Rural Works Programs in Bangladesh: Community, Technology and Graft

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SUMMARY AND RECOMMENDATIONS

I - The Graft and the Monitoring of Rural Works Programs

Graft is a constant in construction projects in all countries. Attempts to deal with it through monitoring and supervision have to keep it within reasonable bounds at a reasonable cost and, at the same time, not simply drive it underground from whence it will resurface elsewhere in another form. Project implementation, moreover, may suffer from successful graft control if past graft has played the role of "incentive" payments to dedicated workers. Because of this delicacy of the question of graft, monitoring systems and special institutional arrangements to inhibit graft should be evaluated as to (1) whether their cost, both nominal and in terms of encumbered project administration, is less or more than the resulting decrease in misappropriation; and (2) whether existing graft is actually harmful to project execution, and whether decreases in graft will result in an improvement in the quality of implementation.

Decentralized works projects executed by local bodies are considered by some to be particularly vulnerable to graft. In Bangladesh, however, there seems to be no evidence that graft takes a greater share of project costs than in the case of centrally-executed, larger, and more capital-intensive construction. Graft in the rural works programs of Bangladesh, moreover, is not associated with considerable failure of projects to be started or completed.

The concern for graft, and for the designing of adequate monitoring and supervision systems, can have a considerable influence on project design. Over time, for instance, USAID and CARE have tended toward larger projects in implementing the Food-for-Work program because this minimizes the demand made on scarce monitoring staff. Earthworks have been preferred over structures for the same reasons, as well as road works over water works. Partly for the same reasons, reinforced concrete bridges have been preferred over brick bridges because brick "tends to fall down" if not properly built. Finally, structures projects have been chosen that are concentrated on a few embankments, or in one geographic area, so as to minimize demands made on the time of supervisory staff.

In some cases, these kinds of choices result in costlier projects or contravene program objectives. The preferred larger projects, for example, may be less within the capabilities of local bodies than smaller projects; yet local execution is a cornerstone of the rural works

programs. Similarly, larger projects are more likely to result in the use of contractors and migrant labor, also contrary to the intentions of the works program. Larger projects, moreover, tend to have lower completion rates than smaller ones.

The preference for earthworks over structures on monitoring grounds has had important cost implications: the construction of many embankments and canals without their appurtenant structures. This reduces the usability and durability of such infrastructural investments, not to mention the damages inflicted on the facility itself and on surrounding agricultural production when embankments are built without drainage. Similarly, though brick bridges may tend to fall down, if their construction is not properly supervised, they cost approximately half as much as the preferred reinforced concrete. Though roads are managerially easier than irrigation works, moreover, the preferences of rural users and the relative economic benefits often run in the other direction. Finally, the most socially profitable set of appurtenant-structure projects--out of all the missing structures that need building in Bangladesh--is not likely to be concentrated on one embankment or in one area. Giving paramount importance to monitoring and supervision constraints in making the above types of decisions will, in some instances, be worth the extra project costs and the compromised project objectives--and, in some instances, will not.

The concern for graft often takes attention away from other problems that, in contrast to graft, are actually impairing project execution. The problem of delays in wheat distribution in Food-for-Work projects is an example. These delays have significantly impaired the rate of project execution and markedly reduced the real wage paid to workers--in that workers frequently have to sell their wheat in advance at a discount as a result of delayed wheat payments. The issue of paying workers in cash instead of wheat, however, has not called forth the attention and time of the implementing agencies that graft has--though graft has not inflicted as significant costs.

Graft is sometimes given more credit than it deserves for causing certain repeated problems in project execution. The lack of compaction is an example. Though this problem is usually attributed to faulty contractor performance and government supervision, there are also some strong economic arguments for not doing compaction at all on earth roads. The fact that it is not done, then, reflects the force of this economic logic, in part, rather than just graft. Though the two explanations are not mutually exclusive--indeed, each may reinforce the other--the exclusive attention to graft and supervision makes it difficult for attention to be devoted to the economic and technical side of the compaction question. Another frequent problem in works

projects, which has an etiology similar to compaction, is the inadequate finishing of embankment slopes.

Graft on works projects takes many different forms and has markedly different effects. If graft is taken out of total wage allocations of an earthmoving project in Bangladesh, for example, the result will be less earth moved and less workers hired than is reported. If graft is taken out of the individual worker's wage, in contrast, the reported amount of earth moved and laborers hired will be accurate, but the worker will receive a lower wage than specified. In the former case, less employment is generated and the donor or government agency finances the graft, since it results in a lower-quality project (less earth moved) for the same money. In the latter case, the worker "finances" the graft, since it results in a lower wage for him. This latter form of graft represents a more regressive form of project financing, especially relevant for a program in which an important objective is to increase the incomes of the rural unemployed.

The underfulfillment of specifications, or overstatement of work done, is a common form of misappropriation in construction projects. The underfulfillment of specifications on earthworks projects has very different implications than that on structures projects. Bridges that threaten to fall down and culverts that do not drain properly can reduce the benefits of the facility of which they are a part and, in the case of inadequate drainage, can cause damage to agricultural production; repair costs will be incurred. A road or flood embankment that is lower than reported, in contrast, will inflict much smaller damages, if any at all.[1]

In various ways, cheating on earthworks is easier to deal with than that on structures. It is easier to measure the cost of underfulfilled specifications on earthworks after the project is

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[1]Exceptions are cheating on flood embankments and on the base width of an embankment. In the case of a flood embankment with over-reported measurements, the embankment will not protect from as severe flooding as was planned, though it takes only a small discrepancy between reported and actual heights to generate a significant amount of misappropriable cash, given an embankment of some length. If cheating comes out of the base width of the embankment, as opposed to the height or the crown width, this will make the slopes steeper, and result in erosion, higher maintenance requirements and, perhaps, earlier reconstruction.

completed--i.e., the earth paid for and not there--as opposed to underfulfillment on structures, which may be buried under concrete. Though the cost of cheating on earthworks can be immediately identified by taking one's own measurements after project completion, the cost of cheating on structures may not manifest itself for some time; when it does become manifest, as in a fallen bridge, the real cost can be much greater than the shortfall in the materials used. Finally, it is easier to identify the "cheater" on the earthworks project--he who took the final measurements--as opposed to the structures project, where opportunities abound to blame various parties and uncontrollable forces for things having gone wrong. Since earthworks projects without structures have accounted for at least 80% of the value of rural works programs in Bangladesh in recent years, it is clear that monitoring and supervision demands have been much less than they would be with a program that built earthworks along with their structures.

Though graft may be undesirable, it may also help get projects done. The graft to be earned on rural works projects, for example, is probably one reason why the implementation of the works component of rural development projects frequently goes more smoothly and rapidly than that of other components like agricultural extension, health, and education, where opportunities for graft are less. In construction programs where contracts are let by government field offices rather than headquarters, engineers have been found to prefer living and working in the field rather than the capital city, because of the greater opportunities there for graft. Since the problem of getting professionals to work in the field is a major one for many rural development programs, this constitutes a certain achievement, which might be lost if graft were discontinued.

Many costs incurred by field officers in development programs often go unreimbursed, except through graft payments taken by them. The project-committee members in charge of Food-for-Work projects in Bangladesh, for example, have to advance their own funds for wheat-transport costs, and are not reimbursed for the lodging and food costs of their various trips to requisition and obtain wheat from storage. A successful graft-control program that touches any of these "legitimate" and project-related misappropriations, then, could also result in footdragging on project execution.

Recommendations

Monitoring and supervision strategies should try to focus on those forms of graft that (1) result in delays in project execution and in significant impairment of project quality, and (2) seriously

compromise program objectives, such as the graft that is taken out of the individual worker's wage. At the same time, careful attention should be paid to the potential deleterious effect of successful graft control--to the extent that project executors have been using graft payments for project-related expenses. One way of preventing the latter problem is to transfer legitimate graft costs to project financing--through increased salaries or commissions paid to project executors. The remuneration now received by local bodies in executing works projects should be reviewed with this consideration in mind. Any increase in project costs that causes the financing of graft costs to be transferred from workers to project funders is also desirable.

Because graft is good at surviving formal systems of monitoring and sanction, incentives to do things other than misappropriate should be provided outside the formal monitoring system--incentives that have the effect of raising the opportunity costs of graft. One such incentive would be cash rewards for good performance in project execution and in wage payment, as described more fully in Sections II and IV.

Project types and techniques should be evaluated as to their vulnerability to graft, and as to the costs that graft inflict on projects and project beneficiaries. Just as USAID and CARE have developed a graft-minimizing set of preferences about earthworks projects, a similar evaluation should be made of the experience with structures--because they are more demanding of monitoring and supervision, and because their role in works programs in Bangladesh is on the increase. Where graft costs and vulnerability are high, alternative techniques, project types, or project organization should be sought. Because earthworks and structures vary so considerably in their vulnerability to graft, for example, there is some argument to separate their monitoring and supervision and, as discussed in Section III, even their execution.

If project costs are increased considerably by the choices of less graft-prone alternatives--or project objectives undermined--then it should be determined whether the diminished vulnerability to graft is worth these costs, and whether there are other, less costly choices. Before deciding that reinforced concrete bridges are preferable on monitoring grounds over brick, for example, one should determine whether brick bridges "tend to fall down" because of contractor irresponsibility or because experience in building them is insufficient. Even if the answer is a mixture of the two explanations, there is still a chance that increased training and supervision will be less costly than the twice-as-costly bridges. The costs to

communities of bridges falling down, moreover, may not be as great as the costs to implementing organizations, especially if the communities are instructed in how to prevent such occurrences, or repair them.

Recurrent problems in works projects can be caused by sloppiness, the traditional way of doing things, and lack of experience--in addition to graft. Problems that are usually attributed to graft, but have other less attention-getting causes, will require different approaches than problems caused by graft alone. If the lack of compaction and treatment of embankment slopes can be explained in part by economic logic, for example, then it may be necessary to change specifications and organizational design in a way that adapts to how these tasks are traditionally done. In such cases, a "lowering" of specifications may result not only in diminished project quality but also in real project costs that are lower than (1) providing the supervision or monitoring necessary to guarantee that specifications are properly filled, and (2) ending up with projects for which specifications are routinely and predictably not filled.

The bridges and culverts under construction in a rural works program are numerous, dispersed and, in many cases, of difficult access--making it difficult to meet the greater demands of structures over earthworks for constant supervision. At the same time, bridges and culverts in construction are, like any construction project, out in the open for anyone to see. The villagers in Bangladesh who routinely gather around construction sites should be drawn upon for some of the constant attention that is required by structures projects and yet is so difficult to provide through field organization. Villagers can be instructed in some of the simple operations that should be carried out repetitively during construction, such as the wetting of bricks or concrete. They are well qualified as monitors because they are interested in the project turning out well--since it will serve their village--and because they have a healthy distrust of contractors and local leaders. The villagers are very available, moreover, because they live nearby and because construction takes place during the time of ebb in agricultural activity.

During the appraisal of the proposed project, advantage should be taken of CARE's experience with the monitoring of works projects. In particular, an analysis of CARE's project-by-project data on non-reimbursement for over-reported earthwork could suggest which types of circumstances and projects tend to be associated with graft. These records should also give an idea of whether graft is fairly constant, or whether it varies considerably from one project to the next. A constant level of graft across all projects would require a

different approach to monitoring than graft that varied widely between projects.

II - Workers, Wages and Misappropriation

Laborers on works projects often receive lower real wages than specified because of wage payments that are lower than reported, or because of long delays in payment, which necessitate their borrowing at high interest rates or selling their expected wheat payments in advance at a discount. At least a part of this shortfall between real and specified wages usually represents graft payments taken by project executors. The difference can also be seen as the price charged by project executors in rationing out scarce jobs to a highly unemployed labor force.

When contractors delay wage payments--and use their funds to cover other costs or as a hedge against delayed reimbursement--this represents a forced interest-free loan by laborers to contractors. Delay in wheat payments to workers on Food-for-Work projects, in turn, represents the bearing by workers rather than program funders of the costs of inadaquacies in the wheat-distribution system. Financing these costs and graft out of workers' wages compromises the asset-creating objectives of rural works programs as well as the income-redistributing ones, in that lower wages in construction work are associated with decreased productivity.

As noted above, graft taken out of total wage allocations before determining the number of workers to be hired--instead of out of workers' wages--results in less employment, overreporting of earth moved and underfulfilled specifications. This represents higher real project costs, paid for by program funders instead of by workers. Graft through underfulfilled specifications, then, is less regressive than graft taken out of workers' wages. Since earthwork measurements are easy to verify, moreover, it has been possible for USAID and CARE to identify and penalize the graft taken out of total wage allocations--by refusing to reimburse for shortfalls in reported earthwork specifications. This successful mechanism of post-hoc measurement, however, may also have the effect of driving graft toward the unmonitored area of laborer wages.

Wages paid by the rural works projects of Bangladesh are vulnerable to misappropriation because unemployment is high and workers are willing to be "charged" for obtaining and keeping a job--and because it is difficult for laborers to monitor their own wage payments, which

results from a certain confusion as to what is actually owed them. Confusion about the wage payment arises because (1) workers are paid by the task--a given amount of earth moved--rather than on an hourly or daily basis; (2) the completed task is measured for a group of workers, a gang of approximately 20, and the individual's wage is determined by dividing the amount owed the gang by the number of workers in it; (3) payment is made to a gang leader or a labor contractor, rather than to the individual laborer; (4) workers are paid irregularly and often at long intervals, so they do not become accustomed to receiving a certain amount; and (5), most important, the wage is composed of a two-part rate--a basic wage plus a "ration rate" for more arduous work, the latter rate being difficult to calculate. The ration rate can account for a significant share of wages, averaging 20% to 35%, and its payment is often withheld until the project is completed. Because of the ambiguity surrounding the calculation of the ration rate, it is looked upon by implementing agencies as providing an additional opportunity for misappropriation.

The vulnerability of workers to wage misappropriation on the decentralized and labor-intensive works projects of Bangladesh contrasts strikingly with the "natural" monitoring potential of such projects--in contrast to more centralized and capital-intensive projects. In the decentralized projects, graft costs are inflicted on a homogeneous, socially distinct class--local laborers--who work and live together in a small geographical area. This aggrieved party has a substantial self-interest in monitoring the way funds are handled. There is no such aggrieved class resulting from the graft that occurs in centrally-managed capital-intensive projects.

The common practice of withholding part of a worker's payment until project completion results, in part, from the fact that the construction season encompasses one of the peaks in the demand for agricultural labor--the roughly six-week period following the spring rains of April. Project committees and labor contractors feel that workers may leave them during this period, when wages for casual agricultural labor, and demands to work on one's own plot, increase. Thus the timing of the construction season from January to June results in (1) a decrease in the net employment-generating impact of works programs, to the extent that works jobs simply substitute for jobs offered after the spring rains; (2) a reduction in the real wages of workers to the extent that wage payments are withheld from them in order to keep them from leaving during April or May; and (3) increased use of labor contractors and migrant labor, which contravenes the regulations of the Food-for-Work program and the intentions of the Rural

Works Program to give employment to local labor.[1]

Recommendations

Implicit in the following recommendations is the recognition that formal regulations and sanctions regarding the payment of laborers cannot be expected to work because of (1) the collusion of workers in breaching the regulations to protect their wages, as a price for obtaining and retaining jobs; and (2) the absence of an institutional mechanism to enforce such regulations. The recommendations fall into two categories: those that increase the ability of laborers to monitor their own wage payments, and those that provide incentives to project executors to pay the specified wage, or decrease the opportunities to take graft payments out of wages.

Worker Monitoring. Measures should be taken to increase the ability of workers to know how much payment is owed them. Principally, the present two-part wage rate--the basic wage plus the ration rate--should be substituted by a single rate set in accordance with the conditions of each particular project.

A worker representative should be appointed to the project committee, perhaps filling the "landless" position on that committee, and literacy requirements should be waived for this particular position. The worker representative should be given supervisory or grievance responsibilities; or, two worker representatives should be appointed, one for each purpose. These representatives should be paid, as is the labor supervisor on current project committees. As representatives of the workers, these committee-members would have a self-interest in preventing misappropriation, in contrast to existing members of the project committees, who are drawn from the rural elites. Because of this "natural" monitoring interest of the workers, the project committees might succeed in playing the watchdog role intended for them.

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[1]The use of labor contractors and migrant labor also deprives rural works projects of two important sources of pressure to get them started and completed: (1) the interest of local landowners, who comprise project committees, in having off-season employment provided for the local unemployed, so that the latter will be available for agricultural work during peak periods; and (2) the political benefit to the local elected officials who control such projects of "doing something" about extreme local unemployment.

If the mixing of workers and elites on the project committee is unrealistic in the social context of Bangladesh, an alternative grievance mechanism outside the project committee should be considered. The approach taken to the problem should be informed by a more careful investigation of the constraints and possibilities of social organization at the local level. In particular, the allegiances of the gang leader should be assessed, along with his potential for successfully representing the workers. An incentive or payment scheme could be devised that keeps the gang leader on the side of the laborers.

Increased incentives and decreased opportunities. Local bodies are very responsive to unambiguous signals from the central government as to what types of works-project proposals will be approved--especially given that only a small portion of such project proposals is ever approved. Criteria should be introduced for project approval which consider the "wage performance" of a project committee on last year's projects. (Project construction is usually completed at about the same that next year's project proposals are being submitted.) "Wage performance" could be measured in two ways: variation of the actual wage received from the specified wage, and variation in the frequency of wage payments from the specified frequency--e.g., from the once-weekly standard of the Food-for-Work regulations.

Project committees that paid the specified wage, and regularly, might also receive cash bonuses for doing so. These performance. bonuses could be paid to central-government implementing entities as well, just as CARE imposes a penalty for underfulfillment of specifications on the Ministry of Relief and Rehabilitation. The proposed measures would have the effect of raising the cost to project executors of not paying workers properly--in terms of the cash bonus or the project approval foregone.

The construction season for works projects should be altered so as to exclude the period of demand for labor after the commencement of spring rains in April. To the extent that the partial withholding of wages results from the fear of losing workers during this period, such a modification would reduce the withholding of payments or, at the least, the justification for it. The construction season could be advanced a few weeks from mid- to early January or late December, and terminated in April when the rains begin, instead of in June; or, there could be a two-phase construction season, before and after the spring peak, with acceptance by project committees of considerable labor turnover between the first phase and the second. Such turnover, though perhaps cumbersome for project supervision, is actually desirable from the point of view of employment-generation, since it

spreads scarce employment opportunities across more individuals. A shorter construction season would require smaller projects, which would lessen the need for and the desirability of using migrant labor and labor contractors.

The possibility should be explored of depositing wage payments directly in individual accounts for workers at local post offices or bank branches, as has been done in a works programs of the Indian state of Kerala. This would make more difficult the misappropriation of wages by project committees, and the withholding of wage payments by contractors to cover other costs. To deal with the latter problem, and in the case of projects with non-labor cost components, wage payments might be authorized and transferred in a way that they could not be used to finance these other costs. Finally, in works projects where the local community pays a part, the government might limit its contribution to cover only wage costs, while the local community would pay for materials and equipment. This is exactly the opposite of the current practice, and would reverse the incentive of the present system for the community to minimize the cash cost of its contribution by relying on conscript or underpaid labor. (This last recommendation is the subject of Section IV.)

If these recommended actions were effective, they would probably result in some increase in project cost in the form of cash outlays for bonuses or commissions and the deflection of graft from worker wages to total allocations for wages or to non-wage cost components. Though this might result in more underfulfillment of specifications, such a deflection of misappropriation would also represent a shift of the costs of financing graft from workers to those who fund programs. Though underfulfillment of specifications is undesirable, then, it is also a less regressive form of financing the graft costs of works projects.

III - Earthworks Without Structures

Because of the overwhelming role of relief agencies and employment-generating objectives in the rural works programs of Bangladesh, many earthworks have been built without their structures--embankments without bridges or culverts, and canals without drains or sluice gates. The economic losses of this way of building infrastructure are obvious: the facility does not yield all its intended benefits and, in the case of missing culverts and drains, the absence of the structure causes damage to the embankment and to surrounding agricultural production.

The earthworks-only experience in Bangladesh suggests that there are also certain advantages in this piecemeal form of construction. Even in an asset-creating program, that is, there may be good reason to de-couple the task of earthwork construction from that of appurtenant structures. This will be particularly relevant in an environment where (1) technical and monitoring capabilities are scarce, (2) graft is a problem, and (3) local execution and employment generation are important program objectives.

Building earthworks separately from their structures is a much less complicated task, technically and organizationally, than building the two together. As carried out in Bangladesh, earthwork is entirely labor-intensive, requiring no equipment or materials except for the headbaskets and hoes usually supplied by workers. The equipment and materials required for structures complicate the supply logistics and management of the earthworks task considerably. The greater simplicity of the earthworks task, then, has facilitated its execution by unsophisticated local bodies, and its management by relief organizations with lean technical and monitoring staffs.

Another aspect of earthwork construction without structures is that the incomplete facility often spontaneously elicits private local contributions from surrounding communities to complete it--financing that would not be forthcoming if the complete facility were undertaken from scratch. Communities, that is, will put bamboo and timber bridges into embankments without them and they will tunnel under embankments without culverts. Though the response to missing drainage is damaging to the embankment, which will ultimately cave in over the tunnelings, both reponses illustrate the willingness of local communities to invest their own resources in the completion of infrastructure facilities. Recent grants and loans for such missing structures by donor agencies show that donors are also willing to supply the missing pieces, after it has become clear that the earthworks are in place and are missing a vital part.

Given a significantly larger number of unbridged spans than funds available to bridge them,[1] the community-supplied bridges can indicate to central planners which spans are most profitable to bridge first. Local decisions about where to put structures and how to do them

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[1]The construction activity of the WFP half of the Food-for-Work program will alone result in 1,000 missing bridges and culverts per annum for the next several years.

can therefore result in a more economically desirable mix of projects. Local choices of technique and design can also be more economically efficient and, at the same time, more compatible with the employment-generating objectives of rural works programs. For communities that raise their own funds, that is, the scarcity of capital is a more compelling constraint on project design than it is for central-government technicians choosing project designs in a capital-city ministry. Decisionmaking by such technicians is influenced equally by the professional prestige and familiarity of certain design choices, and the supervisory effiency of concentrating projects in one place--e.g., spending a budget for appurtenant bridges and culverts on one or two embankments in the same area, as CARE has done, so as to minimize expenditures of scarce monitoring and supervision resources and problems of materials and equipment supply.

Local choices, being more technically rustic, can diminish problems of supervision and supply becuase the cruder techniques rely more on locally available skills and materials. Since most equipment and materials used by contractors are imported, and subject to major delays in arrival at the project site, the use of techniques reliant on local skills and materials can reduce significantly the economic cost of structures projects. The more rustic local approach, then, may do better than "rational planning" at counteracting a certain tendency for cost inflation to occur in structures projects when choices about their design are made by technicians in central-government ministries.

Recommendations

Because earthworks will continue to be produced without their structures for some time in Bangladesh, the proposed works program should exploit some of the advantages of de-coupling the two tasks. Community willingness to respond to missing bridges and culverts with funds and organization should be encouraged by providing technical and financial support for such responses--and, in the case of missing culverts, to facilitate a response that is not damaging to the facility. A central-government matching fund should be set up to elicit these community rrsponses, as discussed in Section IV.

Technical assistance should be provided to communities in a way that increases their ability to make good use of skills and materials already in the community. Such an approach, it should be noted, might result in less a standardization of design than is usually proposed for such programs. Brick bridges merit particular attention, because rustic brick manufacture is widely dispersed throughout Bangladesh, and the use of brick as a substitute for stone and concrete in construction is common. Brick bridges, in turn, can be half as

costly as the reinforced concrete bridges preferred by central-government implementing agencies in Bangladesh.

With respect to programs that continue to rely on complete central-government funding for missing structures, two criteria for project selection could be introduced. One would give preference to missing culverts over missing bridges: the absence of culverts in an embankment gives rise to greater economic costs than that of bridges--including the fact that the community's response to the missing culvert is damaging to the embankment, whereas the makeshift bridge enhances it. Priority should also be given, in the selection of appurtenant bridges for central-government financing, to those spans that already have makeshift bridges supplied by the community. This selection criterion is a convenient proxy for choosing the spans for which the economic returns to bridging are the greatest. This will simplify considerably the identification of desirable bridge projects and the justification of their benefits, though it will not result in the concentration of project sites that minimizes supervisory resources.

IV - Financing Local Works Initiatives

The Ministry of Local Government should modify and expand its "local-participation" program so as to assist local bodies (unions) with matching funds to finance the installation of missing structures in earthwork projects. Such a program would (1) offer unions a flat allocation of government matching funds, which could be used for any project without approval and subject only to the criteria listed here; (2) limit matching-fund financing to appurtenant-structure projects only; (3) be available only to unions, the smallest administrative unit in Bangladesh; (4) limit the central-government contribution to labor costs only, while the local contribution would cover equipment and materials; (5) reward good performance in project execution and payment of labor with (a) a larger matching contribution from the central government for next year's projects, and (b) commissions paid to project executors; (6) be executed through the existing system of project committees, without use of contractors.

Providing flat allocations to unions, without requiring approval by government field officers or ministries, would remove some of the disincentives to economic project selection that now exist--i.e., ambiguous selection criteria or the bypassing of such criteria through political pressures or bribery. Local resources previously invested in bribes to get the project approved, moreover, would now go to the project itself. The resulting project choices may come closer

to those intended by "rational planning" than choices resulting from the present filtering-up system, and its incentive to maximize the number and variety of proposed projects, in the blind hope that a few will strike someone's fancy. The severing of project choice from official approval would also be consistent with the government's interest in transferring power over project selection in rural works programs from technicians to local bodies.

Projects financeable under the matching fund would be limited to appurtenant structures because (1) this would result in project choices that were by definition asset-creating or -preserving, without having to impose formal criteria on the selection process; (2) this limitation would severely circumscribe the area in which rural elites could manipulate project selection and location so as to benefit only a few of them; (3) earthworks without their structures have already proven to be a powerful magnet in drawing financing and organizing out of communities; and (4) in comparison to earthworks, structures in Bangladesh have a high non-labor cost component (60%-70%), which makes it possible for the central government to cover all labor costs and still leave a substantial amount of non-labor costs to the community.

For the central government to cover all labor costs, leaving equipment and materials costs to the community, is to reverse the traditional pattern of financing for "self-help" schemes, whereby the community "contribution" takes the form of unpaid labor. Keeping the community contribution away from labor costs, is one of the only ways of preventing the drafting of conscript labor, and the resulting regressive pattern of financing that is typical of such projects. The financing of labor costs by the central government would also encourage appropriate technical choices to the extent that the community tries to maximize the government contribution (labor) and minimize its own (equipment, materials). Since the present system of central-government responsibility for design decisions and financing of equipment and materials costs carries a tendency toward overdesign, the incentive to minimize equipment and materials costs should result in less costly projects. Finally, the limitation of the community's contribution to equipment and materials will create some natural checks on graft. Under the present system, the rural elites lose nothing of their own as a result of graft-caused faulty project execution, if the local contribution has been in the form of unpaid labor. Graft under the proposed scheme, in contrast, would compromise resources invested in the project by the elites themselves.

The limitation of the proposed matching fund to unions, the smallest administrative unit in Bangladesh, is meant to put interunion

rivalry to work for project selection and execution--instead of this rivalry being disruptive, as under the present system, which seeks to promote "integrated" planning and design of projects by groups of unions (the thanas). Unions would be allowed to continue behaving in an "unintegrated" way under the proposed mechanism, which would stimulate them to compete with each other to get scarce project funds and execute projects well. Appurtenant structures, as opposed to earthworks, are more suited to this "unintegrated" approach, since they are less likely than earthworks to involve more than one union.

The use of contractors would be discouraged under the proposed scheme, as in the Rural Works Program of the 1960s. According to Bank research, the use of contractors in rural works programs is associated with various tendencies that the proposed program is trying to avoid: higher costs, lesser labor intensity, more graft, and less efficient project selection. The use of local bodies rather than contractors would also tend to decrease that part of structures costs that results from delays in the delivery of equipment and materials because (1) local execution and local financing of equipment and materials will result in projects that use less equipment and materials from outside the area; (2) local execution will not be characterized by the juggling of equipment and materials back and forth between various projects in construction, as occurs with contractors; (3) the construction season, the busiest for contractors, is the slow time for agricultural production and hence for local elites, who will have more time available to work on the breaking of bottlenecks in supply deliveries; and (4) local bodies may be more interested than contractors in resolving delay problems--particularly in the case of drainage structures, where the lack of drainage during and after the monsoons can inflict heavy damages on agricultural production.

Rewards to local bodies for good performance would be based on measures of (1) the rapidity with which projects are executed, (2) the extent to which specifications are met, and (3) "wage" performance, a combination of the extent to which laborers are paid the specified wage, and the frequency and regularity of wage payments. These rewards would act as incentives to execute projects well and would impose costs on graft-takers, since graft-taking could result in foregone rewards. This system may be more effective than formal sanctions in dealing with graft, because it is immediate and because it is politically easier to mete out rewards rather than punishments.

The proposed scheme is consistent with the ongoing interest in the Bangladesh government in exacting contributions from the local beneficiaries of works projects. The matching fund would elicit such contributions in a way that is less regressive than current custom,

without encumbering the process with the introduction of a new tax. The proposed scheme, finally, is capable of raising funds for decentralized works programs at a time when the central-government budget for such programs is not likely to increase--because of the greater bureaucratic power of the government ministries in charge of more capital-intensive and centralized contruction programs.