AGP44

DISCUSSION DRAFT

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PROBING THE PROBLEMS OF PARASTATALS:

THE ISSUES FACING TANZANIA’S NATIONAL MILLING CORPORATION

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COMMON ABBREVIATIONS

M"D - Marketing Development Bureau

NMC - National Milling Corporation

RDD - Regional Development Director

RTC - Regional Trading Company
I. INTRODUCTION

1.1 The difficulty of defining the appropriate level of government intervention into the economy is a problem all nations confront. One form this intervention has taken is the creation of the parastatal enterprise, an organization owned by the government and chartered to carry out primarily commercial activities. The decision to maintain parastatals may be economic (to stimulate commercial activity with public investment), political (to maintain control over key sectors of the economy), or social (to provide employment opportunities and ensure equitable income distribution). Usually the motivations underlying parastatal management are a combination of all three.

1.2 Inevitably, these objectives come into conflict. The most visible—though not necessarily the most accurate—indicator of such conflict is the financial performance of the parastatal. When a parastatal soaks up millions of dollars of subsidies annually, the government must ask, How much is this worth?

1.3 Before a decision can be reached, the government must first understand what functions the parastatal is actually performing and how effectively it is performing them. The following study was undertaken to develop an approach to attacking the problem of evaluating the efficiency of parastatals—specifically those involved in marketing activities in the agricultural sector. The issue is made complex by the ambiguity of the term "efficiency". Although the disciplines of economics and finance have developed fairly rigorous
methodologies for analyzing one aspect of efficiency, no simple methodology exists for analyzing the social and political value of a parastatal operation. This last factor is particularly key since major decisions regarding any parastatal are predominantly politically motivated, given its quasi-governmental status.

1.4 The specific object of investigation was Tanzania's National Milling Corporation (NMC), the parastatal responsible for purchasing, processing and distributing staple food crops throughout Tanzania. This paper will attempt to identify and analyze the issues at the core NMC's problems, thereby demonstrating an approach to evaluating similar parastatals. Those issues which appear to be of relevance beyond the narrow NMC case will be the focus of attention.

1.5 The approach used will be to view NMC as a subsidiary component of the larger system which constitutes Tanzania's food economy. The performance of this food economy—and therefore of NMC—is shaped by two interacting factors: physical constraints and policy constraints. The performance of NMC within these constraints is further affected by its internal condition, including its operating capability and administrative efficiency. Un fortunately, for both the policymaker and the analyst, none of these factors is independent of the others. Nevertheless, by taking this approach, the policymaker is less likely to fall into the trap of treating the operational problems of a parastatal in vacuo—as if the activities of a parastatal can be isolated from the environment within which it operates.

1.6 In addition to serving as an illustration of the analysis of parastatals, this paper is also a background paper on NMC and Tanzania's food policy. The information used in this study includes material from published articles and
articles and texts, World Bank documents, Tanzanian documents and interviews during a four-week visit to Tanzania in July-August 1980 (see bibliography).

II. SUMMARY AND CONCLUSIONS

2.1 This study is intended to serve two roles:
- As an illustration of a methodology for analyzing parastatal enterprises;
- As an analysis of the issues confronting a specific parastatal.

2.2 The methodology emphasizes the investigation of the environment in which the parastatal operates, rather than limiting the focus to the activities of the parastatal. In NMC's case, this means analyzing the food economy and the social, political and economic forces shaping it. Within this framework, the discussion of NMC proceeds from the macro level to the micro, as is indicated by the chapter headings:
- Tanzanian Food Economy
- Government Policies
- NMC Operations
- NMC Management

2.3 Within each chapter, key issues are identified for separate analysis. Each analysis contains four elements:
- Background
- Problems
- Conclusions
- Recommendations

This investigation of the issues facing NMC has led to the conclusions that
- Tanzania's food economy is bounded primarily by policy constraints, not resource constraints;
- NMC's problems cannot be corrected by improving its facilities and procedures without changing the policies under which it operates.
2.4 Social, political and bureaucratic objectives—often unstated—shape the policies which govern the food economy. The conflicts and contradictions among the resulting policies have led to costly inefficiencies and social inequities. The objectives underlying policy-making must be made explicit, their costs evaluated and priorities decided upon.

2.5 NMC’s problems manifest themselves in the organization’s operations and management. The company is plagued with poor facilities and equipment as well as inadequate information, planning and control systems and an untrained staff. The result: poor products, shortages and substantial crop and financial losses.

2.6 These failures are symptoms, not problems. Repairing facilities and upgrading management will be insufficient to counteract the impact of Government policies.

2.7 At the conclusion of the paper, several recommendations are offered for improving the analysis and assistance of parastatals:

- Identify the implicit and explicit goals, motivations and incentives of the relevant actors;
- Explicitly evaluate the economic trade-off between equity (welfare functions) and efficiency;
- Identify the sources of managerial weakness;
- Determine the capability of the private sector to handled some of the parastatal’s functions.

2.8 Finally, in providing assistance to a parastatal:

- Attack problems, not symptoms;
- Concentrate on implementation;
- Provide incentives for performance directed toward desirable goals.

2.9 The perspectives gained from the study of Tanzania’s National Milling Corporation will, it is hoped, provide a basis for understanding such parastatals enterprises, and thereby assist in improving their efficiency.
EXHIBIT I

RECENT PRODUCTION PATTERNS
Estimated Production, 1977/78

(10 Tonnes x 1000)

<table>
<thead>
<tr>
<th>Crop</th>
<th>Estimated Production</th>
</tr>
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<tbody>
<tr>
<td>Cassava</td>
<td>1,400,000</td>
</tr>
<tr>
<td>Maize</td>
<td>968,000</td>
</tr>
<tr>
<td>Sorghum*</td>
<td>600,000</td>
</tr>
<tr>
<td>Millets</td>
<td>300,000</td>
</tr>
<tr>
<td>Pulses</td>
<td>300,000</td>
</tr>
<tr>
<td>Wheat</td>
<td>71,000</td>
</tr>
<tr>
<td>Paddy</td>
<td>194,000</td>
</tr>
</tbody>
</table>

*This appears to conflict with the much lower numbers in the GRTM Appraisal Report, which also drew upon MDB.

Sources: MDB Indication Agricultural Price Review, Appraisal Report
III. TANZANIAN FOOD ECONOMY

Patterns of production

3.1 The vast bulk of Tanzania's production of food is grown within the subsistence economy, meaning that it is consumed by the farming family or bartered locally. Because of this, production statistics are unreliable, as is reflected in the substantial differences between the series published by Tanzania's Marketing Development Bureau (MDB), FAO and the United States Department of Agriculture. 1/

3.2 Cassava and maize dominate food crop production. Together they account for approximately two million tonnes annually. 2/ In most parts of the country maize is the preferred staple crop. The size of the cassava crop is the result of its drought resistance and ease of cultivation and storage. As such, cassava is more of a food security crop than a dietary preference. For the same reason, sorghum and millets overshadow wheat and paddy in production (see Exhibit I), despite substantially higher producer prices for the latter two and their general preferability.

3.3 Unlike the other grains, however, wheat is not a significant subsistence crop. Wheat production is concentrated mainly on commercial farms, which produce wheat for the urban areas. Increasing effort, much

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1/ For the period from 1968-78, the USDA series on cereal production varies by 66 percent to 280 percent from the Tanzanian statistics.

2/ Of total foodgrain and cassava production of around 2.5 million tonnes, using the MDB estimates. This does not include some other staple crops, such as pulses and plantains.
EXHIBIT II
CROP PRODUCTION TRENDS AND IMPORT REQUIREMENTS
Comparative Period Averages

PRODUCTION

<table>
<thead>
<tr>
<th></th>
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<tbody>
<tr>
<td>MAIZE</td>
<td>700</td>
<td>900</td>
</tr>
<tr>
<td>PADDY</td>
<td>150</td>
<td>160</td>
</tr>
<tr>
<td>WHEAT</td>
<td>70</td>
<td>60</td>
</tr>
<tr>
<td>CASSAVA</td>
<td>500</td>
<td>1,400</td>
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IMPORTS/EXPORTS

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<tr>
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<th>1968-72</th>
<th>1976-79</th>
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<tbody>
<tr>
<td>Imports</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Net</td>
<td></td>
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</tr>
</tbody>
</table>

*No consistent data available for sorghum and millets.

Sources: MDB, USDA, [Other Sources]
of it sponsored by the Chinese, is being put into developing commercial paddy farms. Nevertheless, most paddy, and virtually all sorghum, millets, cassava and pulses, is produced on smallholder farms, where 80 percent of the cultivation is carried out with hand-held hoes.

3.4 The production of pulses appears to have increased over the past five years, though quantities are uncertain. This conclusion is suggested by rapid increases in the amount sold to NMC since the Government required NMC to purchase pulses in 1976.

3.5 Meanwhile, overall production trends have been unfavorable (see Exhibit II). Although production has increased, demand has increased more rapidly, leading to a growing dependence on imports. Tanzania appears to be losing its battle for food independence.

Patterns of distribution

3.6 Distribution systems reflect the different needs of the various actors in the system. Urban populations have a chronic and unavoidable food deficit. At the same time, many farmers cannot or do not produce everything they want or need. An efficient distribution system is in everyone's interest.

1/ MDB estimates current production at around 300,000 tonnes in the Indicative Agricultural Price Review 1981/82 (April 1980).

2/ NMC purchases have increased over 80 percent per year over the past four years to around 74,000 tonnes in 1979/80. Some of this apparent increase, is likely to be simple substitution: farmers are increasingly realizing that they can sell beans and buy back twice the weight in sembe (maize flour), thus adding to demand for maize.
3.7 Tanzania has attempted to maintain state control of the distribution system through NMC and the Regional Trading Companies (RTCs). Although this is the most visible aspect of distribution, it is by no means the largest. Depending upon how estimated, NMC only handles somewhere between ten and twenty percent of the annual production of foodgrains and cassava.

3.8 It is certainly not true that the remaining production is consumed on the farm where it is grown. Two other channels of distribution exist: barter and the informal market. Barter involves trading crops directly for other goods and services. The informal market is more commonly a cash-based system.

3.9 The scale of each system of distribution is virtually impossible to determine. In different settings, however, different systems predominate. As long as severe shortages do not develop, the formal NMC system handles the urban areas. In some of the smaller towns in which shortages occur more frequently as well as along borders the informal market is likely to be stronger. Finally, in rural areas where consumer goods are scarce and labor is bought with beer, the barter system predominates.

3.10 Although informal distribution is strictly illegal and NMC has the power to prohibit barter trade in food crops, little effort is expended to try to choke off these alternate distribution channels, primarily because enforcement would require substantial amounts of scarce resources, but also because these alternate channels are actually providing valuable services which NMC and the RTCs cannot provide themselves. Although some protest that the perpetuation of these channels leaves NMC with the rump end
of the market, in many cases these private marketers facilitate the Government’s task by serving areas too small or remote for NMC or the RTCs to reach.

Patterns of consumption

3.11 Although maize is the dominant staple crop in most regions, the populations of each region supplement or replace it depending upon what is available locally (e.g., plantains, fish, livestock, etc.) This is sometimes a matter of necessity rather than preference, such as in times of shortage. At such times rural consumption shifts to drought-resistant inferior crops.

3.12 Urban populations however, tend to be less flexible in their diet than subsistence farmers. Hence, when a shortfall hits, the urban population is unwilling to eat the inferior grains, cassava and beans that have accumulated in NMC’s warehouses. 1/ As a result, NMC must import maize, rice and wheat while inferior crops lay in storage until they are unfit for human consumption.

3.13 Consumption patterns have another characteristic which adds to NMC’s burden. When the harvest is poor, all channels of distribution tend to dry up—including bartering and the informal market—as there is less grain to f’ill them. The result is that increasing demands are put on the NMC/RTC channel, from which supplies are presumably guaranteed perspective by the Government. This further exacerbates NMC’s shortfall and requires even more importation.

1/ Or the Government is unwilling to force the switch, either because of the fear of popular discontent or because it would represent an admission of failure.
3.14 This combination of production, distribution and consumption patterns has created a highly volatile food economy in Tanzania.

Key variables in the food economy

3.15 Indeed, the only consistent characteristic of Tanzania's food economy is its instability. Several factors combine to contribute to this instability, including those which appear to be outside the control of the nation, such as the weather and the invasion by Uganda's Amin.

3.16 Much of the instability, however, is the result of Government policies. Policies regarding producer prices and consumer prices (with their implicit subsidies), Government services public investment and land reform have all played a significant role in the food economy. The impact of Government policies will be discussed in greater detail in the next section.

3.17 Another factor which is commonly discussed in developing countries but which is conspicuously avoided in Tanzania—both internally and in World Bank documents—is demography. Unlike many low-income countries, Tanzania does not have severe population pressures on the land or in the cities. One estimate indicates that less than half of the currently available farm land is under cultivation, even though over 91 percent of the mainland population is rural. 1/

3.18 While these statistics may be reassuring, they mask a significant demographic problem for the food distribution system. The census

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1/ American University, Tanzania, A Country Study, p. 193.
EXHIBIT III
TRENDS IN URBAN CONSUMPTION

[Graph showing trends in urban consumption for maize, wheat, and rice over different years.]

DSM as percent of total sales.
of 1978 revealed that the population, at 17.5 million, was growing much faster than had been thought—at an annual rate of 3.3 percent. At that rate of growth, the population increased nearly 40 percent during the decade of the seventies. Compounding the impact of this increase, the population of Dar es Salaam tripled between 1967 and 1978, representing a 10.5 percent annual growth rate. Since one-third to over one-half of NMC's maize and wheat purchases, including imports, are consumed in Dar es Salaam, this growth is putting severe demands upon NMC (see Exhibit III). An additional impact of this urbanization is a shift in consumption preferences by NMC's customers. As the urban portion of NMC's customer base increases, so does the demand for wheat. This demand has grown by 14 percent annually between 1975 at 1979. 1/

Conclusion

3.19 All of the factors which affect the stability and growth of the food economy are, to some extent, controllable. The inconsistencies in food policy are not necessarily the result of analytic incompetence, but rather they may result from inadequate information and the lack of political will. Even those hindrances which appear exogenous can be influenced through policy. Demographic shifts and consumption preferences can be influenced through policies which encourage birth control and discourage urbanization. 2/ Informal markets are influenced through pricing and distribution policies. Even the weather can be accommodated through increased irrigation, mechanization and cropping patterns.

3.20 Overall, it appears that Government policy is the most effective lever with which to move Tanzania's food economy.

1/ Least squares, log-linear growth rate. Another factor to be considered, however is that the real price of wheat flour fell during the period.

2/ The Government has exhorted the people to concentrate on agriculture rather than moving to the city, but it is not clear that any significant incentives are provided. The author is unaware of any population control program.
EXHIBIT IV
TRENDS IN PRODUCER AND CONSUMER PRICES
IV. GOVERNMENT POLICIES

Pricing

4.1 The prices of food crops, both producer prices and retail, are set by a cabinet-level committee. The Ministry of Agriculture submits recommendations on producer prices. (In turn, the Ministry of Agriculture receives recommendations from MDB.) Producer prices are uniform across all regions and throughout the entire crop year, which starts June 1. They are announced before plantings to allow farmers to adjust their crop mix. Retail prices are similarly panterritorial but can be changed more frequently. 1/

4.2 Tanzania's pricing history reflects an attempt to accommodate both producers and consumers (Exhibit IV). Producer prices have been increased—in real as well as nominal terms—in an effort to stimulate greater production. Meanwhile, retail prices have declined in real terms since 1975. The narrowed margin is not the result of increased marketing efficiency but of increased subsidy.

4.3 Although production appears to have increased, much of the increase has been in subsistence production, induced by the growth in population. The evidence does, however, indicate that prices have effectively increased the of crop marketed to NMC. This is especially evident from looking at the procurement trends for sorghum, millets, cassava and beans.

4.4 At the same time, however, demand has been stimulated by decreases in the real retail prices of premium staples—sembe (maize flour) rice and

1/ An interview with the Regional Development Director (RDD) in Arusha indicated that, in practice, RTCs can make some adjustments to local retail prices. The RDD is the chairman of the board for the local RTC.
wheat flour (Exhibit IV). Most real prices, peaked in 1975, when the
Government raised prices in the face of the severe shortfalls of
1973-75. Compared to the period before these price hikes, current
real prices of rice and wheat are slightly higher, though sembe prices
are still lower.

4.5 Distorted prices are responsible for a variety of ills, many of
which fall under the rubric of economic inefficiency, about which much
has been written. But misallocation of resources aside, the most dangerous
problem is food shortage, which results when the distribution system
cannot provide all the food demanded at the quoted price. This is
apparently a chronic problem with wheat flour and was a current problem
with sembe in July and August 1980. The Government implemented an ex-
pedient solution to the sembe shortage: for the first time, NMC was al-
lowed to sell unmilled maize, but at a price above that of sembe. 1/
Consumers could then have the maize milled privately.

4.6 Although there is some economic logic underlying this move—to
speed throughput and increase effective prices—the policy is a contradi-
tion of the original pricing objective, which was to provide an improved
level of welfare for those who depend upon sembe as a staple. By
creating this pricing skew, those who are sufficiently resourceful to
get some of the scarce sembe benefit from a large subsidy, while the rest
of the buyers either curtail consumption or pay much higher prices.

1/ Currently maize is sold for shs.1.85 and sembe is sold for shs.1.10.
Ironically, the system which is motivated by considerations of equity must sacrifice equity for the sake of political and economic expediency.

4.7 Unfortunately, because the welfare function of Government pricing policy is not explicitly stated, the welfare implications of these policies are not explicitly analysed, nor are the costs to the country measured. Instead, NMC has been left to absorb the cost. Not until 1980 did the Government provide NMC with funds to cover the expense of selling sembe below cost. Meanwhile, NMC has been taking the responsibility for years of subsidies, and now it is receiving the blame for the resulting financial impact.

4.8 The other side of price-induced shortages is price-induced gluts. In an attempt to stimulate production of drought-resistant crops, the Government dramatically increased the producer prices of cassava, sorghum, millets and beans in the mid-70's (Exhibit IV). The supply response was excellent. At the end of 1979, NMC held over 200,000 tonnes of these crops in storage, while at the same time importing similar quantities of maize, wheat and rice. Under the current pricing schedules a farmer can sell one kilogram sell one kilogram of beans and buy three kilograms of sembe with the money. Although Government justifies the policy as food security, it appears to be an extraordinarily ineffective and costly approach. (This will be discussed further under the section on the "Strategic Grain Reserve.")

4.9 Both shortage and glut reflect the failure of pricing policies. Under the current system, producer price analysis is isolated from consumer price analysis. In such a setting, distortions are inevitable. In addition to the direct cost of hidden and explicit subsidies and inventory accumulation, price distortions and resulting shortages create strong incentives for the development of informal market channels.
4.10 A great deal of academic time and effort has been devoted to the economic analysis of price policies. But in the Tanzanian case, the failure is not intellectual—it is bureaucratic. For bureaucratic reasons, the analyses of supply and demand have been isolated, and the welfare aspect of pricing policy has not been made explicit. Thus, Tanzania has not faced the decision of how much of its welfare distributions it wishes to make through the food system.

4.11 Part of process of reforming pricing policy requires that NMC maintain timely and accurate financial information. This will be discussed below (see Chapter VI "NMC Management").

**Crop purchasing**

4.12 The Government of Tanzania has guaranteed the purchase of certain agricultural products through several parastatal organizations, including NMC. In general, major export crops, such as coffee, cotton and tobacco, are handled by separate parastatals. NMC is chartered to purchase, process and distribute a variety of food crops. In the crop year 1979/80, sixteen different crops were purchased by NMC (Exhibit V). The Government decides which crops NMC must purchase. Most of the current crops were added to NMC's list during the 1970's.

4.13 Unlike other parastatals, NMC must provide cash advances to villages prior to receiving crops. The policy was instituted after the Government abolished agricultural cooperatives in 1976. The cash advance system was imposed to reassure farmers that they would receive prompt payment if they marketed their crops to NMC.
4.14 As with pricing policy, many crop purchasing policies are implemented without regard for their ultimate cost. Crops were added to NMC's purchasing list in order to stimulate production and mobilization of drought-resistant crops. This is basically a welfare function, yet NMC has been expected to bear the cost of accumulating inventories of these undesirable crops. Currently the problems arising from procuring so many minor crops are coming to light, such as the disproportionate transportation and administrative expenses, as well as high carrying costs. The Party review of NMC operations, announced in June 1980, recommended that the number of crops NMC purchases be reduced by dropping many of the minor crops (or transferring responsibility for them to a different parastatal).

4.15 Similarly, the actual cost of the cash advance system was never considered in its implementation. Inevitably some of the money would be misused given the difficulties of controlling cash disbursed to thousands of villages. Furthermore, NMC was not given any lever with which to demand repayment of disbursed cash for which no crops were received. Because crop procurement has priority, NMC must continue disbursing cash if the village claims it has run out. The result is that over shs. 100 million is outstanding as debt owed by villages to NMC, and less than half of this is even potentially recoverable. 1/

4.16 Although NMC is arguably to blame for administrative failure, the company cannot be held solely responsible. These crop purchasing

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1/ As of March 1980. (MDB, Report on NMC.)
policies were devised as welfare functions, not as business decisions. The costs of these welfare functions should be explicitly identified and analyzed in light of their value. As it is, these costs are hidden in NMC’s losses and explained as inefficiency.

Strategic Grain Reserve

4.17 Tanzania is receiving bilateral aid for the creation of the storage capacity and the grain for a Strategic Grain Reserve (SGR), which should be in place by 1981. NMC will be responsible for managing it, but the principles of its operation have not yet been decided upon—that is, what will trigger the release of stocks, when will stocks be added to, what mix of grains will be held, etc. Some of these management issues will be examined under the Grain Storage and Milling Project.

4.18 The SGR can potentially play two roles: as an emergency stock to prevent famine or as a buffer stock to alleviate temporary shortages. Tanzania does not have a chronic famine problem, thanks to its demography and a reasonably effective distribution system. The Government claims that even during the 1973-75 crisis no one died because of starvation. Further, the fact that NMC regularly has a carryover stock of over 200,000 tonnes suggests that famine relief is not a particularly pressing problem.

4.19 Thus the SGR must be justifies as a buffer stock for alleviating temporary shortages. A buffer stock would have political as well as economic value. Its political value lies in its potential for quelling the discontent arising from shortages of preferred crops. Its economic value arises from stifling the growth of informal markets in the scarce grains. Despite the fixed-price policy in the formal distribution channel, buffer
stocks could still have a price moderating impact by holding down prices faced by consumers forced into the informal market.

4.20 Both of these arguments for a buffer stock require that the Tanzanian SGR contain maize, wheat and rice, the crops which are chronically in short supply. And yet comments from NMC managers indicate that the Government is planning to substitute inferior crops—sorghum and cassava—for SGR stocks supplied through bilateral aid. If the premium crops are replenished regularly—most likely through imports—the buffer stocks effectively become operating stocks. Given that the premium crops are, chronically scarce, the Government will probably be unable to avoid using the SGR for operating stocks. If, on the other hand, the premium crops are not replenished and inferior crops are substituted, the SGR will not be usable as a buffer stock.

4.21 Another argument made in favor of a buffer stock is that it improves the government's flexibility to buy when prices are low for release when prices are high. But this is unlikely to yield any economic benefit for Tanzania. A conservative calculation puts the carrying cost of a 100,000 tonne buffer stock at $50 per tonne, at least. 1/ In the past volatile decade, the world price of maize has only once increased by that amount: in 1972-73, the real price of maize increased by $56. 2/ Hence, Tanzania would do better buying on the spot market

1/ The calculation assumes a construction cost of shs.204 million for 100,000 tonne storage capacity, using costs quoted in the Grain Storage and Milling Project Appraisal. At 10 percent cost of capital, with 20 year depreciation, the annual capital cost is $20 per tonne, using a shadow exchange rate of shs.12 per dollar. If filled with maize and wheat averaging $200 per tonne c.i.f. the capital cost of the stock is $20 per tonne annually. Assuming extraordinary efficiency, operating costs—including maintenance, fumigation, administration and incremental losses—are estimated at $10 per tonne. Note that if an opportunity cost of capital of 19 percent is used, which is the World Bank's estimate of the economic rate of return on new operating storage, the capital cost alone becomes $71 per tonne annually.

90 percent of the time, if past experience is a guide. Even better, Tanzania could consider buying forward in the international grain market to hedge against crop shortfalls.

4.22 Cost is not the only justification, however. The other justification is timing: a buffer stock would be immediately available when shortages appear, whereas purchases on the international markets would take several weeks or months to deliver. But the true constraint here is information, not time and distance. Urban demand is sufficiently predictable that inventory requirements can be months in advance. Better information would identify emerging shortages in rural areas as well. (Furthermore, rural shortages are likely to be less severe because of the greater flexibility in diet and the tendency of farmers to maintain their own emergency stocks.)

4.23 Therefore better management of NMC's current inventory is likely to provide a much higher return than the SGR. Indeed, if NMC cannot effectively manage its operating inventories, it seems unlikely that it will be capable of managing the SGR.

4.24 The Strategic Grain Reserve is another example of the impact of bureaucratic politics on the Tanzanian food system. By making NMC responsible for the SGR, the Government is assured a scapegoat if it fails.

4.25 At the same time, Tanzania has no incentive to suggest that the aid for the the SGR be spent elsewhere. Grain reserves and "food security" programs are currently in vogue. Donors that are interested in establishing buffer stocks may not be interested in funding operating stocks. To suggest that an SGR is not the best application of resources would probably result in a net reduction of aid. Thus, in the name of strategic reserves, Tanzania willing to receive free grain and storage.

Decentralization

4.26 The Arusha Declaration of 1967 emphasized the importance of having the Government control "the major means of production and exchange".
Although small private operations were allowed to continue, the economy became highly centralized under the management of newly created or reconstructed parastatal organizations, which were responsible to appropriate cabinet ministries.

4.27 In a move to increase local self-governance, Tanzania undertook a program of political decentralization in 1972. The resulting regional and district organizations do appear to have increased local control over administration, but because coordination and funding for development must come from the central government, decisionmaking is still effectively centralized.

4.28 Nevertheless, decentralization has become a favored solution within the Party. Another demonstration of this approach was the villagization program, which originated in 1960 with a World Bank recommendation, was reshaped in the Arusha Declaration, and was pursued in earnest in the period shortly after 1972. 1/ Village officials became responsible for acting as NMC's procurement agents after farmer cooperatives were abolished in 1976. Meanwhile, however, the food crop marketing system was increasingly centralized under NMC as more crops were put on its procurement list.

4.29 In June 1980, in the face of NMC's deteriorating financial situation, the Party announced its recommendation that NMC be "decentralized." The statement did not, include any explanation of the reasoning behind this move. It is certainly not obvious that decentralization is a solution to NMC's problems. To the contrary, rapidly changing policies have already forced management and organizational responsibilities on NMC faster than it can handle them. The tendency by the Government to promulgate new policies without careful considera-

1/ The link between villagization and the World Bank is made in Tanzania—A Country Study (see bibliography).
tion of the management requirements to implement them has been part of NMC's problem. Fortunately, in this instance, the Government has commissioned a Task Force to consider these issues before reorganizing NMC (for the third time since 1974).

4.30 In some ways, increased decentralization may alleviate certain difficulties at the branches, particularly in their financial management (see Annex I). An attempt was made to decentralize the accounting system, but it has not yet been fully implemented. One advantage of increased decentralization is that it provides regional branch managers with a strong incentive to look after their regional self-interest, which should include operating more efficiently. Under the current system, a branch manager has neither the responsibility nor the authority to look after the region's interest.

4.31 RTCs are an example of the advantages of a decentralized, partly adversarial system. Although RTC management is not subject to the market, it is subject to the electorate, since the chairman of each RTC is the Regional Development Director. Thus an RTC is more likely to be responsive to local needs than centralized distribution operation in Dar es Salaam.

4.32 Decentralization is a potentially valuable approach to improving organizational effectiveness in the food economy—in part because the system as a whole is too complex to manage centrally and in part because of the incentives decentralization provides. It is not, however, a prepackaged solution. Retyping the organizational chart will not improve efficiency without careful consideration of the implementation process.
4.33 Self-reliance is the stated objective of Tanzania's food policy. The Government contends that a country that imports food is not truly independent. As a result, substantial development emphasis is placed on the agricultural sector. 1/

4.34 Unfortunately, Tanzania's degree of self-reliance has actually deteriorated since the policy was announced in 1967. Not only has the country recently been importing a larger absolute volume of foodgrains, it has also increased the proportion of total consumption it has to import (Exhibit V.). In the same period, foreign aid to Tanzania has steadily increased.

4.35 The pursuit of self-reliance should be questioned both in terms of its logic and in terms of its execution. The logic of self-reliance is that it frees a country from the potential pressures which could be applied by its sources of supply, either intentionally or due to market fluctuations. To avoid this, Tanzania has poured substantial amounts of development funds into increasing food production, plus the additional funds which go into the cost of pricing and purchasing policies. No consideration has been given to how much the country should be willing to spend in pursuit of this elusive self-reliance. The world grain markets are quite accessible to Tanzania. Economic logic suggests

1/ Despite the public proclamations on the importance of agriculture, the sector receives less than half of the development funds received by industry (Government of Tanzania, Third Five Year Plan for Economic and Social Development). These figures, however, may not accurately reflect comparative emphasis since they do not include the costs of the pricing and purchasing policies discussed above.
that Tanzania might do better to invest its development funds in projects
which are more productive, and which would earn the foreign exchange
needed to purchase food. Many developed countries have done quite well
as net food importers.

4.36 Still, if it were not too expensive, self-reliance would be the
preferred position. Since the current approaches have not succeeded in
achieving it, other approaches must be considered, such as allowing the
private sector a broader scope of activity.

Social Philosophy

4.37 Tanzania's President Julius K. Nyerere has articulated the
ideology of the country as ujamaa (familyhood), which he suggests is a
culturally ingrained form of socialism. In such a society, the people
together own the means of production, under the trusteeship of the
Government. In turn, the Government, as trustee, provides for the wel-
fare of the people and ensures that the wealth of the nation is
equitably distributed.

4.38 In pursuit of ujamaa, major industries were nationalized and
a program to create ujamaa villages—voluntary collective farming—was
undertaken. The villagization program, however, was not entirely volun-
tary, as officials resorted to coercion to resettle dispersed
populations. The period of intensive villagization coincided with the
poor crops of 1973-75. Although the Government insists the shortfall
was due to drought, outside observers have suggested villagization
contributed significantly to the crop failures of the same period. 1/

1/ Michael F Lofchie, "Agrarian Crisis and Economic Liberalization in
pp. 451-75.
4.39 Moreover, study of traditional African agriculture suggests that the Government’s conception of socialism is not what we culturally ingrained. Although it is true that individuals did not own land, families did hold the right of tenure to the land they cultivated. Furthermore, differentials of wealth and income were not actively prevented. More prosperous farmers hired the labor of fellow tribesman to help cultivate their fields, paying them with beer made from surplus crop. 1/

4.40 Tanzania must pay a price for its commitment to socialism. Not only has ujamaa been unsuccessful in the agricultural sector, the Government’s policies have placed barriers in the path of development throughout the economy. The controls on the economy have inhibited any substantial foreign investment. In fact, in 1977-78, more long-term private capital flowed out of the country than in. 2/ At the same time, centrally planned allocation of domestic and foreign aid funds results in politically favored projects receiving support while economically productive projects may suffer. A poor society cannot afford to concentrate on welfare at the expense of productivity.

4.41 The current environment also fails to provide effective incentives for workers to fully apply their talents. Because of the scarcity of consumer goods and the restrictions on their ability to accumulate wealth, peasants have little incentive to produce a surplus.


At the same time salaried workers have scant reason to expend extra effort, they have little stake in the company for which they work for. At NMC, it is difficult to get fired without committing a crime, and there is very little upward mobility. In the private sector, entrepreneurship is stifled, either because all of the key industries are publicly owned or because of the fear of nationalization.

4.42 The problems of NMC and Tanzania cannot be solved simply by expanding facilities and training. Workers must also have the motivation to apply their training and use facilities efficiently. To attack parastatal inefficiency, incentives must be restructured before technical and economic problems can be solved.

Conclusion

4.43 Understanding the problems of NMC requires the broader perspective of Tanzanian policy. NMC is not merely a commercial entity carrying out food marketing and processing as a business, NMC is also an instrument of state policy. As such, it bears the managerial responsibility and the financial burden of providing state services. Thus NMC cannot be judged on purely commercial terms, such as financial performance. It must be judged in terms of its fulfillment of Government objectives, some of which may not be explicit, such as keeping the urban population content or serving as a scapegoat for policy failures. Understanding the impact of these policies and the objectives underlying them is a necessary component of analyzing the efficiency of a parastatal.
V. NMC OPERATIONS

5.1 While a great many of the roots of inefficiency can be found in the mandates of Government policy, problems are usually identified in a review of operating performance.

Procurement

5.2 NMC is responsible for purchasing food crops from villages and transporting it to storage and milling facilities. Purchasing is carried out through a cash advance system whereby village agents receive cash from NMC before farmers present their crops for sale. (The mechanism and problems of the cash advance system are discussed in greater detail in Annex I, part IV.) NMC also provides bags and twine, and sells the villages weighing scales.

5.3 Once the village procurement stations have accumulated enough crop, NMC arranges to have trucks transport the crop to district depots, and thence to the branch. The transport system includes a loss control system designed by Coopers and Lybrand as part of a 1977 overhaul of the accounting system. In theory, the crops are weighed and their quality tested before being loaded on the truck. A consignment note is filled out stating the crop, grade, weight and number of bags (which should be of standard weight). If the figures do not agree when the transporter reaches the weighbridge at the NMC warehouse, the transporter is liable for the loss, less a four percent allowance for shortage. 1/

1/ Mr. J. Rubibira, the Procurement Manager, stated that transporters were allowed a four percent loss, but Mike Sackett at MDB commented that he did not believe this was the way it is supposed to be done.
5.4 The main problems in the procurement system are: (i) village debts arising from cash advances, (ii) high transport costs, and (iii) stock losses. The problems of the cash advance system are discussed in the previous chapter and in Annex I.

5.5 High transport costs arise from NMC's almost total dependence on hired transport and from inadequate scheduling. Hired transport represents 35 percent of total expenses (excluding raw materials cost), and is nearly twice as great as labor costs 1/. It cannot be concluded, however, that these costs are excessive. Regional transportation prices are set by the Regional Price Commissioner for all transporters 2/. There is no evidence that NMC is overcharged under that system. NMC's own fleet of trucks is small and poorly maintained. NMC is not likely to operate and maintain trucks more efficiently than the private transporters it hires. And current rates are likely to be close to the economic cost of operating trucks, given road conditions and maintenance service. Rather than providing NMC with a fleet of trucks, the Government might have more impact in reducing transportation charges through a variety of other approaches, such as improving roads and the availability of spare parts, or eliminating NMC's requirement to purchase minor crops that have no market value, as is currently proposed.

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1/ MDB, Investigation into NMC, May 1979. The figure for hired transport is partly interregional transport as well as infraregional. No breakdowns for all of NMC are available, though judging from the Arusha branch, the interregional transport cost is probably somewhat less than a third of total transport.

2/ In Arusha, the standard rate for 1980/81 is shs. 1.55 per ton mile, plus a premium for short hauls and bad roads.
5.6 Another approach to reducing transport cost is better scheduling. Since this is most applicable to interregional transfers, it will be discussed below ("Distribution").

5.7 The evidence on stock losses is mainly anecdotal. No reporting procedure systematically tracks such losses, since the control system is supposed to recover any losses from the transporters. But the control system is not adequate when villages lack adequate scales, when transporters are given a shrinkage allowance, or when truckloads disappear altogether.

5.8 Nevertheless, within the current policy constraints, NMC’s performance cannot be considered dismal. Additional effort should, however, be put into buffering the control and monitoring systems.

Storage

5.9 NMC maintains storage facilities at district depots and at twenty-four regional branches (Dar es Salaam has four branches). Storage at the village procurement centers is the responsibility of the villages. Most closed storage is the warehouse type, stacks of gunny bags on wooden pallets, though NMC does have three bulk storage silos. A substantial amount of storage is also open, underneath tarpaulins.

5.10 The inventory accounting system revolves around "bin tickets," cards attached to each stack of bags in a warehouse. Additions and removals are supervised and entered onto the bin ticket, as well as into a stock ledger.

\[1/\] A complete inventory of NMC storage facilities can be found in the Grain Storage and Milling Project appraisal report.
In theory, a physical inventory is supposed to be taken each month and reconciled with the bin ticket. In practice, most branches take a physical inventory only once a year.

5.11 As a result, it is very difficult to track stock losses in the system, either through pilferage or deterioration. Such losses, according to the appraisal team for the Grain Storage and Milling Project, amount to 30 percent of annual procurements for closed storage, and 40 percent for open storage. These losses are attributed to inadequate facilities and inadequate training.

5.12 Rather than assuming that more facilities and training would be sufficient to reduce these losses, perhaps it would be useful to ask why facilities and training are insufficient. Part of the reason is that controls are not adequate to establish an effective system of accountability for poor maintenance and stock losses. Tanzanians knew about crop storage long before NMC was created, but within the framework of NMC, there is no incentive to apply common sense.

5.13 In addition, an apparent shortage of storage facilities could be due to a failure to efficiently utilize national storage capacity, both public and private. NMC's inventory management and distribution seem so poorly managed that it is likely that storage capacity utilization can be improved by more efficient allocation of inventory (see "Inventory Management" in Chapter VI). This is speculative, however, since no data is available on this. The second factor that must now be considered is the impact of eliminating minor crop procurement from NMC's responsibilities. 1/

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1/ The elimination of minor crop purchasing seems such an obvious approach to improving NMC's situation that it is surprising that more emphasis was not put on such a possibility in the Grain Storage and Milling Project. The potential yield of the approach is mentioned in the Appraisal Report, but the option is assumed to be unviable.
5.14 Finally, Tanzania should consider the potential value of using private storage: on-farm, cooperative, or entrepreneurial. Such an approach would not only reduce storage requirements it would also relieve pressure on NMC’s transport operations by spacing the delivery of crops more evenly throughout the year 1/.

Milling

5.15 NMC’s milling facilities and their performance are discussed in detail in the Staff Appraisal Report of the Grain Storage and Milling Project. Again, however, no analysis of the value of using private sector milling is carried out even though NMC already uses some private milling. Informal discussions with Tanzanians indicate that privately milled maize would be preferred to NMC’s, if it were not for the radically skewed prices between sembe and maize. It is claimed that private mills provide a higher quality sembe than NMC’s mills. In addition private mills appear to have a much better extraction rate 2/.

5.16 Thus, rather than building new mills, NMC should sell unmilled maize at a price that provides a subsidy comparable to that for sembe. Not only would this be cheaper (decreased milling costs and decreased extraction losses), it would also increase the system’s throughput rate by eliminating the milling bottleneck.

Distribution

5.17 NMC is responsible for moving foodcrops from surplus regions to deficit. Because of the location of its mills, NMC also transfers crops from deficit regions to mills and back. Regional Trading Companies and other purchasers. (Dar has its own

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1/ Again, no analysis of the cost of private storage appears in the Appraisal Report of the Grain Storage and Milling Project.

2/ Local private millers receive maize from a customer and return the same weight in sembe and bran. NMC loses 5-6 percent (at the Arusha mill) of the weight in the process, though much of this difference may be due to using maize which has not been cleaned. See Annex I, “Stock Losses”, for a discussion of NMC’s milling losses.
distribution organization, and large institutions purchase directly from NMC) buy from their regional NMC branch, and are therefore not responsible for managing interregional supplies. In addition to these sales, MNC is also responsible for providing famine relief, when necessary.

5.18 The main problem in NMC's distribution lies in the absence of an established system of inventory management on a national scale (see "Inventory Management" in the next chapter). The result is that costs are high and shortages frequent. As in the case of procurement, transportation rates are fixed by the Government. 1/ There is no indication that they are excessive. Rather than blaming high transport rates or insufficient NMC trucks, it is more appropriate to look at management practices. Because of poor planning, crop that could be shipped by railroad has to be shipped by truck to prevent a severe shortage. (Railroad shipping rates are one-third those of trucking.)

5.19 In addition to being expensive, the current distribution system also generates tremendous cash flow imbalances between surplus and deficit branches because surplus brancher must pay the cost of interregional shipping, but they are not reimbursed for the expense (see Annex I, "Branch Cash" and "Accounting Practices", for a detailed discussion).

5.20 The current Party proposal to decentralize NMC may create problems in the distribution system. Even in the current environment, regional rivalries concerning food are apparent. 2/

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1/ Transport charges for 1980/81 for interregional transport: 1) One-way shs. 3.60 per ton mile; 2) Round-trip loaded one-way, shs 4.45 per ton mile; 3) Round-trip loaded both ways shs. 6.10 per ton mile. (Source: NMC document.) Note that even though interregional rates are more than twice as high as interregional, the latter represents the greater expense with in NMC.

2/ The RDD of Arusha complained that "Arusha feeds Tanzania" and yet must eat famine relief imports itself.
Increasing the control by regions of crop distribution will give surplus regions a lever which may cause conflict. Under uniform panterritorial pricing, the authority to allocate supplies between regions must be centralized. Because of the need to coordinate NMC's activities nationally while avoiding regional conflicts, Tanzanian's distribution system would not benefit from NMC's decentralization the way it did by creating RTCs.

Conclusion

5.21 Overall, operational problems are attributable more to Government policies and management practices than to constraints in facilities and training. In its review of NMC's operations, a World Bank team commented that "there were numerous areas obviously open for improvement which were not carried out despite the fact that management was aware of them". 1/ Stock losses, transport expenses, deteriorating facilities and inadequate training have all been highly visible operational problems. But they cannot be solved in purely operational terms. Management must have the ability and the incentive to make improvements before they will be carried out. At the root of many of NMC's operational problems is a weak management system.

VI NMC MANAGEMENT

Organization

6.1 NMC was chartered in 1968 as Tanzania's primary processor of staple food crops. In 1975, it was more fully integrated when it took over the crop purchasing responsibilities of the National Agricultural Products Board. The company is

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1/ Appraisal Report, Grain Storage and Milling Project.
organized around 24 regional branches, which are responsible for crop
procurement and storage. Several branches also have mills, for maize,
wheat, paddy, cassava, or animal feed. In addition, NMC operates significant
bakery, cannery and wine-making operations.

6.2 Management of operations was highly centralized until 1977, when
branches became responsible, in theory, for their own financial management.
In 1979, headquarters was reorganized in an attempt to improve management by
increased delegation of functional responsibility.

6.3 Despite these efforts, NMC's management appears to have become
progressively weaker, if measured by its inability to control losses, maintain
facilities and find a solution to the growing problem with its bank overdraft.
One of the key reasons for these failures is that top management does not have
sufficient reliable information to control such a large and complex operation.

6.4 Thus either the information system is bad, or the organization is
is bad—or both. There are advantages to a centralized organization. In a
system with highly interdependent components, centralized coordination is
vital. Nevertheless, it is inefficient for decisions to be executed at a level
higher than is necessary. The only activities which headquarters must coordi-
nate are interregional transfers, imports, exports, capital budgeting, and
branch performance monitoring. Although the accounting system was decentra-
lized in principle, headquarters has still not released its grip on finances.
In part, however, this is due to the problems created by Government policies
on pricing, subsidies, and capitalization.
6.5 In order for increased decentralization to be effective, improved methods of control must be implemented to ensure that lower-level managers are made accountable for their responsibilities.

Management information, planning and control

6.6 Much of NMC's current information system was designed by Coopers & Lybrand as part of the decentralization of the accounting system. 1/ In addition to financial information, an entirely independent information system on stocks is maintained by the Procurement Department. Data on milling production, imports, exports and other activities is also collected. 2/

6.7 Channels of information tie together village, district depot, regional branch, national headquarters and the Government. Although a substantial amount of data is collected and aggregated, it is not effectively used.

6.8 An information system serves two functions: to improve the ability to make good decisions, and to improve the ability to implement actions. The first function is planning; the second, control. For information to be used effectively for planning and control valid data must be reported in a comprehensible format to the appropriate level of management.

6.9 NMC's management fails on all these counts. Although vast quantities of data are collected, it is usually so inaccurate, incomplete or late that it is no longer valid for decisionmaking purposes. Further, some critical data is not even collected, such as monthly stock losses. The problem is partly design, partly execution.

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1/ A detailed accounting practices annual, in two volumes, was distributed to Branches. Annex I discusses how financial information is handled.

2/ The Planning Department is attempting to put out a Quarterly Bulletin pulling together the information from these various sources.
The execution of data collection is limited by Tanzania's poor communications network and by the low priority given to the collection of some data at various levels in the organization. If any point in a collection channel shuts off, the whole channel is weakened or closed. For example, because two branches had not completed their books, the entire NMC organization had no complete financial records for 1977/78 as of August 1980. Such problems may be attributable to the design of the system, or to a failure to put some fire under the feet of those responsible.

6.10 NMC has also had problems developing a useful reporting system. Data is usually aggregated into large, indigestible tables, lacking good summaries and highlights. Furthermore, too much effort is being expanded to aggregate data at headquarters, with logjams resulting. If branches were given authority to make decisions at branch level, less data would have to flow to headquarters. Establishing clear lines of responsibility is a necessary prerequisite for an effective reporting system, for responsibility creates a demand for focused information. A report is not useful if forced upon a manager—he or she must demand it.

6.11 The result of this poor information system is that planning and budgeting are not regularly carried out. Without good budgeting, control is weakened, for performance cannot then be monitored and evaluated.

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1/ The issue of report format was dealt with in a memo on "Planning in the National Milling Corporation of Tanzania", from William M. Reickert to William Candler, dated August 25, 1980. An effort to revamp NMC's stock reporting system is being carried out by Jan Jansonias under an FAO/UNDP project.
One practical result of this breakdown, for two years, 1977-78, NMC was not reimbursed by the Government for much of the cost of subsidized retail prices because it could not put together the data to quantify the cost.

6.12 A more effective information system is essential to provide a true picture of NMC's current position, to plan the allocation of resources, to enforce accountability, and to reward performance. The first step toward achieving this is to establish clear and rational lines of responsibility and then determine informational priorities. A triage approach should be applied to the data collection system so that channels are not clogged with low priority information. In addition to these organizational reforms, the system would benefit substantially from improvements in training and clerical machines.

6.13 Management's two key responsibilities in NMC, inventory and finances, are entirely dependent on a good information system. They are dealt with below.

**Inventory management**

6.14 NMC must coordinate the flow of food crops throughout Tanzania. Basically, this is a matter of inventory management. Most of the crops purchased by NMC are transported out of the region in which they are grown. 1/ Within constraints in storage facilities and time delays in transportation, NMC must juggle stocks of raw material and finished products so that no region starves and no branch is overburdened.

6.15 The current approach to this task is what might be called the "brush-fire technique" of management. Stocks are shipped when a branch manager complains—either he is running out of storage or, more critically, he is running

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1/ Both Coopers and Lybrand and the Government of the Netherlands have analyzed the interregional crop flow patterns in detail. See bibliography for references.
out of food. The Procurement Manager at headquarters is then responsible for deciding what transfer should be made, e.g., if a branch is running short, which other branch should supply crop and how much. He then sends a transfer request to the supplying branch. It now becomes the responsibility for arranging transportation and paying for it, (knowing that the branch will not be reimbursed with cash for its expenditures). This means that supplying branch managers have little incentive to hasten shipments. The result is delays throughout the system. Ad-hoc transfer decisions are partly responsible for high interregional transport costs. Rush shipments are sent by truck rather than by less expensive rail.

6.16  In addition to managing regional inventories, the Procurement Department must manage required crop imports. Prior to crop year 1979/80, this was done on a predominantly subjective basis. During 1973/74--75/76, when MNC had to import two-thirds of its cereals requirements, frequently the determining factor was not how much was needed, but how much could be delivered through the ports and transport facilities. 1/ Recently, under an FAO/UNDP project, NMC has begun to systematize its inventory management system by integrating it with crop forecasting (Early Warning System). By improving its ability to predict import requirements, NMC should be able to improve the terms on which it gets commercial imports. Establishing better crop information is the first step toward managing inventory more rationally.

1/ In crop year 1973/74, imports were 59 percent of total cereal purchases to 409,000 tonnes; 74/75, 87 percent of 518,000 tonnes; 75/76, 66 percent of 422,000 tonnes. (Source: Appraisal Report Grain Storage and Milling Project). See also Exhibit V.
6.17 Furthermore, inventory policies should reflect consumer demand. Some attempt is made to mix the flour of inferior crops with premium crops when shortages develop, but Government pricing and purchasing policies still limit NMC's ability inventory efficiently—even during shortages, inferior crops lay rotting in storage. The Government is unwilling to raise the price of subsidized premium crops during shortages (except indirectly by allowing the sale of unmilled maize) nor to lower the price of inferior crops.

6.18 Still, many of the problems of inventory management are NMC's responsibility. Before NMC will be able to manage the Strategic Grain Reserve, the problems of information, management skills, incentives and logistics will have to be solved.

Financial Management

6.19 The efficiency of an organization is frequently measured by its financial performance. In the case of NMC, this is both difficult and disheartening. Difficult because NMC's books are in chaos—the most recently audited annual financial statements are for the fiscal year 1975/76. Draft statements are available only through 1977/78. 

After a review of the accounts of one of NMC's branches, there is reason to believe that once the accounts are consolidated, they still do not provide a very accurate picture of NMC's performance and condition.

6.20 The disheartening aspect of NMC's financial measures is their indication that NMC is a substantial economic drain on the country.

1/ In best source of current financial data on NMC is MDB, which has constructed provisional statements in its report on NMC.
Not only is NMC losing millions of shillings annually but it has also been steadily accumulating a huge debt. 1/ As of August 1980, NMC’s overdraft with the National Bank of Commerce amounted to shs 2.2 billion. 2/.

6.21 One root of these problems has already been discussed: Government policies. The other, interrelated root is poor financial management. The fault can be put on both the design and the execution of the systems involved.

6.22 The financial management system designed by Coopers & Lybrand is an example of the best being the enemy of the good. It is a comprehensive reporting, planning and central system, yet it is not designed around NMC’s priorities. A delay anywhere in the system can bring everything to a halt. The system should be designed so that vital information (cash position, inventory, overdrafts, stock losses, transportation expenses and sales) are transmitted immediately, and secondary data (wages, employee loans and advances, breakdown of debtors and creditors) are given lower priority.

6.23 Execution within this system is hampered by poor training and a lack of simple equipment, such as adding machines and calculators. Forms, journals and ledgers are not filled in correctly in addition errors are common. In part, however, clerical performance can be explained by the lack of accountability or incentives to improve performance. (See "Manpower and training" below).

1/ In the three years from August 1, 1975 to July 31, 1978, NMC lost an estimated shs 235 million. (Source: MDB).

2/ From an interview with Mr. Rao, Finance Manager of NMC. This overdraft is equal to over 25 percent of the Tanzanian money supply, and over half of the money supply increase since 1975. From this it appears that NMC by itself is a substantial source of inflation in the Tanzanian economy. Any economic analysis of NMC should take this into account.
6.24 A more detailed discussion of cash management and accounting practices and problems is presented in Annex I.

Manpower and Training

6.25 One of the most commonly heard complaints among NMC managers is that they lack qualified personnel. Since the people in an organization are the underpinning of all activities, this should be a very high priority, yet not much is being done about it. NMC does have formal training programs, but only a small percentage of the staff which needs it actually gets formal training. 1/ In part, the training problem feeds upon itself because NMC cannot afford to divert those people to train people.

6.26 But inadequate training within NMC is not the only reason employees are not sufficiently competent. Tanzania as a nation has a tremendous shortage of individuals people/labor talent educated for modern enterprises. At the same time, the creation of a large, centralized public bureaucracy has generated a strong demand for such talent as exists. NMC is at a particular disadvantage because its wage scales are set private organizations and lower than many other parastatals. 2/ Hence, NMC gets the shallow end of the national talent pool. There is a cadre of young, bright and ambitious Tanzanians emerging from the improved educational opportunities, but they are quickly devoured by the select agencies of government and by private organizations.

1/ Of the fifteen employees in the Accounting Department not including the Branch Accountants of the Arusha Branch, only one was given formal training, and only one was currently scheduled for training. Throughout NMC, only 18 percent of all employees have a high schools diploma or other training, including NMC training.

2/ According to the Finance Manager, Mr. Rao, the maximum NMC is allowed to pay for a CPA is shs. 3,500 per month ($440 at the official exchange rate) but there are very few CPAs available at that price.
6.27 Still, all the training in the world will not help if the employee does not have any incentive to apply it, through either reward or punishment. Although in some jobs, such as the branch cashier, accountability is very strictly enforced, most clerical workers are in little danger of losing their jobs if they are moderately competent. On the other hand, it is very difficult to move up in the organization, so there is little incentive to being a high-achiever 1/.

6.28 NMC may also be exaggerating its training requirements by not properly identifying its management priorities and eliminating unnecessary tasks, such as the administration of a salary advance system. By the same token, the Government has strained NMC's talent resources by requiring NMC to administer such welfare functions as the cash advance program, famine relief, and management of the Strategic Grain Reserve. The irony is that it is the Government which, at the same time is limiting NMC's access to talent.

6.29 One approach to the talent shortage is to hire expatriates. This is constrained by a Government requirement that expatriates only perform staff functions. Expatriate staffing is not a long-term solution, however, unless the expatriates are explicitly chartered to teach as well as manage. Unfortunately, such people are rare even in the international talent pool.

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1/ One clerk in Arusha has held the same job for ten years. There is a logic to the system, though, based on avoiding the Peter Principle. If a person who does his or her job well is promoted, he or she has to be retained for a new job, and someone must be trained for the vacated job. If, however, the high-level job were filled from outside, only one person would need training.
6.30 From a different perspective, some contend that NMC is overmanned with low-skilled labor in the warehouses and mills. 1/ This may be the result of an historic tendency for parastatals to act as employers of last resort in a labor-surplus situation. But NMC management claims that such practices have been eliminated in the attempt to reduce losses. In any case, even 500 excess employees (12 percent of all personnel) would represent less than one percent of NMC's total annual costs. While this is not insignificant in absolute terms the marginal value to NMC and to Tanzania of reducing excess employment seems quite low.

Conclusion

6.31 The danger is great that the recent Party statement on the decentralization of NMC will result in a redrafting of the organization chart which will not provide any practical benefit to NMC's ability to manage its affairs, but will make management more difficult over the near term. The likelihood of this is enhanced by the isolation of NMC's management from the decision-making process. Some degree of effective administrative decentralization, however, would probably improve NMC's efficiency.

6.32 Perhaps the key constraint on NMC's management, though, is information. Frequently the reason that Government and NMC policies are inappropriate is that NMC does not have the information to reach better decisions.

1/ The Party's recommendation to decentralize NMC is being considered by a Task Force of members selected by Cabinet-level officials. The Task Force is to investigate NMC and make recommendations to the Government. No NMC managers are members of the Task Force, nor will any have formal input into the final decision. Further, the Task Force has decided to withhold their recommendations from NMC management until the presentation to the Government.
Poor information also hurts operational effectiveness directly, for plans cannot be made nor controls applied when information systems do not function. This is particularly critical for NMC in the management of inventories and finances. Good information is necessary to make personnel accountable and to reward them for performance.

6.33 Performance is also a function of training, one of NMC’s most visible weaknesses. But good training requires both skills and the willingness to apply them. In any organization, training without well-directed incentives is like a thoroughbred without a jockey.

VII IMPLICATIONS

Main Lessons

7.1 One goal of this study was to better understand the problems parastatals face. Several key lessons have been learned:

(i) Government policies impose costs upon parastatals, both directly and indirectly. The costs of these policies should be explicitly identified and measured. If parastatal efficiency is to be evaluated on the basis of financial performance these externally imposed costs should be taken into account.

(ii) Bureaucratic politics inevitably conflict with business management. The former is concerned with power and the latter with efficiency. NMC has given a charter to pursue efficiency by operating according to mercantile principles, and yet it is subservient to a political bureaucracy. The only way a parastatal’s management can assert its interests in such an environment is either to abandon efficiency and become political or to use efficiency as a political weapon by demonstrating the costs of bureaucratic policies. This requires that the parastatal have a good information system.
(iii) Ideology has its costs. There is often a significant trade-off between social equity and economic efficiency. Talented and productive people are seldom moved by exhortation alone to apply their skills. Some means must be found to reward talent if the society expects to have more each year to pass around.

(iv) On the other hand, price incentives alone with not necessarily create self-sufficient levels of production in agriculture. Although peasant price responsiveness has been clearly demonstrated, social, cultural and physical factors constraint the growth in food supply. Before a society commits itself to food self-sufficiency, it should consider the costs of that path.

(v) A good information system is the sine qua non of organizational efficiency. Without accurate timely and comprehensible information, management can neither learn from its past, control its present, nor plan for its future.

(vi) Poor facilities are a symptom, not a problem. If facilities are inadequate, it is because management has failed, either within the organization or at the national level. 1/ If the facilities of an ongoing operation have decayed, rehabilitation will not solve the problem. Management must be improved at the same time—those responsible for maintenance must be made accountable and those responsible for resource allocation must understand the worth of sound facilities. Similarly, poor staffing is also a symptom. While training is part of the problem, the failure to provide effective rewards and punishments reflects, management inefficiency.

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1/ Some would argue that the problem is really a lack of money. Yet if it is true, as the Appraisal Report for the Grain Storage and Milling Project states, that storage rehabilitation has an economic rate of return of 41 percent, then NMC has certainly been mismanaging its resources.
Recommendations

7.2 The other goal of this study was to provide an approach to analyzing parastatal efficiency. The key elements of the analytic approach are as follows:

(i) Identify the explicit and implicit objectives of the government in operating the parastatal. Determine the roles the parastatal is actually expected to perform—as contrasted with the roles it is chartered to perform.

(ii) Evaluate the costs imposed on the parastatal, directly and indirectly, due to government policies. Unprofitable activities which would not normally be undertaken by commercial enterprises reflect the hand of government.

(iii) Identify the incentives and motives of the key actors. In the case of NMC, it appears that the Party is eager to maintain its distance from direct responsibility for the food system. This means there is little cooperation between the Party and NMC, for one of NMC’s roles is to serve as a scapegoat.

(vi) Determine the actual role the parastatal plays in its sector. How significant a market factor is it? Whom does it serve? How has its role varied over time and with fluctuations in the economy? This should provide indications of how well the parastatal is fulfilling the objectives set for it. If a parastatal’s role is not strictly commercial, financial performance is not a valid measure of its efficiency.

(v) Assess the impact of the private sector and the informal markets. Their behavior may be consistent with Government’s objectives, despite public statements to the contrary, if they actually make the parastatal’s task simpler by serving less accessible markets.

1/ This provides perhaps the best opportunity for the World Bank to have an impact on policy—by evaluating these costs and compelling the government to confront the issue.
(vi) Identify sources of managerial weakness. This can best be done by identifying operational problems and tracing them back to their roots.

(vii) Apply other standards tools for evaluating financial and economic performance. This paper has not discussed these tools—not because they are irrelevant, but because they have been over emphasized in the past. Developing a set of standards costs not tell you as much about parastatal inefficiency as the fact that such standard costs of not exist within the organization.

7.3 Once the situation of the parastatal has been analyzed, effecting change is an entirely new process. This paper has had several implications for the process of creating change in a parastatal:

(i) Attack the problems, not the symptoms. The calculation of the rate of return of an investment in facilities usually assumes the facilities will be used according to specification. But this is a questionable assumption when older facilities have been allowed to deteriorate. Investment in improving management will cost less and return more if poor management is the real problem.

(ii) Establish government responsibility for government-imposed costs. Poor financial performance may be red herring. Financial losses do not necessarily mean the parastatal is wasting money—they may merely reflect the parastatal’s role as an instrument of government policy.

(iii) Concentrate on implementation. One of the ironies of projects to assist parastatals is that the assisting agency gives the parastatal responsibility for project management when it is the parastatal’s management capability
that needs help. Despite NMC's demonstrated management problems, it has been
given responsibility for managing the implementation of the Grain Storage and
Milling Project. Given this design, the project will inevitably suffer problems
and delays. Conceptual solutions are worthless without an effective means of
implementation.

(iv) Institutionalize management capability. Even if a project is
successfully implemented, it will not survive unless ongoing management
capability has also been put in place. One approach to this problem has been
the "appropriate technology" movement—the rationale being that projects die
from material constraints. But with effective management, material require-
ments should not be a constraint at the scale of a parastatal. 1/

(v) Correct other weaknesses. After policy and management problems
have been resolved, the assault on subsidiary problems—training, logistics,
facilities, etc.—will be much more fruitful.

7.4 To be sure, not all of these observations and recommendations
can be generalized. They are derived from the Tanzanian experience, and
therefore both the trust and the substance may be situation-specific. Never-
theless, this perspective, with its emphasis on policy and management, has
received sufficiently little attention in the literature that it would be
valuable to consider it in a broader framework.

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1. Materials may very well be a constraint, however, in a local-level project.
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A PRELIMINARY INVESTIGATION OF FINANCIAL MANAGEMENT
IN THE ARUSHA BRANCH
OF THE NATIONAL MILLING CORPORATION

PREFACE
This paper was originally prepared for the Tanzanian Task Force on the Reorganization of the National Milling Corporation after a visit by the author and members of the Task Force to the Arusha Branch of NMC. The paper was prepared jointly by William M. Reichert and Mathew Ndumondo, a member of the Task Force seconded from the Tanzanian Audit Corporation.

I. INTRODUCTION
The purpose of this study is to develop an initial understanding of the current practices and the key problems of financial management at the branch level of the National Milling Corporation (NMC). This report intends to highlight some of the most important financial issues that the Task Force may with to investigate in more depth at other branches. Since this report reflects the examination of one branch only, the issues raised do not necessarily obtain universally nor are they likely to exhaust the problems which will be encountered. The information contained in this report was mainly the harvest of over six hours of interviews with Mr. Winani the branch accountant at Arusha, and the documents he made available to us, such as financial statements and various reports used for planning and control.
II. SUMMARY AND CONCLUSIONS

The investigation of the Arusha Branch of NMC (Arusha) led to the identification of four areas with significant problems relevant to the financial management system:

- Branch cash
- Cash advances to villages
- Stock losses
- Accounting practices

After analysis of these areas, some additional subjects are touched upon.

The discussion of each of the four areas begins with a brief background, describing policies and practices. This is followed by an analysis of the problems that have been identified, including their causes and impact. Finally, conclusions and recommendations are suggested, which are intended to be very preliminary.

In sum, this investigation has indicated that the management of NMC's finances is plagued by inconsistent policies and inappropriate practices. The allocation of cash to branches has been centralized with the hope that this will provide improved control over expenses and thus reduce the overdraft. But the net effect is more likely to be a decrease in overall efficiency, leading to an increase in the overdraft.

The requirement that NMC provide cash advances to villages for crop procurement has created a substantial administrative and financial burden that cannot easily be controlled. NMC should be able to improve its control procedures, but it will still be performing a welfare function in which the government should provide core assistance.

Current accounting practices avoid the explicit identification of stock losses. Without a straightforward method of monitoring these losses, NMC cannot reliably budget its financial requirements nor can performance be evaluated. The control of losses requires a clear system of accountability.

Accounting practices in general reveal several flaws, though this is to be expected inasmuch as FY 78-79 was only the second year of decentralized branch accounting. Streamlined procedures, increased auditing and improved staff training would greatly speed up the adoption of efficient practices. Ironically, though, despite decentralization, the head office still employs one-third of the accounting personnel in NMC.

To be sure, these problems undoubtedly vary in their severity at the different branches. Still, it is hoped that this paper is useful starting point.
III. BRANCH CASH

Background: The current procedures for cash management within NMC are structured in such a way that surplus producing regions will inevitably have a cash flow deficit. All of the interregional distribution of crops from a surplus branch is handled as an interbranch charge, for which the shipping branch does not receive cash. (See section on "Accounting Practices" for a discussion of accounting for transfers).

Furthermore, the Arusha branch, apparently at the insistence of the National Bank of Commerce (NBC), must now remit all of its cash receipts from sales to NMC Headquarters (HQ). For this purpose, Arusha maintains a separate collections account, into which receipts are deposited and from which the balance is transferred to the NMC Headquarters on a weekly basis. A general account is also maintained from which payments may be drawn.

This General account is funded by means of an imprest allocated from HQ on a monthly basis. This new procedure was announced in March 1980, and the first imprest of 30 million was allocated for April - May. Subsequently, the procedure for requesting funds has involved the submission of a formal requisition based on estimates of cash requirements. The use of imprest funds is monitored by the local branch of NBC and by HQ by means of a Weekly Bank Transactions Report. No one at the branch was certain whether this procedure is being applied to all branches. The Branch Manager, Mr. Maruya, believed it is not.
Problems: The main problem with this system seems to have arisen in the course of the transition from the previous system of funding branch expenses as incurred, which provided little control over the size of NMC's overdraft (currently estimated by the HW Finance Manager, Mr. Rao, at shs. 2.2 billion). The old procedures were suspended in December 1979, and Arusha was provided no cash for over three months during a period when it incurred over shs. 11 million in transportation expenses which could not be paid. Nearly shs. 4 million in cheques bounced when NBC refused to pay them. As a result, Arusha was in danger of losing its supply of hired transport. The Regional Development Director (RDD) has to intervene with coercion to force transporters to haul NMC crops.

Although under the new system, transporters are now being paid for crops they are hauling currently, the shs. 11 million at previous charges has still not been paid. The cost of the delays and administrative expenses resulting from this confusion has not been calculated, but certainly there has been a substantial loss of goodwill.

In addition to these transitional difficulties there is an ongoing danger of overcontrol from HW. Past experience has shown that accurate forecasting of cash requirements is extremely difficult. A branch has substantial incentive to overestimate cash needs. As a result, an imprest system may require more cash for the whole of NMC than a system of funding expenses as incurred. The effect might be to increase the overdraft. Furthermore, the administrative requirements of complying with NBC monitoring procedures impose an
additional cost on the system. Finally if insufficient funds are allocated to a branch, or funds are delayed, the cost of paralyzing branch operations temporarily may be substantial. The new system may also induce branches to expand efforts to try to get around it. Currently, Arucha is engaged in retail sales for cash (a departure from standard procedures which required the approval of the ROD in order to maintain sufficient cash balances for operations according to the Branch Manager. While it is not certain that this is explicitly prohibited by NBC's agreement with HQ regarding the remittance of cash receipts, this does appear to be an attempt to evade the restrictions of the system.

Aside from these problems of branch cash flow, the cash flow of NMC as a whole is hurt by two government policies. The first is the requirement that NMC provide villages with cash advances for the procurement of crops. This will be covered in detail below. The second policy is the stipulation that subsidies from the government will not be paid until after the sale of the subsidized crop. Both of these policies increase NMC's working capital requirements—meaning an increased overdraft.

Conclusions and Recommendations: The imposition of the cash imprest system reflects a responsible desire to improve the management of cash throughout the NMC. These procedures may actually improve the utilization of cash, if effectively applied, and the gains from this may outweigh any of the above problems.
The system would certainly be far more efficient, however, if instead of a cash imprest, NMC branches were allocated a line of credit at local NBC branches. This would reduce the overdraft charges by postponing cash requirements until after expenses are incurred, rather than before. Although this system may be an effective means of improving cash management, it is an illusion to believe that the system can provide effective expense control. The procedures accomplish nothing in dealing with the underlying causes of losses and inefficiency. System of expense control must deal directly with the village procurement process, with stock losses and with the inefficient use of transportation. (The first two of these areas will be discussed below).

For HQ to establish such control would require a substantial increase in centralized monitoring and evaluation systems. Not only is it likely to be cumbersome and inefficient, but it would also be inconsistent with the movement toward increased decentralization. Further consideration should also be given to the appropriateness of the current centralized cash management procedures. Cash management may be equally effective if installed at the branch level. Only a minimal level of coordination would be necessary to ensure the mobilization of cash throughout NMC.
IV. CASH ADVANCES TO VILLAGES

Background: The requirement that NLC provide villages with cash advances for the procurement of crops was imposed upon NLC in 1976 when cooperative unions were abolished and village committees were appointed as NLC's agents. The new policy required the implementation of a procedure for allocating and controlling village cash.

Arusha prepares an annual plan of village cash requirements at the beginning of each crop year. Village agents, presumably with some training or assistance, prepare estimates of the volume of crops which will be marketed based on acreage planted, weather conditions and previous year's experience. These estimates are aggregated by crop at the depot level and at the branch level. Figures are checked against actuals for the previous year to check logical consistency. These figures are then used to develop projections of depot cash requirements on a monthly basis.

Allocation of cash to depots is based on these estimates and monitored through a Weekly Receipts Summary Report provided by the depots. (It is not clear whether depots must formally submit requisitions for cash). Allocation of cash to villages is supposed to be done approximately on a weekly basis, during harvest periods. The village secretary must prepare a formal Request for Cash Advance and submit it to the depot, supported by a Weekly Cash and Stock Return, also prepared by the village
secretary. The depot may adjust the amount requested based on comparisons with past village actual requirements and projections of the future. It appears likely that such adjustments are also influenced by the availability of cash at the depot. The final amount is approved by the depot manager and a cheque is drawn, signed by the depot manager and given to the village secretary.

This cheque is deposited to the village's bank account, which is usually maintained at a branch near the depot. In theory, withdrawals of cash must be countersigned by the village chairman, though actual practice was not verified. The village agents can request an NMC escort back to their village for security purposes.

The method of disbursing funds by cheque rather than directly by cash was instituted at the beginning of the 78/79 crop season as a means of reducing NMC's cash losses. Village officials are responsible for disbursing cash to farmers and maintaining records of receipts and payments. When the farmer delivers his crop to the village collection point, it is weighed and a Produce Receipt Note is drawn up. The farmer should then be given in cash the value calculated on this note. The village secretary should then enter the stock receipt and cash disbursement in his records, to be used for compiling the Weekly Cash and Stock Return. This report alerts NMC to the need to pick-up stocks from villages once enough has accumulated.
Some measure of WMC control over village cash management is maintained by withholding part of the village's levy until the end of the crop season. Currently, WMC credits villages nine (9) cents for each kilogram of crop delivered. The village may claim two (2) cents of this levy immediately upon delivery, and this is disbursed by the depot separately from cash advance. The remaining seven (7) cents accumulates on WMC's books to serve as a buffer against which village losses can be debited. This should provide the village with an incentive to control losses.

Problems: Villages do not always receive in time to pay farmers when they bring their crop. This may have a variety of causes, including insufficient cash at the depot, poor communication and transportation between depot and village, poor planning by either the depot or the village, or misuse of funds.

The result may be that farmers may withhold crops or divert them. If the crop is withheld and used for barter within the area, WMC loses some of its supply; likewise, if the farmer diverts the crop to the informal market. If the farmer diverts crops to another village that does have cash, the first village loses some levy, to which it may be entitled if the cause of cashlessness was beyond its control.

If the farmer does deliver crop on the promise of future payment, current procedures are not well-equipped to provide the necessary control. In one village visited, Mateves (Arumaru depot) no receipts were provided to farmers for whom no cash was currently available. While a record of stock deliveries was kept in a notebook it would be very easy to defraud a farmer. Indeed, a spot audit found that three of four farmers accounts were incorrectly added, all at the expense of the farmer. The implication is "caveat emptor," let the farmer beware.
Though the planning and control mechanism for cash advances appear impractical, they appear to be lacking substantially in practice. On the one hand, arbitrary adjustments to village cash requests seem to have resulted in villages running out of cash prematurely, leading to the problems above. On the other hand, and probably much more significantly, the system has resulted in the accumulation of massive debts owed by villages to NMC as a result of cash advances made in excess of crop deliveries. Although the branch Manager asserted that most of these debts would be recovered from accumulated village levies, in fact, even after crediting levies, 73 villages had outstanding debts totalling approximately $3 million at the end of crop season 79/80.

The structure of the current system forces NMC to continue advancing cash to a village even if the village is responsible for cash or stock losses. Otherwise, NMC will not get any more crops from that village. Thus the current system effectively requires NMC to try to control village losses and absorb part of them if they become large (i.e., if they exceed the accumulated levy). This imposes an administrative and financial cost on NMC which it did not previously have to pay.

Conclusion and Recommendations: The fact that Arumeru depot is in worse shape than all three of Arusha's other depots combined implies that those other depots can more effectively manage cash advances. The Branch Accountant has indicated that the problem has been identified and steps are being taken to apply more stringent control. A more systematic application of planning procedures would probably reduce delays in providing villages with cash and would improve control.
Improved control also demands that village accounts be audited more frequently, both at the village and at the depot. At the village, this audit could be performed as a spot check by procurant officers from the depot, armed with a check list of points to cover. Internal audit staff are clearly insufficient to perform such checks. At the depot, regular reports should be prepared indentifying problem villages which need attention. The data for such a report is already accumulated on a quarterly basis, so such a report would not require a significant increase of effort.

The key problem underlying the accumulation of debts by the villages appears to be the failure to establish and enforce accountability for village stocks and cash. By requiring NMC to undertake the cash advance system the government has made NMC perform a welfare role and pay the associated costs. There are clearly limitations in NMC's ability to police villages. The costs of doing so and the losses that are inevitable should be explicitly identified, and either NMC should be subsidized for performing this function, or some other mechanism for providing this service should be considered by government policy-makers.

V. STOCK LOSSES:

**Background**  NMC performs three functions during which stock losses can potentially occur: transport, storage and milling.

In NMC's transport activities, the procedures for financial control call for a cross-checking of various reference documents which indicate the weight of goods transported at both the issuing and receiving ends. The three forms used to check losses from a truck are the consignment note (or Produce Transfer Note) from the issuer, the Weight and Tally Note from the receiver's weighbridge, and the Goods Received Note from the receiver's warehouse. These three forms are compiled and submitted as supporting documents along with each transporter's invoice.
The forms are, in theory, checked by a clerk, the Branch Accountant, and the cashier before any transporter is paid. Discrepancies between good picked-up and goods delivered are to be recovered from the transporter's fee. Communication to recipient branches before shipment and registration of departing shipments is used to ensure that entire truckloads do not disappear.

Storage losses are the responsibility of a variety of staff members, including the store clerk, who is accountable for discrepancies between actual and recorded receipts and issues, the quality control officer, the pest control officer and the operations manager, who should oversee the maintenance of facilities. Changes in stocks are charted by the procurement manager by compiling the Weekly Stock Returns (WSR), which tracks flows and balances by crop. In Arusha, each depot submits a separate Weekly Stock Return.

The financial accounting for stock losses, however, takes place only once a year, at the end of the fiscal year. Although a physical inventory coordinated with the Accounts Department, which is involved only at year-end.

Losses in the milling process appear to be mainly the result of dirt, husks, stems and the like, and spillage. The Head Miller does monitor such losses, mainly by tracking the extraction rate of the mill, but the losses are not explicitly accounted for financially nor are they reported regularly. In fact, branches are directed to value finished products inventory according to standard costs provided by Headquarter, which have no provision for any losses.

Problems: The key shortcoming of the financial accounting system with regard to stock losses is the failure to make explicit the financial impact of these losses. Rather, losses are hidden in other expenses.
This makes effective control and evaluation of performance extremely difficult.

The control procedures for tracing losses in Transport appear appropriate and are judged to be effective by the Branch Manager. There is, however, anecdotal evidence - that has not been verified - that these procedures are not always stringently applied, in part because of NMC's dependent relation to transporters. Such allegations can and should be investigated by auditing transporter invoices and supporting documents.

Further, NMC allows a 4% loss to transporters, presumably as a shrinkage allowance. For transporters who carry a lot of NMC crops, this provides an opportunity for systematic pilfering, though again, no conclusive evidence of this has been seen. Nevertheless, the fact that Arusha - and probably NMC as a whole - does not compile data on shrinkage losses reflects a failure in the monitoring system. At the same time, it seems inconsistent that the inventory cost standards distributed by HQ assume the full 4% shrinkage occurs for all crops.

The procedures for accounting for losses in storage are extraordinarily deceptive. When the year-end physical inventory is taken, the value of that crop which is considered damaged and not fit even for animal feed is simply deducted from inventory indetermining closing stocks. The accounting impact of this is a hidden increase in the Cost of Sales by an equal amount. By looking at the physical inventory report, the value of this loss was estimated to be shs. 1.4 million in FY 78/79. Because financial losses due to stock losses are not explicitly identified in the financial statements, branches cannot be either monitored or evaluated. The branch's accountability for these losses is diminished.
The accounting for deteriorated crop that is "unfit for human consumption," but fit for animal food, is even more deceptive. In FY 78/79 over 16,000 tons of maize was discoloured due to an undetected leak in the silo, yet its book value was not reduced and no financial loss was accounted for. In fact, because the entire amount was transferred to the animal feed mill in Dar es Salaam at book values, Arusha never even took an implicit financial loss on the damage. According to the Branch Accountant, the transfer price was $1.45 per kg, and the selling price of animal feed was $1.28 per kg. Thus, even before transport and milling expenses, the loss to NMC was $2.7 million (16,000 tons times 17 cents). This loss will be hidden in the financial statements of NMC for FY 78/79 - if and when they are drawn up.

The standard costs for milled products likewise ignore losses. The extraction rate for seme is assumed to be 95%, but actual extraction rates have been around 89 - 90% according to the Head Miller. Although there was trivial reduction of inventory value in 78/79 of $560/= due to dust, this does not nearly account for the extraction rate gap. Again, the loss is hidden in the calculation of Cost of Sales for finished product.

Conclusions and Recommendations: The effect of hiding stock losses is to inflate the apparent operational cost of each unit sold. This is misleading. Stock losses should be explicitly budgeted and monitored. Although shrinkage is budgeted, it is not monitored. In the case of storage and milling losses, they are neither budgeted nor monitored for their financial impact. The burden of such monitoring would not be overwhelming since the requisite primary data is already collected. Measuring the moisture content of shipments at both ends, in the case of interbranch transfers, may be a useful tool in combating shrinkage.
Decisions regarding acceptable loss levels and proper accounting for them will be critical in the calculation of government subsidies to NMC. NMC cannot be expected to operate with absolutely no losses. But at the same time, branches should not be freed of the responsibility for controlling losses.

VI. ACCOUNTING PRACTICES

Background: In 1977, the decision was made to decentralize the NMC accounting system so that each branch maintained its own books. In March 1978, Coopers & Lybrand completed a manual of accounting practices to be implemented in the branches. The manual provides instructions regarding the handling of specific types of transactions, accounting for assets, and general guidelines for budgeting, control and reporting. Using these procedures, Arusha has been able to produce annual statements through FY 78/79, and has completed statements for the first two quarters of FY 79/80.

The Branch Accountant expects to complete the third quarter statement soon and have the annual statement available sometime in September 1980.

Problems: The implementation of the Coopers & Lybrand procedures was not entirely smooth. Some of the newly designed forms for village agents were printed in English, and thus were sometimes not understood. This partly explains some of the inaccuracies in their completion. Additionally, the training of staff in the proper procedures appears to be incomplete. This is probably the most significant problem in accounting.

A specific failure in the design of the accounting system is that it does not require branches to compile a Sources and Applications of Funds statement. Given the substantial discrepancies which can arise between accounting profits and cash flow, such a statement would be a valuable budgeting and monitoring tool.
There are some problems in some particular accounting practices employed by Arusha in the areas of fixed assets, transfers, debtors, and allocation of expenses.

It appears that some items in the category of fixed assets are not fully or appropriately accounted for. Arusha has land on its books even though, according to policy promulgated by the Arusha Declaration, it cannot actually claim to own that land - only the improvements on it. Furthermore, not only is Arusha claiming depreciation on the land, it is also paying land taxes. The impact is to overstate expenses. The entire value of the land should be written off, and Arusha should request compensation from the government if it has not already been received - and if compensation is consistent with government policy.

Several fixed asset accounts have been questionably written down to a zero net book value. Plant and Machinery has no book value because the silo is not even on Arusha's books. The explanation for this is that the silo has not yet been turned over to NMC by its builders. The impact is that Arusha has not incurred any of the depreciation expenses for the silo, meaning that profit is overstated. It also seems suspicious that the branch has not acquired any other machinery in the past 14 years.

As was indicated earlier, the method of handling transfers creates extreme cash flow problems for surplus branches. Transfers out are booked as current assets, i.e., debts owed Arusha by other branches. But these accounts have been accumulated for over three years, to the point where Arusha is a net creditor to other branches in the amount of over Shs. 258 million. Given that there is no mechanism for clearing these accounts annually, this means, in effect,
that over half of Arusha's capital is being used to provide interest free long term capital to other branches.

Arusha also has substantial interest free loans outstanding to villages for the purpose of crop procurement. The problems of this system have already been discussed. The accounting for these current assets is misleading, however, because no allowance has been made for unrecoverable amounts, which appear to be substantial. As of 31 January 1980, the net village debt balance was nearly Shs 18 million, after amounts owed to villages have been deducted. (Gross village debts equalled Shs 23 million.) A significant proportion of this is likely to be unrecoverable, unless there is a change in government policy, and yet no potential loss is estimated. Such estimates should be made and written off annually, otherwise expenses may be materially understated.

The procedures for allocating expenses between procurement, manufacturing and corporate overhead have been somewhat arbitrary, even by the admission of the Branch Accountant. Arusha had been calculating its own standard for valuing inventory. For FY80/81 the branch intends to use standard costs supplied by HQ. Unless allocation of actual costs is consistent with the approach used by HQ in deriving these standards, it will be difficult to accurately identify sources of variance, which is the accounting procedure used to monitor and evaluate performance. Another problem with the HQ standard costs is indicated by Arusha's past experience that its own costs are substantially lower than the standards which have been recommended by HQ. This is attributed to Arusha's overwhelmingly greater volume than other branches. If this continues to be true, then the budgeting value of standard costs will be minimal. Indeed, the impression they provide of Arusha's performance may be dangerously reassuring.
Conclusion and recommendations: Despite all these problems, Arusha appears to be far ahead of HQ in its ability to maintain up-to-date books. Still, substantial improvements in accounting procedures and practices are highly desirable. Part of the improvement can only be affected through improved training and staffing. The other part requires the consideration and design of appropriate collection planning, control and reporting practices.

Increasing the scope and frequency of internal auditing would be a valuable step. Catching and correcting inaccurate and inefficient accounting practices would help straighten out NMC's books while making the information on its financial statements more meaningful. This is easier said than done. According to the internal audit manager at HQ, Mr. Nuneja, his staff can only complete two or three comprehensive branch audits per year. This is certainly unacceptable. It may be more productive to decrease the level of detail at each branch and increase the number of branches.

In addition, because of its clear interest in NMC's efficiency, NBC may be able to provide some auditing talent.

As was indicated in the discussion of transfers and fixed assets, current accounting practices have created a capital structure at the branch level that borders on the bizarre. Not only does this complicate the evaluation of branch performance, it also presents a problem if increased decentralization of financial management is planned.

Miscellaneous Observations:

Staffing: The problem of improving financial management includes the problem of finding and training talent for all levels of the system. Unqualified accounting staff are not only nonproductive, they may be counterproductive. The Branch Accountant emphasized his need for more staff as well as better training, and even to
the casual observer it is clear that the environment in the Accounts Department is extremely hectic. But staffing levels cannot be determined until the impact of improved training and procedures is ascertained.

Organizational priorities: A substantial amount of time appears to be wasted on nonproductive activities which are nevertheless formal responsibilities of the Accounts Department. One particularly obvious waste of time is the staff advance policy. Approval of these advances appear to take up a significant portion of the Branch Accountant’s time, not to mention the clerical time to maintain records (at Arusha, there were nearly 500 active staff imprest accounts as of 31 January 1980). But this policy does not appear to contribute anything to the productivity of the branch. It would probably be more efficient in the long run to abolish advances and pay everyone two weeks earlier. The activities of the Accounts Department at each branch should be examined to determine how much time is actually spent on low-priority tasks.

Computerization: The Branch Accountant expressed an interest in hosting a pilot project on the computerization of branch accounts. Currently, a substantial amount of time appears to be spent adding numbers and then trying to find errors in addition. Some are never found and reports are left out of balance. Serious consideration should be given to implementing a microcomputer-based accounting system using standardized software packages.

RECOMMENDATIONS TO THE TASK FORCE

The experience at Arusha indicates that it is much easier to investigate and analyze problems at the operational level than at the "cystos" level. Even though the Terms of Reference are
frequently couched in terms of overall systems. (e.g., the information system, the planning system, the organizational system), the goal of the Task Force is to recommend improvements, not to redesign, for example, the entire accounting system. Thus the approach in this paper has been to identify key problem areas and analyze them in terms of the various systems which they overlap.

In other words, instead of trying to digest the entire concept of planning, it is easier to digest "stock losses" and consider the relevance of planning to that problem.

Secondly, Arusha is probably one of the better branches for consolidated, up-to-date information. The Task Force will probably not be able to develop a comprehensive, quantitative picture of all aspects of MMC. Spot audits of records will often provide as much insight as a balanced annual statement. Records which might be usefully audited on such a basis include transport invoices, village accounts, milling extraction data, records of physical inventories, weekly additions and deletions from the payroll etc.

Finally all teams, not just the Finance Team, would benefit from reading the Coopers & Lybrand manuals on branch accounting procedures. These manuals provide a structured picture of the operations and organization of branches, and thus they offer a useful picture of the way branches are supposed to work.