54	Oriental Mindoro	2.8	2.3	2.6	2.6	2.7	6.4	5.8	6.4	6.3
45	Palawan	2.8	2.5	2.5	2.2	2.6	6.6	5.9	6.0	5.5
10	Pampanga	3.6	3.2	3.2	3.2	3.3	8.4	7.8	7.4	7.3
29	Pangasinan	2.4	2.7	2.8	2.9	2.7	5.9	6.3	6.7	6.9
52	Quezon	2.4	2.5	2.9	3.3	2.4	5.7	5.9	7.1	7.7
17	Quirino	2.4	2.9	2.6	3.0	2.5	5.7	6.7	5.5	7.2
3	Rizal	2.4	2.3	2.8	2.6	2.4	6.0	5.6	6.8	6.4
69	Romblon	3.2	2.7	3.1	3.2	2.7	6.7	6.3	7.2	7.1
73	Sarangani	2.7	2.2	2.9	3.6	3.3	6.3	5.3	6.9	8.5
56	Siquijor	2.4	2.6	4.1	2.2	3.8	5.9	6.2	8.2	5.0
48	Sorsogon	2.9	3.1	2.7	3.4	3.0	6.4	7.1	6.5	7.7
19	South Cotabato	2.1	2.0	1.6	2.4	1.8	5.4	4.6	3.9	5.8
50	Southern Leyte	3.2	2.8	2.7	2.7	2.7	7.2	6.5	6.1	6.5
65	Sultan Kudarat	3.3	3.8	3.6	3.4	3.3	7.2	8.3	8.0	7.7
79	Sulu	4.5	5.1	4.2	5.1	5.7	10.0	11.0	10.0	11.2
66	Surigao del Norte	2.5	3.0	2.6	2.2	2.4	5.9	7.1	6.0	5.1
59	Surigao del Sur	2.1	2.6	3.0	2.7	2.7	5.5	6.0	7.0	6.1
27	Tarlac	2.5	2.4	2.8	2.6	2.9	6.2	6.6	6.8	6.3
77	Tawi-Tawi	3.2	4.1	4.3	4.9	4.8	7.4	9.2	9.5	10.2
60	Western Samar	2.6	3.3	2.6	2.4	2.6	6.2	7.4	6.0	5.5
23	Zambales	2.0	2.6	3.0	2.0	2.5	5.1	6.3	7.2	5.3
72	Zamboanga del Norte	1.9	1.5	1.8	1.8	2.2	4.6	4.0	4.6	4.3
24	Zamboanga del Sur	2.2	2.1	1.7	1.9	2.1	5.2	5.2	4.4	4.6
76	Zamboanga Sibugay	-	-	1.8	2.4	2.6	-	-	4.6	5.6
	Philippines	2.5	2.5	2.5	2.5	2.6	6.0	6.0	6.1	6.1

	Richest 20%					Richest 10%				
2009	1997	2000	2003	2006	2009	1997	2000	2003	2006	2009
9.3	44.6	50.0	49.9	46.7	42.1	29.9	35.3	35.5	33.2	28.5
6.1	52.9	48.8	54.6	52.4	53.9	37.7	33.8	42.5	36.6	39.3
7.3	53.2	49.9	57.2	54.5	52.5	39.4	36.2	39.0	41.2	39.4
6.7	53.7	53.0	53.5	54.6	50.3	37.3	36.3	37.1	37.4	34.6
4.3	57.8	52.0	52.8	54.0	54.3	41.0	34.8	35.5	36.8	37.0
6.6	52.0	52.6	52.0	59.7	52.8	34.1	35.5	36.3	47.0	36.7
6.7	49.8	54.0	51.9	50.5	50.2	34.5	39.1	36.1	34.0	34.6
5.4	56.4	54.6	57.8	55.9	56.3	42.5	36.8	42.0	38.2	39.0
6.3	53.2	51.5	46.0	48.2	48.6	36.4	36.2	31.2	33.3	34.0
6.8	54.1	55.7	48.8	56.9	52.4	38.5	41.2	32.9	41.9	38.2
6.6	44.1	43.5	43.3	47.6	46.2	29.0	28.5	27.9	32.2	30.5
6.5	46.6	46.7	58.3	50.9	51.8	30.7	31.4	45.2	34.2	36.1
5.6	47.4	53.2	63.9	54.8	53.9	32.2	40.0	51.8	39.5	37.4
6.8	46.1	51.6	49.7	48.5	49.4	31.4	35.9	34.1	32.7	34.6
6.4	47.9	49.8	52.6	52.7	48.3	31.4	33.9	36.7	36.5	31.7
8.1	40.9	41.0	45.0	46.9	43.0	25.1	25.6	29.4	31.1	28.1
6.6	50.1	47.8	47.3	46.9	50.0	33.5	30.9	31.0	30.7	35.0
5.7	50.8	49.1	49.5	45.9	61.1	35.3	31.9	35.0	30.1	49.8
6.8	52.1	50.5	57.4	49.9	47.2	35.6	35.4	40.1	33.0	32.1
6.1	53.4	55.7	47.9	48.3	48.4	39.1	39.9	32.5	32.2	32.2
6.9	54.9	56.8	47.5	50.0	52.7	41.5	44.3	31.8	35.6	38.2
7.6	48.2	50.8	45.6	44.0	49.1	31.8	31.9	30.7	29.5	35.5
8.5	51.8	52.3	47.5	54.8	41.8	33.2	36.2	33.1	44.4	24.4
7.1	52.0	50.8	53.2	49.0	50.3	37.3	35.3	37.5	32.9	35.7
4.6	53.9	59.3	63.9	51.4	56.9	38.9	43.8	51.4	35.6	40.6
6.1	50.2	52.3	56.6	52.6	55.1	35.6	35.4	43.2	35.8	38.6
7.7	47.6	47.4	47.9	47.0	48.5	31.2	31.7	33.5	31.8	33.2
12.5	42.0	38.2	37.4	35.2	32.7	28.5	24.8	23.9	22.4	19.7
5.8	51.5	49.1	54.1	59.6	58.6	35.7	33.7	35.7	44.7	43.2
6.1	49.6	52.9	51.6	53.7	56.6	32.3	37.6	36.4	38.1	44.2
7.0	49.2	44.8	45.5	48.8	45.3	33.7	29.1	28.4	33.4	28.5
10.0	49.5	43.0	39.6	38.4	39.0	33.6	28.7	25.6	26.2	26.3
6.1	52.9	50.0	57.7	56.7	52.4	36.2	34.8	43.3	39.1	36.0
6.2	47.4	47.9	44.9	55.5	47.8	32.2	30.8	28.8	40.9	31.6
5.5	59.5	62.9	59.8	61.5	59.1	43.3	45.5	43.6	45.3	45.6
5.0	53.3	51.7	55.9	55.8	54.5	37.2	34.9	38.2	38.7	38.7
6.3	-	-	64.6	57.9	54.6	-	-	53.9	42.3	41.6
6.3	51.7	51.4	50.7	50.4	50.3	36.4	35.8	35.1	34.4	34.7

Statistical Annex E2: Inequality measures 1997-2009

HDI Rank 2009	Province	Richest 10% to poorest 10%					Richest 20% to poorest 20%	
		1997	2000	2003	2006	2009	1997	2000
	Metro Manila	18.4	17.4	13.6	14.3	13.2	10.1	9.8
51	Abra	27.7	20.9	14.3	15.3	14.0	13.9	11.9
31	Agusan del Norte	16.0	17.1	14.8	14.2	19.7	9.6	9.7
75	Agusan del Sur	17.1	9.8	15.3	15.9	12.9	10.2	6.7
63	Aklan	12.9	12.2	12.3	10.9	10.9	8.5	7.9
43	Albay	16.1	13.8	17.2	21.5	12.9	9.7	8.4
47	Antique	21.4	13.5	19.6	11.2	13.0	11.3	8.3
40	Apayao	13.3	10.3	5.6	11.9	12.6	7.8	6.2
14	Aurora	11.5	14.3	13.7	20.1	11.8	7.0	8.6
62	Basilan	10.8	6.5	6.2	11.1	7.4	6.3	4.3
6	Bataan	12.3	11.8	11.6	12.5	11.4	7.6	7.5
2	Batanes	17.6	8.7	8.5	5.4	8.4	10.7	6.4
11	Batangas	12.3	10.2	13.6	12.9	13.7	7.3	6.4
1	Benguet	15.2	13.0	13.7	15.6	15.1	9.2	7.7
13	Biliran	12.5	13.4	19.5	21.9	28.5	7.4	8.4
53	Bohol	14.8	16.4	14.2	15.7	16.3	8.7	10.0
46	Bukidnon	17.4	20.3	19.7	18.7	15.6	9.8	11.2
5	Bulacan	7.9	8.3	8.7	10.0	9.5	5.1	5.6
12	Cagayan	9.7	9.9	12.6	13.8	15.1	6.3	6.3
57	Camarines Norte	15.1	16.4	20.5	14.9	13.1	8.4	9.5
49	Camarines Sur	12.4	16.7	15.6	12.5	12.7	7.3	9.7
39	Camiguin	11.3	13.1	14.0	18.3	10.3	6.5	7.3
36	Capiz	13.6	14.6	13.5	15.0	18.5	8.4	9.2
20	Catanduanes	12.7	18.0	35.6	18.9	27.9	8.2	10.3
4	Cavite	9.6	10.3	10.2	10.8	8.9	6.1	6.7
26	Cebu	19.6	17.4	19.4	16.3	16.7	11.2	9.9
61	Compostela Valley	-	-	13.3	10.0	10.1	-	-
41	Davao del Norte	16.5	13.0	26.9	13.0	18.4	9.0	7.8
22	Davao del Sur	16.1	15.0	16.7	15.4	16.7	10.0	9.0
74	Davao Oriental	14.4	15.4	10.8	9.9	7.7	8.7	9.3
64	Eastern Samar	14.8	13.1	16.0	34.3	17.0	8.8	8.1
37	Guimaras	9.4	10.5	11.7	7.5	7.2	5.9	6.0
58	Ifugao	14.8	12.6	11.2	10.5	12.7	10.2	7.9
9	Ilocos Norte	16.3	11.5	10.2	12.9	9.5	8.9	7.5
25	Ilocos Sur	13.7	13.3	13.9	12.8	9.6	8.2	7.9
16	Iloilo	17.0	19.7	19.2	16.3	14.3	10.1	11.9
21	Isabela	15.2	15.7	14.0	13.4	15.8	9.5	9.7
32	Kalinga	12.0	13.9	11.5	18.0	14.6	7.8	8.1
18	La Union	17.3	16.4	16.2	14.5	19.2	10.9	9.0
7	Laguna	11.6	11.5	14.1	12.1	10.2	7.3	7.2
33	Lanao del Norte	21.8	22.3	26.3	26.1	20.3	12.7	13.0
70	Lanao del Sur	5.9	5.5	14.3	7.2	9.6	3.9	3.9
28	Leyte	14.6	21.3	17.8	18.0	21.3	8.8	12.4

			Gini index				
2003	2006	2009	1997	2000	2003	2006	2009
7.9	8.5	8.1	0.490	0.474	0.429	0.433	0.428
8.8	8.9	8.4	0.564	0.517	0.458	0.457	0.451
9.2	8.5	11.3	0.460	0.449	0.433	0.430	0.503
9.4	9.3	8.0	0.484	0.394	0.461	0.456	0.427
7.3	7.5	7.2	0.433	0.418	0.421	0.420	0.426
10.2	12.2	8.1	0.484	0.444	0.488	0.529	0.434
11.5	7.1	8.4	0.515	0.444	0.516	0.420	0.439
4.4	8.1	8.6	0.412	0.377	0.296	0.430	0.450
8.8	12.8	8.1	0.405	0.432	0.416	0.518	0.424
4.4	6.4	4.8	0.407	0.307	0.314	0.404	0.358
6.9	7.6	7.2	0.416	0.412	0.392	0.405	0.413
8.5	5.8	4.1	0.513	0.380	0.353	0.318	0.320
8.4	7.8	8.1	0.401	0.374	0.429	0.407	0.427
8.6	9.0	8.4	0.450	0.406	0.421	0.441	0.418
11.9	12.9	15.1	0.427	0.431	0.513	0.538	0.574
8.5	10.2	9.6	0.443	0.502	0.440	0.471	0.471
11.1	10.5	9.3	0.480	0.515	0.486	0.485	0.461
5.7	6.5	6.1	0.337	0.350	0.350	0.376	0.363
7.9	8.3	9.0	0.383	0.384	0.434	0.440	0.456
11.5	9.0	7.3	0.453	0.481	0.528	0.469	0.447
9.4	7.9	7.8	0.424	0.478	0.468	0.433	0.434
9.3	11.0	6.6	0.383	0.433	0.460	0.505	0.404
8.3	9.1	10.1	0.461	0.476	0.449	0.474	0.472
18.5	10.2	16.3	0.438	0.513	0.634	0.527	0.560
6.7	6.8	6.0	0.359	0.377	0.384	0.384	0.359
10.7	9.7	9.8	0.475	0.450	0.467	0.449	0.454
8.1	6.4	6.3	-	-	0.413	0.375	0.388
13.4	8.2	9.8	0.442	0.422	0.533	0.425	0.442
9.9	9.6	9.8	0.466	0.437	0.460	0.435	0.451
6.6	6.6	5.0	0.443	0.457	0.387	0.398	0.346
9.6	16.3	10.4	0.472	0.456	0.475	0.594	0.488
7.5	5.2	5.1	0.368	0.379	0.411	0.329	0.339
7.3	6.5	7.3	0.495	0.443	0.413	0.397	0.408
7.0	7.7	6.2	0.457	0.410	0.395	0.408	0.364
8.3	7.7	6.4	0.438	0.423	0.422	0.435	0.386
10.9	9.7	8.9	0.460	0.509	0.475	0.462	0.449
8.5	8.3	9.2	0.463	0.472	0.443	0.436	0.475
7.7	11.2	9.0	0.429	0.418	0.415	0.506	0.448
9.4	8.6	10.9	0.472	0.449	0.460	0.436	0.498
8.3	7.4	6.6	0.394	0.396	0.420	0.402	0.379
15.0	15.1	11.9	0.505	0.531	0.561	0.564	0.512
8.8	5.1	6.0	0.282	0.295	0.438	0.342	0.392
10.2	10.3	11.9	0.450	0.523	0.490	0.487	0.536

Statistical Annex E2: Inequality measures 1997-2009

HDI Rank 2009	Province	Richest 10% to poorest 10%					Richest 20% to poorest 20%	
		1997	2000	2003	2006	2009	1997	2000
78	Maguindanao	8.2	12.9	10.2	9.4	7.1	5.4	7.6
30	Marinduque	13.8	10.3	13.4	14.2	14.7	8.5	6.4
71	Masbate	13.6	10.7	18.9	16.0	12.0	7.9	6.6
55	Misamis Occidental	16.8	15.1	14.8	16.1	12.0	9.8	9.0
15	Misamis Oriental	27.6	17.8	18.8	21.3	22.2	15.0	10.7
67	Mt. Province	12.7	17.3	15.7	19.7	13.0	8.8	10.3
34	Negros Occidental	12.8	15.0	14.2	12.4	12.3	7.8	8.8
42	Negros Oriental	17.8	18.7	22.2	18.0	16.8	9.7	10.5
44	North Cotabato	15.4	13.2	11.5	12.0	13.1	9.9	8.0
68	Northern Samar	17.2	17.7	10.4	18.7	12.7	10.0	9.8
38	Nueva Ecija	9.4	7.7	8.4	10.9	10.8	6.1	5.1
8	Nueva Vizcaya	11.8	11.7	18.8	14.4	14.2	6.9	7.1
35	Occidental Mindoro	10.6	14.9	29.3	15.9	15.7	6.6	8.1
54	Oriental Mindoro	11.1	15.4	13.2	12.8	12.6	7.2	8.9
45	Palawan	11.1	13.7	14.5	16.4	12.2	7.2	8.4
10	Pampanga	6.9	8.0	9.2	9.8	8.6	4.8	5.2
29	Pangasinan	13.7	11.5	11.1	10.7	13.0	8.5	7.6
52	Quezon	14.5	12.9	11.9	9.1	20.3	8.9	8.3
17	Quirino	14.6	12.3	15.6	10.9	12.8	9.2	7.5
3	Rizal	16.4	17.2	11.6	12.2	13.3	9.0	10.0
69	Romblon	13.1	16.5	10.3	11.1	14.1	8.1	9.1
73	Sarangani	12.0	14.7	10.4	8.2	10.6	7.6	9.6
56	Siquijor	13.9	13.7	8.1	20.1	6.5	8.8	8.4
48	Sorsogon	13.1	11.2	13.7	9.7	11.9	8.1	7.2
19	South Cotabato	18.2	21.7	33.1	15.1	21.9	10.0	12.8
50	Southern Leyte	11.1	12.6	15.9	13.1	14.3	7.0	8.0
65	Sultan Kudarat	9.5	8.3	9.3	9.2	10.0	6.6	5.7
79	Sulu	6.3	4.9	5.6	4.4	3.5	4.2	3.5
66	Surigao del Norte	14.5	11.2	13.7	20.1	17.9	8.7	6.9
59	Surigao del Sur	15.7	14.6	11.9	14.4	16.6	8.9	8.9
27	Tarlac	13.8	11.9	10.3	12.6	10.0	7.9	6.8
77	Tawi-Tawi	10.5	6.9	5.9	5.4	5.4	6.7	4.7
60	Western Samar	13.8	10.5	16.9	16.3	14.1	8.5	6.8
23	Zambales	16.2	12.0	9.7	20.4	12.4	9.3	7.7
72	Zamboanga del Norte	23.1	30.9	24.2	25.9	21.0	12.9	15.6
24	Zamboanga del Sur	17.2	16.5	22.3	20.7	18.3	10.3	9.9
76	Zamboanga Sibugay	-	-	29.9	17.9	15.8	-	-
	Philippines	14.7	14.3	13.9	13.6	13.3	8.6	8.6

			Gini index				
2003	2006	2009	1997	2000	2003	2006	2009
6.5	5.8	4.5	0.354	0.423	0.408	0.375	0.318
7.6	8.2	8.9	0.451	0.400	0.457	0.440	0.462
11.4	9.0	7.2	0.447	0.412	0.495	0.473	0.438
9.0	9.7	7.5	0.465	0.458	0.458	0.472	0.425
10.8	12.5	12.5	0.532	0.464	0.471	0.486	0.489
9.8	11.1	8.0	0.450	0.462	0.459	0.525	0.439
8.5	7.8	7.5	0.422	0.463	0.447	0.426	0.423
12.7	10.7	10.4	0.484	0.474	0.512	0.491	0.492
6.8	7.2	7.7	0.468	0.439	0.388	0.406	0.417
6.7	11.0	7.7	0.473	0.492	0.407	0.503	0.441
5.7	6.8	7.0	0.363	0.347	0.353	0.401	0.392
10.3	8.6	7.9	0.392	0.399	0.518	0.438	0.440
15.1	10.0	9.7	0.398	0.457	0.585	0.478	0.472
7.8	7.6	7.3	0.400	0.448	0.421	0.411	0.416
8.7	9.5	7.5	0.405	0.428	0.453	0.462	0.410
6.1	6.4	5.3	0.319	0.333	0.374	0.388	0.341
7.1	6.8	7.6	0.431	0.408	0.398	0.392	0.427
7.0	6.0	10.6	0.445	0.422	0.412	0.376	0.543
10.5	6.9	6.9	0.452	0.423	0.498	0.410	0.399
7.1	7.6	7.9	0.462	0.484	0.401	0.412	0.414
6.6	7.0	7.6	0.461	0.488	0.392	0.417	0.436
6.6	5.2	6.5	0.409	0.444	0.381	0.347	0.405
5.8	11.0	4.9	0.441	0.444	0.395	0.508	0.328
8.2	6.4	7.0	0.443	0.425	0.445	0.396	0.422
16.4	8.8	12.4	0.479	0.533	0.591	0.446	0.508
9.2	8.1	9.1	0.420	0.440	0.490	0.439	0.468
6.0	6.1	6.3	0.396	0.377	0.388	0.382	0.398
3.7	3.2	2.6	0.312	0.266	0.268	0.238	0.200
9.0	11.8	10.2	0.444	0.412	0.455	0.531	0.506
7.4	8.8	9.3	0.443	0.455	0.429	0.458	0.492
6.7	7.8	6.5	0.425	0.376	0.377	0.418	0.379
4.2	3.8	3.9	0.414	0.332	0.304	0.282	0.286
9.6	10.3	8.6	0.451	0.413	0.500	0.488	0.448
6.2	10.5	7.6	0.424	0.411	0.370	0.492	0.408
13.0	14.4	10.8	0.521	0.561	0.529	0.549	0.518
12.8	12.2	10.9	0.473t	0.456	0.502	0.498	0.483
14.1	10.3	8.7	-	-	0.583	0.503	0.471
8.3	8.3	8.0	0.488	0.486	0.471	0.466	0.463

Statistical Annex F1: Unemployment rate 1997-2009

HDI Rank 2009	Province	1997	2000	2003	2006	2009
	Metro Manila	14.3	18.0	17.5	18.1	16.9
51	Abra	5.8	8.7	8.1	8.9	5.1
31	Agusan del Norte	14.7	14.4	16.3	12.1	11.5
75	Agusan del Sur	5.1	7.8	7.2	6.8	5.1
63	Aklan	7.0	16.3	10.2	12.2	11.0
43	Albay	9.8	10.3	12.6	10.8	12.4
47	Antique	9.1	10.9	16.5	12.1	10.8
40	Apayao	6.8	4.8	3.7	3.8	1.9
14	Aurora	12.9	19.5	17.1	13.2	14.7
62	Basilan	6.5	11.5	12.4	7.1	8.6
6	Bataan	13.0	14.3	14.4	13.3	13.6
2	Batanes	2.4	5.4	4.7	1.6	0.7
11	Batangas	8.8	13.4	13.6	12.1	13.2
1	Benguet	8.3	11.3	12.6	9.9	11.3
13	Biliran	6.4	14.6	9.5	7.6	10.1
53	Bohol	9.3	11.3	10.5	10.4	7.3
46	Bukidnon	3.4	4.2	5.2	6.7	6.3
5	Bulacan	7.4	8.3	11.2	12.3	10.8
12	Cagayan	4.1	5.0	3.5	4.1	4.2
57	Camarines Norte	10.4	10.6	7.3	8.2	8.0
49	Camarines Sur	6.1	11.1	8.0	8.4	9.2
39	Camiguin	3.0	2.0	1.8	2.1	5.1
36	Capiz	5.4	5.8	6.3	6.0	5.9
20	Catanduanes	6.1	10.2	7.1	9.3	7.7
4	Cavite	10.4	15.8	16.1	15.1	16.0
26	Cebu	11.2	12.7	15.0	12.3	13.4
61	Compostela Valley	-	-	6.2	8.6	5.6
41	Davao del Norte	8.6	7.0	12.3	10.0	10.1
22	Davao del Sur	7.6	11.1	10.5	10.3	9.5
74	Davao Oriental	7.4	8.6	6.0	6.0	5.4
64	Eastern Samar	13.6	12.8	8.3	8.8	8.8
37	Guimaras	8.9	8.2	11.1	10.5	13.7
58	Ifugao	4.3	5.3	7.4	5.8	4.9
9	Ilocos Norte	3.5	6.2	6.8	6.3	8.6
25	Ilocos Sur	8.0	9.7	8.3	7.9	9.2
16	Iloilo	11.3	10.3	12.0	9.3	12.4
21	Isabela	6.9	8.5	11.8	6.5	7.4
32	Kalinga	6.9	4.5	9.1	5.9	6.6
18	La Union	7.4	8.5	10.2	8.1	11.2
7	Laguna	9.5	12.6	16.4	16.0	14.0
33	Lanao del Norte	10.4	15.6	8.5	8.0	8.3
70	Lanao del Sur	5.0	6.5	10.7	14.8	11.3
28	Leyte	8.2	14.7	9.9	7.5	9.1
78	Maguindanao	5.7	7.7	8.9	5.3	4.1

HDI Rank 2009	Province	1997	2000	2003	2006	2009
30	Marinduque	6.4	8.4	8.5	7.2	8.5
71	Masbate	4.2	6.1	6.0	4.9	4.4
55	Misamis Occidental	9.3	10.9	9.0	11.5	8.5
15	Misamis Oriental	8.6	10.0	9.7	8.5	6.8
67	Mt. Province	3.5	4.9	3.1	1.7	1.9
34	Negros Occidental	9.3	16.0	9.4	8.4	9.6
42	Negros Oriental	4.9	12.1	10.6	10.6	8.4
44	North Cotabato	4.5	5.4	5.5	5.5	5.3
68	Northern Samar	10.3	12.9	8.6	10.1	9.3
38	Nueva Ecija	6.3	11.6	9.2	10.5	8.6
8	Nueva Vizcaya	5.3	5.3	4.6	5.5	4.6
35	Occidental Mindoro	6.6	10.5	11.2	10.9	10.1
54	Oriental Mindoro	5.8	9.1	7.6	8.0	8.0
45	Palawan	6.2	8.3	12.0	7.8	6.3
10	Pampanga	10.1	11.7	13.4	17.1	15.6
29	Pangasinan	10.5	12.8	14.6	13.7	12.8
52	Quezon	7.8	8.3	8.5	7.2	7.7
17	Quirino	4.0	10.0	8.5	7.4	5.5
3	Rizal	7.2	14.0	13.9	14.5	15.7
69	Romblon	9.9	9.2	7.6	7.2	5.4
73	Sarangani	5.6	8.9	11.6	7.7	5.4
56	Siquijor	6.0	3.3	2.8	7.7	8.7
48	Sorsogon	12.0	16.7	7.3	9.3	9.7
19	South Cotabato	9.8	11.3	15.8	11.5	8.7
50	Southern Leyte	8.6	12.7	14.3	10.0	7.5
65	Sultan Kudarat	3.6	7.7	5.5	6.6	4.5
79	Sulu	2.2	3.0	3.6	3.5	1.6
66	Surigao del Norte	4.5	3.3	7.3	4.9	7.0
59	Surigao del Sur	13.3	10.6	12.4	8.7	8.8
27	Tarlac	12.8	17.7	20.9	13.2	14.0
77	Tawi-Tawi	3.3	5.4	4.3	4.4	3.3
60	Western Samar	8.7	8.3	6.7	7.1	7.5
23	Zambales	21.3	13.7	15.7	16.6	13.5
72	Zamboanga del Norte	8.7	7.7	8.3	5.1	5.2
24	Zamboanga del Sur	5.6	7.7	7.7	6.3	6.0
76	Zamboanga Sibugay	-	-	6.3	4.6	4.4
	Philippines	9.1	11.8	11.7	11.0	10.7

Statistical Annex F2: Underemployment rate 1997-2009

HDI Rank 2009	Province	1997	2000	2003	2006	2009
	Metro Manila	16.0	15.0	9.5	16.6	12.4
51	Abra	14.6	10.9	9.3	14.7	16.1
31	Agusan del Norte	34.9	38.0	26.1	29.3	31.8
75	Agusan del Sur	15.9	10.0	14.1	21.7	27.7
63	Aklan	14.0	12.0	16.4	19.6	18.3
43	Albay	42.5	41.7	35.4	40.7	31.0
47	Antique	23.1	21.7	20.5	36.4	24.9
40	Apayao	37.5	47.7	27.9	28.6	37.8
14	Aurora	27.2	41.9	33.1	31.9	45.2
62	Basilan	3.0	6.6	14.1	10.2	8.8
6	Bataan	13.1	17.9	19.9	18.4	7.5
2	Batanes	0.3	4.4	10.3	3.5	7.9
11	Batangas	21.7	23.1	10.4	19.7	21.4
1	Benguet	10.6	19.2	9.6	21.6	11.6
13	Biliran	23.8	12.3	16.1	44.4	37.0
53	Bohol	10.9	10.2	8.5	12.3	13.3
46	Bukidnon	59.5	34.6	35.5	41.8	28.6
5	Bulacan	10.6	13.1	7.9	17.5	8.1
12	Cagayan	11.4	11.5	9.6	16.4	10.9
57	Camarines Norte	32.9	26.8	28.1	36.9	42.5
49	Camarines Sur	51.2	47.9	33.9	37.3	40.3
39	Camiguin	4.8	17.2	5.4	12.9	13.7
36	Capiz	13.6	24.1	22.4	29.3	30.3
20	Catanduanes	26.8	48.7	38.2	46.2	34.0
4	Cavite	9.8	15.3	17.2	16.0	19.0
26	Cebu	8.9	13.2	10.4	19.7	15.9
61	Compostela Valley	-	-	19.4	23.3	21.4
41	Davao del Norte	34.1	29.6	19.7	23.4	20.1
22	Davao del Sur	30.9	28.4	18.3	20.8	17.3
74	Davao Oriental	45.9	36.7	34.6	39.3	32.4
64	Eastern Samar	37.4	50.8	59.7	50.6	54.9
37	Guimaras	29.0	31.9	32.5	30.5	34.3
58	Ifugao	8.3	20.8	26.1	22.9	31.5
9	Ilocos Norte	22.2	26.8	21.9	34.1	21.0
25	Ilocos Sur	8.1	16.1	7.0	21.1	7.2
16	Iloilo	38.8	41.4	30.5	25.0	29.1
21	Isabela	14.2	24.0	17.5	23.5	12.3
32	Kalinga	31.0	28.9	11.1	20.4	21.5
18	La Union	17.0	21.2	24.1	27.0	29.6
7	Laguna	22.9	19.7	13.3	17.9	13.7
33	Lanao del Norte	35.5	45.6	38.7	33.4	45.1
70	Lanao del Sur	2.0	7.1	4.6	12.8	11.6
28	Leyte	21.0	20.4	22.1	23.1	18.0
78	Maguindanao	22.9	19.4	16.0	27.5	22.5

HDI Rank 2009	Province	1997	2000	2003	2006	2009
30	Marinduque	24.9	27.1	34.0	38.8	36.7
71	Masbate	22.6	26.4	20.9	41.1	35.9
55	Misamis Occidental	15.6	13.4	25.6	27.8	13.5
15	Misamis Oriental	22.7	24.7	18.9	28.1	22.8
67	Mt. Province	16.1	27.6	8.6	18.5	7.2
34	Negros Occidental	16.1	20.1	18.5	24.3	22.5
42	Negros Oriental	23.0	16.1	13.7	25.5	11.1
44	North Cotabato	45.8	31.9	14.4	19.5	14.3
68	Northern Samar	15.4	20.2	7.7	19.8	14.2
38	Nueva Ecija	7.8	6.9	8.2	15.5	7.1
8	Nueva Vizcaya	44.2	35.4	37.3	35.9	27.2
35	Occidental Mindoro	30.2	40.3	22.3	33.5	35.6
54	Oriental Mindoro	18.1	32.8	12.0	20.0	17.8
45	Palawan	7.6	19.0	11.1	13.4	18.9
10	Pampanga	16.3	12.7	8.9	8.0	2.9
29	Pangasinan	17.4	18.7	10.4	15.2	14.0
52	Quezon	17.1	17.0	14.5	23.1	21.4
17	Quirino	15.0	24.1	27.2	51.1	37.5
3	Rizal	16.1	8.9	6.0	14.3	6.6
69	Romblon	18.7	22.1	12.4	36.3	48.7
73	Sarangani	24.8	23.0	23.6	46.9	40.5
56	Siquijor	3.7	9.2	18.5	29.9	30.6
48	Sorsogon	22.4	25.5	16.9	28.4	32.7
19	South Cotabato	49.4	44.3	33.9	29.4	22.1
50	Southern Leyte	27.7	26.8	24.7	34.8	29.9
65	Sultan Kudarat	7.7	16.3	6.7	21.5	15.9
79	Sulu	8.3	5.0	2.4	5.2	1.4
66	Surigao del Norte	9.5	8.9	7.9	9.7	12.4
59	Surigao del Sur	31.3	37.2	32.0	34.5	31.8
27	Tarlac	9.9	6.3	8.2	8.4	12.5
77	Tawi-Tawi	26.9	15.3	3.9	7.8	11.0
60	Western Samar	40.6	36.0	29.6	37.1	32.1
23	Zambales	5.5	6.6	4.3	12.5	6.2
72	Zamboanga del Norte	29.9	33.5	32.7	39.5	42.9
24	Zamboanga del Sur	24.3	13.9	13.3	18.7	11.7
76	Zamboanga Sibugay	-	-	14.4	22.3	18.1
	Philippines	21.8	21.6	16.9	22.6	19.1

Statistical Annex G: Gender inequality in economic activity 2007-2009

	Activity Rate (age 15 and above)			Employment by economic activity (%)	
				Agriculture	
Province	Female	Male	Female as % of male	Female	Male
Metro Manila	51.6	74.0	69.7	0.2	1.2
Abra	45.7	81.9	55.8	48.5	68.1
Agusan del Norte	54.1	83.1	65.1	24.5	40.5
Agusan del Sur	55.6	86.4	64.4	44.6	61.1
Aklan	49.8	75.8	65.7	16.5	46.0
Albay	51.3	80.3	64.0	13.1	40.4
Antique	50.4	75.9	66.3	31.8	67.7
Apayao	66.4	89.3	74.4	76.6	82.4
Aurora	50.5	88.0	57.4	25.9	57.7
Basilan	25.6	78.3	32.6	24.8	63.4
Bataan	45.5	70.6	64.5	4.8	23.5
Batanes	72.2	92.2	78.6	37.9	76.6
Batangas	49.2	75.8	65.0	14.7	35.5
Benguet	48.9	69.0	70.9	25.2	30.8
Biliran	56.6	78.3	72.3	19.9	50.9
Bohol	47.0	76.9	61.2	26.8	54.6
Bukidnon	64.5	89.1	72.4	55.9	72.7
Bulacan	47.8	74.9	63.9	4.8	14.1
Cagayan	52.3	81.4	64.3	55.5	68.7
Camarines Norte	46.3	85.1	54.4	26.7	59.2
Camarines Sur	50.2	80.4	62.5	30.2	58.4
Camiguin	66.5	86.5	76.9	35.6	54.9
Capiz	58.8	81.8	71.9	49.5	67.4
Catanduanes	58.4	84.7	68.9	25.6	53.6
Cavite	50.0	73.7	67.9	1.8	10.8
Cebu	55.5	76.3	72.7	18.6	26.6
Compostela Valley	43.7	85.7	51.0	41.8	57.7
Davao del Norte	45.9	81.9	56.0	37.0	59.0
Davao del Sur	51.1	80.7	63.3	19.0	40.8
Davao Oriental	54.9	90.4	60.7	50.0	71.6
Eastern Samar	61.5	86.9	70.7	33.6	67.5
Guimaras	44.8	80.5	55.6	21.0	55.3
Ifugao	66.5	83.8	79.3	70.4	76.7
Ilocos Norte	42.2	80.8	52.2	35.2	60.8
Ilocos Sur	47.4	80.4	58.9	45.7	57.2
Iloilo	47.0	76.1	61.8	18.5	46.9
Isabela	43.6	83.6	52.2	43.6	64.7
Kalinga	51.1	82.3	62.1	63.3	72.5
La Union	52.3	80.2	65.2	32.1	51.8
Laguna	52.8	75.8	69.7	3.4	15.3
Lanao del Norte	60.5	81.7	74.0	37.6	51.4
Lanao del Sur	24.7	77.9	31.8	18.8	68.0

Industry		Services		Contributing family workers	
Female	Male	Female	Male	Female as of % total	Male as of % total
12.4	26.0	87.3	72.8	67.5	32.5
3.4	7.5	48.1	24.4	46.5	53.5
8.7	23.5	66.8	36.0	56.6	43.4
4.1	12.3	51.3	26.6	56.2	43.8
18.2	16.8	65.3	37.2	57.4	42.6
21.0	19.8	65.9	39.8	50.8	49.2
15.0	8.3	53.2	24.0	58.5	41.5
0.2	3.4	23.2	14.2	59.6	40.4
6.8	15.0	67.3	27.3	43.3	56.7
3.8	9.7	71.5	26.9	14.9	85.1
21.0	26.2	74.2	50.3	46.6	53.4
3.4	8.1	58.7	15.2	43.0	57.0
25.0	23.8	60.4	40.6	49.8	50.2
7.1	24.6	67.7	44.6	67.4	32.6
4.6	10.5	75.5	38.6	53.9	46.1
10.9	15.0	62.3	30.5	52.5	47.5
2.3	7.3	41.8	20.0	60.0	40.0
20.2	29.8	75.0	56.1	58.2	41.8
1.9	7.6	42.6	23.7	61.9	38.1
6.9	15.7	66.4	25.1	38.8	61.2
4.6	11.6	65.2	30.0	50.9	49.1
3.7	13.9	60.6	31.2	53.9	46.1
2.5	9.7	48.0	22.9	63.2	36.8
4.3	10.0	70.1	36.4	48.8	51.2
23.8	31.1	74.4	58.2	60.1	39.9
16.9	28.3	64.6	45.0	61.4	38.6
4.3	23.4	53.9	18.9	52.0	48.0
5.2	10.5	57.8	30.5	62.3	37.7
7.9	16.9	73.1	42.3	55.9	44.1
3.5	7.7	46.6	20.6	50.3	49.7
8.9	8.4	57.5	24.0	52.5	47.5
7.3	18.9	71.8	25.8	28.6	71.4
2.3	6.4	27.3	16.9	65.0	35.0
5.2	11.0	59.5	28.1	44.8	55.2
3.6	12.0	50.7	30.8	58.9	41.1
6.8	14.3	74.6	38.9	48.5	51.5
2.2	9.6	54.2	25.8	52.7	47.3
0.6	5.6	36.1	21.9	47.7	52.3
6.8	16.6	61.1	31.6	50.9	49.1
30.9	32.4	65.7	52.3	62.0	38.0
3.8	13.6	58.5	35.0	57.1	42.9
4.1	3.2	77.2	28.7	32.4	67.6

Statistical Annex G: Gender inequality in economic activity 2007-2009

	Activity Rate (age 15 and above)			Employment by economic activity (%) Agriculture	
Province	Female	Male	Female as % of male	Female	Male
Leyte	52.9	80.6	65.7	26.7	53.7
Maguindanao	50.3	87.3	57.6	60.5	71.3
Marinduque	59.7	81.4	73.4	42.5	63.8
Masbate	58.7	86.1	68.2	48.3	68.2
Misamis Occidental	54.5	80.6	67.6	30.4	50.1
Misamis Oriental	56.6	79.0	71.7	22.2	35.6
Mt. Province	83.8	92.3	90.8	82.9	84.7
Negros Occidental	52.6	80.0	65.7	29.1	49.6
Negros Oriental	56.9	83.1	68.5	46.8	60.5
North Cotabato	51.2	86.0	59.5	54.3	75.6
Northern Samar	45.0	84.3	53.3	29.2	62.5
Nueva Ecija	44.9	82.9	54.2	31.0	51.5
Nueva Vizcaya	56.1	82.5	67.9	49.8	62.5
Occidental Mindoro	55.6	86.9	63.9	38.9	67.3
Oriental Mindoro	54.2	84.9	63.8	36.4	62.5
Palawan	58.3	85.9	67.9	39.2	64.3
Pampanga	40.3	73.2	55.1	2.1	16.9
Pangasinan	38.8	77.1	50.3	13.5	40.0
Quezon	52.4	83.7	62.6	32.4	54.1
Quirino	55.9	86.3	64.7	50.8	63.5
Rizal	46.4	71.5	64.8	1.7	10.3
Romblon	54.7	77.3	70.8	35.9	51.9
Sarangani	47.6	87.2	54.6	43.4	74.5
Siquijor	53.4	78.6	67.9	35.5	55.6
Sorsogon	42.4	79.8	53.2	17.7	56.2
South Cotabato	51.0	80.3	63.6	24.5	46.0
Southern Leyte	40.9	76.8	53.2	18.3	63.3
Sultan Kudarat	40.5	84.6	47.9	43.7	74.3
Sulu	20.0	78.9	25.5	46.7	83.3
Surigao del Norte	45.5	75.8	60.1	23.9	46.3
Surigao del Sur	50.3	82.7	60.8	29.7	60.3
Tarlac	39.2	79.1	49.6	15.3	41.6
Tawi-Tawi	44.4	83.5	53.1	72.3	82.9
Western Samar	53.8	84.5	63.7	31.3	64.4
Zambales	42.6	76.5	55.7	8.7	32.8
Zamboanga del Norte	59.0	84.3	69.9	58.4	71.0
Zamboanga del Sur	44.7	80.0	55.9	27.9	49.9
Zamboanga Sibugay	51.8	86.1	60.2	42.9	70.9
Philippines	49.7	78.9	62.9	23.8	43.3

Industry		Services		Contributing family workers	
Female	Male	Female	Male	Female as of % total	Male as of % total
8.1	13.6	65.3	32.7	56.1	43.9
1.7	4.1	37.8	24.5	58.7	41.3
6.2	12.4	51.3	23.8	55.4	44.6
4.7	10.0	47.0	21.8	54.4	45.6
3.0	14.8	66.6	35.1	64.0	36.0
7.3	18.0	70.4	46.4	61.4	38.6
1.4	6.6	15.7	8.7	60.5	39.5
4.3	12.7	66.6	37.7	56.3	43.7
3.7	11.7	49.5	27.8	59.2	40.8
2.4	5.7	43.3	18.7	50.7	49.3
7.2	10.0	63.6	27.5	48.1	51.9
6.7	13.0	62.4	35.5	46.8	53.2
2.3	11.1	47.9	26.4	63.8	36.2
3.3	9.4	57.8	23.3	48.6	51.4
5.6	11.9	58.1	25.6	53.9	46.1
7.1	11.1	53.7	24.6	51.3	48.7
12.2	24.2	85.7	58.9	56.8	43.2
8.6	19.6	77.9	40.4	45.8	54.2
7.8	16.3	59.8	29.6	52.7	47.3
2.1	11.6	47.1	24.9	56.6	43.4
18.9	32.5	79.4	57.2	59.0	41.0
12.1	21.8	51.9	26.3	62.2	37.8
4.5	7.1	52.0	18.4	56.3	43.7
6.0	18.3	58.5	26.1	53.2	46.8
11.8	13.2	70.5	30.6	38.0	62.0
11.3	14.7	64.1	39.4	62.8	37.2
8.2	10.8	73.6	25.9	25.3	74.7
3.5	5.1	52.8	20.6	44.6	55.4
0.6	0.7	52.8	16.1	32.4	67.6
6.4	20.2	69.7	33.5	60.0	40.0
6.8	12.5	63.5	27.2	54.9	45.1
11.0	20.5	73.6	37.9	42.2	57.8
4.3	2.3	23.4	14.9	60.5	39.5
8.0	7.4	60.7	28.2	48.7	51.3
8.8	21.9	82.6	45.3	42.4	57.6
3.7	9.0	37.9	20.0	62.1	37.9
6.9	13.4	65.2	36.8	54.9	45.1
4.1	7.3	53.0	21.8	47.9	52.1
10.4	17.3	65.9	39.4	55.0	45.0

Statistical Annex H: Descriptive statistics of trimmed data

HDI Rank 2009	Province	Coefficent of variation, 1% trimmed					Per capita income (nominal)	
		1997	2000	2003	2006	2009	1997	2000
	Metro Manila	54.4	56.0	45.4	43.6	44.4	46,837	55,273
51	Abra	53.2	37.7	26.8	28.8	31.1	14,665	21,081
31	Agusan del Norte	31.2	30.9	26.6	30.7	41.7	13,709	16,477
75	Agusan del Sur	41.0	36.6	35.3	44.3	36.2	12,617	12,450
63	Aklan	31.8	30.1	43.7	41.8	46.8	17,345	18,770
43	Albay	60.4	54.0	45.1	56.9	43.9	15,648	19,183
47	Antique	44.8	32.0	61.0	48.1	43.1	16,064	17,898
40	Apayao	20.4	16.8	16.6	27.9	29.6	16,395	18,336
14	Aurora	22.2	22.3	47.9	87.4	44.6	18,418	21,357
62	Basilan	19.6	18.0	26.4	75.6	35.1	15,819	12,701
6	Bataan	34.7	36.8	39.9	42.1	65.6	29,188	34,411
2	Batanes	19.6	9.0	18.3	23.3	31.3	38,683	36,604
11	Batangas	36.0	33.5	45.1	41.3	47.3	26,389	29,388
1	Benguet	29.0	23.7	25.7	27.9	27.1	27,654	34,082
13	Biliran	33.4	29.6	37.7	52.2	75.3	13,401	16,035
53	Bohol	49.4	66.4	43.0	51.3	55.4	11,031	15,055
46	Bukidnon	55.7	50.2	46.0	53.1	50.0	14,576	16,908
5	Bulacan	28.1	31.0	35.1	41.4	39.7	27,049	36,430
12	Cagayan	39.6	38.0	31.7	36.2	40.3	15,766	19,687
57	Camarines Norte	49.7	50.1	61.2	54.4	58.2	14,118	16,492
49	Camarines Sur	54.7	56.9	46.4	45.7	45.5	13,530	16,849
39	Camiguin	13.5	15.6	31.1	43.0	41.4	13,906	15,567
36	Capiz	44.2	49.2	40.6	47.5	44.4	16,070	17,572
20	Catanduanes	33.1	31.3	189.6	72.4	57.8	15,732	15,981
4	Cavite	24.8	31.1	36.6	41.3	38.6	31,851	37,894
26	Cebu	45.0	44.4	43.9	45.0	47.5	19,197	20,728
61	Compostela Valley	-	-	38.2	37.2	37.2	-	-
41	Davao del Norte	46.8	49.2	52.8	35.1	37.2	14,343	16,152
22	Davao del Sur	45.3	45.5	41.0	37.9	42.9	21,289	24,347
74	Davao Oriental	43.3	43.3	33.0	39.2	32.8	14,297	17,982
64	Eastern Samar	49.2	36.8	43.7	57.9	49.5	10,580	13,692
37	Guimaras	20.5	20.4	44.0	31.8	39.3	14,708	18,525
58	Ifugao	28.1	24.9	23.9	27.6	28.4	14,702	14,634
9	Ilocos Norte	49.4	35.5	30.8	35.0	28.8	21,844	28,694
25	Ilocos Sur	37.1	33.9	36.0	38.3	32.8	20,034	23,590
16	Iloilo	43.0	50.1	45.3	44.7	46.4	18,666	26,138
21	Isabela	48.3	44.9	32.8	35.3	36.5	18,335	22,530
32	Kalinga	27.3	27.9	23.5	32.8	30.2	17,673	18,759
18	La Union	37.1	39.9	41.2	40.3	58.0	19,169	23,634
7	Laguna	28.6	30.9	43.0	48.3	42.7	30,646	36,708
33	Lanao del Norte	37.0	42.9	55.5	62.0	52.2	16,298	18,881
70	Lanao del Sur	16.9	20.2	41.1	29.5	34.8	11,018	14,418
28	Leyte	45.4	57.4	45.0	51.1	56.3	14,463	20,226

			Standard error				
2003	2006	2009	1997	2000	2003	2006	2009
53,619	63,106	73,738	801	934	748	830	979
23,285	22,058	27,076	1,684	1,796	1,408	1,386	1,820
19,983	23,505	32,214	585	684	720	943	1,617
16,124	21,268	23,218	806	591	763	1,221	1,100
18,606	22,680	26,354	841	857	1,268	1,397	1,852
22,103	29,507	30,933	878	971	959	1,542	1,259
20,453	20,102	29,094	1,057	854	1,814	1,376	1,912
20,113	21,931	30,456	999	1,062	1,064	1,876	2,625
24,035	31,346	41,370	928	1,129	2,790	6,451	5,092
15,106	20,894	26,256	571	408	710	2,685	1,582
34,925	44,944	58,070	1,340	1,686	1,843	2,476	4,580
46,604	49,561	60,177	6,249	2,835	7,058	7,855	11,871
32,420	36,743	44,213	735	756	1,045	1,074	1,423
41,397	54,596	64,257	1,071	1,008	1,381	1,906	2,135
21,223	32,906	40,989	1,174	1,300	2,119	4,355	6,500
19,345	22,908	29,081	544	982	804	1,105	1,469
18,234	23,706	28,720	792	813	811	1,163	1,414
36,194	44,033	53,252	576	810	806	1,122	1,269
23,335	29,710	39,026	629	778	776	1,088	1,565
18,745	22,922	28,715	1,006	1,146	1,641	1,738	2,257
18,730	20,641	28,070	579	759	691	728	986
24,728	31,193	32,435	752	908	2,864	4,671	3,932
21,348	28,131	34,736	848	1,038	1,066	1,628	1,789
37,387	23,630	41,600	1,073	1,053	15,798	3,641	5,005
43,866	52,422	58,246	670	862	1,038	1,357	1,364
28,333	32,379	39,945	505	509	665	750	931
17,526	20,863	28,841	-	-	862	973	1,422
24,843	24,851	32,066	666	678	1,494	986	1,376
25,945	32,509	39,142	725	811	745	860	1,122
13,939	18,912	20,659	921	1,188	693	1,084	986
18,637	22,474	25,775	775	838	1,309	1,975	1,938
17,473	22,093	30,053	873	1,038	2,164	1,840	2,717
23,214	25,718	30,954	1,006	871	1,357	1,716	2,145
27,163	34,722	41,318	1,525	1,443	1,198	1,671	1,573
24,863	32,117	39,273	954	1,078	1,216	1,642	1,680
24,584	31,804	38,110	598	959	826	1,010	1,220
24,203	28,169	34,690	782	919	716	881	1,102
18,102	22,819	32,587	1,180	1,228	1,002	1,760	2,249
27,970	32,283	39,609	874	1,167	1,427	1,554	2,687
42,221	47,066	51,871	685	823	1,221	1,515	1,465
21,744	31,228	31,443	705	918	1,403	2,180	1,755
20,760	18,216	22,563	267	387	1,053	628	876
19,975	24,320	34,591	532	904	705	933	1,447

Statistical Annex H: Descriptive statistics of trimmed data

HDI Rank 2009	Province	Coefficent of variation, 1% trimmed					Per capita income (nominal)	
		1997	2000	2003	2006	2009	1997	2000
78	Maguindanao	23.4	31.2	36.0	34.8	29.9	13,132	14,540
30	Marinduque	26.3	21.6	40.2	38.2	43.1	16,178	15,949
71	Masbate	49.8	65.9	48.0	52.4	63.0	10,659	11,731
55	Misamis Occidental	28.7	28.7	36.9	44.6	41.6	13,591	15,384
15	Misamis Oriental	40.7	36.4	38.2	46.0	48.3	22,696	23,636
67	Mt. Province	22.9	23.0	26.4	59.3	31.5	13,270	19,072
34	Negros Occidental	49.6	55.5	45.2	45.0	49.4	15,355	16,987
42	Negros Oriental	63.7	59.6	53.0	54.8	50.9	13,329	16,824
44	North Cotabato	46.8	49.1	30.8	38.5	41.8	12,558	14,812
68	Northern Samar	39.7	34.6	37.6	56.5	54.2	11,223	14,031
38	Nueva Ecija	33.6	35.0	33.5	40.9	39.8	20,292	23,934
8	Nueva Vizcaya	33.1	30.5	48.0	33.9	38.0	19,269	25,177
35	Occidental Mindoro	22.8	39.2	44.0	43.9	42.7	14,851	17,865
54	Oriental Mindoro	46.8	53.3	34.4	34.6	38.6	17,832	19,099
45	Palawan	30.4	35.5	35.0	40.0	35.3	16,199	20,560
10	Pampanga	27.8	28.2	37.8	44.5	39.4	26,066	29,045
29	Pangasinan	45.5	42.4	34.1	36.0	37.6	18,262	21,336
52	Quezon	51.8	47.2	42.7	40.8	43.5	19,449	21,146
17	Quirino	23.4	25.4	35.3	32.9	35.7	16,217	17,131
3	Rizal	39.5	54.9	43.2	46.0	48.4	36,292	46,095
69	Romblon	30.0	41.0	27.9	30.9	39.1	12,293	13,689
73	Sarangani	40.1	50.6	33.4	36.1	41.4	12,159	13,925
56	Siquijor	19.7	20.0	33.6	60.3	33.3	11,656	17,409
48	Sorsogon	41.9	36.6	41.0	35.6	45.4	14,281	16,330
19	South Cotabato	40.1	65.0	39.6	35.9	48.4	17,136	24,690
50	Southern Leyte	35.2	30.6	45.2	39.8	41.4	13,084	18,498
65	Sultan Kudarat	36.9	39.0	34.1	35.7	38.1	15,392	14,326
79	Sulu	23.6	19.8	18.0	17.2	15.9	10,555	12,024
66	Surigao del Norte	39.2	31.9	32.8	41.9	46.1	13,506	15,540
59	Surigao del Sur	36.8	39.4	31.6	40.6	49.4	13,636	16,834
27	Tarlac	31.3	32.9	37.7	47.6	41.6	20,538	21,094
77	Tawi-Tawi	28.0	25.0	27.9	37.6	27.5	17,907	14,158
60	Western Samar	41.0	41.7	42.5	51.3	46.5	13,413	14,564
23	Zambales	37.2	34.2	38.7	55.5	46.3	24,863	26,775
72	Zamboanga del Norte	60.8	60.1	45.8	53.3	53.8	14,286	16,868
24	Zamboanga del Sur	40.7	43.9	43.7	48.1	45.0	16,445	16,148
76	Zamboanga Sibugay	-	-	84.8	75.8	49.2	-	-
	Philippines	52.1	54.4	47.3	49.3	48.7	22,468	26,706

			Standard error				
2003	2006	2009	1997	2000	2003	2006	2009
14,580	17,121	20,229	327	431	540	584	625
17,454	21,873	31,630	890	745	1,522	1,734	2,727
16,854	17,800	22,975	590	598	943	1,035	1,612
17,781	21,693	24,064	536	632	948	1,344	1,220
24,957	30,498	42,646	881	802	881	1,245	1,824
18,760	29,547	26,142	876	1,211	1,340	4,585	2,228
21,965	23,959	29,661	465	586	627	665	873
16,764	21,635	29,575	794	936	830	1,081	1,405
17,991	21,247	27,965	617	724	555	819	1,155
16,826	20,701	25,420	592	702	877	1,562	1,828
25,181	28,889	35,231	559	658	634	895	1,006
33,240	36,528	44,254	1,035	1,274	2,627	2,058	2,904
21,493	22,762	33,688	587	1,138	1,491	1,499	2,168
20,775	20,548	28,542	985	1,223	843	814	1,199
18,431	22,467	26,725	616	863	725	953	984
35,426	44,842	45,754	526	609	960	1,361	1,236
24,080	26,241	36,003	561	586	524	580	821
20,330	21,495	28,804	786	768	678	671	940
27,102	29,825	38,973	982	1,112	2,444	2,468	3,255
43,225	52,530	59,640	1,465	1,959	1,309	1,713	1,933
17,587	18,090	25,230	777	1,097	949	1,037	1,732
13,789	16,910	19,962	858	1,095	672	851	1,196
15,653	33,877	26,859	776	1,265	1,922	7,074	2,875
20,178	20,887	28,203	693	759	1,002	885	1,351
25,821	27,022	39,762	736	1,471	938	868	1,579
19,245	24,088	29,551	701	985	1,465	1,594	2,055
14,850	18,046	24,903	776	718	656	805	1,249
14,727	16,376	20,185	329	302	346	366	342
18,064	22,843	26,795	725	743	876	1,342	1,760
15,985	21,797	25,502	668	950	730	1,228	1,655
30,159	34,216	39,729	665	674	1,074	1,500	1,508
15,851	12,790	19,795	910	665	782	766	1,001
18,127	24,018	25,593	730	747	922	1,474	1,375
28,690	33,135	42,669	1,056	1,106	1,383	2,213	2,537
12,751	18,036	20,197	972	1,128	641	1,014	1,093
21,027	27,702	34,132	505	505	760	1,073	1,229
16,866	24,704	24,339	-	-	2,006	2,521	1,779
29,107	34,283	41,344	138	165	155	185	216