IV. WHAT CAN POLICYMAKERS LEARN FROM RESOURCE ACCOUNTING?

Macroeconomic Policy and Structural Adjustment

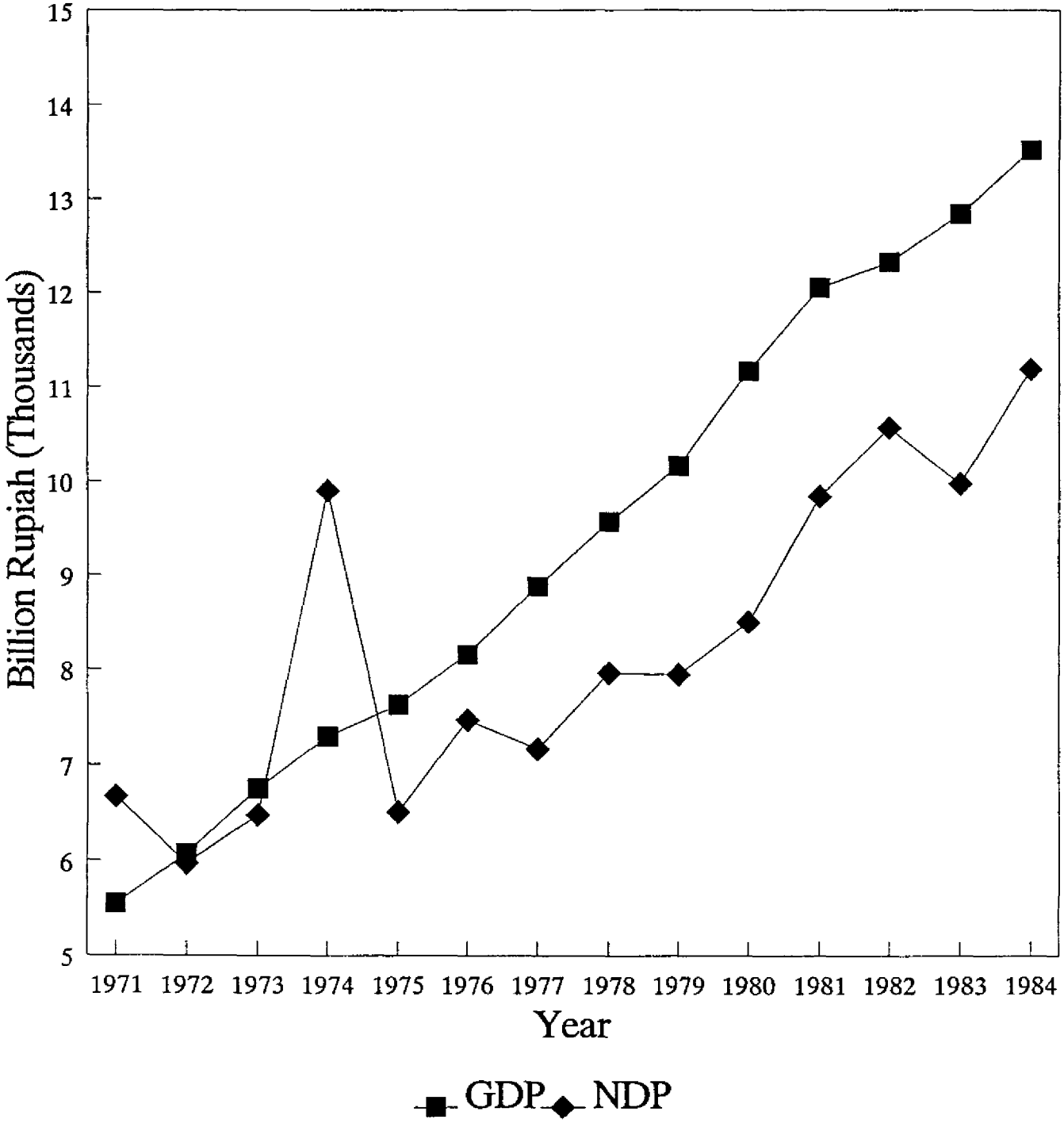
National accounts that incorporate natural-resource accounting provide a more adequate means of evaluating an economy's performance and progress toward sustainable development. The World Resources Institute has collaborated on a pioneering report using Indonesia as a case study. Over the past 20 years, Indonesia has drawn heavily on its considerable natural-resource endowment to finance development expenditures. Revenues from the production of oil, gas, hard minerals, timber, and forest products have offset a large share of government development and routine expenditures. Primary production contributes more than 43 percent of gross domestic product, 83 percent of exports, and 55 percent of total employment. Indonesia's economic performance over this period is generally judged to have been successful: per capita GDP growth averaging 4.6 percent a year from 1965 to 1986 has been exceeded by only a handful of low- and middle-income countries and is far above the average for those groups. Gross domestic investment rose from 8 percent of GDP in 1965, at the end of the Sukarno era, to 26 percent of GDP (also well above average) in 1986, despite low oil prices and a difficult debt situation.

Estimates derived from the Indonesian country case study illustrate how much this evaluation is affected by "keeping score" more correctly. Figure 1 compares the growth of gross domestic product at constant prices with the growth of "net" domestic product, derived by subtracting estimates of natural-resource depreciation for only three sectors: petroleum, timber, and soils. It is clear that conventionally measured gross domestic product substantially overstates the growth of net income, after accounting for consumption of natural-resource capital. In fact, while GDP increased at an average annual rate of 7.7 percent from 1970 to 1984, the estimate of "net" national product rose by only 3.9 percent a year. In other words, half of the recorded growth was generated not by sustainable productivity increase, but by drawing down natural-resource assets.

The overstatement of income growth is actually considerably more than these depreciation estimates indicate, since only three natural resources are covered: petroleum, timber, and soils on Java and Bali. Other important exhaustible resources that have been exploited over the period, such as natural gas, coal, copper, tin, and nickel have not yet been included in the accounts. The depreciation of other renewable resources, such as nontimber forest products and fisheries, is also unaccounted for. When complete depreciation accounts are available, they will inevitably show a greater divergence between the growth in gross output and net income.

Other important macroeconomic estimates are even more badly distorted. Figure 2 compares estimates of gross and "net" domestic investment, the latter reflecting depreciation of natural-resource capital. This statistic is central to economic planning in resource-based economies. Countries, such as Indonesia, that are heavily dependent on exhaustible natural

Figure 1. Gross Domestic Product and Net Domestic Product in Constant 1973 Rupiah



resources must diversify their asset base to preserve a sustainable long-term growth path. The extraction and sale of natural resources must finance investments in other productive capital. It is relevant, therefore, to compare gross domestic investment with the value of natural-resource depletion. Should gross investment be less than resource depletion, then, on balance, the country is drawing down rather than building up its asset base, and using its natural-resource endowment to finance current consumption. Should "net" investment be positive but less than is required to equip new labor-force entrants with at least the capital per worker of the existing labor force, then increases in output per worker and income per capita are unlikely.

In fact, the results from the Indonesian case study show that the adjustment for natural-resource asset changes is large in many years relative to gross domestic investment. In a few years the adjustment is positive, because of additions to petroleum reserves. In most years during the period, however, the depletion adjustment offsets a good part of gross capital formation. A fuller accounting of natural-resource depletion might conclude that in some years depletion exceeded gross investment, implying that natural resources were being depleted to finance current consumption expenditures.

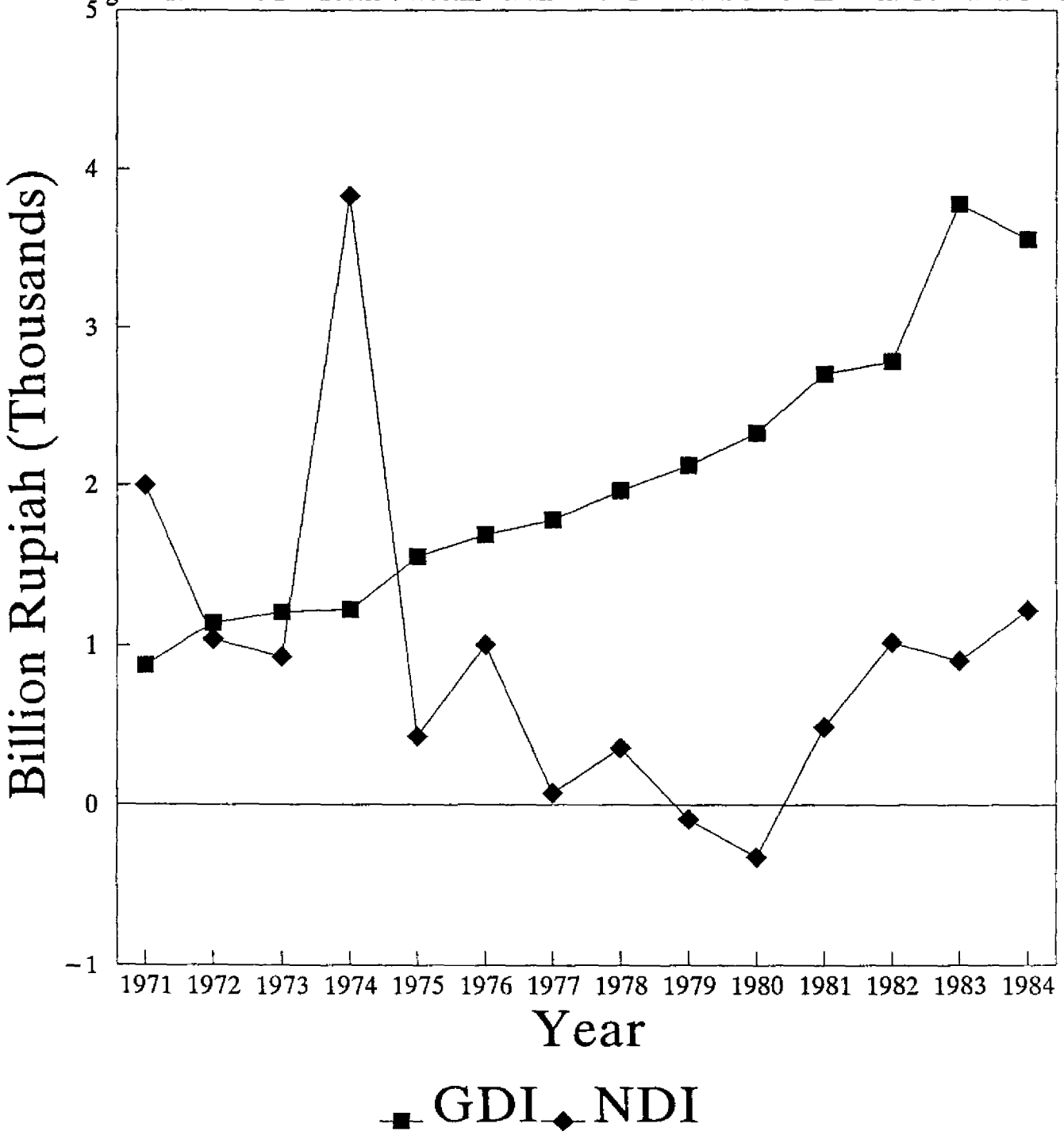
Such an evaluation should flash an unmistakable warning signal to economic policymakers that they were on an unsustainable course. An economic accounting system that does not generate and highlight such evaluations is deficient as a tool for analysis and policy in resource-based economies, and should be amended.

Countries throughout Africa, Latin America, Eastern Europe, and north Asia are undergoing dramatic economic transformations, undoing decades of state intervention and market distortion. The international agencies of the World Bank and the International Monetary Fund are being called upon to support structural adjustment and stabilization programs with policy advice and capital flows.

How economic reforms should be designed to ensure a successful transition to sustainable economic progress is a matter of urgent concern. In all these regions now undergoing structural reforms, environmental degradation has been as obvious a symptom of the failure of the previous policies as economic collapse. Uncontrolled pollution, excessive environmental hazards, and overexploitation of natural resources have accompanied the decline of living standards. New economic policy packages must address and reverse ecological as well as economic deterioration.

In many developing countries the national balance sheet has deteriorated more from depreciation of natural resources than from foreign borrowing. In the Philippines, for example, depreciation in just three sectors--forests, soils, and coastal fisheries--averaged 4.5 percent of GDP per year in the dozen years leading up to the debt crisis, while foreign borrowing averaged only 4 percent of GDP. Unlike the highly publicized debt problem, however, resource depletion went unmeasured and largely unnoticed.

Figure 2. Gross Domestic Investment and Net Domestic Investment in Constant 1973 I



According to the IMF, the principal objective of short-term adjustment programs is to reduce the internal and external imbalances that lead to the unsustainable accumulation of domestic and foreign liabilities. But the rate at which a country can safely accumulate debt is related to the rate at which it is accumulating assets. If both should double within a given period, the process is probably not unsustainable. However, if liabilities are increasing while assets are declining, there is undoubtedly a problem. In the Philippines, this is what occurred.

Moreover, adjustment polices designed to reduce the accumulation of debt without consideration of their environmental impacts might inadvertently increase the loss of natural-resource assets. In the Philippines, restrictive stabilization policies sharply increased poverty and unemployment. Real wages fell more than 30 percent during the early years of the debt crisis, leaving 58 percent of the population below the poverty line. Poverty "pushed" households out of overcrowded rural areas, but not always to face unemployment in the cities. Instead, the prospect of gaining access to land sharply accelerated rural-to-rural migration into upland watersheds and coastal regions, intensifying the deforestation and erosion of upland watersheds and the overexploitation of coastal fisheries and mangroves. Succeeding waves of migrants spilled into fragile ecological areas--2.5 million of them in the first half of the 1980s alone. With each harvest, the eroded soils yielded less and more migrants competed for land. Poverty drove agricultural workers from crowded lowland rice farms, but poverty also awaited them in the cities and the fragile uplands.

To be successful, stabilization programs should be designed to stabilize both sides of the balance sheet, reducing the decumulation of assets as well as the accumulation of debts. Otherwise, adjustment programs will not lead to sustainable development. The IMF, the World Bank, and other development agencies should base their macroeconomic analysis on an accounting system that treats natural resources as the important assets that they are, and extend their analyses to examine the potential environmental effects of adjustment programs.

Sectoral Policy

Natural-resource accounting is also extremely useful in formulating and evaluating sectoral economic policy. For example, the resource accounts drawn up for the Indonesian timber sector estimated the stumpage value or resource rents available from harvest of that country's natural tropical hardwood forests. As the accompanying table indicates, large resource rents have been generated by exploitation of primary forest.

Those forests are in very large part within the public domain, as national forests. The Government of Indonesia licenses concessionaires to extract timber under long-term contract. Many of the concession-holders are controlled by non-Indonesian interests, in partnerships with local elites. The Government captures some of the resource rents from the concessionaires through a variety of license fees, property taxes, royalties, and other charges. In theory, since the calculation of stumpage values makes allowance for a normal return on capital invested in the logging operation, the Government of Indonesia could have captured a large fraction of the available rents.

It was a small step from the estimation of sectoral accounts to the question whether the Government was actually collecting as much of the value from forest exploitation as it might. A leading Indonesian environmental organization, in cooperation with academic economists, undertook to examine the issue of rent capture, and found that in recent years the Government had succeeded in capturing only 10 to 15 percent of the resource rents, losing potential revenues of $2 billion annually--equivalent to 40 percent of annual official development assistance.

This study led to a reexamination of the supply of logs to domestic mills at prices well below international levels, of the lag in forest taxes behind inflation, and of weaknesses in the supervision of timber concessions. These issues are important not only for fiscal reasons, but also to promote more efficient and sustainable utilization of Indonesia's rich forests.

Table 1

FOREST RESOURCE ACCOUNTS, INDONESIA (1970-1976)

PHYSICAL UNITS (million m3)	1970	1971	1972	1973	1974	1975	1976
Opening stock(1)	21713	21651	21587	21522	21450	21383	21325
Additions:							
Growth(2)	51.9	51.9	51.9	51.9	51.9	51.9	51.9
Reforesta-tion(3)	1.3	3.4	5.5	7.6	9.7	11.8	13.8
Reductions:							
Harvesting(4)	10.0	13.8	16.9	26.3	23.3	16.3	21.4
Deforesta-tion(5)	99.0	99.0	99.0	99.0	99.0	99.0	99.0
Degradation(6)	6.6	6.6	6.6	6.6	6.6	6.6	6.6
Net change	62.4	64.1	65.1	72.4	67.3	58.2	61.3
(rounded)	(62)	(64)	(65)	(72)	(67)	(58)	(61)
Closing stock(1)	21651	21587	21522	21450	21383	21325	21264
UNIT VALUES (US$ per m3)							
FOB export price	10.90	15.10	17.10	29.30	41.60	26.40	44.70
Harvesting costs	4.90	6.80	7.90	13.18	18.72	11.88	20.12
"Primary" rent(7)	6.00	8.30	9.20	16.12	22.88	14.52	24.58
"Secondary" rent(7)	3.78	5.23	5.80	10.16	14.41	9.15	15.48
MONETARY ACCOUNTS (US$ million)	1970	1971	1972	1973	1974	1975	1976
Opening stock	---	105224	145064	160339	280137	396227	250782
Additions:							
Growth	196	271	301	527	748	475	803
Reforestation	0	0	0	0	0	0	0
Reductions:							
Harvesting	60	115	155	424	533	237	526
Deforestation & degradation	399	552	612	1073	1522	966	1635
Net change	-263	-396	-466	-970	-1307	-728	-1358
Revaluation:							
Opening stock	---	32620	12764	97798	95039	-117258	140777
Closing stock	105525	145495	160823	281077	397468	251464	424581

Table 2

FOREST RESOURCE ACCOUNTS, INDONESIA (1977-1982)

PHYSICAL UNITS (million m3)	1977	1978	1979	1980	1981	1982
Opening stock(1)	21264	21204	21144	21085	21028	20973
Additions:						
Growth(2)	51.9	51.9	51.9	51.9	51.9	51.9
Reforesta-tion(3)	15.9	18.0	20.1	22.1	24.2	26.3
Reductions:						
Harvesting(4)	22.2	24.2	25.3	25.2	16.0	13.4
Deforesta-tion(5)	99.0	99.0	99.0	99.0	108.0	108.0
Degradation(6)	6.6	6.6	6.6	6.6	6.6	6.6
Net change	60.0	59.9	58.9	56.8	54.5	49.8
(rounded)	(60)	(60)	(59)	(57)	(55)	(50)
Closing stock(1)	21204	21144	21085	21028	20973	20923
UNIT VALUES (US$ per m3)						
FOB export price	47.50	46.70	85.21	106.93	95.84	100.59
Harvesting costs	21.38	21.05	29.84	34.24	37.93	41.00
"Primary" rent(7)	26.12	25.65	55.37	72.69	57.91	59.59
"Secondary" rent(7)	16.46	16.16	34.33	45.07	35.90	36.95
MONETARY ACCOUNTS (US$ million)	1977	1978	1979	1980	1981	1982
Opening stock	423362	448617	439298	945662	1238129	983843
Additions:						
Growth	854	839	1782	2339	1863	1918
Reforestation	0	0	0	0	0	0
Reductions:						
Harvesting	580	621	1401	1832	927	799
Deforestation & degradation	1738	1706	3625	4759	4114	4234
Net change	-1464	-1149	-3244	-4252	-3178	-3115
Revaluation:						
Opening stock	26525	-8072	621808	296719	-251107	29225
Closing Stock	448617	439298	945662	1238129	983843	1009953

Table 3

FOREST RESOURCE ACCOUNTS, INDONESIA (1983-1984)

PHYSICAL UNITS (million m3)	1983	1984
Opening stock(1)	20923	20875
Additions:		
Growth(2)	51.9	51.9
Reforesta-tion(3)	29.6	35.3
Reductions:		
Harvesting(4)	15.2	16.0
Deforesta-tion(5)	108.0	108.0
Degradation(6)	6.6	6.6
Net change	48.3	43.4
(rounded)	(48)	(43)
Closing stock(1)	20875	20832
UNIT VALUES (US$ per m3)		
FOB export price	78.75	93.15
Harvesting costs	43.31	51.23
"Primary" rent(7)	35.44	41.92
"Secondary" rent(7)	22.33	26.41
MONETARY ACCOUNTS (US$ million)	1983	1984
Opening stock	1009953	602974
Additions:		
Growth	1159	1371
Reforestation	0	0
Reductions:		
Harvesting	539	671
Deforestation & degradation	2559	3027
Net change	-1939	-2327
Revaluation:		
Opening stock	-408918	106424
Closing stock	602974	711725

INSTITUTING A SYSTEM OF ENVIRONMENTAL ACCOUNTS

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Before instituting a system of natural-resource and environmental accounts (an "NREA system"), a country must weigh many options and make important decisions. In particular, it needs to respond to a number of specific questions that have not been fully discussed among the countries of the hemisphere and that remain subject to debate and disagreement among the experts. Some of these questions are the following:

1. Should the new system be based on one of the approaches developed in other countries or on a combination of approaches that will be most beneficial for the particular country?

2. Should the basic focus of the system be to modify the existing system of national accounts or to establish an independent or "satellite" system?

3. What should be the scope of the project and the amount of human and financial resources devoted to it?

4. What is the primary objective: to organize existing information scattered among different agencies in the country, to measure the country's economic performance after incorporating environmental variables, to make forecasts concerning these variables, or to formulate policies for managing natural resources and controlling environmental degradation?

5. Is the long-term goal of the system a standard international system that allows for comparison among countries, or an individualized accounting system adapted to the problems and priorities of the particular country?

6. Will the system be initiated immediately, through an evolutionary process, or after the international community reaches a consensus on an appropriate methodology?

7. Which of the country's agencies shall serve as the focal point and which ones shall generate specific information?

8. Which resources and pollutants shall be subject to accounting and which specific environmental problems are to be analyzed through this system?

9. How elaborate shall the system be in terms of sophistication of methodology, precision of data, and number of indicators?

10. What new data or information shall be generated for the exclusive use of the system?

11. To what degree shall the experience of industrialized nations on the foregoing points be applied?

12. Shall measurements be done in physical units alone or also in monetary units? If the latter, what means of valuation shall be applied?

13. How shall the information produced be channeled to the decision-making agencies?

In attempting to answer these questions, I shall group them into six main topics. However, it should be stressed that these responses represent only one point of view on an evolving issue that most of our countries have only recently begun to address. It is also worth noting that each of the approaches currently used reflects a certain position on most of these topics, which should be reconciled with that of the country intending to introduce the new system.

Topic 1: The Starting Point

In many developing and some developed nations, there is only a vague notion of the role of NREA systems and of the development of views on this topic, and decisions on adopting a new system therefore tend to be deferred. It is known, for example, that such systems improve upon the conventional system of national accounts by incorporating environmental variables. However, from this it is usually, though incorrectly, concluded that the purpose of the effort is simply to see to it that national accounts better fulfill their traditional role of providing indicators of the country's economic activity and income. Actually, the role of NREA systems may be much more ambitious.

In particular, NREA systems can (1) be instrumental in policymaking, not only with regard to macroeconomic variables, but also for managing individual natural resources and dealing with specific environmental problems; (2) provide a fundamental tool for the planning of sustainable development (actually, it is difficult to imagine a country carrying out such planning without specific data on the status and evolution of its natural assets); (3) organize and systematize existing information on natural resources, which is usually scattered among the country's various agencies; (4) allow the construction of quantitative models to predict the evolution, in quantity and quality, of the stock of natural assets in alternative scenarios; and (5) enable the system of national accounts to provide relevant indicators of social well-being (including vulnerability), in addition to the conventional indicators of production and income. Achieving any of these objectives is reason enough for instituting some form of NREA system.

The other somewhat vague notion held in our countries is that the topic of environmental accounts is being discussed in a number of international forums, that no consensus has been reached about it, and that there is as yet no standard system, all of which is true. However,

the dangerous conclusion drawn from this, especially when the true role of the new accounts is unknown, is that it is a good idea to wait until the entire issue is clarified before establishing a new system. What is probably not commonly known is that in all of these forums there has always been a consensus on the need for immediately initiating the process of establishing the new accounts, especially in developing nations, whose well-being is closely related to their natural patrimony. Actually, in view of the significant results achieved by the World Resources Institute in Indonesia and Costa Rica, it may properly be concluded that for most of our countries the most opportune time to begin the new system has already come and gone.

Topic 2: Selection of Model and Objectives

Perhaps the most difficult decision a country faces in starting the process of establishing an NREA system is selecting the approach, among the many that exist, to serve as a model or basis. At present, there are no fewer than nine approaches, of which six were developed by industrialized nations for their own individual use, and three by independent institutions for general use. The former are those of Canada, France, Japan, Holland, Norway, the United States, and Germany. The approaches for general application were developed by Repetto, the United Nation Statistical Office, and Peskin. The result is a confusing array of methodologies that sometimes inhibits the developing nations from taking any initiative in this area.

Two points may be made on the subject of selecting the appropriate NREA model:

First, given that the assistance or financing available for developing new accounting systems is not plentiful and generally comes tied to a specific approach, the recipient country does not enjoy much discretion in selecting its approach. This problem is, however, not as important as it appears at first blush. As was said above, what matters at this moment is that the countries of the region initiate the new system, no matter what model it is based on, in order to obtain the attendant benefits immediately and to gain the experience required to set up a system adapted to their own values and needs. Throughout this entire process a clear distinction must be made between what the country seeks as a final product and what the model approach may provide; therefore, the country needs to develop a capacity not only to apply the model approach, but also to judge the merits of other approaches and evaluate their development in other countries.

Secondly, to the extent that the country can exercise its discretion in selecting the approach, it is important to note that the most relevant decision for that country is not, as the literature seems to suggest, to select among alternative approaches, but rather to select among the alternative objectives that the country may pursue. Since each approach serves well-defined objectives, the country must first define its objectives and later derive the approach that best accomplishes them. The selection of objectives should determine the selection of approach, not vice versa.

Topic 3: The Selection of the Basic Approach

As was said above, the most important objectives of the NREA systems are policymaking, the planning of sustainable development, the organization of existing information, the improvement of macroeconomic measurements, the use of quantitative models, and better assessment of social well-being. In seeking to achieve some of these objectives, the countries with NREA systems in progress have focused on one of two basic approaches: (1) modifying the national accounts to incorporate sustainability and environmental values, and (2) establishing independent or "satellite" accounts to deal with specific resources or sectors or environmental problems.

The first approach is especially useful for examining the historical sustainability of the countries' development process, for improving macroeconomic measurements, and for developing new indicators of national well-being. The new "green" accounts are expressed in monetary values and refer mainly to natural-resource depletion and degradation (including losses from and increased vulnerability to natural disasters). Another correction is for the value of natural goods and services for which there are no markets. This approach has produced very interesting results, especially those obtained by the World Resources Institute in developing countries, which show that the real economic growth of such countries may be much lower than conventional measurements suggest and that the stock of certain resources has suffered dramatic losses in recent decades.

The second approach, that of establishing a "satellite" or independent system, is especially appropriate for (1) formulating policies on managing certain natural resources or resolving specific environmental problems; (2) reforming the national accounts system in the long term through an evolutionary process; and (3) making use of quantitative models to forecast or plan the development of priority resources. It includes the accounting of stocks and flows of natural resources or pollutants, initially in physical units; the economic valuation is added only when possible and necessary (for example, for policy analysis). The arithmetic used for stocks and flows is simple. This approach is also interesting because it permits analyzing the future evolution of natural resources and systems. It also provides valuable information and experience for designing new national accounts systems.

Three points may be made with regard to this topic:

1. As was said above, it makes little sense to recommend one approach over another: either is appropriate depending on the particular objective sought. One conforms to a standard accounting pattern, works with macroeconomic aggregates, and looks at the past; the other is more flexible, has limited coverage, and looks at the future.

2. These approaches are not really alternatives, except perhaps at the time of initiating the new system. If a country wishes to avail itself of all the advantages of environmental accounting, it will have to apply both approaches in the long term. But the combined system may require two agencies to serve as focal points, one for each approach. Thus the

modification of the national accounts system may be centralized within the agency in charge of that system and the independent or "satellite" systems be managed by the agencies specializing in specific sectors or resources. The approach initially selected will therefore determine which agency will inaugurate the new system.

3. Both approaches may be designed in a pragmatic and progressive fashion in order to facilitate their immediate adoption in the country concerned and their later incorporation to a standard international system. Thus, when the first approach was applied in Costa Rica and Indonesia, only the accounts of a few important resources were selected for revision; other adjustments, such as quality changes or defensive expenditures, would be incorporated later on. In the case of Uruguay, where the second approach was used, a single resource, soil, was chosen and measured only in physical units; this experience will serve, however, as a basis for expanding the system to many other resources. Furthermore, either approach can be designed so that as it evolves it may be integrated with the other and at any point incorporated into the United Nations "satellite" system. The UN system has been designed in such a way that practically any efforts undertaken in environmental accounting may subsequently be incorporated into it.

Topic 4: Standardization of the System

An important objective of the new system is standardization, so that any of its results may be used for meaningful comparisons among countries. Nevertheless, it is our opinion that this objective should be maintained as a long-term goal--very long-term, in fact--and that the initial emphasis should instead be on resolving the most urgent problems of the country involved through an accounting system adapted to those needs.

This opinion is based on four reasons: (1) the industri-alized nations with NREA systems in operation have not demonstrated any great desire to agree upon a standard international system and have concentrated instead on developing individualized systems, adapted to their own needs; (2) at present, our countries have specific needs for policy-oriented information, which justifies their gearing the new system to meet them; (3) the nature of these needs suggests that, even in the long term, the new system should retain important elements of its own, that is, not easily subject to standardization; and (4) specialized international forums have concluded that it is not possible at this time to establish a standard system. But the very experience gained by the countries through the implementation of the NREA systems will contribute to the formulation of such a system in the future.

Topic 5: Scope of the Project

As was said above, there is a considerable consensus as to the advisability of carrying out NREA projects in developing nations, but not as to the amount of resources to devote to the effort. The experience of developed nations is not very enlightening in this respect, since the scope and complexity of the projects vary quite a bit from one country to another, ranging from the very ambitious (France) to the very basic (United Sates).

Information on the actual cost of the different NREA projects and approaches is also very limited, since no studies have been conducted on this point in spite of its enormous relevance. The work done in some developing nations such as Uruguay, Indonesia, and Costa Rica has not been very costly; however, these were only pilot projects, not the establishment of permanent systems. In developed nations, the cost of an active and permanent environmental accounting program may run into many millions of dollars.

In dealing with the scope of the project, the following points should be made:

1. It may be argued that in developing countries the scope should generally be more limited than in developed countries, given the great difference in the availability of financial, human, and technical resources. However, a strong counter argument is that in developing countries the society's income is much more dependent upon the natural-resources base and actual losses of such resources have been much more dramatic. Consequently, in our hemisphere the new accounting system may be a more important and pressing need in the developing than in the developed countries and thus warrant a more expensive project.

2. If a country is able to obtain sufficient foreign assistance and financing for this activity, it can "think big." But if, as is more likely, assistance is scarce or even nonexistent, there is really nothing wrong with "thinking small." The important thing is to begin immediately the task of quantifying the extent of our most pressing environmental problems and provide decision-making tools to resolve them. In this activity, perhaps more than in many others, it is very important to be realistic as to the amount of resources that one can count on. Very ambitious projects without a matching budget can be needlessly wasteful because they are almost always abandoned or deferred indefinitely before producing any concrete results. If resources are modest, it is much more worthwhile and practical to accept this situation from the outset and direct the system towards producing immediate, low-cost results, even if this means using basic, unsophisticated methods. The experience in Uruguay, for example, shows that even scarce resources permit significant results with great potential impact.

Topic 6: Initial Design of the System

To determine the initial design of its NREA system, a country must answer the questions raised above about different variables: the resources and pollutants to be subject to accounting, the level of detail, the new information and data to be generated, the valuation methods, etc. What is of paramount importance is to distinguish clearly between long-term and short-term goals.

As has been said, in the long term a country can very well pursue all the objectives that environmental and resource accounting may achieve. These will of course include reforming the system of national accounts in accordance with the standard international model that may have been agreed upon in the United Nations. The path taken and the evolution towards this system may differ considerably from country to country, but the final result in this respect should be the same. It is worth noting, however, that the final result with respect to some

elements of the overall system may differ greatly among countries, reflecting their different values and problems. Thus, for example, it is likely that the accounting in developed nations will continue to be concentrated on environmental pollution and degradation, while that of the developing countries will focus on the sustainability of the most important natural resources. In addition, more emphasis will surely be given to vulnerability to natural events, such as droughts, floods, hurricanes, volcanic eruptions, earthquakes, tsunamis, and desertification, all of which affect natural assets.

Moreover, although the long-term objectives may be similar, the short-term goals may be very different. It is precisely the combination of these short-term goals with a realistic project size that should provide the main criteria for the initial design of the system. Thus, the selection of the first resources and pollutants to be covered will depend on the initial goals. If a basic goal is to modify the national accounts, the resources chosen will be those whose loss would most seriously affect the national product; if, on the other hand, the intent is to formulate environmental management policies, the resources chosen will be those related to specific environmental problem.

It is important to keep in mind that the short-term objectives of the NREA system should arise from the country's environmental policy, since the accounting system is only a tool to implement such a policy. At present, a desirable policy for developing countries is to take advantage of available opportunities to reconcile economic growth with protecting and conserving the natural patrimony. The guiding principle in designing the NREA system, particularly at the outset, should be that it contribute to this strategy, and that it do so through significant, immediate, and low-cost results. If such results are possible, they will create an appropriate demand for the NREA system and provide the engine for its continued growth and development.