

# The underfinancing of recurrent development costs



While most governments concentrate their efforts on new development investments, they often fail to provide adequately for the recurrent operational and maintenance costs of previous development projects. The result is a wasteful underutilization and neglect of many projects and programs. This article examines why this problem has emerged, why it persists, and offers some solutions.

## Peter Heller

Both the theory and practice of development policy would suggest that investments are a major factor in economic growth. Yet throughout the developing world the productivity of public investments and programs that are already in place has been seriously jeopardized by the failure of governments to provide adequately for their operation and maintenance over time. Rare is the country that has not witnessed this phenomenon. In Colombia, new tarmac roads have suffered rapid and premature deterioration for lack of maintenance. Throughout West Africa, many new schools have opened without qualified teachers, educational materials, or equipment. Agricultural projects are often starved for extension workers, fertilizer, or seeds. In the Sahel, pastoral wells constructed for livestock projects have fallen

into disrepair. In Bolivia, doctors are often stranded at rural health centers for lack of gasoline for their vehicles.

The resulting loss in productivity and the deterioration of capital stock not only affect existing projects and programs but cast a disturbing shadow on the economic viability of future investment programs. As developing countries and donors place increasing emphasis on new programs to provide for social infrastructure, the problem is likely to be exacerbated. This article will explore why the recurrent costs of public sector projects are "underfinanced" and examine alternative policies that donors and countries could introduce to solve this problem.

## The causes of the problem

The problem is a by-product of the active development efforts of the last two decades. The share of public investment in gross national product in the developing world has risen during this period, reflecting an expansion in the absorptive capacity of most countries for public investment, stimulated by subsidized external aid flows. Since any new project or program inevitably needs some staff and materials for its

operation and maintenance, these investments have obviously engendered the need for subsequent recurrent expenditure. The expansion of a school system necessitates teachers, books, and pencils. The development of rural health facilities creates a need for drugs, doctors, nurses, and other supplies. Roads require a regular program of maintenance. Although some of these costs have been met by charging consumers, most public projects and programs have been deliberately subsidized, and thus their operation and maintenance has depended on the flow of funds from the public treasury. Unfortunately, this flow has generally not been sufficient.

For some countries, this inadequate flow of funds for maintenance reflects government inability to mobilize sufficient resources. Many developing countries are unwilling to mount an adequate tax effort or even to keep the growth of tax revenues equal to the rate of economic growth. But even where a country is mobilizing a relatively large share of its potential taxable resources, there are at least three reasons why the problem of inadequate funds for recurrent costs may still emerge.

First, the recurrent funding of projects is usually financed out of the recurrent budget appropriation. Since both donors and borrowers often tend to equate development expenditure with investment, and recurrent expenditure with consumption, there are both external and internal pressures to curb recurrent expenditure in order to generate "public savings" to finance investment. This leads to arbitrary ceilings on the expansion of the recurrent budget—ceilings which are often completely unrelated to the level of new or existing unmet commitments.

Second, for a given amount of investment expenditure, a development program's ultimate recurrent expenditure requirements will depend on the mix of projects being implemented in each sector. For example, countries placing heavy emphasis on projects in health, agriculture, and education and in rural and urban development will, for a given unit of investment, require higher recurrent outlays than countries investing mainly in physical infrastructure—such as roads, dams, airports, and telecommunication facilities (see the table). Thus, a shift in the sectoral composition of a public investment program may require an increase in recurrent expenditure in excess of the potential increase in public sector revenues. This does not reflect on the productivity of these projects, but simply means that the character and timing of their output flows may not lead to sufficient immediate growth in tax revenues to finance their recurrent costs.

The third reason why developing countries often cannot supply adequate funds to maintain and operate existing projects is that there are other important claims on public budgetary resources. The demands for defense, redistributive transfers, civil

budgetary demands on limited resources seriously affects the allocation of resources to a project. When the recurrent budget is squeezed, for instance, and unemployment is of particular concern, the government may cut down its purchases of goods and services for a project rather than dismiss personnel. This often leads to projects long on staff and short on supplies and spare parts.

In general, external aid flows have only exacerbated this problem by enabling a country to increase the level of its investment without directly encouraging the growth of recurrent revenues. Though recipient governments could conceivably reduce their own investment as funds flow in from abroad by shifting resources to the recurrent budget, donors strongly discourage this. Similarly, some donors (with the notable exception of some European countries) shy away from providing long-term recurrent financing—particularly if it implies funding local costs.

The recent important emphasis on income distribution and the elimination of poverty by external donors, moreover, has sharply changed both the priorities of lending for development and the character of domestic development programs. In the past, donors had a bias in favor of providing aid for economic infrastructure. Such projects were easier to implement, gave a visible and concrete form of output, and, by providing foreign exchange, helped to alleviate some of the principal bottlenecks of development. However, the current emphasis on projects in education, health, and population bodes a significantly higher recurrent expenditure per unit of investment. Even the technology of physical infrastructure projects themselves has changed—witness the interest in high-maintenance rural feeder roads as opposed to low-maintenance trunk bitumen roads.

Thus, the effect of external aid is to stimulate a sharp expansion in ultimate recurrent expenditure commitments. In the context of other pressures on the recurrent budget, these commitments will be difficult to meet.

This problem has not gone completely unnoticed within the donor community. This partly reflects a wider recognition that current expenditure may prove as productive as capital expenditure in the development process. In part, it also reflects the effects of inadequate maintenance on donor-financed projects. For example, several road projects funded by the World Bank have threatened to deteriorate so severely that subsequent loans have been made to develop the borrowing country's capacity for road maintenance. For some rural development and livestock projects,

**Illustrative summary of the recurrent expenditure implications of projects as a proportion of investment expenditure across development sectors ("r" coefficients)<sup>1</sup>**

Sector	"r" coefficient
<b>Agriculture</b>	
Fisheries	0.08
Forestry	0.04
General agriculture	0.10
Livestock	0.14
Rural development	0.08-0.43
Veterinary services	0.07
<b>Buildings</b>	0.01
<b>Education</b>	
Agricultural colleges	0.17
Polytechnic schools	0.17
Primary schools	0.06-7.0
Secondary schools	0.08-0.72
Universities	0.02-0.22
<b>Health</b>	
District hospitals	0.11-0.30
General hospitals	0.183
Medical auxiliary training school	0.14
Nurses college	0.20
Nutrition rehabilitation unit	0.34
Rural health centers	0.27-0.71
Urban health centers	0.17
<b>Housing</b>	0.03
<b>Manufacturing, commerce, and construction</b>	0.01
<b>Roads</b>	
Feeder roads	0.06-0.14
Paved roads	0.03-0.07
<b>Social and rural development</b>	0.04
<b>Tourism</b>	0.05

Source World Bank and IMF data.

<sup>1</sup> These coefficients are drawn from a very restricted sample of developing countries and are meant to illustrate the variability one can observe across sectors and projects.

EXAMPLE: If a polytechnic school costs \$1 million to construct and equip, on the basis of an "r" coefficient of 0.17, we can estimate that it would cost on average \$170,000 in each subsequent year to pay the teaching staff, to operate the facilities, and to maintain the building.

service wage increases, and so on inevitably compete with the recurrent needs of development projects and programs. Coupled with the political difficulties of choosing between these conflicting demands, the planning and budgeting process, unaware of the consequences of cutting the flow of resources, often fails to identify when serious losses in project productivity may occur. Often the pressure of

the World Bank has financed the recurrent costs of agricultural extension and of the provision of agricultural inputs during the initial development of a project.

Another approach has been to introduce explicit covenants or "earmarking" schemes to ensure the local financing of the recurrent costs of a project. This, however, has several important drawbacks. Such covenants generally specify the host country's obligation to maintain a project "adequately" or to provide specific amounts of funds. This may resolve any underfinancing of the donor's projects; but if the entire development program has excessive recurrent expenditure requirements, the effect will simply be to drain resources from development projects that lack such covenants. Similarly, earmarking particular tax revenues (as opposed to user charges) for a project may channel resources away from projects with equal or greater need. Neither policy addresses itself to the root of the problem and both introduce their own rigidities into the budget allocation process.

### Why does this problem persist?

A curious aspect of the "underfinancing" problem is its persistence. The managers of an ill-maintained school, health center, or agricultural extension project are presumably well aware that they are not providing, and cannot provide, adequate services. Anyone who drives on a road with potholes recognizes the need for maintenance. Why are investments made if they are likely to be underfinanced? Are the decision makers who allocate recurrent budgetary resources unaware of these problems? Do they deliberately decide that other claimants of resources have a higher priority? In fact, the contradiction probably persists both because the problems are not rapidly signaled and because their consequences are not readily perceived.

The problem partly derives from the administrative structure common to the financial and sectoral ministries of developing countries which separates the investment and current budgeting functions. The task of the bureaucracy in charge of investments is to generate, evaluate, negotiate, and implement new investment projects—and not to provide for their recurrent costs. The pressures to implement particular projects and to garner external funds are dominant considerations. Post-implementation costs, if considered at all, enter only into the particular project's appraisal process. In any case, the problem of financing such costs lies several years in the future. Thus, there is little pressure to worry about the adequacy of future recurrent funding. Moreover, the recurrent im-

plications of the pool of current projects is usually not considered.

Logically, future recurrent funding of all current projects should be the responsibility of the planning bureaucracy at the time alternative investment programs are considered. The myopia of planners is hard to understand. It may reflect the sheer absence of data on the recurrent expenditure implications of projects, the planners' own preoccupation with the realization of new investments, their macroeconomic policy focus, or their neglect of the impact of underfinancing on future productivity. Certainly the literature on planning and project evaluation offers little guidance on how to deal with this problem. By definition, a project with an acceptable social rate of return has a stream of present value in excess of its social costs. The possibility that scarce recurrent budgetary resources might jeopardize a project's future output is rarely incorporated in the project evaluation process.

Why is the problem not signaled by those in the sectoral ministries responsible for overseeing recurrent expenditure? Each year they receive project requests for additional recurrent funds that presumably detail shortages and operating difficulties caused by inadequate funds. In pooling the requests from all the institutions funded by a ministry, does not the total requested increase in appropriations suggest something about the degree of underfinancing?

Yet even at this early stage the signaling process is often defective. For many sectors, the accounting process does not readily generate information on the recurrent costs of individual projects or programs, since such data are often not needed for the actual appropriation process, and the task of collecting the data may be beyond the limited staffing capacity of those responsible for preparing the recurrent estimates. Thus, the insufficiency of resources may be signaled only by a chorus of complaints. But even when projects are man-

aged individually and there does exist some quantitative measure of the degree of underfunding, project managers are not trained to measure the resulting economic losses. Thus, it is difficult for the finance officer in a ministry to evaluate the relative economic merits of the many requests for additional funds.

At the ministry of finance level, the ceiling for total recurrent expenditure is set on the basis of aggregate fiscal considerations—such as the availability of revenue, the desired level of the recurrent surplus, or the overall budget deficit. This ceiling will effectively limit any sector's increase in appropriations. The amount of revenue that a sector can use to augment a project's operating expenditure is further limited by the impact of inflation and rising wages on its budget. Although the relative growth of a sector's appropriation may be influenced by an unusually large project coming on line, other factors are equally important in determining its allocation (the relative influence of its minister, the effectiveness of the sector's financial bureaucracy in making its case for further funds, and so on). The cry of inadequate resources may be heard, but to the finance ministry the level of fiscal demand, particularly for "public consumption," will always be far in excess of available resources, and the implications for growth and productivity of meeting one request and denying another completely unapparent or subjective. In effect, the movement of a project from the investment to the recurrent budget signals its fall from "budgetary" grace, a decline in its "visibility," and its need to scramble for a share of recurrent funds.

### Identification of the problem

What policy options are available to countries and donors faced by this problem? First, it is absolutely fundamental that donors systematically and regularly incorporate diagnostic analyses of the present and future severity of the problem of meeting recurrent costs in their annual country reporting systems. It is extraordinary that there is so little information on a problem of such significance to the joint goals of donors and borrowers alike. Such an analysis would entail the following:

- Identification of the recurrent expenditure implications of a wide range of projects for a representative sample of developing countries; the routine generation of recurrent expenditure statistics in the process of project appraisal would quickly develop an important data base for planning in many countries. More important, it would explicitly identify for local planners the recurrent implications of each new project.



Peter S. Heller

a U.S. citizen, joined the Fiscal Affairs Department of the Fund in 1977, after teaching at the University of Michigan (U.S.A.). Mr. Heller has a B.A. from Trinity College (U.S.A.) and a Ph.D. in economics from Harvard University (U.S.A.). He has published widely on public finance and health policy issues in developing countries.

• Systematic analyses of whether existing projects and programs are currently underfinanced in developing countries. In many developing countries, inadequate maintenance and operation of the existing capital stock is one of the central development problems. Procedures must be developed to obtain a proper value for the existing capital stock and for the desirable level of corresponding recurrent funding.

• Diagnosis of the likelihood of future underfinancing; a helpful shortcut for such an analysis is to calculate for each project the ratio of its net recurrent expenditure requirements to the total investment outlay. This is called the "r" coefficient. Both within and across sectors, one would expect considerable variation in the level of these coefficients, as illustrated in the table. Given these coefficients, a prospective test of the long-term macroeconomic fiscal consistency of a country's public sector development program could be routinely made using fiscal data available to the Fund and the World Bank. Recent studies on Kenya, Ivory Coast, Malawi, and the Sahel illustrate the methodology. Simulations of the fiscal impact of shifts in the level and sectoral composition of the program could be readily made.

• Project appraisal analyses of the sensitivity of a project's output to underfinancing: that is, to determine what will be the level of project output at different levels of recurrent funding. How sensitive is a project to the inadequate provision of particular inputs (gasoline, skilled labor, and so on)? Such an analysis would help define the minimum set of inputs that a project needs to be productive. It would also allow quantification of the trade-off between the gains from new investment and the losses from underfinancing old ones. In the event that a sector's recurrent funding remains insufficient, it would also allow a more rational allocation of the limited funds.

## Solutions

If a country's existing public capital stock is grossly undermaintained or operating inefficiently, or if such problems are likely to emerge in the future, there are at least seven policies the government can adopt to ensure consistency between the level of future recurrent expenditure and revenue. At a macroeconomic level, it could (1) restructure its public expenditure program by reallocating funds from the investment to the recurrent budget, perhaps diverting funds to the maintenance and operation of existing programs; (2) cut less essential recurrent expenditure; (3) increase the tax effort of the public sector; and (4) increase the elasticity of the tax system.

At the project selection level, the government could (5) change the composition of the investment program to favor programs or investments with lower recurrent expenditure implications; (6) modify the technology of projects to have higher present investment costs at the expense of lower future recurrent outlays; and (7) introduce fees for the use of project services. The World Bank has emphasized that reliance on user charges should be extended from the traditional sectors of power, water, and transport to irrigation, agricultural credit, and urban sites and services schemes. Even in such social sectors as health and education, a modest reduction in the subsidy for some services may be appropriate. In many cases, user charges extend the potential coverage of important socioeconomic programs.

Each of these policies focuses either on cutting the overall recurrent expenditure commitments engendered by an investment program or on raising the amount of available revenue for their funding. All of them reflect solely the criterion of ensuring fiscal consistency between the growth in public expenditure demands and the likely availability of public resources. Although this criterion should be satisfied, other equally important criteria enter into the selection of projects and technology.

Specifically, the adoption of these policies may conflict with the achievement of other governmental objectives and are not without cost. In (5) above, the choice of a low "r" value technology may effectively conflict with a desire for highly labor-intensive employment generating projects. In (7), increasing the user charges for public services may conflict with distributional goals. In (6), changing the composition of the development program to achieve lower overall recurrent costs may conflict with other objectives. Where such conflicts emerge, the government has no choice but to consider other policies to raise revenue and cut expenditure (as in (1) through (4)). If not, the alternative would be further underfinancing of projects.

Though none of these proposals are particularly easy to implement, it would be valuable for officials to go through the process of considering them. By exploring the fiscal effect of alternative project packages, technologies, or pricing policies, a country's economic policymakers should become considerably more aware of the likely dimensions of their "underfinancing" problem.

Other options are available. In examining any sector's future development, the administration might consider the desirability of curtailing or consolidating existing

projects. There may, for instance, have been an overexpansion of schools, hospitals, and agricultural extension projects; in such cases, the marginal gain from adequate financing of a smaller set of projects may significantly exceed the loss from dropping others. This could be quantified if adequate data on the output losses associated with underfunding were available.

Finally, the government could seek greater rationality in the allocation and management of resources through improvements in the performance of local planning, budgeting, and accounting systems. Such reforms have been discussed in past issues of *Finance & Development* (see the articles by A. Premchand in June 1974, March 1975, and December 1975).

What options are available to an external donor concerned about the long-term economic viability of its project loans? In the design and selection of projects, donors might regularly consider the development of short-term to medium-term projects specifically oriented to the maintenance of the public sector capital stock. Once an institutional maintenance capacity is established and incorporated in a country's budget, its claim on future resources is solidified. Equally important, the donor might consider the absorption of all or a part of the recurrent costs of a project in the early years of its initial operation. The recurrent financing could then be tapered so that these costs become fully borne by the host country within two or three years of implementation.

Such an approach would have several advantages. It would ensure that recurrent costs are fully considered in the design and evaluation of projects, it would provide detailed data to budget planners, and it would ensure that an adequate level of recurrent funding for a project is built into a sector's budget. Once the project is fully operational it would then be more resilient to cutbacks when its funding is transferred to the local budget. By providing external technical assistance in the operation of the project, the donor could augment the absorptive capacity of a country in operating its projects. Finally, such a policy would also imply a productive shift in external aid funds from the investment to the recurrent budget.

Adoption of these proposals could never completely prevent the occurrence of underfinanced projects and programs. There is always uncertainty over how a project and an economy will evolve in the context of a changing international economic environment. These proposals would ensure that the problem of adequate recurrent financing is not lost sight of in development planning and budgeting.