FINANCING URBAN AND REGIONAL INFRASTRUCTURE IN INDONESIA
Options for Restructuring the Regional Development Account (RDA)

by

M. Fauzi M. Ichsan

B.Sc. Economics
London School of Economics and Political Science
University of London
(1991)

Submitted to the Department of Urban Studies and Planning
in partial fulfillment of the requirements for the degree of

MASTER OF CITY PLANNING

At the

Massachusetts Institute of Technology

May 1995

© 1995 M. Fauzi M. Ichsan
All rights reserved

The author hereby grants to MIT permission to reproduce
and to distribute publicly paper and electronic copies of
this thesis document in whole or in part

Signature of Author .................................................................
Department of Urban Studies and Planning
May 1995

Certified by ..... .................................................................
Paul Smoke
Assistant Professor
Thesis Supervisor

Accepted by ............ ..............................................................
Langley Keyes
Chairman, Master of City Planning Committee
ACKNOWLEDGMENTS

Looking back at my academic life and career over the past four years, I cannot imagine being where I am now without the sincere support of Professor Paul Smoke. Paul had been my direct supervisor during the two years of my employment at the Harvard Institute for International Development (HIID), at the Ministry of Finance in Jakarta. At HIID he generally introduced to me the technocratic art of managing public finance, which I could never have adequately understood only by reading the related literature. With his assistance, I applied, and was accepted, for admission to the master of city planning program at MIT, where he has been my academic advisor and thesis supervisor. He originated the subject of my thesis and, with his full commitment, helped revise my thesis drafts, which had initially been rather difficult to read. Remembering all his support and kindness, I do not think I could ever sufficiently thank him.
# TABLE OF CONTENTS

Acknowledgments .................................................. 2
Abbreviations ......................................................... 4
Abstract ................................................................. 5

I. Introduction .......................................................... 6

II. Current role of the RDA ........................................... 13

III. Organizational issues ............................................. 16
   1. Organizational structure of the RDA in the government bureaucracy 16
   2. Capitalization, institutional form and financial structure of the RDA 21

IV. Financial issues .................................................. 28
   1. Selecting the right projects and financing modes 28
   2. Creating different departments within the RDA 31
   3. The need for grant financing and subsidized pricing 34
   4. A combination of grant and loan financing 38
   5. Loan financing 48
   6. The issuance of convertible bonds 53

IV. Feasibility of implementation .................................... 57

References .................................................................. 64
## COMMONLY USED ABBREVIATIONS

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>BAPPENAS</td>
<td>National Development Planning Agency</td>
</tr>
<tr>
<td>BUMD</td>
<td>Local Government Enterprise</td>
</tr>
<tr>
<td>FRA</td>
<td>Forward Rate Agreement</td>
</tr>
<tr>
<td>GOI</td>
<td>Government of Indonesia</td>
</tr>
<tr>
<td>HIID</td>
<td>Harvard Institute for International Development</td>
</tr>
<tr>
<td>INPRES</td>
<td>Presidential Instruction Grants</td>
</tr>
<tr>
<td>IPO</td>
<td>Initial Public Offering</td>
</tr>
<tr>
<td>IUIDP</td>
<td>Integrated Urban Infrastructure Development Planning</td>
</tr>
<tr>
<td>MOF</td>
<td>Ministry of Finance</td>
</tr>
<tr>
<td>NPV</td>
<td>Net Present Value</td>
</tr>
<tr>
<td>PDAM</td>
<td>Local Water Enterprise</td>
</tr>
<tr>
<td>RDA</td>
<td>Regional Development Account</td>
</tr>
<tr>
<td>REPELITA</td>
<td>Five-Year Development Plan</td>
</tr>
<tr>
<td>RTI</td>
<td>Research Triangle Institute</td>
</tr>
<tr>
<td>SLA</td>
<td>Subsidiary Loan Agreement</td>
</tr>
<tr>
<td>USAID</td>
<td>United States Agency for International Development</td>
</tr>
</tbody>
</table>
ABSTRACT

The thesis evaluates the role and performance of Indonesia’s Regional Development Account (RDA), a lending mechanism designed to finance urban infrastructure investment, particularly in the clean water sector. Although this fairly new institution has made genuine improvements in the system through which basic infrastructure is financed, major problems remain. As infrastructure backlogs grow and it becomes evident that the central government cannot maintain the current level of subsidization of local government projects, there are increasing pressures to further develop the RDA. The thesis proposes various organizational and financing reforms that could help achieve the following goals: 1) to improve the efficiency of loan processing; 2) to reduce the share of central government grants in financing urban infrastructure; 3) to improve the links between grant and loan financing; 4) to increase capital availability in financing urban infrastructure; and 5) to improve the productivity of capital while maintaining public equity objectives.

Some of the proposed reforms are designed on theoretical grounds and are not likely to be realized soon. However, they are intended to initiate a debate regarding future reforms of the RDA and in urban infrastructure financing in general. The thesis is concluded with a discussion of the feasibility of implementing the suggested measures. Some of the obstacles to effective implementation, such as managerial and financial, could be overcome with time as, for example, RDA personnel become more skilled and the Jakarta capital market becomes more mature. Some others, however, are political and require a carefully designed strategy to overcome.
I. INTRODUCTION

Some basic problems of financing urban infrastructure development in Indonesia

The development of urban infrastructure in Indonesia has been financed primarily by the central government through either the capital expenditure of its line ministries, notably the Ministry of Public Works, or intergovernmental grants, which are allocated by the National Development Planning Board (BAPPENAS) to provincial and local governments.

Given rapid population and economic growth, the central government is finding it increasingly costly to finance local infrastructure development by its sectoral ministries. In particular, there have been three basic problems. First, central government receipts are becoming increasingly inadequate to fund investment needs of the localities. Second, even when infrastructure projects of central government ministries do get funded, many of these projects do not meet the needs of the specific locality. Projects tend to be over-designed with limited financial and economic benefits but high operating cost. And third, the current administration and use of intergovernmental grants, however important they may be in reducing regional poverty and inequality, have also led to inefficient investments.

There are several problems with the intergovernmental grant system. One, the use of the sectoral grants, for local health services for example, which are subject to strict formal directives (JUKLAK) of the Ministry of Home Affairs (DEPDAGRI), has led to project selection and designs which are not compatible to the needs of the specific locality, a problem similar to that experienced by local projects built by central government ministries. Two, because the central government does not effectively favor poorer local governments in the allocation of intergovernmental grants, they are in effect subsidizing richer localities which could afford to finance investment on their own or on modestly subsidized terms. Such a situation maintains or exacerbates, rather than reduces, regional inequality. And three, the allocation of grants is based

---

1 The inadequacy of investment funds has been indicated, for example, by: 1) the declining urban investment per capita in the past five years; and 2) the increasing proportion of the central government budget financed by foreign creditors and donors.

2 It has been frequently argued that due to the lack of local governments’ participation, some of the projects built under the Integrated Urban Infrastructure Development Program (IUIDP), for example, failed to generate the expected net benefits. Paul Smoke and Johan Bastin, Harvard Institute for International Development, Development Discussion Paper No. 469, September 1993.
on a combination of both project feasibility and funds availability as projected by the Ministry of Finance (MOF). Limited funding often leads to project down-sizing, affecting the quality of projects. In addition, the process of grant application and allocation, which requires the approval of the local parliament, the provincial government, BAPPENAS, MOF and the concerned central government sectoral ministry, is highly bureaucratic, often adversely affecting local capital budgeting and project results.

**Loan finance in regional development**

In addition to the capital budget of central government ministries and intergovernmental grants, local infrastructure investment may also be financed by loan capital. Table 1 shows the composition of the 1991/92 realized aggregate local government revenue, including intergovernmental grant and loan. These data clearly show the central importance of grants and the very modest reliance on loan financing.

**Table 1. Realized aggregate local government receipts, 1991/92**

<table>
<thead>
<tr>
<th>Receipts</th>
<th>Billion Rupiah</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Balance carried forward</td>
<td>102.99</td>
<td>2.4</td>
</tr>
<tr>
<td>Own-source revenue*</td>
<td>595.59</td>
<td>13.8</td>
</tr>
<tr>
<td>Property tax share</td>
<td>534.13</td>
<td>12.4</td>
</tr>
<tr>
<td>Intergovernmental grants</td>
<td>3,039.68</td>
<td>70.6</td>
</tr>
<tr>
<td>Loans</td>
<td>32.41</td>
<td>0.8</td>
</tr>
<tr>
<td>Total</td>
<td>4,304.00</td>
<td>100.0</td>
</tr>
</tbody>
</table>

*Own-source revenue includes: taxes, retributions, user charges and profits from local government enterprises. Source: Draft State Budget 1993/94

\(^3\) Unlike the central government budget, the local government budget does not divide receipts into recurrent and development parts.
Before 1988, when the Regional Development Account (RDA) was established, the central government lent to local governments under various, institutionally fragmented, schemes with different terms, including the duration of the loans, grace periods and interest rates charged. Loans were earmarked for different activities carrying different grant components. In addition, local governments were also able to obtain loan capital from foreign donors in the form of two-step loans, known as Subsidiary Loan Agreements (SLAs), through MOF.

There were several problems with this fragmented loan system. First, since most of the loans carried soft terms and, in the case of the ones provided by donors, were guaranteed by the central government, the volume of loan repayments from local governments was not adequate to create the basis for an effective revolving fund. Second, because these loans were provided under different institutions, the central government was not exploiting the potential of economies of scale of integrating all loan mechanisms under a single administrative system to reduce operational and fund costs. Three, because loanable capital was being earmarked for many different uses and standardized project selection criteria were not being applied, the most productive investments did not necessarily get enough capital, while less productive ones, which may not be able to generate enough revenue even for loan repayments, could get relatively more funding. This situation could lead to low productivity of capital. Fourth and last, because the central government restricted local government debt service to 5% of current receipts, even the richer localities could not borrow as much as they wanted to even though they could afford to do so.

The establishment of the Regional Development Account (RDA)

In 1988 the central government established the RDA in response to a declining oil revenue, a deteriorating fiscal position, a growing demand by local governments for loan capital and a growing recognition of some of the problems of the existing system outlined above. Set up as a special account at the central bank, Bank Indonesia, the RDA is administered by MOF to channel funds from various sources, including the central government and various donor agencies.

---

4 These schemes included: 1) the RDI scheme, lending mainly to state enterprises at the national level; 2) the PMP scheme, financing equity capital of local government enterprises (BUMD); 3) the INPRES Pasar program, financing the development of local markets; and 4) the BUM/IPEDA schemes for small, rapid disbursement loans.

5 Debt service of local governments in most other countries is around 20-30%. World Bank, 1994.
agencies, to infrastructure projects of provincial and local governments, as well as the local government enterprises (BUMD) they supervise. In general, the RDA has the following features.

First, the RDA was designed to integrate the various loan financing schemes to local governments that previously existed under a single system. The SLAs are, nevertheless, still used independently of the RDA by some foreign donors to finance investment in regional infrastructure.

Second, the RDA is set up as a revolving fund, building up its capital from loan repayments, funds allocated from the central government and foreign loans and grants.

Third, given the self-revolving nature of the account, interest rates charged on disbursed loans have generally been set to cover inflation and administrative cost. Rates are reviewed annually and, once set, apply to all loans signed during the year. In effect, interest rate is fixed over the life of a loan but may vary from project to project depending on the time the loan is signed. That is, in an expansionary monetary situation where market rates are generally low, a new borrower may fix a lower rate on his or her loan even if later on, when the money market becomes less liquid, market rates rise.

Fourth, RDA financing is specifically targeted to certain sectors that private creditors are unwilling to finance on soft terms, including those of the RDA. These include: 1) urban infrastructure projects and 2) projects which generate revenue, either directly through user fees or indirectly through general revenue. The RDA is particularly expected to promote local revenue generation.

Fifth and last, in order to improve efficiency, the process of loan application, approval and disbursement are standardized. A loan application requires a feasibility study which covers the financial, economic and technical aspects of the proposed project. All applications are appraised and approved by MOF with the assistance of BAPPENAS. Projects are expected to be: 1) financially self-sustaining, being able to cover all future debt obligations; 2) able to generate positive net economic benefits; and 3) technically feasible to implement.

In summary, the RDA has been designed as a revolving fund to finance urban infrastructure development on the basis of sound financial and economic project feasibility. Such

---

6 The projected inflation rate is calculated based on the average inflation rate over the previous three years. Of course, the calculation of the Indonesian consumer price index (CPI) itself, the basis of the inflation rate, is subject to criticism. Further, since the RDA rate is fixed over the life of the loan, the borrower stands to benefit in an inflationary environment.
a system significantly complements the grant financing system, which focuses on equity objectives. The RDA is expected to increase the importance of loan financing and reduce that of central government grants in urban infrastructure development, particularly for those local governments which can afford to borrow.

Some problems with RDA financing

Despite the benefits of the RDA, there are problems. Some of these problems are related to the fact that it is a relatively new organization which needs time to learn to manage a relatively new process. Some others, however, are related to the specific design of the RDA’s operation. The details of these problems, as well as the possible solutions, are discussed in later chapters. In this chapter, the key organizational and financial problems are briefly outlined to provide a basic context for the purpose of the thesis.

Organizational issues

First, the RDA operates like a government agency rather than a lending institution. It is managed by government officials in a hierarchical organizational structure that rewards bureaucratic factors, such as seniority, for example, instead of the performance of loan accounts.

Second, since RDA financing is part of the fiscal policy of the government of Indonesia (GOI), loan processing and disbursement are seriously delayed by the complex administration of the central government’s annual development planning and budgeting cycle. Indeed, RDA loans are treated as standard budgetary allocations, as in the case of grants and expenditure items of government ministries. This condition has often led to disbursements not being made in timely manner and adequate amount, causing poor project results.

---

Financial issues

First, demands for credit far exceed RDA resources. Although this is expected in any bank operation, the RDA attempts to solve the problem by spreading its available resources over more projects and extending disbursement schedules, even though this could also adversely affect individual project outcomes.

Second, there are no links between loan and grant financing. RDA loans could in principle only finance credit worthy projects while grants could finance primarily equity oriented ones, which generate social benefits but not enough cash flow to be credit worthy. Yet many infrastructure projects fall in between: they do generate revenue, but because they have to provide services to the poor, they are not credit worthy. Even if a project has a pricing structure that allows cross-subsidization, it may not generate enough revenue to cover debt service.

Third, although the interest rates charged by the RDA have recently moved closer to market rates, they are still considerably lower than market rates. This situation could lead to economic inefficiency because: 1) capital is not priced “correctly”, leading to its over-utilization and 2) projects which potentially could pay the market rates are unnecessarily subsidized, draining resources needed for equity-oriented projects. Furthermore, lower-than-market returns would not be able to attract private capital in financing urban infrastructure, although the GOI is generally expecting an increased role of the private sector through the RDA.

None of the above problems are easy to solve. Unless the issues are addressed more comprehensively, however, there is a danger that the RDA could end up being like the state banks: bureaucratic, politicized, inefficient and, most important of all, burdened by non-performing loans.

Objectives of thesis

In the thesis, I attempt to design organizational and financing options for the RDA that could help: 1) improve the efficiency of loan processing and project selection; 2) reduce the share of central government grants in financing urban infrastructure; 3) improve the links between grant and loan financing; 4) increase capital availability in financing urban infrastructure; and 5) improve the productivity of capital in general.
As far as organizational restructuring goes, I propose to: 1) detach RDA management from its parent civil service by restructuring its personnel and compensation systems; and 2) transform the RDA eventually into a financially independent entity with various equity holders, including both the central government and regional governments, and, perhaps, private investors.

As far as financing goes, I propose three main options in addition to full grant financing: 1) a combined loan-grant financing; 2) a syndicated loan financing; and 3) the issuance by local government enterprise of convertible bonds, debt instruments that may be converted into equities at the end of their life.

After these options are outlined, I discuss the feasibility of implementing them, technically, politically and financially. Special attention is given to the question of whether these options could eventually promote the development of a more mature infrastructure financing system. A more mature financing system here is defined to be an environment where: 1) the central government could more effectively target grants to financially weak local governments and their enterprises; 2) financially sound local governments and their enterprises could raise capital relatively cheaply through debt-based privatization; 3) the RDA could sell portfolios of well performing debts to the private sector, shifting some of the credit risk it bears to the latter; and 4) borrowing local governments and their enterprises could hedge their interest rate exposure.

Of course, some of the options proposed may be too “far-sighted” relative, for instance, to the RDA’s managerial capacity, the state of maturity of the capital market and the political environment. However, if the GOI is serious in fulfilling the RDA’s missions, it would have to seriously consider reforming the RDA in a strategically designed sequence of steps over time.
II. CURRENT ROLE OF THE RDA

The share of the RDA in credit financing

Following the establishment of the RDA in 1988, there are currently three main sources of credit for financing local infrastructure investment: 1) SLAs, loans which are provided by foreign creditors through MOF 2) the RDI scheme, lending primarily to state enterprises at the national level and 3) the RDA. Figure 1 shows loan disbursements made under the three different schemes.

As figure 1 shows, SLA financing has been the most significant source of credit, disbursing over Rp. 150 billion in 1992/93 alone. There are, however, clear problems with this arrangement, as indicated by the accelerating increase of arrears\(^8\). These problems are partly related to the fact that, in many cases, SLA financing is not “demand driven”. The SLA mechanism had been originally designed to support a large and comprehensive urban investment program under the Integrated Urban Infrastructure Development Planning (IUIDP), a program that was initiated by the World Bank to encourage the participation of local governments in

---

regional infrastructure development. Despite the goal of giving local governments more say over what to invest, the IUIDP has been largely implemented by the central government, partly to capture economies of scale and partly to keep some degree of central control in an environment where many local governments are financially weak. However, the program basically plans and finances local projects. When local governments are not given adequate say in the design and implementation of these projects, for which they are required to obtain SLA credit, many local governments perceive this financing as "forced lending". Under these conditions, there are few incentives to repay and the quality of the lending mechanism generally deteriorates.

As far as RDI financing goes, the potential for growth is fairly limited mainly because: 1) it is targeted only to state enterprises at the national level; 2) the role of state enterprises in aggregate investment has been declining relative to that of the private sector; and 3) state enterprises have been urged to obtain funds directly from the capital market, eventually through privatization.

All the factors above lead to the RDA having to meet an increasing demand for credit. Between 1988/89 and 1992/93 annual RDA disbursement has increased from Rp. 24.8 billion to Rp. 88 billion, an annualized increase of 37%. As of March 1994 the RDA portfolio consisted of 256 loans with a total value of Rp. 644.6 billion. Figure 2 shows the composition of the RDA's loan portfolio at the time.

---

Of the Rp. 644.6 billion disbursed by the RDA: 1) 71% was committed to the clean water sector; 2) 17% to IUIDP; 3) 5% to terminals; 4) 3% to banks; and 5) 1% each to markets, solid waste, wastewater and other.

**RDA capitalization**

Because the RDA is an account, rather than a financially independent entity, it does not have both an equity base and liabilities. Of the total amount of undisbursed, approved loans of Rp. 418 billion as of March 1994: 1) 88% of it has been financed by annual central government budget allocations; 2) 7% came from USAID’s Housing Guaranty Loan (HGL); and 3) 5% came from loan repayments. As table 1 shows, fund allocation for the RDA represents a small and declining component of the central government’s development budget.

**Table 1. Components of central government development budget (in billion Rupiah)**

<table>
<thead>
<tr>
<th></th>
<th>1989/90</th>
<th>1990/91</th>
<th>1991/92</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) Intergovernmental grants</td>
<td>1,242</td>
<td>2,340</td>
<td>3,245</td>
</tr>
<tr>
<td>2) Development expenditure of ministries</td>
<td>2,509</td>
<td>4,854</td>
<td>5,971</td>
</tr>
<tr>
<td>3) Project aid (financed by donors)</td>
<td>8,422</td>
<td>8,508</td>
<td>8,846</td>
</tr>
<tr>
<td>4) Allocation to RDA</td>
<td>73</td>
<td>70</td>
<td>55</td>
</tr>
</tbody>
</table>

Source: Ministry of Finance

In summary, although the RDA’s role in financing local infrastructure development has been relatively small, both the increasing demand by regional governments for loan finance and the central government’s inability to sustain its current share in financing infrastructure investment have led to plans to gradually increase the importance of this new lending mechanism. The following chapters turn to a discussion of the problems of the RDA and outline plans for improving access of local governments to credit financing for infrastructure development.
III. ORGANIZATIONAL ISSUES

1. ORGANIZATIONAL STRUCTURE OF THE RDA IN THE GOVERNMENT BUREAUCRACY

The institutional set-up and the problems it creates

The RDA is administered by the Directorate of Subsidiary Loan Management (DitP3) within the Directorate General of Financial Institutions at MOF. Setting-up the RDA within the government has certain advantages. First, since the initial goal was to integrate previous intergovernmental loans under the various schemes into a single system, setting up the RDA at MOF is convenient, both technically and politically. Second, MOF has the resources to introduce loan financing to regional governments, having also the authority to encourage its use at the same time. And third, since MOF can obtain credit relatively cheaply from donors, the RDA is able to lend funds on soft terms, including lower than market interest rates and long grace periods (up to 5 years). Private lenders are unlikely to find such terms attractive enough.

However, there are also problems of having the RDA as a part of MOF. For example, despite the standardized process of loan application and project feasibility study, all RDA loans follow the same planning and budgeting process as intergovernmental grants and expenditure items of central government ministries. RDA staff annually review and appraise individual loans and combine these applications into a package proposed to be funded during the next fiscal year through RDA loans. This package of new loans and proposed disbursements for ongoing loans already approved in previous years is then submitted to BAPPENAS for development planning review and ultimately to MOF for budget allocations. This process applies to all RDA loans, even those funded by non-budgetary sources, such as USAID’s HG loans and loan repayments. Hence, annual development planning allocation mechanisms determine annually the amount of RDA disbursement, not necessarily taking into adequate account existing loan agreements and sources of funding.

Such an inflexible procedure has inevitably led to problems. First, borrowers whose loan applications have been appraised and accepted could not be assured that they would receive the funds until the next year’s RDA budget is approved and funded. Even if the loan applications are
approved by BAPPENAS, the realized level of financing may not be the same as that agreed in the loan agreements. The annual disbursements may get reduced or/and the disbursement schedules extended, all of which could lead to construction delays and rising costs. Second, exacerbating the effects created by the first problem, there is a tendency for the RDA to obtain budget allocations from BAPPENAS first and, if they amount to less than the proposed level, to delay or reduce disbursements to end users even when there are other sources of funding, such as the USAID loans and loan reflows. Third and last, because disbursement may only be realized after BAPPENAS approval and in the following fiscal year, RDA funds which are already available, such as those provided by USAID, may remain unused and subject to commitment fees.

Possible reforms in institutional linkage

Detaching RDA management from MOF

Despite the convenience of having the RDA functionally integrated to MOF, there are, as discussed above, administrative barriers to operating effectively. To reduce these bureaucratic bottlenecks, reducing the organizational link between the RDA and MOF may be considered. This goal may be realized through the following two options.

First, it may be possible to link career promotion and compensation of RDA staff less to seniority and civil service guidelines and more to performance, such as the performance of loan accounts managed by individual loan officers. The rationale is that, rather than merely administering loans approved and allocated by BAPPENAS, RDA staff will have an incentive to choose projects with a better return to investment under all the institutional constraints, including limited resources and administrative bottlenecks. By rewarding RDA staff based on performance, they are likely to be more creative not only in choosing good projects, but also in obtaining the necessary financing.

Second, it may be possible to hold RDA management accountable less to senior civil servants in a politicized setting and more to some independent board of commissioners who, eventually, would represent equity holders or lenders, such as the Ministry of Finance, private institutional investors and regional governments. Figure 1 below outlines the proposed
organizational structure, as far as accountability is concerned, between the RDA, MOF, private institutional investors and regional governments. The rationale is that investors would have a financial stake in the lending operation and hence are likely to demand financial performance. Indeed, being accountable to senior civil servants does not necessarily lead to good performance. The management of the six large state banks, for example, has always been held accountable to MOF but all of the banks are burdened by non-performing loans. A politicized setting has often led to the financing of bad projects and poor repayment enforcement, the two primary causes of non-performing loans. The issue of equity holding and debt issuance is discussed further in chapter IV.

**Figure 1. Proposed organizational outline of the RDA**

If the governance of the RDA by a board of commissioners is accepted, representation of the Ministry of Finance, private institutional investors and regional governments could be proportional to their financial stake in the capitalization of the RDA. The board would appoint the RDA’s higher managers who, in turn, would have discretion in the selection and organization of middle and lower management.

---

10 In 1993 the World Bank provided a $300 million financial sector loan to strengthen the state banks’ capital base which had been seriously eroded by non-performing loans. The loan was disbursed under the condition that, for some of the banks, no new loans were to be made.
Redesigning the RDA’s link with BAPPENAS

Since most RDA loans are financed by the central government, they have to be approved by BAPPENAS, as in the case of other central government capital expenditure items. RDA financing is treated as capital expenditure because BAPPENAS does not “lend” capital. Annual disbursements for ongoing loans also have to be approved by BAPPENAS because all other long term investment, whether financed through the capital expenditure of ministries or intergovernmental grants, is also subject to the same annual budgetary planning process. Total central government development expenditures in turn are determined by the projected level of development receipts, which depend mainly on oil revenue and donor loans.

As far as RDA financing goes, the administrative link with BAPPENAS is not problematic per se, but some aspects of it are. First, there is no reason why RDA loan commitments that are financed by non-budget allocations should go through the same process as those financed by budget allocations. In the case of RDA’s own financing by loan reflows, not only are central government funds not used, but such a bureaucratic process also unnecessarily utilizes BAPPENAS’ limited manpower.

Second, having annual disbursement for on-going loans approved in previous years subject to BAPPENAS scrutiny not only makes it difficult for borrowers to stick to their project plans, but is also likely to adversely affect borrowers’ confidence in the RDA. This is particularly worrying given the GOI’s plan to encourage a greater reliance on loan financing through the development of the RDA. This problem has been documented in a study by the Research Triangle Institute (RTI), which interviewed the management of six local water enterprises (PDAM) on RDA’s service quality. The study concluded that, although none of the six PDAMs were concerned about interest rates being closer to the market level, none were satisfied with the fact that their original loan disbursement schedules had been stretched by at least a year because the RDA did not have sufficient funds.

As long as RDA budget allocations fall under the category of central government development expenditure, the long process of BAPPENAS budgetary planning cannot be avoided. However, there are several possible ways in which RDA’s service quality may be improved by redesigning RDA’s link with BAPPENAS.
First, the central government should end the requirements that loan commitments, which are to be financed by loan repayments, should go through the normal budget process. Since the RDA is designed to be a revolving fund, there is no reason why revolving its own capital needs BAPPENAS and MOF scrutiny or approval. The same cannot be suggested for commitments which are to be financed by foreign loans, such as USAID’s HG loans. These are treated as central government development expenditure financed by foreign loans, for which the central government, not the RDA, has ultimate responsibility.

Second, the way RDA budgets are allocated should be changed from a project-by-project basis to an annual capital lump sum placement. The former is defined to be budget allocations based on the evaluation by BAPPENAS of individual projects. The latter is defined to be budget allocation mostly on the basis of projected development receipts. So, if the RDA applies for, say, a one billion Rupiah budget allocation for the next fiscal year, BAPPENAS would merely give what is feasible, which may be less than the proposed figure, based on MOF revenue projections. This allocation would be treated as equity capital if, eventually, the RDA is transformed into a more independent institution.

By having the RDA budget allocated as capital placement, many of the bureaucratic steps of the development planning cycle may be avoided. The more important issue would be how to determine the lump sum allocation. This may be done, for example, by allowing a fixed proportion of RDA’s next year commitments to be funded by the central government and requiring the RDA to look for other sources of financing to cover the shortfall. The other sources may be loan reflows or loans, perhaps from foreign creditors or bond investors. Of course, the scenario would be easier to implement if the RDA were a financially independent entity with its own balance sheet, a step that this thesis proposes in the next chapter.
2. CAPITALIZATION, INSTITUTIONAL FORM AND FINANCIAL STRUCTURE OF THE RDA

Current capitalization and the problems it creates

The main role of BAPPENAS is to allocate intergovernmental development grants and capital expenditure budgets of central government ministries on the basis of the national five year plan (REPELITA) and revenue projections. Unlike recurrent expenditure, which is fairly stable and predictable, development expenditure depends more on the state of the economy, particularly oil revenue, the privatization drive, world interest rates and the exchange rates of the currencies in which Indonesia’s foreign debt is mostly denominated. As a result, the trend in development expenditure is not as stable and predictable as recurrent expenditure.

This instability in development expenditure is fairly common and the construction of projects may get delayed as a result. When projects are funded by loans and exposed to debt obligations, however, project delays can seriously affect cash flow and project outcome. And when the delay is attributed to delays in loan disbursements, which are needed to finance capital cost, the whole project cycle may be seriously affected11.

To treat loan financed projects the same way as other capital expenditure items through BAPPENAS is therefore probably not appropriate. When a borrower borrows, it does expect the lender to meet the agreed terms on which he/she plans his/her project. Hence, planned disbursements based on loan agreements should be sheltered from central government revenue variation that affects most other development expenditure items. This implies removing most of the process of RDA loan disbursement from BAPPENAS. Of course, this can not be done entirely, especially when we later propose a combined loan-grant financing. However, it may be done to a significant degree, mostly by turning the RDA into a financially more independent entity.

11 For example, PDAM Grobogan applied for a Rp. 4.7 billion RDA loan in late 1989. It was approved for the 1991/92 budget and disbursements began in 1992. However, the budget allocation was made for three years, despite the loan agreement’s two year period. PDAM Grobogan was unable to complete the number of water connections originally planned because of cost increases (both pipe costs and cement prices doubled) due to delayed loan disbursement. As a result, revenue projections would not be realized and project financing assumptions were in jeopardy. “Regional Development Account: Policy and Operational Issues”, Research Triangle Institute, September 1994.
Possible reform options

The institutional form

The thesis generally proposes that, to attain more financial flexibility and managerial independence, the RDA should eventually be transformed into a development bank. There are, however, other kinds of lending facility which should also be considered: 1) a bond bank; 2) a rediscount facility; and 3) a loan fund. We now discuss each of these options.

First, a bond bank, such as the Danish Credit Institution for Local Authorities, generally packages several borrowers’ financing requirements and offers a single bond issue at the domestic capital market. Although such a large debt issue has a lower cost of funds than that carried by smaller debts issued by individual borrowers, the capital market has to be mature enough if the system is to operate efficiently. The bond market has to have large enough capitalization and turnover, and it has to be liquid enough to make it attractive to private investors. The limited size of the bond market in Indonesia makes this system not feasible in the near future.

Second, a rediscount facility, such as Financiera de Desarrollo Territorial (FINDETER) of Colombia, generally purchases a large portion of long term loans of commercial banks to municipalities. The borrower repays interest to the commercial bank which, in turn, repays it to the rediscount facility at a discount, allowing the bank to make profit from the spread. The facility’s main capitalization sources are bond issues to commercial banks, central budget allocations, donor loans and loan repayments. This lending mechanism certainly encourages the participation of private investors in infrastructure development. The problem, however, is that, since the commercial bank soon recovers most of its capital through the loan purchase, it does not ensure that the bank seriously tests the viability of the project for which the loan is made. Further, as far as Indonesia goes, private lenders have limited experience in infrastructure investment and have been generally unwilling to tie their capital to long term public sector projects.

Third, a loan fund, such as the State Infrastructure Revolving Funds in several states in the US, typically operates in a way similar to that of the RDA. It raises capital largely from loan refloows and grants. The mechanism hence can be operated as an account and managed relatively
simply. The problems with this kind of lending in Indonesia have been explained in detail above, mainly political bottlenecks and managerial and financial inflexibility. If the RDA is to promote private investment in infrastructure development, it must become a more independent institution.

The potential weaknesses of the financing mechanisms mentioned above basically leave a banking institution as the most feasible option for the RDA. First, as a bank, the RDA would have its own capital base and liabilities, enabling it to operate more flexibly. Second, RDA management would be insulated from the MOF hierarchy and administrative bottlenecks. And third, given accounting benchmarks, the RDA would better enable the government, parliament or investors to judge RDA’s performance, particularly that of its loan accounts.

Transforming the RDA into a banking institution

Transforming the RDA into a bank would require the following steps. First, all past RDA budget allocations by BAPPENAS would have to be treated as equity capital provided by the state and all future interest payments would have to be treated as retained earnings. Additional equity capital could be obtained from: 1) MOF; 2) regional governments’ property tax receipts (PBB); 2) regional governments; and 3) financially stable regional government enterprises. By having a range of share holders, the dominance of MOF, and the political power within it, may be neutralized and the common pressure on the RDA would be for financial performance.

Second, the RDA should be allowed to raise its own debt. There are several advantages of debt financing, if managed prudently. One, by raising its own debt, the RDA would have more control over its own sources of financing. Two, through debt leverage, the RDA would have a higher lending ability and, hence, be able to finance more projects without having to extend disbursement schedules. Three, being a semi-state entity, the RDA may in the future be able to issue what the capital market perceives as lower risk bonds; enabling it to issue debts more cheaply than local governments could. Four, by exposing the RDA to its own debt obligations, it would be forced to manage its cash flow more prudently, choosing only good projects to finance. Of course, as the experience of the state banks suggests, the more MOF is willing to subsidize RDA’s losses, the less likely the RDA would manage its accounts prudently.

Third, and this may be optional, borrowers could be required to open checking accounts at the RDA through which disbursements are made. By having borrowers deposit their loans at
the RDA, the RDA could: 1) prevent cash depletion, stabilizing its cash flow and balance sheet in the process and 2) make new loans on the basis of leverage, generally to an acceptable cash: deposit or cash: loans ratio.\textsuperscript{12}

**Structuring a healthy liability side**

It is crucial for any bank to manage its risk prudently. This may generally be done by having a sound asset and liability structure given its mission. To do so, in the case of the RDA, the following measures should ideally be considered on the liability side.

First, capital should not be raised at market rates and relent at the current RDA rate, which is lower than the former. The RDA should only borrow at rates that are still lower than its lending rates. The RDA may, for example, borrow in dollar if the interest rate carried plus the rupiah-dollar depreciation rate is generally lower than the RDA lending rate in rupiah. In notational terms: \[(1 + r') + \Delta(\text{Rp}/\text{S})/(\text{Rp}/\text{S}) < (1 + r^\text{Rp}).\] The expected rate of depreciation, or \(e[\Delta(\text{Rp}/\text{S})/(\text{Rp}/\text{S})],\) in turn may be derived by: 1) calculating the average annual rupiah-dollar depreciation over the past five years; or 2) using the rupiah-dollar forward rate as quoted in the foreign exchange market.\textsuperscript{13} Given this condition, the following points should be considered: 1) the dollar rate must be a soft rate, generally provided by donors with a grant component; 2) assuming that more debt financing may be obtained at near market rates, the higher is the RDA lending rate, or the closer it is to the market rate, the more the RDA could get foreign debt financing; and 3) the higher the rupiah-dollar depreciation rate, the less the RDA should borrow abroad. The sources of capital tapped by the RDA and the rates it pays on loans will, of course, have implications on the types of projects the RDA can finance.

Second, interest payments on deposits should be covered by interest payments on loans. To encourage borrowers to deposit their funds at the RDA, which is needed to help maintain its cash capital, deposits must at least earn interest. But this interest must be covered by interest earned on loans, preferably at a profitable spread. Given this condition, the higher the interest

\textsuperscript{12} These ratios are generally set by Bank Indonesia to maintain banks’ financial health.

\textsuperscript{13} The one year forward rate, for example, is generally calculated in the following way:

\[\text{Rp}/\text{S}^F = \text{RP}/\text{S}^S \times [1 + (r^{\text{Rp}} - r^S)]\]

Where: \(\text{Rp}/\text{S}^F = \text{Rupiah-Dollar forward rate}, \text{RP}/\text{S}^S = \text{Rupiah-Dollar spot rate}, r^{\text{Rp}} = \text{one year Rupiah deposit rate} \text{ and } r^S = \text{one year Dollar deposit rate}.\]
rate on RDA loans, the less risk the RDA faces from the possibility of interest payments exceeding interest receipts. In general, the RDA must satisfy the following notational condition:

$$(1 + r^L) \times Lo > [(1 + r^P) \times Depo] + [(1 + r^D) + \Delta(Rp/\$)/(Rp/\$)] \times Debt^F$$

Where $r^L$ = interest rate on RDA loans, $Lo$ = outstanding RDA loans, $r^P$ = interest rate on RDA deposits, $Depo$ = outstanding deposits at RDA and $Debt^F$ = outstanding RDA’s foreign debt in Rupiah. Satisfying this condition, the RDA would have a positive net interest revenue to contribute to retained earnings.

Third and related to the second point, assets and liabilities should be matched so that interest payments are as elastic as interest receipts to interest rate changes. The potential problem here is straightforward. If interest payments are more elastic than interest receipts to interest rates, a rising interest rate could mean higher interest payments with stagnant interest receipts. On the other hand, if interest payments are more inelastic than interest receipts to interest rates, a declining interest rate could mean stagnating high interest payments with falling interest receipts. Given relative uncertainty about future movements of interest rates, a bank could hedge its interest liability generally by satisfying the following equation: $\Sigma_L^L \times Liab = \Sigma_L^A \times Asset$, where Liab = interest earning liability, Asset = interest earning asset, $\Sigma_L^L$ = the elasticity of interest/liability payments with respect to interest rate or:

$$\Sigma_L^L = [\Delta \text{ int. payments}/ \text{int. payments}] / [(\Delta(1 + r)/(1 + r))]$$

and $\Sigma_L^A$ = the elasticity of interest/asset receipts with respect to interest rate or:

$$\Sigma_L^A = [\Delta \text{ int. receipts}/ \text{int. receipts}] / [(\Delta(1 + r)/(1 + r))].$$

Fourth, because most RDA loans are long term, RDA liabilities must also be long term. Having short term debts to be financed by long term assets, in this case long term loans, will create cash flow problems.
Fifth and last, the RDA should have adequate equity capital. Ideally the ratio between shareholders equity to liability is around 35% - 65%. As far as the short run for the RDA goes, however, equity capital should outweigh liability because most RDA loans are long term carrying lower than market rates, making liability financing at market or near-market rates relatively expensive. In addition, since it is still too soon to evaluate the performance of most RDA loans, adequate equity capital should be available as a buffer against possible non-performing accounts that could be written off the balance sheet and, accordingly, expended against shareholders equity. Based on suggestions by the Research Triangle Institute, capital reserves against bad debts amounting to 10% of total loans outstanding should be adequate\textsuperscript{14}.

**Structuring a healthy asset side**

Having a sound asset structure generally requires the following conditions. First, a healthy amount of working capital (current assets – current liability) is needed. As far the RDA is concerned, this generally means: 1) having enough cash; 2) ensuring that borrowers meet their interest and principal obligations; and 3) raising the interest rate nearer to the market level whenever possible.

Second and most importantly, the RDA needs to develop good loan accounts by financing good projects. As the example of the state banks shows, many banks fail, through having a negative net worth because of non-performing loans. The problem usually begins when borrowers no longer ask to have their principal repayments rescheduled but they simply cannot repay both interest and principal.

In the private sector borrowers could fail to meet their debt obligations for several reasons. One, borrowers could face an unexpected sharp rise of interest rates at a time when they did not hedge their interest rate exposure, for example, by entering into a forward rate agreement. Two, borrowers could face mounting debts and rising costs which are unpredicted by project feasibility studies. Three, borrowers could experience accumulating income receivable which could not be collected. And four, borrowers could find their income (both in cash and receivable) lower than projected.

\textsuperscript{14} "Regional Development Account: Policy and Operational Issues", Research Triangle Institute, September 1994.
As long as the lender meets his/her side of responsibilities as specified by the loan agreements, all of these problems could be minimized by having a good feasibility study. Indeed, since RDA borrowers face a fixed, lower than market, interest rate, they should generally have fewer problems on the debt side. What could be more problematic for them are: unexpectedly rising costs, unrealized revenue and income receivable which could not be collected.

Table 1 below outlines a model balance sheet for the proposed RDA bank. On the liability side of the balance sheet, the ratio between liabilities and shareholders equity has been set within the range that is generally suggested by the Bank for International Settlements (BIS) and the Ministry of Finance. On the assets side of the balance sheet, the level of current assets has been set generally to maintain adequate working capital.

Table 1. Balance sheet of the proposed RDA bank

<table>
<thead>
<tr>
<th>Current Assets (20%)</th>
<th>Current Liabilities (15%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cash, deposits and marketable securities</td>
<td>Interest payable on deposits</td>
</tr>
<tr>
<td>Loan interest &amp; principal receivable</td>
<td>Interest and principal payable on debts</td>
</tr>
<tr>
<td></td>
<td>Other payable (tax, vendor, salary etc.)</td>
</tr>
<tr>
<td>Non-current assets (80%)</td>
<td>Long term liabilities (30%)</td>
</tr>
<tr>
<td>Property, plant &amp; equipment</td>
<td>Borrowers deposits</td>
</tr>
<tr>
<td>Loans outstanding to regional governments</td>
<td>Bonds &amp; notes issued</td>
</tr>
<tr>
<td>Loans outstanding to PDAMs</td>
<td>Outstanding debt in credit form</td>
</tr>
<tr>
<td>Shareholders’ equity (55%)</td>
<td>Common stocks held by: MOF, regional governments &amp; private investors +</td>
</tr>
<tr>
<td></td>
<td>Retained earnings</td>
</tr>
</tbody>
</table>

Total assets (100%) = Total liabilities + share holders equity (100%)
IV. FINANCIAL ISSUES

1. SELECTING THE RIGHT PROJECTS AND FINANCING MODES

Why projects matter: the water sector example

As shown in chapter II, more than 70% of the RDA loan portfolio is committed to the clean water sector. For these reasons, we will illustrate the proposed financing modes with water sector examples. The modes, including the financial and managerial preconditions devised around them, may, of course, be applied to most other public infrastructure sectors, although some adjustments may be required.

The conventional way of evaluating the feasibility of a project is to calculate its net present value (NPV) in both financial and economic terms. In the private sector what matters most is the project’s financial feasibility. That is, the sum of the discounted cash flow through the life of the project must be positive. Whereas in the public sector, as long as the discounted sum of the project’s economic net benefits is positive, the project is justified.

As in other sectors, project feasibility in the water sector may vary, usually depending on the project’s revenue generating ability. This ability, in turn, depends on: 1) the projected level of population to be served; 2) the kinds of water users, that is, the expected composition of household and industrial users; and 3) the market’s willingness to pay, taking into account the availability of other sources of water.

In some regions, notably the big urban centers like DKI Jakarta, where per capita gross regional domestic product is relatively high, the market for tap water is more mature. Water projects can generally repay loans at market rates because tariff revenue is sufficiently high. Indeed, for these projects there is a prospect of going directly to the capital market in several financing modes that will be discussed later.

In other regions, notably the poorer rural areas and smaller cities, there is a demand for tap water but the revenue generating potential is weak, though it may not be completely

---

15 Financial benefit is obtained when revenue exceeds cost, directly improving the profitability of the enterprise. Economic benefit is obtained when the value of the project exceeds what people are willing to pay for it, typically due to positive externalities.
insignificant. Water projects in these regions may not be able to repay loan principal and interest at market rates. However, given the potential economic benefits, these projects may be justified anyway through grant financing either wholly or partially.

Because some of these projects could still generate revenue to cover more than non-interest operating cost, there is no reason why they should be financed completely by grants. Indeed, there is a room to cover some of the opportunity cost of capital that is incurred by investing in these projects. This in turn offers the opportunity of having a combined grant-loan financing, which will be discussed in detail later.

Matching different projects with different financing modes

A project should generally satisfy two conditions to justify either grant or loan financing. First, it must generate enough revenue to cover operating cost that excludes debt service. Second, unless there are compelling equity reasons, the project must have a realistically positive NPV even if it may not be self financing. In this case, NPV is defined as the discounted sum of the financial and economic net benefits of the project. Specific preconditions for grant financing will be discussed later.

Even if a project meets the two conditions, it may still not be able to operate if the capital cost is wholly financed by loans. The ability to service debt depends on the project’s revenue generating ability which, of course, varies from project to project as discussed above. However, a project that satisfies the two conditions should be justified anyway, whatever the financing means.

Given varying revenue generating ability among the different projects that meet the two conditions, different financing modes may be devised. These are generally the following. First, if the project is justified on economic grounds but project revenue could only cover operating cost without debt service, grant financing for the project’s capital investment is justified. Second, if project revenue could cover operating cost including debt service at market rates, any external financing should be provided in the form of loans. In this case, external financing is defined as anything but equity financing by the local government which supervises the local water enterprise (PDAM). And third, if project revenue could cover operating cost including debt service at market rates only if a portion of capital cost is financed by loan, then a combination of
grant-loan financing should be devised. In this case, what is to be subsidized should not be the interest rate on the loan component, but the capital cost itself. So, the interest rate on the loan component should still be either the market, or near market, interest rate.

For those PDAMs that generate sufficient revenue to cover debt service at market rates, there is a future prospect of going directly to the private sector in several financing modes in which the RDA could become an intermediary. These are generally the following.

First, the RDA could lead a syndication of lenders to finance large projects. In this case, the RDA and the borrower would perform the feasibility study and, if the proposed project is found to be attractive, the former would invite both private and state banks to form a financing syndication. The RDA would charge the other lenders fees for leading the syndication, including for performing the feasibility study, organizing the syndication and, perhaps, collecting loan repayments.

Second, the RDA could sell some of its loans, perhaps by packaging its best loan accounts and selling them to private investors. The RDA would have to sell them at less than their net present value but it would receive fresh capital to make new loans while removing some of the credit risk it faces. In addition, it could charge the buyers of these loans service fees for collecting loan repayments from borrowers.

And third, the RDA could help organize purchases of convertible bonds issued by profitable PDAMs. Convertible bonds are generally debt instruments which may be converted into equities of the PDAM concerned, thereby privatizing the entity in the process.

While the last three financing modes generally require the participation of the capital market and, therefore, may be “far-sighted”, they are potentially feasible in the next five to ten years as the Jakarta capital market becomes more mature. The details of the financing methods are discussed under specific headings later.
2. CREATING DIFFERENT DEPARTMENTS WITHIN THE RDA

For administrative efficiency reasons, different departments within the RDA should be created to manage all the different financing modes. I propose five departments to help improve the financial management of the RDA.

The first department is a project evaluation department. This department should be created to evaluate all of the proposed projects and decide, according to clear, transparent rules, whether they should be financed: 1) fully by grants and have the project proposals sent to BAPPENAS; 2) by a combination of grants and loans and have the project proposals sent to the grant-loan financing department; or 3) fully by loans and have the project proposals sent to the loan financing department.

The second department is a grant-loan financing department. This department should have four main responsibilities. First, it should identify the subsidy needs of the proposed projects assigned to it and determine the total amount of grants needed by borrowers. Second, it should match the subsidy needs of these projects with loan components and determine the total amount of loans needed given the department's budget. Third, it should formally request for grants, through the treasury department, to BAPPENAS; this request would essentially be borrowers' application for lump-sum grants. Fourth and last, should BAPPENAS reduce the amount of the proposed grants, the grant-loan financing department should revise the loan composition, project cost and, perhaps, the number of projects to be compatible with its loan budget.

The third department is a loan financing department. This department should have three main responsibilities. First, it should recheck the evaluation made on the projects assigned to it by the project evaluation department. Second, it should choose projects with the highest NPV to be financed by the department's budget. And third, it should eventually develop means to organize financing syndication with state and private banks.

The fourth department is a treasury department. This department should have five main responsibilities. First, as mentioned above, it should formally request for grants to BAPPENAS for the combined grant-loan financing mode; in this case, the beneficiary of the allocated grants would be borrowers. Second, it should request for funds for the RDA's own lending activity to RDA equity holders, including MOF, regional governments and private investors; in this case,
the beneficiary of the allocated equity funds would be the RDA. Third, it should advise the grant-loan financing department and loan financing department of the final grant allocation from BAPPENAS and capital placement from equity holders, thereby: (i) requiring the former to revise the number and/or the grant-loan composition of its proposed projects; and (ii) requiring the latter to revise the number of its projects, form a loan syndication or sell its best performing loans. Fourth, it should obtain loans from foreign creditors, on terms which would allow the RDA to relend these loans. Fifth and last, it should generally prepare the RDA’s annual budget.

The fifth department, to be established in the future, is an investment banking department. This department could have three main responsibilities. First, it could select the RDA’s best loans and, perhaps, combine them into standardized loan packages to sell to private investors. Second, it could collect repayments on these loans for these investors at a fee. Third, it could organize syndicated purchases of convertible bonds issued by PDAMs, a financing mode which will be discussed later.

Figure 1 below outlines the flows of applications for project funding from borrowers to the RDA, specifically the project evaluation department. The department would evaluate the feasibility of the projects before submitting the applications to: 1) BAPPENAS for full grant financing; 2) the grant-loan financing department for a combined grant-loan financing; or 3) the loan financing department for full loan financing at market related interest rate.

Figure 1. Proposed flows of project proposals
Figure 2 below outlines the flows of requests for funds from the two RDA departments which organize the disbursement of funds, the grant-loan financing department and the loan financing department. On behalf of borrowers, the grant-loan financing department submits the total grant request to the treasury department, which forwards it to BAPPENAS. The two departments would also submit their budget estimates, or proposed loan disbursements, to the treasury department. If loan repayments could not cover the planned disbursements, then the treasury department would: 1) request RDA equity holders for additional equity capital; and 2) obtain loans on soft terms from foreign creditors.

Diagram 2. Proposed flows of applications for funding
3. THE NEED FOR GRANT FINANCING AND SUBSIDIZED PRICING

Why grant financing

Before we discuss the proposed financing modes, particularly the combined grant-loan financing, the impact of subsidization itself has to be evaluated. In the clean water sector, grant financing is needed to provide the poor access to adequate water consumption. Given the institutional complexities involved in subsidizing consumers, subsidy should be targeted at the local water enterprise (PDAM). Further, it may be provided in the form of capital grant, thereby reducing borrowing needs and potential debt service, or operation subsidy, thereby allowing tariff to be set at a level that would not recover cost but affordable for the poor.

Because the RDA and BAPPENAS are mainly concerned with infrastructure investment, they should only organize grant financing for investment purposes. Because capital subsidy involves a one time subsidy, it is also easier to administer than operation subsidy. Operation deficit, where operation cost exceeds revenue, should be subsidized either by the supervising local government, through the injection of equity capital, or by the Ministry of Finance, through the annual provision of recurrent subsidies to regional governments.

Determining the eligibility for grant financing

This thesis argues that, eventually, all proposed water projects should be initially evaluated for loan and, perhaps, equity financing. Through rigorous project evaluation, the RDA should decide the extent to which a project could repay a loan. If loan repayments are demonstrated to cause an unacceptable burden to the beneficiaries of a particular project, grants would be provided to cover all or part of the investment cost.

The problem with providing subsidy is that it is often difficult to determine whether the inadequacy of revenue to cover cost is attributed to: 1) too many households being too poor to afford non-subsidized tariff; 2) the base tariff being too low relative to cost and consumers' willingness to pay; or 3) the PDAM operating inefficiently at high cost. In the first case, subsidization may be justified on equity grounds. In the second and third cases, subsidization is unnecessary and may even maintain inefficient operation.
For these reasons, proposed projects should meet certain conditions before they can have access to grant financing, whether partially or wholly. These conditions are based on suggestions by Professor Paul Smoke of MIT in a discussion paper and are outlined below, within the RDA framework which I generally propose.

Condition 1. Project feasibility

All proposed projects must be evaluated on the basis of a standardized feasibility study. This feasibility study has to be performed based on a consumer demand survey covering the willingness-to-pay, water consumption and income of consumers. The project must be economically justified, generating sufficient quantifiable financial returns and external benefits, whether or not it is proven to be fully self financing. However, even if the project is not, strictly speaking, economically justified, it may meet poverty alleviation goals and, therefore, be considered socially justified. In such cases, some grant financing should be allowed.

Condition 2. Pricing and revenue generation

A reasonable pricing structure that meets clearly defined financial and social objectives must be in place. Tariff structures commonly consist of a base tariff which is multiplied by factors that vary by consumer type and characteristics. The base tariff must be set at least to cover operating cost even if it can not cover capital cost or debt repayments. Depending on the composition of users and differences in the price elasticity of demand across user groups, significant revenue may be obtained through a pricing structure which extracts consumer surplus.

---

17 In Indonesia the factors are set by the central government and vary, depending on the consumer types served and the volume of water consumed. Generally, the poorer the consumer, the lower the factor (which may be less than one) and the richer the consumer, such as industrial or commercial user, the higher the factor (which may exceed one). In addition, according to current regulations, a PDAM must determine a base tariff which is calculated to cover cost, having taken into account a 20% water leakage.
18 As discussed in the text, because the RDA and BAPPNAS are mainly concerned with infrastructure investment, subsidy should only be provided to help cover capital cost on the condition that the project can self finance its operation cost. Operation deficit, where operation cost exceeds revenue, should be subsidized either by the supervising local government, through the injection of equity capital, or by the Ministry of Finance, through the annual provision of recurrent subsidies to regional governments.
from richer or industrial users, while still meeting basic equity objectives at the same time. This may be achieved by increasing the variance of tariff charges across the user groups on the basis of price elasticity analysis of each group. Unfortunately, in Indonesia’s case the actual base tariff may be adjusted on political grounds and the relative variance of tariff charges is fixed, for all local governments of a particular type, by the central government.

**Condition 3. System Cost Effectiveness**

To prevent grants being used to subsidize inefficient operation and management of water enterprises, the following two conditions must be met before any grant funding can be allowed to help cover revenue shortfalls.

First, using specific benchmarks based on the technology and age of the water plant, the PDAM must be certified to have an efficient operating cost. If the enterprise does not meet these benchmarks, concrete steps must be taken to improve operating efficiency through cost reductions.

Second, the level of leakage from the plant must be 20% or less. If it is not, steps must be taken to: 1) reduce water leakage through improved maintenance of the system and detection of illegal connections; and 2) reduce revenue leakage through improved billing and collection performance. In cases where water leakage is substantial and unreasonably too expensive to reduce, the maximum leakage requirement can be waived. In general, however, the objective of this condition is to prevent grants from being used to subsidize inefficient producers.

**Condition 4. Project affordability**

If a project has the potential to generate revenue that is sufficient to cover cost, then it should be financed fully by loan and, perhaps, equity, to be provided by the supervising local government. If potential revenue could not recover cost under a pricing scheme that is judged to be fair and affordable, but the project generates net economic benefits that, in a quantified term, exceed the financial loss, then a grant should be provided so that the project can break-even. This grant, however, is provided together with a loan component that is considered “manageable” for the project. This means that the mix between the grant and loan components should depend on
keeping the debt service cost affordable for the local government, however that is defined. Affordability could mean, for example, that the monthly water bill for certain equity targeted classes of users should not exceed 5% of their monthly income\textsuperscript{9}. A limit, however, should be set to prevent the grant component from significantly outweighing the loan component, making full grant financing by BAPPENAS easier to administer.

Having satisfied these four conditions, a proposed project will be eligible for joint grant-loan financing, the mechanics which we will discuss next.

\textsuperscript{9} There is a working rule in the literature on water affordability that households should not spend more than 5\% of their joint income on water consumption.
4. A COMBINATION OF GRANT AND LOAN FINANCING

What should be financed under this method

As discussed above, a combined grant-loan financing is justified when a project, which has been justified by a standardized economic cost-benefit analysis, generates revenue that could cover debt service at market rates only if a portion of the capital cost is financed by loan.

The project, as outlined above, should meet certain conditions as far as cost and revenue are concerned. Costs should meet the specific technology-related benchmarks and projected revenue should be calculated with a base tariff and tariff structure that cover operating cost. Based on price elasticity analysis of each consumer group, the base tariff may be further increased or the tariff structure altered to maximize project revenue as long as it does not seriously affect the poor.

A very simple example of an economically justified project

An approved PDAM project requires an investment capital of Rp. 1,750 million, to be disbursed in two years: Rp. 1,500 million in 1995 and Rp. 250 million in 1996. Following construction, assumed initially to be fully financed by loan, the project would operate for ten years, from 1997 to 2006. Debt service is to be spread over the life of the project based on the loan balance at the end of 1996 which excludes interest charges during construction. Capital is to be depreciated to zero by the end of the project life and hence there would be no scrap value.

In 1997 non-debt service operation cost, assumed to be efficient, starts at Rp. 200 million and tariff revenue, calculated with a base tariff that covers this operation cost, at Rp. 300 million; they are expected to increase annually thereafter by 5% and 8% respectively. The opportunity cost of capital stands on average at 8% which, for simplicity, is assumed to be both the lending and deposit rate.

In addition to generating tariff revenue, the project would provide the poor access to tap water, creating economic benefits. First, the poor would save up to Rp. 50 million in 1997 from not having to buy more expensive vendor water; these savings are expected to increase by 10% annually thereafter. Second, the local government’s health department would also save up to Rp.
50 million in 1997 from an expected decline in the incidence of diseases that are caused by the consumption of unhealthy river and sewage water by the poor; these savings are also expected to increase by 10% annually thereafter.

Calculating the project cash flow, one would get a 1995 financial NPV of minus Rp. 522 million. Table 1 and figure 1 below show the outlay and trend of the project's cash flow.

Table 1. Project cash flow with full debt financing in million Rupiah

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Expenditure</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cash outflow</td>
<td>-1500</td>
<td>-250</td>
<td>-461</td>
<td>-471</td>
<td>-481</td>
<td>-492</td>
<td>-504</td>
<td>-516</td>
<td>-529</td>
<td>-542</td>
<td>-556</td>
<td>-571</td>
</tr>
<tr>
<td>Receipts</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grant</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Loan</td>
<td>1500</td>
<td>250</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Revenue</td>
<td>0</td>
<td>0</td>
<td>300</td>
<td>324</td>
<td>350</td>
<td>378</td>
<td>408</td>
<td>441</td>
<td>476</td>
<td>514</td>
<td>555</td>
<td>600</td>
</tr>
<tr>
<td>Cash inflow</td>
<td>1500</td>
<td>250</td>
<td>300</td>
<td>324</td>
<td>350</td>
<td>378</td>
<td>408</td>
<td>441</td>
<td>476</td>
<td>514</td>
<td>555</td>
<td>600</td>
</tr>
<tr>
<td>Net cash flow</td>
<td>0</td>
<td>0</td>
<td>-161</td>
<td>-147</td>
<td>-131</td>
<td>-114</td>
<td>-96</td>
<td>-75</td>
<td>-53</td>
<td>-28</td>
<td>-1</td>
<td>29</td>
</tr>
<tr>
<td>NPV at r = 8%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

NPV at r = 8% -522

Figure 1. An example of project cash flow with full debt financing
Introducing and Justifying a Grant Component

As Table 1 shows, if the project is fully financed by loan, it would run annual operation deficits which make the project’s financial NPV negative. However, given the assumed positive externalities created through savings by the poor and the local health authority, the present value of the economic benefit, which is calculated by discounting the expected annual economic benefits by the same discount factor of 8%, is largely positive at Rp. 860 million in 1995.

Introducing a grant component is therefore justified so that the project can at least break even. Using a computer spreadsheet, one can incrementally introduce grant, slicing off the original loan and, consequently, debt service to help reduce cash outflow. In this case, the minimum grant amount that maintains annual net cash flow positive or zero is Rp. 1,100 million (63% of capital cost). Reducing this grant component would result in negative net cash flow in some of the years of the project’s life. This may be justified if the local government supervising the PDAM is judged to be able to provide operation subsidies during these years.

If the grant component is set at Rp. 1,100 million, the loan amount implied is Rp. 650 million (1,750 - 1,100), requiring the project to spend Rp. 97 million on annual debt service during 1997-2006. This would yield a financial NPV of Rp. 421 million, which would be attractive to the borrower. For this project, the whole loan is to be disbursed in 1995, the first year of the project, followed by a one year grace period in 1996. Table 2 and figure 2 below show the outlay and trend of the project’s cash flow with a combined grant-loan financing. Table 3 shows the amortization of the project’s loan balance.

In this particular example, it is easy to justify the grant component, which has a 1995 present value of Rp. 1,080 million [850 + (250/1.08)]. The sum of the financial and economic NPV, which is Rp. 1,281 million (421 + 860) clearly exceeds the present value of the proposed grant. Indeed, the case would have been more complicated if the quantified economic benefit could not justify grant financing but the need to alleviate widespread poverty and generate social benefits still justifies the project.
It is important to note that in our case the criterion for determining the mix between the grant and loan components was that the annual net cash flow of the project should be positive or zero. A more sophisticated, equity focused criterion, would set the grant component, as per condition 4 outlined above, at a share which keeps the water bills of low income consumer groups at some clearly defined level that is considered to be affordable to them.

Table 2. Project cash flow with a combined grant-loan financing in million Rupiah

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Expenditure</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Receipts</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grant</td>
<td>850</td>
<td>250</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Loan</td>
<td>650</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Revenue</td>
<td>0</td>
<td>0</td>
<td>300</td>
<td>324</td>
<td>350</td>
<td>378</td>
<td>408</td>
<td>441</td>
<td>476</td>
<td>514</td>
<td>555</td>
<td>600</td>
</tr>
<tr>
<td>Cash inflow</td>
<td>1500</td>
<td>250</td>
<td>300</td>
<td>324</td>
<td>350</td>
<td>378</td>
<td>408</td>
<td>441</td>
<td>476</td>
<td>514</td>
<td>555</td>
<td>600</td>
</tr>
<tr>
<td>Net cash flow</td>
<td>0</td>
<td>0</td>
<td>3</td>
<td>17</td>
<td>33</td>
<td>50</td>
<td>68</td>
<td>89</td>
<td>111</td>
<td>136</td>
<td>163</td>
<td>193</td>
</tr>
<tr>
<td>NPV at r = 8%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>421</td>
</tr>
</tbody>
</table>

**Figure 2.** An example of project cash flow with a combined grant-loan financing.
Combining the grant and loan components into larger packages

Once all of the grant and loan components for the approved projects are identified, they should separately be summed up for possible disbursement during the next fiscal year. The sum of all the loan components should fall within the loan budget of the grant-loan financing department, which is financed by RDA’s own resources, including loan reflows, equity capital and foreign borrowing. The sum of all the grant components, on the other hand, would be the figure proposed to BAPPENAS for block grant financing. Because by this time the RDA has already evaluated the proposed projects, there would be no need for BAPPENAS to perform similar evaluation.

Having received the RDA’s application for grant for the coming fiscal year, BAPPENAS is likely to reduce the proposed figure, depending on the projected central government’s development revenue. Realizing the revised figure, the RDA should immediately revise either the kinds or number of projects to be financed by the combined grant-loan financing mode so that, if possible, all of its budget would be spent.

Some simple examples of choosing projects given budget constraints

In any one year, it is likely that request for grant and loan funds will exceed available funds. Guidelines should therefore be developed to help determine the selection of projects which have already been justified by cost-benefit analysis. Three of such guidelines are outlined below and are designed on the basis of: 1) a ratio comparing the project’s financial NPV to its

Table 3. Loan component in million Rupiah

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Interest pmt. at 8%</td>
<td>-52</td>
<td>-48</td>
<td>-45</td>
<td>-40</td>
<td>-36</td>
<td>-31</td>
<td>-26</td>
<td>-20</td>
<td>-14</td>
<td>-7</td>
<td></td>
</tr>
<tr>
<td>principal pmt.</td>
<td>-45</td>
<td>-48</td>
<td>-52</td>
<td>-57</td>
<td>-61</td>
<td>-66</td>
<td>-71</td>
<td>-77</td>
<td>-83</td>
<td>-90</td>
<td></td>
</tr>
<tr>
<td>Loan balance</td>
<td>650</td>
<td>605</td>
<td>557</td>
<td>504</td>
<td>448</td>
<td>387</td>
<td>321</td>
<td>250</td>
<td>173</td>
<td>90</td>
<td>0</td>
</tr>
</tbody>
</table>
capital cost; 2) a first-come, first-served system; and 3) an index which determines the relative need for tap water in localities which are eligible for grant finance.

1. Financial NPV to capital cost ratio

Under this method, projects are first ranked by their financial NPV-capital cost ratio or, in the case of private projects, their profitability index. Those with the highest ratio are then selected for funding based on the availability of funds. So, say, the grant-loan financing department has five projects that need a combined grant-loan financing during the next fiscal year. The sum of the proposed grant component is Rp. 8,950 million which is expected to be financed by BAPPENAS. The sum of the proposed loan component is Rp. 6,050, which is planned to be financed by the RDA’s own resources as set by the treasury department. Table 4 outlines the characteristics of the five projects and the total requirement for grant and loan components to undertake these projects.

Having received the applications for funding, however, the treasury department indicates that it could only allocate the department with Rp. 4,000 million for the loan portion while BAPPENAS could only allocate Rp. 6,000 million for the grant portion. Hence, not all of the projects could be done.

Table 4. List of projects and their financing requirements

<table>
<thead>
<tr>
<th>Project</th>
<th>Grant needed</th>
<th>Loan needed</th>
<th>Capital cost</th>
<th>Financial NPV</th>
<th>NPV: Cap. Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>3,500</td>
<td>1,500</td>
<td>5,000</td>
<td>6,500</td>
<td>1.30</td>
</tr>
<tr>
<td>B</td>
<td>2,800</td>
<td>1,200</td>
<td>4,000</td>
<td>5,000</td>
<td>1.25</td>
</tr>
<tr>
<td>C</td>
<td>1,700</td>
<td>1,300</td>
<td>3,000</td>
<td>4,200</td>
<td>1.40</td>
</tr>
<tr>
<td>D</td>
<td>750</td>
<td>1,250</td>
<td>2,000</td>
<td>3,000</td>
<td>1.50</td>
</tr>
<tr>
<td>E</td>
<td>200</td>
<td>800</td>
<td>1,000</td>
<td>1,750</td>
<td>1.75</td>
</tr>
<tr>
<td>Total</td>
<td>8,950</td>
<td>6,050</td>
<td>15,000</td>
<td>20,450</td>
<td>1.36</td>
</tr>
</tbody>
</table>
Given the budget constraints, one would rank the projects based on their NPV-capital cost ratio. Having done so, then select projects, in order of descending ratio, until the budget, particularly the loan budget, is spent. Table 5 ranks four of the projects on the basis of their NPV-capital cost ratio and their financing needs.

**Table 5. Projects ranked based on their NPV-capital cost ratio**

<table>
<thead>
<tr>
<th>Project</th>
<th>Grant</th>
<th>Loan</th>
<th>Capital cost</th>
<th>Financial NPV</th>
<th>NPV: Capital Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>E</td>
<td>200</td>
<td>800</td>
<td>1,000</td>
<td>1,750</td>
<td>1.75</td>
</tr>
<tr>
<td>B</td>
<td>750</td>
<td>1,250</td>
<td>2,000</td>
<td>3,000</td>
<td>1.50</td>
</tr>
<tr>
<td>C</td>
<td>1,700</td>
<td>1,300</td>
<td>3,000</td>
<td>4,200</td>
<td>1.40</td>
</tr>
<tr>
<td>D</td>
<td>2,800</td>
<td>1,200</td>
<td>4,000</td>
<td>5,000</td>
<td>1.25</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>5,450</td>
<td>4,550</td>
<td>10,000</td>
<td>13,950</td>
<td>1.40</td>
</tr>
<tr>
<td><strong>Budget</strong></td>
<td>6,000</td>
<td>4,000</td>
<td>15,000</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Here, clearly it is best to do projects E,B,C and D. The loan budget is exceeded by Rp. 550 million, the amount by which the grant budget exceeds grant needs, a situation that allows grant fund to be used for lending. However, if grant funds could not be used for lending, there are two other possibilities. First, the RDA could urge borrowers to inject equity capital totaling Rp. 550 million. If this is not possible either, then projects E,B and A should be done. In this case the difference between the amount of loan disbursed and the loan budget of Rp. 450 million (4,000 - 3,550) could be used by the loan financing department or invested in marketable securities. Table 6 ranks these projects and their financing needs in a way that minimizes unspent funds.
Table 6. Projects selected if grant and loan funds could not be interchangeably used

<table>
<thead>
<tr>
<th>Project</th>
<th>Grant</th>
<th>Loan</th>
<th>Capital cost</th>
<th>Financial NPV</th>
<th>NPV: Cap. Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>E</td>
<td>200</td>
<td>800</td>
<td>1,000</td>
<td>1,750</td>
<td>1.75</td>
</tr>
<tr>
<td>B</td>
<td>750</td>
<td>1,250</td>
<td>2,000</td>
<td>3,000</td>
<td>1.50</td>
</tr>
<tr>
<td>A</td>
<td>3,500</td>
<td>1,500</td>
<td>5,000</td>
<td>6,500</td>
<td>1.30</td>
</tr>
<tr>
<td>Total</td>
<td>4,450</td>
<td>3,550</td>
<td>8,000</td>
<td>11,250</td>
<td>1.40</td>
</tr>
<tr>
<td>Unspent</td>
<td>1,550</td>
<td>450</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Critics may argue that this decision making structure undermines the basic public sector cost-benefit rule of maximizing economic NPV. Indeed there may be other ways of selecting projects under budget constraints that more fully ensure meeting public equity objectives. The fact remains, however, that, as the RDA becomes more concerned with attracting private capital, decision making rules that take into account the need of private investors would have to be adopted.

2. First-come, first-served basis

Under this method, grants and the related loan components are provided on a first-come, first-served basis. The system may be politically justifiable but it might bias funding in favor of those PDAMs which are fortunate enough to possess the capacity to prepare project proposals relatively quickly. These better managed PDAMs are indeed likely to be servicing richer, urban municipalities which may not have an urgent, equity related, need for additional water service compared to poorer localities.
3. Relative need index

Under this method, projects are approved for funding on the basis of their relative need index. This index may be calculated based on the proportion of the locality’s population who already have access to tap water. The lower the proportion, the greater the relative need for water service. The problem with this method is that it may bias funding against PDAMs which have good financial records but are serving a population who mostly has access to tap water service already.

Benefits and weaknesses of a combined grant-loan financing

There are several benefits of a combined grant-loan financing mode, both on the micro and macro sides, particularly if the selected projects meet the eligibility conditions mentioned above. These conditions require the PDAM to: 1) have a base revenue that is calculated to recover operation cost, given a sufficient leakage allowance; 2) have an acceptable variance of tariff charged based on elasticity analysis to enable effective cross-subsidization; 3) run cost-efficient operation; and 4) propose a project that is economically or, perhaps, socially justified, whether or not it is proven to be fully self financing. Given that these conditions are met, the benefits of a combined grant-loan financing are generally the following.

First, intergovernmental grants would be allocated mostly to projects in poorer localities which could not generate enough revenue to cover debt service. Indeed, given efficient operation cost and the maximum revenue attainable without adversely affecting the poor, a PDAM revenue shortfall is justified on equity or economic grounds and grants are effectively given for these reasons.

Second, the revenue generating potential of projects would be exploited to help cover the cost of capital. This helps create the basis of an effective revolving fund for the RDA without placing an unacceptable burden on the PDAM for repaying the loan, a favorable condition allowed by the provision of the grant component. In addition, such loan repayments would also help reduce the central government’s burden of repaying debts to foreign donors.

Third, borrowers would be encouraged to invest capital more efficiently. Because the project has to bear some of the capital cost through debt repayments, the PDAM is forced to use
capital more efficiently, in effect reducing the potential magnitude of misallocation of resources associated with subsidizing poorly designed projects. Misallocation of resources here is defined to be the over-utilization of subsidized capital relative to labor, leading to unnecessarily capital intensive projects with inadequate benefits.

Fourth, given the first two arguments, the linkage between grant and loan financing could be streamlined, thus improving the overall system of infrastructure finance. That is, the central government could better identify the part of a project which is financially viable, which could be financed by a loan, and the other part which is economically or socially justified, which should be financed by a grant.

Fifth and last, because the combined grant-loan financing is relatively inflexible, it could encourage borrowers to opt more for full loan financing. Since a combined grant-loan financing requires going through the central government’s budget process, it could only be realized on fiscal year basis. As a result, this financing mode would be less flexible than full-loan financing with the RDA’s own resources. This condition would add the incentive for borrowers to opt for the latter financing mode if they could afford to do so, thereby reducing excess demand for grant in the process.

Despite these benefits, there are also potential weaknesses of the combined grant-loan financing mode. For example, the process requires RDA staff to skillfully differentiate between financial and economic project evaluation on the basis of structured finance. In addition, this process requires clear, objective determination of affordability. Finally, under the new system, the RDA would receive the kind of applications for project funding that traditionally used to be sent to BAPPENAS. Hence, not only does the kind of feasibility study for each project become more complex, but the number of projects which have to be evaluated could also drastically increase.
5. LOAN FINANCING

Definition of loan financing

Loan financing in this case is defined to be the financing of a project either: 1) wholly by loan or 2) by a combination of loan and equity capital. When providing loan finance, the RDA should mostly be concerned about the financial feasibility, or the expected financial return, of the project. That is, it should mostly be concerned about getting its money back.

Interest rate issues

This thesis argues that the RDA should generally charge the market interest rate on its loans simply for economic efficiency reasons. Even if the actual rate is below the market lending rate, the differential should not be too large, say over 200 basis points, to the extent that it could lead to misallocation of resources.

An important interest rate issue is, whether over the life of the loan, the RDA rate should be fixed at the time the loan agreement was made or floating with a changing market rate. Most donor-provided loans carry fixed rates whereas most private loans carry floating rates. As long as the RDA is financed by state institutions, whether BAPPENAS, MOF or regional governments, its loans may be considered as intergovernmental loans. Such loans may carry more or less fixed interest rates which, nevertheless, may vary from project to project depending on market conditions at the time they were obtained. However, if private investors were to have a stake in the RDA in the future, there would be pressures to have the RDA rate more flexibly tied to market rate. If realized, this in turn could lead to the unexpected variation of the interest rate and debt service payments which could adversely affect project cash flow.

If in the future the RDA were to start charging floating rates on its loans, there would still be ways in which borrowers could, to a certain extent, hedge their interest rate exposure. First, given a fixed annual debt service, the RDA could extend the repayment schedule. If interest rate rises, more of the loan repayment would cover interest charges. This would slow down the amortization of principal and, as a result, the whole repayment schedule would have to be extended. Although this method shelters project cash flow from sharp rate variation, it still
could not prevent the project's NPV from declining as a result of the additional cash outflow. Further, if the repayment schedule has already been stretched fully over the life of the project, then it is not possible to extend it, unless, of course, the project has enough salvage value to cover it.

Second, a borrower may enter a forward rate agreement (FRA). Here, the borrower, who is concerned that interest rate may rise, enters a contract with a lender or depositor who is concerned that interest rate may fall. They could specify an interest benchmark, usually the current market rate, and if in the future interest rate increases, the lender will pay the borrower the difference between the new rate and the benchmark. Similarly, if interest rate declines, the borrower will pay the lender the difference. Other things being equal, through FRA interest expense is hedged and the project's NPV is maintained as expected. There are, however, potential problems with FRAs. One, if the money market is certain about the direction of future interest rates, there would not be enough counter parties willing to hedge against the opposite direction. In this case, the market has a "rational expectation" of the future. Second, the market for FRAs could only be developed by sophisticated financial intermediaries, which may take a while to develop in the Jakarta money market.

**Syndicated lending**

Some projects, which could generate sufficient revenue to cover debt service at market rates, may have large capital costs that could not be financed by BAPPENAS and the RDA combined. Because these projects could generate a rate of return that is expected by the market, there would be private investors willing to finance them. As far as the water sector goes, the problem is mainly that: 1) private investors have not developed a specialty in the sector and 2) they do not have sufficient access to it.

---

20 Less than 0.5% of private banks credit outstanding covers the water sector.
This offers the RDA, which has enough experience in water sector investment, the opportunity to lead a syndicated loan financing. Here, both the borrower and the RDA would perform the feasibility study and invite other lenders, including private and state banks, to participate in a joint project financing arrangement. Having organized the loan package, the pooled fund would be allocated through an account with the RDA, the syndicate arranger. Indeed, before the fund is finally disbursed to the end user, the RDA could use it for daily inter-bank lending to earn interest.

As the project operates, the RDA could collect loan repayments for the other joint lenders, charging fees for this service. With the participation of private lenders, the interest rate on the loan is likely to be floating at the market rate. This does pose a potential threat to project cash flow and the repayments schedule. However, because the default risk is spread among the lenders, the RDA is not exposed to potential cash flow problems as much as if it had financed the project alone.

Benefits and weaknesses of syndicated lending

In addition to those mentioned above, there are other benefits of syndicated lending. First, syndicated lending increases capital availability for water-sector investment. Second, it opens the clean water sector to the private sector which, despite government encouragement, may not be willing to invest in it without the participation of a state entity with enough experience in regional infrastructure development. Third, with the participation of private lenders, the RDA could gain experience in private banks’ professional practices, such as sound cash flow analysis, timely loan disbursements and writing-off non-performing loans. Fourth and last, the participation of private investors would force borrowers meet certain standards that are generally required for sound corporate management. These standards include: a) financial reports that are audited by independent accountants; b) servicing debts on schedule at a market related interest rate; c) collecting tariff charges to ensure a sound cash flow; d) adequate tariff level(s) to generate sufficient revenue; and e) manpower streamlining to control operation costs.
On the other hand, there are also potential weaknesses of syndicated lending. First, syndicated lending may take a while to organize. For instance, the joint lenders will have to agree on interest rate, grace period, repayment schedule and equity placement. Disagreements may arise if, for example, the RDA is politically inclined to offer softer loan terms (subsidized rate and longer grace and loan periods) while private lenders insist on terms that would generate profits in the short run. Second, given private investors’ demand for profit, a local water enterprise may find it more difficult to run loss making operations, that is, in poor areas where affordability is low. Third, if the RDA could not meet its obligations as promised, private investors may in the future be deterred from investing in the water sector or other public infrastructure where they lack experience. Fourth and last, private investors are likely to demand a guarantee against loan default, a provision which may have to be made by the local government supervising the borrowing PDAM.

Selling loans and loan packages

In the future, some RDA loans which are provided to PDAMs of the richer localities may be able to perform well at the market rate. Indeed, these loans may operate on terms which the private sector finds attractive. To raise fresh capital the RDA could sell these loans to private investors either on the basis of individual accounts or loan packages.

The value of a loan or a package of loans would be its net present value (NPV) or the sum of the discounted future payments from it. To attract private investors, the RDA would have to sell it at less than its NPV. Yet, if the difference between the lending and borrowing rates is large enough and the loan life is long enough, the RDA may still make a profit.21

---

21 In selling the loan, on the asset side the RDA loses a loan account and the interest receivable (within one year) related to it, but receives cash amounting to, at the most, the present value of the loan using the deposit rate, which is lower than the lending rate, as a discount rate.
Benefits and weaknesses of selling RDA loans

Apart from possibly being profitable, there are other benefits of selling RDA loans to private investors. First, as mentioned above, the RDA receives fresh capital for further lending. Indeed, if the RDA were a bank, and if it receives more than the sold loan account plus the interest receivable (within one year) associated with this account, retained earnings and, hence, total assets increase. Not only does the RDA’s balance sheet grow, but it is also strengthened in quality as working capital increases both in absolute terms and relative to current liabilities. Second, by selling some of its loans, the RDA reduces the credit risk it carries. Of course, if it relends the money it receives by the same amount as the sold loans, it would not change its overall credit risk. Credit risk may even increase if the RDA relends all of these receipts. Third, as in the case of syndicated lending, the RDA could charge the buyer of this loan a service fee for collecting loan repayments from the borrower, thereby increasing its non-loan revenue. Fourth and last, also as in the case of syndicated lending, by selling PDAM loans to private investors, the private sector is introduced to water sector investment, enabling it to gain more experience in the area.

Of course, there are also potential weaknesses of selling corporate loans. First, by selling its best performing loans, the RDA may be left with its mediocre ones which are more likely to default. If overall credit risk is derived by calculating the weighted average of individual loan risks, selling off loans with low credit risk may indeed increase overall credit risk faced by the lender. Second, the RDA’s credibility would be severely affected if the sold loans default or if the RDA could not collect loan repayments for which it receives service fees. Third, similar to the case of syndicated lending, private investors would probably want a guarantee against loan default from the local government supervising the PDAM.
6. THE ISSUANCE OF CONVERTIBLE BONDS

The relevance of convertible bonds to privatization

Why privatization

In the future, some of the PDAMs may operate well, running at efficient operating cost and generating profitable tariff revenue. The local governments that technically own and supervise these PDAMs could then privatize these entities to: raise revenue, which could be used to reduce outstanding local government debt; focus their responsibilities more on regulating rather than operating entities; and enhance efficiency of the PDAM itself, through private corporate restructuring, and of its parent local government, through administrative streamlining.

Of course, just as in the case of the privatized British public utilities, it is likely that tariff level across the board will increase if a PDAM is privatized, causing some affordability problems for poor households. However, it is often the case that tariff level is also too low in the first place, relative to consumers willingness to pay and the unit operating cost of the water plant for instance, creating excess demand for tap water. It may also be possible to alter the tariff structure so that costs could be recovered while still maintaining affordability for the poor.

Raising water tariffs may be politically sensitive for a local government. On the other hand, a privately run PDAM would be pressurized to increase profits by increasing the tariff and cutting costs. Even if there are tariff ceilings to prevent monopolistic profits from being made, allowable tariff increases could still improve PDAM financial strength, thus helping attract private investors.

Some methods of privatization

The common way a state owned entity is privatized is through an initial public offering (IPO) of equity. Unless the entity is privatized by less than 50%, the process of ownership transfer from the state, which may be concerned with mere cost recovery, to private investors, concerned with getting attractive dividends, may pose a shock to the organizational culture of the entity. What must be avoided is therefore a dramatic restructuring, involving widespread lay off
and sharp tariff increases, immediately after privatization. Such a situation would simply create political instability and adversely affect employees’ morale, which would be counter productive to the goals of privatization.

To be effective, the privatization of a state entity should therefore be implemented in steps. On the managerial side, the first step may first be privatizing the entity's management, followed by tariff increases for the richer consumers and, as a last resort, cost cutting measures, including shorter term job contracts, early pensions and outright layoffs. On the financial side, limited privatization may be implemented through a partial sale of assets (less than 50% of the entity), debt-equity swaps and convertible bondage.

**What is convertible bond**

A convertible bond gives the bondholder the option to exchange it for a specified number of shares of common shares in the firm. For example, a firm could issue five year fixed rate convertible bonds each at a par value of Rp. 100,000 with a conversion ratio of two. At the end of the fifth year each bond may be converted into 2 shares in the firm. If at the maturity date the price of the firm’s share exceeds Rp. 50,000, then converting the bond into shares would be profitable for the bondholder. Otherwise, he or she should instead opt to receive Rp. 100,000 for each of his or her maturing bonds.

**Why convertible bonds**

By issuing convertible bonds, a PDAM planning to privatize gains certain advantages. First, a direct privatization through initial public offerings of equity would involve a transfer of funds from the new shareholders, private investors, to the old owner, the state. So, unless otherwise specified, the beneficiary of the sale would be the state. However, by issuing convertible bonds, the PDAM itself receives the funds, as in normal borrowing, and may still be privatized at the bond’s maturity date.

Second, the PDAM is given enough time, the life of the bond, to reorganize itself and promote the kind of corporate efficiency attractive enough for bondholders to convert their securities into shares at the maturity date. Indeed, if bondholders do not find the PDAM an
attractive investment, they may instead opt to cash in their bonds, which may destabilize the PDAM's cash flow\(^{22}\).

**A very simple example**

Say, a credit worthy PDAM, PDAM X, wants to expand its plant and needs a Rp. 5 billion ten year debt. Instead of providing the entity with a loan, the RDA could organize a syndicated purchase of convertible bonds.

At the date of issuance, say January 1st 1996, PDAM X issues five thousand ten year convertible bonds, each at a par value of Rp. 1 million that matures on December 31st 2005. The bonds carry an annual interest rate of the Certificate of Bank Indonesia (SBI) rate at the date of issuance plus 1\% and, preferably, are guaranteed by the local government that supervises the PDAM. A syndication of bond investors organized by the RDA, including both private investors and state entities, pools Rp. 5 billion to lend to PDAM X in payment for the five thousand bonds, to be held by members of the syndication on a pro-rata basis.

At the issuance date the net worth of PDAM X (assets - liabilities), having taken into account the issued bonds, is Rp. 20 billion. There are 100,000 common shares in PDAM X, held by the local government which supervises PDAM X. The accounting worth of each share is therefore Rp. 200,000 (20 billion ÷ 100,000). At the maturity date of December 31st 2005 each bond may be converted into 5 common shares in PDAM X, giving the bondholder the right to buy 5 common shares in PDAM X at Rp. 200,000 per share.

On December 31st from 1996 to 2006, PDAM X makes interest payments on those bonds at the prespecified rate. On December 31st 2006 the bonds mature and the bondholders have the option to: 1) cash in the bonds and, if all of them decide to do so, get their Rp. 5 billion back, a condition which could adversely affect the PDAM’s cash flow or 2) convert the bonds into common shares in PDAM X.

If by the maturity date the net worth of PDAM X is still Rp. 20 billion and the bonds are converted into equity, PDAM X's net worth will increase to Rp. 25 billion. There would now be

---

\(^{22}\) Unlike loans, whose principal is amortized over its life through principal repayments that creates a degree of financial stability, bonds only require interest payments over their life. At the maturity date, however, the whole principal has to be repaid in lump sum, which may affect the borrower's cash flow.
125,000 common shares (100,000 + 5 billion/200,000) each with an accounting worth of Rp. 200,000 (Rp. 25 billion + 125,000 shares). Indeed, because bondholders could not enjoy capital gain and the newly issued stocks may not be sold in the secondary market, they may not want to convert their maturing bonds into equity.

However, if throughout the life of the bond the PDAM has performed well, generating retained earnings that increase net worth, then converting the bonds into equity may be profitable. Say, by the maturity date the net worth of PDAM X has risen to Rp. 25 billion. As the bonds are converted into equity, it will increase to Rp. 30 billion. There would be 125,000 common shares but each with an accounting worth of Rp. 240,000 (Rp. 30 billion + 125,000 shares). Now, bondholders could enjoy capital gain on the newly issued stocks, developing a secondary market; converting their maturing bonds into equity would be profitable.

If the latter case takes place, the number of the sold shares makes up 20% of the total number of PDAM X common shares. In effect, 20% of PDAM X is privatized. If PDAM X continues to make this kind of borrowing, then it is possible that a significant share of the entity will eventually be privatized.

**Weaknesses of PDAM convertible bonds**

Despite all the benefits of issuing convertible bonds, there are also potential weaknesses. First, bondholders may decide not to convert their maturing bonds into equity but cash them in instead. This would certainly destabilize the PDAM’s cash flow as a financial obligation, which could be large relative to annual revenue, suddenly has to be met.

Second, a secondary market for the newly issued shares may not be well developed, which means investors may not be able to sell their shares in the stock market despite their attractive book value.

Third, as with other financing options discussed above, private investors may demand the supervising local government to guarantee both interest and principal repayments. A demand of this nature, however, may: 1) be politically sensitive; 2) create a disincentive for the PDAM to perform; and 3) be impossible for many local governments because of their weak financial performance.
V. FEASIBILITY OF IMPLEMENTATION

Economic justifications

Although there are strong economic reasons for implementing the reforms proposed in this thesis, there are factors that will make this a difficult undertaking. This concluding chapter reviews the economic case for reform and discusses some of the major technical, institutional and political constraints in realizing it.

There are various macro and micro economic reasons which justify reforms of the RDA and the overall system of infrastructure financing. At the macro level, there are at least four economic considerations. First, as discussed in the first chapter, central government resources are becoming increasingly inadequate to fund local infrastructure fully. Second, Indonesia’s external debt is mounting, currently already exceeding US$ 100 billion. This makes additional borrowing, particularly with a growing current account deficit, risky to the state of the balance of payments. Third, domestic private savings are increasing, as shown by the growth of the Jakarta capital market, so that the private sector ought to be able to contribute more directly to infrastructure financing. Fourth and last, more productive infrastructure investment would create multiplier effects on overall economic growth.

At the project level, there are also four economic reasons justifying the suggested reforms. First, the existence of under-utilized facilities suggests that lower-than-market interest rates have led to misallocation of resources and over-investment. Second, the failure to separate equity based and cost-recovering operations effectively is also likely to have led to resource misallocation. Third, the current funds allocation mechanism between BAPPENAS, MOF and the RDA is too bureaucratic, resulting in delays and low capital productivity. Fourth and last, not enough financial innovations and options, such as debt-equity swaps which have been used in Latin America, are being adopted to improve capital productivity.

About the proposed reform and future options

The suggested near-term and future options for reform aim specifically for the following five objectives. First, local government infrastructure needs should be met more fully on the
basis of loan financing, except where this would make critically needed infrastructure too expensive for the beneficiaries. Second, grant allocation mechanisms to subsidize infrastructure projects, when required, should be less bureaucratically controlled and more standardized. Third, the RDA should have more flexibility in raising its funds and spending them. Fourth, infrastructure investment should be made more attractive to private capital. And fifth, subsidized and cost recovering public service operations should be differentiated. These objectives have been selected to ensure that capital for infrastructure development will be used more efficiently in the future while still meeting basic social equity concerns.

Most of the options have been designed based on normative grounds and may be difficult to implement quickly. They are, however, intended to set the direction for future reforms of the RDA and urban infrastructure financing in general, rather than to provide a concrete blueprint for reform. As discussed throughout the thesis, the measures suggested, to a varying degree, would also face obstacles. Some of these obstacles, such as managerial and financial constraints, could be overcome with time, for example, as RDA personnel become more skilled and the Jakarta capital market becomes more mature. Some other obstacles are political and will not be overcome by simple technical and institutional improvements. We now summarize the major obstacles - managerial, financial and political - in terms of what steps need to be taken regarding the major institutions and parties involved.

Managerial considerations

BAPPENAS and Ministry of Finance (MOF)

BAPPENAS and MOF are parts of the national civil service. Their personnel follow civil service guidelines and are politically protected, making rationalization, through early pensions and layoffs, for instance, almost impossible. However, deregulation and decentralization are possible. In this spirit the thesis suggests: 1) ending BAPPENAS’ appraisal responsibility over proposed projects already approved by the RDA; 2) ending the requirement for BAPPENAS approval of loan disbursements already specified by loan agreements; and 3) reducing the MOF’s complete control over the RDA. Such managerial reforms are relatively straightforward, but there are, of course, political considerations, which we discuss later in this chapter.
The RDA

Detaching the RDA from MOF and transforming it into a financially independent entity is feasible, again, under the spirit of decentralization and privatization. Indeed, the RDA could manage its personnel more like a private firm and, like the national state enterprises, raise its own debt. Moving towards this goal, however, would have to be done gradually because of the limited expertise of the RDA staff, which may take a while to develop. Required steps include improving the ability to: 1) appraise more projects based on standardized computer modules; 2) appraise projects on the basis of investment funds obtained from various sources with different financial objectives; 3) develop investment opportunities for private investors; and 4) organize syndicated lending and investment. These areas require a high level of technical skill which even the state banks currently do not have. Still, the investment opportunities are there and could be exploited, perhaps, initially through a joint venture with a private bank. A partial privatization of the RDA, as well as the improvement of personnel compensation, may be required to attract and develop the needed expertise.

Private investors

As far as investing in the water sector goes, the problem with most Indonesian private investors is that, apart from some limited experience in bidding for government projects, they lack experience in infrastructure investment. However, as suggested by the productivity growth following the recent deregulation drive, entrepreneurs do spot investment opportunities and are willing to diversify their expertise, including training staff for new types of activities if this is expected to generate profits. If the private sector is to diversify into infrastructure, however, there is a need to develop an institutional framework with which to build agreements between the RDA and private investors.
Local government

With the exception of wealthy local governments, such as the provincial capitals, the technical expertise of local government staff needs to be improved. On the management side, the suggested measures require local governments to develop loan proposals and manage services efficiently, responsibilities which are feasible to implement. In addition, to help ensure effective implementation of the recommended measures, local governments would be required to: 1) protect the ownership rights of investors; 2) devise and implement a tariff structure that protects the poor; and 3) perhaps, consider options to privatize the management of local government enterprises. These requirements are generally feasible to implement, but this will take time.

Financial considerations

BAPPENAS and Ministry of Finance (MOF)

Although there are several political obstacles to implementing the suggested reform measures, BAPPENAS and MOF have few financial reasons to oppose them because they would reduce local demands for central government funding. Indeed, the measures suggested would require BAPPENAS to finance only the grant elements of infrastructure projects.

Transforming the RDA into a bank would lead it to seek funding mostly from its equity holders, including MOF. This means government funds which had traditionally been channeled to the RDA directly through BAPPENAS would now be channeled through the capital expenditure budget of MOF as equity capital. To a certain extent, this implies a weakening of direct central government control of the RDA.

The RDA

Switching the source of funds from BAPPENAS to MOF would not necessarily reduce government funds spent on the RDA, of course, without the participation of other equity holders: regional governments, financially stable local government enterprises and, perhaps, private investors. By transforming the RDA into a bank, it could attract equity and loan capital.
Even if the RDA operates as a bank, it is still likely that it would obtain more financing from MOF than the other equity holders in the medium term. Other equity holders, especially private investors, have to be assured first that investing in the RDA would be profitable before injecting more money. They would be attracted mainly if RDA loans are performing, and this could only be realized if: 1) the interest rate is market related; and 2) loan repayments are made on schedule. If these two conditions are met, which may take time, the RDA would also have a better access to foreign creditors.

In summary, transforming the RDA into a bank would not immediately reduce government spending on it, but this would provide easier means to attract both equity and loan capital should the RDA prove to be an attractive investment.

Private investors

Private capital would only be attracted to the RDA only by investment returns that are at least identical to those offered by bank deposits. This justifies not only raising interest rate to the market level, as suggested above, but also separating profitable and subsidized PDAM operations at the project level, as would be realized by the combined grant-loan financing mode.

Further, private investors may demand provisions in addition to market related returns: 1) a guarantee against loan default; 2) predictability, as indicated by having loan repayments on schedule; and 3) as far as equity holders are concerned, dividend payout. Only when these conditions are met would infrastructure investment have the potential to attract private capital.

Local government

As far as financing goes, it is suggested that, when there are available own-source funds, the local government which supervises the local service enterprise in question, such as a PDAM, should provide equity capital and, given the agreed tariff rates, ensure tariff collection.

Additional equity injection into the local enterprise would: 1) reduce the need for intergovernmental subsidies and loans; and 2) convince private investors that the local government is seriously treating infrastructure development as an investment opportunity. Of course, the need to raise revenue and equity capital would indirectly pressurize the local
government to generate more own-source revenue, for instance, through local tax increases. This may be most feasible among local governments of richer localities, for example, the provincial capitals.

Ensuring better tariff collection would: 1) help cover operating cost; and 2) convince investors that the local enterprise offers a genuine investment opportunity, particularly if tariff levels are set to cover cost. Improved tariff collection is impossible by both rich and poor local governments, although the degree to which cost recovery is realized may vary.

Political considerations and concluding remarks

Some political factors support the implementation of the suggested measures, but many do not. Certainly the current environment of deregulation, liberalization, privatization and increased political openness would support a more independent RDA and an increased participation of private investors in infrastructure development. However, this environment does not automatically imply that government institutions are willing to give up their strong, direct control over resources without legally having to do so. As far as the proposed reform goes, BAPPENAS, the Ministry of Finance and the Ministry of Home Affairs may not be too enthusiastic about losing control over the allocation and use of grant and loan capital. If this is to happen, there must be a strong directive from the central government and a reform process that is well accepted by all of the major actors involved.

In addition to the general problem of reducing central control, some of the specific reform measures suggested may also be politically sensitive. First, raising the interest rate to the market level in the public sector, including raising interest rate charged on RDA loans to local governments, may weaken the paternalistic link between central and regional governments. Because, the allocation of subsidized capital to the localities has been partially used as a means to maintain central control, reducing subsidies and introducing loans on market terms may pose a threat to central political control over the regions.

Second, raising tariff levels to maximize revenue, even when poor households are protected with tariff ceilings, may cause political problems at the local level. It has been frequently argued that the population of localities generally accept central control of local governments in return for subsidized services. Once these services are no longer subsidized,
there is a possibility that local population would demand local governments to be more responsive to local needs and less to central directives.

Third and last, many local governments may not be able to provide effective guarantees against loan defaults. Local governments, especially the poorer ones, simply may not have the financial and managerial resources to play this role. Furthermore, local governments are used to having their donor-provided loans, in effect, guaranteed by the central government. Placing the responsibility of guaranteeing loans on local governments may, again, weaken the paternalistic link between central and regional governments.

These factors pose serious obstacles to the effective implementation of the suggested reform measures. Unfortunately, without meeting the required financial conditions tied to the measures, there is a little chance that private investors would seriously consider urban infrastructure development as an attractive investment. Yet, without meeting these conditions, the productivity of investment capital and the quality of infrastructure projects are likely to remain poor, if not worsen. Given these circumstances, the central government needs to devise a way to reform the RDA and existing infrastructure financing mechanisms in a strategically designed sequence of steps over time, while convincing both central and local government institutions of the infeasibility of sustaining the current financing system.
REFERENCES


Research Triangle Institute, (September 1994), “Regional Development Account: Policy and Operational issues”.


