reaching the **POOR**

CHALLENGES FOR CHILD HEALTH IN THE WESTERN PACIFIC REGION
reaching the POOR

CHALLENGES FOR CHILD HEALTH IN THE WESTERN PACIFIC REGION

World Health Organization
Western Pacific Region

www.wpro.who.int
Acknowledgements:

The main contributors to this document were: Sarah Coll-Black (consultant and principal author), Anjana Bhushan (Poverty, Gender and Human Rights), Carmen Casanovas, Carolyn MacIiennan, Emmalita Manalac and Marianna Trias (Child and Adolescent Health) of the World Health Organization Regional Office for the Western Pacific.

The team gratefully acknowledges the technical comments and other inputs received from Hilary Brown, Catherine Malsi, Guillermo Paraie, Robert Scherpier, Niko Speybroeck, Marcus Stahlhofer, Nicole Valentine, Jeanetta Vega and Eugenio Villar. Roslyn Stirling edited the document. Design and layout were done by Zando Escultura.

Table of Contents

List of abbreviations .................................................. ii
Foreword ................................................................. iii
Executive summary ..................................................... v
1. Introduction .......................................................... 1
2. Poverty and child health .............................................. 5
3. Inequalities in childhood morbidity ............................... 7
   3.1 Inequalities in childhood morbidity between countries .... 8
   3.2 Inequalities in childhood morbidity within countries .... 9
4. Inequalities in childhood mortality .................................. 11
5. Inequalities in access to health care services .................... 14
   5.1 Inverse care law and the fallacy of equitable impact .... 15
   5.2 Inequalities in access to the expanded programme on immunization 16
   5.3 Inequalities in access to antenatal care and skilled birth assistance 16
6. Poverty-related determinants of child health ...................... 19
   6.1 Macro-level factors ............................................ 20
   6.2 Micro-level (community and household) factors .......... 23
7. Barriers to access to child health care ........................... 29
   7.1 Geographical distance ........................................ 30
   7.2 Financial barriers ............................................. 30
   7.3 Sociocultural, language and ethnicity-related barriers .... 32
   7.4 Lack of knowledge and awareness ........................... 32
   7.5 Inequalities in quality of care ............................... 32
8. Ill health among children leads to greater poverty .............. 34
   8.1 Poorer child health leads to greater poverty in that generation 35
   8.2 Poorer child health leads to greater poverty in the next generation 35
9. The importance of tackling inequalities in child health ......... 37
10. Addressing inequalities in child health ........................ 40
    10.1 Mainstream child health and survival in national and international poverty-reduction strategies 41
    10.2 Ensure a focus on poverty and equity in child health interventions 43
11. Conclusion .......................................................... 51
References .................................................................. 53
Endnotes .................................................................. 62

Figures

Figure 1: Under-five mortality rate per 1000 live births in selected countries in the Region (most recent data 1999-2005) ranked according to World Bank income groupings ........................................... 2
Figure 2: Under-five mortality rate in selected countries in the Region, 1990-2003 or latest year available ........................................................................................................... 3
Figure 3: Under-five mortality disparities, selected countries ........................................................................... 3
Figure 4: Prevalence of diarrhoea and acute respiratory infection (ARI) among children by income quintile in the Philippines, 1998 ........................................................................... 8
Figure 5: Proportion of under-fives suffering from underweight (< -2 SD weight/age) in selected countries in the Region (data from 1997-2004) ranked by World Bank income groupings ......................................................................................... 9
Figure 6: Cause-specific mortality in high-mortality areas, Western Pacific Region, 2000-2003 ......................................................................................................................................... 12
Figure 7: Under-five mortality rate by selected income quintiles in Cambodia, the Philippines and Viet Nam ........................................................................................................... 12
Figure 8: Treatment of acute respiratory infection (%) by income quintiles, the Philippines, 1998 ......................................................................................................................................... 15
Figure 9: Proportion of children fully vaccinated, by selected income quintiles, in Cambodia, the Philippines and Viet Nam ........................................................................................................... 16
Figure 10: DPT3 immunization by income quintiles in Malaysia, the Philippines and Viet Nam ................................................................................................................................. 17
Figure 11: Measles immunization by income quintiles in Malaysia, the Philippines and Viet Nam ................................. 17
Figure 12: Proportion of women in the poorest and richest income quintiles receiving delivery assistance from a doctor or nurse/midwife in Cambodia, the Philippines and Viet Nam ................................................................. 17
Figure 13: Skilled antenatal care by income quintiles in Malaysia, the Philippines and Viet Nam ......................................................... 18
Figure 14: Skilled birth attendance by income quintiles in Malaysia, the Philippines and Viet Nam ................................................................. 18
Figure 15: Improved drinking water coverage (%) in selected countries in the Region, 2002 ........................................................................ 24
Figure 16: Improved sanitation coverage (%) in selected countries in the Region, 2002 ........................................................................ 25

Tables
Table 1: Infant mortality rate among provinces with a high concentration of ethnic minorities compared with the national averages in the Lao People's Democratic Republic and Viet Nam ........................................................................ 13
Table 2: Literacy rates among men and women from ethnic minorities and the total populations in Cambodia, the Lao People's Democratic Republic and Viet Nam ........................................................................ 22

Boxes
Box 1: The estimated cost of scaling up immunization and treatment for diarrhoea and acute respiratory infections ........................................ 42
Box 2: Microcredit in Bangladesh ................................................................................................................................. 43
Box 3: Preventive interventions in selected low-income countries ................................................................................................. 44
Box 4: Contracting nongovernmental organizations to deliver child health interventions in Cambodia ........................................ 45
Box 5: Primary health care in the Lao People's Democratic Republic ................................................................................................. 46
Box 6: Reducing financial barriers to child health interventions in Yunnan Province, China ........................................................................ 47
Box 7: Outreach strategies can improve the accessibility of child health interventions for the poor ........................................................................ 48
Box 8: Behavioural change in Viet Nam ................................................................................................................................. 48
Box 9: Improved case management in two districts of Tanzania ................................................................................................. 49

List of Abbreviations
ADB Asian Development Bank
ARI Acute respiratory infection
BMI Body mass index
CRC Convention on the Rights of the Child
DALY Disability-adjusted life year
DHS Demographic and health survey
DTP Diphtheria-tetanus-pertussis
EPI Expanded programme on immunization
GAVI Global Alliance for Vaccines and Immunization
IEC Information, education and communication
IMCI Integrated management of childhood illness
IMR Infant mortality rate
LBW Low birth weight
MDG Millennium Development Goal
MMR Maternal mortality ratio
NGO Nongovernmental organization
ORT Oral rehydration therapy
PRSP Poverty Reduction Strategy Paper
USMR Under-five mortality rate
UNDP United Nations Development Programme
UNICEF United Nations Children's Fund
WHO World Health Organization
Foreword

The WHO Western Pacific Region has achieved impressive gains in child survival. But it is becoming increasingly clear that children living in poor households and communities have enjoyed significantly fewer benefits from the numerous proven and cost-effective child health interventions that have been initiated. That fact is manifested in the persistent and growing inequalities in child survival across and within countries in the Region. Such inequalities are not the result of inadequate knowledge or ineffective child health interventions; rather, the strategies employed to deliver those interventions appear to have fallen short of reaching the children and households most in need. Greater efforts are thus required to address the impact that poverty and inequality have on the health of children, thereby reducing inequalities in child survival.

Fortunately, there is a renewed commitment and emphasis on reducing child mortality in the Western Pacific Region. Catalysed by the launch of the United Nations Millennium Development Goals in 2000, the WHO Regional Committee for the Western Pacific, at its fifty-fourth session in September 2003, called on Member States to position child health higher on their political, economic and health agendas. The WHO Regional Office for the Western Pacific was charged with leading the drive towards reducing the under-5 mortality rate in the Region by two thirds, from 1990 to 2015, thereby meeting Millennium Development Goal 4 on child mortality reduction. In response, the WHO Regional Office for the Western Pacific and UNICEF’s Regional Office for East-Asia and Pacific have developed a joint WHO/UNICEF Regional Child Survival Strategy to accelerate efforts to improve child survival and reduce inequities.

Reaching poor or underserved communities with existing life-saving interventions remains one of the biggest challenges in reducing child mortality. The Region is thus seeking to integrate a pro-poor focus into child survival-related programmes. This publication is a step in that direction. Primarily targeting national programme managers and policy-makers working on child survival in countries and areas in the Western Pacific Region, it aims, based on a review of the literature, to increase awareness of the relationship between child health, poverty and equity, and suggests strategies to address those links, with reference to the Region in general and, more particularly, to countries with high child mortality. It also seeks to provide an evidence base for the implementation of actions outlined in the WHO/UNICEF child survival strategy to assist Member States in designing and implementing policies and programmes to improve child survival, with an appropriate focus on poor and underserved areas and groups.

Shigeru Omi, MD, Ph.D.
Regional Director
Executive Summary

The Western Pacific Region has seen remarkable improvement in child survival rates, however, evidence increasingly shows persistent and growing inequalities in child health still exists across countries in the Region. Numerous studies describe how children living in poor households face greater exposure to the risks of ill health. The multiple dimensions of poverty have been found to have a significant negative impact on child survival, including low income and social exclusion; limited educational attainment, particularly among women; inadequate living conditions; and undernutrition. Children residing in poor and vulnerable households thus suffer a disproportionate burden of morbidity.

Although health care appears to be an effective means of reducing inequalities in the burden of childhood disease, evidence increasingly suggests that poor and vulnerable children benefit less from health care interventions than those who are better off. Various studies have found that when children from poor households fall sick, they are less likely to be taken to an appropriate health care provider and less likely to receive quality care than children from non-poor households. Evidence increasingly demonstrates that inequalities in access to health care may arise from a number of financial and non-financial barriers that may delay or prevent poor households from seeking care for their sick children. The cumulative effect of living in poverty is manifested in the higher rates of mortality among poor children than among their better-off counterparts.

Case studies across the Region have found that the costs of seeking health care further impoverish already poor households. Studies have also observed that morbidity in early childhood is associated with lower productivity and other disadvantages in adulthood. Thus, aggregated to the national level, the costs of poor child health may be staggeringly high.

Inequalities in child health do not appear to be the result of inadequate knowledge or ineffective child survival interventions. Rather, mounting evidence shows that a lack of investments in child survival in general, and a lack of focus on addressing those in greatest need in particular, have contributed to the existence of such inequalities. Renewed efforts are thus required to address the impact that poverty and inequality have on children in the Region, building on the experience of strategies that have been successful in reaching poor or underserved children. Often, this calls for a cross-sectoral response to address the multiple determinants of child health that lie beyond the health sector. At the same time, within the health sector, prioritizing child survival interventions that disproportionately benefit poor children in resource allocation, and adopting delivery strategies that aim to increase the accessibility of health care services for poor children, may result in a concrete move towards improving the efficiency and equity of child survival interventions. The ultimate goal is universal coverage for essential life-saving child health interventions to ensure achievement of MDG4, on child mortality reduction.
Introduction
Introduction

Overall, the Western Pacific Region has realized impressive reductions in child mortality. The under-five mortality rate (U5MR) fell from 154 per 1000 live births in 1955-1959 to 48 in 1995-1999.\(^1\) That decline mirrored the worldwide reduction in child deaths to a global average of 83 per 1000 live births in 2000.\(^2\) Yet, an estimated 10.8 million children died worldwide in 2000, and 3.9 million of those deaths occurred in the first 28 days of life.\(^3\) Recent child and neonatal health data from the Western Pacific Region show a yearly average of approximately 1.02 million deaths from 2000-2003, with 3000 children under five in the Region dying every day.\(^4,5\)

Global and regional averages often mask large variations in child health outcomes between countries, with the burden of child mortality weighing more heavily on developing countries in the Region (Figure 1). Six countries in the Western Pacific Region – Cambodia, China, the Lao People’s Democratic Republic, Papua New Guinea, the Philippines and Viet Nam – account for over 75% of child deaths.\(^6\) Notably, these countries are classified as low-income economies, with the exception of China and the Philippines, which are categorized as lower-middle income economies.\(^7\) Considering a more comprehensive measure of development, the Human Development Indices of these countries dominate the lower ranks of countries with middle human development.\(^8\) As many as 800 000 children under five will continue to die every year in these countries if current trends continue.\(^9\)

---

**Figure 1: Under-five mortality rate per 1000 live births in selected countries in the Western Pacific Region (data 1999-2005) ranked according to World Bank income groupings**

Source: Country Health Information Profiles (CHIPS). Manila, WHO Regional Office for the Western Pacific, 2006. (http://www.wpro.who.int/countries/Countries.htm)

---

* High-income economies (GNI per capita>US$ 10 726)
** Upper-middle income economies (US$ 3466 – 10 725)
*** Lower-middle income economies (US$ 876 – 3465)
**** Low-income economies (US$ 875 or <)
It is becoming increasingly apparent that variations in child survival between countries in the Region are reproduced within countries as well: children living in poor households and communities seem to suffer higher rates of morbidity and mortality than their better-off peers. Importantly, evidence suggests that differences in U5MR between and within some countries may even be widening. For example, in the last decade, the rate of child mortality increased in Cambodia and showed little change in Papua New Guinea, Kiribati and the Philippines (see Figure 2). Based on the published Demographic Health Survey (DHS) and National Statistics Office data, large disparities in under-five mortality within countries can be noted, as shown in Figure 3.

Traditionally, poverty has been defined in terms of low income and consumption. However, more recently, poverty has been conceptualized as being multidimensional. In the discussion that follows, poverty is considered to encompass, not just low income, but also lack of access to education, skills, services and resources; vulnerability; insecurity; voicelessness; and powerlessness. An important aspect of poverty is that it often overlaps with and reinforces other types of social exclusion, such as those based on race, ethnicity, geographical location (urban/rural) and gender.

Growing international commitment to tackling all dimensions of poverty has led to a greater concern for the health of the poor. Health is increasingly understood to play a central role in human development and poverty reduction. That belief is supported by a growing body of evidence on the interrelationship between poverty and health at the household, community and national levels. The poor consistently identify good health as central to their survival, and vulnerability to the impoverishing effects of ill health as a key dimension of their poverty. Evidence is also mounting on the strong linkages between a lower burden of disease and increased economic growth and poverty reduction at the level of country or society. The Commission on Macroeconomics and Health, for example, called attention to the powerful linkages between health, economic development and poverty reduction.
The universal enjoyment of good health is also acknowledged as a fundamental human right, as embodied in the Convention on the Rights of the Child (CRC).

The interrelationship between health, human development and poverty reduction is specifically reflected in the United Nations Millennium Development Goals (MDG): the first seven goals, of which three aim to improve health outcomes, are mutually reinforcing and are directed at reducing the multiple dimensions of poverty. Thus, progress towards reaching the fourth goal, which aims to reduce child mortality by reducing the under-five mortality rate by two-thirds between 1990 and 2015, is contingent on progress towards reaching the other goals and targets, specifically those for poverty reduction, maternal mortality reduction, increased gender equality and improved access to safe drinking water and sanitation. Recent estimates by the World Bank suggest, however, that only 17% of the population in East Asia and the Pacific region reside in countries that are on track towards reaching the goal for under-five mortality, and progress has been slowest in the poorest communities. Concerted effort is thus required to ensure that child health interventions reach those children most in need.
2

Poverty and child health
Poverty and child health

The interrelationship between poverty and health can be represented by two reinforcing cycles:

- **The vicious cycle:**
  Poverty breeds ill health.
  Ill health causes poverty.

- **The virtuous cycle:**
  Higher income is linked to good health.
  Good health is linked to higher income and welfare.

Whether at the household, community or national level, poverty is seen to be a major determinant of ill health. Children are especially vulnerable to the cumulative adverse effects of living in poverty. Born to women who are often undernourished and in ill health themselves, infants in poor and marginalized households are typically weaker than their better-off peers, whose mothers are more likely to be better nourished and to have received appropriate antenatal care. Infants from poor households have lower survival rates and may die in the first weeks or months of life. Should they survive infancy, poor children face greater exposure to the risks of ill health by virtue of growing up in poor households, and are therefore more likely to fall sick than children born into wealthier families.

Although appropriate health care is an effective means of addressing inequalities in the burden of childhood morbidity, evidence suggests that, once sick, poor children typically have lower access to quality health care services than non-poor children. Even where health services are available, the costs of seeking health care may be more than a poor family can bear, thereby delaying or preventing them from seeking care for their sick children. Such a situation often results in a higher incidence of life-threatening disease and mortality among poor and marginalized children than among their non-poor peers. The costs of seeking health care may also drive poor children and their families into greater poverty. Ill health in childhood has been shown to have long-term repercussions on growth and development, which may result in chronic illness, lower productivity and other disadvantages in adulthood. Thus, periods of ill health in childhood may lead to a continuing cycle of poverty and ill health.

On the other hand, economic growth translates into better health. In China, Thailand and Viet Nam, the proportion of undernourished people declined through the 1990s, with sustained economic growth exceeding 7% in most years, low inflation and unemployment, and stable exchange rates. At the same time, declining fertility releases women from child-rearing activities and enables them to enter the labour force. With higher incomes, they are able to contribute to household education, nutrition and, consequently, good health.
3

Inequalities in childhood morbidity

reaching the POOR CHALLENGES FOR CHILD HEALTH IN THE WESTERN PACIFIC REGION
Inequalities in childhood morbidity

Within countries, children from poor households and communities typically suffer a higher burden of disease and are often sicker than children from non-poor households, as seen in Figure 4 on the prevalence of diarrhoea and ARI among children by income quintile in the Philippines in 1998. In Viet Nam, children living in poor rural areas suffer a burden of disease, as measured in disability-adjusted life years (DALYs) per 1000, that is estimated to be 27 times greater than that experienced by children residing in urban areas. In Cambodia, the proportion of children under five years of age with diarrhoea in 2000 was found to be higher among those whose mothers had received no education (18.8%) than among those whose mothers had benefited from secondary level or higher education (16.1%).

3.1 Inequalities in childhood morbidity between countries

Undernutrition is a contributing factor in around 50% of childhood deaths in developing countries. More specifically, as much as 50%-70% of the burden of diarrhoeal diseases, measles, malaria and lower respiratory infections in childhood can be attributed to undernutrition. Even mild undernutrition places children at risk. Some of the poorest countries in the Region face the highest rates of undernutrition and severe underweight among children under five years of age (see Figure 5). Analysis of the 2000 Demographic and Health Survey (DHS) in Cambodia reveals that, compared with an international scale, 45% of children were stunted, 45% underweight and 15% too thin for their height. Similarly, high rates of stunting are observed in Papua New Guinea, where more than 40% of children under five are stunted. Importantly, UNICEF reports that, over the past decade, the prevalence of undernutrition among children in Cambodia and Mongolia appears to have increased, while in the Lao People’s Democratic Republic it has decreased only slightly.

Deficiencies in micronutrients are likewise common among young children in developing countries in the Western Pacific Region. Recent surveys in Cambodia and the Lao People’s Democratic Republic show that the rates of anaemia among children younger than five years are 63% and 46%, respectively. The National Health Survey 2000-2001 for the Lao People’s Democratic Republic found severe vitamin A deficiency among 44.7% of children under five. High rates of micronutrient deficiencies have also been found in some Pacific island countries. For example, in the Marshall Islands, a community-based survey, conducted in 1994-1995 and...
Involving children from one to five years of age from 10 atolls, found that 55% of the children were vitamin-A-deficient and the prevalences of anaemia (haemoglobin <110g/L) and iron deficiency (serum ferritin <12 microg/L) were 36.4% and 53.5%, respectively. In the Federated States of Micronesia, an analysis of 1994 Pohnpei Child Health Study data concluded that 33% of children of 24-47 months of age were anaemic, 44% were moderately vitamin-A-deficient and 7% were severely vitamin-A-deficient.

3.2 Inequalities in childhood morbidity within countries

Within countries, children from poor households and communities suffer disproportionately from undernutrition. For example, in 1997, the prevalence of undernutrition among children from the poorest quintile in Viet Nam was calculated to be 160% higher than that among children from the richest quintile. Other dimensions of household poverty, such as low levels of parental education, also appear to be correlated with lower nutritional status among children. Vietnamese children whose mothers are illiterate have been found to have higher rates of underweight (40%) than children whose mothers have completed higher education (10%). In Cambodia, a household survey estimated that, in 2000, 51% of children of mothers with no education were stunted, compared with 36% of children of mothers with a secondary education or higher. The results of a cross-sectional survey conducted from September 1996 to January 1997 in the Gulf Province of Papua New Guinea reveal a strong association between better childhood nutritional status among children below five years of age and maternal education and language, as measured by the ability to speak pidgin and/or English. Finally, a study examining nutritional status among children under five attending an urban clinic in Lae, Morobe Province, Papua New Guinea, observed better weight-for-age among those children whose fathers were in paid employment and whose families lived in professionally built housing than among those whose fathers were unemployed and whose families lived in self-built housing.

Inequalities in childhood undernutrition are likewise observed between urban and rural areas in many countries in the Region. A longitudinal community-based study carried out in Cebu in the Philippines from 1983 to 1995 found that, by 12 months of age, the prevalence of stunting among the study population was 37.7% in rural areas and 35.1% in urban areas. By 24 months of age, the rate of stunting had increased to 68.8% in rural areas and 61.9% in urban, and the rural-urban gap had widened. Children of landless Filipino agricultural workers and small farmers were found to be at greatest risk of underweight in a study undertaken in 1990. While

![Figure 5: Proportion of under-fives suffering from underweight (< -2 SD weight/age) in selected countries in the Region (data from 1997-2004) ranked by World Bank income groupings](http://www.wpro.who.int/countries/Countries.htm)
improved nutrition led to declines in the percentage of underweight children in China from 19% to 7.88% and in stunting from 33% to 14.3% between 1990 to 2002, more than 40% of children in western China were mild to moderately stunted. Also, the prevalence of undernutrition in rural areas is three to four times higher than in the urban areas.

Higher rates of undernutrition have also been observed among ethnic minorities in the Region. In Viet Nam, ethnic minorities experience a rate of undernutrition that is 15% greater than that in the Kinh majority. A study carried out in 1999 to estimate the prevalence of protein-energy undernutrition among children under seven years of age in four economically disadvantaged rural minority communities in Yunnan Province in the southeast of China reported rates of underweight and stunting above the national average. The study also observed an increased risk of stunting among children belonging to the Miao, Yi and Hani ethnic minorities compared with those from the Han majority.

Although undernutrition in the Western Pacific Region is steadily decreasing, progress is unevenly distributed. In Viet Nam, for example, the decline in child undernutrition from 1992 to 1997 was reported to be greatest among the richest income quintile. Using data from the 1992-1993 and 1997-1998 Viet Nam Living Standards Surveys, a second study suggests that, not only was the rate of stunting and underweight higher among children from poor households, but that children from poor households had experienced a smaller rate of reduction in stunting and underweight between 1992-1993 and 1997-1998 than those from households above or at the poverty line. Similar inequalities were reported for households in rural areas and among ethnic minorities.
4

Inequalities in childhood mortality
Inequalities in childhood mortality

The main causes of under-five mortality in high-mortality areas (U5M>50 per 1000 live births) of the Western Pacific Region are shown in Figure 6. Acute lower respiratory infections are the single most important cause of death, accounting for 20% of deaths among children under five years of age, with diarrhoea accounting for 18% and measles for 2.4%. Malaria does not account for a large share of total child deaths in the Region, but is a cause of high child mortality in some countries, such as the Lao People’s Democratic Republic, Papua New Guinea and some provinces of Cambodia. HIV/AIDS is an emerging problem and is related to about 1% of mortality among children under five. Neonatal deaths account for 32% of deaths.46

The cumulative effect of a childhood spent in persistent poverty is manifested in lower survival rates among children living in poor households, as Figure 7 shows. The risk of death in childhood is estimated to be 10 times higher among the poorest 20% of the global population than among the richest 20%.47 Data from the 2003 DHS in the Philippines show that the infant mortality rate (IMR) was 2.3 times higher among households in the poorest quintile than that among those from the richest quintile, while the under-five mortality rate (U5MR) was 2.7 times higher.48 In Viet Nam in 2000, the mortality rate among children whose mothers had received no education was found to be double that of children whose mothers had completed higher secondary education.49 An inverse association between infant mortality and maternal education has also been observed in Cambodia and the Philippines. The IMR among children whose mothers had received no education was 103 per 1000 live births in Cambodia in 2000, while children whose mothers had completed secondary education or higher experienced an IMR of 60 per 1000 live births.49 Data from the 2003 DHS in the Philippines show that the IMR among children with mothers who had received a college education was 15, compared to 65 per 1000 live births for mothers with no education.50

In other countries in the Region, mortality rates likewise tend to be higher among children residing in rural communities than among children in better-off urban areas. For example, in 1999, the average IMR in the poorer western provinces of China was 26.1 per 1000 live births in comparison with 17.1 in the wealthier eastern provinces. U5MR mirrored this trend, reaching, on average, a high of 46.9 per 1000 live births in the western provinces.
and an average of only 20.9 in the eastern provinces.  

Similarly, in the 1999 Viet Nam Population Census, the IMR in poor mountainous provinces in the north and central regions was estimated to be up to eight times higher than that in large urban centres, such as Ho Chi Minh City.  

In 2003, the Asian Development Bank reported that the IMR was 2.5 times higher in rural than in urban areas of Papua New Guinea.  

Data from the 2003 DHS in the Philippines reveal that the IMR was 36 per 1000 live births and the U5MR was 52 among children living in rural areas, while their urban counterparts experienced an IMR of 24 and an U5MR of 30.

Although disaggregated data are scarce, rates of child survival in the Region are also generally lower among marginalized communities, such as ethnic minorities, than among majority ethnic groups. Provinces with a high concentration of ethnic minorities in the Lao People’s Democratic Republic and Viet Nam, for example, generally experience poorer child health than the national average, as seen in Table 1. More specifically, the U5MR among ethnic minorities in Viet Nam has been estimated to be higher than that among the majority Kinh. 

In the Lao People’s Democratic Republic, the national IMR is 70, while in Luang Prabang province in the Highlands it is close to 90.

Recent evidence from a number of countries in the Western Pacific Region suggests that inequalities in child mortality may be increasing. Between 1980 and 1998, the IMR deteriorated in over half of the provinces in Papua New Guinea. 

The decline in child survival in Papua New Guinea has been attributed to the collapse of the health system following law and order problems. Growing regional disparities have likewise been observed in Viet Nam. In the early 1990s, the IMR in rural areas was 80% greater than that in urban areas. However, due to a more rapid decline in the IMR in urban areas, the urban-rural gap had increased to 125% by 1998. 

Widening inequalities between the survival prospects of poor and non-poor children in Viet Nam have also been observed, and have been attributed to a reduction in the coverage of some health care services among the poor. In China, evidence indicates that the urban-rural IMR ratio increased from 1.67 in 1981 to 1.75 in 1990. Based on a population sampling survey conducted in 1995, the ratio may have increased to 2.1.
Inequalities in access to health care services
Inequalities in access to health care services

5.1 Inverse care law and the fallacy of equitable impact

Providing access to appropriate health care is an effective means of reducing the burden of disease among poor children. For example, a positive relationship has been observed between the availability of child health services and a reduction in child mortality in Viet Nam. Despite the greater risk of ill health and higher rates of morbidity poorer children face compared with their wealthier counterparts, evidence suggests that they benefit less from health care interventions. The lower access to health care services by poorer households is known as the inverse care law, which states, “The availability of good medical care tends to vary inversely with the need for it in the population served.” Studies show that, once sick, children from poor families are less likely to be taken to an appropriate health care provider or facility, such as a village health worker, a dispensary, a health centre, a hospital or a private doctor, than children from non-poor families.

Since childhood diseases are primarily concentrated among poor populations, health interventions targeting such conditions are often assumed to disproportionately benefit the poor. Gwatkin terms this the ‘fallacy of equitable impact’: the assumption that interventions against conditions that are concentrated primarily among the poor can be expected to benefit primarily the poor victims of those conditions. However, it is becoming increasingly apparent that effective child health interventions, such as immunization, deliveries attended by medically trained personnel and antenatal visits, may not be reaching those most in need. A study of over 40 countries reveals that child health interventions thought to be pro-poor, such as oral rehydration therapy (ORT) and immunization, have generally achieved higher rates of coverage among wealthier children than among poor children. Other health services, such as attended deliveries, exhibit even larger inequalities in coverage between poor and non-poor households.

The inverse care law and the fallacy of equitable impact are revealed in evidence on the proportion of children with diarrhoea and ARI who are taken to health facilities in the Western Pacific Region. The 2003 DHS from the Philippines shows that 46.3% of Filipino children with ARI and/or fever in the two weeks preceding the survey were taken to a health facility or health care provider. However, children whose mothers had a higher level of education or belonged to a higher asset index quartile were more likely to seek care than their counterparts with lower income or education. Inequalities in access to health care between poor and non-poor children with ARI in the Philippines were also observed in the analysis of 1998 DHS data, as seen in Figure 8. This analysis suggests that, in the Philippines, children in poor households are less likely to be
taken to an appropriate health care provider than children from better-off households, although the prevalence of ARI is higher among poor children. A similar trend is observed in Viet Nam, where children from wealthier families seek care 45% more frequently than children from the poorest group. In Cambodia, the proportion of children with diarrhoea who consulted a health care facility in 2000 was found to be positively associated with maternal education. On average, only 20.1% of children with diarrhoea whose mothers had received no education sought care in a medical facility, in comparison with 31.1% of those whose mothers had received a secondary education or higher.

A number of studies have shown the generally incomplete coverage of successful preventive and curative child health interventions. Inequalities in access to cost-effective and proven interventions suggest that such initiatives have been unable to reach poor and vulnerable populations in particular. This is reflected in disparities in immunization coverage and access to antenatal care and skilled delivery assistance between poor and non-poor households, between rural and urban areas, and among ethnic minorities in the Region.

5.2 Inequalities in access to the expanded programme on immunization

The expanded programme on immunization (EPI), for example, has achieved high coverage rates in many countries in the Western Pacific Region. However, inequalities in coverage across provinces, communities and households still exist. Figure 9 presents the proportion of children fully vaccinated by income quintile in Cambodia, the Philippines and Viet Nam. Similarly, Figures 10 and 11 reveal inequalities by income quintiles in the status of diphtheria-tetanus-pertussis (DTP3) immunization and measles immunization in three countries in the Region with widely varying per capita incomes, using data from various surveys. Again, although immunization coverage in Papua New Guinea is generally low, coverage in the Western Provinces (27%) is less than half that achieved nationwide (60%), according to the National Health Plan 2001-2010. Further, the proportion of Cambodian children aged 12-23 months who received measles vaccinations in 2000 ranged from 45.6% among those whose mothers had received no education to 71.1% among those whose mothers had benefited from a secondary education or higher. Notably, the coverage of measles vaccination appeared to be the lowest among poor girl children, at only 35%.

5.3 Inequalities in access to antenatal care and skilled birth assistance

Antenatal care and skilled assistance at birth increase the likelihood that an infant will be born healthy. A recent meta-analysis of infant and child mortality and child
nutrition found that the likelihood of survival is greater among infants and children whose mothers receive antenatal care, either from a physician or midwife. The study also found that infants born in health facilities are less likely to die than those born at home. Yet, coverage of antenatal care in the Region varies widely. In 2003, UNICEF reported that, in developing countries in the Region, the coverage of antenatal care ranged from lows of 27% in the Lao People’s Democratic Republic and 38% in Cambodia to a high of 97% in Mongolia.

In general, wealthier households and communities have greater access to skilled health personnel than do poor households and communities (see Figure 12). The proportion of women from the poorest income quintile who received at least one antenatal care consultation from a medically trained person was found to be 71.5% in the Philippines and 78.5% in Viet Nam, in comparison with over 97% of women from the richest income quintile in both countries. The association of number of antenatal visits to skilled birth assistance was also analysed. In the Philippines, among women with less than four antenatal visits, only 33.9% had skilled assistance during delivery, compared with as many as 72.3% among those who had four or more antenatal visits. Inequalities in deliveries attended by medically trained personnel were even starker: only 21.2% of births among women from the poorest income quintile in the Philippines were assisted by a doctor, nurse or trained midwife, while over 91% of women from the richest income quintile received such assistance. Figure 12 shows similar findings in Cambodia and Viet Nam. Conversely, over 90% of women from the poorest quintile in the Philippines gave birth at home, while a mere 20% of those from the richest quintile chose home births. Similarly, women in the richest income quintile in Viet Nam were over 150% more likely to have deliveries in health facilities than those from the poorest quintile.
Similarly, Figures 13 and 14 reveal inequalities by income quintile in the proportion of women receiving skilled antenatal care and skilled attendance during delivery in Malaysia, the Philippines and Viet Nam, which have widely varying per capita incomes, using data from various surveys.
Poverty-related determinants of child health
Poverty-related determinants of child health

Poverty is multidimensional and encompasses many determinants of child health. The numerous dimensions of poverty, such as low household income and social exclusion, low levels of maternal education, inadequate living conditions and undernutrition, can increase the risk of children falling ill. These determinants may be categorized into two broad sets: those that relate to the macro environment and those that relate to micro environment, that is community-level and household-level conditions and behaviour. Such factors reinforce one another in crucial ways and, together, typically lead to overall worse health outcomes among poor children.

6.1 Macro-level factors

a. Income

Low income is generally associated with worse health outcomes among children at the national, regional and household levels. Estimates suggest that as much as 70% of the variance in infant mortality observed across and within countries can be attributed to differences in income. As discussed above, developing countries in the Western Pacific Region bear a higher burden of child mortality than developed countries. Masked by national averages, the survival prospects of children living in marginalized provinces and regions within countries are often worse than those living in better-off provinces and regions. For example, about 37% of the variation in child undernutrition across provinces in Viet Nam can be explained by differences in provincial poverty levels. The most recent household survey conducted in Viet Nam in 2004 shows that poverty has decreased to less than half of that in 1993. However, extreme poverty persists in remote areas and those dominated by ethnic minorities. Despite overall economic growth, income disparities between geographical areas and ethnic groups are widening.

Studies from the Philippines and Viet Nam also reveal a positive association between income and child survival at the household level. A study seeking to unravel the underlying causes of childhood survival in Cebu, in the Philippines, found that household income was the most important contributing factor to inequalities in child survival. In the Philippines 2003 DHS, 67% of women reported obtaining money for treatment as the main constraint in accessing health care. Women in the poorest income quintile and those not paid in cash were more likely to face this constraint. A study analysing Viet Nam Living Standards Survey (VLSS) data from 1992-1993 and 1997-1998 largely attributes increasing inequalities in child undernutrition from 1992-1993 to 1997-1998 to rising inequalities in household consumption. In addition, the 2004 Viet Nam Household Living Standards Survey shows that undernutrition remains high, with 23% of the population being currently...
or potentially food insecure. Undernutrition is higher in areas dominated by ethnic minorities and among the rural poor. The poorest income quintile, which includes almost all ethnic minority children, makes up 30% of all undernourished children. The relationship between household income and child survival is further substantiated by a recent meta-analysis that combines the results of studies of infant and child mortality and child nutrition utilizing household survey data. Analysing the results of 38 studies on infant and child mortality and 35 studies on child nutrition from countries in Africa, Asia, Europe and Central and South America, the study concludes that household income is a powerful determinant of child health and child nutrition outcomes.

The association between low income and poorer child survival prospects at the household level operates through a number of pathways: for example, low income households are typically also disadvantaged with regard to other determinants of child health, such as maternal education and nutritional outcomes. In developing countries, higher income is associated with improved infant and young child feeding practices, better sanitation practices and more frequent and intense use of modern health care services. Conversely, women from poor households are more likely to experience early child-bearing, short birth spacing and high parity births, all of which have been identified as common factors for risky births.

b. Education

Education is highly correlated with income. Recent evidence from Viet Nam, for example, suggests that low educational levels are increasingly concentrated among the poor. In turn, educational achievement is positively associated with better health outcomes. UNICEF reports that children who go to school are more likely to learn how to stay healthy, such as by protecting themselves from disease. In poor households, knowledge can make the difference between taking advantage of piped water to wash hands or not doing so. In this manner, piped water has been found to have a larger impact on the prevalence of diarrhoea among children in better-off and educated households in India than among children in poorer, less-educated households.

In particular, educating girls is understood to have a far-reaching impact on human development in general, and on health specifically. A number of studies from countries in the Region reveal a significant positive association between increased levels of maternal education, measured by literacy or years of schooling, and improved child survival. For example, a study from Cebu, in the Philippines, observed that the probability of a child surviving beyond his or her first birthday increases significantly with the level of the mother’s education. Also in
the Philippines, the likelihood of a child receiving the six vaccines is positively associated with the mother’s education. As many as 83% of children in the study whose mothers had completed college or a higher education had received all the basic vaccines, compared with less than 70% of children whose mothers had not reached the college level. The IMR for children whose mothers had received no education was 65 deaths per 1000 live births, compared with 15 for children whose mothers had a college or higher degree. The U5MR was also higher, at 105, among children of mothers with no education, compared with 18 among those whose mothers had a college education or higher. A cross-sectional survey conducted in 1996-1997 in the Gulf Province of Papua New Guinea, an area characterized by limited cash income and low literacy levels, revealed a strong association between maternal education and child nutritional status. The impact of women’s education on the health of their children is further substantiated by a study of 65 countries, including China, the Lao People’s Democratic Republic, Malaysia, the Philippines and Viet Nam. Analysing nationally representative household survey-based underweight prevalence data, the study concludes that improvements in women’s education accounted for 44% of the total reduction in the prevalence of child undernutrition from 1970-1995.

The positive impact of girls’ education has been shown to transcend generations. It results in better health outcomes among women, their children and eventually their grandchildren. Evidence suggests that women with higher levels of education are more likely to seek care during pregnancy and childbirth, to have improved nutrition and to increase spacing between births. Using retrospective data covering Peninsular Malaysia from 1950-1998, Panis and Lillard explain that improved education had a strong positive effect on a woman’s decision to obtain antenatal care and to deliver in a clinic or hospital, which were found to improve the probability of child survival.

However, education in general, and among girls and women in particular, is unevenly distributed within countries in the Region. Table 2 presents literacy rates among men and women from ethnic minorities and the general population in Cambodia, the Lao People’s Democratic Republic and Viet Nam.

c. Social exclusion

Social exclusion, such as that based on gender, race, ethnicity and geographical location (urban/rural), appears to be an important determinant of child survival. Throughout the Region, poor populations are concentrated in rural areas, which are typically underserved and experience worse health outcomes. Children of families
living in rural areas and in urban slums have a greater risk of dying in childhood than do children living in urban areas. The social exclusion of ethnic minorities in the Region is reflected in their concentration in rural, remote and isolated areas and their overrepresentation among the poor. In the Philippines, for example, the incidence of poverty is highest in the Autonomous Region of Muslim Mindanao. Correspondingly, the U5MR in that region is 72, which is the highest among all the regions and much higher than the national average of 42. In Viet Nam, although ethnic minorities account for 14% of the total population, they represented 29% of the population living below the national poverty line in 1998. Furthermore, ethnic minorities in Viet Nam are isolated (an estimated 75% live in mountainous areas), with limited participation in government structures and public life, low levels of education and poor health outcomes. As a result of social exclusion, 60% of children in the 42 countries accounting for over 90% of the global burden of child mortality do not receive antibiotic treatment for pneumonia, 33% do not receive vitamin A, and 70% of those with malaria do not receive treatment.

6.2 Micro-level (community and household) factors

a. Living conditions

Living conditions for poor children are often characterized by inadequate housing and overcrowded, unsafe and unhygienic environments. Such environments place children at greater risk of illness. Poor households often use coal or biomass fuels for cooking and heating, which, when combined with inadequate ventilation, produce indoor air pollution. A recent survey in Mongolia revealed a direct correlation between ger heating and the incidence of respiratory disease among children. Studies have also observed an association between indoor air pollution and an increased risk of maternal death and low birth weight. In addition, urban slum dwellers often have to contend with polluted living and working environments. Poorer households are typically located in communities that are underserved, have limited or no infrastructure and may be prone to flooding. Community-level factors are important determinants of child survival.

While recognizing the importance of community norms, the discussion here focuses on access to safe drinking water and improved sanitation. Poor children are at greater risk of waterborne disease than non-poor children because they typically live in households that are less likely to have access to clean water and sanitation. WHO estimates that ingestion of unsafe water, inadequate water for hygiene and lack of sanitation account for 88% of the 1.8 million deaths from diarrhoeal diseases annually. An estimated 90% of those deaths occur among children under five, generally in developing countries. Within the Western Pacific Region, however, since most cases of diarrhoea are treated at home and are not reported by health facilities, it is challenging to determine whether estimates of the burden of disease attributable to unsafe water and sanitation are accurate.
b. Access to safe drinking water

Three-quarters of the world’s poor live in Asia, with one of every three people in the region lacking a safe source of water supply. An estimated 1.7 million children die each year because of unsafe water, and poor sanitation and hygiene, with 9 out of 10 of these deaths occurring in children, primarily through infectious diarrhoea.

Contaminated drinking water is a problem even in some capital cities in the Region, but more so in rural areas, where water is not treated. Despite its known benefits, coverage of improved drinking water remains incomplete in the Region. Some of the lowest coverage rates are found in Cambodia (34%), Papua New Guinea (39%), the Lao People’s Democratic Republic (43%), Mongolia (60%) and Kiribati (64%). Inequities in access to improved drinking water also persist within countries across the Region. For example, the proportion of households with access to safe water in the Philippines ranges from 97% on the island of Luzon to just 29% in the Autonomous Region of Muslim Mindanao. Rural-urban inequalities in the Region are particularly striking. For example, 85% of the urban population in Vanuatu has access to improved water, compared with only 52% of the rural population. In Viet Nam, the proportion of the population without access to safe drinking water is only 1.2% in Ho Chi Minh City, but it rises to as high as 86.6% in the province of Dong Thap.

Figure 15 shows the coverage of improved drinking water sources in rural and urban areas in selected countries in the Region.

![Figure 15: Improved drinking water coverage (%) in selected countries in the Region, 2002](image-url)

Although improved drinking water coverage is generally higher in urban than rural areas, urban poor communities face particular constraints in accessing safe drinking water. A 1995 survey in the Philippines showed that 72% of urban slum dwellers had access to piped water or tube wells. However, improper handling, transportation and storage contaminated 36% of the water at point of consumption, in comparison with 17% contamination at source. In 2000, poor households in the Philippines were found, on average, to be allocating a greater proportion of their monthly expenditure to vended water (9%) than wealthier households (5%).

c. Access to adequate sanitation

In many countries in the Western Pacific Region, the coverage of improved sanitation is even lower than that achieved for improved drinking water. Four countries in the Region—Cambodia, the Lao People’s Democratic Republic, the Federated States
of Micronesia and Solomon Islands—rank among the 27 countries worldwide where coverage of improved sanitation was one-third or less in 2002. Urban-rural inequalities in the coverage of improved sanitation facilities are especially stark, as seen in Figure 16. Significant differences in the coverage of improved sanitation between rural areas/outer islands and urban areas have been found among many Pacific island countries. In Solomon Islands, for example, improved sanitation facilities reach 98% of the urban population, compared with only 18% of the rural population. Importantly, the coverage of improved sanitation among the Pacific islands is below that required to meet the MDG sanitation target.

**d. Effect of education on coverage of safe drinking water and sanitation**

Inequalities in the coverage of improved drinking water and sanitation in the Region typically operate to the disadvantage of poor households. Lower levels of education and knowledge among poorer households, particularly among mothers, may further exacerbate the impact of such inequalities on the health of poor children. Limited education and knowledge may prevent caregivers from practising proper hygiene and making optimal use of available water and sanitation. Estimates suggest that improved hand washing might reduce the number of diarrhoeal cases globally by up to 35%. Women with some formal education are more likely to adopt improved sanitation practices. The precise mechanisms by which health depends on maternal education are unknown, but it is plausible that the adoption of hygienic practices is important. A 1990 study in the Philippines showed that the effect of maternal education on overall infant mortality depended on the source of drinking water and the availability of toilets, whereas its effect on child mortality depended on the availability of household income and toilets. Among disadvantaged groups, even where mothers were highly educated but had low incomes or lived in unsanitary environments, children were likely to be exposed to higher risks of infant and child mortality. Having a college education was not found be sufficient, unless the education led to higher income.

**e. Undernutrition**

Hunger and undernutrition are closely associated with poverty. Undernutrition is estimated to contribute to 50% of child deaths. Although the risk is present across all stages of the life cycle, undernutrition in infancy and early childhood are of special concern, as its effects on human development accumulate. Improved

---

**Figure 16: Improved sanitation coverage (%) in selected countries in the Region, 2002**

nutritional status from conception to the first two years of life reduces private and public health care expenditures throughout the life cycle. Undernutrition encompasses deficiencies, not just in protein-energy, but also in micronutrients, such as iron, vitamin A, iodine and zinc in particular, which are essential for the health and development of children.

Gender inequality is often manifested in a greater risk of undernutrition among girls than boys. Although much research on gender inequalities in nutritional status originates from South Asia, there is some evidence to suggest that gender inequalities occur in the Western Pacific Region as well. In Viet Nam, a greater percentage of women than men suffer from second- and third-degree chronic energy deficiency, signifying that they have been subject to chronic undernutrition. A small study in Preah Vihear, Cambodia, also showed that feeding practices differ for girls and boys, leading to higher rates of undernutrition among girls.

A review of studies exploring the relationship between undernutrition and child mortality finds that undernutrition is strongly associated with an increased risk of mortality from diarrhoea and ARI, including pneumonia. Data from the longitudinal study of children conducted in 1988-1991 in Cebu, in the Philippines, reveal that nutritional status, as measured by weight-for-age, is a significant risk factor for both acute lower respiratory infections and diarrhoea mortality in the first two years of life. Even when better nutrition is achieved later in life, the effects of undernutrition in childhood may never be overcome and may in fact be transmitted across generations. An underweight girl is more likely to grow into a stunted adolescent and stunted woman, who is more likely to have low-birth-weight (LBW) babies. Recent evidence from South Asia also suggests a link between intrauterine growth retardation (leading to low birth weight) and chronic diseases in adulthood.

f. Low birth weight

For many children from poor families, undernutrition begins in utero, often leading to low weight at birth. LBW is commonly attributed to short gestation and/or intra-uterine growth retardation. However, the causes are complex and are commonly the result of poverty. Poverty and gender inequality impinge on the health and nutritional status of women, which has been found to be a key contributing factor to LBW. In Cambodia, the rate of undernutrition (defined as BMI<18.5 kg/m²) was found to be higher among women from the poorest income quintile (24%) than among women from the richest income quintile (17%) in 2000. Evidence shows that women living in rural areas of Mongolia are more likely to give birth to LBW babies than are women in urban areas. This is attributed to their relatively more difficult living and working conditions. LBW babies face a higher risk of disease and a greater probability of dying in the neonatal period or in infancy than babies with normal birth weight. Studies have found that, should LBW babies reach childhood, they are more likely than their peers to experience cognitive impairment, which may
never be fully redressed later in life. They also tend to be smaller (more stunted) and to face a higher burden of disease throughout childhood and into adulthood.

g. Breastfeeding and other feeding practices

Evidence shows that breastfeeding offers a protective effect against undernutrition that is strongest in the first year of life and has been observed to be especially successful among the poor. WHO recommends exclusive breastfeeding for the first six months and continued up to two years and beyond. Yet, the proportion of infants less than four months old in Pacific island countries who enjoy the benefits of exclusive breastfeeding varies widely, from 19% in Cook Islands to 65% in Solomon Islands. Only an estimated 12% of infants below six months of age in Cambodia, 23% in the Lao People’s Democratic Republic and 37% in the Philippines are exclusively breastfed.

After six months of age, infants should receive nutritious complementary foods of appropriate consistency and sufficient quality to meet the nutritional demands of growth. However, infant feeding practices in the Western Pacific Region are often inadequate. In Viet Nam, a National Institute of Nutrition review found suboptimal infant feeding practices. Specifically, the study found a prevalence of early weaning practices and the early introduction of complementary foods, generally customary foods with limited nutritional value. Similarly, growth faltering among children in Papua New Guinea has been attributed to inadequate weaning practices, the late introduction of solid foods, and the inadequacy of supplementary foods. Further evidence shows that complementary feeding varies with socioeconomic status, the availability of proper foods and mothers’ knowledge of how, what and when to feed their children.

A study using data from a longitudinal survey of nearly 10 000 children in Cebu, in the Philippines, examined the effects of lack of breastfeeding on child mortality among children under two years of age. Not breastfeeding had a greater effect on mortality from diarrhoea than on mortality due to ARI. The study also revealed that the risk of mortality associated with not breastfeeding was greater for LBW infants whose mothers had little formal education. After six months, the protective effect of breastfeeding dropped dramatically among all children.

h. Intrahousehold income distribution and decision-making

Evidence also suggests that the intrahousehold distribution of and control over income has an important impact on child health outcomes. More specifically, higher levels of income have been found to have a greater impact on the health of children in households where women exert a greater degree of control over household income and participate more actively in household decision-making than in those where women’s decision-making power is weak. Much evidence shows that, when women have
a say in the allocation of household resources, they tend to allocate more resources to the health and nutrition of children and to discriminate less against girls. These findings point to an association between the status of women within their households and communities and child health outcomes. This association is corroborated by a recent study that explored the relationship between women’s status and the nutritional status of children under three years of age using DHS data from 36 developing countries in Latin America and the Caribbean, South Asia and sub-Saharan Africa. The study used two measures of women’s status, defined as their power relative to men (women’s decision-making power relative to that of their male partners), and the degree of equality between men and women in their community. The results clearly demonstrate that improvements in these two measures of women’s status are significantly correlated with improved nutritional status among children under three years of age. The study explains that this is because women with higher status have better nutrition, are better cared for and, thus, are better able to care for their children than women with lower status.