



Public policies to improve people's health and education

As the Millennium Development Compact argues, the first cluster of policies required for top and high priority countries to break out of their poverty traps involve investing in health and education. These investments contribute to economic growth, which feeds back into human development (see chapter 3). Education, health, nutrition and water and sanitation complement each other, with investments in any one contributing to better outcomes in the others. A major message of this chapter is that policy-makers need to recognize the synergies among the many aspects of human development as they invest in achieving the Millennium Development Goals.

Education affects all types of human development outcomes. More than just a source of knowledge, education promotes better hygiene and increases the use of health services. Safe water and adequate sanitation also determine health outcomes. By reducing infectious diseases, they improve children's nutritional status and increase their learning abilities. Together such interventions contribute to a health transition—from having communicable diseases account for most of a country's disease burden to having chronic diseases as the main source.

The health transition hastens the demographic transition from high to low birth and death rates. In addition, higher education levels are associated with better family planning. As more children survive, families reduce the number of children they have. Desired family sizes decline, a process helped by the ready availability of contraceptives. So, over time, lower infant and child mortality plays a major role in falling fertility rates.¹ This notion of synergies among social investments is central to reducing hunger, malnutrition, disease and illiteracy—and to advancing human capabilities.

To get the most from the synergies among basic social services, it is crucial to focus on universal primary education early on, particularly

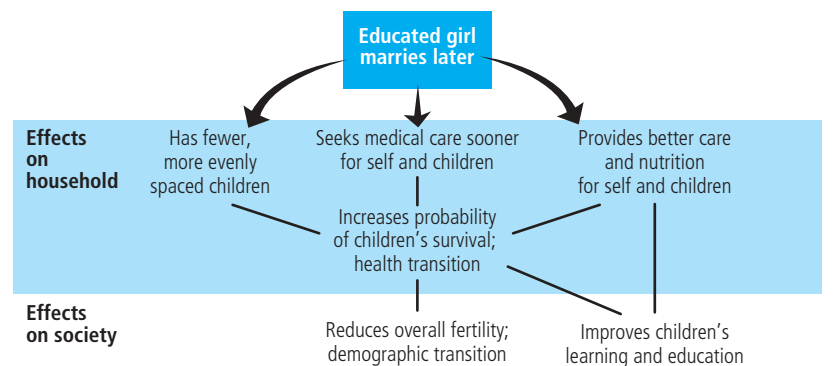
for girls. But doing so requires available, fully functional family planning, water and sanitation services. Thus these services are integral to achieving all the Millennium Development Goals.

This chapter also argues that gender equality is not just a Goal in its own right—it is central to achieving all the other Goals. The lifecycles of educated girls illustrate the synergies among social sector interventions (figure 4.1). Educated girls are likely to marry later—especially if their schooling extends to the junior secondary level and they engage in economic activity outside the home. Educated girls and women also have fewer children, seek medical attention sooner for themselves and their children and provide better care and nutrition for their children.² Such behaviour reduces the probability of disease and increases the odds of children surviving past age five.

Over time reduced child mortality leads to smaller families and increased contraceptive use—lowering overall fertility. With smaller households child care improves, and with lower fertility the school-age population shrinks. Thus the benefits of girls' education accrue from generation to generation. But while strengthening women's

FIGURE 4.1

Educated girls lead different lives



Source: Mehrotra and Jolly 2000.

health and education capabilities in this way is important, action is also needed to reinforce their role in society as agents of change (box 4.1).

Past progress shows what is possible. Over the past 50 years most developing countries achieved advances in health and education that took nearly 200 years in rich countries. But a dozen or so developing countries made especially fast progress, achieving social indicators comparable to those in rich countries. These high performers offer policy lessons for other countries in reaching the Millennium Development Goals (box 4.2).

If there is any doubt that the Goals can be achieved in less than a generation, consider the following gains. Sri Lanka added 12 years to life

expectancy at birth in just seven years (1945–52).³ In nine years (1953–62) China added 13 years.⁴ Between 1960 and 1980 Botswana more than doubled its gross primary enrolment ratio, from 40% to 91%.⁵ And in Zimbabwe the gross primary enrolment ratio rose from 75% in 1960 to 124% in 1985, five years after independence.⁶

Some high performers combined rapid economic and social progress—and now have high-performing economies (Republic of Korea, Malaysia, Mauritius). They achieved social progress early in their development processes, when national incomes were still low—suggesting a certain sequence for investments. In other high-achieving countries economic growth was slower and less consistent. Still, all of these high

BOX 4.1

Women’s capabilities and agency—key to achieving the Millennium Development Goals

Unless women’s capabilities are improved and gender equality increased, the other Millennium Development Goals will not be achieved. Strengthening women’s agency and voice is essential to enhancing their capabilities—and strengthening their capabilities is essential to enhancing their agency and voice. Though education is the only official target (“Eliminate gender disparity in primary and secondary education, preferably by 2005, and in all levels of education by 2015”) used to assess progress towards the gender equality Goal, several other indicators have been established to monitor performance:

- The ratio of girls to boys in primary, secondary and tertiary education
- The ratio of literate female to male 15- to 24-year-olds.
- The share of women engaged in wage employment outside agriculture.
- The share of women in national parliaments.

Gender equality in education helps women secure employment outside the home and acquire political power, contributing to their agency in the public sphere. But gender equality must also extend to the private domain.

Today gender inequality undermines women’s capabilities in education and health. Still, some progress is being made. For example, between 1990 and 2001 the ratio of literate female to male 15- to 24-year-olds in countries with low human development increased from 70 to 81 women per 100 men, though in countries with medium human development it increased only from 91 to 93. The gender ratio in primary

education also made limited progress, rising from 86 to 92 girls per 100 boys in developing countries between 1990 and 1999–2000. At current rates gender equality in education will not be achieved until 2025—20 years after the target set by the Millennium Development Goals.

Among young women (15- to 24-year-olds) in developing countries literacy is 60%, compared with 80% for young men. In addition, more women suffer from HIV/AIDS. Maternal mortality is another dimension of women’s additional burdens. And despite biological reasons for women to live longer than men, many developing regions and countries have millions of “missing” women killed by infanticide, gender-based abortions or systematic discrimination over the life cycle (resulting in a lower female population, with 35–37 million fewer million women in South Asia and 38–40 million in China).

Without action to increase women’s capabilities in health and education, they will have limited prospects for working outside the home and earning independent incomes. In the 1990s women working outside agriculture accounted for an unchanging 40% of men’s employment in developing countries.

Many challenges undermine gender equality in employment and community and political participation. In developing countries most poor female workers outside of agriculture are engaged in informal employment and receive low, irregular pay. And around the world, women account for more than 30% of parliamentarians in just seven countries. More equal political representation often has to be jumpstarted by quotas.

Gender relations are largely determined by social and cultural contexts. Patriarchal values instilled from childhood influence the attitudes and outlooks of both women and men throughout their lives. These values are often enshrined in laws prejudicial to women’s rights and claims—especially those related to marriage, divorce, rape, violence and inheritance. Movements for women’s rights often focus on reforming such laws.

Although employment and education are considered basic strategies for strengthening women’s agency and voice, stronger agency also requires not just:

- Recognizing the importance of education, but also improving its content, provision and returns.
- Creating more jobs for women, but also improving their nature and terms—including sustainable livelihoods.
- Increasing the number of women in parliaments, but also raising women’s visibility in positions of authority and decision-making—from the local to the national levels.

Thus empowering women requires policies that address both practical needs (supporting the basic capabilities required to function, such as by improving living conditions and increasing employment, health care and safe water supplies) and strategic needs (strengthening women’s voice and agency to renegotiate their roles at home and in society, such as through legal rights to assets and laws ensuring equal wages, reproductive rights and freedom from violence). Moreover, these policies must be backed by laws guaranteeing equal rights—for both women and men in the private and public sectors.

Source: Christiansen, Conway, and Poston 2003; Drèze and Sen 2002; Landuyt 1998.

Policy lessons from high-achieving countries in health and education

There is no global prescription for achieving the Millennium Development Goals, and no set track for being “on track”. Diverse national situations require that countries develop different strategies for achieving international targets for health and education. But success stories abound.

- In the 1980s Botswana made strides in education and health much greater than expected based on its income level.
- The state of Kerala, India, has health indicators similar to those of the United States—despite a per capita income 99% lower and annual spending on health of just \$28 a person.
- Cuba’s per capita income is a small fraction of that in the United States, yet it has the same infant mortality rate and has kept HIV/AIDS under control.

High-performing countries in health and education show the remarkable progress that can be made within a generation, and similarities between success stories provide useful insights into what works:

- Public financing was adequate and equitable. In high-achieving countries political commitment is reflected not just in allocations of public spending to health and education, but also in their equity. Spending has focused

on basic rather than tertiary health services, and on primary rather than higher education.

- Education achievements preceded higher health status. From the outset of their development processes, all the high-achieving countries pursued high enrolments for all children, particularly girls. Thus gender inequality in education was lower from the start, and gender differences were narrowed much faster than in lower-achieving countries. As investments in public health infrastructure emerged, high education levels ensured high demand for and effective use of health services.
- Educated women were able to act as agents of change. Children’s health and education outcomes are not only the result of adequate food consumption and health services, but also proper child care. In this respect the capabilities and positions of women in the household and in society take on major significance. When women are educated, have ownership rights and are free to work outside the home and earn an independent income, the well-being of the entire household is enhanced (Drèze and Sen 1995). In high-achieving countries women not only had near parity in education, they also had high rates of participation in non-agricultural employment.

Source: Chen and Desai 2000; Mehrotra 2000; Drèze and Sen 1995.

performers show that with the right government priorities and policies, high social development is possible even without a thriving economy.

This chapter is about setting the right policy priorities—those of the high-performing countries—to achieve the Millennium Development Goals. The Goals for hunger, education,

health and water and sanitation are examined in turn, from the scale of the challenges to the actions required to resolve them. The chapter then proposes an action plan to boost the level, equity and efficiency of public spending—as well as the quantity and quality of official development assistance—for basic services.

ACHIEVING THE HUNGER GOAL

Given past achievements, the Goal of halving the percentage of hungry people by 2015 should be readily achievable. In 1996 the World Food Summit set a similar target: halving to 400 million the number of hungry people in developing countries.⁷

Since the early 1970s food production in developing countries has tripled, more than keeping up with population growth.⁸ In addition, the real prices of the main cereal crops have dropped 76%.⁹ Between 1980 and 1995 per capita food production increased 27% in Asia and 12% in Latin America. But in Sub-Saharan Africa it fell 8%.¹⁰ Although hunger is most prevalent in South Asia, it is declining—while in Africa about one-third of the population is undernourished, and the number is increasing.¹¹ If all the food produced worldwide were distributed equally, every person would be able to consume 2,760

calories a day (hunger is defined as consuming fewer than 1,960 calories a day).¹² Addressing hunger means ensuring that people have command over the resources (especially income) needed to acquire food.

Hunger is more than just a lack of available food. It is a problem of deficiencies in food entitlement and deprivations in related essential services (health care, education, safe drinking water, adequate sanitation). Food entitlement differs from food availability in that it indicates what a person can command with income and thus consume, rather than what is available in the market.

SCALE OF THE PROBLEM

Every day 799 million people in developing countries—about 18% of the world’s population—go

Millennium Development Goals and targets

Goal 1: Eradicate extreme poverty and hunger

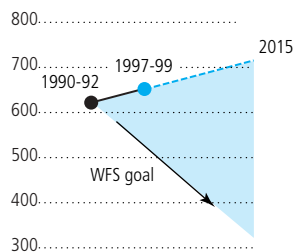
Target 1: Halve, between 1990 and 2015, the proportion of people whose income is less than \$1 a day

Target 2: Halve, between 1990 and 2015, the proportion of people who suffer from hunger

FIGURE 4.2

Food insecurity increases

Number of food-insecure people in all developing countries except China



Note: WFS is World Food Summit.
Source: FAO 2001c.

hungry.¹³ In South Asia one person in four goes hungry, and in Sub-Saharan Africa the share is as high as one in three.¹⁴ India is home to the largest number of hungry people, 233 million, while Sub-Saharan Africa has 183 million, China 119 million, the rest of East Asia and the Pacific 74 million, Latin America 55 million and the Arab States 32 million.¹⁵

Between 1990–92 and 1998–2000 the proportion of hungry people in developing countries fell from 21% to 18%.¹⁶ The largest reductions by far were in China, though substantial declines also occurred in South-East Asia.¹⁷ But with population growth, the number of hungry people is not falling as quickly. Worldwide, the number of hungry people fell by 20 million between 1991 and 1999.¹⁸ Yet that progress came only because 80 million Chinese escaped hunger: in 25 developing countries the number of hungry people increased (figure 4.2).¹⁹

The hunger Goal also seeks to reduce child malnutrition. In this area, among 33 countries with data, 10 saw reversals or failed to improve in the 1990s.²⁰ And because data on child malnutrition are more reliable than those on hunger, such trends are worrisome.²¹

More than three-quarters of hungry people are in rural areas of developing countries.²² About half live in farm households on marginal lands, where environmental degradation threatens agricultural production.²³ Nearly a third live in rural landless and non-farm households, such as those dependent on herding, fishing or forestry.²⁴ Yet poor fishers are seeing their catches reduced by commercial fishing, and foresters are losing their rights as logging companies move in under government concessions. Moreover, landlessness is rising in most rural regions because of higher farming densities and unequal land distribution. Average land per capita among rural farmers in developing countries declined from 3.6 hectares in 1972 to 0.26 hectares in 1992—and stands to fall further by 2020.²⁵

Another worrisome trend is the shift of malnutrition to cities.²⁶ Urban poor people now account for more than one-fifth of hungry people in developing countries. But this could be rising because urban populations are growing faster than rural.²⁷

In any given year 5–10% of hungry people are affected by droughts, plagues, floods, hurricanes, extreme storms or violent conflicts.²⁸ Among the 21 countries with extreme food emergencies in 2002, in 15 they were sparked by war, civil strife or the lingering effects of past conflicts.²⁹

Meeting the Millennium Development Goal for hunger will require improving food distribution and increasing production. Among the top priorities for increasing production:

- *Focusing on technologies that raise agricultural productivity.* Doing so will also raise incomes for people with few assets other than land.
- *Directing more resources to agriculture.* Poor countries have neglected agriculture—a trend that must be reversed.
- *Preventing environmental degradation.* New policies and technologies to raise productivity must also protect critical ecosystems. Poor people suffer the most from environmental degradation, but poverty also leads to environmental degradation. In developing countries low productivity is more often the cause of such degradation—while in Europe and North America high productivity is the cause.
- *Sharing resources more equitably.* Women, who produce most of the food consumed in Sub-Saharan Africa and Asia, must have more secure access to land. The same goes for landless people.
- *Addressing global warming and reducing agricultural tariffs and subsidies in rich countries.* Protection rigs international markets against farmers in developing countries. Meanwhile, global warming can adversely affect weather patterns for farmers dependent on rain.

FOOD BUFFER STOCKS TO IMPROVE DISTRIBUTION AND SMOOTH PRICES

Governments can maintain reserves of essential foods, especially grains, and release them into markets if food prices rise inordinately—enabling poor people to afford them. Such systems may or may not involve public distribution of essential commodities at below-market prices. China and India have long traditions of maintaining buffer stocks (reserves) of food, usually at public expense.

India has maintained food stocks since the 1970s, enabling it to stave off widespread famine.

These efforts have been aided by the increased wheat and rice productivity that resulted from the green revolution, with grains and essential commodities (sugar, cooking oil) provided through a public distribution system. In addition, during droughts food for work programmes ensure subsistence consumption levels.

It is critical that food be kept affordable for poor households, whether through public distribution systems or releases of grains into markets (something the Indian government has failed to do in recent years). One reason for the food security of poor households in Kerala, a high-performing Indian state, is that ration shops distribute grains even in rural areas.³⁰ Elsewhere in India most public food distribution occurs in urban areas. In China buffer stocks of food are maintained at the community level.

Sri Lanka—another high achiever in social indicators—has maintained food subsidies since independence in 1947. In 1979 universal subsidies for essential commodities (rice, wheat flour, lentils, dried fish, powdered milk) were replaced with a food stamp scheme covering 40% of the population.

In Africa food stocks have not been used as much as might be expected given the continent's low agricultural productivity, fragile soils and frequent famines. One reason for the 2002 famine in Southern Africa was that limited food stocks were run down, partly because fiscal constraints prevented governments from maintaining them.

It is especially important for landlocked countries to hold buffer stocks, because the costs of building and managing warehouses to store them are worth the lives saved, suffering averted and productivity gained. In countries with ports the costs of maintaining stocks must be weighed against the benefits. But even in coastal countries buffer stocks can mitigate the adverse effects of fluctuating food prices.

Policy advice for Africa has tended to push in the opposite direction, arguing that free markets should determine how the continent feeds itself.

Governments facing budget deficits should not provide fertilizer subsidies, crop price supports or cheap loans. A recent report suggests that rural African countries grow cash crops for export—to generate income for poor farmers

and provide foreign exchange for food imports. Though the report acknowledges that bigger food crops would help some farmers, it also suggests that many are so isolated that they should grow only what they need for themselves as cheaply as possible.³¹

INEQUITY—AND WHAT TO DO ABOUT IT

Access to food could be greatly increased by government action to secure the assets and raise the incomes of the most vulnerable groups.

MARGINAL GROUPS

Small farms are more productive than large farms per unit of land. Hence more equitable land distribution increases agricultural efficiency and output. In Piauí, Brazil, farm yields increased 10–40% on non-irrigated and 30–70% on irrigated fields after land was distributed to small farmers.³² Equitably distributed land also reduces poverty and promotes improved income distribution. In El Salvador a 10% increase in land ownership among cultivators raised per capita income by 4%. Similarly, Indian states that implemented land reform saw poverty fall faster between 1958 and 1992.³³

To make the investments in natural resources needed to raise productivity, poor people need to have secure access to those resources. In Thailand there is a robust relationship between secure title to land and confidence to practice sustainable agriculture.³⁴

Poor and hungry people also benefit from common property resources. In recent years Brazil, Cameroon, the Gambia, India, Nepal and Tanzania have set aside public lands for use or comanagement by indigenous communities. Similarly, community forest tenure has been strengthened in Bolivia, Colombia, Indonesia, Mozambique, the Philippines, Uganda and Zambia. And in China and Viet Nam public forest land has been allocated to households. The recognition of indigenous rights and community ownership—and the broader rationalization of public forest tenure—provide opportunities to dramatically improve the livelihoods of millions of forest inhabitants. Poor communities' rights

More equitable land distribution increases agricultural efficiency and output

to water must also be recognized—not just for household needs but also for irrigation, agro-processing and livestock watering.³⁵

WOMEN

Women produce most of the food consumed in Sub-Saharan Africa and (to a lesser extent) Asia. But they rarely have secure tenure to the land they work. Fewer than 1 in 10 female farmers in India, Nepal and Thailand own land. Without secure ownership, women lack collateral, access to credit and the means to invest in productivity improvements—hurting the health and nutrition of their families.³⁶ In some regions women have limited claims to food within households, a particular problem for pregnant and nursing women, who need more calories.

URBAN POOR PEOPLE

Most cities have land available for agriculture—the informal safety net for many poor urban dwellers who grow food in parks, rooftops, wetlands, churchyards, containers, vacant lots, rights of way and plots near railways. They also graze livestock on hillsides, open spaces and rights of way. These residents should not be denied the right to use these lands to feed themselves.

PEOPLE IN FOOD EMERGENCIES

Refugees from wars and natural disasters need emergency help to survive. Response times in food emergencies need to be far shorter so that supplies can get to starving people much faster. Early warning systems for political crises, like those for environmental disasters, would help because political crises have become the main cause of famine.

In addition, a permanent fund should be established so that international agencies can respond to crises immediately, without having to raise funds as they try to respond. A fully capitalized fund would enable the World Food Programme to undertake far more strategic planning for emergency food supplies and post-famine crop and livestock recovery. The UN

Food and Agriculture Organization estimates that it would cost \$5.2 billion a year to feed the world's 214 million hungriest people.³⁷

To extend the benefits of food security even more, food for such programmes could be purchased from developing countries. International financing for community nutrition and community food bank initiatives could be organized under the World Food Programme as an international bank providing nutrition for all.³⁸

RAISING PRODUCTIVITY

Many technologies have been developed to raise agricultural productivity and reduce hunger. Several pro-poor technologies focus on sustainable productivity and suitability for women. Promising management approaches include agroforestry, permaculture, conservation agriculture, biological nitrogen fixation, water use efficiency, gender selection in livestock, integrated pest management, integrated plant nutrient management, integrated intensive farming systems and integrated soil and water management.³⁹

For many African farmers the most pressing need is improving soil quality. On many farms fertilizers can double or even quadruple yields of basic food crops.⁴⁰ Even farmers who cannot obtain or afford such inputs have many options for raising soil fertility, especially in Africa (box 4.3).

National policies must emphasize rebuilding natural assets. Since 1996 China has rehabilitated 5 million hectares of low- and medium-yield farm land. In some Indian communities better fallows and cover crops have been widely adopted—145 systems have been identified—by farmers on marginal lands forced to reduce fallow periods.⁴¹ Agricultural systems can also be improved by paying farmers, fishers, herders and foresters for their roles in ecosystem management. Such schemes are already in place in many areas: a recent review found 75 that make payments for carbon emission offsets, 72 for biodiversity and 61 for watershed services.⁴²

Initiatives can also promote sustainable agriculture in farming communities. A study in 17 African countries found that 730,000 poor households in 45 projects were practicing

Fewer than 1 in 10 female farmers in India, Nepal and Thailand own land

Increasing soil fertility in Sub-Saharan Africa

Soil nutrient depletion is traditionally treated through the use of mineral fertilizers. But fertilizers cost two to six times more at the farm gate in Africa than in Europe, North America and Asia. But crops do not care whether the nitrate and phosphorous they absorb come from a bag of fertilizer or a decomposing leaf. Thus the main issue is to replenish plant nutrients in sufficient quantities, and whether this is done with mineral fertilizers or organic inputs is primarily a question of farm economics.

The most advisable approach is to combine the use of both nutrient sources in agronomically sound ways. The Sasakawa Global 2000 network and other organizations have shown on thousands of African farms that mineral fertilizers can double to quadruple yields of basic food crops. But even farmers who cannot obtain or afford purchased inputs can achieve long-term increases in yields through alternative approaches to soil building and replenishment:

- Nitrogen-fixing tree fallows. Leguminous trees are interplanted with young maize crops and allowed to grow as fallows during dry seasons, generating 100–200 kilograms of nitrogen per hectare in 6–24 months in subhumid tropical regions of East and Southern Africa. These fallows are economically and ecologically sound and fit well with farmer customs and work calendars—no surprise, because farmers helped develop the technology.
- Indigenous rock phosphate. Using indigenous rock phosphate deposits provides an alternative to imported superphosphates. The mild acidity of most of these soils (pH 5–6) helps dissolve high-quality rock phosphates at a rate that can supply phosphorus to crops for several years. Over a five-year period their use doubles or triples maize yields 90% as efficiently as superphosphates—at a much lower cost.
- Biomass transfers of leaves of nutrient-accumulating shrubs. Transfers of leaf biomass of the nutrient-accumulating shrub *Tithonia diversifolia* from roadsides and hedges into

cropped fields adds nutrients and routinely doubles maize yields without fertilizer additions.

Tens of thousands of farm families in Kenya, Malawi, Mozambique, Tanzania, Uganda, Zambia and Zimbabwe are using these approaches with good results. Improved fallows are the most widespread practice. Knowledge is being transferred between farmers, villages and community organizations and through national research and extension institutes, universities, non-governmental organizations and development projects.

The challenge now is to accelerate the adoption of such technologies to tens of millions of farm families. The main obstacles are insufficient supplies of high-quality tree germplasm (seeds and seedlings) and rock phosphate and inadequate awareness and knowledge of the technology components. But increased adoption is essential, as these approaches offer major opportunities to drastically and sustainably increase food production—reducing hunger in a way that enhances the natural resource base.

Source: Millennium Project Task Force 2 2003a.

sustainable agriculture—defined to include intensified land use, diversified crops and livestock, increased use of renewable resources and other criteria.⁴³ In eight Asian countries some 2.9 million poor households using sustainable agriculture have increased food production on 4.9 million hectares.⁴⁴ These programmes must be scaled up to involve tens of millions of households.

Farmers in developing countries often lack the roads, warehouses, electricity and communication links required to bring them closer to markets—making them more vulnerable to intermediaries charging high prices for inputs and to monopoly buyers squeezing their incomes. Yet around the world, agriculture is a low priority for governments and donors alike. Most governments have invested much less in marginal lands than in more favoured agricultural areas.⁴⁵ In Africa most countries invest less than 5% of their budgets in agricultural development—even though 75% of their citizens depend (directly or indirectly) on farming.⁴⁶

In addition, agricultural research is severely underfunded, with many low-income countries spending only 0.5% of agricultural GDP on

it—and nearly all of that focused on higher-quality lands and commercial crops.⁴⁷ To benefit poor farmers on marginal lands, agricultural research must support promising initiatives such as multicrop systems, eco-agriculture, early maturing seed varieties and low-cost methods of soil building.

Agricultural services, if available, mainly come from private firms selling inputs and offering advice that is often incorrect and almost always incomplete. Government agricultural extension services have focused on distributing seeds and fertilizers, often promoting varieties and formulations unsuited to local conditions.

When allocating input subsidies or buying grain, most developing countries subsidize or provide privileged access to large producers and processors. Rules for these mechanisms often distort markets, unduly burden small producers, establish official monopoly buyers and set excessive taxes and service charges.⁴⁸ Government policies that discriminate against small producers should be immediately reformed, and public financing for subsidies should be redirected to support small farmers (box 4.4).

Farm policies and food security

As the Indian government's interventions in grain markets show, public policies can create different winners—and losers—among different population groups.

Designed to stabilize prices and support grain farmers, the minimum support prices set by the government's Food Corporation of India have instead risen much faster than inflation. This outcome is partly explained by strong farm lobbies (especially for rice and wheat) and government policies that cover farmers' economic costs of production. Economic costs of production are based on input costs,

imputed values of land and labour as well as a bonus.

Theoretically, prices in the public food distribution system are based on economic costs (and so minimum support prices). But market prices are lower than the system's prices, increasing food stocks in government warehouses, although India has the largest number of world's hungry, and nearly half of its children are malnourished. Countering the farm lobbies, however, is pressure on political leaders to satisfy voters and so control prices in the public food distribution system.

Source: Kannan, Mahendra Dev and Sharma 2000; India 2002a.

INTERNATIONAL RESPONSIBILITIES

Bilateral official development assistance for agriculture, forestry and fisheries increased between 1971 and 1990, but declined thereafter along with overall official development assistance. Multilateral official development assistance increased from \$1.2 billion a year in 1973–74 to \$3.6 billion a year 1981–83, but then fell over the next two decades to \$1.4 billion a year in 1999–2000 (in 2000 dollars). As a share of total lending of multilateral institutions, assistance to agriculture, forestry and fisheries fell from 15% of total lending in 1997 to 10% in 1999.⁴⁹

ACHIEVING THE EDUCATION GOALS

During the 1990s primary education enrolments increased in every region, and in many a large proportion of children are enrolled. In East Asia and the Pacific, Central and Eastern Europe and the Commonwealth of Independent States (CIS) and Latin America and the Caribbean more than 90% of children are enrolled in primary school. In South Asia 79% are enrolled, and in the Arab States 77%. In Sub-Saharan Africa net primary enrolments increased by 3 percentage points in the 1990s,⁵⁰ yet less than 60% of children are enrolled.⁵¹

But reducing hunger in developing countries requires international action not only on aid, but also on two other issues crucial for increasing food production and farm productivity. First, agricultural subsidies in rich countries—totalling \$311 billion in 2002—inhibit agricultural growth in developing countries (see chapter 8).

Second, global warming, caused by emissions of greenhouse gases, is leading to more frequent extreme weather conditions—floods, droughts, mudslides, typhoons, cyclones—increasing the number of people facing food emergencies. Over the next few decades climate change will probably increase precipitation from latitudes 30 degrees North to 30 degrees South—areas that include many of the world's richest countries. But rainfall will likely decrease and become more erratic in many tropical and subtropical regions, causing crop yields to fall in countries already suffering from food insecurity.

Africa's rainfall has been decreasing since 1968. In addition, rainfall fluctuations have widened across the continent, resulting in disastrous floods like the one that devastated Mozambique in March 2000. Sub-Saharan Africa is especially sensitive to climate change because its agriculture is mostly rain-fed—and accounts for 70% of the region's employment and 35% of its GNP. Because of global warming, Africa will become even more dependent on food imports.

Millennium Development Goals and targets

Goal 2: Achieve universal primary education

Target 3: Ensure that, by 2015, children everywhere, boys and girls alike, will be able to complete a full course of primary schooling

Goal 3: Promote gender equality and empower women

Target 4: Eliminate gender disparity in primary and secondary education preferably by 2005 and in all levels of education no later than 2015

SCALE OF THE PROBLEM

Of the 680 million children of primary school age in developing countries, 115 million do not attend school—three-fifths of them girls.⁵² In India 40 million children are not in primary school, more than a third of the world's total.⁵³

Moreover, enrolment does not mean completion. Just over half the children who start primary school finish it—and in Sub-Saharan Africa, just one in three.⁵⁴ Reflecting these shortcomings, one-quarter of adults in the developing world cannot read or write.⁵⁵ And of the

world's 879 million illiterate adults, two-thirds are women.⁵⁶

Developing countries face three main challenges in expanding primary education:

- *Limited resources.* Relative to rich countries, developing countries spend much less per student and as a proportion of GNP at all levels of education.
- *Inequity.* When spending is low, rich people often capture a much larger share of it—so poor people do not benefit as much.
- *Inefficiency.* Inefficient spending means that a high share of recurrent spending goes for teacher salaries, leaving little for learning materials. In addition, low-quality teaching means that students do not learn as much as they could.

LIMITED RESOURCES—AND WHAT TO DO ABOUT THEM

Governments play a much more important role in the economies of countries where human development is high than in countries where it is medium or low. In 1999 median public spending was 35% of GDP in countries with high human development—while in countries with medium human development it was 25%, and in countries with low human development, 21%.

SMALL EDUCATION BUDGETS

Rich countries rarely spend less than 4.0% of GDP on public education. In countries with high human development median spending on public education is 4.8% of GDP, compared with 4.2% in medium human development countries and 2.8% in low human development countries. Moreover, lower incomes mean that per capita spending is much less in poor countries than in rich ones.

When public spending places high priorities on areas other than education and health, social spending suffers. Debt service is an important non-discretionary component of public spending in many low human development countries (see chapter 8). But military spending—a discretionary expenditure—can also squeeze out education spending (box 4.5).

During 1975–97 developing regions exhibited different patterns of public enrolments and

BOX 4.5

Military spending or education? The inconsistencies of government action

What can developing countries do to increase spending on education, especially basic education? Cutting spending on other priorities (such as the military) is one way. World military spending fell in the 1990s—except in Latin America and South Asia. In 1991–2000 military spending increased 59% in South Asia.

Military spending in Sub-Saharan Africa fell during the decade, from \$9.3 billion in the early 1990s to \$7.1 billion in 1996. But it rose sharply in 1999 and 2000, to an average of \$9.8 billion. This surge does not capture overall military spending in the region; these data reflect only official figures. In 2001 Angola, one of the leading recipients of transfers of major conventional arms, spent 3.1% of GDP on the military—

compared with 2.7% on education. Sierra Leone spends 3.6% of GDP on the military and 1.0% on education.

All the major arms-exporting governments have pledged their commitment to the Millennium Development Goals. Hence rich country governments can help shift these expenditures by reviewing their arms exports. The G-8 are among the world's top 10 suppliers of major conventional weapons: the United States (\$49.2 billion), the Russian Federation (\$15.6 billion), France (\$10.8 billion), the United Kingdom (\$7.0 billion), Germany (\$5.6 billion), Italy (\$1.7 billion) and Canada (\$0.7 billion) account for 85% of world weapon exports. Without reforms by exporters and recipients, commitments to the Goals seem questionable on both sides.

Source: SIPRI 2002b.

recurrent spending on primary education.⁵⁷ In South Asia, West Asia and Sub-Saharan Africa the number of students enrolled almost doubled, while recurrent spending (in 1995 US dollars) increased modestly.⁵⁸ But in East Asia and Latin America and the Caribbean enrolments remained stable, while recurrent spending increased rapidly. Thus some regions invested in quantity (enrolments) and some in quality (higher spending per pupil). If quality is to improve in the first group of regions, more resources are needed.

Some studies argue that public spending levels are not important for education outcomes.⁵⁹ They are misguided. True, efficient spending is critical to achieving desired outcomes. But the amount of spending is also important.⁶⁰ One basic use of any additional resources would be to hire more teachers. With 26 million primary school teachers in developing countries in 2000, the estimated number of additional teachers required by 2015 ranges from 15–35 million—including more than 3 million in Sub-Saharan Africa, with more than 1 million in Nigeria alone.

THE FUNDING GAP

According to the United Nations Children's Fund, achieving universal primary enrolment

In Africa economic growth would have to exceed 8% a year to provide the required resources—an unlikely outcome

(not completion, the aim of the second Millennium Development Goal) in developing and transition countries by 2015 would cost another \$9 billion a year.⁶¹ That estimate includes additional capital cost requirements as well as needs to improve schooling quality—and is more than four times what donors now spend, as well as far more than current government spending. Education spending is especially low in heavily indebted poor countries. Another estimate, taking into account a variety of scenarios, is even higher.⁶²

WHO WILL FOOT THE BILL?

Economic growth is unlikely to provide enough resources for developing countries to achieve universal primary completion by 2015. In Africa economic growth would have to exceed 8% a year to provide the required resources—an unlikely outcome.⁶³ Thus much greater donor support is needed.⁶⁴

But donor aid for education is insufficient: in 2000 it totalled \$4.1 billion, with just \$1.5 billion for primary education. In the 1990s bilateral aid for education fell from \$5.0 billion to \$3.5 billion, dropping to just 7% of official development assistance—an all-time low.⁶⁵ Only France, Germany, Japan, the United Kingdom and the United States devote significant shares of their assistance to education. The gap between donor rhetoric and reality must be reconciled.

In 1996–98 multilateral institutions provided an average of \$954 million a year in education-related official development assistance.⁶⁶ The amount fell to \$799 million in 1999–2001. Commitments for basic education were \$402 million a year in 1996–98 and fell sharply to \$222 million a year in 1999–2001. The Education for All Fast-Track Initiative, a good example of interagency work, could increase the funding for some countries.

INEQUITY—AND WHAT TO DO ABOUT IT

Who benefits from public spending on primary, secondary and higher education: poor people or non-poor people? In most countries the poorest 20% of the population receives less than 20% of the benefits of public spending on education—

and in some, much less.⁶⁷ Meanwhile, the richest 20% generally captures considerably more than 20%. But there are exceptions—including Colombia, Costa Rica and especially Chile—where a larger share of public spending on education goes to the poorest 20%. Not coincidentally, all three countries have made impressive strides towards universal primary enrolments.

Countries performing well on education devote more resources to primary education (averaging 1.7% of GDP) than do countries with average performance (1.4%). High-performing countries also spend more on primary education relative to their per capita incomes. And they allocate less of their education budgets to higher education.

Despite improvements in the 1990s, the countries with the lowest primary enrolments spend more per pupil for higher education than primary education.⁶⁸ Indeed, the lower are primary enrolments, the greater is the difference in spending.⁶⁹ These countries need to focus on primary education, not spend more on higher education. Still, additional resources are needed for higher education as well if countries are to build capacity to compete in the global economy—but not at the cost of primary education. Entire education budgets need to increase.

IMPROVING POOR PEOPLE'S ACCESS TO PRIMARY SCHOOL

The costs associated with education discriminate against the poorest people by eating up a larger share of limited household budgets.⁷⁰ A considerable body of literature argues that school dropouts and child labour can be reduced by lowering the direct and indirect costs of schooling.⁷¹ In Bhutan, Burkina Faso and Uganda high household costs per pupil—ranging from 10–20% of per capita income—discourage primary school attendance, while in Myanmar and Viet Nam lower costs contribute to higher enrolments (figure 4.3).⁷²

Uniforms are often the biggest cost for parents. In eight states in India—together containing two-thirds of Indian children out of school—uniforms are one of the largest out-of-pocket education expenses.⁷³ One policy option is to make uniforms optional, letting school

administrations and parent-teacher associations decide whether to require them.

User fees for education have long been hotly debated, and in the 1980s and early 1990s international financial institutions sent mixed signals about them. But in the early and mid-1990s, after sharp criticism of the consequences for primary schooling, the World Bank came out (albeit late) against fees for primary education.⁷⁴ Again, high-achieving countries point the way. To ensure universal primary enrolment and completion early in their development, they largely avoided direct tuition fees—and kept indirect costs low as well.

Thus there is a strong case for reducing the out-of-pocket costs of sending children to school. Sri Lanka eliminated tuition fees in 1945 and began providing free textbooks and free school lunches in the 1950s, and free school uniforms in 1991. Botswana gave enrolments a major boost by halving fees in 1973 and eliminating them in 1980.⁷⁵ Malawi also saw enrolments increase sharply after eliminating school fees and uniforms in 1994.

ENDING DISCRIMINATION AGAINST GIRLS

Gender differences in enrolments and dropouts are most severe in South Asia and Sub-Saharan Africa. How, then, can gender disparities in schooling be eliminated by 2005—just two years from now—as called for by the Millennium Development Goals? Countries that have eliminated such differences offer several lessons:⁷⁶

- Getting and keeping girls in school requires that schools be close to their homes. School mapping can identify least-served locations, aiding the establishment of multigrade schools in remote areas.
- Lowering out-of-pocket costs prevents parents from discriminating between boys and girls when deciding whether to send children to school—and in times of declining household income, to keep children from dropping out.
- Scheduling lessons flexibly enables girls to help with household chores and care for siblings.⁷⁷
- Having female teachers provides girls with role models—and gives parents a sense of security about their daughters.⁷⁸

INEFFICIENCY—AND WHAT TO DO ABOUT IT

Efficiency means getting better outcomes from the same amount of resources—and pursuing policies that help rather than hinder learning.

OPERATING INEFFICIENCIES

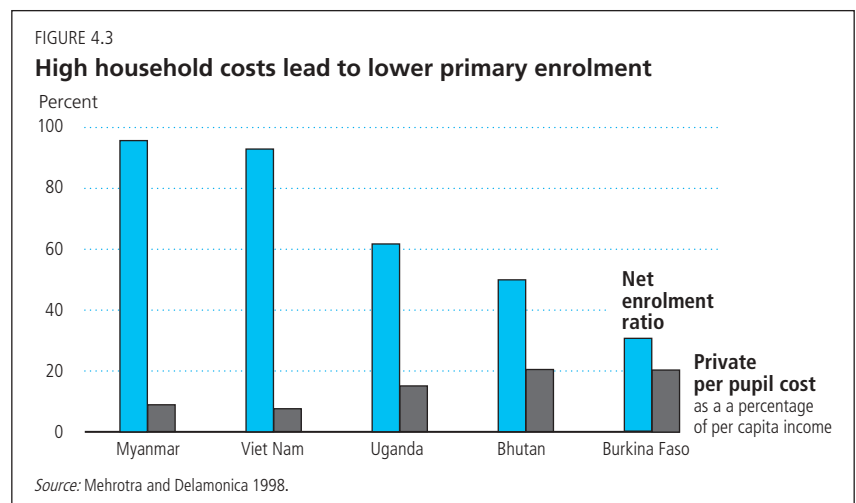
A major problem in nearly all developing countries is making children repeat class years, a factor in high dropout rates and a significant waste of resources. Countries that have done well in primary education have addressed this inefficiency. Costa Rica cut repetitions in half by introducing automatic promotions to the next class year in the 1960s. Malaysia and Zimbabwe have also adopted automatic promotions.⁷⁹ To maintain standards, automatic promotions should be accompanied by a minimum package of inputs, especially classroom materials and teacher training.

Teaching children in the appropriate language also improves education outcomes, as high-performing countries show. In all those countries the mother tongue was used for instruction at the primary level. Students learn to read more quickly when taught in the language most familiar to them and can learn to read a second language more quickly.

This is an important conclusion for, say, francophone Africa, where in most countries French is the language of instruction at all levels.⁸⁰ This alienating school experience was hardly conducive to learning.

School feeding programmes are also effective in getting children into school and keeping them

Malawi also saw enrolments increase sharply after eliminating school fees and uniforms in 1994



there. One of the factors behind increasing enrolments in India in the second half of the 1990s was a mid-day meal programme covering all states.

FINANCIAL INEFFICIENCIES

About 55 developing countries have low primary enrolments and require new buildings and facilities to achieve universal primary education.⁸¹ But such capital investments are often inefficient, and the use of state construction companies and large private contractors often leads to inflated costs.⁸²

How can school construction costs be kept low? One way is to use local rather than imported construction materials—an approach that Cameroon and Niger are encouraging to increase efficiency.⁸³ And since 1994 India has been using not only local materials but also local contractors and construction techniques to contain costs in its District Primary Education Programme.

Managing recurrent costs—to strike a better balance between salary and non-salary spending—is by far the most daunting financial challenge for countries with low enrolments. Wage bills for teachers and administrative staff often account for 90% or more of recurrent spending at the primary level, crowding out non-salary spending and leaving little money for other inputs, such as teaching materials.⁸⁴ High performing countries—Botswana, Cuba, Sri Lanka—have recognized this problem and spend reasonable amounts on teaching materials.⁸⁵

Limited budgets also make it difficult for countries to increase the number of teachers, fundamental for universal primary schooling. Increasing salaries can help, but so can changing the salary structure—perhaps even reducing costs. One option is to manage the gap between minimum and maximum teacher salaries. In OECD countries the maximum teacher salary is on average 1.4 times the minimum wage, while in developing countries the range is 1.0 to 2.5 times the minimum.⁸⁶ The United Nations Educational, Scientific and Cultural Organization and the International Labour Organization have recommended that it take 10–15 years to reach maximum pay.⁸⁷ Another option is to unlink teacher salaries from advanced qualifications, an approach being tested in South Africa.⁸⁸

Better use of teachers' time and better teacher deployment could also do much to help manage teacher costs. Botswana has experimented with paying teachers more to teach double sessions—doubling the number of pupils taught with a small increase in salary cost. Investing in information technology to crack down on “ghost” teachers and incorrect salary payments also generates fairly rapid returns, as shown by the National Education Statistical Information Systems in several Sub-Saharan countries.

Salaries eroded by inflation can also erode teacher morale, forcing them to take second jobs. Teacher absenteeism, a major problem in South Asia and Africa, can be partly addressed by hiring teachers from the neighbourhoods where they are required to teach. In Indonesia and Thailand, which achieved universal primary education early on, teachers have traditionally been hired locally. But teacher salaries are often a reason for absenteeism.

In many middle-income countries teachers have fared well—especially in China, Mauritius, Thailand and Uruguay, where governments have actually managed to increase teacher salaries. But in many low-income countries teacher wages have progressively eroded, including in Cambodia, the Central African Republic, Kyrgyzstan, Madagascar, Moldova, Myanmar, Sierra Leone and Zambia. Such countries will find it difficult to maintain teacher morale without higher salaries. Some of these countries also have to sharply increase the number of teachers to achieve the Millennium Development Goal of universal primary education. For such countries, donor assistance to meet recurrent costs is crucial, at least for a limited period.

A final point on increasing financial efficiency involves official development assistance for education. Such aid tends to emphasize equipment, overseas training and technical assistance. Some 60–80% of education assistance is spent in recipient countries, the rest in donor countries—on education and training for developing country nationals and on consultants and instructors from rich countries.⁸⁹ This is not the most efficient use of funds. Technical assistance can undermine local institutions,

In OECD countries the maximum teacher salary is on average 1.4 times the minimum wage, while in developing countries the range is 1.0 to 2.5 times the minimum

particularly if education authorities end up being overwhelmed by an influx of advisors pushing overly elaborate systems. Between 1994

and 1997 Ethiopia conducted 66 studies on its education system, half sponsored by bilateral aid agencies—to little avail.⁹⁰

ACHIEVING THE HEALTH GOALS

A severe shortage of trend data for many developing countries makes it difficult to appraise the likelihood of achieving the Millennium Development Goal of cutting maternal mortality by three-quarters by 2015. Yet many experts believe that already high maternal mortality—a shameful failure of development—is increasing in many countries. The situation is most urgent in Sub-Saharan Africa, which accounts for half of the developing world’s maternal deaths—with 1 of every 100 live births resulting in the mother’s death.

Lack of data also precludes assessing progress towards the Goal of reversing the spread of HIV/AIDS by 2015. But progress is possible—as in Brazil, Senegal, Thailand (box 4.6), Uganda and Zambia.

Of the measurable health Goals, the world is farther from achieving the one for child mortality—a two-thirds reduction by 2015—than any other. Here the highest-priority countries are in Sub-Saharan Africa and South Asia. South Asia is making progress, with child mortality falling from 12.6% to around 10.0% during the 1990’s. But Sub-Saharan Africa trails far behind: there, 17% of children do not reach age five. At current rates the region will not achieve the Goal for child mortality for almost 150 years.⁹¹

SCALE OF THE PROBLEM

Every day more than 30,000 of the world’s children die from preventable causes—dehydration, hunger, disease.⁹² In Sierra Leone, an urgent priority country, 18% of children will not see their first birthday.

Every year more than 500,000 women die in pregnancy and childbirth—one every minute of the day. A pregnant woman is 100 times more likely to die in pregnancy and childbirth in Sub-Saharan Africa than in a high-income OECD country.⁹³

Around the world 42 million people are living with HIV/AIDS. Moreover, the disease has killed the mother or both parents of 13 million children.⁹⁴ Tuberculosis is the other leading infectious cause of adult mortality, killing up to 2 million people a year.⁹⁵ Malaria kills 1 million people a year, and without effective intervention the number of cases could double in the next 20 years.⁹⁶

Many diseases hurt rural poor people more than city dwellers. For acute respiratory infections, a major child killer, less than half of rural children receive care in most developing regions.⁹⁷

Many of these deaths are readily preventable (box 4.7). Bednets, affordable antibiotics, trained birth attendants and basic hygiene and health education are hardly high-tech solutions. Yet as with education, for broad systemic reasons such solutions remain tragically out of reach for millions of poor people:

- *Limited resources.* Governments do not spend enough on overall health, and they spend even less on basic health.
- *Inequity.* Rural health systems do not have enough staff or enough resources dedicated to women and children.
- *Inefficiency.* Vertical programmes for specific diseases are not integrated with general health systems.

It is here that the links among health, education and income play out most clearly, because it is poor people who lack access to water and sanitation, who cannot afford drugs and who do not receive education about HIV prevention and family planning.

Women are at greater risk than men. Globally, women account for about half of adult HIV/AIDS cases. But among young women the share is far higher and will likely worsen. In many Caribbean countries women account for the majority of new HIV infections. And in many African countries HIV prevalence among 15- to 24-year-olds is up to six times higher for women than for men.⁹⁸

Millennium Development Goals and targets

Goal 4: Reduce child mortality

Target 5: Reduce by two-thirds, between 1990 and 2015, the under-five mortality rate

Goal 5: Improve maternal health

Target 6: Reduce by three-quarters, between 1990 and 2015, the maternal mortality ratio

Goal 6: Combat HIV/AIDS, malaria and other diseases

Target 7: Have halted by 2015 and begun to reverse the spread of HIV/AIDS

Target 8: Have halted by 2015 and begun to reverse the incidence of malaria and other major diseases

Thailand's success in preventing HIV/AIDS

Thailand's response to HIV/AIDS is one of the developing world's few successful prevention programmes. Since peaking in the early 1990s, new HIV infections have dropped by more than 80%. How?

Political will

AIDS was first identified in Thailand in 1984, and in 1987 the government established the National AIDS Prevention and Control Program (NAPCP), chaired by the prime minister. Political will has been complemented by financial commitments: between 1987 and 1991 spending by the government and donors jumped from \$684,000 to \$10 million. By 1997 government spending on AIDS control programmes was \$82 million a year.

Multiplayer collaboration

From patients to private practitioners to Buddhist monks, many participants have worked with the national government to plan and implement AIDS programmes. For example, 150 groups of people with HIV/AIDS provide support and advocacy for other patients. The Thai NGO Coalition on AIDS coordinates the AIDS activities of non-governmental organizations. In an

innovative initiative, the government created a programme called Reduce Girls' Vulnerability that provides scholarships to young women for continuing education—aiming to discourage them from becoming prostitutes.

Targeting high-risk groups

In 1989 it was found that 44% of sex workers in Chiang Mai were HIV positive. Instead of denying that prostitution existed, the Thai government focused on reducing male visits to brothels and promoting the use of condoms by sex workers. In 1991 the 100% Condom Use Program was launched, distributing 31 million condoms a year to high-risk groups. Clinics gave away another 600 million condoms a year.

These efforts had dramatic results: between 1988 and 1992 condom use in brothels rose from 14% to 90%. In addition, the average number of men visiting each such establishment dropped from 4.0 to 1.5 a day. As a result HIV prevalence among sex workers fell from 50% in 1991 to less than 10% in 2001.

Education campaigns

A national public information campaign accompanied the 100% Condom Use Program.

AIDS information was made available everywhere—from billboards to cereal boxes to televisions, with one-minute AIDS education spots appeared every hour on television and radio. Thus messages helped dispel the stigma associated with having HIV.

Monitoring and evaluation

Three surveillance systems collect information on HIV and sexually transmitted infections. This information is used to track changes in the distribution of new HIV infections and has been used by policy-makers to guide control efforts.

International support

Thailand has received abundant international financial and technical support for its AIDS programmes. The Joint United Nations Programme on AIDS (UNAIDS), for example, has been active in raising funds, evaluating programmes and helping HIV/AIDS patients. Bilateral cooperation includes partnerships with the US Agency for International Development (USAID), European Union and Australian Agency for International Development (AusAID).

Source: Avert.org 2003; Kongsin and others 1998; Forster-Rothbart and others 2002.

Poor women are especially vulnerable to HIV because of their low nutritional status, limited education and employment opportunities and low social status and consequent inability to negotiate safe sex. And once infected, women are more likely to avoid or postpone seeking care because of gender constraints, such as domestic responsibilities and the costs of travel and treatment. Autonomy is also a problem: in South Asia men often decide whether women should seek medical treatment.⁹⁹

LIMITED RESOURCES—AND WHAT TO DO ABOUT THEM

Every high-income OECD country spends at least 5% of its GDP on public health care. But few developing countries achieve that share—and in most it is less than half that. (Costa Rica—a country with no military that is a high performer in health and education—is a rare exception.) In countries with high human development the

median public spending on health was 5.2% of GDP in 2000—while in medium human development countries it was 2.7% and in low human development countries, 2.1%. In per capita terms public health spending is very low in most developing countries: in 2000 the median was \$1,061 in high human development countries, \$194 in medium human development countries—and just \$38 in low human development countries (in purchasing power parity terms).¹⁰⁰

The World Health Organization's Commission on Macroeconomics and Health recommends that donor assistance for health systems in low-income countries be substantially increased, along with domestic financial resources in those countries. The commission estimated that an increase in donor assistance for health to \$35 billion a year by 2015 (from \$5 billion a year in 2001), if properly invested in high-priority areas (infectious diseases, nutritional deficiencies, maternal complications) and if accompanied by greater health spending by

Policy priorities and technical interventions

Goal 4: cutting under-five mortality by two-thirds

Achieving Millennium Development Goal 4—reducing under-five mortality by two-thirds between 1990 and 2015—will require addressing the main causes of child mortality. Technical interventions must focus on malnutrition, infectious and parasitic diseases and immunizations, delivered through a strengthened basic health care system.

Malnutrition. Low birth-weight often leads to child malnutrition and is directly related to the mother's health before and during pregnancy. Expanding access to reproductive health care and ensuring adequate nutrition greatly enhance the health of mothers and their children.

Exclusively breastfeeding infants for the first four to six months of their lives greatly benefits their health. But when a mother is HIV-positive, substitutes for breast milk should be explored. As a first step, countries should immediately adopt into law the International Code of Marketing of Breastmilk Substitutes (promulgated by the World Health Organization and United Nations Children's Fund).

Children's health can suffer enormously from micronutrient (vitamin A, iron, zinc and iodine) deficiency, and can be addressed through supplementation (such as iodization of salt). Vitamin A deficiency can be reduced simply by providing two high-dose vitamin A capsules a year. In countries without functioning health systems, vitamin supplements should be delivered through campaigns akin to mass vaccination campaigns. In 1999 such methods enabled the least developed countries to achieve 80% supplementation coverage.

Infectious and parasitic diseases. In the worst-affected areas under-five mortality from HIV/AIDS is expected to more than double by 2010. In many countries combating HIV/AIDS—and explicitly addressing issues specific to women and children—is a top development priority (see box 4.1). Meanwhile, every year malaria kills more than 400,000 children—making it another priority in many countries.

Although under-five deaths from diarrhoea fell in the 1990s, the disease continues to take a high toll on children. Continued reductions will depend on families' ability to treat diarrhoea at home (increased fluids and continued feeding) and to use health services when needed. Increased access to clean water and sanitation, as discussed in this chapter, will also reduce the incidence of the disease.

Finally, acute respiratory infections account for nearly 20% of child deaths in developing

countries, yet most are easily preventable. Data from 42 countries show that only half of children with such infections are taken to health care providers. In West Africa that share falls to one-fifth. As discussed in this chapter, a functioning health system that expands the number of health care providers in underserved areas is crucial to attacking this killer.

Immunizations. After increasing for many years, immunizations in South Asia have stagnated at their 1990 level—and in Sub-Saharan Africa they have dropped. But achieving higher levels is possible, as shown by periodic polio campaigns by national governments. Between 1998 and 2000 the campaign cut new polio cases by 99% through mass public education campaigns and better routine immunizations and surveillance.

Goal 5: reducing maternal mortality by three-quarters

Every year about 500,000 women worldwide die from complications arising from pregnancy and childbirth. Thirty times more suffer injuries, infections and other complications related to pregnancy. To achieve Millennium Development Goal 5—reducing maternal mortality ratios by three-quarters between 1990 and 2015—developing countries must expand access to skilled birth attendants, emergency obstetric services and reproductive health care, bringing these services together within a functioning health and referral system. Countries must also address the broader social issues that inhibit women from seeking health care.

Skilled birth attendants. Skilled birth attendants are present for less than half the births in developing countries. Reducing maternal mortality will require substantially increasing the number of skilled attendants, especially in areas underserved by the health system. Skilled attendants help reduce maternal mortality in two ways. First, by using safe and hygienic techniques during routine deliveries, and referring complicated deliveries to clinics and hospitals. Second, by actively managing third-stage labour—potentially reducing post-partum haemorrhages. This requires specific training beyond the distribution of safe birthing kits. Skilled attendants must be able to recognize the onset of complications, perform essential interventions, start treatment, and supervise the referral of mother and baby for emergency care when necessary.

Emergency obstetric services. Even in the best of circumstances, more than 10% of

pregnant women experience potentially fatal complications. To reduce maternal mortality, skilled attendants must be able to refer complicated deliveries to emergency obstetric care. Developing countries are grossly lacking in emergency obstetric care, with more than 80% of deliveries occurring in areas without such facilities. Thus countries must commit themselves to the first UN indicator in this area: having such a facility for every 500,000 people.

Reproductive health care. Increasing access to contraception can significantly reduce maternal deaths simply by reducing the number of times that a woman becomes pregnant—and so the risks from related complications. If the unmet need for contraception were filled and women had only the number of pregnancies at the intervals they wanted, maternal mortality would drop 20–35%. In addition, unsafe abortions—those performed by untrained providers, under unhygienic conditions or both—kill an estimated 78,000 women a year, or about 13% of all maternal deaths. Thus achieving Goal 5 will require rapidly expanding access to reproductive health care.

Goal 6: reversing the spread of HIV/AIDS

In 2002, 3.1 million people died of AIDS. Another 42 million people are infected with HIV/AIDS. One of the most crippling plagues in modern history, AIDS has struck every country, devastating many in Sub-Saharan Africa. Though daunting, the first target of Millennium Development Goal 6—reversing the disease's spread by 2015—can draw on more than 20 years of successful prevention and treatment efforts. Moreover, in 2001 the UN General Assembly adopted an unambiguous declaration on the gravity of the epidemic, highlighting the need for decisive action to guide policy.

In tackling HIV/AIDS, strong leadership is essential to thwart institutional inertia and to address social issues that fuel the epidemic, including stigma, discrimination and unequal power relations between men and women. The proportion of women living with HIV/AIDS has risen steadily, from 41% in 1997 to 50% by the end of 2002. In Southern Africa young women are 4 to 6 times more likely to be HIV-positive than men of the same age group. Prevention and treatment programmes must explicitly address the conditions that make some groups more vulnerable to infection and less likely to seek health care. Strong community leadership, such as through discussions of

Continued on next page

Policy priorities and technical interventions

behaviours and values that increase the spread of HIV/AIDS, can help generate locally acceptable responses.

Strong leadership is also needed to address disorganized, overwhelmed and grievously underfunded health systems, to promote multi-sectoral responses to the epidemic, to invest in effective prevention technologies (such as condoms and disposable needles) and to increase capacity through better training of health and community workers. Such efforts are being aided by HIV/AIDS control collaboration among developing countries. Thailand is sharing its expertise with Cambodia, as is Brazil with its neighbours.

In addition, prevention efforts must be intensified to curb the spread of the disease. Though control programmes will differ based on local needs, many effective interventions are available (see box 4.6). Effective prevention has enabled many countries to make remarkable progress in reducing infection rates.

Expanded treatment is also widely supported—most notably by the World Health Organization, which has placed antiretroviral drugs on its essential medicines list and issued guidelines for treatment where resources are limited. But significant constraints to scaling up these programs exist, and the timeline for expanding treatment should be ambitious, yet realistic. Involving diverse groups in planning and implementation has contributed to successful treatment programmes in Brazil, Thailand and Uganda.

Weak health systems severely constrain expanding treatment. Ensuring patient compliance with treatment regimens and monitoring drug resistance will require a larger number of well-trained health professionals, new drug distribution and storage systems and more clinics and laboratories in areas with high infection rates.

Goal 6: reversing the incidence of malaria and other major diseases

Malaria and tuberculosis are among the leading infectious causes of adult mortality, particularly in developing countries. To achieve the second target of Millennium Development Goal 6—reversing the spread of malaria and other major diseases by 2015—every developing country will need to identify and tackle the diseases that cause the most damage to its population.

Malaria. Every year malaria infects 500 million people—nearly 10% of the world's population—and kills more than 1 million. Many

researchers fear that the situation could get even worse due to environmental change, civil unrest, population growth, widespread travel and increasing drug and insecticide resistance. But new approaches to malaria control have emerged, and growing international awareness has boosted resources for research and control activities. Still, reversing malaria's spread will require sustained political and financial commitments to scale up successful programmes and to invest in research that could dramatically enhance these efforts.

Because the distribution of malaria cases differs markedly across regions, control programmes must be tailored to local needs. A variety of interventions can be incorporated into local strategies:

- Distributing insecticide-treated nets to people in high-risk areas and ensuring that the nets are retreated each year.
- Training community health workers to diagnose and treat malaria by providing simple diagnostic tools and prepackaged treatment regimens.
- Ensuring that infants and pregnant women receive preventive treatment as part of routine immunizations and antenatal care (though the latter assumes a functional health system).
- Providing antimalarial drugs in combination to decrease the likelihood of resistant parasites.
- Using new techniques to facilitate service delivery by mapping the distribution of populations, health facilities and transport networks. Tools are also available to forecast malaria epidemics—making control efforts in epidemic-prone areas more timely and effective.
- There is also an urgent need to increase research for new drugs and vaccines, because resistance to current treatments undermines their efficacy. Public-private partnerships, such as the Medicines for Malaria Venture, have combined scientists, financial resources and managerial capabilities to accelerate the development of new drugs. Finally, health system capacity must be significantly increased to ensure that existing and emerging treatments are delivered effectively.

Tuberculosis. Fifty years after the introduction of effective chemotherapy, tuberculosis still kills nearly 2 million people a year—making it, along with AIDS, the leading infectious killer of adults worldwide. And its toll is rising. Between 1997 and 1999 the number of new tuberculosis cases rose from 8.0 to 8.4 million. If this trend continues, tuberculosis will still be among the leading causes of adult mortality beyond 2015.

But reversing these trends is possible. The Stop TB partnership, formed in 2000, has made remarkable strides in formulating a plan, complete with financial requirements, to achieve international targets for halting the spread of tuberculosis. This framework calls for expanding, adapting and improving directly observed therapy short-course (DOTS)—a remarkably effective programme in which health workers, while supervising treatment regimens, form close bonds with their patients.

Expanding such therapy requires strengthening tuberculosis control programmes, as well as the overall health system, in four ways:

- Increasing political support to expand DOTS.
- Increasing financial support to expand DOTS.
- Improving health system capacity to expand DOTS.
- Procuring sustainable supplies of quality drugs to expand DOTS.

Adapting DOTS to meet the challenges of drug resistance will involve moving towards “DOTS plus”—the cornerstone of managing multidrug-resistant tuberculosis, which requires strict supervision of therapy regimens. In Russia the incidence of tuberculosis rose by more than 300% between 1990 and 1996, with a substantial proportion of the cases drug resistant. There is an urgent need for clinical, epidemiological and operational research to define the most effective approaches for implementing DOTS plus.

The growing number of tuberculosis cases, combined with HIV/AIDS, places an immense burden on tuberculosis control activities—a burden exacerbated by shortages of trained health personnel, laboratory resources and drug supplies. Establishing joint tuberculosis-HIV/AIDS programmes would address overlaps between the epidemics. But it would also require substantial reconfiguration of and increased outreach between country and community agencies.

Finally, DOTS could be improved by increasing research on:

- New diagnostic tools to detect active tuberculosis cases more quickly, easily and accurately.
- Better drugs to simplify treatment regimens and improve responses to multidrug-resistant tuberculosis and latent infections.
- A better vaccine.

One step towards improving DOTS has been the formation of the Global Alliance for Tuberculosis Drug Development, which will advance such research.

the countries themselves, would avert 8 million deaths a year, with economic benefits on the order of \$360 billion a year.

Most developing countries implementing economic stabilization or adjustment programmes have no way of expanding health spending without increasing revenues from other sources. Heavily indebted poor countries in particular do not have the fiscal space to increase social spending. Yet basic services account for less than half of public spending on education and health in such countries.¹⁰¹ (The private sector's role in health care is described in chapter 5.)

What can governments do in the face of severe fiscal constraints? One source of extra funds is official development assistance, and for health such assistance has been rising—with commitments averaging \$3.6 billion a year in 1999–2001, up from \$3.3 billion a year in 1996–98. Still, official development assistance for health is equal to just \$0.01 of every \$100 of donor countries' GNP—too little to meet even the basic health needs of developing countries.

In 1996–98 multilateral institutions provided an average of \$872 million a year in health-related official development assistance, though in 1999–2001 that fell to \$673 million a year.¹⁰² But commitments for basic health were \$264 million a year in 1996–98 and stayed at much the same level (\$249 million a year) in 1999–2001.

At the end of the 1990s, 37% of health aid from members of the OECD's Development Assistance Committee went to basic health, 23% to general health and the rest to reproductive health (figure 4.4). Thus, unlike for education, official development assistance for health is focused on basic services—good for the Goals. In the 1990s official development assistance for reproductive health rose from \$572 million to \$897 million a year.¹⁰³

INEQUITY—AND WHAT TO DO ABOUT IT

How should small health budgets be shared among services and users? This is a key issue for equity, because today poor people lose out. A recent survey of developing countries found that in every case the poorest 20% of the population receives less than 20% of the

benefits from public health spending. They also receive less than the richest 20% (which in many countries includes a large portion of the middle class).¹⁰⁴

But spending on basic health care is shared more equitably than total health spending. In some countries poor people make disproportionate use of primary health facilities. In Kenya the poorest 20% receive 22% of government spending on primary health care, compared with 14% of total health spending. In Chile—a high performer in health—the poorest 20% receive 30% of spending on primary health care. And in Costa Rica, another high performer, the poorest 20% receive 43%.¹⁰⁵ Thus, if poor people are to benefit, more resources must go to primary health care.

More egalitarian spending is strongly reflected in health outcomes. In countries where fewer than 70 of 1,000 children die before age five, the poorest 20% receive more than 25% of public spending on primary health care—while in countries with child mortality rates above 140, the poorest 20% get less than 15%. Moreover, in countries with high child mortality rates, the poorest 20% account for less than 10% of hospital use—the richest 20%, around 40%.¹⁰⁶

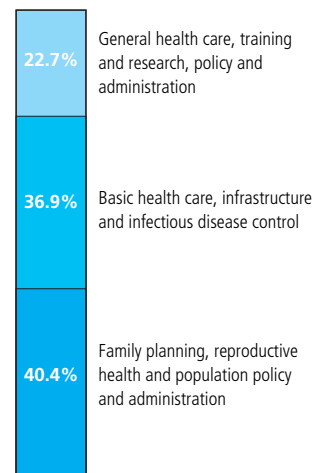
When resources are limited, less developed rural areas bear the brunt of shortages in medical personnel. Moreover, efforts to deploy medical personnel in underserved areas are usually unsuccessful. In Cambodia 85% of people live in rural areas but only 13% of government health staff are located there, while in Angola 65% of the population is rural but just 15% of government health professionals work in those areas.¹⁰⁷ In Nepal only 20% of rural physician posts are filled, compared with 96% in urban areas.¹⁰⁸

Several measures can be taken to redress imbalances in health care coverage:

- *Increase the number of nurses, paramedics and community health workers.* Nurses, trained birth attendants and community health workers are the limbs of the health system, enabling the outreach that is critical to successful reproductive health services. For example, high-achieving countries—those where life expectancy is high and under-five mortality is low relative to the average for developing countries—tend to have more nurses per doctor. Compare

FIGURE 4.4
A large share of aid for health goes to basic services

Aid for health from Development Assistance Committee members



Source: OECD, Development Assistance Committee 2003a.

Zimbabwe (9.5 nurses per doctor in 1990) and Thailand (4 in 1990) with India (1.5 in the late 1980s) and Bangladesh (1 in 1990). More recent data confirm this observation.¹⁰⁹

- Use service contracts to require medical personnel to spend a certain number of years in public service. Such contracts, common in Latin America, have also been implemented in the Philippines and Tanzania. In the 1970s Malaysia, another high performer, required all holders of medical degrees to work three years for the government health service—enabling the government to post doctors to rural areas they had previously avoided. In addition, policies ensured that the poorest groups received a larger share of public health spending than the middle and upper classes.¹¹⁰

- Have donors fund some recurrent costs. The World Health Organization has recommended a package of essential health services for developing countries, including public health and clinical interventions. But this package cannot be provided without more staff, so donors should cover some recurrent staff costs.

INEFFICIENCY—AND WHAT TO DO ABOUT IT

Unless the performance of health systems improves, any extra funds could be wasted.

BOX 4.8

Integrating vertical programmes into working health systems

Where disease specific programmes are integrated into a working health structure, their likelihood of success is high, as India's tuberculosis programme demonstrates. More than 200,000 health workers have been trained. Some 436 million people (more than 40% of the population) have access to services. And 200,000 deaths have been prevented, with indirect savings of more than \$400 million—more than eight times the cost of programme implementation.

Using the strategy of directly observed therapy short-course (DOTS), India's programme uses the existing health structure but supplements its activities with additional resources, staff and drugs, with diagnosis and treatment free of charge to patients. Once a decision is made to start a

programme in a district, the health administration forms a society, which hires staff for a tuberculosis unit—covering 500,000 people. The state government trains the doctors and hires the lab technicians. Policy direction, drugs and microscopes are provided by the central government, with financial assistance from the World Bank and bilateral donors.

There are several levels of support, monitoring and supervision. Staff from the government and World Health Organization (WHO) make site visits. WHO-hired consultants, with mobile phones and Internet access, provide support to tuberculosis units. The government provides detailed feedback each quarter on the performance of each state and district.

Source: Khatri and Frieden 2002, pp. 1420–25.

FOCUSING ON ESSENTIAL INTERVENTIONS

Cash-strapped governments have traditionally tried to ration health care by limiting overall budgets—not directing resources to specific illnesses or diseases. A different approach would be to ration funds based on essential interventions. Mexico has taken this approach, and Bangladesh, Colombia and Zambia are beginning to.¹¹¹

TAKING AN INTEGRATED APPROACH

The smallpox and malaria eradication campaigns of the 1960s started a trend towards donor-driven, disease-specific vertical programmes imposed on developing country health systems. Since the 1980s—with the launch of myriad structural adjustment programmes and especially since the World Health Organization–United Nations Children's Fund campaign promoting universal immunization of children (1985–90)—donors have tilted the balance even more towards such efforts. And with the increasing prevalence of tuberculosis, malaria and HIV/AIDS, this trend has been further reinforced.

Such programmes have risks. Resources are concentrated in these areas at the expense of the overall health system. Public health care efforts outside of such vertical structures may be gutted. And even vertical programmes, expensive to maintain, may be threatened if donor funds disappear. Vertical programmes may be affordable and prudent only for diseases that offer a reasonable possibility of eradication in a foreseeable period.

Disease-specific programmes should be integrated with overall health structures, as India's successful tuberculosis programme shows (box 4.8). But maternal and child health services are also crying out for integration: in many countries primary health care has focused on family planning to the exclusion of maternal and child health services. To avert more maternal deaths, care during pregnancy and especially during childbirth must be linked to reliable systems that ensure the availability of advanced treatment in cases of obstetrical emergencies.

Ensuring essential medicines for all—success in Bhutan

Bhutan, a small landlocked Asian kingdom, shows how a coherent national drug policy—backed by concerted international assistance—can achieve impressive results in providing essential medicines. Until 1986 public drug supplies in Bhutan were in disarray, with poor availability, erratic quality, irrational prescriptions and high costs. Then the country embarked on an essential drugs programme with extensive technical and financial assistance from the World Health Organization and donor countries. In 1987 a comprehensive national drug policy and enabling legislation were adopted. Key components of the programme include:

- National procurement and distribution facilities.
- Quality assurance through careful supplier selection and product testing.
- More rational prescriptions through the creation of standard treatment guides and better training and supervision of pharmacy technicians.

- Reduced waste and increased efficiency through workshops for storekeepers on proper drug storage and management.
- Free public provision of essential drugs and vaccines.

Since 1993 the programme has been operated by Bhutanese staff, with minimal assistance from international experts. Results include:

- Access to high-quality essential drugs for more than 90% of the population, with 90% of core essential drugs available.
- Reduced errors in medication bookkeeping, from 76% in 1989 to 14% in 1997.
- Reduced waste, with only 0.75% of the drug budget spent on drugs that expire before their use.
- Much lower prices paid by the essential drugs programme (which procures 85–90% of drugs), falling to about half of average international prices.

Source: Stapleton 2000, p. 2.

PROVIDING ESSENTIAL DRUGS IN CLINICS TO ATTRACT PATIENTS

Grossly inadequate drug supplies are one reason public health systems become dysfunctional. When patients do not receive therapeutic drugs, they have little incentive to seek public health care. This kills the demand for medical services, causing medical professionals and paramedics to skip work.

In India public health facilities in four southern states—Andhra Pradesh, Karnataka, Kerala, Tamil Nadu—function better because drugs are distributed through the primary health care network, giving patients a reason to visit the facilities. In other countries providing essential drugs through decentralized facilities could help revive primary health systems. Providing curative services would also expand the coverage of preventive services.

In countries with high human development almost the entire population has access to essential drugs. In countries with medium human development there is a huge range: in China 80–94% of the population has access (depending on the region), in India 0–49%. Most countries with low human development have low access (defined by the World Health Organization as 50–79%). Bhutan is a low human development country but has succeeded in providing essential medicines for 80–94% of its population (box 4.9).

Many low-income countries will require concessional donor financing to provide essential drugs. High-performing countries have provided essential drugs at public health centres—stimulating local demand for other services from these centres. Increasing beneficiary interest in the public health system also improves supervision of public health workers through community monitoring.

ACHIEVING THE WATER AND SANITATION GOALS

Access to safe water and adequate sanitation is crucial for survival. Water is essential for the environment, food security and sustainable development. And adequate sanitation can also make the difference between life and death.

SCALE OF THE PROBLEM

In 2000 at least 1.1 billion of the world's people—about one in five—did not have access to safe water.¹¹² Twice as many (2.4 billion people) lacked access to improved sanitation.¹¹³ Asia contains

Millennium Development Goals and targets

Goal 7: Ensure environmental sustainability

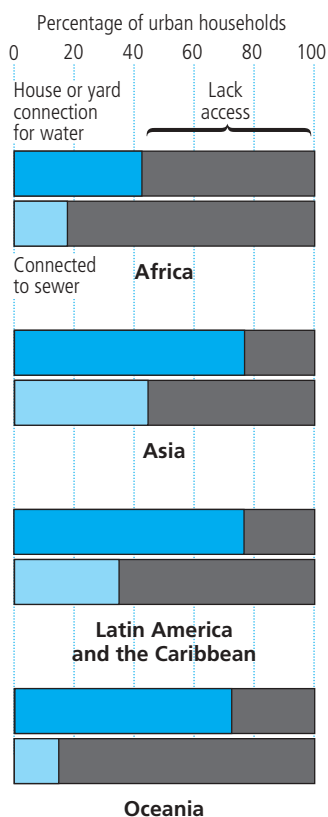
Target 9: Integrate the principles of sustainable development into country policies and programs and reverse the loss of environmental resources

Target 10: Halve by 2015 the proportion of people without sustainable access to safe drinking water

Target 11: Have achieved by 2020 a significant improvement in the lives of at least 100 million slum dwellers

FIGURE 4.5

Many urban households lack water and sanitation



Source: WHO, UNICEF and WSSCC 2000.

65% of the population without safe water, and Africa 28%. For sanitation Asia contains 80% of the unserved population, and Africa 13%.¹¹⁴

There were some positive developments during the 1990s: about 438 million people in developing countries gained access to safe water, and about 542 million in urban areas gained access to proper sanitation.¹¹⁵ But due to rapid population growth, the number of urban dwellers lacking access to safe water increased by nearly 62 million.¹¹⁶

In the major cities of Europe and North America more than 90% of households are connected to piped water and sewers. But in the rest of the world the situation is very different. If adequate sanitation is taken to mean a toilet connected to a sewer, there is a significant lack of adequate sanitation throughout the developing world—even in large cities. And sanitation coverage is much worse than water coverage in every region (figure 4.5).

In the 1990s the number of children killed by diarrhoea—the result of unsafe water and sanitation—exceeded the number of people killed in armed conflicts since the Second World War.¹¹⁷ Moreover, half the world’s hospital beds are occupied by patients with water-borne diseases, meaning that expensive curative services are being used to treat diseases that could easily have been prevented.

In South Asia only 37% of the population has access to adequate sanitation. Some 1.4 million of the region’s people still either defecate in open areas or use unsanitary bucket latrines.¹¹⁸ In Sub-Saharan Africa the more pressing problem is safe water, available to just 57% of the population¹¹⁹—an average masking huge gaps between urban and rural areas.¹²⁰

Rural poor people suffer more from a lack of safe water because they generally rely on land and water resources to sustain their livelihoods. Urban poor people suffer more from inadequate sanitation, made worse by overcrowding in cities.

As with the other Millennium Development Goals, increasing access to safe water and sanitation also requires addressing gender inequities. African women and girls spend three hours a day fetching water, expending more than a third of their caloric intake. Such household chores

keep many girls out of school—and if they attend school, the energy they use performing household chores seriously undermines their school performance. Moreover, when other family members become sick, often due to water- or sanitation-related diseases, girls are more likely to be kept home to care for them. And when water is needed in schools, girls are sent to fetch it, reducing their time for study and play.

The policy priorities for achieving the water and sanitation Goals involve:

- *Increasing resources.* Low-cost technologies are available to increase household and community access to safe water and sanitation. But for cash-strapped governments, wastewater treatment infrastructure is extremely expensive to install and maintain.
- *Increasing equity.* Poor people often cannot afford water and sanitation costs because wealthier users are not paying enough. And in poor households girls and women suffer more from difficult access to water and sanitation.
- *Increasing appropriate maintenance.* Too often, water and sanitation delivery systems are poorly maintained by governments and do not respond to local needs.
- *Limiting environmental damage.* Sustainable water supplies require rational water use—especially in agriculture.

APPROPRIATE TECHNOLOGIES FOR EFFICIENT USE

In water supply low-tech, low-cost technologies include household connections, public standpipes, boreholes, rainwater collection and protected springs and wells. These technologies are far better than alternatives such as bottled water, tanker truck provision of water and unprotected springs and wells. Some of these alternatives are unsafe, while others are inappropriate because they cannot be secured in sufficient quantities.

In sanitation there is a pressing need to provide technologies that people want to use, because decisions about sanitation are made at the household level. Households do not need to be convinced about the merits of a well or a standpipe. But they may need to be sold on the merits of onsite sanitation, as well as

given adequate hygiene education. The best way to do so is through products that match consumer demand in both price and quality (box 4.10). Appropriate technologies include pour-flush latrines, simple pit latrines, ventilated pit latrines and connections to septic tanks or covered public sewers. In rural areas waste disposal through composting is sometimes appropriate.

Such technologies are affordable to and can be easily maintained by poor communities. In the past governments often took a top-down approach, installing hand pumps, tube wells and even ventilated pit latrines regardless of whether there was demand for them. As a result communities generally neglected maintenance or relied on the government to perform it. But when communities—especially women—are involved in providing and financing facilities and trained to maintain them, ownership and sustainability increase.

Many city governments are reluctant to invest in basic sanitation without addressing the broader challenges of drainage and solid waste disposal. In developing countries very little urban wastewater is treated before being returned to the environment. But treating wastewater is much more expensive than simply providing access to safe water and household sanitation. Thus research is needed on feasible, affordable approaches to the full range of sanitation services.

It may also be necessary to accept an increase in environmental pollution as a first step towards improving sanitation. In Europe and North America, for example, improved household sanitation initially came at the cost of polluting rivers and waterways.

LIMITED RESOURCES—AND WHAT TO DO ABOUT THEM

In developing countries the domestic public sector finances 65–70% of water infrastructure, donors 10–15%, international private companies 10–15% and the domestic private sector 5%.¹²¹ In 90% of developing countries water and sanitation services are provided by the public sector. Funding comes from users who pay bills to local authorities—the usual suppliers of services—but

BOX 4.10

Affordable sanitation in India

Much defecation in India still occurs in open spaces. But pioneering work by Sulabh International, a non-governmental organization (NGO), has shown that human waste can be disposed of affordably and in a socially acceptable way. Sulabh's approach is based on partnerships with local governments, backed by community participation, and has substantially improved environmental quality in rural and urban slums inhabited by poor people.

Sulabh's solution is a low-cost, pour-flush water-seal toilet with leach pits for on-site disposal of human waste. The technology is affordable for poor people because designs suit different income levels. Flushing requires only 2 litres of water, compared with the 10 used by other toilets. Moreover, the system is never out of commission because there are two pits—so one can always be used while the other is being cleaned. The latrine can be built with locally available

materials and is easy to maintain. It also has high potential for upgrading because it can easily be connected to a sewer system when one is introduced in the area.

Since 1970 more than 1 million of the units have been constructed in houses. In addition, 5,500 have been installed in pay-and-use public toilets, staffed by an attendant around the clock who supplies soap for washing hands. The public toilets include facilities for bathing and doing laundry and offer free services to children and disabled and poor people. As a result more than 10 million people have received improved, low-cost sanitation, and 50,000 jobs have been created.

Sulabh's door-to-door campaigns also provide free health education to millions of people. The organization trains local people to construct more latrines themselves, and has helped set up and maintain fee-based community toilets in slums and other areas.

Source: WSSCC 2002, 2003.

cost recovery usually covers only part of the capital and recurrent costs of water infrastructure and services. The financing gap is covered by tax revenue and donor funding. With political commitment and money, access to safe water can be increased—as South Africa showed in the 1990s (box 4.11).

Many developing countries struggle to pay for water and sanitation infrastructure, with funding from the cash flows of water services especially precarious.¹²² Inappropriate charges are a big problem. Yet in the absence of core infrastructure, household plumbing and sanitation cannot advance. And without trunk sewerage and treatment plants, wastewater typically flows into open streams and drainage channels—posing health risks and damaging the environment.

International private investment in water services has declined after peaking in 1996–99, apparently because returns are too low.¹²³ Moreover, water projects require larger initial investments than electricity, telecommunications and natural gas. Currency devaluations—as in the recent economic crisis in Argentina—are another disincentive.

In the 1990s an average of \$3 billion a year in official development assistance was allocated

South Africa and the “right” to water

In 1994, as a new democratic government came to power, more than 15 million South Africans lacked access to 25 litres of clean water a day within 200 meters of their homes. By 2001 that number dropped to 7 million. How?

- Top-level political support has been essential. South Africa’s constitution guarantees—as a human right—access to a basic water supply and an environment not harmful to health. As a result a policy ensuring free basic water was recently adopted, providing each household with the first 6,000 litres of water each month free of charge.
- Clear laws and regulations have clarified the roles of water authorities and service providers. In addition, national standards and similar legislation have helped regulate water quality and tariff structures.
- An extensive capital works programme was quickly pursued by the new government to address areas in greatest need. This

programme benefited from substantial government funding and from the support of various actors, including non-governmental organizations, private companies and community groups.

- Devolution of responsibilities to local governments gives local authorities more control over projects, allowing them to be better tailored to local needs.

Despite these achievements, South Africa still faces obstacles to sustaining and expanding access to basic water supplies. Continued political and financial commitments will be necessary to ensure continued success. The viability of the free basic water policy, for example, largely depends on government revenue—as well as the number of wealthy households available to cross-subsidize poorer households. In addition, mixed experiences with private sector participation have left uncertain the extent of its role in future service provision.

Source: Millennium Project Task Force 2003; WSP 2002b.

to water and sanitation projects. In 1996–98 such funding was \$3.5 billion a year, but in 1999–2001 it fell to \$3.1 billion a year. The share of water and sanitation in total official development assistance remained relatively stable in the 1990s, at 6% of bilateral and 4–5% of multilateral aid. Non-concessional lending, mainly by the World Bank, added \$1.0–1.5 billion a year. Japan made by far the most significant commitments.¹²⁴

Water supply and sanitation accounted for three-quarters of aid to the water sector in 1997–2001. Most aid to water supply and sanitation goes for large systems.¹²⁵ The number of projects drawing on low-cost technologies offering the best prospects of increased coverage for poor people—hand pumps, gravity-fed systems, rainwater collection, latrines—is very small.¹²⁶ Thus the composition of aid for water and sanitation has to change. Ten countries accounted for half of the official development assistance for water, and just one donor—Japan—provides one-third of such aid.¹²⁷ Worse, only 12% of official development assistance for water went to countries where less than 60% of the population has access to safe water.¹²⁸

INEQUITY—AND WHAT TO DO ABOUT IT

To fill part of the financing gap to meet the Goals for water and sanitation, costs must be reduced and revenues from users increased. To reduce costs, local authorities have to improve management—for which there should be more donor support and exchanges among developing countries.

In terms of revenues, local authorities commonly do not include capital costs in their cost recovery policies—and only partly recover recurrent costs. It has been suggested that “for the water and sanitation sector, full cost recovery from users is the ideal long-term aim”.¹²⁹ Under such a strategy urban users would pay full costs for investments, while peri-urban and rural users would not contribute to capital costs. For operation and maintenance costs urban users would pay full costs, peri-urban users would do so where possible and rural users would pay partial recurrent costs.

But such an approach would be unfair. Since the social benefits of safe water and adequate sanitation far exceed the costs, there is a strong case for a pricing policy that reflects the wider benefits to all from, say, reducing the incidence of diarrhoea. This implies that those with direct household connections should be paying full cost. Today they are the ones paying below cost—and receiving the greatest subsidies. Charging them full cost would generate resources for the sector and make it possible to cross-subsidize those lacking improved water or sanitation or having a lower ability to pay. Such cross-subsidies would also be possible if higher rates were charged to industrial and agricultural users.

Depending on poverty levels in peri-urban and rural areas, there should be only partial cost recovery of recurrent costs. In many areas poor people currently pay exorbitant prices to water vendors. Some form of cost recovery is often desirable, less to generate resources than to ensure efficient use. Communities should be encouraged to provide labour to ensure rapid installation of hand pumps and public toilets.

How difficult is it for poor people to cover the costs of water and sanitation infrastructure? Consider an example from Bolivia and some cost estimates for water and sanitation from a project in El Alto:

- *Average monthly income*: \$122 (\$0.80 a day per capita).
- *Connection costs*: \$229 for traditional water, \$276 for sanitation (excluding trunk infrastructure).
- *Connection costs for condominal technology with community participation*: \$139 for water, \$172 for sanitation.¹³⁰

An important additional cost for poor households is the construction of a bathroom or similar in-house facility, including a toilet. In El Alto these costs averaged \$400, plus 16 days of labour. These costs are typically not factored into costing exercises for water and sanitation. Even with microfinance available the costs were too high for most poor people. But with hygiene education, the demand for toilets more than doubled.

Where poor people struggle to cover charges, they should be helped through credit schemes. Bangladesh's Grameen Bank has been extending credit for water and sanitation, on a group basis, for years.

Women face more problems of workload, privacy, safety and hygiene than boys and men—and so are more interested in sanitation improvements. But they often have fewer resources, so it is important to persuade men that sanitation improvements are worth it. The improvements should also be financially affordable for female-headed households, which often have less money and fewer labour resources than households with a man and a woman. Since women are more likely to know what designs and locations are suitable for use by women and children, men and women should share information and decisions.

Women also prove more reliable in maintaining equipment, such as hand pumps—partly because they are commonly responsible for fetching water for the family. Thus they should be encouraged to train as masons and plumbers, because they would feel more comfortable showing another woman where to locate a latrine in a home than showing a man. And with a job in maintenance, they are less likely to move from the community in search of work elsewhere.

Within the social services, particularly health and education, resource allocations have tended to be biased against basic health services and basic education

CROSS-CUTTING PRIORITIES

The discussion so far has focused on sectoral policy priorities. Here the focus shifts to policy priorities that cut across the Goals for all groups of countries.

INCREASING THE LEVEL, EFFICIENCY AND EQUITY OF PUBLIC SPENDING ON BASIC SERVICES

In most rich countries the government accounts for more than 40% of GDP—in most developing countries, less than 20%. With development the size of government is expected to rise. The enormous challenges of reducing hunger, preventing deaths and spreading literacy require a big increase in public spending.

But it is difficult to drive through multi-sectoral action in low-income countries, where tax revenues typically account for less than 15% of GDP. And achieving the Millennium Development Goals will require significant additional resources not likely to be generated by the economic growth of poor countries alone

(see chapter 3). Their fiscal resources are squeezed by debt repayments (see chapters 3 and 8). And the allocation of what is left over is skewed too much towards defence (see box 4.5). Not enough goes for agriculture—less than 5% of budgets in Africa—or for health and education.

Within the social services, particularly health and education, resource allocations have tended to be biased against basic health services and basic education. But the capacity of governments to reallocate spending to basic services to meet the Millennium Development Goals depends partly on shifting spending away from defence and debt servicing, partly on generating more domestic revenues. Things become a lot easier if government revenues are increasing, because discretionary spending on each individual can rise.

The problem facing many developing country governments is that large budget deficits have forced them to undertake macroeconomic stabilization and adjustment. But since the early 1980s adjustment policies have focused on reducing public spending—rather than mobilizing

If public spending is stagnant or falling, it is next to impossible politically for governments to shift funds to social services—particularly to basic social services—without incurring the wrath of those better off

tax and non-tax revenues—to reduce the deficits. In a recent external review of International Monetary Fund (IMF) Extended Structural Adjustment Facility programmes, a group of independent experts concluded that public spending limits have often been set too tight, with detrimental effects on human capital and growth. This was again the case in the policy conditions laid down in the IMF's response to the East Asian economic crisis that started in 1997—conditions relaxed somewhat only after widespread criticism of the IMF on this and other counts.¹³¹

Another recent study shows that, for all of more than a dozen countries, real per capita public spending on basic social services (basic health, basic education and water and sanitation) declined only when public spending fell as a proportion of GDP.¹³² In other words, if public spending is stagnant or falling, it is next to impossible politically for governments to shift funds to social services—particularly to basic social services—without incurring the wrath of those better off.

Much more could be done to strengthen tax collection to prevent tax evasion and tax avoidance. And much more could be done to enhance the tax base, by enlarging the tax net to catch those now escaping it. International financial institutions need to take much more seriously the technical support requirements of most developing countries in tax administration and collection, especially those in Sub-Saharan Africa and Latin America.

The prospects for enhancing the efficiency of spending (by increasing the availability of textbooks in schools, of drugs in public health clinics and so on) and improving the equity of spending on social services would be much brighter if spending was to increase. As noted, health spending—even in countries with stagnating incomes—strongly affects health outcomes. The same goes for education spending: it improves outcomes.¹³³

IMPROVING THE QUANTITY AND QUALITY OF AID FOR BASIC SERVICES

Reaching the Goals requires true adherence to the Millennium Development Compact. For the poorest low-income countries a significant

proportion of the additional resources needed for social investments will have to come from external sources. For heavily indebted poor countries, from debt cancellation—and much more than so far. And for all low-income countries, from enhanced official development assistance.

How has official development assistance responded? The total share devoted to basic social services (basic health, basic education and water and sanitation) has rarely surpassed 10%, despite an increase in bilateral flows in the new decade. The multilateral contribution has accounted for a third of official development assistance, including UN agencies, the World Bank and regional banks. Official development assistance for small water and sanitation projects in rural areas and for basic education are insufficient.

Official development assistance for basic services must increase. Donors worried about the fungibility of recipient government resources should bear in mind that even if governments shift resources partially to other sectors, they still increase public spending.¹³⁴

IMPROVING SECTORWIDE PROGRAMMES

Moving from project-oriented to sectorwide approaches is an important step forward. A sectorwide approach avoids the weaknesses of the project approach: weak links to other sectors, geographic isolation, lack of ownership and aid conditionality. It is also supposed to build an integrated programme that sets out policy objectives, a comprehensive policy framework, an investment plan, a spending plan and funding commitments for governments and donors.

The idea is that sectorwide programmes should become part of the overall policy environment—rather than bypassing national structures, as project funding does. They could also ensure clear financing commitments from donors, an improvement over unpredictable aid flows to particular projects. Though a complex exercise, because they presuppose home-grown and effective sector policies, at least they involve recipients.

The sectoral approach has had problems, however, and in many cases resource pooling has

not yet occurred. First, the approach takes years to develop and finalize. It has been estimated that a sectoral approach planning cycle takes an average of five to seven years.

Second, technical cooperation (with expatriate technical personnel), which tends to dominate the project approach, remains a lingering problem with sectoral programmes. It would be useful to evaluate the opportunity costs of time and funds used for donor-financed training.

Third, donors' differing legislative constraints on spending, rigid and different procedures for resource allocation and reporting needs and weak capacity in recipient countries prevent actions from being fully harmonized. The government cannot be in the driver's seat if donor project implementation units continue to exist over which the line ministry has little control.

In Zambia donors have agreed to release the second tranche of their aid only if the government has spent at least 20% of its budget on education.¹³⁵ In addition, all the external agencies involved have linked their financial flows to specific programmes. Indeed, earmarking funds for specific elements of sectorwide approaches is widespread, often depending on donor perceptions of local political leadership and commitment in specific areas.

Donors recognize some of these problems. The February 2003 Rome Declaration on Harmonization calls for donors to commit to "providing budget, sector, or balance of payments support where it is consistent with the mandate of the donor, and when appropriate policy and fiduciary arrangements are in place".¹³⁶

COVERING SOME RECURRENT SPENDING

Most donors have been willing to finance investment costs (building hospitals) but unwilling to finance recurrent costs (doctor salaries). This attitude is changing—but if the Goals are to be met, donors will have to be more flexible than in the past in this area. Governments are often unable to absorb multilateral resources for capital costs if, as is often required, they have to show they can match these

capital expenditures with funds to meet the running costs of the resulting infrastructure.

In the interim donors will need to cover some recurrent costs, especially for non-salary purposes in areas related to the Goals for heavily indebted poor countries—as long as these countries have raised some revenue from domestic sources. In cases where fiscal constraints are very severe, donors may need to show a willingness to accommodate even the salary costs of school teachers, paramedics or trained birth attendants for a transitional period until the fiscal space can be created for the government to bear those recurrent costs domestically on a sustainable basis.

DEVOTING RESEARCH AND DEVELOPMENT TO TECHNOLOGIES FOR POOR PEOPLE

For some sectors the lack of research funding is a serious problem. For instance, 90% of global research for pharmaceutical drugs goes to diseases that account for 10% of the disease burden in developing countries. Thus international efforts need to be mobilized to address the need for drugs for tropical diseases. One clear case is the rapid development and testing of a vaccine for HIV/AIDS. The International AIDS Vaccine Initiative is making long strides in this area, trying to develop vaccines specific to the strains of the AIDS virus prevalent in different parts of the developing world. Vaccine trials are expected to begin soon in Uganda on the strain in that part of Africa—and in 2004 in India. But many other areas of research remain neglected.

In many other areas relevant to achieving the Goals, the solution is to diffuse existing technologies. Agricultural output in Sub-Saharan Africa, for instance, has been bedevilled by low productivity, even though high-yielding varieties are available for maize, rice and wheat. Nor have high-yielding varieties been developed for the grains consumed most by poor people, such as sorghum and millet. Part of the problem is the low commercial availability and high prices of inorganic fertilizer. Another is the limited use of organic fertilizer, despite the ease of making it from local resources. Using organic fertilizer would raise

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productivity and promote environmentally sustainable farming in a region where environmental degradation has been reducing already low agricultural yields.

Another example is the lack of diffusion of impregnated (or even ordinary) bednets to control malaria. Similarly, slow deaths from indoor pollution caused by smoke from cooking fires can easily be prevented by going to scale with

the commercial production of smokeless ovens. Clearly, what such commercial production requires is appropriate subsidies, reinforced by a communication strategy to reach poor people in remote areas. The Sulabh latrine can promote environmental sanitation in most densely populated urban areas. But to do so, it must be adopted by international agencies as a model for widespread promotion in developing countries.