Fiscal Dimensions of Sustainable Development

Prepared for
World Summit on Sustainable Development
Johannesburg, August 26–September 4, 2002

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Preface

The achievement of sustainable development—combining economic development, social development, and environmental protection—is a key challenge facing the international community. To this end, progress will be needed in a number of different policy areas, with the right mix of policies varying from country to country.

The purpose of this pamphlet is to explore the relationships between fiscal policy—the range of the government’s taxing and spending decisions—and the economic, social, and environmental aspects of sustainable development. It also addresses how the IMF seeks to promote sustainable development in its fiscal policy advice. Fiscal policy is central to the work of the IMF, whose mandate is to promote international monetary cooperation, the balanced growth of international trade, exchange stability, and orderly exchange arrangements. Fulfilling this mandate is the IMF’s primary contribution to sustainable development.

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Introduction

One of the challenges facing the international community is to achieve sustainable development. Sustainable development has three pillars—economic development, social development, and environmental protection. It entails “. . . balancing the economic, social, and environmental objectives of society . . . integrating them wherever possible through mutually supportive policies and practices and making trade-offs where (this) is not possible. This includes, in particular, taking into account the impact of present decisions on the options of future generations.” In September 2000, the member states of the United Nations underscored the importance of sustainable development by re-affirming the Millennium Development Goals (MDGs), a set of time-bound targets for improving human development along several important dimensions.

Fiscal policy—the range of the government’s taxing and spending decisions—has important effects on all aspects of sustainable development: economic, social, and environmental. Fiscal policy affects sustainable development through its effects on growth, the environment, and human resource development. These effects operate at both a macroeconomic level and through the myriad ways in which governments’ tax and spending decisions affect incentives to work, spend, save, and invest.

Fiscal policy is central to the work of the IMF. The IMF’s mandate is to promote international monetary cooperation, the balanced growth of international trade, foreign exchange rate stability, and orderly foreign ex-

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2 OECD (2001a).
3 The MDGs grew out of the agreements and resolutions of world conferences organized by the United Nations in the past decade. The goals have been commonly accepted as a framework for measuring development progress and include goals relating to eradicating extreme poverty and hunger; achieving universal primary education; promoting gender equality and women’s empowerment; reducing child mortality; improving maternal health; combating HIV/AIDS, malaria, and other diseases; ensuring environmental sustainability; and developing a global partnership for development (see http://www.developmentgoals.org).
change arrangements among countries. Fulfilling this mandate is the IMF’s primary contribution to sustainable development. Within this general setting, fiscal policy plays a key role in all three main aspects of the IMF’s work: IMF-supported programs, surveillance, and technical assistance. In IMF-supported programs in countries facing balance of payments crises, the IMF often finds that reestablishing the credibility of the government’s fiscal position is key to restoring sustainable growth. In its support to low-income countries, the strengthening and reorientation of tax and spending structures often has a central role. In its surveillance work, the IMF often focuses on the sustainability of the fiscal position as a key to preventing crises. Indeed, it is the prevention of crises—the burden of which often falls on the poor—that the IMF sees as one of its major contributions to sustainable development. In its technical assistance work, the IMF responds to countries’ requests for expert advice in improving their tax and spending systems.

This paper explores the relationships between fiscal policy and sustainable development and how the IMF seeks to promote sustainable development in its fiscal policy advice. The paper also discusses lessons learned thus far and how governments, the international community, and international financial institutions (IFIs) can more fully support sustainable development.

Fiscal Policy and Growth

Economic Growth, Sustainable Development, and the Millennium Development Goals (MDGs)

Economic growth is essential for sustainable development and improving social outcomes. Growth usually—but not always—benefits the poor; in about 90 percent of the cases in which countries have experienced per capita GDP growth of at least 2 percent per year over a five-year period, the poor also experienced rising real incomes. While, in general, there is no pro-rich bias in growth, appropriate development of the poor’s income-earning potential can help ensure that they also share in the fruits

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4For example, see Chen and Ravallion (1997), Rodrik (2000), and Dollar and Kraay (2001).
of an expanding economy (see the section on “Fiscal Policy, Human Development, and the MDGs”). Not surprisingly, there is also a strong link between economic growth and improvements in non-income dimensions of poverty. For example, a 10 percent increase in GDP per capita typically results in a 3–5 percent decrease in infant and child mortality rates.6 Similarly, disparities between male and female literacy rates fall markedly as GDP increases.7 In this light, fiscal policy can play a pivotal role in achieving the MDGs by fostering robust economic growth.

Economic growth can support environmental sustainability and vice versa. Growth can help the environment by increasing the resources available for environmental improvement. For example, access to safe water and sanitation has been steadily increasing with economic growth in East Asia.8 However, the experiences of developed countries show that growth is no panacea. Good policies and institutions are also important, not least in relation to fiscal policy; recent studies show that they can significantly reduce environmental degradation in low-income countries and speed up improvements in high-income countries.9 Policy must also recognize that important links run in the other direction as well; environmental quality and sustainable resource use can affect economic growth.10 The morbidity and mortality costs of air pollution, for instance, are substantial in many parts of the developing world, with adverse consequences for economic growth.

**Fiscal Balances and Growth**

A prudent, sustainable fiscal position promotes economic growth. In the long run, low and stable levels of government deficits (the difference between government revenues and expenditures) and debt are typically as-

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7World Bank (2001a).
8The share of the population with access to safe water rose from 71 percent in 1982 to 89 percent in 1995 in Malaysia, from 66 percent to 89 percent in Thailand, from 39 percent to 65 percent in Indonesia, and from 65 percent to 83 percent in the Philippines. Similarly, sanitation service availability rose from 46 percent to 96 percent in Thailand, from 33 percent to 55 percent in Indonesia, and from 57 percent to 77 percent in the Philippines (World Bank, 1999).
associated with higher rates of economic growth. In countries with high deficits and debt, reducing budget imbalances generally increases growth, even in the short run. Since there is less need to create money to finance government expenditure, the resulting inflation rates for countries with low budget deficits are often lower. Low fiscal deficits also increase the pool of savings for higher levels of investment, leading to higher economic growth. In addition, low deficits promote growth by reducing the probability of economic crises caused by concerns about the government’s ability to service its debt. Indeed, research suggests that the macroeconomic stability associated with the absence of such crises yields numerous benefits, including higher rates of investment, growth, and educational attainment, increased distributional equity, and reduced poverty.

The appropriate fiscal policy to promote growth varies, depending on the economic situation and time frame. Over the long run, fiscal policy should aim to keep government debt at sustainable levels. In the short run, the optimal fiscal stance varies, with tightening being appropriate for countries with substantial fiscal deficits and fiscal expansion (larger deficits) being appropriate for countries that have achieved fiscal stability but are experiencing severe economic downturns (as, for example, Asian countries were during the 1997–99 crisis). In addition, fiscal expansion may also be warranted in low-income countries with solid macroeconomic positions (for example, low inflation and budget deficits) that wish to support higher public spending as part of their poverty-reduction strategies.

This line of thinking is reflected in IMF policy advice. For example, once the magnitude of the economic contraction in countries affected by the 1997–99 Asian crisis became clear, the IMF supported a significant expansion in public spending to bolster economic activity. Once the crisis had subsided, the IMF supported fiscal tightening to help these economies keep their government debt at moderate levels. Similarly, flex-

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12Perotti (1999) and Gupta and others (2002a).
13High inflation is correlated with both less rapid growth of average income and less equality. See Romer and Romer (1998) and Guitián (1998).
14Containing the size of government to an appropriate level may also promote private sector development. For a discussion of government size, see Tanzi and Schuknecht (2000).
16Boorman and others (2000).
ibility in fiscal targets is reflected in the design of adjustment programs in low-income countries supported by the IMF’s Poverty Reduction and Growth Facility (PRGF). In practice, this has meant that in countries that have already achieved low budget deficits and low inflation, adjustment programs incorporate increases in the deficit to support their poverty-reduction strategies. Deficits in these countries have been programmed to increase by \( \frac{1}{2} \) of 1 percentage point of GDP, on average, in order to accommodate high-priority, pro-poor expenditure. In contrast, in countries that have not yet achieved macroeconomic stability, fiscal restraint has been more common, with the average deficit remaining roughly unchanged.\(^\text{17}\)

**Fiscal Policy, Incentives, and Growth**

Fiscal policy can also affect growth through its effects on the incentives faced by individuals and firms. Business taxes can affect firms’ decisions regarding how much to invest and in what kind of assets; taxes on labor can affect the level of employment and decisions on the acquisition of education and job training; stumpage fees can discourage tree cutting (or encourage illegal logging); taxes on capital income can affect incentives to save; the absence of emissions charges can lead to excessive pollution; the availability of special tax breaks and subsidies for those with political connections (rent-seeking) can reduce incentives to engage in productive activity; and excessively generous social programs can reduce incentives to work and save. Incentive effects are not limited to the private sector; they play just as important a role within the public sector. Pay and disciplinary policies, for instance, shape the extent of corruption in the civil service and the productivity of public sector employees.

Incentive effects can constrain the effectiveness of fiscal policies. An increase in the corporate tax rate intended to increase revenues will fail to do so, for instance, insofar as this leads businesses to invest instead in other countries or to shift their profits to jurisdictions offering low tax rates.\(^\text{18}\) High benefit levels in social programs may discourage recipients from seeking employment and gaining job skills, miring individuals in a

\(^{17}\)See Gupta and others (2002c). The paper defines low budget deficits as cash deficits of less than 2 percent of GDP (after grants) and low inflation as an annual inflation rate below 10 percent.

\(^{18}\)On the role of incentive constraints in tax design, see Boadway and Keen (2000).
“poverty trap.” These problems have implications for policy design. For example, poverty relief may be more cost-effective if linked to work participation or to children’s school attendance.

Tax and expenditure policies should, in general, be designed to minimize adverse incentive effects. In choosing tax policy measures to raise revenues, for example, there should be preference for those that least distort labor supply, consumption, saving, and other decisions. When the aim of a policy is to help the poor, little is gained by discouraging them from raising their own living standards. In some important cases, however, notably in relation to the environment and natural resources, tax and spending policies have a role in correcting what would otherwise be inappropriate incentives for overconsumption. For example, the price of energy determined by the private market is too low if the true social cost of energy consumption (which includes the cost of pollution and traffic congestion) is not incorporated into the private sector price. The role of incentives in designing fiscal policies to support sustainable development is a central consideration in many of the issues addressed in this pamphlet.

Revenue Composition and Growth

An efficient and fair tax system is an important component of a pro-growth strategy. While foreign aid can make an important contribution, the main source of finance for a country’s public expenditure must be its own tax revenue. This requires an effective tax administration and a tax policy that minimizes distortions to ensure that the best use is made of resources across the economy. To minimize distortions, tax systems should avoid excessive complexity, focusing on taxing a broad range of goods and services at relatively uniform rates. Income taxation also has a role to play, although weak administrative capacity limits revenue from this source in many developing countries. Tax systems should also be sensitive to the possibility of market failure, not least in relation to the use of the environment and natural resources, and be administered in a manner that is transparent, impartial, and rules-based.

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19 Although the empirical literature on the effect of taxes on growth is mixed, some studies find that distortionary tax systems impede growth. For example, see Kneller, Bleaney, and Gemmell (1999).

20 Tanzi and Zee (2000) provide an overview of tax policy issues for developing countries.
The tax system also needs to be accepted by domestic constituencies as equitable, although experience has shown that taxation is generally less effective than well-targeted spending programs in pursuing pro-poor policies. The wealthy have proved adept in avoiding high tax rates on their income by, for instance, locating assets abroad or taking advantage of relatively favorable treatment of capital gains. Taxes on consumption and trade, which are particularly important in many developing countries, are also blunt instruments for pursuing equity objectives. For example, exempting some basic foodstuffs from the value-added tax (VAT) certainly conveys some benefit to the poor, since they are likely to spend a larger fraction of their income on food. However, the rich may well spend a larger absolute amount on the exempted good, so they derive the largest benefit. Removing the exemption would yield revenue that could be spent in a more pro-poor way, along the lines discussed in the section on “Fiscal Policy, Human Development, and the MDGs.”

Improving the efficiency and equity of tax systems is a critical component of IMF-supported programs. Almost three-fourths of PRGF-supported programs in low-income countries incorporate measures to broaden the tax base and improve horizontal equity (treating taxpayers with similar incomes equally) by, for example, removing exemptions and abolishing special tax breaks for foreign investors. Many programs also seek to improve tax efficiency by lowering or reducing the number of import tariff rates, simplifying the structure of the personal income tax, or improving tax administration. Similarly, some programs seek to improve equity by, for example, increasing the progressivity of the personal income tax. The IMF also continues to play a key role in the adoption and improvement of the VAT, which has proved to be a key tax innovation for many developing countries. By introducing modern methods of self-assessment, the VAT is also seen as an important first step toward modernizing tax administration.

Expenditure Composition and Growth

Allocating a higher share of public spending to physical and human capital formation can also promote growth. Investments in physical capi-
tal, such as roads and other infrastructure, can increase the economy’s productive capacity. Although the efficacy of such investment varies across projects and countries, recent research indicates that it may have a significant impact on economic growth. One study finds, for instance, that an increase in public investment in transportation and communication of 1 percent of GDP is associated, on average, with an increase in annual per capita GDP growth of as much as 0.6 percentage points.

A better-educated and healthier population contributes to growth. Beyond their direct effects on well-being, improvements in the education and health status of the population also increase worker productivity. Reductions in communicable diseases such as malaria have positive spillover effects on growth by promoting tourism and foreign direct investment. Indeed, it has been estimated that each 10 percent improvement in life expectancy at birth can raise the per capita GDP growth rate by 0.4 percentage points. Although it has been difficult for economic research to quantify the magnitude of the effect of education on growth, there is nonetheless evidence that it can be significant. Economic growth, in turn, has beneficial effects on education attainment and health status, contributing to a virtuous cycle of stronger education, health, and growth.

Physical and human capital spending should also be protected during fiscal adjustments. Fiscal consolidations that protect capital expenditure tend to be both more sustainable and better for growth. This finding reinforces the notion that reorienting public expenditures away from less productive spending, such as untargeted subsidies, and toward more productive spending, such as investments in physical and human capital, facilitates growth in many countries in both the short and long runs.

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23Moreover, if left purely to the private sector, investment in public infrastructure and human capital may be suboptimal because of low profitability. For an overview of the literature on investment and economic growth, see Barro and Sala-i-Martin (1995).

24See Easterly and Rebelo (1993). These and other estimated effects on growth, however, should be viewed with some caution, since it can be difficult to identify precise causal relationships in the growth literature (Temple, 1999). Gupta and others (2002a), for example, find smaller, although still significant, effects.

25For example, some evidence links part of the postwar takeoff of growth in Southern Europe to the control of malaria. See Gallup and Sachs (2001).


However, capital accumulation should not come at the expense of unsustainable damage to the environment. Economies that derive much of their income from natural resources cannot sustain growth by substituting physical capital accumulation for deteriorating natural capital. Severe environmental degradation can affect a country’s long-run macroeconomic performance. The impact of this may be most devastating for the poor, who often depend on natural resources for their income and have few possibilities for substituting other assets. In the long run, growth strategies that pay attention to environmental quality and the efficiency of natural resource use contribute to investment, economic growth, and human welfare.\textsuperscript{29}

Increased public expenditure on other items, such as law enforcement and the judiciary, may also be important for growth. However, data problems have significantly limited research on the impact of these outlays on growth.

Improving the composition of government outlays is an important element of the IMF’s fiscal policy advice. Under reform programs supported by the IMF’s PRGF, physical capital expenditures are targeted to rise, on average, by \(\frac{3}{4}\) of 1 percentage point of GDP. At the same time, many of these programs involve measures to improve the efficiency of government spending and increases in spending for human development and poverty reduction (see the section on “Fiscal Policy, Human Development, and the MDGs”).\textsuperscript{30}

Many Countries Fall Short

There is substantial scope to make budgets more growth oriented. Significant budget imbalances remain in many low-income countries, which have an average central government deficit and debt of 4½ percent and 83 percent of GDP, respectively (Table 1). Just under one-fifth of these countries have deficits above 7½ percent of GDP and about one-third have debt exceeding 100 percent of GDP. Given the positive relationship between fiscal sustainability and growth, many countries could promote economic growth by embarking on fiscal consolidation.

Low levels of social spending—and lags in social indicators relative to other countries—also indicate that there is room to reallocate public outlays

\textsuperscript{29}Thomas and others (2000).
\textsuperscript{30}Gupta and others (2002c).
to pro-growth spending. For example, public health spending in the poorest
countries is only US$40 per person (in purchasing power parity terms); as a
share of GDP, low-income countries spend only about one-third of the Or-
ganization for Economic Cooperation and Development (OECD) average
(Table 2). This low level of spending is partly reflected in these countries’
health indicators; for instance, average life expectancy is only 55 years,
compared with 78 in OECD countries. Spending for education is somewhat
more generous in low-income countries (Table 3); nevertheless, low literacy
rates (63 percent) indicate significant room for upgrading the human capi-
tal and productivity of the workforce. Also, recent estimates of subsidies in
non-OECD countries for the exploitation of natural resources and the en-
ergy and industry sectors suggest that during 1994–98, the cost of environ-
mentally harmful subsidies amounted to US$340 billion per annum, or 6.3 percent of GDP (Table 4), which was roughly equivalent to total public
spending on education and health. Thus, there may be room to further re-
orient expenditure toward more productive areas.31

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31López (2002).
Improving the efficiency and targeting of social spending are also essential for promoting growth. Higher spending will only contribute to better health and education outcomes if it is efficient and well targeted—an issue we turn to in the section on “Fiscal Policy, Human Development, and the MDGs.”

**Fiscal Policy for a Sustainable Environment**

In both developed and developing countries, fiscal policy has an important role to play in assuring sustainable use of natural resources and safeguarding the environment. This applies to both the tax and spending sides of the government’s budget. On the former,

- Taxes can be used to ensure that prices reflect the full social costs of producing goods and services. This type of pricing is most conducive for growth over the long term. The prices charged for petroleum products, for instance, need to reflect not only the cost of buying or selling them on the world market but also the social costs of the airborne pollution their usage can create and—in the absence of better-targeted instruments, such as toll charges—the congestion associated with motor vehicle use.

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**TABLE 2. PUBLIC HEALTH CARE SPENDING AND LIFE EXPECTANCY, BY COUNTRY GROUPS**

*(Unweighted averages; most recent year for which data are available)*

<table>
<thead>
<tr>
<th>Public Spending on Health</th>
<th>Number of Countries</th>
<th>Percent of total government spending</th>
<th>Per capita spending in PPP dollars</th>
<th>Life Expectancy (years)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Developing and transition countries</td>
<td>118</td>
<td>2.4</td>
<td>8.0</td>
<td>117</td>
</tr>
<tr>
<td>Of which: Low-income countries</td>
<td>53</td>
<td>2.2</td>
<td>7.6</td>
<td>40</td>
</tr>
<tr>
<td>OECD2</td>
<td>24</td>
<td>6.1</td>
<td>14.4</td>
<td>2,872</td>
</tr>
</tbody>
</table>

Sources: OECD (2001b); World Bank (2001b); national authorities; and IMF staff estimates.

1PPP denotes purchasing power parity.

2OECD denotes the Organization for Economic Cooperation and Development. Figures shown exclude the Czech Republic, Hungary, Korea, Mexico, Poland, the Slovak Republic, and Turkey.
A well-designed tax and royalty system is key to ensuring that countries receive a proper share of the rents earned by the exploitation of their natural resources and to ensuring that those resources are not overexploited. For many developing countries, rents from mineral deposits, forestry, or fisheries can be an important source of revenue and one that, with a well-designed tax regime, is compatible with socially appropriate patterns of resource usage.

On the spending side,

- Some public expenditures, such as assistance to rural energy efficiency and spending on forestry management agencies, directly support more efficient resource use. Subsidies for, or relatively low taxation of, kerosene may also be desirable, since in many developing countries it is used as a household fuel, providing an alternative to deforestation.

- Other kinds of spending, however, may inadvertently increase environmental externalities by pursuing objectives that could be better achieved by less damaging means. Subsidies for particular kinds of energy use, for instance, are sometimes intended to serve primarily distributional goals but generate adverse environmental effects that

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**Table 3. Public Education Spending and Literacy Rate, by Country Groups**

(Unweighted averages; most recent year for which data are available)

<table>
<thead>
<tr>
<th>Public Spending on Education</th>
<th>Number of Countries</th>
<th>Percent of GDP</th>
<th>Percent of total government spending</th>
<th>Per capita spending in PPP dollars₁</th>
<th>Literacy Rate (percent)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Developing and transition countries</td>
<td>118</td>
<td>4.5</td>
<td>15.5</td>
<td>199</td>
<td>75</td>
</tr>
<tr>
<td>Of which:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low-income countries</td>
<td>53</td>
<td>4.3</td>
<td>15.6</td>
<td>82</td>
<td>63</td>
</tr>
<tr>
<td>OECD²</td>
<td>24</td>
<td>5.2</td>
<td>12.0</td>
<td>1,231</td>
<td>97</td>
</tr>
</tbody>
</table>

Sources: OECD (2001b); World Bank (2001b); national authorities; and IMF staff estimates.

₁PPP denotes purchasing power parity.

²OECD denotes the Organization for Economic Cooperation and Development. Figures shown exclude the Czech Republic, Hungary, Korea, Mexico, Poland, the Slovak Republic, and Turkey.
could be avoided. The underlying equity objective could still be met by eliminating such subsidies and spending the resources saved on basic health care or education. (Box 1 gives more examples of these harmful subsidies.)

In many countries, there are significant opportunities for “win-win” fiscal reforms that enhance the sustainability of both resource use and the fiscal position. Prices of both intermediate inputs—such as energy or chemical fertilizers—and outputs—such as agricultural commodities—are still seriously distorted, even in many industrial countries, aggravating environmental degradation (Table 4). These cases of combined policy and market failures can be turned around to provide “win-win” opportunities for fiscal reform. For example, eliminating subsidies on fossil fuels can simultaneously strengthen macroeconomic balances, promote efficient resource allocation, and improve the quality of the environment.  

<table>
<thead>
<tr>
<th>Natural resource sectors</th>
<th>OECD²</th>
<th>Non-OECD</th>
<th>World</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture</td>
<td>335</td>
<td>65</td>
<td>400</td>
</tr>
<tr>
<td>Water</td>
<td>15</td>
<td>45</td>
<td>60</td>
</tr>
<tr>
<td>Forestry</td>
<td>5</td>
<td>30</td>
<td>35</td>
</tr>
<tr>
<td>Fisheries</td>
<td>10</td>
<td>10</td>
<td>20</td>
</tr>
<tr>
<td>Mining</td>
<td>25</td>
<td>5</td>
<td>30</td>
</tr>
<tr>
<td>Energy and industry sectors</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Energy</td>
<td>80</td>
<td>160</td>
<td>240</td>
</tr>
<tr>
<td>Road transport</td>
<td>200</td>
<td>25</td>
<td>225</td>
</tr>
<tr>
<td>Manufacturing industry</td>
<td>55</td>
<td>—</td>
<td>55</td>
</tr>
<tr>
<td>Total</td>
<td>725</td>
<td>340</td>
<td>1,065</td>
</tr>
<tr>
<td>Total in percent of GDP</td>
<td>3.4</td>
<td>6.3</td>
<td>4.0</td>
</tr>
</tbody>
</table>

Source: Van Beers and de Moor (2001).

¹Subsidies are measured on a gross basis—that is, they are not net of taxes.

²OECD denotes the Organization for Economic Cooperation and Development.

³²Beyond
the elimination of policy distortions, there may also be cases in which en-
vironmental taxes—such as pollution or waste charges—are called for to
properly account for the negative effects of pollution. These have the side
benefit of increasing government revenue, enabling other and more harm-

### BOX 1. ENVIRONMENTALLY HARMFUL SUBSIDIES

*Energy subsidies.* Most countries provide explicit or implicit subsidies for
coal, electricity, oil (mostly in oil-exporting countries), gas, and nuclear
power. Yet energy use contributes to many of the world’s most serious envi-
ronmental problems, notably (1) global warming owing to the greenhouse
effect; (2) damage to property, forests, livestock, and aquatic life caused by
acid rain, dust, soot, and ash; and (3) health problems, in particular respira-
tory problems.

*Transport subsidies.* In most countries, use of the road network is under-
priced, stimulating road traffic and reducing the use of mass transport, which
is less polluting.

*Agricultural subsidies.* Agricultural outputs and inputs have been a popu-
lar target of government subsidies. Such subsidies are damaging because they
increase the demand for agricultural inputs, such as pesticides and fertilizers,
which can cause health problems owing to the contamination of the food
chain. They also provide incentives for land clearance, which can result in
loss of wildlife, forests, and public amenities and lead to greater soil erosion.

*Forestry and fishery subsidies.* Direct or indirect subsidies provided by
government to promote timber exports and/or local wood processing can re-
sult in deforestation, soil erosion, sedimentation in waterways, fire hazard
owing to deadwood left behind, destruction of wildlife, destruction of trop-
ical plants, and increased global warming (since forests act as carbon sinks).
Similarly, subsidizing the fishing industry can jeopardize the sustainability
of the fish stock.

*Water subsidies.* Subsidized water delivery for agricultural, industrial, and
household purposes, coupled with demographic pressures, can lead to the
unsustainable utilization of water resources (scarcity/stress, pollution, and
runoff).

*Industrial subsidies.* When raw materials processing and energy use are
subsidized, a negative impact on recycling and a strong negative impact on
all kinds of emissions and waste can result.

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ful taxes to be reduced or beneficial public spending to be increased, although such revenues, especially in developing countries, may be modest.

Many of the fiscal reforms needed to enhance sustainable resource use and environmental protection would be good policy, even in the absence of such special considerations. This is because many of the most damaging provisions arise from distortions often introduced for nonenvironmental reasons, so that the same policy objective can be achieved by other means that do less damage. The desire to help farmers, for instance, has led some countries to zero-rate fertilizers and pesticides under the VAT. As an alternative, the VAT could be charged on these items at the standard rate; this would reduce the prospect of fraudulent refund claims and generate additional revenue, which could then help finance expenditures to benefit small farmers, such as those to improve rural transportation networks. In such cases, environmental considerations are usually only secondary in the policy debate, with revenue and standard efficiency issues being more to the fore; nonetheless, the potential environmental gains from such reforms can be significant.

Taking its lead from organizations with a particular expertise and mandate in the environmental area (especially the World Bank) and focusing particularly on problems with a macroeconomic dimension, the IMF has encouraged countries to implement fiscal reforms that are consistent with more sustainable resource use. In Uzbekistan, for example, the IMF has repeatedly argued that the degradation of irrigation water and agricultural land—owing to massive explicit and implicit subsidies—is unsustainable and has severe economic costs. To remedy this, the IMF recommended increased charges for irrigation and other communal services to cost-recovery levels. The IMF has also advocated reforms in the pricing of energy—in Azerbaijan, Belarus, Ecuador, Venezuela, and elsewhere—arguing that prices should reflect the opportunity costs to the country. To help counter the unsustainable depletion of water resources in Yemen, the IMF has encouraged reforms to progressively eliminate the substantial subsidies on diesel fuel and other petroleum products, since these encourage water overuse by unduly reducing the costs of operating water pumps. The IMF has typically not involved itself, however, in the design of pollution charges and other taxes explicitly designed to correct environmental externalities, leaving this to other organizations with the required expertise.

The forestry sector provides an example of how fiscal policy can be used to capture resource rents while, at the same time, providing a number of environmental benefits. Uncorrected market failures and gover-
nance problems are leading to the loss of large areas of forest in many countries. These problems have also attracted attention in some IMF-supported programs (Box 2). In many countries, the value of the rents captured from concessions for forest resources has been too low, leading
governments in need of revenue to accept excessive exploitation. Reforming the pricing of forest resources would help governments to capture more resource rents and so strengthen fiscal balances. At the same time, these reforms would encourage more efficient and environmentally friendlier exploitation of forests.

Fiscal Policy, Human Development, and the MDGs

Public Spending on Education and Health Care and the MDGs

Government expenditure policy will have a key role in determining whether countries meet the MDGs. In many countries, the government will have a central role in ensuring that its citizens, especially the poor, have access to education and health services by either providing these services itself or financing private sector provision. As such, it is critical to understand the link between government spending on these programs and performance on indicators that measure the health and education status of the population. Of special interest is how government spending affects the achievement of the 48 social and human development indicators that have been selected to monitor progress toward the achievement of the MDGs.

The bulk of the empirical evidence confirms that, over time, government spending has a positive effect on educational performance. Higher public spending on education tends to be associated with higher enrollment rates and increased chances that a student will continue on to the fifth grade. Higher public education spending is also associated with lower illiteracy rates. Allocating a higher share of the education budget to primary education is also found to strengthen educational attainment. The correlation between higher public spending and improvements in ed-

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33Also, in some countries, leases on forest concessions tend to be for periods of 15 years. However, at least 30 years are required for forests to regenerate—concession periods shorter than this do not give concessionaires an incentive to ensure the regeneration of logged forests.

34Forests may have several external benefits (prevention of soil erosion and flooding, absorption of carbon dioxide) and provide other ecoservices (such as ecotourism, nontimber products, and bioprospecting).

35See Gupta and Verhoeven (2001); Baldacci, Guin-Siu, and de Mello (2002); and Gupta and others (2002e).

36See, for example, Flug, Spilimbergo, and Wachtenheim (1998) and Mingat and Tan (1998).

37For a survey of 10 country studies, see Mehrotra (1998).
ucation indicators is nevertheless modest, as these indicators are affected more strongly by other factors, such as income levels and the sociodemographic characteristics of the population.

Public health spending can also have a positive effect on health status. Public outlays on health care are positively correlated with life expectancy at birth and negatively correlated with malnutrition rates. However, the majority of econometric studies find that per capita income is a much more important determinant of health outcomes than health spending. Nonetheless, many of these studies have focused on the nexus between total public spending on health care and the health status of the population as a whole. Since the poor are more likely to utilize public health services, a more useful approach would be to assess the impact of government health spending on the indicators measuring the health status of the poor. Recent research along these lines confirms that government spending has a salutary effect on the poor’s health status, underscoring the potential role of higher outlays in helping countries meet the MDGs.

Increased public expenditures for improved water supplies and sanitation would also help improve health indicators, as well as those relating to environmental sustainability.

The link between social spending and social indicators can be dramatically strengthened by eliminating waste and inefficiency. In many countries, governments are allocating too small a share of the education and health budgets to activities with the most powerful effects on basic social indicators. For example, a large share of budgetary resources in the social sectors is often used for wages, leaving few resources for nonwage inputs with high productivity, such as medicines and textbooks. Similarly, a majority of the benefits from public spending on education and health care do not accrue to the poor—including in low-income countries (Figure 1). In education, about one-quarter of public spending provides benefits to the richest 20 percent of the population, while the poorest 20 percent receives about 15 percent of the benefits from this spending. In contrast, public

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38Anderson and others (2000).
39Peters and others (1999).
40Filmer and Pritchett (1997).
41See Bidani and Ravallion (1997) and Gupta and others (2002d).
42On the high productivity of selected nonwage inputs in education, see Glewwe (2002).
43Public spending is said to be well targeted if the share of benefits that accrues to the poorest 20 percent of the population is larger than that accruing to the richest 20 percent.
spending on primary education is more pro-poor, yet in a sample of 52 developing and transition economies for 1996, about one-fifth of education spending was allocated to tertiary education, an area that also has lower social rates of return.\textsuperscript{44} Similarly in the health care sector, spending on basic preventive health care, such as immunization and prevention of diseases, has a relatively larger impact on the poor,\textsuperscript{45} yet in a sample of 35 countries for 1997, almost two-thirds of public health care outlays were absorbed by curative care (for example, hospitals and medical equipment) rather than basic and preventive health care.\textsuperscript{46} In many cases, there is also substantial leakage of public funds. For example, in Uganda, public ex-

\textsuperscript{44}Psacharopoulos (1994).

\textsuperscript{45}For example, see Koenig, Bishai, and Ali Khan (2001).

\textsuperscript{46}Education and health figures based on national authorities’ data and IMF staff estimates.
penditure tracking surveys revealed that during 1991–95, less than 15 percent of central government nonwage budgetary allocations for primary education actually reached the schools, with the remaining funds being used by local government officials for noneducation purposes.\textsuperscript{47}

In its policy advice, the IMF recognizes the need to raise the level of social spending to help foster human development. Under IMF-supported programs, for example, education and health spending has risen significantly. Since the year preceding the program, education spending has increased by more than 1 percentage point of GDP, and health outlays have increased by about $\frac{1}{2}$ of 1 percentage point of GDP, in low-income program countries (with smaller increases for program countries as a whole).

(See Figure 2.) Spending on the social sectors has also increased as a share of total government spending. This has translated into sizable increases in real social spending per person; the annual rate of real per capita growth for both types of spending was about 2 percent for program countries as a whole and 3–3½ percent for low-income program countries (Figure 3).

Spending increases have been accompanied by broad-based improvements in social indicators for education and health, particularly in the indicators associated with the MDGs. These improvements include those in primary school enrollment (0.8 percent per year), female primary school enrollment (1.2 percent per year), infant mortality (2.7 percent per year), immunization rates for measles (3.0 percent per year), and births attended by skilled staff (1.2 percent per year).

Measures to improve the efficiency of public spending are incorporated into a number of IMF-supported programs. About two-thirds of PRGF-supported programs include such measures, drawing on countries’ poverty-reduction strategy papers (PRSPs) or the World Bank.\textsuperscript{48} Specific measures vary, depending on country circumstances. For example, some countries are increasing the share of spending for inputs other than wages to improve the quality of spending (for example, The Gambia, Kenya, the Lao People’s Democratic Republic, Niger, Senegal, and Zambia).\textsuperscript{49} Other

\textsuperscript{47}In response to this finding, the government took strong action: by 1999, schools were receiving 95 percent of the intended funds (Reinikka-Soininen and Svensson, 2001). For more on governance issues, see the section on “Governance and Sustainable Development.”

\textsuperscript{48}See Gupta and others (2002c).

\textsuperscript{49}For an examination of measures to improve the efficiency of education and health spending under programs supported by the PRGF’s predecessor—the Enhanced Structural Adjustment Facility (ESAF)—see Abed and others (1998).
countries (for example, Azerbaijan, Cameroon, Mali, and Uganda) are granting selected wage increases to attract skilled workers, including in the social sectors.

IMF-supported programs also emphasize targeting to increase the efficiency of public spending. Some countries are reforming their subsidy programs by replacing those subsidies from which all consumers—poor and nonpoor alike—benefit with those that target only low-income groups. In other countries where the poor do not have access to health care and education services, the objective of reform is to increase equity by making sure that public provisions reach the intended beneficiaries. This can be facilitated by, for example, the elimination of primary school fees (as was done in Tanzania and Uganda).

In many countries, higher spending is needed in areas other than health care and education to enable them to move toward the MDGs. In addition to emphasizing social programs, it is crucial to implement other comple-

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**Figure 2. Changes in Education and Health Care Spending in Countries with IMF-Supported Programs, 1985–2000**

*In units as indicated*

<table>
<thead>
<tr>
<th></th>
<th>All program countries (66)</th>
<th>Low-income program countries (32)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Education</td>
<td>In percent of GDP</td>
<td>In percent of total spending</td>
</tr>
<tr>
<td>Health Care</td>
<td>In percent of GDP</td>
<td>In percent of total spending</td>
</tr>
</tbody>
</table>

Sources: National authorities; and IMF staff estimates.

1Numbers of countries appear in parentheses. Average change between the year preceding the first program in the period 1985–2000 and the latest year for which data are available.
Sources: World Bank (2002); national authorities; and IMF staff estimates.

1Numbers of countries appear in parentheses. Average annual percent improvement between the year preceding the first program in the period 1985–2000 and the latest year for which data are available.

2The annual percent improvement in illiteracy and infant mortality rates refers to a decline in these rates.
mentary programs—such as those for water and sanitation, rural development, and nutrition—to effectively improve social indicators and reduce poverty. Some countries may also need to devote more resources to prepare for the natural disasters to which they are prone. This is recognized in PRGF-supported programs, where countries define “poverty-reducing spending” in their poverty-reduction strategy papers (PRSPs). PRSPs have defined a range of programs as poverty reducing, including spending on primary education, basic health care, roads, rural development, agriculture, judicial systems, and anti-corruption efforts. Based on budgetary projections in 19 countries that most closely approximate the PRSP definition of poverty-reducing spending, these outlays will rise, on average, by about 2 percent of GDP in the first years of their PRGF-supported programs (most of which started in 2000). The share of total government spending absorbed by these outlays will also rise.

Social Safety Nets and Poverty and Social Impact Analysis

Certain government expenditures, such as temporary income transfers or public works programs, can help form social safety nets to protect the poor from the short-term adverse effects of reforms. The economic reforms needed to spur economic growth may, in some cases, have adverse short-term effects on the poor. These can be mitigated, however, with appropriate social safety nets to shelter the disadvantaged from the hardships that may be associated with the implementation of reform programs. In this way, economic reform can be consistent with countries’ poverty-reduction strategies and continued progress toward the MDGs.

Social safety nets should be in place before they are needed and should be well targeted to the intended beneficiaries. These programs should be directed primarily to those poor and vulnerable groups who are most adversely affected by the temporary shocks to income and general well-being caused by economic reform. Examples of social safety nets include cash and in-kind transfers, price subsidies, social services fee waivers, supplemental feeding and nutrition programs, public works programs, and microfinance programs, as well as other social insurance programs, such as unemployment benefits and minimum or social pensions.

Social safety nets play an important role in many IMF-supported programs. For example, IMF-supported programs included measures to protect the poor in Indonesia, Korea, and Thailand during the Asian cri-
Social safety nets are incorporated into about two-thirds of PRGF-supported programs. Examples include severance payments for retrenched state enterprise employees or civil servants (as in Kenya, Mongolia, and Vietnam) and provision of free electricity to the poor (as in Georgia).

The design of social safety nets can be aided by poverty and social impact analysis (PSIA). PSIA consists of the analysis—ex ante, during implementation of reforms, and ex post—of the positive and negative impacts of reform policies on the well-being of the poor and other vulnerable groups. As such, PSIA can be a powerful tool for both redesigning policies (to avoid an adverse effect on low-income groups) or for implementing social safety net measures.

PSIA is a key feature of PRGF-supported programs, although significant improvement is needed in this area. More than half of all PRGF-supported programs refer to some form of PSIA. However, the majority of measures that could potentially affect the poor have not been covered by PSIA or by social safety net measures. Moreover, in the majority of low-income countries, the technical capacity to perform PSIA is very weak. Thus, the IMF, together with the World Bank and other development partners, is actively working to widen the depth and scope of PSIA, with their efforts concentrating on increasing countries’ capacity to undertake such analyses, although experience indicates that it will be several years before most countries are able to implement PSIA based on analytical studies.

**Governance and Sustainable Development**

Poor governance poses a number of obstacles to human development. Corruption results in the allocation of budgetary resources for unproductive programs and inefficiencies in public spending, which reduces the effectiveness of outlays on social and poverty-reducing programs in fostering social development. Poor governance results in budgetary allocations tilted in favor of less-productive investment projects and defense-related

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50See Gupta and others (1999). For a review of issues in the design of social safety nets, see Chu and Gupta (1998).
51See Gupta and others (2002c).
52Governance covers a wide set of issues. This paper focuses on only those most germane to fiscal policy. For a further discussion of fiscal policy and governance, see Abed and Gupta (2002); for the impact of corruption on output growth, see Shleifer and Vishny (1993); and for a more general discussion on corruption, see Bardhan (1997).
spending and against nonwage operations and maintenance expenditures, which reduces the quality and productivity of existing infrastructure. Corruption also reduces revenue and therefore the ability of the government to mobilize the resources needed to finance critical poverty-reducing programs. Corruption results in the poor capturing a smaller share of the benefits from public spending and, more generally, in higher poverty and income inequality.

Good governance is essential to ensuring that higher social spending translates into better social outcomes. Even if spending is allocated to pro-poor activities, public funds must be used for their intended purposes to ensure that these outlays have a positive impact on human development. As such, a sound public expenditure management (PEM) system and transparency in government operations are pivotal not only for good macroeconomic management but also for good governance.

Good governance is also essential for promoting environmental sustainability. Progress in alleviating environmental problems in developing countries has been slow, often owing to ill-defined property rights regimes, corruption, and a general lack of capacity and political will at the national level. The IMF’s general emphasis on improving the quality and transparency of spending decisions has improved the effectiveness of developing countries’ environmental and other spending. In Brazil, for example, federal spending on environmental protection programs grew during an IMF-supported program. The IMF has also explicitly addressed environmental governance issues in a number of countries (for example, Cambodia and Indonesia) where these were important to overall macroeconomic performance.

Almost all PRGF-supported programs incorporate measures to strengthen PEM systems. Each program, on average, incorporates four to five measures, which generally include steps to improve budget formulation, budget execution (to keep spending within budgeted amounts), and budget reporting (including auditing). Both the IMF and the World Bank have provided countries with substantial technical assistance to strengthen their budget systems. For 24 of the heavily indebted poor countries (HIPC) that have qualified for debt relief under the enhanced HIPC Initiative, the World Bank and the IMF, together with country authorities, have

drawn up action plans to strengthen budget systems. These action plans are being implemented in the context of the countries’ World Bank- and IMF-supported programs. Despite recent progress, PEM systems remain deficient in many of these countries, and rigorous implementation of these action plans will be essential for achieving sustainable development.

Increasing the transparency of government operations will be essential to ensure that governments are accountable for their use of public funds. In this regard, transparency can be enhanced if governments adhere to the IMF’s Code of Good Practices on Fiscal Transparency. The participation of governments in reports on the observance of standards and codes (ROSCs)—which assess a government’s practices on transparency against this benchmark—can provide a useful step in this regard. Thus far, 36 developed and developing countries have participated in fiscal ROSCs, with another 15–20 per year expected in the near future.

Moving Forward

There are many economic, social, and environmental challenges along the path to sustainable development, and there is no panacea to address them all. Rather, accelerated development will require progress in multiple policy areas, with the right policy mix and focus varying from country to country. Countries may also need to make difficult choices regarding trade-offs between competing policy objectives. Achieving more sustainable development will thus require a concerted effort from developing countries, the international community, and the international financial institutions.

Developing Countries

Sound fiscal and macroeconomic policies are essential. Sustainable growth and poverty reduction are possible only with prudent macroeconomic and, in particular, fiscal policies.

Tax and expenditure policies should also be designed to minimize adverse incentive effects, which can hinder economic growth. Tax policies should seek to raise revenue in a way that least distorts labor supply, consumption, saving, and other decisions. Expenditure policies should not deter the active participation of the poor in the labor market and the process of economic development.
Higher spending on poverty reduction is not sufficient to achieve better social outcomes. Increased spending must be accompanied by steps to strengthen the efficiency and targeting of these outlays. There is significant scope to make existing spending more effective in fostering development by reallocating it to inputs that are most needed, such as textbooks and medicines. There is also scope to increase the share of outlays that most directly benefit the poor, such as those for primary education and preventive health care. To ensure that economic reforms do not hurt the poor, countries will need to integrate PSIA into their policymaking processes with a view to both modifying the design of their economic policies and implementing well-targeted social safety nets.

Fiscal policies must also provide appropriate incentives for the efficient and sustainable use of natural resources. Harmful subsidies and inappropriate tax policies that lead to the excessive exploitation of natural resources should be phased out. The prices of energy products should reflect their social costs, and subsidies for pesticide and fertilizer use—which contribute to overfarming of land—should be eliminated and replaced with government expenditure programs that more directly benefit small farmers. At the same time, industrial countries should implement similar policies to ensure that the world’s environmental resources are not overexploited.

A strengthening of governance and public expenditure management systems is also needed. Countries need to move ahead to address their most serious deficiencies in public expenditure management; HIPCIs, in particular, must work together with the international community to help implement their action plans to improve their capacity to track poverty-reducing spending. For many countries, a useful step toward strengthening transparency would be to adopt the IMF’s Code of Good Practices on Fiscal Transparency.

It will also be necessary for countries to monitor the actual delivery and impact of poverty-reducing programs on human and natural resource development. Within the context of the PRSP process or other country-owned poverty strategies, countries should continue to monitor the impact of poverty-reducing spending on social indicators that measure human development. Improved and more detailed data on social indicators, combined with more disaggregated data on poverty-reducing spending by program, will facilitate a more solid understanding of the relationship between government spending and social outcomes. In this regard, improvements in
PEM systems—and the concomitant ability to track poverty-reducing spending—will also improve understanding of the complex link between government spending and sustainable development. There are welcome signs that PRSPs are increasingly reflecting recognition of the role that proper use of natural resources can play in reducing poverty.

**International Community**

Freer access to industrial country markets and greater and more predictable aid are needed to support sustainable development (included under Goal 8 of the MDGs). Countries in the developed world need to support more robust world economic growth by opening their markets to exports from the developing world. As IMF Managing Director Horst Köhler has stated, “we need to work first and foremost on trade . . . this requires greater ambition to open markets and phase out trade-distorting subsidies in the industrial countries, beginning with agriculture, textiles, and labor-intensive manufactures.” Higher aid flows will also facilitate growth, since it is unlikely that many poor countries, particularly in Africa, can mobilize enough of their own resources to meet all of their human development needs. Moreover, aid flows could be made more continuous and predictable, in order to facilitate budget planning in developing countries. The need for more trade and more aid is echoed in the New Partnership for Africa’s Development (NEPAD), which calls on the international community “to reverse the decline in ODA [official development assistance] flows to Africa and . . . . admit goods into markets of developed countries. . . .”

**International Financial Institutions**

The international financial institutions (IFIs) need to continue to provide financial support to countries pursuing sustainable growth and poverty-reduction strategies. In this regard, IFIs need to ensure that such support is used to promote strategies that are country-owned and developed with input from PSIA. In countries where the institutional capacity to develop and implement such strategies is weak, it is essential for IFIs to provide technical assistance, including in public expenditure management,

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54 Köhler (2002).
as well as assistance in improving the understanding of links between government policies, poverty, and sustainable use of the environment. In addition to supporting capacity building, the IFIs and their development partners should continue analytical work on the links between economic policy and sustainable development, since many facets of development are still not fully understood. Finally, international financial institutions should foster more extensive dialogue with member country governments and civil society to improve communication and better explain the rationale for their policies.

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