

# 8 SPI and Multicountry Analysis

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**Table 1. Key Statistical Data for Participating Countries**

Variable	Unit	Bangladesh	Indonesia	Mongolia	Nepal	Pakistan	Viet Nam
Population	Million	134	214	2.5	23	149	80
Annual Growth Rate	% pa	1.6%	1.5%	1.8%	2.3%	2.5%	1.7%
Urbanization	% population	23%	42%	58%	14%	34%	24%
Age Structure	% aged 0-14 years	39%	30%	23%	53%	44%	30%
GDP Per Capita*	\$PPP	\$1,720	\$2,990	\$1,650	\$1,350	\$1,940	\$2,240
Government Expenditure	% of GDP	13%	15%	38%	19%	18%	38%
Agriculture	% of GDP	23%	15%	21%	39%	23%	23%
Employment Rate	Empl. as % of pop. Aged 15+	70%	60%	61%	84%	47%*	71%
Agricultural Employment	% of total employment	45%		47%	74%	42%	69%
Infant Mortality Rate	Per 1,000 live births	65	47	23	71	82	18
Life Expectancy at birth	Years	62	66	63.6	59%	61	
Primary Schooling*	Completion Rate	70%	91%	82%	65%	59%	100%
Literacy	% 15 +years	48%	94%	98%	49%	42%	90
Poverty (headcount)	% poor	34%	18%	36%	42%	32%	29%
Human Development Index**	Rank (out Of 175 countries)	139	112	117	143	144	109
	Value	0.502	0.682	0.661	0.499	0.499	0.688

Source: Country Reports except:

\* World Bank. 2004. *World Development Report 2004 – Making Services Work for Poor People*. World Bank/ Oxford University Press. Washington.

\*\* United Nations Development Programme. 2003. *Human Development Report 2003 – Millennium Development Goals: A Compact among Nations to End Human Poverty*. Oxford University Press.

## I. Summary and Main Results

### A. The Definition of Social Protection (Chapter II)

In order to develop a feasible and sound methodology for the creation of a Social Protection Index (SPI), ADB's definitions of Social Protection (SP) as well as those that exist in the participating countries were carefully reviewed. Taking into account the numerous conceptual and practical issues, the conclusion was that it was necessary to narrow ADB's definition of SP, which is particularly wide-ranging, to concentrate on programs that (i) generally fall outside the purview of other development sectors such as education, health, and rural/ community development; and (ii) involve direct transfers, whether in cash or kind, to beneficiaries. Table 2.1 summarizes the types of programs which have, and have not been included, in the definition of SP. Without some refinement of ADB's definition of SP for the purposes of this study, it would have been difficult, if not impossible, to achieve the objectives of this study.

### B. General Approach and Methodology (Chapters III and IV)

The SPI that has been developed is made up of four different aspects of SP—(i) expenditure, (ii) coverage, (iii) poverty-targeting, and (iv) the impact on the incomes/expenditure of the poor. The definition of these summary indicators is shown in Table 1.1.

**Table 1.1. Definition of Summary SP Indicators**

Component	Description	Comment
Social Protection Expenditure (SPEXP)	SP expenditure as % of GDP	
Social Protection Coverage (SPCOV)	Combination of coverage rates of 7 priority target groups	Using the narrow reference population and a combination of unweighted and weighted means (see Chapter IV.B.6)
Poverty-Targeting Rate (PTR)	Poor SP beneficiaries as % of poor population	Double counting of beneficiaries needs to be
Social Protection Impact (SPIMP)	Per capita SP expenditure on the poor as % of current poverty line	Similar methodology to PTR but no need to allow for overlaps

Every attempt was made to keep the SPI as simple and as understandable as possible through the selection of the summary SP indicators and by using a formulation that is similar to that used in the now widely accepted Human Development Index (HDI) (see Chapter III).

If the actual formulation of the SPI is relatively straightforward, the compilation of the necessary input data was not. Data was only rarely available in published reports, thus necessitating a painstaking data collection exercise involving numerous, and often repeated, meetings with agencies responsible for individual SP programs and activities. Furthermore, considerable cross-checking of the data was needed to ensure both its accuracy and its comparability with that obtained from the other participating countries. The difficulties in obtaining the key information such as expenditure, eligibility criteria, number of beneficiaries, and the incidence of poverty among these beneficiaries, should not be underestimated. The detailed information needed to create the SPI has been presented in the country analysis of this book.

In Chapter III, the algebraic formulations of the four summary indicators are presented while Chapter IV describes the rationale for their selection and issues related to their definition and computation. This is straightforward for the “expenditure indicator,” but much less so for the “coverage indicator,” despite its conceptual simplicity. The chosen approach for this indicator is to first derive separate coverage indicators for seven broad categories of programs. These seven categories are targeted at the vulnerable groups that are usually seen as being priority groups for SP activities namely the unemployed/underemployed, the elderly, those requiring health care, the poor (for both social assistance and micro-credit), the disabled, and children with special needs. There was considerable debate among the authors as to how to best define the reference populations, i.e. the denominators needed to calculate the coverage rates from the data on beneficiary numbers. In the end, it was concluded that the best approach was to define the reference populations in such a way as to approximate the actual target group for each category of programs as far as possible. These reference populations are presented in Table 4.3.

It also proved difficult to decide how best to combine these target group coverage rates into a single overall coverage indicator. There are three basic alternatives: (i) using an unweighted (arithmetic mean); (ii) using a weighted average base on the size of the reference population; and (iii) assigning weights based on expert opinion. Using the arithmetic mean means that each target group is accorded equal importance irrespective of their size; this biases the indicator towards the smaller groups, e.g. the elderly, the disabled, and children. Conversely, using the weighted mean, gives much greater emphasis to health

insurance/assistance. Both have advantages and disadvantages; expert opinion, canvassed during the October workshop and the Manila conference, was split on this issue. It was decided to obtain the overall coverage indicator by averaging the weights implied by the unweighted and weighted approaches (see Table 4.5).

The third SPI component indicator is the Poverty-Targeting Rate (PTR), which is defined as the number of poor beneficiaries as a percentage of the poor population, after accounting for overlaps between program beneficiaries. While the PTR provides an indication of the extent to which SP programs reach the poor, it gives no information on the magnitude of the assistance provided. A fourth indicator, the Impact on Expenditures (or incomes) indicator has, therefore, been developed to reflect this crucial aspect of SP provision. It has been defined as the ratio of SP expenditure going to the poor, expressed on a per capita basis, divided by the poverty line income. Both of these indicators are obtained by applying PTRs obtained from the analysis of household income and expenditure surveys, discussions with officials, information gleaned from project reports, and professional judgement on the data already obtained on the expenditure and numbers of beneficiaries of individual SP programs.

### **C. Cross-Country Comparisons (Chapter IV)**

Chapter IV presents the resultant indicators alongside a number of cross-country comparisons. These reveal similarities and dissimilarities between the countries:

- (i) In all countries except Bangladesh, SP expenditure is dominated by formal social security schemes for old age pensions and health insurance. In Bangladesh, microcredit is, by some way, the largest component; Nepal is the only other country where micro-credit constitutes a significant proportion of total SP expenditure. All countries are also similar in the low proportions of SP expenditure on child protection, the disabled, and labor market programs. Expenditure on social assistance programs is significant in all countries except Pakistan and Nepal, and especially so in Bangladesh and Viet Nam;
- (ii) Coverage rates for the seven priority groups fluctuate dramatically between countries with little consistency either between countries or between target groups. Coverage rates range from under 1% (the disabled in Pakistan and Bangladesh) to almost 100% (the elderly in Mongolia). The overall coverage rates are: Pakistan, 6.5%; Bangladesh, 10.2%; Nepal, 10.5%; Viet Nam, 21.7%; Indonesia, 34.6%; and Mongolia, 54.6%;

- (iii) Similar cross-country variations are shown by the PTRs: Viet Nam, Mongolia, and Indonesia have poverty targeting rates in excess of 50%, i.e. more than half the poor population receives some form of SP. The PTRs of Nepal and Bangladesh lie between 25% and 35%, while in Pakistan it barely exceeds 5%;
- (iv) The Impact Indicator provides a broadly similar pattern to the overage indicator: the highest Impact percentage (21%) is achieved by Mongolia, followed by Bangladesh (15%), Viet Nam (12%) and Indonesia (11%); values for Nepal and Bangladesh do not exceed 7.5%; and
- (v) It is important to note that, in virtually every case, the summary SP indicators are dominated by a few large programs, although different programs dominate different summary indicators. SP expenditure is usually dominated by formal social insurance programs that, as they tend to be restricted to public servants, the military and formal sector employees, rarely benefit the poor. In contrast, the programs that provide most benefits to the poor beneficiaries are the major targeted social assistance programs: free or cheap food, assistance with health and education costs, and microcredit.

## **D. The Social Protection Index (Chapter V)**

In order to compute the SPI from its four constituent components, it was necessary to combine them. As each of the summary SP indicators has different ranges, we have scaled them based on the maximum value in the data set. This provides an easily understandable measure of how countries compare to each other and how any country “lags” behind the best performer. Then, replicating the HDI, equal weights were applied to each summary indicator in order to derive the final SPIs for the six participating countries. The results are summarized along with the scaled values of the summary indicators presented in Table 1.2; Figure 1.1 provides a graphical representation of the four summary indicators.

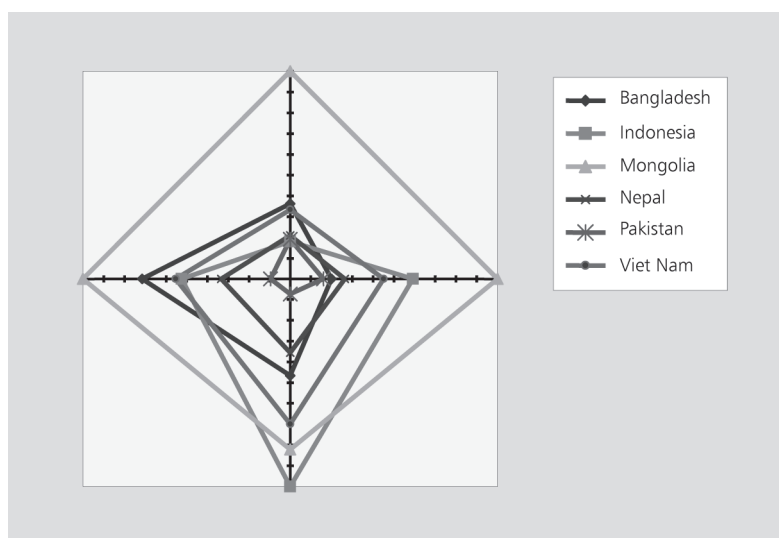
Conclusions and comments on the final SPI values are inevitably constrained by the fact that this study only relates to six countries. The main conclusion is that the final SPI values replicate the rankings shown by the summary SP indicators to a large extent. For all countries except Bangladesh and Indonesia, the ranking of the indicators barely alters. In contrast, Bangladesh’s rankings range from 2 to 5 while Indonesia’s range from 1 to 6. Indonesia has high rankings for the two coverage components but low rankings for the expenditure and impact indicators; Bangladesh exhibits the reverse

pattern, largely due to its extensive microcredit operations. Given that the summary indicators reflect very different aspects of SPI, the above consistency in their ranking is encouraging as it implies that increasing the number of indicators making up the SPI would not materially affect the final SPI values.

**Table 1.2. Country SPI Values and Summary Indicators**

Country	Composite SPI	Social Protection Indicators			SP Impact Targeting
		Expenditure	Coverage	Poverty-Targeting	
Scaled Values					
Bangladesh	0.44	0.36	0.21	0.47	0.71
Indonesia	0.58	0.18	0.62	1.00	0.52
Mongolia	0.96	1.00	1.00	0.82	1.00
Nepal	0.29	0.21	0.27	0.36	0.33
Pakistan	0.13	0.19	0.17	0.07	0.10
Viet Nam	0.51	0.33	0.47	0.70	0.55
Ranking					
Bangladesh	4	2	5	4	2
Indonesia	2	6	2	1	4
Mongolia	1	1	1	2	1
Nepal	5	4	4	5	5
Pakistan	6	5	6	6	6
Viet Nam	3	3	3	3	3

**Figure 1.1. Summary SP Indicators by Country**



Essentially, the countries fall into three groups: (i) Mongolia with a high level of SP provision; (ii) Viet Nam, Indonesia and Bangladesh (if micro-credit programs are included) with moderate levels of SP provision; and (iii) Nepal and Pakistan with low levels of SP provision. Reasons for these relative SPI values are:

Mongolia's high SPI reflects the existence of a comprehensive social insurance and social assistance dating from the days of its status as a Soviet-dominated command economy. Recent evidence suggests that the maintenance of these comprehensive SP programs is under strain.

Indonesia and Viet Nam have major SP programs, which are targeted and well targeted at the poor. These include free or subsidized food, health insurance cards for the poor, and educational assistance for poor children to attend school. In contrast, their traditional social assistance programs are much more limited in scope and targeted at the very poor.<sup>1</sup>

Bangladesh's values are heavily influenced by widespread and well-targeted pro-poor microcredit programs. If these programs were eliminated from the SPI, all four of Bangladesh's summary indicators would decrease significantly.

Pakistan and Nepal have few social assistance programs that achieve significant coverage of the poor particularly, and concentrate their relatively limited budgets for these programs on groups (such as public servants and the military) that are not poor.

## **E. Sensitivity Tests (Chapter VI)**

While the authors are confident about the definition of the four summary SP indicators and the approach to combining them into a composite SPI, they considered it desirable to undertake some sensitivity tests to examine how the SPI might alter if there were changes in either the indicators or the combination methods. The sensitivity tests looked at the following: (i) different definitions of the reference populations used for the coverage indicator; (ii) an impact indicator based on the poverty gap rather than the poverty line income; (iii) the effect of excluding microcredit programs; (iv) alternative scaling methods; and (v) alternative weighting of the summary indicators in the final SPI formulation. In general, these sensitivity tests resulted in little variation in the final SPI values and no change in the relative country rankings. These results go some way to corroborating the overall robustness of our preferred SPI formulation.

<sup>1</sup> Note that the very low SP expenditure value for Indonesia is, at least partly, a reflection of the large subsidies on fuel and electricity prices. If these subsidies were included in the SPI, Indonesia's value would be considerably higher.

Also ILO's approach to formulating a composite indicator of SP was examined. The ILO bases its indicator around the same components of SP expenditure, coverage; and impact (or depth); and they use generally similar indicators. The major difference is that ILO combines these into a single indicator and that they take no account of the distributional impact of social protection, i.e. poverty-targeting. In this study it is considered that the SPI has to incorporate this aspect given that poverty reduction is ADB's overarching policy goal. The ILO approach has also been formulated with developed rather than developing nations in mind and it has yet to be operationalized. At present, it can not be seen as a viable alternative to the SPI.

## **F. Use of the SPI**

The SPI can be used in two ways. First, the SPI can be used to compare the overall level of SP provision across countries and over time on a consistent basis. Second, the SPI can be used as a starting point for diagnostic work of a country's SP program and activities. In this case, it is the four summary indicators and the information on individual SP programs rather than the SPI values and rankings that are more likely to generate policy implications.

When assessing the summary indicators it is, however, important to recognize that while higher values of two of the four indicators (coverage and poverty-targeting) are unambiguously good, this is not the case for the other two indicators (expenditure and impact). Because of the trade-offs between SP and other spending priorities, neither the expenditure nor the impact indicators have benchmarks against which they can be assessed. A low percentage of GDP devoted to SP expenditures, for example, can be indicative of either a relatively well-functioning and secure economy (in which few social protection programs are needed), or an extremely poor and vulnerable one (in which social protection programs are desperately needed, but cannot be funded from a limited revenue base). This is because the expenditure indicator is a product of both the relative wealth of a country and its development priorities. For this reason, it is not said that the expenditure indicator of the SPI reflects "affordability" of SP activities.

Unlike the expenditure indicator, the summary coverage indicator is an indicator with a clear benchmark, since in most countries the goal will be to reach 100% of the target population. However, as the coverage indicator is itself composed of coverage rates for seven different target groups, most attention should be focused on these constituent coverage rates. In countries where the coverage rate for many programs is low (as in Nepal and Pakistan), there will be grounds for developing new programs, using government, donor, or NGO finance. These will, however, need to be set against other

development priorities, e.g. the promotion of economic growth and provision of basic infrastructure. Scrutiny of program-specific coverage rates can also help answer questions such as whether programs reach their designated target groups and whether eligibility criteria or spending limits restrict the ability of SP programs to reach the needy and the vulnerable. Answers to these questions will assist policymakers in refining existing SP programs and formulating new ones.

A low coverage rate does not, however, necessarily demonstrate the need for an increase in SP. Consider the case of educational assistance where the need for such assistance will depend on how the provision of education is funded. If education is provided free, the demand for additional assistance will be a lot less than if fees are payable. However, if school nonattendance is high and inability to pay fees is seen as its major cause, the case for additional targeted assistance will be much greater. Similar considerations will apply for health assistance.

A common objective of overall SP policy will be to provide assistance to the poor and hence, raise PTRs. The achievement of a 100% PTR will, therefore, constitute the long-term goal for this indicator. Where the PTR is low, the emphasis should be on identifying ways in which it can be raised by, for instance, modifying eligibility criteria of existing programs, improving the targeting of these programs by reducing “leakage” to the nonpoor, and expanding the coverage of SP programs (e.g. pensions and health insurance) that do not currently reach the poor. Analysis of program-specific PTRs then allows who is and who is not being reached by these programs to be assessed.

In general, an objective of an SP policy will be to raise the “impact on expenditures” indicator. Examining this indicator will help assess whether the level of transfers to protect the poor and the vulnerable is adequate and how their effectiveness could be improved. There are four main ways to do this: (i) by increasing a program’s benefits; (ii) by improving the poverty-targeting of existing programs; (iii) by increasing the coverage of existing programs; and (iv) introducing new programs. All of these, with the exception of (ii), will involve additional expenditure. Given budgetary constraints, this is most likely to come through the reallocation of funds from other sectors or from other existing SP programs. While this is clearly easier said than done, opportunities do present themselves. In Indonesia, the long-term overall policy is to reduce the fuel and electricity subsidies and to use these funds for targeted SP programs. In Viet Nam, expenditure on providing assistance to war invalids and victims’ families is likely to decrease in years to come as age takes its toll, thereby providing scope for increasing the funding of other SP programs.

In all the above, the SPI and its components indicators provide the starting point for the appraisal of existing SP provision. Once this initial stage has been achieved, attention can be focused on the information on the coverage of the priority target groups (the subcomponents of the coverage indicator) and then on the expenditure, coverage and targeting of individual SP programs based on the information provided in the country reports. This more detailed analysis can identify where there are major problems in a national SP system, what the reasons are for this, and how the situation could be improved.

Overall, and in many respects, this approach to using the SPI and its constituent information is analogous to the use of the HDI, the examination of which is only a prelude to a more detailed analysis of a country's human development situation focusing particularly on the education and health sectors.

## **G. Conclusions**

SP is increasingly seen as an important tool for poverty reduction. To date, however, there has been little quantitative assessment of SP activities. This study goes some way to remedying this situation and has led to the formulation of an SPI that:

- (i) is composed of four indicators that reflect very different aspects of SP provision;
- (ii) is not difficult to calculate, notwithstanding unavoidable difficulties in data collection;
- (iii) can be easily understood and interpreted;
- (iv) has been developed with substantial inputs from SP specialists from various organizations;
- (v) enables international comparisons of SP activities to be made as well as the monitoring of these activities by individual countries over time;
- (vi) along with the summary indicators and program specific information, will provide the basis for more rigorous diagnostic evaluations of countries' SP provision.

Furthermore, the very process of obtaining the information needed to calculate the SPIs as well as its publication will increase interest in SP nationally and internationally and lead to a more rigorous evaluation of current SP programs and activities. At present the SPI has only been developed for six countries. For it to gain widespread acceptance, it is vital that it is calculated for more countries. Increasing international interest in SP as a tool for poverty reduction will be complemented by a thorough quantitative underpinning.

It is the intention to develop the index including the corresponding country studies for all Asian Developing Member Countries of ADB and beyond. The only realistic and satisfactory way of obtaining SPIs for the other countries is through similar studies such as this one. Therefore, in the course of the study, a handbook was elaborated, which will guide future experts when elaborating the index and the country studies.<sup>2</sup>

## II. The Definition of Social Protection

### A. ADB's Definition of Social Protection

The definition of SP has both conceptual and practical implications for this study:

What is SP and how should it be distinguished from the more all-embracing concepts of poverty reduction and social development?

How can SP be defined in such a way that the primary objective of this study—the creation of a SPI—can be achieved? In this regard, key considerations are the need for quantification and ensuring a similar approach for all the participating countries.

The starting point for this study was ADB's definition of SP. The ADB has defined SP as “the set of policies and programs designed to reduce poverty and vulnerability by promoting efficient labor markets, diminishing people's exposure to risks, and enhancing their capacity to protect themselves against hazards and the interruption/loss of income”.<sup>3</sup> Furthermore, SP is defined as comprising five major kinds of activities: (i) labor-market policies and programs, (ii) social insurance, (iii) social assistance, (iv) micro/area-based schemes, and (v) child protection.<sup>4</sup> Table 2.1 lists the types of programs and activities that are considered to fall into each of these components of SP.

The wide-ranging nature of this definition is immediately apparent when one considers the different types of activity that are deemed to fall into each of the above SP components. While the “traditional” components of SP are included—e.g. social assistance and social insurance along with labor market policies—so, too, are aspects of early child development such as immunization and nutrition, which are more usually classified as falling within the health policies. Similarly, area-based projects such as social funds involve activities as those found in many integrated rural, urban, and community development

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<sup>2</sup> The handbook can be obtained from ADB upon request.

<sup>3</sup> Ortiz, 2001. (p.41).

<sup>4</sup> ADB. 2001. Social Protection Strategy. (p. 13) Manila.

projects, e.g. community-based infrastructure development. The variety of activities that ADB includes as falling within SP is shown in Appendix 3 of the ADB, Social Protection Strategy-Progress Report to the board of Directors, Manila, 2002. This appendix includes projects such as Rural Health (Viet Nam), Coastal Community Development and Fisheries (Indonesia), Fisheries Resource Management (Philippines), Agriculture Sector Development Program (Mongolia), Basic Education (Laos) and Health and Nutrition Sector Development Programs (Indonesia). These programs not only involve a much wider range of activities, but also appear to extend the definition of SP cited above.

**Table 2.1. ADB's Components and Subcomponents of Social Protection**

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**Component/Subcomponent of Social Protection**

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**Labor Market Programs**

- Direct employment-generation (micro-enterprise development and public works)
- Labor exchanges and other employment services
- Skills development and training
- Labor legislation (including minimum age, wage levels, health and safety, etc.)

**Social Insurance Programs**

- Programs to cover the risks associated with unemployment, sickness, maternity, disability, industrial injury, and old age

**Social Assistance and Welfare Programs**

- Welfare and social services targeted at the sick, the indigent, orphans, and other vulnerable groups
- Cash/in-kind transfers (e.g. food stamps)
- Temporary subsidies for utilities and staple foods

**Micro and Area-based Schemes (Community-Based)**

- Microinsurance schemes
- Agricultural insurance
- Social funds (usually involving the construction, operation and maintenance of small-scale physical and social infrastructure)
- Disaster preparedness and management

**Child Protection**

- Early child development activities (e.g. basic nutrition, preventative health, and educational programs)
  - Educational assistance (e.g. school feeding, scholarships, fee waivers)
  - Health assistance (e.g. reduced fees for vulnerable groups)
  - Street children initiatives
  - Child rights and advocacy/awareness programs against child abuse, child labor etc,
  - Youth programs to reduce health risks (especially HIV/AIDS and drugs) and anti-social behaviour. Family allowances (e.g. in-kind or cash transfers to assist families with young children to meet part of their basic needs)
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Source: Derived from I. Ortiz ed. 2002. *Defining an Agenda for Poverty Reduction - Proceedings of the First Asia and Pacific Forum on Poverty*, Volume 2, p. 57. ADB: Manila. ADB. 2001. *Social Protection Strategy*. pp. 14–22. Manila.

It should also be noted that the range of SP programs identified in Table 2.1 fall into four general types:

- (i) Programs that bring direct and tangible benefits to subgroups of the poor and the vulnerable through cash or in-kind transfers—e.g. most social assistance payments, scholarships or other educational assistance, health subsidies, food/disaster aid, food for work programs;
- (ii) Programs, especially insurance, that provide coverage to a group far larger than actually direct benefit from the service;
- (iii) Programs that benefit communities as a whole rather than individual households—e.g. social funds, area-based schemes; and
- (iv) Legal and legislative measures covering sections of the poor and the vulnerable, but do not bring “measurable” benefits—e.g. labor codes, child protection laws.

The feasibility of quantifying expenditures and beneficiaries, the critical variables as far as the SPI is concerned will vary considerably between each of these categories of SP activities.

ADB’s Progress Report on the Social Protection Strategy (ADB, 2002) is contradictory in some senses. The SP projects listed in Appendix 3 reflect the range of programs listed in Table 2.1 and constitute a very wide portfolio, including urban infrastructure development/upgrading, fishery sector development, general vocational and technical education, microfinance, health sector development (in general), and forestry development among others. Yet the footnotes to the tables imply a more restrictive approach.<sup>5</sup> Furthermore, the reported SP activities undertaken by ADB reveal an emphasis on labor and vulnerability issues as well as the targeting of vulnerable groups. SP training provided has also been targeted at topics such as labor standards/legislation, and social security and assistance. Appendix 4 to this report also highlights the incorporation of basic labor protection safeguards into a number of major ADB projects. The implication is that the ADB’s current SP activities cover a narrower and more “traditional” range than is implied by the definition it has adopted.

## **B. Country Definitions of Social Protection**

In order to further explore the issues relating to the definitions of SP, definitions were reviewed and discussed in the participating countries. It was revealed

<sup>5</sup> ADB, 2002. For instance, under Child Protection Programs (Table 5, Appendix 3), the footnote states that “basic education...projects are normally excluded” yet the Table includes the Laos Basic Education (girls) project.

that most countries do not have formal definitions of SP. This is not altogether surprising as the term “Social Protection” has only been adopted by multilateral and bilateral development agencies in recent years; it is also not in common usage in many developed countries. The result of the country analysis was that SP should definitely include the “traditional” components of SP such as social insurance, social welfare, and other programs (e.g. health and education assistance) targeted at vulnerable groups, e.g. the poor, the elderly, the unemployed/underemployed, the sick, children with special needs, and the disabled.

Even in the absence of a formal definition of SP, all countries had programs targeted at most of these groups. For example Viet Nam’s recently adopted Comprehensive Poverty Reduction and Growth Strategy (CPRGS),<sup>6</sup> that is entitled “Development of Safety Nets for the Poor and for Victims of Natural Disasters” includes policies to:

- (i) provide subsidies/exemptions to the poor for their health and education costs;
- (ii) help disabled and vulnerable people to be more self-sufficient and integrated into mainstream society;
- (iii) expand the coverage of social insurance policies, including community-based schemes;
- (iv) expand SP and safety-net schemes for the poor, the hungry, and those unable to work and with no other means of support;
- (v) protect and educate vulnerable children and those with special needs (CWSN) e.g. orphans, child workers, street kids, and disabled children (including victims of HIV/AIDS and Agent Orange);
- (vi) improve labor market access for the poor and the vulnerable;
- (vii) enhance the labor legislation to protect workers’ rights and increase safety at work;
- (viii) develop and effective system of emergency social relief solutions; and
- (ix) expand the participation and role of nongovernmental organizations (NGO) in developing and implementing safety net policies.

Some of the other components implied by ADB’s definition, e.g. health education and nutrition programs, local infrastructure development, integrated rural/community development programs, could lead to a definition of SP that would:

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<sup>6</sup> Socialist Republic of Vietnam, 2003, Comprehensive Poverty Reduction and Growth Strategy, Hanoi.

- (i) include types of programs generally associated with other sectors such as health, education, and rural development;
- (ii) create difficulties in terms of quantification, especially for projects targeted at communities where implementation and expenditure are often phased over a number of years. The population will also continue to benefit from the resulting infrastructure and technical assistance (e.g. agricultural extension services) for many years despite the formal completion of the project. How could the beneficiaries from these programs be related to the annual numbers of recipients of direct social assistance, pensions, etc.;
- (iii) divert attention away from the “traditional” social insurance and welfare aspects of SP; and
- (iv) require a level of resources for data collection and analysis not available to this study. It was soon realized that obtaining the required information would be difficult and time-consuming given the multiplicity and varied nature of current SP projects and programs, the wide range of implementing agencies (government and non-government), and the absence of much in the way of consolidated sources of information.

Although not reviewed in detail, the definition of SP adopted by other development organizations, if they have them indeed, tend to be narrower and restricted to the “traditional” components—social welfare and social insurance. The case of Viet Nam confirms this. The UN/MOLISA report on Basic Social Services in Viet Nam (Hanoi, 1999) limited their chapter on SP to social insurance, social assistance, employment services, disaster relief, and programs for the disabled and children with special needs. The Poverty Task Force Consultation Document on Reducing Vulnerability and Providing Social Protection (Hanoi, 2002) widened their discussion also to include mention of informal household and community-based SP mechanisms, the Hunger Eradication and Poverty Reduction Program (HEPR), microfinance, crop insurance, subsidized access to health care, and agricultural extension.

Finally, the 2004 Viet Nam Development Report – Poverty,<sup>7</sup> uses the term “Social Safety Nets” to concentrate on the direct transfer of resources to households under the Hunger Eradication and Poverty Reduction Program and the SOE Retrenchment Program, which also involved household level transfers.

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<sup>7</sup> ADB et al, 2004.

## C. Key Issues in the Definition of Social Protection

### I. Training

ADB's definition includes training programs (see SPS, p.15). The programs implicitly referred to are those training programs targeted at particular vulnerable groups, e.g. the unemployed, women, and the poor. So it does not seem logical to simply include all vocational training within SP programs to be enumerated while excluding other forms of tertiary education. More practically, the inclusion of ongoing training programs operated by enterprises is unlikely to be feasible due to the absence of any centralized data source.

### 2. Area-Wide Programs

The Viet Nam study reviews several (but by no means all) major integrated area development projects implemented by government agencies, international and national NGOs;<sup>8</sup> these projects mostly had a substantial element of foreign finance. These projects had some or all of the following characteristics:

- (i) Their prime objective was poverty reduction;
- (ii) They were area-based, usually with a clear geographic focus consisting of a number of small communities;
- (iii) They were multisectoral involving basic infrastructure (roads, water supply, improved irrigation, electrification, construction of schools, health clinics, and markets), improved agriculture and husbandry through extension services and improved inputs, community development and mobilization, health education, capacity-building and institutional-strengthening, and microcredit and loans to small businesses;
- (iv) Considerable emphasis on local involvement in the identification, implementation, and maintenance of projects; and
- (v) Securing the involvement of local NGOs and organizations such as Commune People's Committees and Council's, the Women's Union, the Farmer's Association, and the Youth Union.

Although not termed "social funds," these projects have many similar characteristics in terms of their aims, their constituent components, their community-based focus, and the emphasis on local involvement. Arguably,

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<sup>8</sup> Program 135 and Hunger Eradication and Poverty Reduction/Employment Creation (infrastructure and commune-based components)—government programs; the Community Based Rural Infrastructure Project and the Northern Mountains Poverty Reduction Project (both World Bank), the Improved Livelihoods for Mountainous Communities Project (CIDA), Area Development Programs (Worldvision).

they would, thus, fall within ADB's definition of SP. The same would be true of other multisectoral projects in the forestry, fishery, and urban development (slum upgrading) sectors.

It is considered that there are serious difficulties in including these types of projects within this study:

- (i) They are multisectoral and frequently include components e.g. rural/agricultural development, infrastructure construction, basic health and education services, that fall more easily within the wider concepts of overall poverty alleviation and social development rather than the narrower concept of SP;<sup>9</sup>
- (ii) Costs are incurred over a number of years and the number of beneficiaries increases similarly. Yet it is not realistic to limit the number of beneficiaries to those gaining in any one year. Benefits will persist throughout the economic life of buildings and physical infrastructure and as long as support in terms of teaching, health and agricultural extension staff is provided;
- (iii) They rarely involve direct transfers of resources to individual households or significant social assistance or social insurance components;
- (iv) The multiplicity of the programs makes the compilation of relevant information a daunting task, especially when it becomes necessary to estimate counterpart funding and to allow for communes benefiting from more than one project—there are almost certainly overlaps between Program 135 and programs funded by WB, ADB and other development agencies; and
- (v) Including these programs with annual expenditures exceeding D2,000 billion and beneficiaries exceeding 10 million is likely to “overshadow” the equivalent numbers for the “traditional” SP activities e.g. social insurance and social assistance.

In summary, the inclusion of this type of integrated rural/community development programs in this study would create methodological problems in the estimation of costs and beneficiary numbers, and would detract from the prime objective of this study, which is to develop an SPI and not an Index for Poverty Reduction or Social Development.

<sup>9</sup> ADB's Social Protection Strategy clearly states that basic education and health programs do not fall within its definition of SP.

### **3. Microcredit/Microfinance**

Microcredit and finance (MCF) programs are excluded from ADB's definition of SP unless they include microinsurance (which is not generally the case) or "promote community self-help or other social protection policies." However, in some countries e.g. Bangladesh, MCF programs represent one of the most prevalent forms of assistance to the poor. They also involve a direct transfer of resources to a vulnerable group, the poor, and very often poor women. The funds are most often used for income-generating purposes; and evidence suggests that, in many cases, these programs contribute positively and directly to the general welfare of recipients, most of whom are poor.

Furthermore, the dividing line between microcredit and loan-based job creation programs is not always apparent. A program providing loans for the purchase of a cow or some chickens would normally be seen as a microcredit program, while loans to purchase several sewing machines would be classified as a job creation program; but what about loans to purchase a single sewing machine? Unless a clear demarcation between these two types of programs can be established, the inclusion of one but not the other would be impractical even if there was a sound logical case for so doing—which is far from certain.

There were many discussions among the authors and with a third party on whether to include or exclude microcredit programs from this study. In the end, the vast majority of experts involved and consulted voted for inclusion. This is conclusive, in line with the above mentioned arguments and could be achieved within the scope of this study.

### **4. Early Childhood Development**

Programs included under this subcomponent of SP include immunization, provision of food supplements/vitamins (e.g. iodized salt, vitamin A), postnatal and preschool care, and health and nutrition education.

These programs as well as others related to child protection were reviewed and the conclusion was that there were important methodological and practical issues:

- (i) Whether health programs targeted at young children (e.g. immunization, child and mother nutrition, health education) should be considered to fall under the SP umbrella? These are traditionally seen as part of the health sector. Is it logical to include programs targeted to mothers and children and exclude antenatal care and family planning? Why should immunization programs be included but not programs to control other diseases, such as TB, malaria, and HIV/AIDS, for which there can be considerable funding;

- (ii) Is it logical to consider preschool education as part of SP when primary education is specifically excluded? Arguably, SP should only embrace educational issues where they involve the types of targeted subsidies or school-cost exemptions;
- (iii) The general absence of program-by-program information on expenditures and beneficiaries of NGO programs targeted at children, and the multisectoral nature of many of the programs means that it is virtually impossible to disentangle Child Protection expenditure (and beneficiaries) from total program expenditure, even where this is available. Furthermore, the majority of these NGO programs involve health and nutritional education, and improving school and health facilities rather than direct transfers to recipients; and
- (iv) How to assess beneficiary numbers when the major components of projects are advocacy, promotion of child rights, legislative reforms, training, capacity-building, physical construction, and equipment; all of which will lead to benefits long after the formal completion of the project?

With view to these problems, it was decided to exclude ECD programs from the definition of SP.

## 5. Implications

The preceding paragraphs raise a number of important issues that need to be resolved before the task of aggregating statistics leading to the formulation of an SPI can be undertaken.

The key issue is whether SP is seen as a cross-cutting topic that includes components from other sectors such as health, education, rural development, community infrastructure, or whether SP is seen as forming a separate sector with its own defined programs and policies.

Treating SP as a cross-cutting issue would be consistent with ADB's definition of SP. It would also recognize the all-embracing nature of SP, much as gender issues are treated, i.e. that they occur within, and need to be addressed by, virtually all sectors and projects. This approach would enable the inclusion of programs such as immunization, mother and child health promotion, and community-based infrastructure development. SP would, therefore, include elements from virtually all sectors. However, it is difficult to see how the demarcation line between SP, on one hand, and overall poverty alleviation and general social development, on the other, would be drawn.

On the other hand, if SP is considered to be a stand-alone sector, there would be much greater consistency with national and international definitions of SP—this will increase the acceptability of the eventual SPI. SP programs and activities would be defined so as to exclude those that are more traditionally seen as being part of other sectors and would, therefore, be narrower, with a primary focus on insurance schemes, social welfare, direct transfers to vulnerable households via reduced health and education costs, and labor market programs. Other programs such as area development would then remain within the ambit of rural development, while preschool education would remain within education, nutrition within health, etc. This approach would also eliminate most of the difficult definitional decisions raised in the preceding paragraphs. It would also enable SP policies and programs to concentrate on those aspects that do “not” fall within the jurisdiction of other, long-established ministries and would, thus, reflect the current sectoral approach to policy and program formulation.

This issue is not just one of semantics. The practicality of collecting the appropriate data is also critical, especially given the study’s objectives of formulating an SPI that is simple, replicable, and can be computed with a minimum of data. The preceding paragraphs have revealed the multiplicity of activities that would be included with the current ADB definition of SP and the difficulties involved in providing even the most basic statistical indicators.

Essentially, if all the types of programs listed in Table 2.1 and the appendices to the above-mentioned Progress Report on the SPS were included as part of this study:

- (i) Few development projects not involving major infrastructure would be excluded;
- (ii) Expenditure and beneficiaries from “traditional” SP activities such as social welfare and social assistance would, in many cases, only represent a small minority of total SP expenditure and beneficiaries. This would considerably weaken the usefulness of the results, especially given that ADB’s current emphasis in regards to social protection is on topics such as social and health insurance, job creation programs and improving labor legislation, standards and safeguards.
- (iii) The difficult issues relating to estimating beneficiaries from projects not targeted at individual households and with impacts lasting several years would have to be resolved;
- (iv) The data collection task would be monumental and would never be easily replicable without considerable resources;

Bearing in mind these theoretical and practical considerations, it is neither feasible nor desirable to attempt to obtain information or to construct an SPI that attempts to cover all the types of projects and programs that are implied by ADB's definition of SP. A narrower definition of SP must be adopted in order to achieve the prime objective of this study, i.e. the formulation of a SPI.

## **D. Social Protection: Project Definition**

Given the above and in order to proceed, it is, therefore, necessary to provide a definition of SP for the purposes of this study, which takes the above issues into consideration. The definition that was formulated takes account of the numerous discussions had related to this topic and the comments received; it is as follows:

“Social Protection is the set of policies and programs that enable vulnerable groups<sup>10</sup> to prevent, reduce and /or cope with risks, and that are targeted at the vulnerable groups, involve cash or in-kind transfers; and are not activities usually associated with other sectors such as rural development, basic infrastructure, health and education.”

This definition is preferred for the following reasons:

- (i) It distinguishes SP activities from those that are traditionally seen as falling with sectors such as health, education and early child development, rural/community development, and infrastructure provision;
- (ii) It puts the emphasis on programs and activities that provide assistance to clearly defined vulnerable groups;
- (iii) It enables the study to concentrate on programs that involve direct cash or in-kind transfers to these vulnerable groups, which are, therefore, quantifiable and can thus form part of an SPI ; and
- (iv) It is consistent with the great majority of ADB's current activities in the field of SP.

Based on this definition, Table 2.2 provides a checklist of the various types of programs covered by ADB's definition of SP and states whether or not they will be included as part of an SPI.

Regarding this table, the following should be noted:

- (i) Programs that are generally seen as falling within health or education sectors such as health education (including HIV/AIDS

<sup>10</sup> The primary target groups for social protection policies, which reflect ADB's definition of SP, are the unemployed/underemployed, the elderly, the sick, those affected by natural disasters, the poor, the disabled, and children with special needs.

Table 2.2. Inclusion/Exclusion of Social Protection Components

Component/Subcomponent of Social Protection	Included/Excluded	Comments
<b>Labor Market Programs</b>		
Direct Employment-Generation (micro-enterprise development and public works)	Included	Includes loan based programs to support small businesses, food for work, etc.
Labor exchanges and other employment services	Included	Including retrenchment programs
Skills Development and Training	Excluded	Unless targeted at particular groups, such as the unemployed or disadvantaged children
Labor Legislation (including minimum age, wage levels, health and safety, etc.)	Included	Not amenable to quantification
<b>Social Insurance Programs</b>		
Programs to Cover the Risks Associated with Unemployment, Sickness, Maternity, Disability, Industrial Injury, and Old Age	Included	
Health Insurance	Included	
<b>Social Assistance and Welfare Programs</b>		
Welfare and Social Services Targeted at the Disabled, the Indigent, Those Affected by Disasters and Other Vulnerable Groups	Included	
Cash/In-Kind Transfers (e.g. food stamps or food aid, subsidized health costs, land tax exemptions)	Included	
Temporary Subsidies for Utilities, Housing, etc.	Included	Only if imposed in times of crisis and if targeted at particular vulnerable groups. General subsidies are excluded even if their rationale is to assist the poor.
<b>Micro and Area-based schemes</b>		
Microinsurance/Microfinance Schemes	Included	Microfinance seen as an important aspect of social protection; however, mainstream rural credit programs will be excluded.
Agricultural Insurance	Included	Agricultural insurance will rarely be affordable to the most vulnerable farmers. Few programs of this type exist.
Social Funds	Excluded	Except where direct transfers to households occur. Most social funds involve community development and basic infrastructure construction programs; these are excluded.

continued next page

Table 2.2. Inclusion/Exclusion of Social Protection Components

Component/Subcomponent of Social Protection	Included/ Excluded	Comments
Disaster Preparedness and Management	Included	Reconstruction of physical infrastructure is excluded. De-mining programs included. Number of beneficiaries not amenable to quantification
<b>Child protection</b>		
Child Rights And Advocacy/ Awareness Programs Against Child Abuse, Child Labor, etc	Included	Not amenable to quantification
Early Child Development Activities	Excluded	Direct assistance for health and education would be included in following categories. Otherwise, these programs essentially fall within basic health and education programs, which are excluded.
Educational Assistance (e.g. school feeding, scholarships, fee waivers)	Included	
Health Assistance (e.g. health cost reduced fees/ subsidized medicines for vulnerable groups)	Included	Will generally be included under social assistance
Family allowances	Included	Would not include transfers through the tax system
Street Children/Child Worker/Orphan Initiatives	Included	

Source: Country reports.

- and reproductive health), immunization, nutrition, preschool education, general vocational and technical education are excluded;
- (ii) Programs that fall within the general category of rural/community development are excluded along with those that concentrate on the construction of physical assets or social infrastructure, e.g. schools or clinics;
  - (iii) Job creation programs are included whether or not they are based on the provision of loans to employers, usually SMEs;
  - (iv) Training and subsidy programs are only included if they are clearly targeted at one or more of the identified target groups;
  - (v) Programs to improve the quality of teaching or health care in poor areas are excluded; and
  - (vi) Microcredit programs are included where they are community-based, are targeted at the poor households or are associated with microinsurance schemes. Mainstream rural credit programs are excluded. This approach was endorsed at the Manila conference.

This approach will:

- (i) facilitate the acceptability of the results by national governments and international development agencies by not including programs and activities that are normally seen as being a part of other sectors;
- (ii) enable SP strategies and programming to concentrate on a clearly defined set of activities and projects that fall outside the ambit of other major sectoral development funding;
- (iii) not prejudice the implementation or adoption of any policies or programs that fall within wider definitions of SP;
- (iv) facilitate the development of a statistical database and an SPI in the six countries that are to be considered in-depth by this study and will enable a more approximate SPI to be derived for other countries; and
- (v) As this definition is consistent with the great majority of ADB's current activities in the field of Social Protection, it is likely to facilitate rather than hamper ADB's ability to achieve its current SP priorities.

### III. Formulation of the Social Protection Index – General Approach

The construction of an SPI is one of the primary objectives of this study. In this chapter, a brief overview of the approach taken to construct the SPI is provided including the formulae for the summary indicators for each country, and how these indicators are scaled and aggregated to produce the overall SPI. More detail on the indicators and cross-country comparisons of these are contained in Chapter IV, while Chapter V describes the combination of these indicators into an overall SPI.

The key indicators that are seen as the building blocks for the SPI are:

- (i) the cost of/expenditure on SP programs;
- (ii) the coverage of the programs in terms of the number of beneficiaries; and
- (iii) the distributional impact of these programs on the poor in terms of the proportion of all SP beneficiaries who are categorized as poor; and SP expenditure on the poor as a proportion of their incomes/expenditures. This latter indicator can be seen as providing an indication of the effectiveness of current SP programs.

Figure 3.1 provides a diagrammatic representation of the process for constructing the SPI. It was decided that the distributional impact consists of two indicators: poverty-targeting and impact on incomes/expenditures, for three reasons:

- (i) Poverty-targeting and the amount of SP expenditure going to the poor relative to their incomes/expenditures reflect substantially different facets of SP;
- (ii) It creates a methodologically simpler, and in our opinion, more easily understandable approach to the formulation of an SPI; and
- (iii) It reduces the need for the scaling of these two components prior to their combination.

Algebraically the four indicators used in the construction of the SPI may be defined as follows:

### A. Expenditure

The expenditure indicator shows what percentage of a country's Gross Domestic Product is spent on SP activities:

$$\text{Expenditure} = \sum_{s=1}^S \frac{E_s}{GDP} = \sum_{s=1}^S \frac{e_s B_s}{GDP}$$

where there are  $s=1\dots S$  social protection programs and  $E_s$  is the total expenditure of each program. Since the total expenditure of each SP program must equal the average expenditure per beneficiary ( $e_s$ ) multiplied by the number of program beneficiaries ( $B_s$ ), the numerator of this equation can also be expressed as  $e_s B_s$ . Note that government, private sector, and NGO expenditures are included in the calculation of  $E_s$ .

It should be mentioned that the expenditure indicator provides little information on the demand for SP expenditure. A low percentage of GDP devoted to SP expenditures can be indicative of either a relatively well-functioning and secure economy (in which few SP programs are needed) or an extremely poor and vulnerable one (in which SP programs are desperately needed but cannot be funded from a limited tax base). For this reason, it is not stated that this element of the SPI reflects "affordability."

### B. Coverage

The coverage indicator shows the percentage of people in a country that benefit from SP programs. Letting  $B_s$  denote the number of people who are beneficiaries of (and therefore, protected by) program  $s$  and summing over all SP programs gives:

$$\text{Coverage} = \sum_{s=1}^S \frac{R_s}{\sum_s R_s} \frac{B_s}{R_s} = \sum_{s=1}^S w_s \frac{B_s}{R_s}$$

where there are “s=1”...”s” is SP programs. “ $R_s$ ” is the reference population for program “s” and represents the relevant target group for each type of SP activity. The weight attached to each type of SP programs is denoted by “ $w_s$ ” and is calculated by dividing the size of the reference population for that program by the sum of the reference populations for each type of SP program. Further details on how the reference populations are determined are provided in Chapter IV.

### C. Poverty-Targeting

The poverty-targeting indicator shows the percentage of the poor in each country that receives social protection transfers or other SP benefits (such as free schooling).

$$\text{Poverty Targeting} = \sum_{s=1}^S \frac{B_s \cap P}{P} = \sum_{s=1}^S \frac{B_s \cap P}{H * N}$$

where there are “s=1”...”s” is SP programs; “ $B_z$ ” is the number of beneficiaries of program “s;” “P” denotes the number of people living below the national poverty line; “H” is the headcount index of poverty; and “N” is the total population.<sup>11</sup> The intersection between two groups is represented by “)”” in this case between SP beneficiaries and the poor, so that “ $B_s \cap P$ ” represents the number of SP beneficiaries who are poor.

The main difficulty that must be faced in calculating PTR is the extent to which different SP programs benefit the same poor people. It is common, for example, for a substantial proportion of poor households in many countries to receive both social assistance payments and other in-kind benefits such as food for work or free primary schooling. In Chapter V, we describe two methods for dealing with this problem of overlaps between poor beneficiaries based on

<sup>11</sup> Note that the national poverty lines used in the six studies countries are all based on similar minimum daily nutritional requirements (e.g. 2,100 to 2,350 calories per person) with a modest allowance for nonfood expenditures and are, thus, be broadly comparable. It is preferred using national poverty lines to the \$1 a day international poverty line used to monitor the MDGs because (i) their use avoids the problems associated with purchasing power parity conversion factors; (ii) where evaluations are available of the poverty targeting of individual SP programs, they invariably local definitions of poverty; and (iii) national poverty lines are more meaningful to most policy makers.

household income and expenditure surveys, and project evaluations/expert opinions respectively.

## D. SP Impact

The final indicator used in calculating the SPI is the ratio of SP expenditures per capita to the poverty line.

$$\text{Impact} = \frac{\sum_s (E_s \cap P) / P}{z} = \frac{\sum_s e_s \cap P}{z}$$

where “z” is the poverty line; “E<sub>s</sub>” is total expenditure on program “s;” “e<sub>s</sub>” is the expenditure per beneficiary for program “s;” and “P” is the number of poor people. The intersection between groups is again represented by “)” “ in this case between total expenditure and the poor.

The impact of SP expenditures is expressed as a ratio of the poverty line for two reasons. First, the poverty line represents the minimum expenditure needed for survival and therefore, represents the minimum consumption needs of poor and vulnerable people. Second, if SP expenditures per person were expressed as a ratio of average expenditures (as may seem natural) this would give undue weight to narrowly targeted programs, which provide substantial benefits to a small number of beneficiaries (such as pensions). In contrast to the poverty targeting indicator, it is not necessary to worry about the issue of overlaps among SP programs when calculating this indicator as the different SP transfers received by the poor are simply aggregated.

## E. Scaling and Aggregation

Having calculated the four summary indicators of SP for each country, these indicators must be scaled and aggregated to produce the overall SPI. Scaling is necessary because although the four indicators are all expressed in percentages, their denominator and therefore, ranges differ. In the interest of simplicity and transparency, we propose to use the maximum value scaling method (see Chapter V.b. for the reasons as to why this scaling approach is preferred):

$$\text{ScaledValue} = \frac{V_i}{V_{\max}}$$

where “V<sub>i</sub>” is the value of the SP indicators and “V<sub>max</sub>” is the maximum value for this indicator across all countries in the data set.

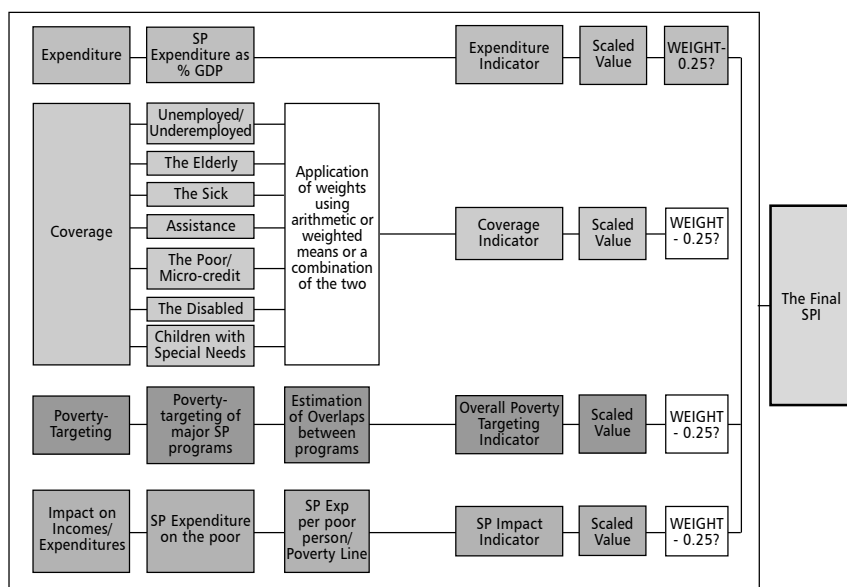
Once the summary indicators have been scaled, they are then aggregated to produce the overall SPI. Since different levels of importance may be attached to different summary indicators, it may be necessary to weight each indicator as follows:

$$SPI = w_1 \overline{Expenditure} + w_2 \overline{Coverage} + w_3 \overline{Poverty\ Targeting} + w_4 \overline{impact}$$

where “ $w_i = 1$ ” and the over-scoring represents scaled values.

Different methods for scaling and weighting methods are considered in Chapter VI.

**Figure 3.1. Diagrammatic Representation of the Derivation of the Social Protection Index**



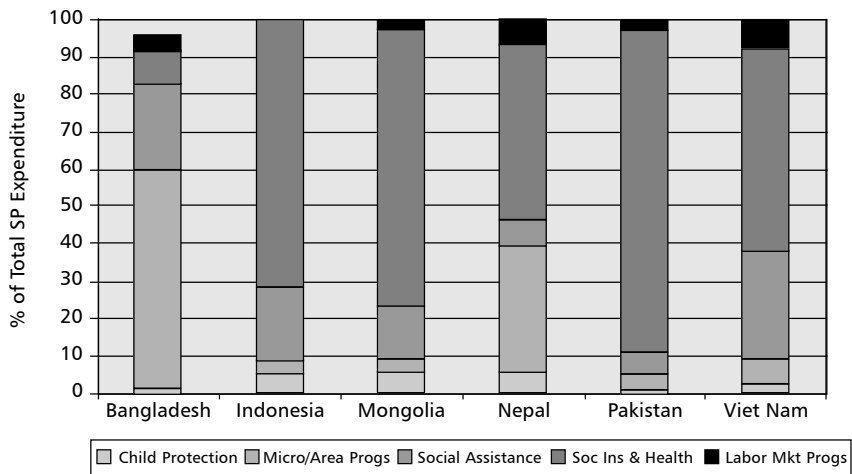
#### IV. Social Protection Indicators and Cross-Country Comparisons

This chapter describes the summary SP indicators for each of the SPI components—expenditure, coverage, poverty-targeting, and SP Impact; and presents some cross-country comparisons of these indicators. Unless stated otherwise, all tables are derived from the information in Annex A.

## A. Social Protection Expenditure

Expenditure on SP programs in each participating country was classified according to ADB's Social Protection categories—labor market programs, social insurance, social assistance, micro and area-wide programs (essentially microcredit), and child protection. The relative distribution of these five categories for each of the six countries is shown in Figure 4.1. The absolute values are contained in Annex A.

Figure 4.1. Social Protection Expenditure by SP Component, 2002-2003



While the pattern of SP expenditure varies between the six countries, it is dominated, in all countries by expenditure on formal social security schemes except Bangladesh; these usually incorporate pensions and health insurance. In Bangladesh, microcredit is, by some way, the largest component. Nepal is the only other country where microcredit constitutes a comparable proportion. All countries are also similar in the low proportions of SP expenditure on child protection and labor market programs. Expenditure on social assistance programs is significant in all countries except Pakistan and Nepal, and especially so in Bangladesh and Viet Nam.

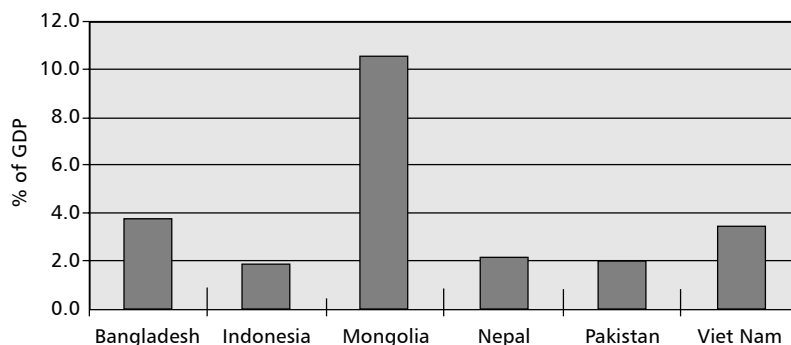
The largest SP programs in terms of expenditure for each country are listed in Annex C (Table A.8). With the exception of Bangladesh, the largest programs are the formal social security schemes. In all countries, expenditure on the five largest programs exceeds 84% all SP expenditures.

The preferred summary indicator of SP expenditure is total SP expenditure expressed as a percentage of GDP (see formula in Chapter III). Table 4.1 and Figure 4.2 show how this indicator varies between countries.

**Table 4.1. Social Protection Expenditure as a Percentage of GDP**

Country	SP Expenditure Value (%)	as % of GDP Rank
Bangladesh	3.8	2
Indonesia	1.9	6
Mongolia	10.5	1
Nepal	2.2	4
Pakistan	2.0	5
Viet Nam	3.5	3

Source: Country reports.

**Figure 4.2. Total Social Protection Expenditure (as % of GDP)**

All countries spend broadly similar percentages of GDP ranging from 2% to 4%, on SP, with the exception of Mongolia, which spends 10.5% of GDP on SP activities. It should be noted, however, that the values for Bangladesh and Nepal would decrease significantly if microcredit programs were excluded from total SP expenditure.<sup>12</sup> The low percentage for Indonesia is partly a reflection of the fact that very large subsidy on fuel and electricity prices does not fall within the project's definition of SP; if this were included, the percentage would increase to 3.3%.

The inclusion of this summary SP indicator is seen as an essential component of the SPI. The only alternative that has been suggested is to express SP expenditure as a percentage of total government expenditure and then, using a combination of this and the GDP percentage. However, following discussions, it was decided that this indicator should not be included as a component of the SPI. The reasons for this decision were:

<sup>12</sup> In Chapter 6, we examine how the exclusion of MCF programs would affect the final SPI values.

- (i) Government expenditure is already included in the calculation of GDP;
- (ii) The inclusion of total SP expenditures as a percentage of government expenditure would add complexity to the SPI;
- (iii) There could be difficult issues relating to separating government and nongovernment SP expenditures, which could further complicate the process; and
- (iv) The average weight<sup>13</sup> assigned to this indicator would be insufficient to significantly affect the overall indicator.

## **B. Social Protection Coverage**

### **I. How is it best to define coverage?**

The second proposed element of SPI is the coverage of SP programs. Unlike SP expenditure, the selection of an indicator for SP coverage, was by no means obvious despite the fact that the overall notion of coverage is fairly straightforward, i.e. the percentage of the population covered by SP programs. Initially, it was proposed to directly derive a single coverage indicator by summing all beneficiaries of SP programs by the total population of the country. This approach was found to be unsatisfactory because

- (i) a coverage indicator derived in this way would be difficult to interpret as there would be no indication of overall need;
- (ii) the resultant indicator would be dominated by the largest programs meaning the smaller child protection and labor market components would have a minimal impact on the resultant indicator; and
- (iii) it would also be necessary to exclude overlaps between programs;<sup>14</sup> otherwise, the resultant indicator could approach or exceed 100%, which would be erroneous and would not improve the acceptability of the resultant SPI.

The preferred approach is to initially derive separate coverage rates for key SP target groups—the unemployed/underemployed, the elderly, the sick, the poor, the disabled, and children with special needs (CSWN). These are considered to be the key target groups for the great majority of SP activities. Conceptual reasons for preferring this approach are:

<sup>13</sup> A Delphi exercise with the participants at the October workshop produced only a 20% weight for this variable (as against 80% for the GDP ratio); two thirds of participants felt that it should be excluded altogether.

<sup>14</sup> i.e. People who receive benefits from more than one program.

- (i) The coverage rates derived for each target group will be more easily understandable to policy makers in both the national and international context, e.g. the percentage of the elderly/the poor/the disabled in a country who are receiving some SP assistance;
- (ii) It reflects the way that SP programs and policies are formulated and targeted; and
- (iii) It is consistent with the starting-off point of most PPAs and other evaluation methods that seek to identify discrete groups of the poor and the vulnerable.

There are also practical reasons for adopting this approach:

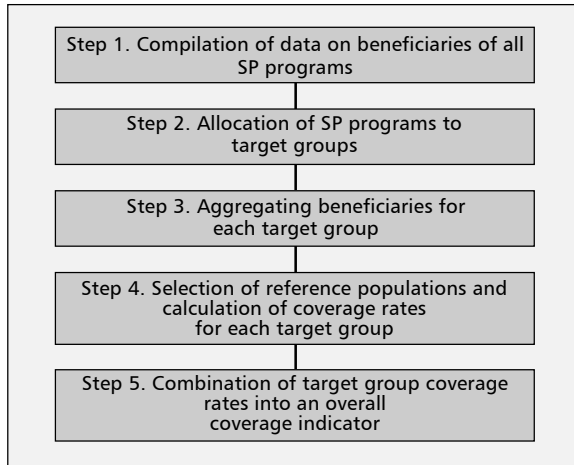
- (i) Deriving coverage rates for individual SP programs would make it difficult, if not impossible, to make intercountry comparisons as different countries have different types of program;
- (ii) Programs within the categories used to classify expenditure can target different groups—social insurance programs are aimed at both the old and the sick; social assistance programs can target all vulnerable groups. Conversely, different categories of SP program can target the same group. Pensions and some social assistance are both targeted towards the elderly, while health insurance and health subsidies are both targeted at the sick. Both these considerations essentially preclude the derivation of easily interpretable coverage rates for the five categories that make up ADB's definition of SP; and
- (iii) The issue of double counting, which would have arisen if the beneficiaries of all programs had been added up and expressed as a percentage of the overall population, is largely avoided.

The procedure for deriving the coverage indicator based on key SP target groups is shown diagrammatically in Figure 4.3. As can be seen, there are five steps. The following paragraphs describe issues relating to the execution of these steps.

#### Compilation of Data on Individual Programs (Step 1)

While the objective of this step is obvious, its execution was far from straightforward:

- (i) there was no centralized data source on information on SP programs;
- (ii) SP programs are implemented by a wide range of government and nongovernment agencies; and
- (iii) Individual agencies did not always have the required information at hand.

**Figure 4.3. Derivation of Coverage Indicator**

The data collection exercise was, therefore, laborious. In a number of cases, the required information was simply not available and estimates had to be made using, for instance, the average level of expenditure per beneficiary or grossing up from partial data. Thorough cross-checking was also necessary to ensure consistency between the coverage rates in each country.

Despite these difficulties all the largest SP programs have been identified and the information is sufficiently accurate to ensure that the resultant indicators give a realistic picture of current SP activities in the participating countries. Table A.9 (in Annex C) lists the largest SP programs in each country in terms of the number of beneficiaries. Most of these programs also figure in the largest programs in terms of expenditure; however, pro-poor programs are more likely to be found near the top of the rankings. While these programs reach more people, they attract much less expenditure than the formal social security programs.

## **2. Allocation of SP Programs to Target Groups (Step 2)**

Table 4.2 establishes the pairings between SP programs and the key target groups; it thus provides the basis for the allocation of SP programs for the purpose of assessing coverage.

It was decided that coverage for microfinance/credit (MCF) programs should be assessed separately from other programs targeted at the poor for the following reasons:

- (i) the issue of whether or not MCF should be included as part of SP is a matter for debate;

**Table 4.2. Relationship Between Social Protection Programs and Key Target Groups**

Type of SP Program*	Target Group
All Labor Market Programs (relevant training and job creation through SME support); Food For Work Programs; Targeted Public Works Programs	The unemployed and underemployed
Pensions	The elderly
Social Assistance to the Elderly	
Formal Health Insurance	The sick
Microinsurance for Health Care (but not life insurance schemes, which are more akin to general saving schemes)	
Subsidized Health Costs or Exemptions	
Senior Citizen Treatment Allowance	
Basic Social Welfare/Assistance Payments; Land Tax Exemptions; Residential Care for Vulnerable Groups; Food Aid	The poor
But Excluding Education and Health Programs as well as Those for the Disabled	
Microfinance/Credit	
All Forms of Assistance Programs for the Disabled (including recipients of social assistance, training programs)	The disabled
Educational Programs (e.g. fee exemptions, scholarships, school feeding programs, etc.)	Children with special needs (CWSN)
All Other Child Protection Programs	

\*These are generic programs and will vary from country to country.

- (ii) MCF programs, which involve loans, are qualitatively different from other social assistance programs that essentially involve targeted transfers; and
- (iii) to avoid the need to deal with potential overlaps between MCF and other social assistance programs.

It should also be noted that the objective for this indicator is to get the overall coverage rate for each target group. Some programs target more than one group, e.g. assistance to the elderly who are poor; similarly, with food for work programs that would go to both the unemployed and poor categories. The same applies to social insurance schemes that provide both pension and health care benefits and microcredit programs that also include microinsurance for health. In these cases, the program beneficiaries have been allocated to both the relevant target groups: e.g. beneficiaries of social assistance programs targeted at the elderly will be allocated to both the elderly and the poor target groups. There are three other points that need to be mentioned.

**Coverage of Pensions.** The number of those currently receiving pensions rather than the number of people belonging to pension schemes should be used in the calculation of coverage of pensions. Reasons for this are:

- (i) the number of people receiving pensions will relate directly to the current expenditure on pensions;
- (ii) using pension scheme membership would preclude deriving an overall coverage rate based on the number of old people; and
- (iii) pension scheme members will be included in the coverage rates when they attain pensionable age and the coverage rates are updated in future years. This objective of this study is to assess Social Protection today, not what it will be in the future.

**Coverage of the Sick.** In contrast to the approach with pensions, it is felt that is more logical to use the number of persons who could receive assistance with health care, i.e. scheme members, rather than those actually benefiting in a particular year. Firstly, the basic objective of health care insurance and subsidy programs is to ensure that everyone who needs health assistance can receive it. Secondly, it is very difficult, if not impossible, to obtain data on the number of persons with health insurance (or who were eligible for subsidized treatment) who actually sought treatment. Thirdly, in order to derive a coverage rate, it would be necessary to estimate the number of persons who actually needed assistance, i.e. were sick enough to need treatment and medication; this was considered to be impractical.<sup>15</sup>

**“Young” Pensioners.** In two countries, Mongolia and Pakistan, it was found that a substantial proportion of pensioners were not of pensionable age due to early retirement (both countries) and pensions being granted to disabled persons (Mongolia). In both cases, estimates of “old,” “young,” and “disabled” pensioners were obtained. “Old” pensioners were allocated to the elderly target group and “disabled” pensioners to the disabled category. The remaining “young” pensioners were assigned to the unemployed/labor market category as

- (i) these beneficiaries could not be excluded from the calculations altogether;
- (ii) their inclusion with “old” pensioners would distort the subsequent calculation of the coverage rate, and
- (iii) the provision of early retirement pensions can be seen as a type of

<sup>15</sup> Overall morbidity estimates are rarely available and even where available would not provide an accurate reflection of the need for health care. They would not, for instance, include the needs of pregnant women and new mothers.

unemployment/retrenchment benefit,<sup>16</sup> even if many of these beneficiaries are likely to have obtained new employment.

### **3. Aggregating Beneficiaries for Each Target Group (Step 3)**

This step involves summing the beneficiaries of all programs providing assistance to each target group. In most cases, this is straightforward. It is, however, necessary to exclude overlaps between different programs for the same target group, e.g. recipients of food aid who also benefited from other social assistance programs. In practice, this did not prove to be a major issue as most programs for each target group were aimed at different subgroups. Estimates of the amount of overlap were made where these were considered to exist and be significant enough to considerably affect the resultant coverage rates.

### **4. Selection of Reference Populations and Calculation of Coverage Rates (Step 4)**

Having obtained the number of beneficiaries for each SP program category, it is now necessary to identify the reference populations that will be used to derive the coverage rates. Throughout the study, there has been considerable debate over how to define these reference populations.

The intuitive approach is to define the reference population in such a way that it approximates the target group. This can be termed the narrow definition of the reference population. For three of the Table 4.4 categories, e.g. the definition of the reference population is obvious: the number of persons aged over 60 years<sup>17</sup> and over for the elderly, the number of disabled in the country, and the total population for health coverage.

In other cases, e.g. for the labor market programs, the target population is not so easy to define—the unemployment rate is of limited use in many developing countries and underemployment (defined in terms of hours of work) takes no account of low productivity and low remuneration employment. There can also be problems where countries target their pro-poor programs using criteria other than the official poverty line; in these cases, even if one could estimate the size of the target groups actually used, the resultant coverage

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<sup>16</sup> The alternative would have been to include this group in the social assistance category. As members of this group will mostly come from the formal sector, they are less likely to be poor, it seems more logical to see this “benefit” as compensation for unemployment rather than poverty.

<sup>17</sup> It is recognized that retirement ages vary between countries and by gender. However, in order to ensure comparability between countries this definition for the reference population has been used.

rates would not be comparable across countries.<sup>18</sup> There may also be programs that cut across those defined for this study, e.g. the Vietnamese war invalids and heroes program which benefits both the old and the disabled, and the pension schemes in Pakistan and Mongolia which include many pensioners below normal pensionable age and who are unlikely to be poor.

These problems are largely overcome if a wide definition for the reference population is used that essentially includes the entire population who could receive benefits from the identified programs. However, the resultant coverage rates will inevitably be lower if a larger reference population is used and they will be inherently less meaningful as they take no account of the size of the actual target group.

Table 4.3 presents the definitions of the narrow and wide reference populations. It should be noted that for three of the target groups—the elderly, the sick, and the disabled—only one reference population is considered to be viable. The coverage rates themselves are then simply obtained by dividing the number of beneficiaries by the reference population; these rates are presented in Tables A.5 (Narrow reference population) and A.6 (Wide reference population) in Annex A.

**Table 4.3. Alternative Coverage Reference Populations**

Category/Target Group	Reference Population — Narrowly Defined*	Reference Population — Widely Defined
Labor Market Programs/ Unemployed & Underemployed	Unemployed + underemployed	Total labor force
Assistance to the Elderly	Population Aged 60+ years	Population aged 60+ years
Health Care Assistance	Total population	Total population
The Poor—Social Assistance	Poor population**	Total population
The Poor—Microcredit	Poor population	Total population
Assistance to the Disabled	The disabled population	The disabled population
Child Protection	Poor children, aged 5-14 years***	All children, aged 5-14 years

\* i.e. to approximate the primary target population.

\*\* Defined according to the official national poverty line.

\*\*\* Defined in this way as the majority of applicable programs involved educational assistance, especially for primary and lower secondary schooling.

<sup>18</sup> In many cases, especially for social assistance programs there will be “leakage,” i.e. where beneficiaries fall outside the defined target group.

Whether to use the narrow or wide reference populations was extensively discussed. Finally, the authors became increasingly convinced that it is preferable to use the narrow reference population as the basis for assessing SP coverage, despite the above-mentioned shortcomings. The reason is that any indicators used in this study should be capable of interpretation.

Using a wide reference population for some target groups would not achieve this. To say that child protection programs cover  $x\%$  of the child population in the country means little as it contains no indication of the number of children who are likely to be in need. The same applies if one says that  $y\%$  of the total population receives social assistance or that labor market programs reach  $z\%$  of the total labor force. Coverage rates based on the wide reference population will also be much lower and could, therefore, be seen as representing a policy failure, which would not be the case if the actual target group represents only a small proportion of the wide reference population.

Accordingly, the coverage rates shown in Figures 4.4 and 4.5 are based on the narrow reference population (Table A.5 of Annex 1). We have however examined how the definition of the reference population can affect the overall coverage indicators and the resultant SPI values (see VI.B).

As can be seen from these figures, coverage rates vary widely among countries and among the categories of programs; little generalization is possible. Out of 42<sup>19</sup> coverage rates, only 13 exceed 30%, five of which exceed 50%. Conversely, 17 (almost 40%) are below 10%; in no category do all countries coverage rates exceed 10%. In most cases, one or two countries have much higher coverage rates than the others; the most obvious exception to this is microcredit where the coverage rates range from 5% to 20%. In the four categories, the country with the highest coverage rate is Mongolia; in two categories, it is Indonesia; and in one, Nepal. Coverage rates for Pakistan are uniformly low both absolutely and relative to other countries except for labor market programs (LMP), where the high coverage rate reflects the number of pension recipients below retirement age; this factor also increases LMP coverage in Mongolia. Coverage rates for Bangladesh are also low for most categories. Only Mongolia and Viet Nam achieve significant coverage of the disabled, while only three (Indonesia, Nepal and Viet Nam) do so for children. This variability shows that countries have very different approaches and priorities to the provision of SP.

Combination of Coverage Rates into a Summary Coverage Indicator (Step 5). Unlike the information on expenditure, which consisted of just one indicator, the coverage component involves seven indicators that need to be combined

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<sup>19</sup> Seven target groups for each of six countries. Table A..5 contains the coverage rates.

Figure 4.4. Social Protection Coverage Rates (1)

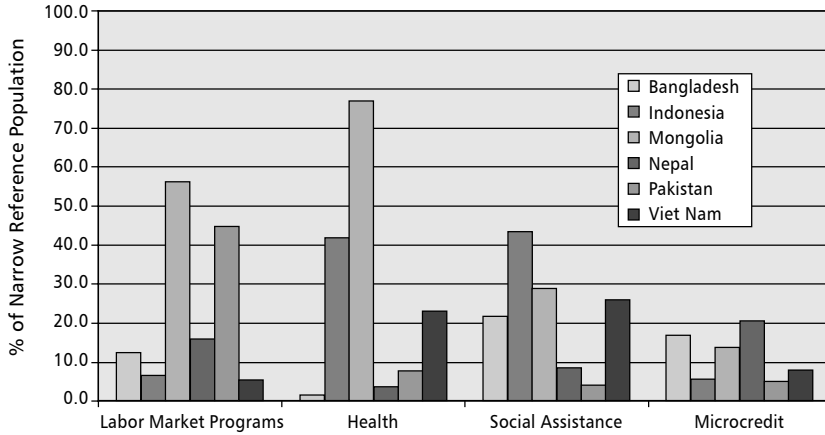
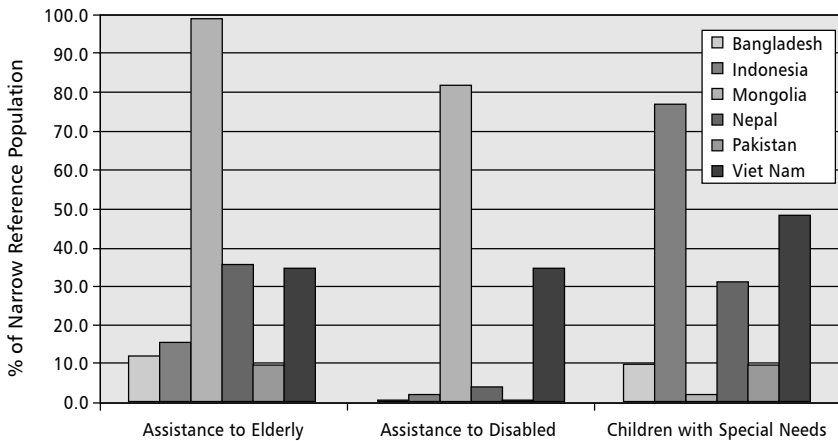


Figure 4.5. Social Protection Coverage Rates (2)



into a single summary indicator. During the course of the study, three potential approaches have been identified:

- (i) taking the arithmetic mean of the individual coverage rates;
- (ii) deriving a weighted average based on the size of the reference populations; and
- (iii) assigning weights derived from a Delphi exercise involving all the experts participating in this study.

The main advantages and disadvantages of each of these approaches are summarized in Table 4.4.

Table 4.5 presents the weights that would be assigned using the weighted and unweighted approaches. Using weighted populations gives much greater weight to health care, where the reference population is the total population, and correspondingly less for programs targeted at the elderly, the unemployed, the disabled, and children. Weighting for the programs targeted at the poor, social assistance, and microcredit hardly change.

Table 4.5 also shows the “assigned” weights (column 3) that were obtained from a Delphi exercise.<sup>20</sup> These assigned weights unsurprisingly lay between those from the other two approaches. They are also virtually identical to those obtained by simply averaging the other two sets of weights (column 4).

Table 4.6 and Figure 4.6 show how the choice of weighting method affects the overall coverage indicator in each country. Essentially, the summary indicator increases for countries with high coverage rates for health care (e.g. Indonesia and Mongolia) and decreases for countries (e.g. Nepal and Viet Nam), which have high coverage rates for some of the smaller target groups, e.g. children, the disabled and the elderly. The scaling values exhibit similar changes; these changes are, however, too small to induce any change in the

**Table 4.4. Alternative Approaches to Deriving Overall Coverage Indicator**

Approach	Advantage	Disadvantage
Using an “Unweighted” Average	The coverage rates for each target group are given equal weight.	Indicator will not reflect differences in the size of the target groups, e.g. between health insurance (large), the elderly (quite small) and the disabled (very small).  Does not take into account expert opinion.
Using a “Weighted” Average	Index reflects scale of each component element.	Index is dominated by larger target groups; smaller ones have minimal impact on overall indicator.  Does not take into account expert opinion
Using Assigned Weights	Takes into account expert opinion.	Expert opinion will vary between different stakeholders and countries. How to derive these weights?

Source: Authors.

<sup>20</sup> Participants were given a form with three options: (i) to use the unweighted average, (ii) to use the weighted average, or (iii) to assign their own weights.

Table 4.5. Alternative Weighting of Coverage Rates

SP Program Category/ Target Group	Weighting Approach			
	Unweighted	By Reference Population	Assigned (Manila Conference)	Average of Unweighted/ Weighted
	1 (%)	2 (%)	3 (%)	4 = (1+2)/2 (%)
Labor Market Programs	14.3	5	9.9	9.7
Assistance to the Elderly	14.3	4	10.6	9.2
Health Care Assistance	14.3	50	32.1	32.2
Social Assistance	14.3	16	15.1	15.2
Microcredit Programs	14.3	16	12.4	15.2
Assistance to the Disabled	14.3	5	10.1	9.7
CSWN 143%	4	9.8	9.2	
<b>Total 100%</b>	<b>100</b>	<b>100</b>	<b>100</b>	

\*These factors are derived from an all country average.

Source: Authors' analysis.

Table 4.6. Overall Coverage Rates Using Alternative Weighting Approaches

Country	Coverage Rate*			Scaled Value**			Ranking
	Un- Weighted	Average weighted ***	Weighted	Un- weighted	Average weighted***	Weighted	All methods
	(%)	(%)	(%)				
Bangladesh	10.7	10.5	10.2	0.22	0.21	0.20	5
Indonesia	27.4	31.0	34.6	0.56	0.62	0.68	2
Mongolia	49.1	50.1	51.1	1.00	1.00	1.00	1
Nepal	17.0	13.8	10.5	0.35	0.28	0.21	4
Pakistan	10.3	6.5	8.4	0.21	0.13	0.17	6
Viet Nam	25.6	23.7	21.7	0.52	0.47	0.42	3

\* Using the narrow reference population.

\*\* From Table 4.5.

\*\*  $V_i / V_{\max}$  where  $V_i$  is the country value and  $V_{\max}$  is the maximum value (Mongolia) amongst the 6 countries, (see Chapter V.B).

\*\*\* Using the Table 4.5 Column 4 weights—the average of weighted and unweighted values, which are very similar to the assigned rates (Column 3 of Table 4.5).

Source: Authors' analysis.

country rankings. Values using the average of weighted and unweighted approaches are predictably midway between those using either of these approaches.

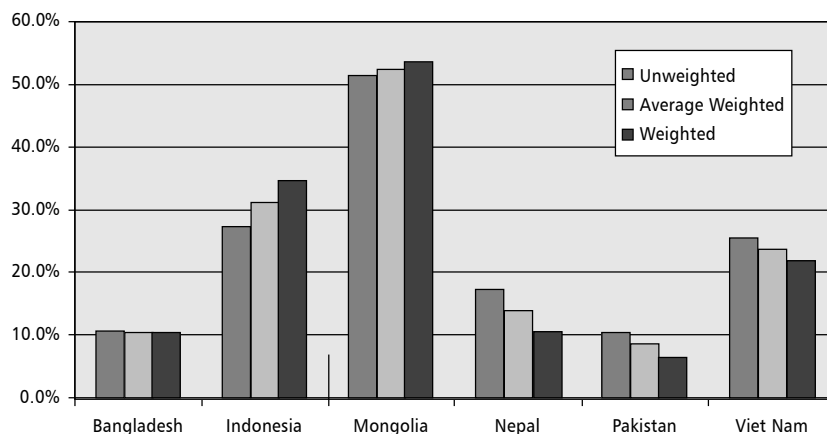
The selection of the preferred weighting method to derive the overall coverage indicator is essentially a matter of choice: using the weighted average implicitly means giving greater importance to the coverage of health assistance. Conversely, using the unweighted (arithmetic) average gives greater importance to programs targeted at the smaller groups. There is no clear

justification for preferring either of these weighting methods over the other. Unsurprisingly, therefore, there was considerable diversity of expert opinion on these issues.

Given the above, it is considered to be most appropriate to use the weights obtained by averaging those implied by the unweighted and reference population weighted approaches (see Col. 4, Table 4.5); this can be called the “average weighted” approach. These “average” weights are virtually identical to the responses obtained from the Delphi exercise. It is also logical that the overall coverage indicator should reflect the relative size of the reference populations while ensuring that the smaller target groups make a significant contribution to the overall indicator.

Using this approach, it can be seen (from Figure 4.6) that one country (Mongolia) has an overall coverage rate exceeding 50%; two (Indonesia and Viet Nam) have coverage rates between 20% and 30%; while the other three (Bangladesh, Nepal and Pakistan) range from 6% to 13%.

**Figure 4.6. Overall Coverage Rates (Using Narrow Reference Population)**



### C. The Poverty-Targeting Rate

Given ADB’s over-arching goal of reducing poverty and the fact that most social protection programs have, directly or indirectly, similar objectives, it is essential that the SPI includes a measure of the extent to which a country’s SP activities reach the poor. Two alternative approaches to defining this indicator—the PTR—were considered:

- (i) Obtaining separate indicators for each of the major groups of programs—as was done for coverage—and then combining these into a single PTR; and

- (ii) Directly obtaining an overall estimate of the pro-poor targeting of major SP programs, i.e. poor beneficiaries of SP programs as a percentage of the poor population.

In the early stages of the study, there was a preference for the first alternative, essentially using the same approach as for the summary coverage indicator, on the basis that deriving an overall poverty-targeting rate would be difficult without unit record household income and expenditure survey data. Following discussions, however, it was felt that a simpler approach should be adopted, which led directly to an overall PTR (the second alternative). This approach eliminates the need for the subsequent combination and weighting of PTRs for individual programs or reference groups. The preferred PTR is given by dividing the total number of poor beneficiaries by the poor population (see formula in Chapter III).

Deriving the PTR requires the two sets of information:

- (i) An estimate of the number of poor beneficiaries for each of the identified SP programs; and
- (ii) An estimate of the overlaps between these programs, so as to avoid the double counting of beneficiaries, i.e. households receiving benefits from more than one program.

The required information can be obtained either through knowledge of the poverty-targeting of each program (the ad hoc approach) or through the analysis of household income and expenditure survey (HIES) data. The second approach is likely to yield the more robust results because:

- (i) The agencies responsible for executing the major SP programs rarely maintain data disaggregated by poor and nonpoor households; and
- (ii) HIES data on SP programs permits both calculation of PTRs for individual programs and the estimation of the overlaps between programs.

HIES data of varying degrees of comprehensiveness was available in Indonesia, Pakistan and Viet Nam. For these countries, the authors undertook their own analysis to obtain information on SP programs and used this to derive the PTRs, supplemented by the ad hoc approach for SP programs not covered by HIES data.

The ad hoc approach involves some or all of the following:

- (i) identifying SP programs where the poverty-targeting is obvious, such as the social assistance programs targeted at the very poor where the PTR is likely to be close to 100%. In contrast, pension

- and health insurance schemes that only benefit government servants and formal sector employees may be expected to have PTRs close to zero;
- (ii) obtaining PTRs from reports where necessary in order to make adjustments for the poverty line used;
  - (iii) estimating PTRs in discussions with officials responsible for the programs; and
  - (iv) professional judgment.

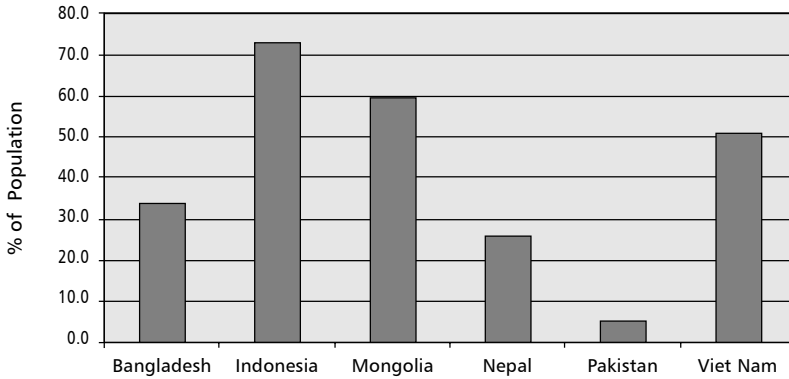
Multiplying the PTRs by the number of beneficiaries and summing these provides a high estimate of the total number of poor beneficiaries. It is a high estimate as there will be overlaps between programs in most countries, especially those with several major programs. In Viet Nam, for instance, total poor beneficiaries would exceed 100% if there were no overlaps; this is clearly implausible. Fortunately, in Viet Nam, as well as Pakistan and Indonesia, these overlaps can be identified from the analysis of the household surveys. In other countries, an ad hoc approach had to be adopted. After identifying the largest SP program and those with compelling evidence that there was either a complete overlap (e.g. as between microinsurance and microcredit) or no overlap (e.g. food for work and disability programs), overlap rates were assigned based on a combination of professional judgment and the PTR starting with largest program.<sup>21</sup>

The overall PTR was obtained by applying the overlap rates to the “gross” poor beneficiaries, summing, and then, dividing by the poor population in each country.<sup>22</sup> The results are presented in Figure 4.7 for the six participating countries. The figure shows that three countries, Viet Nam, Mongolia, and Indonesia have PTRs in excess of 50%, i.e. more than half the poor population receive some form of SP. The PTRs of Nepal and Bangladesh lie between 25% and 35%, while in Pakistan it barely exceeds 5%.

Table A.10 (Annex A) lists the largest SP programs in terms of the total number of poor beneficiaries. With the exception of Nepal, the five largest programs account for at least 92% of all poor beneficiaries. These programs, with the possible exception of MCF, are almost explicitly targeted at the poor, e.g. food aid, health, and educational assistance. Regular social assistance programs also figure in the calculation of the PTR, but are usually lower down the list.

<sup>21</sup> If, for instance, 25% of the poor population were beneficiaries of the largest program, it is reasonable to assume that 25% of the poor beneficiaries of other programs will also receive benefits from the largest program, in the absence of other information.

<sup>22</sup> Obtained by multiplying the total population of the country by the latest available estimate of the poverty headcount ratio.

**Figure 4.7. Poverty-Targeting Rates**

#### **D. Impact of SP Programs on Household Incomes/Expenditures**

While the PTR provides an indication of the extent to which SP programs reach the poor, it gives no information on the magnitude of the assistance provided. This is a crucial issue and any SPI developed without taking this aspect into consideration would be deficient. Therefore, an indicator is derived reflecting the impact of SP transfers to the poor on their incomes/expenditures. Given the name of this project, “Social Protection Index for Committed Poverty Reduction,” it was felt that the indicator had to be based on the amount of SP expenditure going to the poor. Both the numerator (i.e. the amount of SP expenditure) and the denominator (the income variable) have to be defined.

The key data required is the amount of SP expenditure going to the poor. The ideal approach would be to derive this variable by analyzing HIES data on the income received from different SP programs. This approach is not generally considered to be feasible because:

- (i) The unit record HIES data may not be publicly available or may be very dated (as in the case of Nepal);
- (ii) The HIES must include questions on the major SP programs and on the amount of transfer income received from them. Furthermore, the quality of the resulting data must be good. In our experience this is not always the case, particularly in regards to income from irregular relief for emergencies from NGOs or other sources. Missing values can also be significant problem, e.g. where someone states that they have received a particular benefit, but there is no corresponding data for the value of this benefit.

- (iii) Imputation is necessary to estimate the value of transfers in-kind, e.g. exemptions from school and health fees, community taxes of Food for Work. The values of these benefits will not always be known to the beneficiary;
- (iv) The time and technical expertise required to manipulate unit record HIES data in this way is substantial, and may not be available in every country; and
- (v) HIES are usually only conducted every three to five years, thus precluding the more frequent updating of the SPI.

SP expenditure to the poor can, however, be estimated by using data on program expenditures and the PTRs. Multiplying program expenditures by the already derived PTRs and summing gives an estimate of the total SP expenditure going to the poor. The procedure is actually simpler than deriving the PTR as there is no need to consider the overlaps between programs. The resultant total SP expenditure going to the poor is then divided by the poor population to give the average per capita SP expenditure going to the poor.<sup>23</sup> This methodology assumes that average benefits from a program to the poor are the same as to the not poor, and that this may not hold true for some programs, e.g., pensions. However, no alternative to this assumption could be identified.

The alternatives considered for the denominator of the impact indicator were poverty line income and the poverty gap. While using the poverty gap has its attractions, it was felt that its use could be problematic as:

- (i) up to date estimates of the poverty gap might not be available;
- (ii) it would be necessary theoretically to adjust the amount of SP expenditure before calculating the ratio;
- (iii) the resultant indicator would be less straightforward and therefore, less understandable to policy makers; and
- (iv) it would be difficult, if not impossible, to estimate the extent of SP transfers, which are already included in the expenditure estimates on which the poverty gap is based.

In contrast, poverty lines are updated more frequently and are more understandable to nontechnical people. Discussions among the authors and

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<sup>23</sup> At first sight, a simple ratio of SP expenditure on the poor to total per SP expenditure also looks promising. This ratio would, however, be linked to the level of poverty in each country, which would preclude intercountry comparisons. The ratio could be “standardized” by dividing by the poverty level. While informative, this indicator would partly replicate the PTR and would give no indication of how average SP expenditure compare to the incomes of poor households.

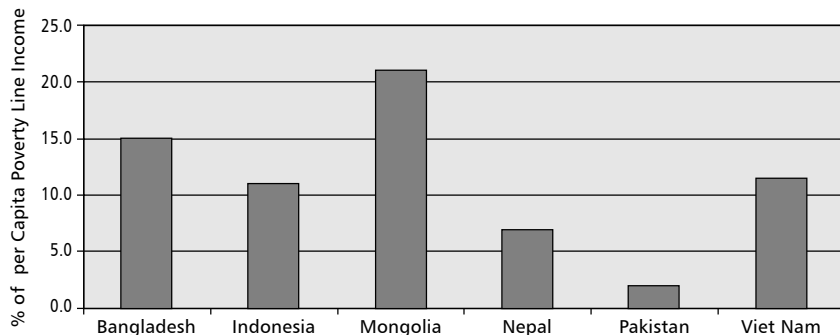
external experts led to the result that the poverty line income rather than the poverty gap should be used as the denominator for the impact indicator. Nevertheless, Chapter 6 contains a sensitivity test that examines how using the poverty gap could influence the SPI results.

Consideration was also given to weighting this indicator by the percentage of poor beneficiaries to give per capita SP expenditure to the poor as the percentage of poverty line income for beneficiary households only. While intuitively attractive, it was realized that this approach could produce counter-intuitive results. If, for instance, a large SP program with a wide coverage of the poor was introduced but the level of benefits provided per capita was very low, total SP expenditure on the poor would increase but the proportionate increase in beneficiaries would be greater, thereby, reducing the overall ratio. It was felt that this “paradoxical” outcome would be confusing to policy makers and could reduce the acceptability of the resultant SPI.

The preferred approach to the calculation of the impact indicator is, therefore, to use the poverty line income<sup>24</sup> as the denominator with per capita SP expenditure to the poor as the numerator (see Chapter III for the actual formula).

The largest programs in terms of their expenditure on the poor (Table A.11, Annex C) are a mixture of pro-poor programs and formal sector schemes, which despite low PTRs, provide a significant expenditure to the poor. In four of the six countries, the five largest programs provide over 90% of total SP expenditure to the poor. The exceptions are Viet Nam and Mongolia, which arguably have the widest range of SP programs among any of the six countries. The impact summary indicators obtained for the six participating countries are presented in Figure 4.8. The highest impact indicator (21%) is achieved by Mongolia, followed by Bangladesh (15%), Viet Nam (12%), and Indonesia (11%). The impact indicators for Nepal and Bangladesh are less than 7.5%.

**Figure 4.8. Social Protection Impact Indicators by Country**



<sup>24</sup> The official poverty line is used whether it is based on per capita income or expenditure.

## V. The Formulation of the Social Protection Index

### A. The Summary SP Indicators

This chapter describes the preferred approach to formulating an SPI. Throughout the study, it was considered that the SPI should be modelled like the Human Development Index developed by UNDP in the mid-1990s. The HDI is now commonly used as an indicator for making cross-country comparisons concerning countries' economic and social development; and modelling the SPI on the HDI will increase the likelihood of the SPI becoming widely accepted. Key features of the HDI are:

- (i) the use of just three components to reflect health, education, and standard of living respectively;
- (ii) the use of only four indicators—two for education and one each for health and standard of living; all of which require data that are collected routinely by national statistics offices and international development organizations and are easily understood by policy makers; and
- (iii) simple scaling and weighting procedures.

These are all desirable features as they make the HDI computationally straightforward and easily understandable, and to an extent possible, these were replicated in the preferred formulation of the SPI by:

- (i) minimizing its constituent indicators;
- (ii) ensuring that these indicators are understandable and meaningful; and
- (iii) using simple weighting and scaling procedures.

The preceding chapter described our four preferred constituent SPI indicators, the rationale for their selection, and the procedures needed to derive them; they are summarized<sup>25</sup> in Table 5.1, while Table 5.2 presents the derived indicators for each country. This chapter will describe the scaling and weighting steps needed to transform these indicators into a single SPI.

Table 5.2 shows that the rankings for the different indicators are broadly similar. For all countries except Bangladesh and Indonesia, rankings do not vary by more than one between the indicators. Bangladesh and Indonesia exhibiting contrasting patterns: low coverage but “high” expenditure for Bangladesh (due especially to the importance of microcredit) with Indonesia showing the reverse—low expenditure but high coverage.

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<sup>25</sup> The mathematical formulations are presented in Chapter III.

**Table 5.1. Definition of Summary SP Indicators**

Component	Description	Comment
Social Protection Expenditure (SPEXP)	SP expenditure as % of GDP	
Social Protection Coverage (SPCOV)	Combination of coverage rates of 7 priority target groups	Using the narrow reference population and a combination of unweighted and weighted means (see Chapter IV.B.6)
Poverty-Targeting Rate (PTR)	Poor SP beneficiaries as % of poor population	Double counting of beneficiaries needs to be allowed for
Social Protection Impact (SPIMP)	Per capita SP expenditure on the poor as % of current poverty line	Similar methodology as PTR, but no need to allow poverty line

**Table 5.2. Summary SP Indicators by Country**

Country	SP Indicator (percentage)				SP Indicator (ranking)			
	SPEXP	SPCOV*	PTR	SPIMP	SPEXP	SPCOV	PTR	SPIMP
Bangladesh	3.8	10.5	34.0	15.0	2	5	4	2
Indonesia	1.9	31.0	73.0	11.0	6	2	1	4
Mongolia	10.5	51.1	60.0	21.0	1	1	2	1
Nepal	2.2	13.8	26.0	7.0	4	4	5	5
Pakistan	2.0	8.4	5.3	2.0	5	6	6	6
Viet Nam	3.5	23.6	51.0	11.6	3	3	3	3
Max. Value	10.5	51.1	73.0	21.0				
Min. Value	1.9	8.4	5.3	2.0				

PTR = poverty-targetting; SPCOV = Social Protection Coverage; SPEXP = Social Protection Expenditure; SPIMP = Social Protection Impact.

\* Using the narrow reference population and weighting by a combination of weighted and unweighted means (see Chapter IV.B.6).

Source: Country Reports; authors' analysis.

The authors are confident that this approach<sup>26</sup> is the one that should be adopted. Alternative formulations for the SPI and its summary indicators have been suggested. Chapter VI reviews some of these and examines how the resultant SPIs compare.

<sup>26</sup> To a large extent, this was the approach presented in the Inception Report.

## B. Scaling of Indicators

Having calculated the four summary indicators of SP for each country, these indicators must be scaled and aggregated to produce the overall SPI. Scaling is necessary because although the four indicators are all expressed in percentages, their denominators and therefore, ranges differ. If the four indicators were left unscaled, those with the highest percentages (such as coverage and poverty targeting) would dominate the final index.

Several alternative scaling methods were considered. Their formulations, advantages, and disadvantages are summarized in Table 5.3.

**Table 5.3. Alternative Scaling Methods**

Scaling Method	Formulation	Advantage	Disadvantage
The HDI method	$(V_i - V_{\min}) / (V_i - V_{\max})$	Enables comparisons over time.	Maximum and minimum values have to be preset/assigned
Dividing the country value ( $V_i$ ) by the highest value in the data set	$V_i / V_{\max}$	Creates an upper-bound for the range of values Simpler than the HDI method Provides an upper-bound for the range of values	Highest country value likely to vary over time making it difficult to examine longitudinal changes.
Dividing $V_i$ by the lowest value in the data set	$V_i / V_{\min}$	Provides a more positive set of results as it shows how well a country is doing relative to the country with the lowest level of SP provision	No upper-bound on values
Dividing $V_i$ by the average (or median) value in the data set	$V_i / V_{\text{mean}}$	Provides a range of scaled values based on the "average" country rather than one with abnormally good or bad SP provision	Difficult to examine changes over time as minimum/mean values will change

Scaling using minimum or average values is not considered desirable, as there would be no defined upper-bound for the range of scaled values. In contrast, both the HDI and dividing by the maximum value provide an upper limit of 1 to the scale values, which is considered to be desirable.

An important feature of the HDI method is that by assigning minimum and maximum values that remain constant, it provides a basis for comparing the evolution of SPIs over time. With  $V_i / V_{\max}$ , this will not be the case, as

recalibration will be required every time a country with a higher scaled values enters the dataset or the indicators of the country with the highest scaled values for each indicator alter. One could reasonably assume 0 as the minimum value for the four indicators although in this case, the HDI formula reduces to  $V_i / V_{\max}$  method. One could also assume maxima of 100% for the coverage and the poverty-targeting indicators; but with a dataset of only six countries, there is no basis for assigning maximum and minimum values to the expenditure or impact indicators. The HDI method could also be adapted by using the minimum and maximum values of our dataset, but this would: (i) introduce 0 values, which is not considered desirable; and (ii) would not get over the issue of recalibration.

In consequence, it was considered that the best approach at present is to scale using  $V_i / V_{\max}$  (a). it is simple to understand; (b). it is more straightforward than the HDI method; and (c). '0' values cannot occur. In the longer term, when the dataset is considerably enlarged, it may however become desirable to assign maximum and minimum values and to recalculate the SPI's using the HDI methodology in order to facilitate time series comparisons of SP provision.

Table 5.4 and Figure 5.1, in the form of a star graph, show the resultant scaled values for the four SPI components

The main conclusion that emerges from Figure 5.1 is that countries have similar rankings for all four indicators. Rankings of four of the six countries are virtually identical for all indicators. Mongolia has the highest values for three of the four indicators. At the other extreme, Pakistan consistently has the lowest indicators followed by Nepal. Viet Nam ranks third for all indicators. Only Bangladesh and Indonesia have rankings that change significantly: from two to five for Bangladesh and from one to six for Indonesia. Indonesia has high rankings for the two coverage components, but low rankings for the

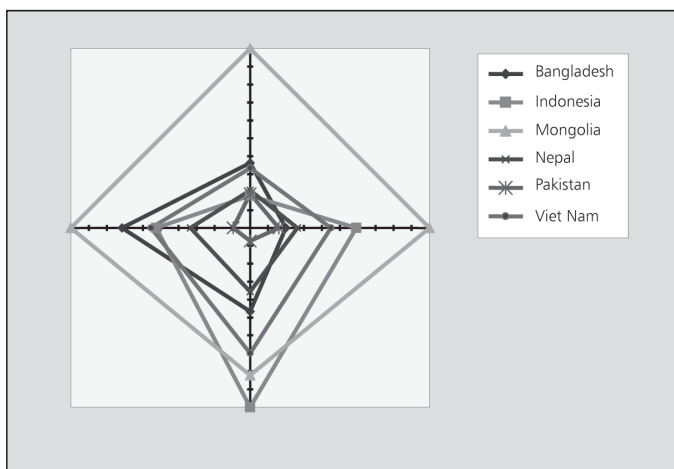
**Table 5.4. Scaled Values of Summary SP Indicators by Country**

Country	SP Indicator (scaled values)			
	SPEXP	SPCOV*	PTR	SPIMP
Bangladesh	0.36	0.21	0.47	0.71
Indonesia	0.18	0.62	1.00	0.52
Mongolia	1.00	1.00	0.82	1.00
Nepal	0.21	0.27	0.36	0.33
Pakistan	0.19	0.17	0.07	0.10
Viet Nam	0.33	0.47	0.70	0.55

SPIMP = Social Protection Impact.

\* See note to Table 5.2.

Source: Country Reports; authors' analysis.

**Figure 5.1. Star Graph of Summary SP Indicators**

expenditure components. Bangladesh exhibits the reverse pattern scoring highly on the expenditure and impact indicators, but lower in terms of coverage and poverty-targeting.

### C. Weighting of SPI Components

The final stage in calculating the SPI is the application of weights to the scaled values of the four SPI components contained in Table 5.2.

There are two basic approaches for deriving these weights:

- (i) Giving equal importance to each component, as is the case for the HDI. As the SPI combines four indicators, the weight assigned to each is 25%; and
- (ii) Assigning weights obtained from a Delphi exercise.

It should be noted that the HDI uses equal weights, although no justification other than simplicity is given for this approach.

In order to assess expert opinion, two Delphi exercises was carried out among experts, partly involving the same people. The results are presented in Table 5.5.

The key findings from Table 5.5 are the similarity between the results of both Delphi exercises and between these results and those one would get with equal weighting. Accordingly, equal weighting of the four SP indicators should be used to derive the overall SPI, as it is both the simplest approach and differs little from the weights obtained from our assessment of expert opinion.

**Table 5.5. Weighting of SP indicators**

SP Indicator	Equal Weighting	Delphi 1	Delphi 2
SPEXP	25%	21.8%	19.7%
SPCOV	25%	24.8%	25.0%
PTR	25%	26.8%	31.0%
SPIMP	25%	26.6%	24.3%

\* Calculated from actual results, which were based on a three-component SPI with the PTR and SPIMP indicator being combined into a single SP distribution indicator prior to combination with SPEXP and SPCOV. They are, thus, not strictly comparable.

Source: Authors' analysis.

**Table 5.6. Country SPI Values**

Country	SPI Value	SPI Rank	HDI Rank
Bangladesh	0.44 (0.43)	4	4
Indonesia	0.58 (0.59)	2	2
Mongolia	0.96 (0.96)	1	3
Nepal 0.29 (0.27)	5	5	
Pakistan	0.13 (0.13)	6	6
Viet Nam	0.51 (0.50)	3	1

Figures in ( ) are SPI values using weighted average for coverage indicator.

Source: Authors' analysis; UNDP. 2003.

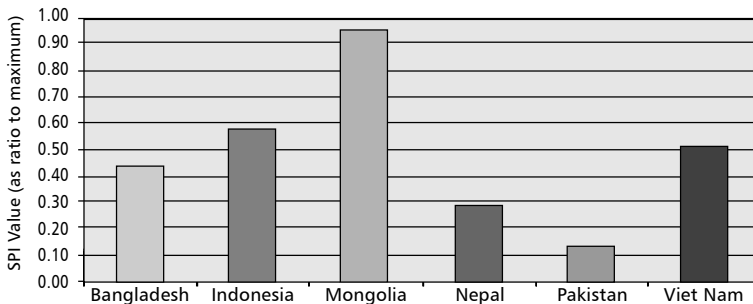
**Figure 5.2. Country SPI Values**

Table 5.6 and Figure 5.2 present the resultant SPIs, based on equal weighting, for the six countries forming part of this study. For comparative purposes their HDI ranking is shown.

Any conclusions and comments on the final SPI values are inevitably constrained by the fact that the data only relates to six countries. Unsurprisingly, the main conclusion that emerges from Table 5.6 is that the final SPI values largely replicate the rankings shown by its four summary

indicators (see Table 5.2). Given that these four indicators reflect substantially different aspects of SP, the above consistency is encouraging, as it implies that increasing the number of summary indicators would not materially affect the final SPI values. Mongolia has, by some way, the highest SPI value. It is followed by three countries—Indonesia, Viet Nam and Bangladesh—with SPI values on average half of that of Mongolia. Nepal and Pakistan’s values are much lower again. Essentially, the countries fall into three groups: (i) Mongolia with a high level of SP provision; (ii) Viet Nam, Indonesia, and Bangladesh with moderate levels of SP provision; and (iii) Nepal and Pakistan with low levels of SP provision. Reasons for these relative SPI values are:

- (i) Mongolia’s high SPI reflects the existence of a comprehensive social insurance and social assistance dating from the days of its status as a Soviet-dominated command economy. Recent evidence, contained in the Mongolia country study, suggests that the maintenance of these comprehensive SP programs is under strain;
- (ii) Indonesia and Viet Nam have major SP programs, which are targeted and well targeted, at the poor. These include free or subsidized food, health insurance cards for the poor, and educational assistance for poor children to attend school. In contrast, their traditional social assistance programs are more limited in scope and targeted at the very poor;<sup>27</sup>
- (iii) Bangladesh’s values are heavily influenced by widespread and well-targeted, pro-poor microcredit programs. If these programs were eliminated from the SPI, all four of its indicators would decrease substantially; and
- (iv) Pakistan and Nepal have few social assistance programs that achieve significant coverage, particularly of the poor, hence their low rankings.

There is a high degree of concordance between the SPI and the HDI rankings. Indeed, they are identical apart from Viet Nam and Mongolia, which swap positions. This is not unexpected as, by and large, as GDP per capita (one of the HDI components) increases, the amount of spent on SP will increase.<sup>28</sup>

<sup>27</sup> Note that the very low SP expenditure value for Indonesia is, at least partly, a reflection of the large subsidies on fuel and electricity prices. If these subsidies were included in the SPI, Indonesia’s value would be considerably higher.

<sup>28</sup> Generally, government revenues increase with GDP per capita; therefore, providing greater opportunities for government SP activities.

## VI. Sensitivity Tests and Alternative SPI Formulations

### A. General

While the authors are confident that the procedure for the deriving an SPI described in the preceding chapters is logical, comprehensive, and well justified, it is recognized that alternative formulations of the SPI do exist. To examine how robust the approach is to such alternatives, this chapter undertakes a number of sensitivity tests on how the SPI is calculated. It also examines in more detail two more radical alternative formulations based on multiplicative and efficiency ratio models. The alternatives examined in this chapter are:

- (i) Using the wide reference population for deriving the overall coverage indicator;
- (ii) Using the poverty gap instead of the poverty line as the denominator for the impact indicator;
- (iii) Calculating an SPI without microcredit or any loan-based employment-generation programs;
- (iv) Alternative weighting schemes for the 4 SPI components;
- (v) Calculating the SPI using a multiplicative model instead of an additive one; and
- (vi) The ILO ratio approach to deriving an indicator of the efficiency of SP expenditures.

### B. Using the Wide Reference Population

Table 6.1 shows the actual and scaled coverage rates that are obtained, if one uses the wide rather than the narrow definition for the reference population. As previously described, the wide reference populations comprise the entire population who could receive benefits from SP programs rather than their more narrowly defined target populations (see IV.B.5).

Using the wide rather than the narrow reference population results, as one would expect, in lower coverage rates. However, with the exception of Indonesia, the scaled values of the six countries do not change significantly; the country rankings also barely alter. The reason that the Indonesia value changes substantially is due to a very high coverage rate for child protection programs, whose contribution to the overall coverage indicator is heavily reduced if a wide reference population is used. The impact of this change on the final SPI value for Indonesia is, however, small; other final SPI values hardly change. These results, allied to the fact that the results based on the narrow reference population are easier to interpret (see section IV.B.5), reinforce our selection of the narrow reference population as the basis for the overall coverage indicator.

**Table 6.1. Overall Coverage Rates Using Narrow and Wide Reference Populations**

Country	Coverage Rate* (%)		Scaled Value**		Final SPI	
	Narrow	Wide	Narrow	Wide	Narrow	Wide
Bangladesh	10.5	6.3	0.20	0.18	0.44	0.43
Indonesia	31.0	13.6	0.59	0.39	0.58	0.52
Mongolia	52.4	34.9	1.00	1.00	0.96	0.96
Nepal	13.8	7.8	0.26	0.23	0.29	0.29
Pakistan	6.5	3.3	0.16	0.10	0.13	0.11
Viet Nam	23.7	13.9	0.45	0.40	0.51	0.50

\*Using average weighted method of obtaining overall coverage rate

\*\* $V_i / V_{\max}$  where  $V_i$  is the country value and  $V_{\max}$  is the maximum value (Mongolia) among the six countries.

Source: Authors' analysis.

### C. Using the Poverty Gap as the Denominator for the Impact Indicator

The preferred approach used the ratio of per capita SP expenditure to the poor to the poverty line income for the impact indicator (SPIMP1). It has also been suggested that the poverty gap could be used as the denominator, with total SP expenditure to the poor remaining as the numerator.

The poverty gap is a measure of the shortfall of the actual incomes of the poor from the poverty line income and as conventionally calculated, including any income from SP programs. There are two main alternatives if the poverty gap is used as the basis for this indicator:

- (i) SP expenditure to the poor / (Poverty Gap<sup>29</sup> + SP Expenditure on the Poor). This alternative impact indicator is referred to as SPIMP2; and
- (ii) Total SP expenditures to the poor / (Total Income of the Poor—SP Expenditure to the Poor). This is essentially the reciprocal of the poverty gap less transfer income<sup>30</sup> (SPIMP3).

Whichever of the above is used, current SP expenditure to the poor will appear as a ratio of either the poverty gap or the current incomes of the poor excluding any transfers from SP programs.

<sup>29</sup> Expressed as the total additional income that would be needed to raise the incomes of all poor households to the poverty line. This assumes that this can be achieved with no targeting or transfer costs. Although unrealistic, there is no way of estimating what these costs would be. Furthermore, it is unlikely that their inclusion would significantly affect the overall results.

<sup>30</sup> Theoretically, this indicator could be derived from survey data; this is, however, unlikely to be feasible; see Section IV.D above.

Table 6.2 shows how these indicators compare to that based on the poverty line income (SPIMP1). There is very little difference between SPIMP1 and SPIMP3: the rankings are the same and the scaled values do not change much; the greatest change is for Indonesia, which is explained by it having the lowest poverty gap. In interpreting these data, it should be remembered that not all SP programs involve direct transfers (e.g. health and educational assistance programs) and therefore, will not feature in household income and expenditure data. The indicators, therefore, overestimate the amount of income (in cash or kind) directly transferred to the poor.

Differences between SPIMP1 and SPIMP2 are greater, largely because the denominator is much smaller: (i) the range between countries is much reduced; and (ii) the rankings of Bangladesh and Indonesia are transposed, largely because of the difference in poverty gaps in the two countries. As the differences between these two indicators are significant, we substituted SPIMP2 into the SPI calculations; the results are shown in Table 6.3. The table shows no overall change in the rankings and little change in the SPI values apart from Indonesia, which improves significantly.

None of these alternative indicators of the impact of SP expenditure on the poor can be substituted for the one based on the poverty line because:

- (i) There is no appreciable difference between SPIMP1 and SPIMP3 and the latter is more complicated to calculate;
- (ii) SPIMP2 is very dependent on an up-to-date estimate of the poverty gap and relatively small fluctuations in this can lead to substantial changes in the impact indicator. Furthermore, there is no easy way of estimating which SP transfers are already included in the expenditure estimates on which the poverty line and hence, poverty gap are based; and
- (iii) The clear preference of experts interrogated was to use the poverty line income as the basis for this indicator.

#### **D. The Exclusion of Microcredit and Other Loan Programs**

As previously noted, microcredit has been included in the SPI, even though it generally falls outside of ADB's definition of SP. The reasons for this decision were the poverty focus of these programs and the fact that they involve a direct transfer of resources to beneficiaries (see Section II.C.3). It will now be examined how the SPI would change if microcredit programs were excluded. To be consistent, any job creation programs based around loans to small businesses have been excluded.

Table 6.2. Alternative Income Impact Indicators

Country	SP Expenditure as Percentage of:						Scaled Values						Rankings				
	Poverty Gap* SPIMP2 (%)	Poverty Gap + SP exp. SPIMP3 (%)	Total Income of poor excl.SP exp. SPIMP3 (%)	Poverty line income SPIMP1 (%)	SPIMP2	SPIMP3	SPIMP1	SPIMP2	SPIMP3	SPIMP1	SPIMP2	SPIMP3	SPIMP2	SPIMP3	SPIMP1	SPIMP2	SPIMP3
Bangladesh	12.9	53.9	20.9	15.1	0.70	0.67	0.71	0.71	0.71	0.71	0.71	4	2	2	2	2	2
Indonesia	3.1	77.4	12.3	10.6	1.00	0.39	0.50	0.50	0.50	0.50	0.50	1	4	4	4	4	4
Mongolia	11.0	65.9	31.3	21.2	0.85	1.00	1.00	1.00	1.00	1.00	1.00	2	1	1	1	1	1
Nepal	12.1	34.3	7.7	6.3	0.44	0.25	0.30	0.30	0.30	0.30	0.30	5	5	5	5	5	5
Pakistan	6.9	21.1	2.0	1.8	0.27	0.06	0.09	0.09	0.09	0.09	0.09	6	6	6	6	6	6
Viet Nam	6.9	62.6	14.2	11.6	0.81	0.45	0.55	0.55	0.55	0.55	0.55	3	3	3	3	3	3

SPIMP = social protection impact

NB. For detailed calculations, see Table A.7.

\*Latest available year.

Source: Authors' analysis.

Table 6.3. Changes in SPI Using Alternative Impact Indicators

Country	SPI Scaled Value			SPI Ranking		
	INCIMP1	INCIMP2	INCIMP2	INCIMP1	INCIMP1	INCIMP2
Bangladesh	0.44	0.43	0.43	4	4	4
Indonesia	0.58	0.69	0.69	2	2	2
Mongolia	0.96	0.92	0.92	1	1	1
Nepal	0.29	0.32	0.32	5	5	5
Pakistan	0.13	0.17	0.17	6	6	6
Viet Nam	0.51	0.57	0.57	3	3	3

INCIMP = impact indicator

Source: Authors' analysis.

Table 6.4 presents the SP indicators revised to exclude microcredit and loan-based job creation programs. Table 6.1 shows that the SPI values change little except, as one would expect, for countries where these microcredit makes up a substantial proportion of total SP activities (i.e. Bangladesh and Nepal). In these cases, the SPI values for Bangladesh and Nepal drop significantly. Although the ranking between the countries stays the same, one would expect some changes once SPIs are calculated for more countries. It is, however, considered unlikely that there will be many countries where microcredit and other loan programs constitute such a high proportion of SP activities that their SPI values would be significantly affected by their exclusion of these programs.

**Table 6.4. SP Indicators Excluding Microcredit and Loan Programs**

Country	SP Indicator (percentages) Excl. MCF				SPI Value			
	SPEXP	SPCOV	PTR	SPIMP				
Bangladesh	1.6	9.0	23	6				
Indonesia	1.9	30.6	73	10.5				
Mongolia	10.1	59.9	50	19.4				
Nepal	1.5	12.9	17	1.9				
Pakistan	1.9	9.0	4	1.7				
Viet Nam	3.1	26.3	50	9.5				
	Scaled Values (ratio to maximum value)				Without MCF		With MCF	
Bangladesh	0.16	0.15	0.32	0.31	0.24	0.44		
Indonesia	0.19	0.58	1.00	0.54	0.58	0.58		
Mongolia	1.00	1.00	0.68	1.00	0.92	0.96		
Nepal	0.15	0.21	0.23	0.10	0.17	0.29		
Pakistan	0.19	0.15	0.05	0.09	0.12	0.13		
Viet Nam	0.31	0.44	0.68	0.49	0.48	0.51		

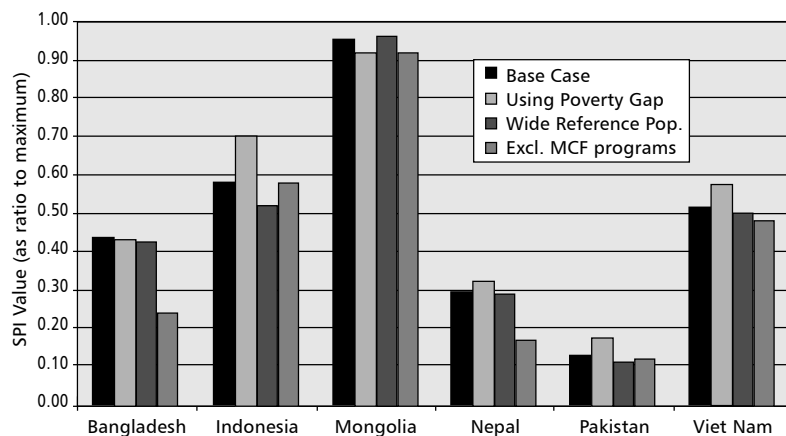
MCF = microcredit finance; PTR = poverty-targetting; SPCOV = social protection coverage; SPEXP = social protection expenditure; SPIMP = social protection impact

Source: Authors' analysis.

## E. Comparisons of SPI Values Using Different Indicators

Figure 6.1 compares the SPIs obtained from the above sensitivity tests against the base case, i.e. including MCF programs, narrow reference population, and impact based on poverty line income; all tests use equal weighting of the four component indicators. The main conclusion from Figure 6.1 is that varying any one of these indicators will, in most cases, have little impact on the final SPI value. Apart from Indonesia, the SPIs only vary significantly for Bangladesh and Nepal, if MCF programs are excluded.

Figure 6.1. Comparison of SPI Sensitivity Tests



## F. Alternative Weights for the SPI Components

As described in Section V.C, equal weights were used for the four SPI components. This preference replicates the HDI approach and reflects the results of the Delphi exercises. It was, however, examined how varying the weights would affect the SPI; two alternatives were tested:

- (i) Emphasis is given to overall SP activity: weights for SP expenditure and coverage are 0.35; weights for Poverty-Targeting and SP Impact are 0.15; and
- (ii) Emphasis is given to the overall impact of SP programs on the poor, essentially the reverse of the previous alternative: weights for SP Expenditure and Coverage are 0.15; weights for Poverty-Targeting and SP Impact are 0.35.

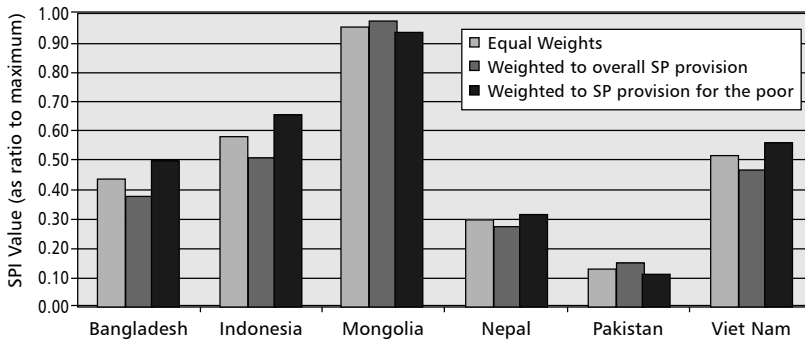
Table 6.5. SPIs with Alternative Weighting of Indicators

Country	Equal Weights	Weighting System Emphasise Overall SP Activities	Emphasize Poverty Impact of SP Activities
	35%/ 35%/ 15%/ 15%	15%/ 15%/ 35%/ 35%	25%/25%/25%/25%
Bangladesh	0.44	0.38	0.50
Indonesia	0.58	0.51	0.65
Mongolia	0.96	0.97	0.94
Nepal 0.29	0.27	0.31	
Pakistan	0.13	0.15	0.11
Viet Nam	0.51	0.47	0.56

Source: Authors' analysis.

Table 6.5 and Figure 6.2 show how the SPI varies with these different weighting systems. These show that even substantial changes in the weighting of the summary indicators have little impact on overall SPI values.

**Figure 6.2. SPIs with Alternative Weighting of Indicators**



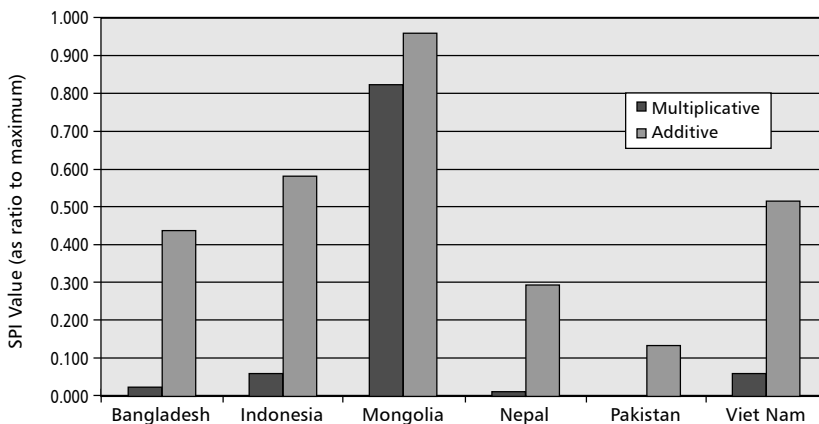
## G. Formulation of SPI Using a Multiplicative Model

In the course of the discussions, a multiplicative model for the derivation of the SPI was also suggested as an alternative to the additive one that was adopted. The formulation of this model is as follows:

$$SPI_i = \overline{Expenditure}_i * \overline{Coverage}_i * \overline{Poverty Targeting}_i * \overline{Impact}_i$$

where “SPI<sub>i</sub>” is the Social Protection Index for country “i.”

Figure 6.3 compares the resulting SPI values to those obtained using the additive model. The multiplicative model, apart from being harder to interpret, dramatically increases the range of the SPI values; two (Pakistan and Nepal) have values as near to 0 as makes no difference; and none reach 10% of the top value (Mongolia). These features are not considered to be desirable, or indeed acceptable to users of the index. The introduction of other countries with higher SPI values than those shown would further exacerbate the differences between countries.

**Figure 6.3. Comparison of Multiplicative and Additive SPI Formulations**

## H. The ILO Approach to Deriving an Aggregate Social Protection Indicator

To the authors' knowledge, the only other organization working on the development of a combined SP indicator is the ILO. ILO's current thinking,<sup>31</sup> which has yet to be officially adopted, is to define an overall indicator of the efficiency of SP using the following ratio:

$$FSP = ESP/SER$$

where "FSP" is the Efficiency of SP and is interpreted as the amount of SP that can be bought with 1% of GDP Expenditure on SP; "ESP" is the effectiveness of SP; and "SER" is the SP expenditure ratio.

The SER is identical to the SP expenditure ratio that we have adopted. The ESP formula has two components: coverage and depth. These are related in the following formula:<sup>32</sup>

$$ESP = (\text{COV}_1 * \text{DEPTH}_1) / I$$

<sup>31</sup> As described in ILO, 2004, Social Protection, Chapter 7, unpublished.

<sup>32</sup> ILO includes a dummy variable to incorporate instances where a branch of SP activity is not present. This is not necessary in our case as the target groups have been defined in such a way that all will have some coverage, however limited. Also note that the formula divides by I implying an arithmetic weighting. ILO does, however, comment that it might be desirable to assign different weights to different types of programs to "reflect a certain order of priority/relevance for social schemes;" this is the same as our suggestion to assign weights based on stakeholder/expert opinion.

where “COV<sub>1</sub>” is the Beneficiaries<sub>1</sub>/Target Population<sub>1</sub><sup>33</sup> which is essentially the same as our coverage indicator, and “I” is the total number of SP branches/target groups.

DEPTH = average benefit / <sub>pov</sub> (poverty line income)<sup>34</sup> or (SPEXP<sub>1</sub> / Beneficiaries<sub>1</sub>) / Y<sub>pov</sub>. This indicator is similar to the indicator we have used for SP impact in that it involves a ratio of SP expenditure to the poverty line. However, it differs in three ways: (i) it relates to all SP expenditure and not just that going to the poor; (ii) it is compiled on a program by program basis; and (iii) it is based on beneficiaries only.

Both SPI and the ILO’s approach are similar in that they both use the same indicators—expenditure, coverage, and depth of SP. While there are differences in the way that target groups and types of SP programs are defined, the principal differences are:

- (i) The ILO approach does not involve any consideration of poverty-targeting. As previously mentioned, we believe that this has to be included as a component of the SPI. In particular, the fact that formal social security schemes in developing countries rarely cover more than a small proportion of the poor population is not addressed in the FSP as it currently stands; and
- (ii) The ILO formula enables the combination of the SP indicators into a composite indicator at the country level without the need for data from other countries. However, the resulting indicator (FSP) is unlikely to be easily interpretable and could not easily be broadened to incorporate the poverty impact of SP.

It should also be noted that the ILO developed the FSP primarily for “mature” social security/assistance systems such as those that occur in OECD countries.<sup>35</sup> Clearly, the social security/assistance systems in developing countries are not mature. So it is likely that substantial adaptation will be required to make the FSP suitable to the types of SP programs that operate and the types of data that are available in developing countries. In contrast, the SPI was developed specifically with reference to developing nations. During the course of this study, also resolved were numerous issues related to

<sup>33</sup> This is the narrow reference population as defined for our coverage indicator.

<sup>34</sup> In their illustrative example, ILO suggests the use of various coverage indicators, including the poverty line, for different types of program. However, the authors assume that a ratio of average expenditure to the poverty line is derived for each target group.

<sup>35</sup> The ILO document does make reference to SER, which incorporates the fact that some SP schemes may not be fully developed. But there is no explanation as to how this would be defined or calculated in practice.

coverage and the definition of the target groups/reference populations, which the FSP is likely to encounter.

At present, we do not see any grounds for preferring the FSP over the SPI, although we believe that once the FSP has been operationalized, there may be scope for combining the two approaches.

## **I. Overview of Sensitivity Tests**

There were two main reasons for carrying out the sensitivity tests presented in this chapter:

- (i) to examine how the SPI varied with different formulations of the indicators and with alternative weighting systems; and
- (ii) to assist in the resolution of issues that had remain unresolved during the course of the study, despite often intense discussions at the workshops.

The key unresolved issues were:

- (i) whether to use a narrow or a wide reference population as the basis for deriving the target group coverage indicators;
- (ii) whether to adopt an impact indicator based on the poverty gap rather than the poverty line income;
- (iii) what weighting system to use to combine the seven target group coverage rates into a single indicator of coverage;
- (iv) whether or not to include microcredit and loan-based employment-generation programs;
- (v) whether there were advantages to using a multiplicative rather than an additive model for combining the summary indicators into the composite index; and
- (vi) what weighting system to adopt in order to calculate the SPI from its four component indicators.

It was concluded that it was preferable to use a narrow reference population (which approximates the target group for each category of SP program) and thus, provides more meaningful coverage rates (see Section IV.B.5 and VI.B). Furthermore, the  $V_i/V_{\max}$  scaling method was seen as the simplest method for scaling the indicator values prior to the calculation of the SPI itself. However, it may be desirable to adopt the HDI scaling method once SPIs become available for more countries (see Section V.B). Given that the preceding analysis shows that the final SPIs vary little with either the choice of reference population for the coverage indicators or the method of scaling the four summary SP indicators, there is no reason to alter these conclusions.

There is little to be gained by adopting a multiplicative model in preference to the additive model that is simpler to understand and to compute. The multiplicative model also considerably increases the variations between the countries (see Section VI.F above).

## VII. The Use of the Index

The SPI can be used in two ways. First, the SPI can be used to compare the overall level of SP provision across countries and over time on a consistent basis (see Table 5.6 and Figure 5.2). Second, the SPI can be used as a starting point for diagnostic work of a country's SP program and activities. In this case, it is the four summary indicators (see Tables 5.2 and Figure 5.1) and the information on individual SP programs rather than the SPI values themselves that are more likely to generate policy implications. In essence, this is the reverse of the process needed to compile the SPI.

There are many practical fields of application for the SPI including the country studies like:

- (i) In many countries the index and study provides for the first time a comprehensive overview over SP programs and their relevance allowing an informed debate;
- (ii) Providing a base for discussions about policy and its priorities in the countries, also with view to the situation in other countries;
- (iii) Providing guidance and information for research in the respective countries and on international level;
- (iv) Guiding support and assistance to the countries in the field of SP; and
- (v) Monitoring impact and results of SP programs.

However, when assessing the summary indicators, care must be taken in their interpretation, and when deriving policy implications particularly. The expenditure summary indicator, although easy to calculate is a case in point, as there is no benchmark against which it can be assessed—unlike the coverage and poverty-targeting indicators, where 100% coverage is theoretically achievable. A low percentage of GDP devoted to SP expenditures can be indicative of either a relatively well-functioning and secure economy (in which few SP programs are needed) or an extremely poor and vulnerable one (in which SP programs are desperately needed, but cannot be funded from a limited tax base). This is because the expenditure indicator is a product of both the relative wealth of a country and its development priorities. A low ranking for a country's expenditure indicator should not, therefore, be taken

as a *prima facie* reason for increasing SP expenditure given that in most developing countries, the availability of finance will be severely constrained. For this reason, it is not said that the expenditure indicator of the SPI reflects “affordability” of SP activities. Notwithstanding this caveat, comparisons of the expenditure indicators for countries with similar levels of GDPs per capita will provide an idea of how a country is performing relative to its “peer” group.

In contrast to the expenditure indicator, the overall coverage indicator represents a percentage where the overall goal is, in general, to reach 100%. However, as the coverage indicator is itself composed of the coverage rates for seven different target groups, most attention should be focused on these constituent coverage rates. Where these constituent coverage rates are high, as they are in several cases, it indicates that programs are already in existence and are reaching the target groups. In these cases, the emphasis would be on further expanding these programs as well as on concentrating on developing programs targeted at those groups where coverage rates are low using government, donor or NGO finance. The development of such programs will, however, have to be set against other development priorities, e.g. the promotion of economic growth and/or providing basic infrastructure. Scrutiny of program-specific coverage rates using the information contained in the country studies can also help answer questions such as whether programs reach their designated target groups and if eligibility criteria or spending limits restrict the ability of SP programs to reach these groups.

However, it needs to be emphasized that a low coverage rate does not necessarily demonstrate the need for an increase in assistance. Take educational assistance as an example. To a large extent, the need for such assistance will depend on how education is provided. If education is provided free, the demand for additional assistance will be a lot less than if fees are payable. In these cases, additional funding should probably be devoted to improving the quality of the education provided; this expenditure falls outside the definition of SP and therefore, would not affect the coverage rate. If school nonattendance is high and inability to pay fees is seen as a major cause, the case for additional targeted assistance will be much greater. Increased provision for children with special needs (CWSN) could reflect a worsening situation, whereby the demand for SP programs targeted at this group is itself growing.<sup>36</sup>

Similar considerations will apply for health assistance. The coverage of health care assistance (one of the subcomponents of the coverage indicator) is closely linked to the national policies on the provision of health care. If

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<sup>36</sup> In Mongolia, the number of street children has substantially increased in recent years. A similar situation has arisen in Africa, where the need to care for HIV/AIDS orphans did not exist 20 or so years ago.

health care services are basically provided free of charge, directly financed out of the government budget, the need for health insurance or health care assistance programs will be much lower than if health care is largely financed through user charges. This will result in low coverage rates as the availability of largely free government-provided health care is not considered to form part of SP. This may partly explain the situation in Pakistan, Nepal, and Bangladesh where there is little in the way of health insurance.<sup>37</sup> This and the preceding paragraph underscore the need to examine the reasons why coverage rates are low before immediately concluding that they need to be raised.

One objective of overall SP policy will be to provide SP for the poor and hence, raise the PTR. Low PTRs will, thus, usually be seen as a matter of concern with the achievement of a 100% PTR being a long-term goal. Where the PTR is low, the emphasis should be on identifying ways in which it can be raised by some or all of the following: (i) modifying eligibility criteria, (ii) increasing the coverage of existing programs, (iii) improving the targeting of these programs by reducing “leakage,”<sup>38</sup> and (iii) expanding the coverage of other SP programs (e.g. pensions and health insurance) that do not currently reach the poor.

As with the coverage rates, low PTRs should not immediately be construed as indicating an unsatisfactory level of provision. Social welfare programs are often targeted at the very poor rather than the poor population, as a whole and complete coverage of the poor by these programs may not be realistic. Educational attendance programs may be targeted at the very poor as school attendance among the poor (as opposed to the very poor) may be at an acceptable level. Other programs may use targeting criteria that are lower than the official poverty line; this appears to be the case in Viet Nam. There may well be good reasons for this, such as the impossibility of providing direct assistance to the entire poor population or difficulties associated with targeting based on the official poverty line. In Indonesia, in contrast, one reason for the PTR being high is that programs use criteria that are more “generous” than the official poverty line, which itself appears to be particularly harsh.<sup>39</sup>

In general, an objective of an SP policy will be to raise the impact on expenditures indicator. There are four main ways to do this: (i) by increasing

<sup>37</sup> As a side note that if SPIs were constructed for the USA and European countries, coverage rates and expenditure would be much lower in the latter despite the fact that, to all intents and purposes, health care in many of these countries is free.

<sup>38</sup> Leakage show the number (or percentage) of program beneficiaries who are nonpoor. Reducing leakage will enable more resources to be transferred to the defined target group and hence, increase coverage.

<sup>39</sup> The allowance for nonfood expenditure in the poverty calculations is much lower than in many other countries.

a program's benefits, (ii) improving the poverty-targeting of existing programs, (iii) by increasing the coverage of existing programs, and (iv) introducing new programs. All of these, with the exception of (ii) will involve additional expenditure. Given budgetary constraints, this is most likely to come through the reallocation of funds from other sectors (e.g. from the construction of health facilities to subsidized health costs for the poor<sup>40</sup>) or from other existing SP programs. While this is clearly easier said than done (e.g. where a large proportion of SP expenditure is taken up with the provision of social security to civil servants), the scope for reallocating these expenditures to poverty-targeted programs will be limited. Yet, opportunities do present themselves. In Indonesia, there is a long-term overall policy to reduce the fuel and electricity subsidies and to use these funds to targeted SP programs. In Viet Nam, expenditures on providing assistance to assist war invalids and victims' families is likely to decrease as age takes its toll, thereby, providing scope for increasing the funding of other SP programs. In other countries, reducing administrative costs associated with the implementation of some programs could increase the amount of funds actually transferred to beneficiary households.

In addition to analyzing each of the four SP summary indicators individually, it is also important to examine combinations of them. A high expenditure indicator, for example, could reflect either a large number of people receiving minimal SP transfers or a few people receiving large benefits (as would be the case where generous social insurance schemes only reach a small section of the population such as civil servants). The expenditure indicator, therefore, says nothing about the scope a country's SP programs. In this instance, analysis of the coverage indicator will indicate which of these alternatives is applicable, thereby, giving rise to different policy implications. Similarly, a high poverty-targeting indicator indicates that a large proportion of the poor are receiving SP transfers, but the value of these transfers may be either a substantial or negligible in relation to the poverty line. To distinguish between these two situations, the poverty-targeting and the impact on expenditure indicators need to be examined at the same time. As a third example, when a low expenditure indicator is associated with a high impact indicator, this indicates a high level of SP targeting to the poor. However, substantial numbers of the near poor (for example, the elderly) might still be excluded from the benefits of SP programs. In this case, it is useful to examine the subcomponents of the coverage indicator to check if any important target

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<sup>40</sup> In countries where the primary health care network is well-established, increasing attention is being paid to improving the access of the poor to these facilities. One way to do this is through targeted subsidized treatment and medication costs. The same applies to education.

groups are being missed. The four summary indicators that make up the SPI when analyzed together, therefore, complement one another.

In all the above, the SPI component indicators can provide the starting point for the appraisal of existing SP provision. Once this initial stage has been achieved, attention can be focused on the information in the country studies such as the annual expenditure (total and amount going to the poor), the coverage rates, and the PTRs for individual SP programs. Examining this information can reveal which programs are reaching their target groups and which are not, the amount of expenditure transferred to these target groups, and which programs are most successful at reaching the poor. Problems such as low coverage or targeting rates will be identified and whether there are justifiable reasons for this (e.g. targeting is based on criteria more “generous” than the official poverty line). Where programs are considered to be underperforming, their implementation, eligibility criteria, and the level of benefits can be investigated to see if there is potential for improvement, either with or without the need for additional funding.

In many ways, the process of using the SPI and its constituent data in order to generate policy implications is the same as for the HDI. The HDI itself is undeniably useful for providing intercountry comparisons and tracking a country’s overall level of development over time, but it will not, of itself, generate more than very general policy implications. While the HDI can be calculated in a matter of minutes from routinely available information and presented on a single page of paper, it is frequently accompanied by Human Development reports that include detailed studies of education, health, and other social development sectors. It is this material that can generate changes to policies and programs.

Arguably, however, the greatest impact of the development and subsequent acceptance of the HDI has been to focus greater attention on the need to develop and improve the provision of health and education and other noneconomic aspects of countries’ development policies. In the same way, it is anticipated that the very process of obtaining the information needed to derive the SPIs and the subsequent dissemination of the results will increase interest, nationally and internationally, in SP and lead to a more rigorous evaluation of current programs and activities.

It is also to be hoped that the SPI will be periodically updated. In comparing SP indicators over time, there will always be two stages: (i) identifying the changes, and (ii) identifying the reasons for these changes. This is particularly important if the indicators have declined and in these instances, what the scope is for reversing these changes. Again, comparisons of the overall SPI values for different time periods will provide relatively little

information and changes in the SP indicators are likely to be more useful and generate policy implications. For instance, comparative analysis of the 1998 and 2002 Vietnamese household surveys revealed that the overall PTR had almost doubled in the intervening period, but that even now, around half the poor population does not receive any SP.<sup>41</sup>

Overall, the SPI should not be seen in isolation; and any evaluation of a country's SP provision must also include both the component indicators and the program-specific information contained in the Country Reports. Furthermore, any attempt to raise the summary indicators will need to consider: (i) whether there are justifiable reasons for the indicators being low; and (ii) as most countries will have limited funds at their disposal and have several other development priorities, the financial implications of devoting more funds to SP. SP is but one, and in many cases, not the most important way of achieving poverty reduction. Nevertheless, and notwithstanding the caveats mentioned in the preceding paragraphs, the long-term goal will be to raise the level of the SPI and its component indicators in most cases.

## VIII. Conclusions

The primary objective of this study is to produce an SPI that summarizes a country's SP activities. In order to achieve this, it has been necessary to establish a definition of SP that excludes activities that are normally seen as being part of other sectors, e.g. rural/community development, the provision of infrastructure, basic education, and health care. The definition that was found concentrates on programs that are targeted to the poor and the vulnerable, and programs that provide direct transfers, in cash, in-kind or through fee exemptions to these groups.

Sensitivity tests and expert opinion have been harnessed to improve the robustness of the SPI, while the incorporation of some features of the widely used HDI is designed to increase its acceptability.

In summary, the SPI presented in this study:

- (i) is composed of four indicators that reflect very different aspects of SP provision— expenditure, coverage, poverty-targeting, and impact on incomes;
- (ii) is not difficult to calculate, notwithstanding unavoidable difficulties in data collection;
- (iii) is relatively easy to understand and interpret; and

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<sup>41</sup> Halcrow. February 2005. Vietnam Country Report.

- (iv) takes into account the comments received by various commentators.

The study has raised awareness in the six participating countries about SP and the SPI developed will enable meaningful international comparisons of the provision of SP. However, the SPI cannot be seen in isolation and any evaluation of a country's SP provision must also examine both the summary indicators and the program-specific information contained in the country studies. The totality of this information can provide a valuable foundation for diagnostic work on the performance of a country's SP activities.

This study was only concerned with six countries. If the SPI is to become internationally accepted, it is essential that this work is replicated. It is the objective that "an index will be calculated for all ADB Developing Member Countries (DMCs) and beyond."

The SPI that was developed requires the following information on a program-by-program basis:

- (i) Expenditure;
- (ii) Number of beneficiaries; and
- (iii) Number of poor beneficiaries (based on the national poverty line) and/or the proportion of beneficiaries with incomes below the poverty line.

Annex C provides a list of internationally available sources on SP. A web search to ascertain the availability of this information from internationally accessible data sources concluded that there was negligible information available from these sources. There was some data on the coverage of social security systems, but this is now out of date (the most recent data was from the mid-1990s). The Social Security Worldwide database (see Annex C, para. A.7) contains information on social security systems in the following DMCs: Azerbaijan, Bangladesh, China, Fiji, India, Indonesia, Kazakhstan, Kyrgyzstan, Malaysia, Micronesia, Nepal, Pakistan, and Papua New Guinea.<sup>42</sup> The majority of the information is qualitative rather than quantitative. At best, this database could provide information on one, albeit large, component of SP.

ADB's Key Indicators publication<sup>43</sup> contains information on the amount of government budgets allocated to the broad category of "Social Security and Welfare (SSW)." Even allowing for variations in the definition of what is and is not included in each government's SSW budget, it is likely to include most

<sup>42</sup> The web address is <http://www.ssa.gov/policy/docs/progdesc/ssptw/2002-2003/asia/ssptw2002asia.pdf>.

<sup>43</sup> Asian Development Bank. 2003. Key Indicators 2003, Manila.

government social assistance/social welfare programs and any government-funded social security schemes. Conversely, this budget head is most unlikely to include many other SP programs that are included in the definition of SP adopted for this project, e.g. food for work, educational and health assistance, microcredit, nongovernment pension, and health insurance.

There is, therefore, to all intents and purposes, no easily available data on the expenditure, beneficiaries or povert-targeting of individual SP programs. As a corollary, there is no possibility of being able to produce even preliminary SPI's for other ADB DMCs without recourse to country studies similar to those carried out for this study. Therefore, in the course of this study, a handbook was elaborated, which will guide future experts when elaborating the index and the country studies.<sup>44</sup>

## IX. Annexes

### A. Base Data

**Table A.1. Social Protection Expenditure by SP Component**  
(percentages)

Country	Labor Market Programs	Social Security/ Insurance	Social Assistance	Micro/ Area Programs	Child Protection	Total
Bangladesh	7.8	9.1	23.3	58.2	1.6	100.0
Indonesia	0.8	70.9	19.7	3.3	5.3	100.0
Mongolia	2.5	74.6	14.4	3.0	5.6	100.0
Nepal	6.3	47.5	7.1	33.6	5.6	100.0
Pakistan	2.4	86.8	5.9	3.9	1.0	100.0
Viet Nam	7.8	54.5	28.5	6.8	2.4	100.0

<sup>44</sup> The handbook can be obtained from ADB upon request.

**Table A.2. Social Protection Expenditure as Percentage of GDP**

Country	Expenditure Ratio*		Scaled Values ( $V_i / V_{max}$ )	
	With MCF	Without MCF	With MCF	Without MCF
Bangladesh	3.8	1.6	0.36	0.16
Indonesia	1.9	2.2	0.18	0.22
Mongolia	10.5	10.1	1.00	1.00
Nepal	2.2	1.5	0.21	0.15
Pakistan	2.0	1.9	0.19	0.19
Viet Nam	3.5	3.1	0.33	0.31
Max	10.5	10.1		
Min	1.9	1.5		

MCF = microcredit finance.

\*Total SP Expenditure / GDP \*100.

**Table A.3. Poverty-Targeting Rates**

Country	Poverty-Targeting Rate*		Scaled Values ( $V_i / V_{max}$ )	
	With MCF	Without MCF	With MCF	Without MCF
Bangladesh	34	23	0.47	0.32
Indonesia	73	73	1.00	1.00
Mongolia	60	50	0.82	0.68
Nepal	26	17	0.36	0.23
Pakistan	5	4	0.07	0.05
Viet Nam	51	50	0.70	0.68
Max	73	7		
Min	5			

\*Poor beneficiaries / Poor population \*100.

**Table A.4. Social Protection Impact**

Country	Social Protection Impact*		Scaled Values ( $V_i / V_{max}$ )	
	With MCF	Without MCF	With MCF	Without MCF
Bangladesh	15	6.0	0.71	0.31
Indonesia	11	10.5	0.52	0.54
Mongolia	21	19.4	1.00	1.00
Nepal	7	1.9	0.33	0.10
Pakistan	2	1.7	0.10	0.09
Viet Nam	12	9.5	0.55	0.49
Max	21	19.4		
Min	2	1.7		

\*Per capita SP Expenditure on the Poor/Poverty line expenditure \*100.

Table A.5. Coverage Rates (Using Narrow Reference Populations) (%)

Country	Labor Market Programs	Unemployed and under-employed	Assistance to Elderly	Assistance with Health Care	Social Assistance	Micro-credit	Assistance to Disabled	Children with Special Needs	Overall Coverage Rate	
									Coverage Rate (%)	Scaled Value ( $V/N_{max}$ )
Reference Population		Population aged 60+ years	Population aged 60+ years	Total Population	Population living below Poverty line	Population aged 5-14 years	Disabled population	Poor Population aged 5-14 years	Unweighted	Weighted
Bangladesh	12.2	12.0	1.4	17.0	21.7	0.3	10.2	10.7	10.2	0.22
Indonesia	6.5	15.7	42.0	5.3	42.9	2.0	77.0	27.4	34.6	0.56
Mongolia	56.0	98.6	76.8	13.9	28.8	81.7	2.4	49.1	51.1	1.00
Nepal	15.9	36.0	3.6	20.6	8.2	4.4	30.7	17.0	10.5	0.35
Pakistan	44.9	9.4	7.3	4.9	3.9	0.1	1.3	10.3	8.4	0.21
Viet Nam	5.2	34.4	23.1	7.6	25.9	34.6	48.3	25.6	21.7	0.52
Max Value	56.0	98.6	76.8	20.6	42.9	81.7	77.0	49.1	51.1	
Min. Value	5.2	9.4	1.4	4.9	3.9	0.1	1.3	10.3	6.5	

Table A.6. Coverage Rates (Using Wide Reference Populations) (%)

country	Labor Market Programs	Assistance to Elderly	Assistance with Health Care	Social Assistance	Micro-credit	Assistance to Disabled	Children with Special Needs	Overall Coverage Rate			
								Coverage Rate (%)	Scaled Value ( $V/V_{max}$ )		
Reference Population	Unemployed and under-employed	Population aged 60+ years	Total Population	Population living below Poverty line	Disabled population	Disabled population aged 5-14 years	Unweighted	Weighted	Unweighted	Weighted	
Bangladesh	5.0	12.0	1.4	11.0	8.5	0.3	5.0	6.1	6.6	0.15	0.24
Indonesia	1.6	15.7	42.0	7.5	0.9	2.0	17.0	12.4	14.8	0.31	0.54
Mongolia	12.4	98.6	76.8	10.4	5.0	81.7	1.0	40.1	27.6	1.00	1.00
Nepal	3.0	36.0	3.6	3.0	8.0	4.4	12.0	9.9	5.7	0.25	0.21
Pakistan	3.8	9.4	7.3	1.2	1.6	0.1	0.4	3.4	3.3	0.08	0.12
Viet Nam	1.7	34.4	23.1	7.5	2.2	34.6	14.0	16.8	11.0	0.42	0.40
Max Value	12.4	98.6	76.8	11.0	8.5	81.7	17.0	40.1	27.6		
Min. value	1.6	9.4	1.4	1.2	0.9	0.1	0.4	3.4	3.3		

## B. Calculations Using the Poverty Gap

Table A.7. Calculations of Alternative Impact Indicators Using the Poverty Gap

Country	Year	Poverty Gap # (%)	Headcount Ratio (%)	Poverty line (Local currency)	Population (millions)	Total Income Deficit* (Local currency millions)	SPEXP POOR	SPIMP2**
		1	2	3	4	5 = (1/100)*4*(2/100)*3	6	7 = 6/(5=+6)
Bangladesh	2000	12.9	50	7,820	134.0	67,588	79,000	53.9%
Indonesia	2002/03	3.1	18	1,389,000	214.0	1,658,633	5,681,000	77.4%
Mongolia	2002	11.0	36	296,600	2.5	29,363	56,661	65.9%
Nepal	1995/96	12.1	42	6,400	23.0	7,481	3,908	34.3%
Pakistan	1998/99	6.9	32	9,000	149.0	29,609	7,920	21.1%
Viet Nam	2002	6.9	29	1,930,000	80.0	3,089,544	5,180,000	62.6%

Country	Total Income of the Poor***	Total Income Before SP Expenditure (Local currency)	SPEXP POOR	SPIMP2**
	8 = (2/100)*3*4*5	9 = 8 - 6	10 = 6	11 = 10 / 9
Bangladesh	456,352	377,352	79,000	20.9%
Indonesia	51,845,647	46,164,647	5,681,000	12.3%
Mongolia	237,577	180,916	56,661	31.3%
Nepal	54,343	50,435	3,908	7.7%
Pakistan	399,511	391,591	7,920	2.0%
Viet Nam	41,686,456	36,506,456	5,180,000	14.2%

\* Income equivalent of poverty gap aggregated over poor population.

\*\* Ratio of SP Expenditure to poverty gap + SP expenditure.

\*\*\* Total income of all poor households.

# Poverty gaps from country reports except for Pakistan (A.R. Kemal. *Poverty in Pakistan: Trends and Causes*. Undated online presentation.) and Indonesia (C. Maksum. 2004. *Official Poverty Measurement in Indonesia*. available online)

### C. Largest SP Programs by Country

Table A.8. Largest SP Programs in Terms of Expenditure (%)

Rank	Bangladesh	Indonesia	Mongolia	Nepal	Pakistan	Viet Nam
1	Microcredit (58)	Pensions for military, government, and formal sector employees. (67) Food security/ aid (15)	Pension Fund (55) Health insurance (13) Social welfare (7)	Pensions for government, and formal sector employees. (43) Microcredit (34) Social assistance (7)	Pensions for military, government, and formal sector employees. (81) Health insurance (6) Zakat (4)	Social Security (46) War invalids and contributors (20) Health Insurance (8)
2	Food security/ aid (17)	Health assistance (3)	Health insurance (13) Social welfare (7)	Social assistance (7)	Health insurance (6) Zakat (4)	War invalids and contributors (20) Health Insurance (8)
3	Pensions for government employees (8)	Health assistance (3)	Social welfare (7)	Social assistance (7)	Zakat (4)	War invalids and contributors (20) Health Insurance (8)
4	SOE retrenchment (6)	Microcredit (3)	Educational assistance (5) Social welfare pensions (4)	Educational assistance (5) Food for work (3)	Microfinance (4) Bait-ul-Mal (3)	Microcredit (6) Job creation (subsidized business loans) (5)
5	Vulnerable group development (2)	Health insurance (formal sector) (3)	Educational assistance (5) Social welfare pensions (4)	Educational assistance (5) Food for work (3)	Microfinance (4) Bait-ul-Mal (3)	Microcredit (6) Job creation (subsidized business loans) (5)
% of total SP Exp.		91	84	94	98	85

Source (all tables): Country Reports.

Table A.9. Largest SP Programs in Terms of Beneficiaries

Rank	Bangladesh	Indonesia	Mongolia	Nepal	Pakistan	Viet Nam
1	Food security/ aid	Health care assistance	Health insurance	Microcredit	Health care/ insurance (ESSI and armed forces)	Subsidized health care (incl. schoolchildren)
2	Microcredit	Food aid/ security	Pensions	Educational assistance	Pension schemes	Formal health insurance
3	Vulnerable group development	Formal Health insurance	Microfinance	Loan based job creation	Microfinance	Land tax exemptions
4	School feeding/ educational assistance	Pension schemes	Social welfare pensions	Health care assistance	Bait-ul-Mal (social assistance)	Educational assistance
5	Microinsurance programs	Educational assistance	Social assistance programs	Social assistance programs	Zakat (social assistance)	War invalids and contributors

Table A.10. Largest SP Programs in Terms of Poor Beneficiaries

Rank	Bangladesh	Indonesia	Mongolia	Nepal	Pakistan	Viet Nam
1	Food security/ aid	Food aid/ security	Health insurance	Microcredit	Bait-ul-Mal (social assistance)	Educational assistance
2	Microcredit	Health care assistance	Social assistance	Microinsurance	Microcredit	Land tax exemptions
3	School feeding/ educational assistance	Educational assistance	Microfinance	Loans for job creation	Zakat (social assistance)	Various social allowances
4	Microinsurance programs	Social assistance	Pensions	Food for Work	Health assistance (EDHI)	Health care assistance
5	Food for work	Microcredit	Disabled programs	Social assistance	na	Pensions
% of total SP Exp.	92%*	c. 95%	94%	76%	98%	93%

\*No allowance for overlaps. These percentages therefore overestimate the number of poor people receiving SP.

Table A.11. Largest SP Programs in Terms of Expenditure on the Poor (%)

Rank	Bangladesh	Indonesia	Mongolia	Nepal	Pakistan	Viet Nam
1	Microcredit (61)	Food aid/ security (60)	Pensions (30)	Microcredit (71)	Pensions (39)	Pensions (30)
2	Food security/ aid (24)	Social Assistance (14)	Social assistance (13)	Food for Work (8)	Bait-ul-Mal (social assistance) (24)	War invalids and contributors (22)
3	Social assistance (5)	Health care assistance (8)	Educational assistance (9)	Educational assistance (5)	Zakat (social assistance) (20)	Microcredit (15)
4	SOE retrenchment (2)	Educational assistance (4)	SI disability allowances (9)	Loans for job creation (4)	Children's programs (3)	Social Assistance (5)
5	School feeding educational assistance (2)	Microcredit / loans (3)	Formal health insurance (8)	Allowances for senior citizens (4)	Khushal (job creation) (3)	Formal health insurance (5)
SP	94	89	69	92	90	77
Exp on the poor						

## **D. Review of Internationally Available Data on Social Protection**

### **A1. Asian Development Bank**

Key Indicators, 2003

Considerable information on the economy, population, employment and poverty/incomes for most DMCs for years between 1985 and 2002. Series are not always complete.

Cross-country tables: expenditure on health and education as % of GDP

National table—government finance: disaggregation is not consistent for all countries. Government expenditure on social security and welfare is given for many but not all countries.

### **A2. Association of East Asian Nations (ASEAN)**

Statistics are confined to trade and finance related information.

### **A3. Child Info (Key Statistical Data base for children; used by UNICEF)**

[www.childinfo.org](http://www.childinfo.org)

Country Data on Child Labor: For some ADB countries, not all. (Proportion of children 5-14 working, by country, 2000)

<http://www.childinfo.org/eddb/work/database.htm>

Data from End of Decade Assessment abstracted from national Multiple Indicator Cluster Surveys: Education, Child Labor, Maternal Mortality, Child Disability, Water and Sanitation, Salt Iodization and others. (Four SPSS data files were produced, corresponding to the four main units of analysis: households, household members, women in reproductive age [15-49 years] and children under the age of five).

Databases are available for the following ADB Countries (but access requires registration/password): Indonesia, Lao PDR, Philippines, Viet Nam, Azerbaijan, Mongolia, Tajikistan, Uzbekistan

NB. The MICS surveys contain no information on either social protection or on household incomes/expenditures.

### **A4. International Labor Office (ILO)**

<http://www.ilo.org/public/english/protection/socsec/publ/css/table11.htm>

1. World Labor Report of 2000

Table 11: Social Protection coverage: “Protected persons” (old age invalidity, employment injury, health care, unemployment benefit, and family benefit) as % of and contributors as % of the total population. Asian countries included: China, Indonesia, Pakistan, Singapore, Sri Lanka, and Thailand.

Table 14: Public Social Security Expenditure (latest available year is 1996): Total social security expenditures as a % of GDP and total public expenditure. In both cases, the latest year for which data is available is 1996.

## **2. World Employment Report, 2000**

[http://www.ilo.org/public/english/support/publ/wer/tables/tabl\\_toc.htm](http://www.ilo.org/public/english/support/publ/wer/tables/tabl_toc.htm)

Table 2: Labor force participation rate

Table 3: Employment to Population ratio

Table 4: Unemployment Rate

Provided for most Asian and Pacific countries.

## **3. Social Security Expenditure and Receipts**

<http://www.ilo.org/public/english/protection/socsec/publ/css/cssindex.htm>

Disaggregated by main categories and expressed in local currency, US\$ and as % of GDP. Available for various years between 1990 and 1996 for the following countries: Azerbaijan, China, Indonesia, Malaysia, Philippines, Thailand, Bangladesh, India, Pakistan.

## **A5. International Monetary Fund (IMF)**

Government Finance Statistics Yearbook (2002)

Some countries only: social security contributions—1992-2002

Supplementary Manual (2002)

<http://www.imf.org/external/pubs/ft/gfs/manual/supp.pdf>

Thailand: social security contributions and expenditure, social protection outlays—1999,2000,2001. NB. No other countries available.

The existence and usefulness of IMF Country Reports has not been reviewed. If relevant, these documents will be researched during the “upscaling” phase of this study.

## **A6. Organisation for Economic Cooperation and Development (OECD)**

Social Expenditure Database: 1980/1998 2001 Edition (CDROM)

Contains internationally comparable statistics on public and private social expenditure at program level for above dates, but information only covers developed nations

## **A7. Social Security World Wide (SSW)**

Social Security Worldwide covers six different databases on social protection, all of which can be accessed and searched using simple, easy-to-

use search screens subject to the payment of US\$400 for CDROM or US\$700 for internet access. These six databases are:

- (i) **Scheme Description.** Concise outlines of social security systems in over 170 countries (from Social Security Programs throughout the World, published jointly by ISSA and US Social Security Administration);
- (ii) **Complementary and Private Pensions.** Profiles of the system of complementary and private pensions in 52 countries;
- (iii) **Reforms.** Summaries of important reforms in social protection programs since 1995 (from the ISSA Development and Trends database published as Trends in Social Security);
- (iv) **Legislation.** References to social security legislation, including, in some cases, the full text of legislation (from the NATLEX database maintained by the International Labor Office);
- (v) **Bibliography.** References to books, periodicals and other material on social protection issues available in the ISSA Documentation Centre. The full text of ISSA meeting and conference reports since 1999 are also available; and
- (vi) **Thesaurus.** Key social security terms in English, French, Spanish and German (used in the other databases for indexation purposes).

Social Security Programs Throughout The World: Asia And Pacific, 2002:  
<http://www.ssa.gov/policy/docs/progdesc/ssptw/2002-2003/asia/ssptw2002asia.pdf>

Available for the following ADB member countries: Azerbaijan, Bangladesh, China, Fiji, India, Indonesia, Kazakhstan, Kyrgyzstan, Malaysia, Micronesia, Nepal, Pakistan, and Papua New Guinea. Four types of information are provided:

- (i) Types of social security programs;
- (ii) Types of mandatory systems for retirement income;
- (iii) Demographic and other statistics related to social security, 2002; and
- (iv) Contribution rates for social security programs, 2002.

Owing to the restricted access, it is not possible at this stage to identify the statistical data provided. It would appear, however, that much of the information is primarily qualitative in nature with little data on the number of beneficiaries or coverage. There is, however, limited free access. For the above-mentioned countries, qualitative information is provided on the regulatory framework, coverage, source of funds, and qualifying conditions for government

insurance programs for old age, disability, survivors, sickness, and maternity benefits.

#### **A8. UNICEF**

State of the World's Children, 2004

[http://www.unicef.org/sowc04/sowc04\\_contents.html](http://www.unicef.org/sowc04/sowc04_contents.html)

Government expenditure on education in East Asia and Pacific: shows the rise in the percentage of government expenditure on education from 1990 to 2000 in East Asia and Pacific.

Table 5. Education: lists countries' and territories' education-related statistics, including Adult Literacy rate, Primary School Enrollment Ratio, Net Primary School Attendance and Secondary School Enrollment Ratio;

Table 9. Child protection (READ ONLY EXCEL/PDF File): lists selected countries' and territories' child protection-related statistics; gives figures for Child Labor, Birth Registration and Female Genital Mutilation; and

Table 10. Rate of progress: lists countries' and territories' rates of progress towards the satisfaction of some essential human needs— statistics available for Under 5 mortality rate; GDP per capita average annual growth rate, and Total Fertility Rate).

NB. No data on social protection although estimates of child labor may be of some use later in the Study.

#### **A9. United Nations Development Programme**

Emphasis is on the Millennium Development Goals, none of which relate explicitly to Social Protection, so relevant data is limited in the extreme.

The UNDP's Human Development Report for 2003 has various estimates for the % of GDP spent on health and education. Table 20 give estimates of the # of internally displaced people and refugees by country, which might just be relevant.

#### **A10. World Bank**

World Development Indicators. 2003

Table 2.10 entitled "Enhancing Security" gives public expenditure on pensions, health, and education as a % of GDP and per capita income. Table 2.9 gives pension contributors as a % of the labor force and the working age population.

#### **A11. Overview**

The initial review of international data sources reveals a general paucity of data on Social Protection. The only indicator that might be available for a

majority of countries is government expenditure on social security and welfare, i.e. the cost element of SP. Data is not always available for recent years (e.g. since 2000).

In contrast, there is considerable amount of basic statistical data on the economy, population, employment, etc.

Although country reports by international organizations (e.g. the World Bank and the ADB) and national statistical reports have not been researched in detail, it is considered very unlikely that there will be much information on the coverage and distributional impact of SP activities or for that matter on the SP activities of NGOs.

The principal implication is that deriving an SPI for countries not forming part of this study will almost inevitably result in a less comprehensive index (e.g. using only involve the cost element) than will be achieved for the six countries forming part of this study.