Seminar Paper No. 13:II

AID AND DEVELOPMENT

Part II: Problems of Application

by

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AID AND DEVELOPMENT

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AID AND DEVELOPMENT

A study of the principles to assess the impact of foreign assistance and Swedish case material.

PART II, PROBLEMS OF APPLICATION

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CHAPTER 5. THE SPECIFIC CHARACTERISTICS OF SWEDISH AID

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CHAPTER 5. THE SPECIFIC CHARACTERISTICS OF SWEDISH AID

The objectives

Sweden is a small country, without a colonial past, and with limited international political aspirations. Strategic and political considerations therefore have little influence on the direction and contents of this country's aid. Neither has any explicit expression been given to a desire that aid be used to diffuse Swedish cultural values. The commercial interests of Sweden play but a limited role on the contents of its aid program. The overriding objective tallies fairly well with that of the UN family, e. g. to speed up economic and social development.

In consonance with a change of emphasis among multilateral donors, or perhaps even spearheading this change, Swedish aid policy declarations in recent years have stressed the social and equality aspects of national and international development.

> "Sweden's development cooperation has as its aims to support the efforts in LDC's to bring about a development, in which economic and social changes, including both structural transformation and social and economic growth,help to improve the poor people's level of living, a development which will ultimately lead to a just division of the world's resources. In a world of growing inequality, it is particularly important to support efforts towards increased social and economic equality."[1]

In contradistinction from the foreign aid program objectives of many other bilateral donors[2], the main goals for providing assistance from Sweden are thus by and large in agreement with the development definition which we derived in chapter 3. This obviously does not mean to say that the Swedish goals remain undistorted by the indirect influences exerted by diverse powerful pressure groups outside the government in the country.

The size and growth internationally compared

Sweden's official aid is of rather recent origin. Public contributions before 1962 were fairly insignificant. Since then, however, they have been fast increasing. In that year, the government established a central agency to

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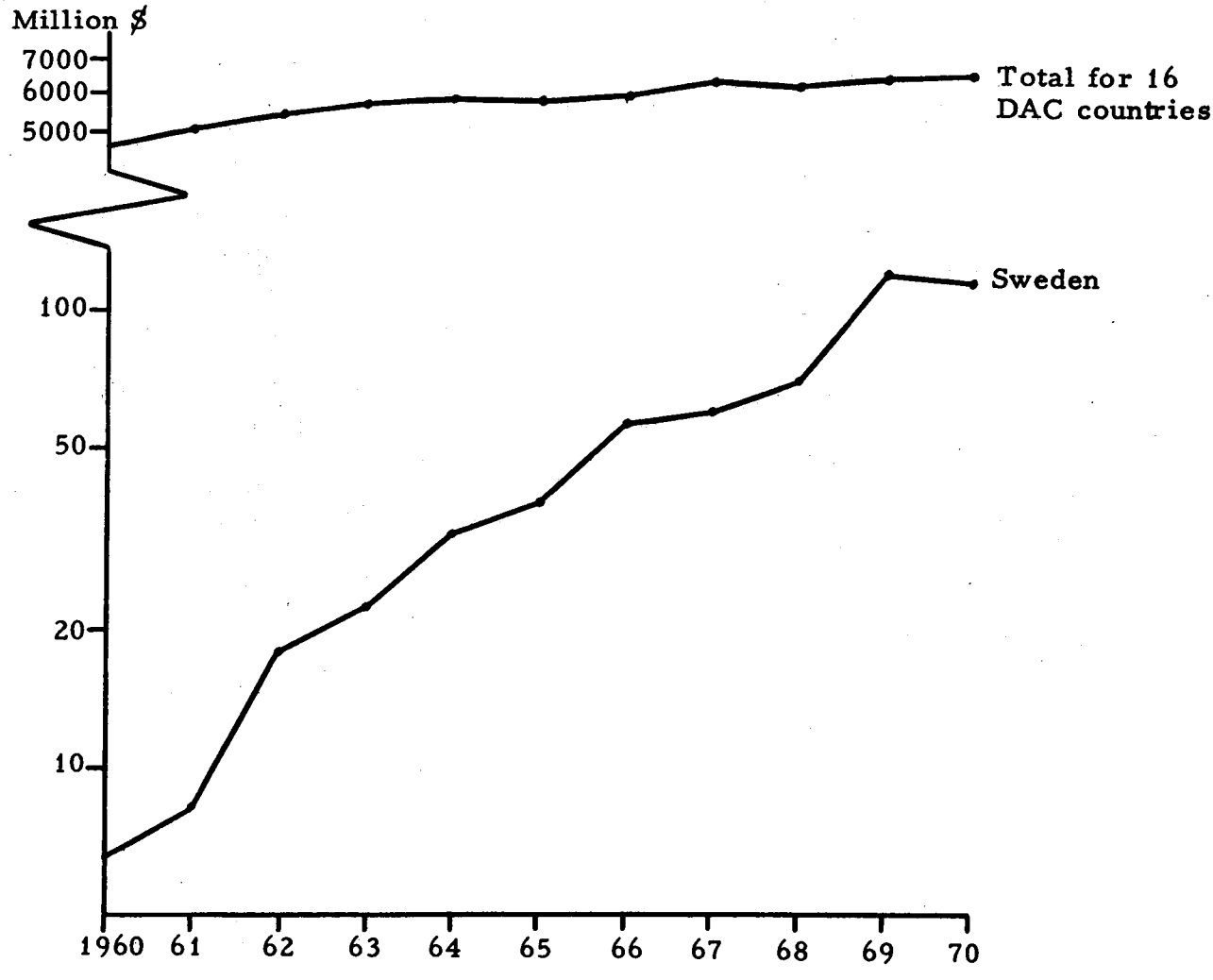
1. Statsverkspropositionen, Stockholm 1970.
2. See section 3. 1

manage Sweden's technical assistance endeavors. After a reorganization in 1965, the Swedish International Development Authority (SIDA) has been responsible for the country's entire bilateral aid program, under the broad guidance of the Ministries for External Affairs and Finance (until 1970). The "net flow of official development assistance"[1] rose from less than $ 20 million in 1962, to about $ 120 million in 1969 and 1970. In comparison with the DAC total, Sweden's aid, measured in this way has expanded very fast. In 1962, it constituted 0.35% of the aggregate amount for the 16 DAC countries. In 1970, the share was 1.7%. The relative growth of Sweden's net official disbursements appears in figure 5.1. The very fast increase in 1969, and slight decrease in 1970,

Figure 5.1. Growth of the net flow of official development assistance, million $, semi-logarithmic scale



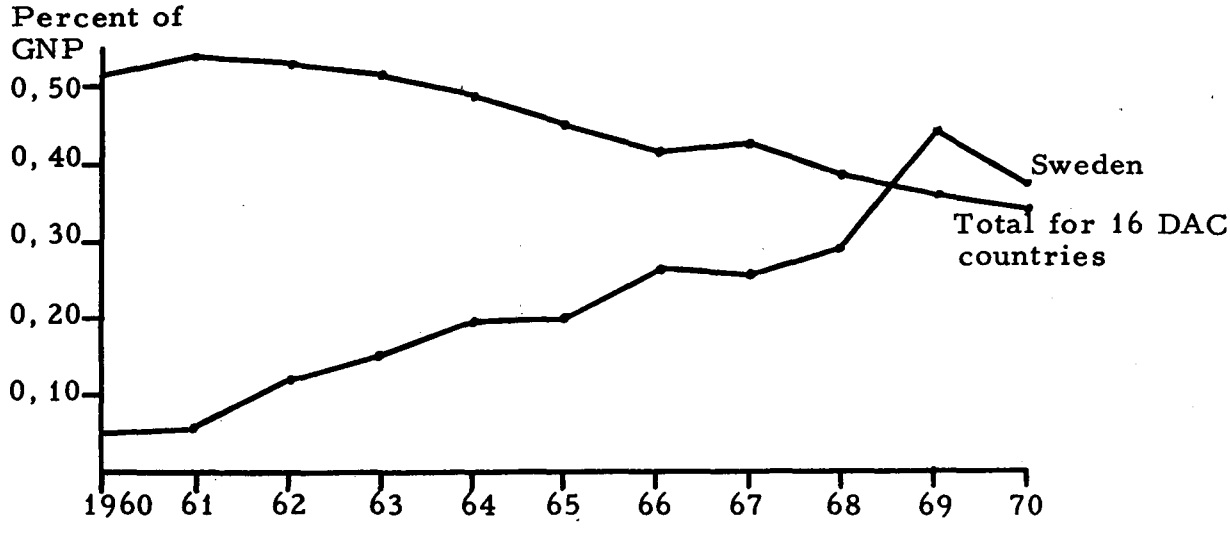
Source: DAC Reports.

are explained by certain Swedish prepayments to multilateral bodies of the amounts due in 1970.

1. As defined by OECD. See chapter 2 for a discussion of the meaning of this flow.

After almost a decade of fast growth, the share of official assistance in the Swedish economy remains rather unimpressive. Until 1968, the share of aid in relation to this country's GNP remained considerably below the DAC average, as is apparent from figure 5.2. Even in 1969 and 1970, when for the first time Sweden exceeded this average, and disbursed about 0.4% of its GNP, this figure was easily surpassed by contributions from countries like Australia, France and Netherlands, each of which had disbursed in excess of 0.5%.

Figure 5.2 Net flow of official development assistance in relation to donor countries' GNP



Source: DAC Reports.

In 1968, the Swedish Parliament decided that official aid appropriations as distinguished from disbursements, were to increase yearly by about 25%, to reach 1% of GNP by 1975. Historically, Swedish appropriations for a given year have been 10-20% higher than disbursements. The sum appropriated for FY 1968/69 was $ 100 million. The yearly increases have been carried out up to now according to the Parliamentary decision. Thus, the amount appropriated for FY 1971/72 is $ 200 million, and for FY 1972/73, an appropriation of $ 250 million is planned.

The current growth of appropriations is insufficient to bring the total up to the 1% level by 1974/75. Recent statements by political leaders and other influential personalities in the country, suggest a certain weariness of aid. The aid growth rates over a somewhat longer run are therefore uncertain. From the past evidence one could possibly conjecture that the very speedy expansion of Sweden's assistance has been, to a large extent,

an adjustment process, to bring the country in line, volume-wise, with other donor countries. But now that this level has been reached, the forces working against further aid expansion are growing stronger, and a rate of increase considerably above that of GNP will consequently be difficult to maintain.

Multilateral shares internationally compared

During recent years, the multilateral share in Swedish assistance has been around 40%. This compares with an international total of slightly above 10%. The proportion of multilateral contributions in Swedish aid has sharply declined over the years. In 1962, for instance, the multilateral part accounted for more than 80% of the total. Recent policy statements suggest, however, that the decline is not to continue, and that the future multilateral share in Sweden's aid will be maintained at the 35-40% level.

The overwhelming dominance of multilateral contributions in the early 60-s is easily explained. Like the other Nordic countries, Sweden was a relative new-comer in the field of aid, and simply lacked the experience required to carry out an assistance program of its own. Contributions to the multilateral organizations were therefore a natural way out of this practical difficulty.

The continuing high proportion of multilateral aid in Swedish allocations has a somewhat more complex explanation. First, there is the historical factor. A precedent has, so to say, been set by the earlier necessity. Second, the correspondence, by and large, between most of the multilateral bodies on the one hand, and Sweden on the other, in regarding economic and social development as the primary objective of aid, has facilitated continued generous multilateral contributions. In the absence of international political, strategic and similar ambitions, the motivation for Sweden to put a maximum effort on its bilateral programs, has not been so strong. Third, the public opinion in support of continued high multilateral aid may have been

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strengthened by the prominent roles played by a number of Swedes (foremost perhaps Dag Hammarskjöld and Gunnar Myrdal), in various multilateral bodies. This touches upon the factor of influence. By concentrating on multilateral aid, Sweden has, despite its small size, become a very prominent contributor to a number of multilateral organs. This country's 1968 and 1969 grants to the UNDP have accounted for close to 10% of that agency's entire budget. Sweden's contributions were thus second only to

those of the US. The capital subscriptions to IDA, likewise, weigh comparatively heavily in the international total. Even if voting power, in most cases, is not connected with financial contributions, their size and importance are likely to exert a certain indirect influence on the overall direction of the multilateral efforts, thereby giving an extra sense of purpose and importance to these Swedish engagements. A fourth practical reason for continuing heavy multilateral support can be sought in the difficulty to recruit suitably experienced Swedish experts for bilateral assignments, and the unwillingness of the Swedish government to expand the personnel available for administering the bilateral engagements. In the late 60-s the latter constraint has been so severe that it has resulted in a shift of about one third of the resources allocated to bilateral programs, into joint ventures, administered by multilateral organs, but financed to a larger or smaller extent, by Sweden.[1]

Bilateral country concentration

Before 1965, there was no strict policy with regard to the choice of recipient countries for Swedish bilateral assistance. In that year, as a result of a thorough reorganization of Swedish assistance endeavors, it was decided that future bilateral aid programs should be concentrated in a few selected countries. A geographical concentration was thought to improve efficiency and to increase the impact of the internationally relatively small Swedish bilateral aid program. Seven countries were chosen as the main recipients of assistance: Ethiopia, India, Kenya, Pakistan, Sudan, Tanzania and Tunisia. The selection did not reflect any political evaluation, nor was it a result of a thorough economic analysis. In general, the choice fell on the countries which had up to then been the main beneficiaries of Sweden's bilateral programs. Later on, Zambia, and a few smaller African countries, politically exposed to South Africa, were added to the list.

The principle of country concentration has not been applied to all aid forms. Assistance in family planning, where earlier reluctance of many donor countries limited the availability of such aid, and humanitarian assistance, have been provided by Sweden to about 30 countries, without any geographical restrictions.

In the late 60-s, a heated political debate has been taking place in Sweden, about the choice of recipient countries. The suitability of the then current

1. G Westring: Swedish aid to developing countries, Journal of World Trade Law, March/April 1970.

country concentration was challenged on the ground that Sweden's aid could not effectively contribute towards the objectives for which it was provided in countries which did not themselves work wholeheartedly towards similar aims.[1] The discussion has partly convinced the Swedish aid policy decision makers that this country's assistance should be gradually shifted to so called progressive countries, e. g. the ones

> "whose governments pursue social and economic policies aimed at a structural change which forms a basis for a development process, characterized by economic and social equality."[2]

The tangible results of this discussion have been the earmarking of sizable sums for aid to North Vietnam, a beginning aid involvement in Cuba, considerable increases in the allocation to Tanzania, decreases in the relative shares going to Ethiopia and Pakistan, and a quiet drop-out of Sudan.[3] It is difficult to say how far-reaching the recently initiated changes in country concentration will prove to be in the long run. Whatever the reallocations, it should be noted that close to half of Sweden's entire aid resources (multilateral and family planning) are not affected by the country concentration rules. This ensures a reasonable geographical spread, no matter how the rest is distributed.

Table 1 below gives an overview of the distribution of Sweden's bilateral aid among its major recipient countries.

Table 1. Distribution of Sweden's bilateral aid among the major recipient countries. Million $

	Disbursed		Anticipated appropriations
	1966/67	1969/70	1972/73
Cuba	---	---	3.4
Ethiopia	---	8.2	6.9
India	3.5	6.8	21.1
Kenya	---	2.7	12.5
North Vietnam	---	3.3	15.0
Pakistan	2.3	8.2	0.8
Sudan	1.9	0.1	---
Tanzania	2.7	8.0	23.1
Tunisia	---	4.3	10.6
Zambia	---	0.4	2.7

Sources: Statsverkspropositionen 1969 (Finansdepartementet, p. 89), SIDA Report of activities 1969/70, SIDA Anslagsframställning (Appropriation estimate) 1972/73, Stockholm 1971.

1. For a discussion and analysis of this discussion see my artides What countries get aid: The Swedish Answer, International Development Review 1970, no. 2, and How best to achieve the objectives of Swedish bilateral aid?, paper presented at the first meeting of the Scandinavian Dev. Society, Uppsala, May 1971.
2. Statsverkspropositionen, Stockholm 1970.
3. Statsverkspropositionen, Stockholm, 1971. No new commitments have been made to Pakistan since the beginning of the war in East Pakistan. The ongoing activities in Pakistan have been heavily curtailed.

Subject concentration in bilateral aid

We discussed in chapter 2 the subject distribution of international aid. Available data do not permit a proper split-up of the international totals according to the subjects they support. Table 7 in chapter 2 conveys a very incomplete picture, with only about 30% of the bilateral aid broken down purpose-wise.

A very rough subject division of Sweden's entire bilateral program is given in table 5.2. With the exception of a few credits to India and Turkey, all bilateral aid is

Table 2. Swedish bilateral aid according to subject

	Disbursements 1968/69-71/72 Annual average		Anticipated appropriations 1972/73	
	million $	%	million $	%
Agriculture and food	15.2	21	19.4	14
Infrastructure and industry	22.3	30	56.7	42
Education and research	13.4	18	16.9	12
Family planning	7.2	10	14.6	11
Health	1.0	1	4.1	3
Administrative support	0.8	1	3.5	3
Unspecified	13.6	19	21.6	15
Total	73.5	100	136.6	100

Source: SIDA Anslagsframställning 1972/73, Stockholm 1971.

strictly tied by purpose. Project tied aid was the rule in earlier years. More lately, some assistance agreements have tied the Swedish support to a specific sector, e.g. rural water, or small scale industry development. It would hardly be meaningful to separate out the technical assistance part from the total, since practically all Sweden's bilateral aid endeavors incorporate a technical assistance component.

The contents of table 2 are too general to permit a conclusion about the features that distinguish Swedish aid from that of other donors. The high proportions accounted for by agriculture, infrastructure and industry, and education, are likely to be found in the programs of most donors. Somewhat surprising is the tendency towards increasing the shares for infrastructure and industry, and decreasing the proportion allocated to agriculture and education. This seems to go against the common current contention among development economists, that agriculture has been neglected and industry overemphasized in the development efforts of many u-countries.[1] Furthermore,

1. See for instance the work of Little-Schtovsky-Scott, cited and heavily drawn upon in the analysis of chapter 3.

on a priori grounds, one would expect an opposite trend from a donor who becomes particularly concerned about social development and equality. The IBRD's recently increasing allocations to agriculture and to the social sector, provide an illustrative example.

We should not make too much of this point, however. The changes in allocation appearing in table 2 may be accidental, and due to the specific years compared. Besides, it is impossible to generalize about the social and equality consequences of aid without penetrating considerably below the broad categories into which aid has been split up in the table. Aid to small scale industry and to rural infrastructure for the benefit of the small farmer will of course have social consequences quite different from those which would emerge if aid is used instead for financing large-scale capital-intensive industrial complexes, or electricity and transport, mainly intended for the urban elite. Swedish aid administrators sometimes claim that this country's aid does have special social and equality implications not apparent in a rough subject split-up. So far, however, they have not presented any quantitative comparative analysis in support of this claim.

Although official declarations repetitiously state that aid from Sweden should only be given to activities which are urgently needed by, and have a high priority in the recipient countries, it is easy to point to numerous practical examples of aid involvements motivated not primarily by the recipient needs, but rather by priorities and preferences of Sweden's aid decision makers. Overcapacity on the part of Swedish industry has sometimes been the criterion for selecting aid endeavors, and has motivated the choice of the two major items on the commodity assistance program: paper and fertilizer. Availability of expertise and a long tradition in Sweden, pertaining to a particular field, has been another criterion for choosing subjects for aid. The effort in the field of vocational training, for instance, has been supply- rather than demand-oriented in this way, and therefore not always entirely fortunate. Sweden has considerable experiences in the field of vocational training. But these experiences are not readily useful in all u-countries, because in contradistinction from what is common in Sweden, there is a greater tendency among u-country employees to rely more on internal training and promotion.[2] As a result, the need for separate vocational training institutes diminishes, and there is a wide experience of difficulties in finding jobs for graduates from such institutions.[1] A weakness with the Swedish establishment

1. See DAC 1970 Review, p. 125.
2. This would be particularly true for Asia or Latin America.

of a paper technology institute in India was that it was not preceded by any proper analysis of demand and sources of supply for the type of labor that would be trained at the institute. One may also wonder about the appropriateness of vocational training of carpenters and tailors in Pakistan[1], where no casual visitor can fail to notice the excessive supply of carpentry and tailoring services. Some of the sizable transfers of the rich Swedish experience in the field of cooperatives, too, appear to have failed in adjusting their contents and timing to the circumstances and needs of the recipient countries.

Certain subjects receive a particularly favored treatment, because they are thought to be especially important in development work, but neglected by the international aid community. Support for women's training and for rural water development is probably often motivated in this way. Up to a few years ago, the same motivation could be provided for Sweden's heavy involvement in family planning support. In fact, the Swedish government was the first to use aid funds for this purpose, and its family planning aid started already in 1958. Non-governmental organizations like the Ford Foundation and the Population Council, were much earlier on the scene, however, and have continued to render support on a larger scale than Sweden. In 1965, SIDA's family planning aid was less than $ 1 million, about 4% of the international contributions for this purpose. By 1969, the figure had increased to $ 9 million, or about 8% of the international total. In recent years, the US AID has accounted for close to half of the entire international family planning effort.[2]

It is possible that the subjects chosen do differentiate Sweden from other donors in certain respects. But the general donor preference orientation in deciding on aid endeavors, would hardly be a characteristic feature of Swedish aid. Rather, it would mirror a common approach to aid among most bilateral donors. Those who design the future Swedish aid programs, contend that this donor preference approach is now being replaced by an effort to integrate this country's assistance into the plans and requirements of recipient countries. It remains to be seen whether such recipient orientation will become a distinguishing aspect of future Swedish assistance.

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1. See SIDA Projektbeskrivning, Pakistan, Yrkesskolorna, 1968, p. 3.
2. T Ruprecht - C Wahren: Population Programs and Economic and Social Development, OECD, Paris, 1970, chapter 3.

A small share of Sweden's aid budget is used for support to African liberation movements. This is openly accounted for in the SIDA documentation, and amounted to about $ 350,000 in 1970/71. The expected allocation for this purpose in 1972/73 is about $ 1 million. It is quite possible that other countries too provide support for liberation movements, but that for various reasons they do not do it openly. If this is the case, the specific Swedish characteristic would merely amount to the method of accounting.

The terms of aid, internationally compared

In comparison with the DAC average, there is a high concessionality in Swedish aid. In the late 60-s, the grants' share in total public commitments has varied between 75 and 85%. For the early 70-s the grants' share is expected to remain around 75%. The DAC average in the late 60-s fluctuated at a much lower level, between 55 and 65% of commitments.

The terms of Sweden's official loans have been highly softened in recent years. A large share of new loans are now provided on IDA terms, e.g. with 0.75% interest and 50 years' maturity. The average terms for the 1970 loan commitments were 1.5% interest and 35 years' maturity, as compared to a DAC average of 2.8% and 30 years.

In principle, the entire Swedish aid contribution is untied by source of purchase. This clearly applies to the multilateral contributions and to the bilateral assistance credits. The main remaining item, bilateral grants, constituting ordinarily 30-35% of the entire aid budget, is used to a considerable extent to pay for Swedish resources in the form of personnel and equipment required in technical assistance endeavors, as well as for commodities supplied on a grant basis to recipient countries. But the money involved, is also spent to cover part of local costs of the projects in some cases, and for equipment and commodities purchased outside Sweden. An illustrative instance of the latter is when contraceptives bought in Japan, were subsequently used in family planning projects financed by Sweden on a grant basis. There are no data on the amounts of the bilateral grants aid which are actually spent in Sweden.

We may recall the attempts in chapter 2 to calculate the global amount of pure aid, by deducting from total DAC commitments the present value of aid loan servicing obligations (discounted at 8% in 1968 and 9% in 1970), and by decreasing the amount of tied aid by 15% for excess pricing, our conclusion for the 1970 figures was that the official DAC commitments had to be reduced by some 45% to obtain the value of pure aid.

The corresponding calculation for Sweden in 1970 can be carried out as follows: Total commitments for that year amounted to $ 217 million. Loans were about $ 39 million. The grant equivalent of loans provided on the Swedish terms, as specified above (using a 9% discount rate), is somewhere around 65%. The deduction for the present value of servicing obligations thus amounts to some 35% of $ 39 million, or, in round figures, $ 14 million. Inferring from the above discussion that 25% of Sweden's aid is tied, with an element of excess pricing equal to that assumed in the international calculation, the deduction due to tying would be 15% of $ 55 million or, in round figures, $ 8 million. The value of committed pure aid would thus be $ 195 million, roughly 10% below the stated commitments. This compares very favorably with the DAC average. The small deduction required to derive the value of pure aid gives a clear reflexion of the high concessionality implied in Swedish aid terms.

Summary conclusions

Economic and social development of recipient countries appear as the overriding objectives for Swedish aid. In spite of its fast growth, assistance from Sweden is still rather small in absolute terms, and not especially impressive in relation to the country's GNP. The terms of aid are far more concessional than the DAC average. With the exception of the high importance attached to family planning, there is nothing extraordinary in the subject allocations of Swedish assistance. Very roughly, four recipient categories can be discerned. The first is the multilateral one. 35-40% of the aid flow consists of multilateral contributions, and Sweden is one of the largest supporters of the multilateral organs. The second comprises socialist countries like North Vietnam or Cuba, to which a small but fast growing proportion of aid is directed. Sweden is breaking a new path here, since no other "Western" donor provides assistance to these countries. The third and fourth categories, are the Asian and African recipient countries, respectively. The distinction between the two is warranted primarily by the considerable difference in the economic and social structure, and the types of development constraints existing in each of the two country groups.

In what follows, I will not discuss the role and impact of Sweden's aid on the two first recipient categories. The determination of the role played by Swedish aid on the multilateral organs is a task for political scientists rather than for economists to tackle. Sweden's aid to socialist countries has just begun, and it is as yet far too early to assess its contribution to development in these countries.

I have instead chosen to concentrate the continued exposition on the Swedish aid endeavors in Kenya and Tanzania. The results I hope to reach, ought to be applicable to some extent at least, on other recipients of the fourth, African category. After concluding the analysis of Swedish aid in these two countries, I try to clarify, in a brief chapter, the main features, distinguishing Sweden's aid recipients in Asia from those in Africa, and attempt to draw some very general conclusions on the difference in the suitable structure of aid as between the two country categories.

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CHAPTER 6. SWEDISH AID TO EAST AFRICA: THE CONSTRAINING FACTORS IN KENYAN AND TANZANIAN DEVELOPMENT

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CHAPTER 6, SWEDISH AID TO EAST AFRICA: THE CONSTRAINING FACTORS IN KENYAN AND TANZANIAN DEVELOPMENT

6. 1 Introduction

The purpose of this and the following two chapters is to make a practical application of some of the methods and tools developed in part one of this study on empirical material pertaining to Swedish aid to the two East African countries. The present chapter will attempt to specify the factors which constrain Kenya's and Tanzania's development pace, and to suggest, on the basis of the constraints found, the areas where foreign aid could be most fruitfully applied. In our search for the economic, social, structural and political constraints, a great number of references will be made to the planning, preferences and factual development achievements in the two countries since their independence in the early 60-s.

Chapter 7, which contains an overall assessment of Sweden's aid endeavors in East Africa, is opened up by a brief description of the factual international aid flows to the two countries. This provides a background, against which several aspects of Swedish aid flows can be examined. Thus we discuss for instance the amount of pure as against disbursed aid, the efficiency in the Swedish aid allocation decisions, the extent of distortion on the recipient countries' planning, the general performance efficiency in projects for which SIDA is partly or wholly responsible, and the volume and types of innovation aid provided. This overall assessment is followed in chapter 8 by detailed micro-scrutinies of two aid ventures financed by Sweden, one in Kenya and one in Tanzania. The methodology proposed in section 4. 4 is used to search for and identify the development effects brought about by the two projects.

The final aim of all these macro- and micro-examinations is to try to derive recommendations on more development promoting Swedish aid resource applications. It is necessary, however, already at this stage, to express modesty at what we will be able to accomplish. The complexity of the problem involved, the incompleteness of its theoretical formulation, and a highly deficient data base will prevent us from deriving any far-reaching and definite conclusions. At best we will be able to point to the general

directions of desirable change. Our recommendations with regard to Swedish aid, based on these tentative findings, are spelled out in chapter 10.

6.2 Lack of information

We start our constraints discussion with what appears to be a major aspect, distinguishing the problems of development in Africa south of the Sahara from problems in most other u-countries, namely the lack of hard facts in crucial fields.[1] We have indeed a very weak factual foundation of economic and social macro-relations in the two countries on which to base rational allocation decisions. Lack of information thus appears as a first important constraint on development in East Africa. National planning, or for that matter, micro-economic assessments of individual ventures, by necessity become more uncertain when basic data are missing or doubtful. A few examples will help to clarify the nature of the lacunae.

In the second 5 year plans for the two countries[2], the share and growth of agriculture in total GNP is presented by the following figures[3]:

	Share of GNP 1968/69 %	Annual growth, %, 1968/69 - 73/74
Kenya: Monetary agriculture	14.6	5.8
Subsistence agriculture	20.3	3.5
Tanzania: Monetary agriculture	24.0	7.2
Subsistence agriculture	26.4	3.0

A very high degree of uncertainty is hiding behind the apparently exact figures. Little is known, for instance, about subsistence production. A Tanzanian plan document states that while between 40 and 140 thousand tons of maize, the country's dominant food-crop, is marketed nationally each year, only guesses are available about total production.[4] Estimates of subsistence

1. W Stolper: Planning without facts, Harvard University Press, Cambridge, Mass, 1966, p. 4.
2. Both countries have published two comprehensive 5 year plans, covering the periods 1964/65 - 68/69 and 1969/70 - 73/74.
3. Kenya 2nd 5 year plan, p. 142, Tanzania 2nd 5 year plan, p. 203.
4. Tanzania, Annual Plan 1970-71, p. 48.

output are based on assumptions of its magnitude in a base year. This magnitude is then adjusted by estimated population changes, which are themselves uncertain, and by an assessment of climatic conditions for particular years. It is quite possible that the much faster increases in recorded and projected monetary agricultural output result from shifts away from subsistence, which do get included in the monetary sector compilations, but are overlooked in the crude estimates from which the value of subsistence production is derived.[1] If this is so, the effect would be an over-estimation of GNP growth rates.

The margins of fault resulting from the uncertainty surrounding the subsistence sector estimates are amply illustrated by what happened when Kenya revised its national accounts. A result of this revision was an increase of the 1964 monetary GDP by about 14%, but simultaneously the subsistence sector contribution was adjusted upwards by some 30%, increasing its share in total GDP from 24 to 27%.[2] How much reliance can in these circumstances be attached to the sector share and annual growth figures given in the above table, and to the numerous other relationships, which use these figures as their inputs?

Being in their infancy, the national accounts of most sub-Sahara African countries will have to be periodically revised for a considerable time to come. Each revision will tend to play havoc with the relationships on which development planning is based. In the latest Kenyan national accounts revision process, referred to above, the country's gross fixed capital formation for the period 1964-68 was augmented by some 30%.[3] A consequence of this was that the estimate of national savings increased still more. This is because savings are derived as a residual, using the capital formation and balance of payments accounts, and while the capital formation figures were revised upwards, no comprehensive changes were undertaken of the balance of payments account. Accepting the figures presented, the revised national accounts indicate that the marginal savings rate was above 25% in the 1960-68 period, while, in contrast, marginal savings seem to be no higher than 11.3% in the same period if the old accounts are used.[4] Projections of the countries' future development will be crucially affected by differences of this magnitude, ranking of priorities, and decisions on economic policies likewise. The last

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1. F Mitchell: Macro Aspects of the Plans, East Africa Journal, March 1970.
2. Kenya 2nd 5 year plan, p. 29.
3. Kenya 2nd 5 year plan, p. 48-51.
4. A Shourie: The use of macroeconomic regression models for forecasts and policy prescriptions, IBRD, August 1970, stencil, p. 9. To be published in Oxford Economic Papers.

word has certainly not been said regarding the size of savings and investment in the Kenyan economy, and the problem of uncertainty about the savings rate remains even after the national accounts revision.

Not even the balance of payments statistics provide the information required for comprehensive national planning. Tanzania's foreign transactions on capital account pertaining to other bodies than the central government, are not specified in the balance of payments. The transactions of both the private and the parastatal sectors, are recorded under errors and omissions.[1] Yet, the parastatal sector is expected to account for close to 30% of total investments in Tanzania during the second 5-year plan, of which more than a third is to be financed from abroad.[2] Are the errors and omissions figures the result of sizable flows in both directions, which balance each other, or are they built up from smaller unidirectional flows? This is an indispensable information for the development planner concerned with foreign direct investments, or with the flight abroad of domestically owned capital.[3]

Data on employment are available for wage earners only, who currently constitute about 25% of the labor force in Kenya, and less than 10% in Tanzania.[4] This estimate is in itself based on a very crude definition of what constitutes the labor force, starting out from the two countries' somewhat uncertain total population figures. Since independence, the number of wage employees in Kenya has increased at about the same rate as the population, and we can deduct that the share of wage earners in the total labor force has remained constant. In Tanzania, the share must have declined, since there was no expansion at all in the number of wage earners during the period. So far available data. But how is the employment situation outside the wage sector? Are we to believe those who claim that in African circumstances the development problem cannot be described as a simple case of redundant labor and disguised unemployment, because everyone who is unable to find another job, can provide for himself by clearing a plot and establishing a subsistence farm?[5] It has been claimed for instance that drawing so called "surplus labor" from tribal agriculture into the modern sector has had severely adverse effects on agricultural production in several African countries.[6] Or should we rather trust the statement made in Kenya's second 5 year plan that unemployment or underemployment are Kenya's most

1. See for instance Tanzania Annual Plan 1970-71, p. 7, or the IBRD report on Tanzania, vol I, dated March 17, 1970, p. 26.
2. Tanzania 2nd 5-year plan, p. 210-213.
3. It may be, of course, that the statistics discussed here, do exist, but that they are kept confidential, out of reach to the outside researcher.
4. Kenya 2nd 5 year plan, p. 68, Tanzania Annual Plan 1970-71, p. 8.
5. W Stolper: Planning without facts, Harvard University Press, Cambridge, Mass, 1966, p. 19.
6. H Myint: The classical theory of international trade and the underdeveloped countries, Economic Journal, June 1958.

difficult and persistent problems?[1] This is a difficult question to resolve without access to clear-cut facts from field surveys which specify in detail the size of the labor force and the extent of its utilization in a particular area.[2] In the absence of data we can only conjecture from better documented evidence in other countries[3], that the problem does exist, and that it is severe.[4] With the relatively low degree of urbanization in East Africa, most of the underemployment problem is likely to be located in rural areas, whereby it tends to become less visible. How can it be explained that Kenyan and Tanzanian farmers are underemployed when surplus land, suitable for agriculture still seems to be available for whoever wants to use it? Explanations can be sought along several lines. First, from the individual farmers' point of view, it is not at all certain that agricultural land is really in surplus. Where land is highly fertile, population tends to be dense, and land utilization is intensive. Tribal ownership patterns, particularly in regions inhabited by nomadic tribes, prevent outsiders from putting apparently empty and ownerless land under plough. Shifting agriculture is still common in many places, and this requires that large areas remain fallow for considerable periods of time. With limited mobility among people, it would not be surprising if a gradually emerging land pressure provided one explanatory factor to local rural underemployment, particularly in Kenya, which has a higher population density per hectare of potential agricultural land. A second explanation could be that breaking up new land is so cumbersome that many farmers don't find it worthwhile to undertake the effort without outside support. This may be a fully rational attitude, in view of the low yields of subsistence agriculture. The increase in consumption necessitated by the additional work effort could be so substantial that part idleness is voluntarily chosen as a more economic alternative. A third reason for the restricted agricultural labor input could be that the remuneration for marketable surpluses is inadequate due to non-existent facilities for storage, transport and marketing, or perhaps because the farmer lacks information about the potentialities of outside markets. This argument could be reformulated as a situation where the farmer is ready to produce more, if only he can be provided with sufficient incentives, for instance in the form of manufactured

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1. Kenya 2nd 5 year plan, p. 103.
2. For the methodology to use in such a study, see for instance B Hansen: Employment and wages in rural Egypt, American Economic Review, June 1969.
3. D Turnham - I Jaeger: The employment problem in less developed countries, a review of the evidence, OECD, Paris, 1971.
4. It has been suggested that in circumstances where employment statistics are hard to obtain, the degree of labor utilization could be approximated from the average income levels. See the DAC 1970 Review, p. 117. The very low income levels in some of the regions of the two countries, could then be taken as indirect evidence of the existence of a severe underemployment problem.

goods, which he can exchange for his agricultural products. A fourth reason may be a weakly developed entrepreneurship among farmers, expressing itself in an inability to seize existing opportunities to increase employment and income. This could be due to isolation, and a consequent lack of experience of markets and trade, or to a long economic subordination, first to the British colonial administrators and Indian traders, and later to the central national government.

Although the essence of the un- or underemployment problem seems to be a very inadequate availability of factors like initiative, skills and capital, which are required to create remunerative employment opportunities, in relation to the existing potential labor force, the absence of more factual information on the employment situation in the two countries naturally makes a concerted attack on the employment front a difficult and highly uncertain undertaking.

We have so far emphasized the lack of information at the aggregate level. But it is obvious that the underlying cause to these lacunae is an equally deficient availability of micro-data in the fields covered. The absence of reliable statistics at the local level on socio-economic conditions like production and consumption, savings and capital, population and employment, as well as on physical features, e.g. soil and rainfall, create problems in designing relevant local development policies, quite similar to those experienced at the macro-level.

Ignorance is in no way limited to mere statistical data. Much more fundamental is the lack of knowledge about technological and socio-economic relationships. If data were available, they would provide a static picture of the existing situation. Development, however, implies change, and the development work consists of measures intended to bring about desirable changes. To pursue a rational development policy, therefore, we would need to know something about the functional relationships between development measures and their micro-level responses. The Kenyan and Tanzanian planners have to face great uncertainties when deciding on matter like taxes, restructuring the land ownership, choice of production methods, or development of the educational system. The effects of such measures must be extremely hard to predict, when both data and insights into the social mechanisms at work, are deficient.

A few conclusions can now be drawn about the problems emerging from inadequate information. First, the incomplete state of knowledge at any given time, will limit the number of projects, whose expected social return or private profitability can be adequately calculated. Risk averting investors are likely to limit their engagements in such situations. This is probably one important explanation to the distorted investment allocation pattern in favor of the modern sector in the two countries. Both public and private, foreign and domestic investors seem to prefer the higher degree of predictability resulting from the modern sector's large and better information flows.

Second, a strong case can be made for decentralization and delegation of the decision making authority to the district or local level especially in matters of geographically limited consequence. The risk for faulty decisions at the center will be great in the absence of adequate knowledge of facts. When the information flows are deficient, the man on the spot will be in a better position to see the opportunities, since he will have more direct sources of information than the central government. Provided that he has an adequate background and experience, he will be better placed than the central authorities, to make the best possible decisions in detail. Collective farms were established in the resettlement schemes of Rufiji District in Tanzania, as a consequence of decisions taken by the central government. The heavy public support provided was wasted, because the farmers were unwilling to work on the collective fields. The local government representatives were aware of the problem. In their opinion, more ideological training was required before starting the joint farming ventures. But the local administrators had no power to stop the waste by changing the central government's decision.[1] In circumstances like these, with inadequate information at the center, it is probably easier to advance towards the set goals if the central authorities work by broad directives, and provide incentives for whatever they want to achieve, rather than involving themselves in detailed executive decisions. Indirect guidelines of this kind might also help in encouraging the local innovative, entrepreneurial talent to accept the challenge of uncertainty, and seize the existing opportunities of the traditional sector. Initiatives of this type need not necessarily be private. They could as well be public or cooperative. But they could hardly be brought into being without a considerable freedom of action and adequate incentives at the local level. The emergence of local entrepreneurship in the back country along such lines, could help to balance the current concentration of investment into the modern sector. The activities would by themselves contribute to an expanded and improved flow of information.

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1. See my "Regional development fund in Tanzania", report to SIDA, dated December 12, 1970.

A third obvious conclusion is that acquisition of information and knowledge about the functioning of the society's various parts should have a high priority. The private investor is expected to collect information relevant to his investment decisions up to the point where its cost equals the benefits he can derive from it at the margin. In u-countries like the two with which we deal here, where lack of information constitutes a serious development constraint, the social benefit of information acquisition is likely to exceed considerably its private benefit. This is because additional data will usually have a sizable external effect in weakening the information constraint on development. A case can therefore be made for strong public support in general, or the involvement of aid in particular, in this process of gathering facts and systematizing the knowledge about their interrelations. Aid can for instance be given to build up or support economic and social research institutions, which could then draw upon the wealth of experience in research methodology, available in the donor countries. More specifically, the project appraisals preceding project aid involvements could be made both broader and more penetrative, and the findings widely and effectively disseminated, so as to derive a maximum of external benefits from the additional appraisal costs.

A result of the data inadequacy is that our continued survey of the constraining factors in the two countries' development is bound to be superficial and inconclusive. We will draw on available statistical material, but when doing so, we should be clear about the high degree of uncertainty which surrounds them. Many of the arguments brought out will have to be based on mere hunches rather than on hard and reliable facts.

6.3 Population growth

Population growth, like so many other key data, is based on highly uncertain information. Current estimates put the yearly population increase at a few decimal points below 3% in Tanzania, and somewhat above 3% in Kenya. A noteworthy observation is that consecutive population censuses have tended to adjust the figures upwards.

Irrespective of which decimal point happens to be the correct one, a population growth of about 3% per year must severely decrease the per capita results of a given development effort. The implication for Kenya and Tanzania is that close to 1/2 of their total population consists of infants, who constitute a consumption burden, while they do not yet contribute to production. Even the maintenance of status quo in development requires that total production grows by at least 3%, that the education and health sectors

provide service to about 300,000 additional people each year, and that sizable investments are undertaken to create job opportunities to the ever growing number of entrants into the labor market.

Both countries still appear to have substantial resources of land suitable for agriculture, which is utilized very extensively or not at all. In this sense, they can both be said to be sparsely populated. This is probably the main explanation to the insignificant efforts, undertaken so far, to control population growth. The Kenyan government has only recently become involved in a national family planning program. In Tanzania, family planning is carried on by a private organization, without direct government participation. A slow-down of birth rates could certainly enable Kenya and Tanzania to achieve a faster pace of progress, both by changing the age structure, and by diverting resources from mere maintenance of what has been achieved, to per capita additions in various fields.

While a lot of work remains in the development of improved contraceptive methods, a more important, albeit highly sensitive field for aid action is to help in finding ways to disseminate information on family planning, and to make it acceptable throughout the society, including its top administrative echelons as well as its subsistence sector.

6.4 The resource constraints

Tanzania became independent in December 1961, Kenya exactly two years later. Colonial penetration had been more profound in Kenya, with a resultant larger monetized sector, better developed infrastructure, bigger industrial share in GNP, and higher per capita income level than in Tanzania. These

Table 6.1 Kenya and Tanzania, basic economic data

	Kenya	Tanzania
Population 1969, million	10.5	12.8
GDP real growth rate 1960-69, compound, %	4.5	3.3
GNP/capita at 1964 prices, $: 1960	101	65
1969	116	71
Share of GDP in 1968 in %, for		
agriculture	34.8	50.0
mining, manufacturing and construction	17.0	12.0

Source: IBRD World Tables, January 1971, Tanzania Economic Survey 1970-71

differences notwithstanding, the two countries started their independent nationhood from very low development levels, whether measured by per capita GNP-s, or the Adelman-Morris development index.[1]

1. See chapter 3, p. 12. Neither of the two countries is included in the UNRISD index.

The skill constraint

We attempted to show, with the help of figure 1 in chapter 3, how an extremely uneven factor endowment along with a limited substitutability between factors of production, can lead to a partial redundancy for the abundant unskilled labor supplies in u-countries. In that context, we also discussed Chenery's empirical findings with regard to the time sequence at which different effective constraints commonly emerge in a country's development. Since their independence, Kenya and Tanzania appear to be in the stage where insufficient skills[1], rather than savings and foreign exchange have constituted the effective resource bottleneck to faster progress, and to a fuller utilization of the countries' underemployed labor resources. This contention is amply supported both by various authoritative opinions[2], by the generally rising foreign exchange reserves in the two countries over the period since independence[3], and by the frequently reported difficulties and delays in spending domestic and foreign resources, caused by a limited capacity to formulate and implement development projects.[4]

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1. The term is defined in a broad sense, to include entrepreneurial skills and the personnel required to run various types of institutions.
2. See R. Rasmusson: Development targets and plans of Kenya and Tanzania, Stockholm School of Economics, April 1971, stencil, p. 66-77, for a summary of authoritative opinions on this matter.
3. See the following text in this section, for factual evidence.
4. See for instance IBRD's Report on Kenya, Part I, dated October 22, 1969, p. i-iv, and Kenya 2nd 5 year plan, p. 47, or Tanzania Annual Plan 1970-71, p. 88.

The causes of the skill constraint are not difficult to understand. The colonial administrations by and large kept the Africans away from more qualified administrative or managerial functions. Domestic trade was a virtual monopoly of the Asian minority. Existing industrial and foreign trade enterprises were run either by Europeans or Asians. Credit and insurance institutions were ordinarily branches of foreign enterprises. The higher layers of government were almost entirely in the hands of the colonial power. In 1962, 95% of the incomes above £400 in Kenya, accrued to non-Africans, who constituted no more than 3% of all the country's residents.[1] Lack of qualified employment opportunities, and indifference on the part of the colonial authorities, resulted in considerable negligence of higher education for Africans. In this respect, the profounder colonial penetration and the higher prosperity in Kenya as compared to Tanzania, made little difference to the African skill formation. In 1960, the entire secondary school enrolment ratio (including both Asians and Europeans, who formed about 3% of total population in Kenya and 1.5% in Tanzania[2])was 4% in Kenya and 2% in Tanzania.[3] In 1961, there were in all less than 600 university educated Africans in Tanzania.[4]

With independence, the requirement for skilled Africans instantaneously rose. Qualified nationals were needed both to take over the governments' administrative functions, and to initiate a large-scale national development program.

In theory, the skill constraint could have been overcome simply by retaining all the foreigners who could not be replaced by Africans, and by importing the additional human resources needed for the expanded development program. In reality, this was an expensive, practically diffcult and politically unacceptable solution. Self-determination and national control were regarded as the essence of independence. Many of the colonial administrators had no wish to stay on. International recruitment was not always easy for the young, unestablished, independent governments. Finally, many of the skilled positions, especially at sub-national levels, required detailed knowledge of local conditions, which only long-term residents could possess. For these reasons, both countries opted for a compromise, stretching available national skill resources to the utmost, to replace foreigners in key positions, and trying to retain old, or to invite new expatriate experts, to take take of indispensable functions, for which it was impossible to find nationals with an appropriate background. Simultaneously, energetic efforts were initiated to expand the educational systems in the two countries, with the aim to replace the remaining foreigners as soon as was practical. The difficulty in obtaining

1. Kenya, first 5 year plan, p. 29.
2. D S Pearson: Industrial Development in East Africa, Oxford Univ. Press, Nairobi, 1969.
3. IBRD World Tables, Washington DC, January 1971.
4. G Hunter: Education for a developing region, Allen & Unwin, London, 1962, p. 59.

suitable expatriates and the political push for substituting even less experienced nationals for the foreigners, resulted in a constant inadequacy of skills.

The pressures to replace foreigners have been particularly strong with regard to responsible public sector positions. By 1967, Kenyan citizens had filled 45% of the public sector jobs requiring university training. In Tanzania, in the same year, 73% of senior and middle grade civil service jobs were held by citizens. This had increased to almost 82% in 1969.[1] In more general terms, however, the two countries continue to depend heavily on imported skill resources. Thus, in 1967, more than 65% of those employed as engineers, veterinarians, doctors, dentists, university and secondary school teachers, managers of large firms, accountants and economists in Kenya, were still non-citizens. In Tanzania, in 1969, more than 80% of practicing doctors and engineers were expatriates.[2] The short-cut of sending students abroad was no immediate solution, because the countries lack adequate cadres of technically trained secondary school graduates. As late as in 1970, Tanzania is said to face "a very serious problem in the ability of her secondary school system to produce enough students with maths and science background, who are qualified to enter university for training in these scientific occupations, critically needed for her social and economic development".[3]

The high priority given to the development of skills required to transfer key national administrative functions from foreign into local hands, has left less energy and resources for skill formation at sub-national levels. This may provide one explanation to the common observation that the availability of administrative skills in the early 70-s appears to be less of a constraining factor at the national than at the district and local levels.[4] This finding is particularly serious, because it is probably much more difficult to use foreign skills to supplement the domestic skill availability at the local level.

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1. Kenya 2nd 5 year plan, p. 117-118, Tanzania Annual Plan, 1970/71, p. 84-87.
2. Kenya 2nd 5 year plan, p. 117, Tanzania Economic Survey 1970, p. 114.
3. Tanzania Annual Plan 1970/71, p. 86.
4. See R. Rasmusson, op. cit., p. 66-67 for a summary of such observations. Also note the discussion in Tanzania Economic Survey 1970-71, p. 3., where it is suggested that while the country now possesses ample capacity for execution of large infrastructural projects, small rural development ventures are delayed by deficient implementation capacity at the local level.

It should already be apparent that the skill constraint on development is at least partly policy induced. Several policy aspects are involved. One concerns the premature replacement of foreign specialists, usually on aid contracts. In many fields, the training and experience required to occupy a position efficiently is such, that an indiscriminate Africanization policy is bound to impair efficiency. There is of course the counter-argument that the foreigner who stays in the country only for a few years, will seldom accquire a wholehearted concern for its problems, and, besides, will tend to distort attention away from crucial long-run tasks, in an attempt to accomplish tangible results during his tenure.Even if the national is less qualified, he might be more devoted, and therefore produce a better result. In any case, he will stay on, and the experience he gains, will remain in the country. It is difficult to generalize the net outcome of the two forces. Whether a premature replacement of a foreign expert will be beneficial or not in the long run, will depend on the circumstances of the individual case.

Another aspect concerns the policies towards the permanently settled Asian community in the two countries. The Asians have for a long time played a key role in the East African economies. Their dispositions are therefore bound to have considerable repercussions. One of the results of the uncertainty about their future status and position, has been a considerable disinvestment and liquidation of the Asian-owned productive assets. This, it is claimed, has severely reduced private investment in East Africa in the late 60-s.[1] It is easy to understand the African desire to break the Asian dominance in Kenya and Tanzania. But it may be difficult to replace the favorable combination of business competence, detailed knowledge of local conditions, and investible resources, which the Asians happen to possess. Pushing them aside, therefore, implies a risk, at least in the short run, of slower economic growth.

A third policy aspect affecting the severity with which the skills constraint is felt, has to do with the incomes policies pursued by both countries. An important social aim of these policies is to even out income distribution by narrowing the increases in high level salaries.[2] In principle, the excess demand for skills would cease, if the market forces were allowed to push

1. See G K Helleiner: Economic constraints on socialist planning in Tanzania, University of Toronto, January 1969, stencil, or IBRD's Report on Kenya Part I, dated October 22, 1969.
2. See Kenya 2nd 5 year plan, p. 130, Tanzania 2nd year plan, p. 205. The seriousness of the policies in keeping down high level salaries can be verified by factual instances quoted in IBRD's Report on Kenya, part I of October 22, 1969, p. 54., or in Socialism in Tanzania, President Nyerere's speech of October 1966, Tanzania shall be built with devotion.

the price of skills up to a level where demand equalled supply. In this sense, the inadequacy in supply is policy induced. Socially motivated rationing has replaced the price mechanism. The important question, however, is whether the rationing system is efficient in allocating the scarce resource so as to make its contribution to development as large as possible. The point made is not a plea for higher salaries, but a suggestion that the various agencies which demand scarce skilled labor, are unlikely to clarify to themselves or to the rationing authority the alternative social cost involved, unless they are charged that cost in full. There is then a risk that fashion, prestige and personal influences on the rationing authority rather than the anticipated development output, might become a guiding criterion for skill allocation at the micro-level.[1] At an aggregate level, this could lead to a more skill intensive national development program than the one resulting in maximum development, given the skill supply. This problem is not easily overcome by overall central planning, unless the planning authority is both fully aware of the problem, and prepared to scrutinize the details of all development ventures. Such a degree of centralization is of course not practicable. Besides, it would by itself be extremely skill-consuming. The conceivable negative effects of the income policy, as outlined here, provide an instance of a possible conflict between the object of equality and the other development goals pursued.

What is the likelihood that Kenya and Tanzania will follow the pattern suggested by Chenery, so that first savings and then foreign exchange replace skills as the effective constraints in the countries' progress? The fact that domestic and foreign capital have not so far constituted the general effective constraint, is not a sign of their abundant absolute supply, but rather of a situation where, with the initial conditions and policies followed, the availability of skills has been still more inadequate, and has hindered the full utilization of the other two resources.

To form a judgment on what will happen to the skill constraint in future, we have to study among other things, the expected changes in supply for skills, savings and exchange in the coming years. A very broad idea about the forthcoming supply of skills can be obtained by reference to the expansion, achieved and expected, in the two countries

1. For a practical instance see IBRD's Report on Tanzania, Part I, dated March 17, 1970, p. 31. One might also conjecture that there would be much more hesitation about many of the modern sector industrial ventures in Kenya, or the skill- and capital-intensive state farm program in Tanzania, if full account were taken of the real scarcity prices of skills required in these activities.

table 6.2. In our context, the secondary and university enrolment changes are of foremost interest, since the skill constraint pertains primarily to persons with such higher level training. In 1969, more than 2,000 Kenyans and about 800 Tanzanians were studying at universities overseas.[1]

Table 6.2. Enrolment in Kenyan and Tanzanian educational institutions. Achievement in first 5 year plan, state in 1969, and target for the second 5 year plan.

	Kenya:			Tanzania:		
	1964-69 % change	1969, no. enrolled	1969-74 % change	1964-69 % change	1969, no. enrolled	1969-74 % change
University	270	1,700	100	550	2,000	100
Secondary	220	115,000	50	50	30,000	15
Primary	26	1,200,000	43	43	850,000	35

Source: Kenya and Tanzania, 5 year plans, yearly economic surveys and annual plans.

These should be added to the university enrolments in East Africa to get a proper appreciation of the future supply of university graduates.

The unprecedented expansion of the educational system presented in the above table, gives a highly aggregated picture. The figures must be handled with caution in deriving conclusions about the future supply of skills required in development.

First of all, almost half of the students enrolled in and graduating from secondary schools and universities in Kenya and Tanzania, concentrate their studies on arts subjects[2], with only limited relevance for the development efforts pursued in the two countries. Graduation, therefore, does not provide the subject background needed to widen the skill bottleneck. On the contrary, there are already signs of saturation, and even redundancy among certain categories. Thus, growing unemployment problems are reported among art graduates leaving secondary schools in Kenya[3]. From the point of view of development, the resources spent on the extremely fast expansion of the arts departments in Kenya's secondary school system, have not been efficiently allocated. The development impact could have been more sizable if the same

1. Kenya 2nd 5 year plan, p. 122, Kenya Economic Survey 1971, p. 209, Tanzania Annual Plan 1970-71, p. 85.
2. Statement compiled from pieces of information in Kenya Economic Survey 1971, ch. 11, Tanzania Annual Plan 1970-71, p. 83-88, and Tanzania Economic Survey 1970-71, chapter 13.
3. Kenya first 5 year plan, p. 109, Kenya Economic Survey 1970, p. 173.

resources had been spent on training programs of more practical relevance. It might well be that the relative demand for arts education facilities in both countries would decrease, if the salary rewards of different professions were not affected by equilizing incomes policies, but were to reflect better their respective scarcities.

Secondly it should be clear that a considerable part of the skills needed in development are acquired outside the school system. Local entrepreneurial talent, for instance, which was so important in the earlier economic development of i-countries, was not usually based on a formal school background. And in many professions, high level training is required as a basic prerequisite only, to be followed by several years of practical training. In the case of medical doctors, high level administrators or architects, to take just a few instances, the process of skill creation is very long. Thus, although Kenya and Tanzania have expanded very considerably the training facilities for such specializations, it will take long before the students now enrolled in the educational institutions, will add to these high level skill supplies. One could finally conjecture that the Africanization policies, while decreasing the skill supply in the short run, facilitate the long run creation of domestic skills outside the school system, by providing more opportunities for Africans to acquire practical experiences in various fields.

Our arguments on the future skills supply are rather inconclusive. They do provide us with a general impression of a continuous fast growth, resulting mainly from the education expansion. But they do not enable us to specify the time sequence, nor the quantity of the future supply of various skills.

Availability of savings and foreign exchange

Let us now leave the skills problem for a moment, and examine instead the anticipated savings and exchange supplies, to return thereafter to a joint consideration of all the three resource constraints. Savings and exchange availabilities can be divided into what emerges from national efforts, and from foreign contributions, e. g. foreign investment and aid. Our interest is primarily in the national part, since we wish to determine the nature of the resource deficiency which aid could help to overcome.

The discussion of savings has to be based on a factual foundation which is much weaker than that of skills. The national savings figures are very rough estimates obtained as residuals in the national accounts. The IBRD has derived the amount of national savings for the two countries in this way. The

figures suggest that gross savings grew at about the same rate as the national product during the 60-s, and constituted roughly 16% of GNP in Kenya and 14% in Tanzania.[1] Even with reliable data on past achievements, predictions about the development of future savings is an extremely equivocal task. With the uncertain information on past and current savings performance, quantifications of future savings are simply impossible. The development of national savings will depend on the policies pursued, with measures like interest rates, increased profit incentives, savings mobilization efforts through rural savings banks, and expanded taxation as some of the determinants. Even if the savings ratios are increased, the total amounts saved will continue to be small, as a result of the low GNP base from which savings are derived. This can be illustrated by a simple arithmetical example. Suppose that the average and incremental capital/output ratios are 3, per capita product $ 100, and per capita capital depreciation $ 8. When per capita gross savings and investment is $ 20, net investment will be $ 12, the overall capital stock will grow by 4%, and the per capita capital stock will increase by $ 3 to $ 3.03, assuming 3% population growth. If per capita gross investment is suddenly augmented to $ 25, as a result of increased savings or larger aid inflows, depreciation will remain unchanged to begin with, and net investment will now be $ 17. The overall capital stock will now grow by 5.7%, while the per capita capital stock growth will increase from $ 3 to $ 7. In relative terms, the change is substantial, in absolute terms growth continues to be very small.

Government revenue from taxation has been fast increasing. During the first 5 year plan period, tax income in Kenya rose by 80%, in Tanzania by more than 100%. In 1969/70, taxation constituted 17% and 19% of GDP respectively, in the two countries.[2] Recurrent expenditure has increased at fast rates too, however, and no positive trend can be discerned in the amount of government savings out of tax income, as the latter rises. The fast increase in the recurrent expenditure has been predominantly caused by the running costs of all new development projects, like schools, hospitals, transport facilities etc., which went into operation during the first plan. Taxation has not so far been an efficient source of national savings.

There is also a wider question pertaining to the savings constraint, which needs clarification. In what sense can deficient savings be seen as an effective constraint on the full utilization of a country's resources? One could argue

1. IBRD World Tables, January 1971, Table 3.
2. See Kenya Economic Survey 1970, p. 153, Tanzania Annual Plan 1970/71, p. 163, and Tanzania Annual Economic Survey 1968.

that if and when skills cease to be the effective constraint, and a deficient generation of savings puts a limit on the size of the development effort, deficit financing could be expanded, to help in putting the underutilized unskilled labor resources into production. We may distinguish between the roles of deficit financing in rich and in poor countries. The role of deficit creation in an industrialized country during a period of depression is primarily to stimulate demand, thereby creating incentives for resumed production. In an underdeveloped economy deficient demand is seldom the major cause to underemployment of productive resources. Instead, the inability to expand production usually depends on factors like inadequate incentives, an inflexible resource structure, insufficient entrepreneurship, non-existent technological and commercial information and knowledge, absence of credit institutions etc. A common factor of all these obstacles is that they relate to deficiencies of effective supply of inputs in the production process. Expanding the supply of these inputs thus becomes the primary objective of deficit finance.

The government could for instance use deficit finance to mobilize the underemployed marginal rural labor into a rural works program. The deficit money would be used for providing management, and for labor remuneration. Agricultural production would not decrease much, if the workers were more or less unemployed prior to their new engagement. Instead of being fed within the family structure of subsistence agriculture, they would now use most of their income for purchases of food. Agricultural incomes would rise both as a result of this increased cash demand for food, and because the agricultural sector would benefit from the roads, ditches, irrigation works etc., established through the works program. To prevent inflationary pressures, the government could recoup its deficit finance expenditure at this stage by taxing away part of agriculture's additional income, and by charging a price for the new facilities.

In principle, deficit finance could be used in this way, until a skill bottleneck of some type were hit upon, for instance when the government would run short of administrative capacity. But then savings would no longer constitute the effective constraint.

In practice, the fear of inflation imposes a r e s t r i c t i o n on the use of deficit financing. To rework the above example in more realistic terms, increased taxation of those subsistence and semi-subsistence farmers, whose support burden is diminished by the labor mobilization, may

be a complicated and politically unfeasible matter. The reaction of the farmer could be to consume more rather than to add to the marketable surplus. The choice for the government will then be either to accept inflation through the increased demand for food, or to expand food imports. In the latter case, action is limited by the country's exchange reserves and exchange earnings. Inflationary pressures are further enhanced by the general structural rigidities characteristic of u-countries. The immobility of all types of resources, and the deficient knowledge and market information will restrict supply reactions even if the needed resources are available somewhere else in the country. Thus, although in principle deficit financing could be used in most cases to overcome a national savings deficiency, the savings constraint reemerges in practice as a result of the limit commonly posed on the use of deficits in government budgets. The appearance, timing and severity of the savings constraint in Kenya and Tanzania will then partly depend on this self-imposed restriction, after the major deficiencies of skills have been overcome.

During most of the 60-s, institutional interest rates, both short- and long-term in the two countries, appear to have been maintained at lower levels than in major West European economies.[1] This may be surprising, since one would expect either an excess demand or higher prices for funds in countries as scarce in capital as the East African ones. The most important reason why, in spite of low interest rates there has not been any persistent excess demand for finds, is the lack of skills, expressing itself in an ability to formulate and implement investments. This situation can change very fast, however, and it is instructive to study the developments in Tanzania in 1969-70. Having succeeded in initiating the implementation of several larger development projects, the government had to impose restrictions on credit and controls on the credit flows, in order to limit the fast credit expansion, with its ensuing inflationary pressures, and a beginning decline of exchange reserves. Another important explanation is that the low interest rates, and the balance in the supply and demand for funds pertains to the small modern sectors only, while traditional agriculture has so far had quite limited possibilities to take advantage of institutional credit and its low interest rates.

Statistics on exchange earnings rest on a considerably firmer ground than those on savings. The growth of exchange earnings from exports of goods and services has been about the same as GDP growth in Tanzania. The value of these exports remained around 30% of GDP throughout the 60-s. Kenya's

1. Survey of African Economies, Vol. 2 IMF, Washington DC 1969, p. 193, 271. Kenya Economic Survey 1971, p. 24., Tanzania Economic Survey 1970-71, p. 31.

exports grew more slowly, and their share of GDP fell from 34% in 1964 to 27.6% in 1969.[1] Almost 60% of Kenya's commodity exports consist of agricultural goods, with coffee and tea being very important items.[2] In Tanzania the commodity concentration in foreign trade is less prominent, but the overall agricultural concentration in export is even higher than in Kenya, with coffee, cotton, sisal and cloves accounting for the largest shares.[3] The expansion of exports during the 2nd 5 year plan is projected to be slightly above the GNP growth in both countries.[4] This optimistic forecast is mainly based on the positive prospects for exports of coffee in the early 70-s, and the bright expectations about tourist traffic expansion in the coming years. In a longer perspective, the concentration on fairly stagnant commodities like coffee, tea, cotton etc., is likely to restrict the export growth in the two countries.

So far, foreign exchange has not been a factor constraining development. Thus Kenya's reserves stood at $ 235 M in December 1970, up from about $ 77 M in 1964, and sufficient to cover more than 6 months' imports. In Tanzania, at the end of 1970, the exchange reserve was about $ 108 M, up from roughly $ 22 M in 1964, and sufficient for more than 4 months' imports.[5] It should be noted that this growth of foreign exchange reserves has taken place in a period with no severe restrictions on the imports of consumer goods. Like the small but ample availability of capital funds this in part reflects an inability during the 60-s, to mobilize the exchange resources, resulting from a limited capacity to implement development projects, caused by an inadequate supply of skills.

The last statement could be turned around, and seen from a somewhat different angle. One could then contend one important factor explaining why capital has not so far emerged as an effective constraint in the two countries, is the way in which their governments have dealt with foreign support. While both have adopted far-reaching Africanization policies, curtailing the number and types of foreign personnel in responsible positions, there has up to recently been much less discrimination against diverse inflows of foreign capital. This may explain why Kenya has been able to improve its exchange reserves position during recent years, while the share

1. IBRD World Tables, January 1971, Table 3, and IBRD Report on Kenya, dated October 22, 1969, table 15.
2. Kenya 2nd 5 year plan, p. 36, 38.
3. Tanzania Annual Plan 1970-71, p. 135.
4. IBRD Report on Kenya dated October 22, 1969, Part I, and IBRD Report on Tanzania, Part I, dated March 17, 1970.
5. Figures compiled from material in Tanzania Economic Survey 1970-71, p. 33, Kenya Economic Survey 1971, p. 29, Surveys of African Economies, IMF, Washington DC 1969, UN Statistical Yearbook 1969, and IBRD Material.

of its exports in GNP was falling. Eventually, however, there is likely to be a reaction against the relative freedom of capital inflows, based on arguments similar to those used as a rationale for the Africanization policies. Tanzania has already taken important steps in this direction in its nationalizations in 1967. The simultaneous policy changes, restricting the areas for foreign private investments, are likely to speed up the emergence of insufficiencies in the savings and exchange resources.

The interrelationships between resource constraints

Rather than attempting the impossible task of predicting the forthcoming sequence of effective constraints in Kenya and Tanzania, let us instead reason about some of the factors which will determine this sequence. Many of the factors have already been discussed, and can be dealt with briefly.

Following the fast expansion of the education system, the supply of skills will grow considerably over the forthcoming years. The growth may be uneven, with redundancies emerging among certain types. Some skills require a very long maturing time, and the efforts since independence to expand their supply will not bear fruit for a number of years yet. We have not been able to make any prediction with regard to future savings and have concluded that the long run export revenue expansion prospects of the two countries are not very encouraging, in view of the heavy concentration of exports on agricultural commodities.

Excess demand or excess supply in skills, savings and exchange respectively, is ordinarily the result of non-equilibrating relative prices. The governments maintain a strong price and quantitative control in the capital and exchange markets, and a partial one in the skills market. The pricing policies of the governments, and the inducements to ensure efficient utilization of the resources, embodied in the prices, will thus be an important determinant for the relative inadequacies of the three resources.

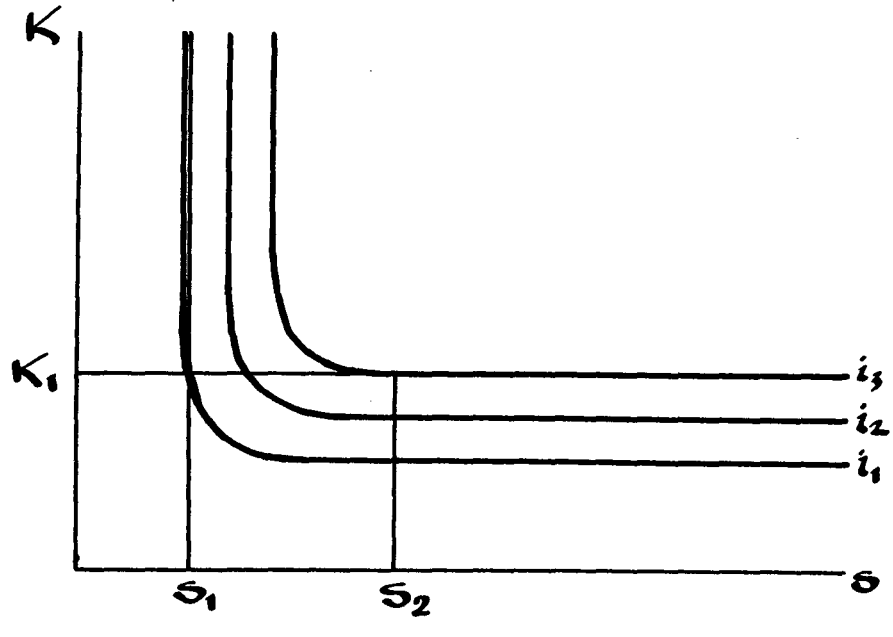
Both Kenya and Tanzania undergo a profound structural transformation, which obviously affects the tastes and preferences of the population. This, too, will considerably affect the nature and sequence of constraining factors in coming years. Growing income might lead to a higher preference for future consumption, with an increased savings propensity as a result. Widened horizons could contribute to a sharply augmented demand for imported goods, with ensuing exchange problems, or to an unexpected multiplication of demand for skill intensive services. The demand-led expansion of secondary school enrolments in Kenya's 1st 5 year plan,

exceeded the target by more than 75%[1], with an obvious failure in the country's skilled manpower plans.

The governments' approaches with regard to foreign support in the form of personnel and capital through aid or foreign investment, and their choices of development strategies will also affect the sequence and severity of resource deficiencies. We have discussed in chapter 3, how a forceful industrialization policy is likely to strain the foreign exchange resources of a country much more than a development policy emphasizing agriculture.

The nature of the constraints will also be influenced by the possibilities to substitute the three resources for one another. Foreign exchange can obviously always substitute for domestic capital, but substitution the other way round is feasible only when there is a possibility to use the local currency to obtain the capital goods required. Skills and capital are substitutable for each other to a very limited extent only. By introducing highly capital intensive automatic equipment, one might save some of the skilled personnel who would be needed to handle the less automated machinery. Commonly, however, skills and capital appear to be complements rather than substitutes, and a growing use of one requires added supplies of the other. For a sector in the economy, say health, this situation could perhaps be illustrated by figure 6.1 where the availability of skills S_1 (medical personnel) is depicted along the horizontal axis, and the existing capital stock, K_1 (hospitals, health centres, dispensaries), on the vertical one. The expansion of K is dependent both on savings and on availability of foreign exchange. In view of the limited choice of medical technologies, substitutability between capital

Fig. 6.1



1. Kenya first 5 year plan, p. 109, Kenya Economic Survey 1970, p. 173.

and skills is limited, as appears from the isoquants i_1 to i_3, depicting the health sector's production
is constrained to i_1 by the skill supply, for even if the availability of capital is increased above K_1, the isoquant i_2 cannot be reached. The possibility to expand production through an exclusive increase of skills, however, is very limited too, and if skills are extended beyond S_2, a skill redundancy will emerge, unless capital is increased simultaneously.

The figure also illustrates that full employment of sectoral resources presupposes a growth of capital and skills in narrowly determined proportions. There is therefore a risk that Kenya's and Tanzania's forceful efforts to overcome their present skill deficiencies, may result in an overinvestment, and future oversupply of some skill categories. This is because investment in skills is very durable, with yearly additions constituting only a small fraction of total stock. A simple numerical example will illustrate the problem. Say that the yearly replacement requirement of the health sector's capital and skills is 5%, but that the domestic medical skill requirement suddenly doubles from 1000 to 2000, following independence and the departure of colonial personnel. If it is desired to fill in the emerging excess skill demand within, say, a 10-year period, it is necessary to expand the yearly output from 50 to about 200. From the 10th year onwards, the lag due to the expanded stock requirement has been caught up, and a yearly output of 100 will henceforth be sufficient to keep the skill stock intact. The expanded educational capacity, which also has long durability,cannot be curtailed in the short run. The consequence of this is that either there will be an excess production of skills, or that part of the educational investment is put into idleness, unless of course, it is decided to undertake a sharp expansion of the health sector's capital stock. The latter may be impractical in view of the demand conditions for health services, and the capital requirements in other sectors. Mechanics of this type helps to explain the the educated unemployment, and the sizable brain drain from India, Pakistan and other u-countries.[1] A similar development might ensue in East Africa as well, following the impressing growth of this region's educational sectors.

One way to ameliorate the problem just illustrated, is to make the education system as flexible as possible, so that it can easily shift between different educational requirements. Another is to make extensive use of foreign resources, e.g. of sending students abroad for training, or of importing teachers for the catching-up period. This may of course be counter to the Africanization drive.

1. For a description of a factual development like the one described here, see Matching Employment Opportunities and Expectations: A program for Ceylon, ILO Geneva 1971, especially chap. 1 and 9 in the Report, and chapter 20 in the Technical Papers of the above document.

It is essential that the relative growth rates of skills and capital are maintained at levels which will permit their full utilization. But this should not overshadow the basic problem, discussed in chapter 3, and referred to again in the beginning of this section, namely the prevalence of an extremely uneven overall factor endowment. Kenya and Tanzania appear to be so poor in both skills, domestically generated capital, and foreign exchange, that even when pursuing the appropriate policies, they are most likely to face very serious difficulties in providing gainful employment to their growing labor force. Our above discussion has given a predominant attention to the skill deficiency, since skills seem to have constituted the effective constraint in the development work so far. But the data presented should also have indicated that the absolute amounts of savings and exchange reserves are so low that they are far from sufficient to permit a gainful utilization of the growing labor force in its entirety, even if the skill resources required for doing so were available. One or two larger investment projects could for instance easily deplete the entire exchange reserve, if the necessary imports were financed from this source.

The focus in aid to the two countries ought therefore to center on the more general and long-run problem of how to balance the unevenness between the unskilled labor supply on the one hand, and all the three deficient factors on the other, rather than on the less important difficulty of insufficiencies in the availability of one of the three deficient factors vis a vis the others, especially as this latter type of difficulty is probably much more short-term, and much easier to rectify by domestic policy measures.

What can aid do to overcome the resource constraints?

A few conclusions can now be drawn regarding the characteristics of an aid program best suited to overcome the resource deficiency problems of Kenya and Tanzania. The first conclusion is that the problems to be tackled appear to be very similar in the two countries. Although Kenya's economy is more prosperous, while Tanzania might have a larger potential for expanding its agricultural land area, and in spite of the differences in the two countries' approaches to education expansion and foreign capital, the constraints which both are tackling in the field of skills, and will have to tackle in the fields of savings and foreign exchange, are very akin to

each other. The specific characteristics of aid to overcome the resource constraint problems will consequently be much the same in both countries.

As skills, savings and exchange all seem to be insufficient for the mobilization of the entire unskilled labor force, a seeming conclusion is that aid should support those ventures which have sizable requirements of one or several of the three deficient factors. By concentrating aid support to such ventures, the immediate foreign contribution to the supply of the resource constraints would be maximized.

Obviously it is far too simplistic to make the intensive use of externally provided skills and capital the sole criterion for choice of ventures eligible for aid support. An indiscriminate application of this rule has led in a number of cases to perverse results. Several qualifications must therefore be added.

A first qualifying condition is that the venture has a valuable contribution to make to the development of the recipient country. This should be self-evident, but needs pointing out in view of the common tendency among donors to choose aid support activities on the basis of their own national talent and experience rather than according to the recipient's development needs.

Secondly it is necessary to enquire whether the output of the venture considered could not be obtained in an alternative manner. If it could, for instance through labor intensive traditional sector production, or perhaps through imports, it is by no means certain that the skill- or capital-intensive aid project will really help the recipient country to make a saving in the use of its scarce resources.[1]

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1. To illustrate the point, 165,000 people in India are directly employed in bakeries. Their employment is now in serious danger as a result of a recent aid loan to India from Canada for 5 automatic bread-making machines. See R. Shaw: Jobs and agricultural development, ODC, Washington DC, 1970, p. 52-53.

Third, it must be clarified whether aid will be forthcoming throughout the period of the project's high-level consumption of the scarce resources. A common donor practice is to finance the establishment of a project, while leaving maintenance and operations at the recipient's responsibility. The donors' short-sighted wish to maximize the scarce resource inputs in their contribution by selecting skill-, capital- and exchange intensive ventures, has led in many cases to a situation where the recipient country is left with a number of institutions which require large quantities of scarce resources for their running. Instead of helping the country, by making its availability of scarce resources last longer, aid reinforces the scarcity in such cases, by increasing the resource requirement.

A more constructive approach in selecting aid activities to help Kenya and Tanzania to overcome their skills-, savings- and exchange problems might be to search out and support activities whose "net output" of one or several of the scarce resources is particularly large. According to a suggestion by Keesing[1], each industry both consumes and produces skills. Engineers, accountants, qualified construction workers etc., are needed both to establish a factory, and to run it. But the production process will also lead to an accumulation of knowledge, experience and skills, which can subsequently benefit the nation at large. To overcome a scarcity of skills, it would be helpful to pick out those industries where the net skill output, e. g. the difference between skill creation and skill consumption is greatest. The same argument could be applied to savings-capital and exchange, and could be extended to any type of development activity.

Measures to help Kenya and Tanzania in developing new, more labor-absorptive technologies in agriculture and industry, and in increasing the competitiveness of existing labor-absorptive production methods, ought to have a high priority in aid programs directed towards overcoming the two countries' resource constraints. The subject has already been developed in other chapters of this study.

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1. D B Keesing: Outward looking policies and economic development, Economic Journal, 1967, p. 303.

Increasing the scarce resource supply through foreign inflows or through higher domestic generation, and stretching their use by the application of labor intensive production methods, are two ways to ameliorate the prevailing scarcity conditions. A third is to make a fuller use of existing resources by increasing their mobility and improving their allocation. The question is what kind of aid ventures could contribute, for instance, to a higher mobility and thereby fuller utilization of skilled personnel, to an improved development promoting utilization of those rural savings which are currently kept in improductive forms, or to a situation where the exchange resources, which for various reasons have left the country, could be attracted back and put to use in the development effort. The contribution of aid in these respects is likely to be found mainly in the fields of better information on opportunities[1] and improved fact gathering, and knowledge about the country, aimed at facilitating both private and public decision making on allocation and reallocation of the scarce resources.

There is finally the intricate problem how best to make use of the skills provided by aid in the face of the two countries' Africanization policies, which limit the number of foreigners that they are willing to receive. In order to avoid creating foreigner-intensive programs, counter to the current Africanization policies, the donors interested in providing skill intensive aid might first consider the possibilities to render such aid without transferring personnel to East Africa. Sometimes a suitable alternative to sending teachers could be to organize training for Kenyans and Tanzanians in the donor country or somewhere else. Likewise skill intensive research, whose results are to be used in the two countries, must not always necessarily take place on the spot. Another donor measure towards greater restraint in sending foreign personnel could be to ask in each and every case whether the expatriates are necessary and essential in the execution of the aid projects, and whether they do not belong to a skill category which no longer remains scarce, and which could therefore be replaced by local talent in the recepient country.

The whole above discussion on the patterns of aid to overcome the resource bottlenecks, presupposes a donor wish to provide assistance tied to specific projects.[2] The donor problem would be much simplified, and the aid efficiency might well be left unimpaired or even improved, if donors were willing to give most of their aid in the form of untied cash. If the skill scarcity constitutes a constraint on the recipient countries' administration, development

1. During a visit in Tanzania I was told by a small scale transport entrepreneur that prices of potatoes differed by 100% between two regional capitals, separated by a distance of about 500 km. Potato transportation by lorry gave a net return on capital invested of several hundred per cent per year, while simultaneously helping to keep down the regional potato price differentials. Availability of this type of information would certainly stimulate the activation of improductive savings and exchange deposited in foreign banks.
2. See discussion in chapter 2 for explanations to the donors' preference for project tying.

planning and project formulation, the difficulty might be overcome by the donors' adoption of Boserup's suggestion[1] that a small fraction of the untied program assistance be used for purchasing economic and planning expertise in the country or countries of the recipient's choice. Besides saving the various donors the trouble of formulating suitable aid contents, program aid would overcome the considerable difficulty of coordinating at the recipient level the aid flows from a multitude of donors, each with his own set of idiosyncracies and preferences. But the present aid climate is not very favorable towards untying aid from specific, donor formulated projects, and the above discussion on suitable patterns of project aid is based on this state of affairs.

6.5. Distinguishing policy patterns

The discussion on the resource constraints has frequently touched upon the policies pursued by the two countries. Before concluding the section on the constraining factors in Kenya's and Tanzania's development, it may also be worthwhile to have a look at the overall policies pursued by the two countries, to judge whether they contain any general development-constraining features, and, if this is the case, whether some kind of aid could be used to overcome them.

The ultimate development goals pursued by Kenya and Tanzania are very similar both to each other and to the definition of development used in this study, with the addition of a strong emphasis on self-reliance with regard to qualified man-power. In their broadest formulation, the Kenyan goals are stated as "achievement of high and growing per capita incomes, equitably distributed, so that all are free from want, disease and exploitation."[2] The Tanzanian goals are expressed more directly in terms of improved living conditions, e. g. achievement of adequate and balanced diets, adequate clothing, acceptable housing and access to basic education and health facilities for all.[3]

Informed observers agree that the development policies used by Kenya and Tanzania to achieve these goals, seem well-designed and realistic for tackling the development problems which both countries face.[4] The general

1. See Mogens Boserup's paper on Danish aid presented at the first meeting of the Scandinavian Development Society, May 7-8, 1971, Uppsala, Sweden.
2. Kenya, first 5 year plan, p. VII.
3. Tanzania, 2nd 5 year plan, p. VIII.
4. See IBRD's Reports on Kenya (Oct 22, 1969), and on Tanzania (March 17, 1970) or R Rasmusson: Development targets and plans of Kenya and Tanzania, Stockholm School of Economics, April 1971, p. 4, which lists the positive opinions of both individual scholars and institutions on the two countries' development planning.

criticism of u-country strategies and policies, presented in chapter 3[1], has a potential rather than actual validity here, mainly because it referred to countries at somewhat more advanced stages of development in which a badly conceived import substitution policy has led to the creation of an inefficient and burdensome industrial structure. It is true that industrial development is emphasized in East Africa too. Thus, planned growth rates in manufacturing during the 2nd 5 year plan are 9.7% in Kenya and 10% in Tanzania, as compared to the overall rates of GDP expansion of 6.8 and 6.5% respectively.[2] Capital costs to industry are quite likely to be subsidized in both countries.[3] But the industrial share of GNP is still small. And in view of the scarcity of skills, there has not yet emerged any severe rationing of capital, while import restrictions are relatively lax. Local industries, in so far as they compete with imports, can therefore not deviate too far from international standards of efficiency. It is too early to say to what extent the policy generated problems described in chapter 3 will affect Kenya's and Tanzania's development.[4] This will depend on whether and how the policies of the two countries will change, once the availability of skills ceases to be the overriding constraint.

Whereas both the general ultimate goals and a number of policy features are very similar in the two countries, it is frequently claimed that some key aspects of the policies pursued are distinctly different from each other. Kenya is said to rely heavily on private incentives and entrepreneurship, while the Tanzanian policies include several central features, characteristic of socialism. The clearest expression of this difference is probably found in three fields. The first one concerns land ownership and agricultural development policy. In Kenya, the effort is to institutionalize private land ownership, and the greatest agricultural development achievement has been the resettlement schemes, in which by 1968, about 1 million hectares of the White Highlands have been divided into plots and sold to almost 50,000 African farmers.[5] In Tanzania, in contrast, all land is in principle owned by the state, and the agricultural development policies are used to promote the establishment of Ujamaa-villages, in which both agricultural and subsidiary production are to be pursued in the main on collective lines.[6]

1. Import substitution policies which promote the use of capital and exchange intensive production methods by maintaining low interest rates on institutional credit, and under-pricing foreign exchange. See section 3.32.
2. F Mitchell: Macro-aspects of the plans, East Africa Journal, March 1970.
3. P Hopecroft claims that various investment incentives, depreciation allowances and support to industrial estates in Kenya, can be seen as mere subsidies on industrial investment capital. See his Industrial Development Aspects of the Plan, East Africa Journal, March 1970.
4. Tanzania Economic Survey 1970-71, however, describes the country's beginning import substitution problems. Thus some branches of industry are working with considerable excess capacity, as a result of faulty market predictions and consequent overinvestment, See p. 97.
5. Kenya, 2nd 5 year plan, p. 24.
6. Tanzania, 2nd 5 year plan, p. 4.

The second one concerns the approach to industrialization. The Kenyan government assumes in the main a promoting role, without any substantial direct equity involvement. The private industrial growth is supported by government sponsored industrial estates, various infrastructural services, finance at favorable rates, and industrial survey activities, aimed at mapping out the profit opportunities in different industrial branches.[1] In Tanzania, industrialization is predominantly a public affair. Of the industrial investments envisaged during the 2nd 5 year plan, 84% are to be undertaken by parastatals, e. g. government corporations, which manage groups of industries.[2] This public dominance is predominantly based on decree. The Arusha declaration of January 1967, clarified the government's aim to keep the major industrial branches in public ownership.

The third difference in policy intentions relates to the dependence on foreign capital. The Kenyan government underlines that domestic savings are insufficient to achieve the goals of the 2nd 5 year plan, and welcomes increasing private foreign capital flows into the country.[3] In Tanzania, on the other hand, the policy statements forcefully stress the necessity for national self-reliance.[4] The nationalization of banks, insurance companies, mills and foreign trade enterprises, and the establishment of public monopolies in most of the important industrial sectors at the time of the Arusha declaration, have probably discouraged the foreign investment flows. The private foreign capital inflow which is now permitted, is mainly into participation ventures, along with the parastatals.

The differences outlined here can hardly be used for judging the development constraining effects of one country's policy in relation to the other's. First there is lack of empirical evidence, on which a comparative judment could be based. Tanzania introduced its new policy package in 1967, and the effects would not yet be apparent. Second, it seems that the differences in approach have been somewhat overstated. The resettlement and ujamaa-policies have hardly affected more than a small minority of the rural population in the two countries. The Tanzanian public industrialization measures do not necessarily imply an outcome which is essentially different from developments in Kenya. A recent study of some state controlled industrial companies in Tanzania

1. Kenya 2nd 5 year plan, p. 315-323.
2. Tanzania 2nd 5 year plan, p. 67.
3. Kenya 2nd 5 year plan, p. 17.
4. "The basic objective will be to maintain the pattern of self-reliant finance, established during the first plan. This involves the utilization of such external finance as is available under suitable terms and conditions, while ensuring that the implementation of the development program does not become excessively dependent on external sources." Tanzania, 2nd 5 year plan, p. 212.

notes that the National Development Corporation, largest among the parastatal holding institutions seems to be content and does not interfere as long as satisfactory profits emerge from the industrial operations.[1] The national self-reliance urge in Tanzania too, becomes less distinctive from the Kenyan approach towards foreign capital, when expected inflow figures are substituted for the ideological verbal expressions. For the period 1969-74, the gross foreign capital inflow expectations constitute 44.5% of expected gross investment in Kenya[2], and 41.5% in Tanzania.[3] In view of the high uncertainty surrounding these figures, the difference between them is well within the margin of error.

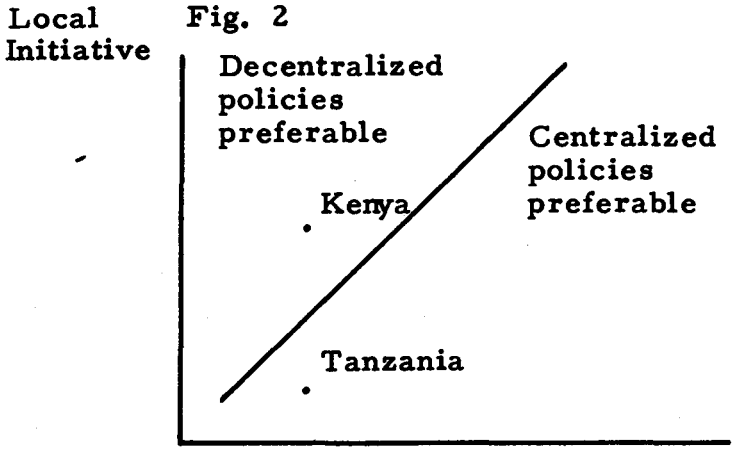
Even if a difference in policy along the lines outlined above could be found, it may be that it is explained by different requirements, due to the disparity in the two countries' initial conditions. It has for instance been claimed that the profounder colonial penetration in Kenya has led to more of local individual initiative as a result of higher prosperity, based on the infrastructural capital accumulation created by the colonialists, and due to the more profound integration of the rural population into the market system. In this situation it is possible that an indirect development policy, providing incentives, but expecting the individual to take the initiative, will render the best results in terms of creation, allocation and utilization of the skills and savings which constrain development at the local level. In Tanzania, on the other hand, where the rural sector has been much more characterized by isolation and stagnation, and where there are hardly any domestic industrial entrepreneurs, a forceful central government effort will be required to furnish the non-existent or inadequate scarce factors, to mobilize the population and push ahead with the development process.[4] If the above interpretation is correct, both countries' policies could be quite appropriate for the situation at hand.

This statement in no way contradicts what was said earlier about the necessity to decentralize when information is lacking at the center. Figure 2 could be used to illustrate the relationship between the degrees of local initiative (vertical axis), the amount of information available at the

1. I. Hägg: Some state controlled industrial companies in Tanzania, a case study, Scandinavian Institute of African Studies, Uppsala, Sweden, 1971.
2. Kenya, 2nd 5 year plan, p. 146, 161.
3. Tanzania, 2nd 5 year plan, p. 210-213. The Tanzanian plan does not provide figures for the expected foreign contribution to private investments. The share given above therefore pertains to the government and parastatal investments only, which constitute more than 65% of total expected investment.
4. G Hydén: Socialismens problem i Östafrika, Utrikespolitiska Institutet, Stockholm 1970.

center (horizontal axis), and the optimal degree of centralization in development policies. The more local initiative, and the less information at the center, the more efficient will it be to pursue decentralized development policies. To the left of and above the diagonal line, therefore, relatively more decentralized policies will tend to be more development promoting,

Fig. 2



while to the right and below, the same will be true of more centralized ones. If information flows are equally deficient in the two countries, while there is more initiative at the local level in Kenya, the model outlined here suggests that a lesser degree of centralization ought to be preferred in that country. The implications of the model should not be over-extended. Although it does illustrate a possible rationale for the policy difference between Kenya and Tanzania, it is likely that in practice this difference is motivated by purely political considerations. It should be emphasized, furthermore, that the model is highly simplified and static. It fails to show, for instance, the mechanics through which a chosen policy package will influence the degree of both local initiative and information at the center over a period of time.

While judgements on the overall development policies in Kenya and Tanzania, although generally positive, will lack specificity, it is much easier to criticize specific aspects of the policies pursued. We have, for instance, already pointed out the possible negative effects on the availability and utilization of skills, arising from the political pressures for Africanization or from the incomes policies pursued. We have also touched upon the employment problems caused by the demand-generated secondary school expansion in Kenya. It is improbable that the Kenyan society will be in a position to make use of all the skills imparted to the fast growing numbers of arts graduates of secondary schools. Even if there is an independent value in education, better uses of the resources now devoted to secondary training, could certainly be found, in education or otherwise.

A further policy, the value of which may be put into question, is the large-scale state farm development in Tanzania. Acreage-wise, this program is not very substantial. State farms are to be established on some 100,000 hectares, during the 2nd 5 year plan.[1] Allocation of capital, however, is to be massive. About half of the government's investment in agriculture is to be spent on these state farms.[2] The problem with the program is that it is rushed into being without proper preparations. Neither the technical nor the economic aspects of the farms have been adequately studied. The managers are in many cases poorly trained for the complicated tasks they are to handle, and there is neither the data nor the organization to provide them with proper guidance.[3] Little employment will be created, in view of the high degree of mechanization envisaged. The state farm program carries a considerable resemblance with a row of unsuccessful attempts to establish large-scale capital-intensive agricultural ventures in Tanzania, from the famous groundnut project, initiated by the colonial administration in the 50-s, to the over-capitalized settlement schemes, established partly on the advice of the IBRD, and eventually would up during the country's first 5 year plan.[4] There is likelihood that the current state farm program too will prove to be failure.

The conclusions to be drawn by aid givers from the above policy discussion, are rather meagre especially as most policy matters are political sensitive issues, in which the recipient would not tolerate foreign involvement. The role that aid could play to improve the formulation of policy in both Kenya and Tanzania, is probably to be found in two areas. The first one relates to a clarification of the effects which various policy measures are likely to have. Aid resources could be used to initiate research around policy evaluation. In Kenya, for instance, an urgent task for research of this type is to clarify the effects on employment of the present and alternative educational expansion policies. In Tanzania, the agricultural policy formulation

1. Tanzania 2nd 5 year plan, p. 30.
2. F Mitchell: Macro-aspects of the plans, East Africa Journal, March 1970.
3. IBRD's report on Tanzania, Part I, dated March 18, 1970, p. 68.
4. See for instance Rural Cooperatives and Planned Change in Africa, UNRISD, Geneva, 1970, for the relevant experiences. Quoting the World Bank Mission to Tanganyika of 1961, the UNRISD document states that "the World Bank recommended that Government attempt a transformation of rural society by creating large-scale settlement schemes, using technologically advanced means of production, and massive technical and financial assistance". (p. 295). As early as 1963, the conclusions from a thorough analysis of large scale capital-intensive farming were that "none of the schemes considered would be viable by normal economic standards". See R F Lord: Economic aspects of mechanized farming at Nachingwea, Her Majesty's Stationery Office, London 1963, p. 151. It is surprising that the authorities in Tanzania continue to disregard both the research results quoted here, and the experiences from the earlier unsuccessful attempts.

would be greatly facilitated, if suitably designed research studies could analyze the economic and social implications of various types and degrees of agricultural mechanization. In both countries, studies are needed to enlighten the decision makers in the central government about the positive and negative effects of different policies on incentives to develop skills, increase savings, and undertake diverse development initiatives at the local level. Another interesting field of study would be to clarify in what way different policies towards private foreign investment affect the development contributions of such investments in the recipient country. A possible practical follow-up action might be for the donor to induce his own multinational firms to accept the investment terms adopted in the recipient country, as a result of the aid-financed study.

The other area for a possible aid contribution, related to policy questions, is to widen the skill bottleneck in the two countries' administration, either by supplying personnel, as far as Africanization policies permit, to support the countries' administrative structures, or by providing suitable training in East Africa or abroad, for those involved in the formulation of policy.

6.6 A summary of areas for a valuable aid contribution

It may be useful after this lengthy discussion of Kenya's and Tanzania's development constraints, to summarize our findings of areas and tasks in which aid could be an efficient help in overcoming the constraining forces.

Our analysis has repetitiously suggested the inadequacy of information to be a serious constraint on development. We have consequently concluded that aid support for activities aimed at providing the countries' decision makers with a firmer factual background would be highly valuable both for making a fuller use of existing resources, and for avoiding the costs of faulty decision making. Aid could for instance be used to establish or expand fact-gathering or research institutions, and to increase the data output from aid project appraisals, by deepening and broadening such appraisal exercises.

We have noted the strain on the two economies, resulting from their fast population growth, and suggested a concentration of aid in this field to a search of ways to spread the birth control message throughout the society, including both the central government's decision makers and the subsistence sector, and for the formulation of arguments to facilitate its acceptance.

Our discussion of the resource constraints in Kenya and Tanzania suggests that both skills, savings and exchange are deficient in relation to the two countries' unskilled labor and possibly also to their resources of cultivable land. Foreign assistance can play a valuable role by simply adding to the scarce supplies. When aid is project tied, care should be taken to select projects which will help in ameliorating the recipient country's resource scarcities, even after the aid support has been discontinued. Preferably, those ventures should be supported, which, while not taxing on the recipient country's scarce resources, make a large direct and indirect contribution to the recipient country's supplies of skills, savings and foreign exchange. A fruitful task might be to use aid for the purpose of designing production technologies in different fields, which are more labor absorptive than the ones presently in use.

Up to now, and for some years to come, scarcity of skills appears to be the effective resource constraint. The implications for aid to help in overcoming this constraint are particularly intricate, because it is induced to some extent by the countries' Africanization policies. The problem for aid donors could be expressed as one of maximizing over time the value of skill resources transferred and created, within the limits of a given number of persons sent out. Consequently, foreign personnel ought to be sent only for indispensable tasks for which it is impossible to obtain local skills. Support by providing qualified technical personnel to the recipient government's administration could be one such task, personnel to organize information collection, and search for more suitable production technologies, would be another. Training programs, enabling local personnel to take over as soon as possible, ought to be an ordinary corollary of skill-intensive assistance projects.

Aid to help expanding the education structure should have the important subsidiary objective to help the recipient countries make their education system flexible, so as to avoid the potential risk of overinvestment in education. Facilities to receive students from Kenya and Tanzania for training in the donor country might be a way of increasing the flexibility in the supply of education services. But then it is essential that the training provided is relevant to the conditions of the recipient countries.

M. Radetzki
March 1972

CHAPTER 7. SWEDISH AID TO EAST AFRICA: AN OVERALL ASSESSMENT

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M. Radetzki
March 1972

CHAPTER 7. SWEDISH AID TO EAST AFRICA: AN OVERALL ASSESSMENT

7.1 Factual international aid

This section contains a brief account of international aid flows to Kenya and Tanzania. It is intended to serve as an introduction to the following assessment of Sweden's overall assistance endeavors in the two countries. The data presented in this summary of international aid have mainly been taken from DAC documents and SIDA working papers, supplemented by UNDP country mission compilations, and, where available, documents prepared by the recipient country governments. The recipient governments, and particularly the Tanzanian one, do not always wish to provide full information on their aid relationships with various donors. The insufficiency of data, and a wish to be brief, will make this account somewhat general and not very profound.

A summary of aid flows from DAC countries and multilateral institutions to Kenya and Tanzania for the 5-year period 1964-69 is provided in table 7.1. It should be noted that the table gives figures for net disbursements according to OECD's definition. This means that loan amortizations have been deducted from the totals, but no adjustments have been made for interest payments. To get an overall view of aid, assistance from the Socialist countries should be added to the DAC and multilateral flows. Information on Socialist aid,

however, is very incomplete. The scattered evidence I have been able to

Table 7.1 Kenya and Tanzania: Total official DAC and multilateral disbursements net, 1964-68, million $

	Kenya	Tanzania
Total multilateral and bilateral	301.23	193.28
Total bilateral	252.28	172.87
of which:		
Canada	4.91	8.22
Germany	15.73	26.45
Italy	1.14	15.31
Sweden	8.21	10.89
UK	176.59	60.60
US	37.62	43.19
Total multilateral	48.95	20.41
of which:		
IBRD and IFC	26.11	-6.61
IDA	13.76	17.87
UN	12.99	13.22
Total net borrowing	151.49	71.24
Total grants	149.74	122.04

Source: DAC Geographical distribution of financial flows to developing countries, 1960-64, 1965, 1966-67 and 1968.

collect, is presented below, but in the computations which follow, only the DAC donors will be considered.

Between 1964 and 1968, total aid committed by socialist countries amounted to $ 66 M in Kenya and $ 77 M in Tanzania.[1] Disbursements between 1964 and 1967, reported only for Kenya, were no more than $ 3 M.[2] An estimate by UNDP of USSR disbursements in Tanzania in 1969, suggests a total of $ 1.6 M, predominantly for expert remuneration, the amount of which has been computed at UN salary scales.[3] Chinese credits and technical assistance to Tanzania have been provided for various purposes, e.g. a textile factory, mobile rural hospitals, and rural water development.[4] Already in 1967, China agreed to assist in the construction of the TANZAM railroad, estimated to cost some $ 300 M.[5] By the end of 1970, the Chinese commitment for this

1. UN Statistical Yearbook 1969, p. 670, and Paul Streeten: Aid to Africa, UN ECOSOC, stencil, July 1970, p. 23.
2. UN Statistical Yearbook 1969, p. 671.
3. UNDP in Tanzania, Annual Report on Development Assistance other than UNDP-s, 1969, stencil.
4. UNDP in Tanzania, Reports on Development assistance other than UNDP-s in 1967 and 1969, stencils.
5. The aid programs of the Communist countries, OECD Observer, June 1970. Including the Zambian part, total Chinese involvement has been estimated at $ 400 m.

railroad project amounted to a credit of $ 207 M, of which $ 15 M had been disbursed. Part of the credit is being spent on the import of consumer goods from China, and the proceeds from their sales in Tanzania finance Chinese and local construction expenditures as well as imports of capital goods from other countries.[1] In 1969, the UN estimated that some 1,200 Chinese experts were working in Tanzania, a majority of them with the railway project.[2]

Reverting to table 1, we may first note the very dominant position of the UK among the aid givers. Part of the amount provided by UK as aid has been used for payment of salaries and pensions to British administrators who stayed on in the two countries after independence.[3] The most important British involvement in Kenya has been a $ 22 M credit for repurchase of estate land, owned by British settlers. This land was subsequently used in the resettlement schemes referred to in chapter 6. In 1969, about 1,800 Britons were working on aid contracts in Kenya. Over half of them were teachers. Large groups were also working in the agricultural and health sectors. UK-s loan aid disbursements to Tanzania were severely curtailed from 1967, primarily for political reasons. Since then only about 10% of the aid flow received by Tanzania, has come from UK, and has mainly consisted of personnel assistance. The number of British experts and advisors in 1969 was about 440, down from more than 800 in 1967.[4]

The US and Germany, the next most important aid providers to Kenya and Tanzania over the 1964-68 period, had fairly heterogenous programs in the two countries, emphasizing agricultural development, road building and education. About 400 Americans and 90 Germans were working as experts on aid contracts in Kenya in 1969. In Tanzania, at the same time, their number was 75 and 35 respectively. Since 1967, Tanzania had declined a continued US Peace Corps support, while the number of German volunteers had decreased considerably between 1967 and 1969.[5]

The activities supported by the IBRD group have had a high emphasis on road-building, those of the UN on cattle breeding, and other agriculturally oriented ventures.[6]

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1. Information from newspaper reporting in Tanzania.
2. UNDP in Tanzania, Report on Development Assistance other than UNDP-s 1969, stencil. In 1971, an inofficial appraisal by the Swedish aid authorities put the figure at between 15 and 30,000.
3. Paul Streeten: Aid to Africa, UN ECOSOC, Stencil, July 1970, p. 10-11.
4. Most of the factual information contained in this paragraph has been taken from various unpublished working papers prepared by SIDA. The personnel figures exclude volunteers.
5. The factual information has been taken from various unpublished working papers prepared by SIDA.
6. ibid.

The sizable difference in the two countries' total receipts is primarily accounted for by the large flows of loans to Kenya, while the grant amount ($ 150 M and $ 122 M respectively) are much more equal. The assistance flow has been stagnant in Kenya, at $ 55-60 million per year over the period considered in table 1, while it has gradually decreased in Tanzania, from $ 47 M in 1964 to $ 33 M in 1968.[1] There are certainly several explanations to the difference in aid flows to Kenya and Tanzania. The smaller amount of loans and the limited number of personnel provided to Tanzania may be a result of that country's more discriminating attitude towards those types of aid. The diminishing amount of aid to Tanzania in comparison with the flows to Kenya might be explained by a wish to manage without too much dependence on outside sources, but could also be a reflexion of donors' political reactions to Tanzania's nationalization policies in 1967, or to the fact that, with the curtailed personnel support, the country could not present sufficient numbers of projects which the donors would find acceptable for aid support. Finally, the contrast in the amounts of aid from Socialist countries must certainly be viewed as a result of political considerations. Kenya, for instance, is said to have declined a Chinese aid offer in the late 60-s.

The importance of the aid flow to the national economy can be expressed in many different ways. Table 7.2 provides some comparisons of the magnitude of resource flows from DAC-countries with domestic magnitudes. DAC has

Table 7.2. The importance of net official DAC aid flows to Kenya and Tanzania

	Kenya	Tanzania
DAC aid disbursements 1964-68		
in % of gross investment 1964/65 - 68/69	28.5	22.5
in % of recurrent and development expenditure of central government 1964-65 - 68/69	25.5	22.1
annual average, in % of GDP of 1968	4.8	4.5

Source: Table 7.1 and Kenya Economic Survey 1970, Tanzania background to the budget 1968/69, and Tanzania Annual Plan 1970/71.

calculated the rank among 92 countries with regard to their official aid flow receipts, per capita, in % of GDP, and in % of their imports, for the period 1967-69. Kenya and Tanzania come close to the median in all three rankings, Kenya somewhat above Tanzania. However, for a sub-group of very poor countries, say those with per capita GNP-s below $ 150, they would come out far below the median.

1. DAC Geographical distribution of financial flows to developing countries, 1960-64, 1965, 1966-67, and 1968. The flows to Tanzania have increased considerably after 1968.

The value of pure aid, as calculated in chapter 2, is of course considerably smaller than the totals shown in table 2. No detailed estimates of this value will be undertaken here. It sufficies to note that the loan proportions of net aid disbursements to Kenya and Tanzania do not deviate very far from the international averages calculated in section 2.2. There is little reason for assuming better loan conditions for the two East African countries in comparison with what is common for DAC aid in general[1], nor that the cost of aid tying would be smaller. Consequently, following the conclusions of section 2.2, the total net disbursements must be decreased by 30 to 40%, to obtain the value pure of aid.

We should finally note that the deductions necessary to obtain pure aid will be somewhat smaller for Tanzania, in view of the higher grant proportion in the aid it receives, in comparison with Kenya. If Chinese assistance is also considered, it is likely that the total value of pure aid will weigh heavier in the Tanzanian than in the Kenyan economy.

7.2 Swedish aid to Kenya and Tanzania: the facts

Assistance from Sweden to Kenya and Tanzania was initiated soon after the two countries' independence. Up to the end of their first 5 year plans, Sweden's disbursements were $ 8.7 M to Kenya and $ 12.9 M to Tanzania. No loan repayments occurred during the period. Consequently, there is no difference between gross and net disbursements. Although some minor sums were paid out prior to 1964/65, the above amounts can be regarded, for all practical purposes, as Sweden's contribution to the two countries' first 5 year plans, which ended by June 1969.

Table 3 on the next page subdivides the totals into grants and credits, and estimates the amounts of pure aid by the same method and on the same basis as the international estimate in section 2.2. The grants include a heavy expenditure on personnel, recruited almost exclusively from Sweden. Loans are untied by source of purchase, and offered either on IDA terms.

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1. Between 1967 and 1969 the average terms of DAC-s official development assistance provided to Kenya and Tanzania, were in fact inferior to the overall DAC average. Discounting the repayment obligations of development lending by 10%, DAC has estimated that the grant equivalent of its official development assistance constituted 70% of the 1967 and 1969 commitments to Kenya, and 73% of the same commitments to Tanzania. Simultaneously the overall grant equivalent of DAC-s official development assistance commitments to all countries was above 80%. See DAC 1969 Review, p. 77 and DAC 1971 Review, p. 62 and 155.

or somewhat harder Swedish terms. A discount rate of 8% is used to estimate their grant equivalent. The resulting pure aid figures constitute 87% of reported disbursements to Kenya, and 72% of disbursements to Tanzania.

Table 7.3. Total Swedish aid to Kenya and Tanzania up to June 1969. Reported disbursements and pure aid value, $ million.

	Kenya		Tanzania	
	Dis-bursed	Pure aid	Dis-bursed	Pure aid
Grants	7.9		6.4	
Adjusted for excess cost due to tying[1]		7.0		5.7
Disbursed loans on IDA terms	0.8		2.6	
Grant equivalent discounted at 8%, equalling 80% disbursement		0.6		2.1
Disbursed loans 25 years maturity, 10 years' grace, 2% interest			3.9	
Grant equivalent discounted at 8%, equalling 55% of disbursed				2.1
TOTAL	8.7	7.6	12.9	9.9

Source: SIDA reports and official Swedish government documentation.

Sweden's resource contribution to the two countries' first 5 year plan development efforts is insignificant. Even if the unadjusted disbursement figures are considered, the flows constituted very small proportions of the recipients' GDP-s. Swedish aid was less than 1% of Kenya's total gross investment, as well as of total central government expenditure for the 5 year period considered. In Tanzania, Swedish aid constituted about 1.5% of the corresponding domestic outlays.[2]

But aid from Sweden is expanding very fast. By 1968/69, it had already risen to more than 3% of Tanzania's gross domestic investment. Between 1968 and 1970 the volume of committed but undisbursed credits to the two

1. When calculating the excess costs due to tying, we start out from the assumption (see chapter 5), that 75% of the grant amount is tied to Swedish resources, and that the excess price on this tied part is 15% (see chapter 2). The excess cost will then constitute about 11% of the grants transferred.
2. Figures on the recipient countries' investments and central government expenditures have been taken from Kenya Economic Survey 1970, and Tanzania Background to the Budget 1968/69 and Tanzania Annual Plan 1970/71.

countries rose very considerably, and much expanded credit disbursements will follow in the early 70-s as a consequence.

A very rough estimate of the importance of Swedish aid in the two countries' second 5 year development plan periods can be obtained from SIDA's Country Programming exercises. Actual and planned disbursements for the 5-year period 1969/70-1973/74 amount to $ 36 million for Kenya and $ 77 million for Tanzania.[1] This would correspond to 1.9% of Kenya's planned gross investment during the 2nd 5 year plan and 7.0% of the corresponding magnitude in Tanzania.[2] If the terms of aid do not change significantly, the value of pure aid will be some 20% below the figures quoted above, but this downward adjustment will probably be counterbalanced by the fact that like in their first 5 year plan, the two countries' total investments will fall short of the planned figures. If Sweden succeeds in expanding its aid volume according to this projection, the percentages quoted above might therefore be taken as a very rough indication of the likely importance of Sweden's aid in Kenya and Tanzania. For comparison we might recall the conclusion reached in section 4.2, that overall international pure aid in 1968 constituted about 8% of recipient countries' gross investment.

We have already noted that DAC and multilateral aid to Tanzania declined during the late 60-s. Suppose however that total foreign assistance inflows during the country's 2nd 5 year plan will be somewhat higher than for the 1964-68 period, and will amount to $ 200 million. On this not unreasonable assumption, Sweden would account for more than one third of the total Western foreign assistance inflow. Such a dominant role among donors will certainly place Sweden in a politically highly sensitive position vis-a-vis the Tanzanian government.

The figures do not suggest the magnitude of investment increase resulting from Swedish assistance, since it is hardly possible to say what would happen to consumption and investment in the absence of Swedish aid. Besides part of the Swedish funds is intended for recurrent expenditure rather than for investment.

Judged on the basis of volume alone, Sweden's aid cannot be said to have contributed in a significant way to Kenya's and Tanzania's development during the past 5 year plan. This will change during the 2nd 5 year plan period, if the above aid projections materialize.

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1. SIDA Annual Report 1970/71, and SIDA Länderprogram 1971, dated October 20, 1971.
2. The total planned gross investment volume appears in Kenya 2nd 5 year plan, p. 147, and Tanzania 2nd 5 year plan, p. 210.

Rather than devoting further attention to the quantitative aspects, however, it might be more interesting to try to ascertain whether the resources from Sweden have some particular characteristics, which make them more development productive than the domestic development resources of the two countries, so that the development effect of the Swedish contribution becomes more important than its share of gross investment. To verify whether this is true, a much more detailed look at the contents of the assistance from Sweden will be required.

> Financially, the Swedish involvement was highly concentrated to a few major activities during the first 5 year plan. Diversification came about in connection with a considerable expansion of Sweden's aid efforts between 1968 and 1970. Most ventures are thus relatively recent, with few ex post results to study. Practically the whole program can be classified into the categories of rural development, education, infrastructure and general administrative personnel support. The following brief survey pictures the most important activities in existence in 1971. The data mainly stem from SIDA-s Faktablad.
>
> Kenya
>
> Since 1966, an artificial insemination program is managed and financed by Sweden. Its final objective is to increase milk production by improving the cattle stock, with an emphasis on the small independent agriculturists in the resettlement schemes. The program includes a bull station, training of Kenyan inseminators, propaganda and information, and an analysis of the results from inseminations undertaken. Swedish veterinary personnel has administered the venture.
>
> On the lines of the Indian Intensive Agricultural Development Program, the Kenyan government has selected 14 pilot areas for a special rural development program. Assistance has been sought from various foreign sources to carry through the program, and Sweden has agreed to give the required support to the Migori District. Planning and preparations are currently pursued, and when the actual program starts in 1972, it is intended to include extension services to agricultural producers, help in improving cooperatives, marketing and animal husbandry, health- and training activities, production credits to farmers, and some development of the local road system.

Along with IDA, Sweden has provided a credit for the development of cattle ranching in the areas of Kenya, which are too dry for cropping. The credit will be used by the government of Kenya to establish a number of cattle ranches on different organizational patterns, among the predominantly nomadic tribes, now inhabiting the areas. The formation of ranches is aimed, at improving marketing and supply of meat in the country. The measures envisaged include increasing the number and improving the quality of the herds by vaccination, veterinary services, provision of water and rest places, and development of transport facilities for slaughter cattle from production areas to consumption markets. The agreement was reached in 1968, but full scale implementation did not begin until 1971.

In 1970, an agreement was signed between Kenya and Sweden about a credit for rural drinking water development, with emphasis on the poorest north-eastern parts of the country. To some extent this water development program will be directly supporting the above cattle-ranching scheme. In connection with the credit, 10 experts and 10 volunteers from Sweden were made available to Kenya's Water Development Division, to help in the execution of the program.

The cooperative movement of Kenya is supported since 1967 through a joint Nordic endeavor, of which Sweden finances 45%.[1] This project includes the establishment of a national cooperative college, with a correspondence institute attached, support to cooperative training at provincial level, advisors to the cooperative ministry as well as to the cooperative organizations at district level, and scholarships to cooperative leaders for studies in the Nordic countries. 45 Nordic advisors were working in Kenya in 1970, and 10 of them were Swedes.

The largest and oldest Swedish aid endeavor is the Kenya Science Teachers' College, about which agreement was reached in 1965. Sweden has paid almost all the investment costs, and covers gradually diminishing shares of the running costs of the venture. The three year program of the college, qualifies the students to become secondary school teachers in science subjects, a profession, for which there is currently a large excess demand. The training started early in 1966, and all those examined in 1968 and 1969, have easily secured employment as teachers. Of the 41 teachers working at the college itself in 1970, 30 were Swedes. A special training program is underway to enable Kenyan teachers to replace the ones from Sweden. A valuable side-line in the activities of the college has been the development of simple teaching aids for science instruction at the secondary level, which the graduates of the college can take with them after completing their studies.

Aside from the projects enumerated above, Sweden renders both personnel, commodity and financial assistance to Kenya's small birth control program. Personnel assistance is also provided on request to support various segments of Kenya's administration. Altogether 79 Swedes were working in Kenya with Swedish or Nordic aid activities in 1970, and 24 of them were volunteers.

Tanzania

The Kibaha Education Center was a joint Nordic responsibility from its establishment in 1963 till 1970, when the project was taken over by the Tanzanian government. The current agreement envisages continued Nordic personnel and investment contributions. The activities of the Kibaha Center comprise a general secondary school, forming an integral

1. This is the rule in all joint Nordic ventures.

part of Tanzania's school system, a health center, which, aside from its ordinary curative work, also includes a training program for rural medical aides, and a farmers' training center, providing both courses and extension services to farmers, cooperative leaders and government officials in the nearby districts. In addition, various community development programs, e. g. adult education, construction of latrines etc, are also organized by the Kibaha Center. 21 Nordic experts worked with the project in 1970, and 16 of them were teachers. A gradual decrease of Nordic personnel is envisaged during the coming years.

Preparations are at present underway for another Nordic endeavor in the field of rural development. The activities for the Mbeya project have not yet been worked out in detail, but they are likely to include agricultural research, training and extension services. As a preparatory measure, a Nordic group is evaluating the current Tanzanian system of rural training centers, and the efficiency of its agricultural extension.

One of the development goals proclaimed by Tanzania's political leadership, is to provide the country's population with drinking water. Beginning in 1965/66, Sweden has been financing 80% of Tanzania's rural drinking water development expenditure. So far, 4 credits have been granted, and the program is supported by several technical and administrative experts, and a number of volunteers. The credits have been used for implementing a great number of small projects, but also for surveying the water resources in different parts of the country.

Since 1968, the Danish and Swedish governments jointly provide assistance to the Tanzanian cooperative movement. This mainly consists of personnel from Denmark and Sweden, who are occupied with two tasks. One is aimed at expanding and improving cooperative training, using both residential courses, peripatetic units, and a combination of radio-cum-correspondence method to keep in touch with the trainees. The other is to strengthen the government's cooperative extension service, by making Nordic advisors available to the cooperative organizations in over half of Tanzania's regional capitals.

Through an agreement of 1963, Sweden has financed the construction and some running costs for a training institute for instructors in home economics in Musoma. The institute has been run jointly by FAO and SIDA, and has offered courses of various length, predominantly for women. No allocations are planned after the 1969/70 budget, and presumably Swedish involvement has now been ended.

Along with the IBRD, Sweden contributes through a credit to the financing of the Tan-Zam road, between Dar es Salaam and the copper belt in Zambia. The agreement was reached in 1969. Another credit was granted in the same year to the National Development Corporation, to finance industrial ventures. In 1970, a credit-cum-technical-assistance agreement was reached for help with Tanzania's grain storage. Another credit provided jointly with the IBRD, was offered for electric power development.

Sweden's development collaboration with Tanzania is being fast expanded. Construction of a secretarial school is expected to start in 1972.

Swedish aid to Kenya and Tanzania by project. $ M.

Project	Total committed Credits only	Disbursed up to June 1969	Disbursed 1969/70	Disbursed 1970/71	Budget 1971/72
Kenya					
Artificial insemination		1.5	0.5	0.5	0.6
Rural dev. Migori District			0.1	0.1	0.4
Cattle ranching	3.7	0.8	0.1	0.4	
Rural water	2.9		0.1	0.1	
Cooperative support		1.1	0.5	0.7	0.4
KSTC		5.2	1.2	1.0	0.9
Birth control			0.1	0.2	0.2
Secretarial school					0.1
Administr. personnel support		0.1	0.2	0.5	1.2
Tanzania					
Kibaha Education Center		5.1	0.3	0.0	0.2
Mbeya Rural development			0.2	0.2	0.4
Rural water	17.0	3.3	2.8	1.9	
Cooperative support			0.6	0.2	0.3
Home economics institute		1.2	0.3		
Tan-Zam road	15.1	2.6	2.3	2.6	
Industrial credit	2.9		0.2	0.9	
Secretarial school				0.6	1.1
Feeder road development					0.2
Nutrition institute					0.1
Correspondence institute					0.1
Training centre for administr.					0.1
Administr. personnel support		1.0	1.3	1.5	2.2
Grain storage	3.9			0.1	
Electric power	12.2			1.7	

Source: SIDA reports and official Swedish government documentation.

In the same year, a correspondence institute is expected to commence its operations. There are also plans to initiate a rural feeder road development project, a nutrition institute, and a training center for government administrators, in the course of the early 1970-s.

Like in Kenya, personnel from Sweden is provided on request, to support the public administration system. Including those working with the projects enumerated above, there were 105 Swedes working on Swedish or Nordic contracts in Tanzania in 1970. 57 of them were volunteers.

gives a rough summary of the major Swedish aid ventures in the two countries. Several minor involvements are not mentioned, and an addition of the table's figures will not fully correspond to actual or budgeted total disbursements. Total ex ante commitments are made for credits only, but the timing for their disbursements in the forthcoming years has not been fixed.

Overall, the impression gained from table 4 is a positive one. The Swedish efforts do have an emphasis on activities like education, rural extension, and socio-economic infrastructure, with direct relevance to both the economic and social variables of our development definition.

But to obtain a proper insight of the merits of Sweden's assistance, it is necessary to probe far beneath the headings of the above table. The rest of this section will therefore be devoted to a critical assessment of some features in the assistance flows. Although in this assessment we will try as far as possible to use examples which mirror the current characteristics of Swedish endeavors in East Africa, it must be remembered that projects ordinarily take several years to materialize, and that consequently our criticism may sometimes direct itself to practices which have been changed since, in the light of more recent experiences. The assessment will be organized around three headings, trying to evaluate (1) the efficiency in the use of Swedish aid resources, (2) the effects of the influence of aid on recipient preferences, and (3) the extent to which aid from Sweden has an innovative character.

7.3 Efficiency in the use of aid resources from Sweden

Sweden's aid to East Africa is a conglomeration of various activities. This should be clear from a glance at table 4. The macro-assessment, with which we deal here, can only point to, and scrutinize features which appear to be more or less typical for the entire aid endeavor. Since the programs are heterogenous, it will always be possible to pick out individual ventures which will be exceptions, and diverge from the features characterizing the overall program.

The word efficiency can be used in different senses. We have just noted that as far as can be judged from the macro-level, the composition of the aid programs appears to be efficient in the sense that it aims at pursuing the development objectives, as defined in chapter 3.

In a somewhat more narrow sense, we may ask whether the Swedish aid endeavors are specifically directed towards overcoming the development constraints of Kenya and Tanzania, as outlined in the last chapter. The answer to this query is not unambiguously affirmative, as the following arguments will show.

It is thus not possible to find any special emphasis in Sweden's aid preoccupations, on widening the information bottleneck, or on clarifying the development effects of various public policies pursued in the two countries. The Swedish administrative personnel support, valuable per se in overcoming the recipient countries' administrative deficiencies, will of course have some secondary consequences on policy determination. But aside from that, no clear-cut Swedish endeavor can be discerned in these fields.

The contribution towards slowing down population growth, is confined to Kenya, and small in size, but this reflects more the lacking interest on the part of the recipients, than deficient willingness of the donor.

The macro-survey does not disclose any substantial activities directed at increasing the two countries' potential to save, or to earn foreign exchange. In contradistinction, some of the Swedish aid endeavors do contribute valuably to indigenous creation of currently inadequate skills in the recipient countries. This would be true of the educationally oriented ventures like KSTC, or the Kibaha Education Center. On a more subtle level, the Swedish endeavors have been instrumental in establishing several efficiently functioning institutions, with a built-in system of local personnel training and promotion. Examples of this are Sweden's involvements in setting up functional organizations for the implementation of rural water development in Tanzania, or of artificial insemination in Kenya. Similarly, an important result of the Swedish administrative personnel support to Tanzania, has been the setting up of a governmental purchasing agency, with a gradual replacement of the earlier, doubtfully efficient practice to channel public purchases through the British Crown Agent for international bidding procedures.

Direct Swedish transfers of skills and capital, seem to have been much more important than the aid-induced indigenous creation of these resources. Several question marks can be formulated with regard to a number of aspects in these transfers. We will devote most of the remaining space in this section to a scrutiny of some of the problems and inefficiencies involved.

The tendency among aid donors to use excessively capital- and skill-intensive approaches in their aid endeavors was discussed in chapter 3, (section 3. 3). This seems to be true of several Swedish aid projects in Kenya and Tanzania too. As a result, more scarce resources than necessary are required to bring about a certain development output. A redirection of

the resources provided by Sweden, into less capital- and skill-intensive ventures could increase the development contribution of the aid flow. In a narrow sense, this malpractice is perhaps not so serious. It simply implies a wasteful use of aid. Taking a broader view, however, the recipient country risks to get stuck with a set-up of capital- and skill-absorbing institutions, which it can ill afford to maintain and replicate. The recipient does not foot the bill (at least while the aid flow lasts), and therefore lacks strong incentives to oppose such practices.

To illustrate this tendency, a common point of criticism about the KSTC in Kenya and the Kibaha Education Center in Tanzania has been that the buildings and implements were luxurious, far above common standards in the two countries. Neither of the institutions is unique for the countries concerned. Kenya has other secondary teacher training colleges, and although the combination of institutions at Kibaha is unusual, none of them represents any substantial deviation from what is common in Tanzania. Had the two projects been built without foreign aid, and according to prevailing local standards, it is most certain that the result would have been simpler and less costly, without substantially impairing the two institutions' productivity. In defending its policies, a body like SIDA uses two arguments. It is first suggested that policies have changed since the construction of the buildings for Kibaha and KSTC. Secondly it is claimed that the more expensive (luxurious?) mode of construction ensures less need for maintenance, whose inferior quality results in fast deterioration of many physical facilities in u-countries.

Although there may be something in both arguments, neither of them appears particularly convincing. The analysis of the Swedish grain storage project in Tanzania, presented in the next chapter, where SIDA's decision was taken as late as 1970, supports the contention that the capital intensive inclinations remain. And a superficial inspection of the cooperative college in Langata, outside Nairobi, where construction was completed only in 1971, and finance was provided jointly by Denmark and Sweden, renders a similar, somewhat luxurious impression. Thus, judging at least from these examples, there has been no serious change in policy in this respect.

The other claim that a higher initial investment minimizes maintenance, and thereby ordinarily improves the overall economy, is seldom, if ever,

supported by actual comparative costs calculations.[1] If the calculations were carried out, and, in particular, if real scarcity prices for capital and labor were used, the argument would probably prove untenable in the great majority of cases. It is also sometimes suggested that the recipient governments tend to neglect maintenance, in view of limited budget allocations for recurrent expenditure. This certainly is no argument for more durable and capital intensive aid approaches. For unless the comparative cost calculations confirm that the overall economy improves as a result of higher initial investments, the donor would gain by choosing the cheaper alternative, even if he took over the financial responsibility for the additional maintenance expenditure. Furthermore, there is probably a close relationship between the "imported, luxurious and capital-intensive" type of aid facilities, and the neglect of the recipient to keep maintenance at adequate standards. First, the recipient may correctly feel that the standard is so high that a certain deterioration can be allowed. Second, the special kind of maintenance services, required for the facilities established by aid may not be easily available in the recipient country.

The difference in approach between domestic efforts and those of a donor like SIDA could have a number of explanations. A likely contributory factor to the stress on capital, skill and exchange intensity in aid-supported projects has its origin in a mis-conceived Chenery analysis, according to which the donor attempts to maximize the scarce resource contribution in his aid flow by selecting those ventures for aid support, which make a particularly intensive use of such resources. We have dealt in chapter 6 with the fallacies of this approach. Even if there is an increasing understanding of the inappropriateness of such policies, it takes time for this understanding to penetrate to and to influence all those responsible for actual project formulation.

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1. A SIDA-report dealing with the Swedish support to secretarial training in Kenya, provides a representative instance of the concern about maintenance costs, without simultaneously considering the overall consequences on the economy of the project: "... special attention must be paid to the maintenance of the buildings, and a slightly more expensive material should be chosen if it has a longer life and low maintenance.... Generally the design and choice of material should be chosen in order that the minimum cost on maintenance is considered. By careful consideration for maintenance in respect of all mechanical services, a great saving can be effectively made so that over a long period much money can be saved." Source: Kenya Government Secretarial Colleges, Report from a mission to Kenya, September-October 1970, SIDA, Stockholm, December 29, 1970, section 7.24.

The unwillingness of the Swedish government to increase the administrative costs for aid has at times created a considerable administrative bottleneck at SIDA. A way out from this predicament has been to give preference to large-scale projects whereby SIDA's administrative resources could be economized. On the reasonable assumption that there is commonly a positive correlation between project size and capital intensity, this has been a further factor explaining the excessive capital intensity in many of the ventures supported by Sweden.

Another probable explanation is that the technicians and administrators who design Sweden's aid, are unable to free themselves from the factor price relations prevailing in the donor country. It is then likely that they will tend to substitute capital for labor to a degree not warranted by the low labor costs in Kenya and Tanzania. This tendency would be reinforced on technical grounds. Swedish technicians generally lack experience of the more labor-intensive methods, machines and materials, appropriate for the recipient countries' conditions, and would tend to choose the more capital intensive ones, with which they are better acquainted.

Although the aid administrators would certainly not admit it, a further contributory factor to the capital and import intensity of aid projects from Sweden as well as from other countries, is likely to arise from a donor wish to leave a lasting and identifiable imprint of his involvement. A more or less conscious preference is thence probably given to more durable and therefore more expensive outfits, and to equipment manufactured by and therefore identifiable with the donor country. The tendency described here is likely to be most common in institution building technical assistance projects. The problem is reinforced by the fact that such projects are usually staffed for a considerable time by expatriates, recruited by the donor agency, and demanding residential and working facilities at standards not too different from the conditions to which they are accustomed at home.

The question of personnel in Swedish assistance to Kenya and Tanzania raises some further problems of wider implication. Scarcity of skills in the two countries has been accepted by the Swedish aid administrators as a major development constraint. Consequently, aid to the two countries has become particularly personnel intensive. The number of bilateral field personnel from Sweden early in 1970, per million $ disbursed in 1969, was 21 in Kenya, 13 in Tanzania, less than 4 in Pakistan and none at all in India.[1] Furthermore, as appears from table 7.4 administrative personnel support from Sweden, e. g. personnel not specifically connected with any of the enumerated projects, is to increase very sharply in coming years from the 1970/71 level.

Undoubtedly, a considerable amount of technical and administrative competence, of which there is not enough to pursue the ambitious development goals, is supplied with Swedish aid. Nevertheless, questions should be raised about the conditions on which this transfer is provided. Although, on the average, the technical qualifications of personnel furnished would be superior to what is available in Kenya and Tanzania in the corresponding category, several serious disadvantages must also be taken into account.

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1. Disregarding the fortuitous year-to-year changes in the composition of the aid flow, the below table gives comparative figures for the personnel involved in the major aid programs in Kenya and Tanzania. The UK continues to maintain a very dominant position with regard to personnel in both countries. We should note, however, that the Swedish aid personnel group in Tanzania in 1969 was the third largest, after the Chinese and the British.

From	total disbursements 1968, $ M.	Personnel in 1969	No. of aid personnel per million $
Aid to Kenya			
UK	24	1,750	73
US	5	400	80
Germany	3.6	90	25
Sweden	3.6	67	18
Aid to Tanzania			
UK	3.6	520	145
US	6.0	75	12
Germany	3.4	75	22
Sweden	3.3	115	35

Source to table: UNDP country mission papers for Kenya and Tanzania, internal working papers prepared by SIDA and SIDA Annual Report, 1968/69.

The first has to do with the short duration of stay for the Swedish field personnel. Relatively few experts and volunteers extend their stay for more than 3 years, while many leave already after 2.[1] The task abroad, therefore, tends to become a parenthesis in the person's Swedish career, from which follows that there cannot be much of identification with the host country and its problems, and little of profound adaptation to its conditions.

This has many trivial expressions. Not only are there very few Swedish aid workers, who learn Swahili sufficiently to be able to work with it, but the time or inclination even to acquire a complete proficiency in English are often insufficient, and the job of the Swedish expatriate suffers thereby.[2]

The expert's technical competence has been acquired through work in Sweden, and during the short period spent abroad, he will seldom find it possible to study and understand how his experiences have to be adapted to suit the conditions of the country where he works temporarily. Only in rare cases is he even fully aware of the fact that the developed country solutions are aimed at problems which are frequently quite different from those prevailing in u-countries. The fact is that science and technology are so

1. Employees of Swedish firms sent to work abroad, usually stay for much longer periods. At LM Ericsson, for instance, the initial contract is for 3 years, but it is quite common for individuals to remain 10-15 years in a foreign country or region. To send out a person for 2 years only is generally considered wasteful. This information was received through interviews with personnel divisions of a few of Sweden's multinational enterprises. From an ongoing study on British technical assistance it is reported that "the British TA program provides a career for only a few; the majority of the respondents were employed on a short term basis only. Nevertheless, a large number - two thirds - had had previous working experience in a developing country". No information is provided, however, on the nature and length of this experience. See: A MacBean and K Morton: A Note on factors affecting the effectiveness of technical assistance, Institute of Development Studies, University of Sussex, Bulletin, January 1971. Comparisons with Sweden are difficult, since no corresponding information is available for Swedish technical assistance personnel. In view of UK-s colonial history, a reasonable conjecture is that u-country experiences are much more freely available in the UK than in Sweden.

2. A recent report on language proficiency of Swedish aid workers in Tanzania states that the experts, not having received adequate specialized English language training, "have been greatly handicapped during the first few months of their stay in Tanzania". The report also notes that there is far too little stress on teaching Swahili. "This applies especially to volunteers, who can hardly function now, unless they have a practical knowledge of the local language". (From Stencilled Report marked SIDA TAN DAO JH 24. 12. 70). For Kenya another report claims that "the majority of experts..... stated that it took many months before they could function properly because of their lack of language ability", and continues that "there should be greater demands made by SIDA as to the type of people to be recruited for duties in developing countries... At the moment there are far too many experts who can hardly function at all because of their lack of English." (From Stencilled Report, marked SIDA KEN DAO, J Hanson(ZA, 11. 1. 71).

dominated by i-countries, that little or no attention is devoted in the rich countries to areas like tropical agriculture, small scale production, an illiterate labor force, or subsistence farming, because such problems do not exist in these countries. The newly arrived expert will have to start learning afresh in most cases, provided he has the inclination. Ordinarily, however, he wishes to accomplish something tangible while his short contract lasts. Therefore he tends to use concepts, methods and solutions which worked at home, but which are not always fully relevant to the problems at hand. When, towards the end of his stay, he has acquired more relevant experiences, he will soon be leaving, and the experiences gained will be lost to the host country.

The unwillingness to readapt is further strengthened by the fact that the expert comes from a developed, e. g. "successful" country. This reinforces his feeling that the methods, tools and technologies used at home, are superior, and should be adopted by the recipient. Increasing numbers of nationals in Kenya and Tanzania will of course tend to argue along the same lines, as a result of the training that they received abroad or their collaboration with the expatriate expert group.

Most of the above problems are not restricted to Swedish personnel, but apply generally to aid experts. The problems certainly give an extra impetus to the strong Africanization drive in the two countries. Mainly for political reasons, Tanzania seems presently to have a lower tolerance limit than Kenya with regard to the acceptable number of foreign aid workers in responsible positions. With the relatively large number of Swedes already working on aid contracts in Tanzania, one may wonder if it will at all be possible to achieve the very considerable expansion of Sweden's administrative support to that country, in accordance with current Swedish plans.

A somewhat different point, concerning Sweden's aid personnel transfer, is related to the cost of tying this transfer to Swedish human resources. This point has nothing to do with the problems of inappropriate background, and short tenure, discussed above. It is instead concerned with the volume of the transfer within the personnel assistance budget in Swedish aid. One may thus wonder, if under present conditions, the recipient country gets the best value for the Swedish aid money allocated to experts' and advisors' salaries. Sweden is a high wage country, and SIDA contracts are rather generous. With all social overheads, the total cost for an expert of any kind, recruited from Sweden, will be many times higher than that of

a locally employed person with corresponding qualifications and responsibilities.[1] One must ask whether the personnel provided by SIDA could not be made available at lower costs, thereby enabling an increase in the volume of aid within the same cost frame to the donor. This is a complicated question, but the following points suggest a positive reply: First, there is a distinct feeling that the remuneration levels of Swedish personnel sent to u-countries by private companies are lower than those of SIDA.[2] The difference is said to depend inter alia on the uncertainty regarding re-employment or career prospects on return to Sweden, which does not exist in the case of employees permanently engaged with private, multinational firms. To this must only be added that a large part of the Swedes taking temporary SIDA assignments, are granted long leave by their employers. In their case there is at least no unemployment risk, warranting higher salary levels. For the remaining ones, savings on the uncertainty premium should be possible to achieve by some kind of collective insurance against unemployment, in place of letting each employee face the uncertainty individually. Second, many of the experts themselves appear to feel that their remuneration levels are "too high."[3] Third, the personnel cost could be decreased by recruitment in countries with lower salary levels than Sweden. At present recruitment outside Scandinavia is practiced by SIDA only in exceptional cases.

We can now try to derive some tentative conclusions from our discussion on the efficiency in the use of Sweden's aid resources. Swedish assistance is certainly playing a useful role in filling in increasing parts of the two recipient countries' development plans. Given the domestic skill, saving and exchange resources, it enables them to maintain their development efforts at a higher level than would be feasible in the absence of outside help. Aid support thus makes it possible for the two countries to reap the benefits from a number of additional development ventures, without increasing the strain on their scarce domestic resources. In this sense, a clear development gain can be credited to Swedish aid.

The consequence of the inefficiencies, pointed out above is twofold. First, it is reasonable to contend that more development could have been accomplished with the same volume of aid, if the inefficiencies were overcome. At the

1. It should be noted that the real value of Swedish aid resources is diminished further by the habit to tax the experts' salaries in Sweden.
2. Definite statistics are hard to come by. A comparison of telecommunication engineers sent out by SIDA and L M Ericsson, suggests a differential in remuneration of the order of 10%. Information received from L M Ericsson's Personnel Department, Mr Rockström, April 1971.
3. About one third of SIDA's experts on contract in Ethiopia, Kenya, Tanzania and Zambia appear to feel that their salaries are exceedingly high. See S Lindholm: Biståndsarbetare i fält, University of Stockholm SKUM, Dept of Education, Report No 1 Jan. 1972, stencil p. 5:27.

overall level, from which we presently scrutinize Sweden's aid efforts, the quantification of this "development lost" is impossible.[1] The arguments presented, suggest that in many of the projects supported by Sweden, there should be considerable room for "capital stretching", whereby investment funds could be saved, and made available for additional ventures. The present personnel transfer policies, likewise, leave room for various significant improvements. Thus, one could say that the inefficiencies appear to diminish, but do not reverse the sign of the development effect, resulting from the aid flow.

Second, we have suggested that the inappropriate aid practices may have brought about undesirable structural changes, e.g. in the form of capital- and skill-intensive institutions, or by spreading a belief in the general superiority of inappropriate modern i-country solutions to the various problems of underdevelopment, with the result that further development efforts may be rendered more difficult. Whereas it has not been possible to verify in a conclusive way the existence of such negative consequences, much less still to quantify them and to compare their magnitude with the positive effects noted above, we might obtain some further insights into the problem, by considering what would happen if an unchanged amount of aid were given to the recipients with no project ties whatsoever.

It is by no means likely that such an untying of aid would bring about some kind of optimal solution in place of the Swedish inefficiencies. The recipient countries would in principle have the choice of trying alone, or recruiting foreigners, but now without any country ties, when making use of the Swedish program aid. Inefficiencies of all sorts would most certainly emerge if Kenya and Tanzania tried to stretch their own scarce skill resources, to make use of a purely financial support flow from Sweden in their development program.

The result might be somewhat better if the recipients decided to spend part of the money on the recruitment of foreign specialists, to help them in decisions on allocation and implementation of their enlarged development program, made possible by Swedish support. It is true that in this case too, much of the bias in favor of i-country technologies and problem solutions would probably remain. But with untied recruitment on a world-wide basis, the likelihood is that Kenya and Tanzania might be more successful in finding suitably experienced personnel than what is possible if the

1. Compare, however, with the discussion in chapter 8, on the likely development effects from an alternative grain storage support program.

recruitment horizon is by and large limited to Scandinavia.[1] Furthermore, the recipient countries' decision makers could act with much more independence and authority towards personnel employed and paid for directly by the u-country government.

Thus, while the current sub-optimal situation could be replaced in this way by another, and perhaps a slightly superior one, the major problem, e. g. how to avoid the undesirable structural changes emerging from an excessive dependence on problem solutions worked out and adapted to the conditions of i-countries, might remain. Yet, aid from Sweden could play an important role in counter-balancing this influence in Kenya and Tanzania in perhaps one or a few fields, by helping to design problem solutions which are unbiased by i-country conditions, and specifically adapted to the circumstances prevailing in the recipient countries. But to play such a role, the arrangements in Swedish aid would have to be changed quite considerably. Thus, a much more profound and long-term approach would be required in tackling the chosen problems. Also, the recruitment of aid personnel would have to become far more discriminatory, and the contract periods considerably longer than under the present practice. We will return to this subject in chapter 9.

7.4 Influence on the recipient preferences

According to Swedish policy, aid to Kenya and Tanzania is only given to high priority areas within the recipient countries' development plans. In principle, therefore, the only effect that this aid should have on the recipient countries is a net expansion of their development effort, without any change in their own priorities. It should already be clear from the brief survey of Swedish aid in chapter 5, that this policy is hardly all-pervading. Assistance from Sweden does reflect clear subject preferences, which may distort the development efforts pursued by a country receiving Swedish aid. In the following we will discuss some of the mechanics through which such distortion takes place, and the consequences it might have.

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1. The difficulties of u-countries' own independent recruitment efforts should be noted. The Tanzanian government carried out a recruitment campaign in Sweden in the later 60-s, with the aim of employing about 200 persons, but succeeded in obtaining a total of no more than two applications. The explanation to this failure is probably a sense of insecurity deterring qualified professionals from signing employment contracts directly with a u-country administration, and caused, inter alia, by u-countries' sometimes erratic efforts to nationalize their local administrations, frequent changes of their regimes etc. There would thus be an important role for SIDA in acting as international recruitment agent to the Kenyan and Tanzanian governments, and in extending guarantees to those employed, akin to the common export credit and foreign investment guarantees, on the fulfilment of the employment contract on the part of the u-country government employer. For an elaboration of this suggestion see chap. 9.

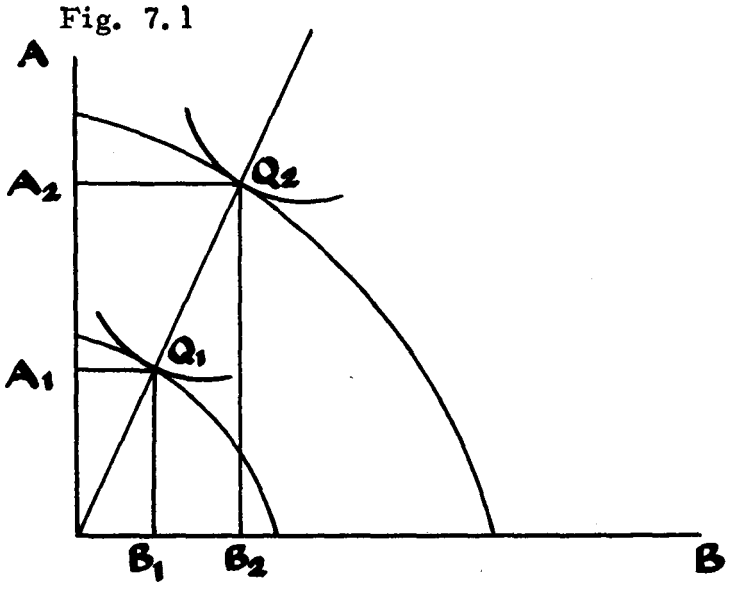
As a first approximation, we could take the development plans of recipient countries to be a very general expression of their development preferences. This cannot be done, however, without an immediate reservation.

There is hardly a nation, whose development plan can be taken as a pure expression of its people's desires, not even of the desires of its political leadership. In some countries, although not the ones considered here, the primary purpose of working out national development plans has not been to get a framework for domestic development efforts, but simply to attract donors. Indirectly, the fact that a large proportion of the administrative elite in most u-countries has received its university training in the West, must have a strong influence on the contents of the plan. Finally, foreign advisors under various aid contracts play an important role in many u-countries in formulating both the goals and programs contained in the plan. Thus, even in the absence of other types of aid, the contents of the plan will have been heavily influenced by the philosophies, experience and fashions of the industrialized world, as mirrored in the attitudes of the expatriate planning experts.

But aside from this general remark, there are more concrete forms of influence. The most straightforward one is when the donor simply suggests to the recipient which activities he would like to support. This has perhaps been less common in Swedish aid during later years. In its current relationship with East Africa, Swedish influence may express itself by a mutual tacit understanding that a more favored treatment will be given by Sweden to certain types of aid. Thus, even in the absence of any official statement on the matter, the requests forthcoming are likely to concentrate on particular ventures, known to be favored by the donor. Alternatively, the donor influence can be manifested through casual remarks by representatives of the donor agency, or insistence of individual experts or project directors, that requests for certain activities should be forwarded. The recipient is seldom aware of the maximum amount, above which the donor will not expand the total aid volume any further. (Up to the late 60-s, no such maxima for individual recipient countries had been established on the Swedish side.) In his psychologically inferior situation vis-a-vis the donor, he is easy to influence, in particular if the alternative to the aid suggested by the donor is not other types of assistance, but rather curtailment of the total flow. In this situation it may be more "profitable" to become influenced. Consequently, both the priority areas in the plan, and the flow of requests for aid will give a picture of recipients' preferences, which has been influenced and distorted by the donors. Let us try to analyze through some highly simplified graphic illustrations, the consequences of donor preferences expressed through a concetration of aid offered to some favored areas of activity, by arrangements commonly used in Swedish aid.

A national recipient country planner will try to maximize his goal achievement by allocating his various development resources valued at their real scarcity prices, so that the marginal development output (valued politically or in some other manner) from a unit of resources will be the same irrespective of the activity pursued. This situation remains where aid is granted in the form of untied cash. To simplify, assume that there are only two development objectives (consumption and health), and that their attainment depends on investment in two activities (agriculture and drinking water). In figure 7.1, the inner production possibility curve represents the possible attainment of consumption, A, and health standards, B, without any foreign support, while the outer production possibility curve

Fig. 7.1



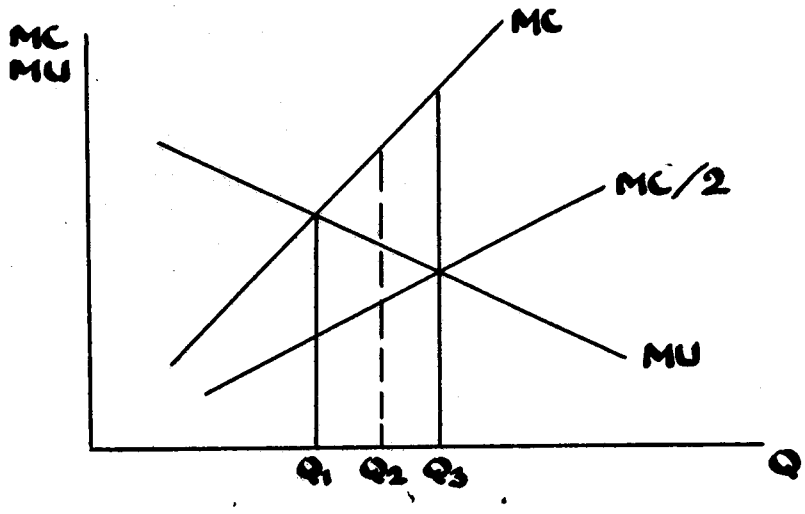
shows the levels which can be reached with the help of a given amount of untied cash aid. Assuming unitary elasticity of utility, the untied aid will enable the country to move from Q_1 to a higher utility indifference curve at Q_2.

The result will be different, however, if the same volume of aid is provided in the form of specific resources for a given activity only. Such tying can have two effects. First, it is likely to induce the planner to expand the activity above its optimal point, given the total available development resources, and second, it may easily result in an inefficient allocation of resources, thus reinforcing the inefficiencies practiced by the donor, as described earlier in this section. As a result, the outer production possibility curve is in fact not reached.

Figure 7.2 illustrates what happens if a donor like Sweden agrees to finance a given proportion of the recipient country's drinking water development. Assume decreasing marginal utility, MU, and increasing marginal costs, MC, in national drinking water development. In the absence of aid, the

activity will be pursued at the level of Q_1, where MU and MC intersect.[1] If the donor now agrees to finance half of the total water development expenditure, the rational planner will extend the water development expansion to Q_3, where MU intersects MC/2, the actual cost to the recipient. In this and

Fig. 7.2



the following cases, the expansion is above optimum, because the recipient disregards part of the costs (those covered by aid) involved in the water development effort.

Suppose in the next case that the donor also puts a limit on his contribution. Now expansion will stop at Q_2, somewhere between Q_1 and Q_3, determined so that the donor subsidy gets fully utilized. The area between MC, MC/2, and a vertical line from Q_2 equals the maximum donor support, and expansion beyond Q_2 is not pursued, because there the recipient has to cover the full cost.

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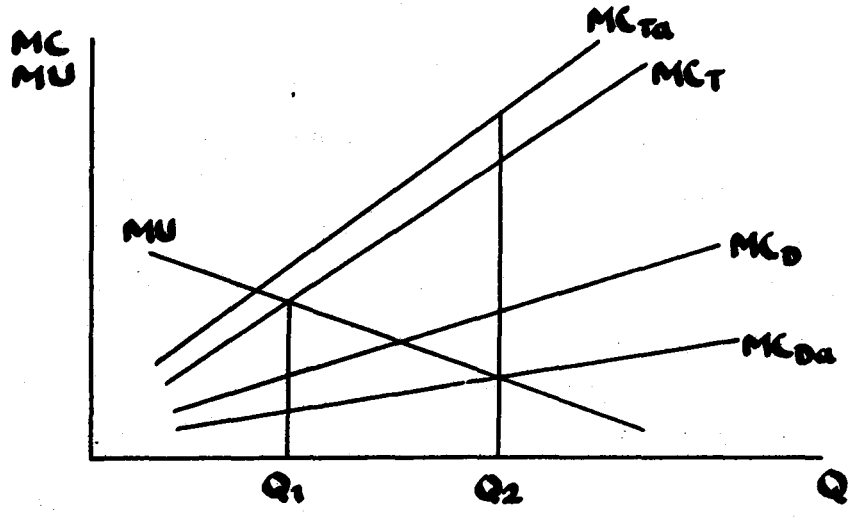
1. The assumption about decreasing MU is derived from common micro-economic arguments. Ceteris paribus, the assumption ought to hold at the national level as well. Thus, the most pressing requirements for drinking water would have the highest social utility, but with increasing volumes of water development, less urgent and needy projects could also be included. The situation is not ceteris paribus, however. If a majority of the population lacks adequate drinking water supplies, an expansion of the water development program could lead to more widely aroused expectations, and strong pressures from all those not immediately benefitting. The politicians and planners exposed to this increasing pressure, might interpret it as a sharply rising marginal utility in drinking water development. If the rising MU curve does not at all intersect the MC curve within a reasonable range, standard economic analysis will not be of much help in determining the optimum level of water development activity. The whole of this argument is an elucidative example of the crudeness of the above illustrative analysis, and underlines the necessity to be cautious in drawing too far-reaching conclusions from it.

Another common arrangement is where the donor agrees to cover the foreign exchange costs of the supported activity. Suppose that prior to aid, MC_T was total marginal cost, MC_D was the domestic part, and that the water program was carried on at the Q_1 level in figure 7.3 With aid on the conditions

Fig. 7.3



considered here, the recipient planner will have a strong incentive to convince the donor that the foreign exchange costs are higher than they would in fact have been in the absence of assistance. He is likely to adopt this approach even if total marginal costs are increased thereby. This is because he knows, on the one hand, that the donor is prepared to cover the full foreign exchange expenditure in water development, but is uncertain, on the other hand, about the donor's willingness to transfer any funds saved in the water program, to other development ventures. The recipient planner will then have a strong inducement to minimize the domestic water expenditure costs, even at the expense of a higher overall cost level.

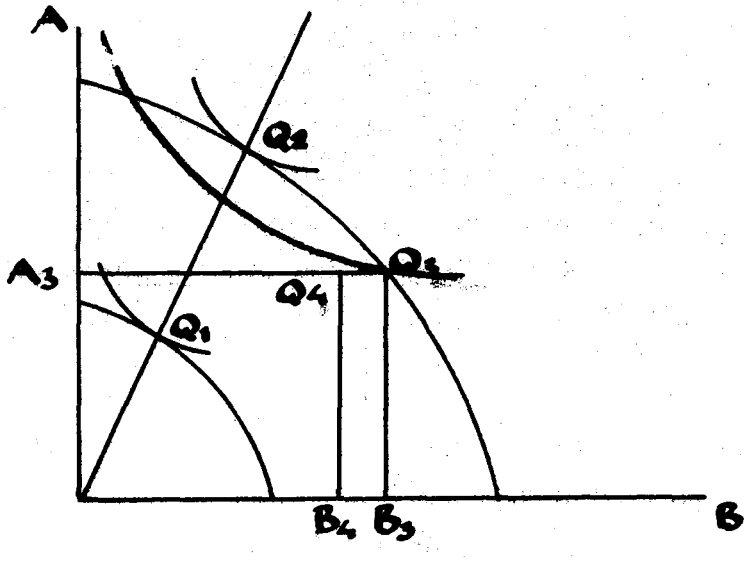
Convincing the donor about a high foreign exchange share in total expenditure should usually not be too difficult. Donors commonly believe in the superiority of i-country technology, and sometimes even undertake

an active search for aid ventures with a sufficiently high foreign component. The result of our argument could be represented by the new adapted marginal cost functions, MC_{Ta} and MC_{Da} in figure 7.3 The water development program will now be expanded up to Q_2, where MC_{Da} intersects MU.

The effects are somewhat more difficult to analyze if a limit is set on the donor's total contribution. Like in fig. 7.2 the activity will be extended only as far as the aid subsidy lasts. There will now be less incentive for the recipient planner to depress the domestic part of total costs, and the activity will be pursued up to a point of intersector between MU and a somewhat higher MC_{Da}, defined so that the area between MC_{Ta}, MC_{Da}, and a vertical line from the point of production will equal the foreign support.

The above should suffice as examples of aid arrangements with reallocation effects, contrary to what the recipient would consider optimum. Figure 7.4 summarizes the effects of donor influence exerted by the described tying of

Fig. 7.4



aid to a specific activity. Instead of allowing the recipient country to reach Q_2, by expanding A and B in the desirable proportions, the concentration of aid resources on B leads in the best case to a situation where a point like Q_3 situated on a lower utility indifference curve is reached. Production of A, A_3, may be higher than A_1, in figure 7.1

because as appears in figures 7.2 and 7.3 there are many situations where some domestic resources will be released from production of B for an expansion of A, as a result of the introduction of aid. There is no guarantee, however, that Q_3 will be reached. More likely, a point like Q_4, inferior to Q_3, will be attained, on account of the increase in total marginal cost, as described in figure 7.3 and as a result of the inefficiencies in donor aid management, outlined earlier.

Thus, in the case used for our illustration, aid has made the recipient country better off, but the various donor influences have distorted production in favor of B, and have prevented the country from reaching the utility indifference curve attainable, if aid had consisted of untied cash.

Whereas inefficiencies in aid, which result in a production position like Q_4 rather than Q_3 in figure 7.4 are unambiguously bad, it is not equally self-evident that the donor influence, pushing the development effort away from Q_2 towards Q_3 can be generally condemned. From the value premises on which this study is based, as expressed in the definition of development in chapter 3, the preference between the two has to be judged not according to the valuations of donor agency or recipient government but on the degree to which each of the points contributes to the country's development. This amounts to a claim that sometimes the indifference curves of figure are somehow irrelevant. We can provide at least two instances where this claim could be defended. First, Q_3 could be preferable to Q_2 in cases where the donor agency is more concerned about development than the recipient government, and where, consequently, Q_3 represents a higher level of development than Q_2. Second, it should be noted that the comparative statics analysis presented in figure 7.4 does not take dynamic considerations into account. Suppose that it is much easier to expand the production possibility frontier from Q_3 than from Q_2, but that due to limitations of skills and experience, the recipient government cannot perceive what is beyond the Q_2Q_3-frontier. Even if in the short term perspective Q_2 could seem preferable, the donor push towards Q_3 may appear beneficial when a longer term perspective is chosen. Assume for instance that the Tanzanian planners evaluate the rural water development only on the basis of its immediate and direct contributions towards the welfare of its consumers, and determine the expenditure to be allocated to rural water expansion accordingly. Suppose, however, that the donor has a better understanding of the development process, and is able to predict correctly some very substantial indirect development effects from rural water development on agricultural production, which were not considered by the recipient. If the

donor is correct, his distortion of the recipient's development effort towards more water development may result in the attainment of a higher development level, if several time periods are taken into account.

To what extent can it be assumed that the distortions of Kenya's and Tanzania's preferences, caused by aid from Sweden, can be beneficial for the countries' development? We have already noted that the objectives of the two countries' development efforts tally rather closely with the development definition derived in chapter 3. On the first count, therefore, the distortions, arising from Swedish preferences in aid, could not have any important beneficial role to play in Kenya and Tanzania. It would also be difficult to claim that Swedish aid decision makers currently possess a grasp of the dynamic development forces working in Kenya and Tanzania, which is superior to that of the countries' own development planners. Obviously, an optimal decision on how much to spend on for instance water development in Tanzania, which incorporates the predictable dynamic effects, can only be taken in the context of that country's overall development effort. I doubt that Swedish aid administrators have independently determined the optimal size of Tanzania's water development expenditure, on which to base the volume of Sweden's aid for this purpose. With few exceptions, the involvement of Swedes in East African development work is so transient that it could hardly make them the most competent judges of the preferable development paths for the two countries. Tanzanian and Kenyan planners, with permanent assignments to coordinate and promote their countries' overall development endeavors seem much better placed to undertake decisions of this type. On the second count too, therefore, it is unlikely that the distortions caused by Swedish aid have any substantial beneficial effects on the recipient countries' development.

We discussed in chapter 5 the domestic considerations behind Sweden's preferences in many instances with regard to selection of activities for aid. This donor oriented bias renders further support to the contention that the distorting influences embodied in Sweden's aid are not likely to be particularly development promoting. It has been common to start out by asking: What do we have that the recipient country might need?, rather than: What are the most important needs of the recipient?[1] It is of course reasonable to claim that no harm, but rather a benefit could be implied in a division of work, where each donor concentrates his aid endeavors

1. Examples of this are: Swedish silos (we are efficient silo builders), Swedish vocational training, or Swedish cooperative support. See also chapter 5.

to fields where he happens to possess a comparative advantage. But to derive the avails of such a practice, it would be necessary to have a very close coordination between many donors, offering aid in a wide array of fields, and willing to extend assistance to many different recipients with a multitude of requirements at each point of time. These preconditions are certainly not fulfilled in Sweden's aid relationship with Kenya and Tanzania.

Two further points should be noted. First, it is true that in a situation, where the recipient faces several donors, each with his own favorite aid support area, the distortions created by one donor may be cancelled out by the different inclinations of another. Sweden's preference for rural water in East Africa is thus probably somewhat counter-balanced by the US or IBRD interest in expanding urban water facilities. But even then, the risk is severe that due to prevailing fashions and the similarity of conditions in rich countries, the donors' preferences will coincide to a considerable extent. Important development activities are then likely to remain relatively neglected as a result of the narrowness in donor interests.

Second, it must be underlined that the above analysis of distortions is based on extremely simplified assumptions. The graphic presentation allows us to work with only two activities for the promotion of development. We abstract from the highly complex network of non-economic relations between donor and recipient. We assume a unitary recipient- and an equally unitary donor will, in place of the multitude of opinions on both sides. Our argument also presupposes an accepted method of weighing and aggregating the development variables of chapter 3 into a unitary development measure, while in the real world this would be an intricate, probably even an insoluble political issue. While these simplifications help us to bring out and clarify some important aid issues, we should be clear that our analysis has abstracted from a number of complicating real world problems.

7.5 How much innovation aid?

In chapter 4 we tried to define innovation aid as that type of assistance which breaks new paths, unlikely to have been trodden upon without the actual aid involvement. We found three main areas of innovation aid. The

first was when the aid venture resulted in some completely new concept, product or process, which had been unknown before. The second was when aid provided a resource which was not unknown, but for some reasons difficult to obtain. The third was when the resource provided was neither original nor difficult to obtain, but where the decision makers in the recipient country were ignorant of its existence.

A scrutiny of the Swedish activities in Kenya and Tanzania, hardly renders a very innovative impression. Innovative traits may be contained in some of the Swedish-assisted institution-building activities, giving the emerging institutions a degree of independence from earlier organizational patterns and commercial ties, which might have been difficult to attain without the specific aid received. The administrative personnel support to both countries can have innovative features in the form of new ideas, with an influence on policy, which are introduced by some of the Swedish administrators. Without a detailed scrutiny, it would be difficult to identify the source of such new ideas, as they emerge within the organizations of the recipient country's administrative structure. Besides, it should be noted that the innovative features contained in Sweden's administrative support, are incidental, since Swedish personnel is ordinarily provided in order to add to the administrative strength, and thus to help in overcoming the deficiency of administrative resources, rather than for evaluating policies and suggesting changes. An innovational fragment in the activities of the KSTC has been the development of a tool kit, to be used for demonstrations and similar activities, by science teachers in secondary schools, and to make instruction more efficient by a realistic demonstration. In Tanzania, the home economics institute, with its emphasis on practical training for women, and the radio-cum-correspondence method introduced in the cooperative support project, can be said to contain innovative elements. The rural water support, too, has been innovative in introducing new and more efficient administrative structures and techniques, not earlier known in the country.[1] Among the planned

1. This point has been strongly advocated by Lars Kalerén, Swedish Ministry of External Affairs, in an interview in March, 1972.

projects, the nutrition institute, and the correspondence institute in Tanzania, are likely to have an innovative character, influencing the consumption habits and education system in the country. It is more difficult to predict, how much innovation will be contained in the rural development projects of Migori in Kenya and Mbeya in Tanzania.

To a very large extent, however, the Swedish programs in the two countries can be characterized as bulk aid, consisting of ventures which the recipients could have brought about on their own, without any foreign involvement, provided only that they had more rather than new resources at their disposal. Bulk aid, bringing in, by and large, mere additions to available resources, is certainly, highly useful in helping Kenya and Tanzania to overcome their present resource scarcities. One may wonder, however, why there is so little innovative content in the activities supported by Swedish aid. Could it be because up to now, Sweden has been a relative new-comer in the aid field, feeling its way in a cautious manner? Or is the absence of innovation aid rather an expression of bureaucratic risk avoidance, strengthened by a scandal-prone domestic public opinion, which demands an aid performance much more failure free than that of any activities carried on at home?

7.6 The relative merits of Swedish aid

In chapter 4 above, we discussed the common aid donor claims that foreign assistance resources are much more development productive than the resources generated domestically, and concluded that this was unlikely to be generally true. What can we say more specifically about the development productivity of Sweden's overall aid, as compared to the development productivity of Kenya's and Tanzania's own resources? The comparison is simplified by the insubstantial amounts of innovation aid in the Swedish assistance program. The question of relative development productivity can now be pursued by enquiring whether the Swedish aid resources, which are added to the domestic ones, are in some sense more efficiently allocated, and whether they are more efficiently managed.

We have noted earlier in this section, that Sweden's assistance is likely to influence allocation in two ways. First, it may change the national preferences by making the development of certain sectors and activities

appear cheaper from the recipient government's point of view. There is no reason, however, to assume that this kind of reallocation should lead to an improved development performance, since the distorting concentration in Swedish aid is based on information and analysis of the recipient countries' development situation, which would commonly be less thorough and comprehensive than that which the development planners of the two countries possess.

Once the sectors and activities for aid support have been selected, we must consider the second influence on allocation, which refers to the production methods and technologies chosen. We have discussed above, how and why the influence of Swedish aid tends to favor modern, capital-, skill- and exchange-intensive problem solutions, which might complicate the development problems of the recipient countries over a period of time. The interrelations are very complex, and we have not penetrated them thoroughly. Overall, this influence on allocation could well have negative long-term consequences on the recipient countries' development.

But given both sectors and activities, and production methods, it may well be that the ventures supported by Sweden are usually more efficiently managed than corresponding activities without aid support. The rationale for this supposition is first that the donor organizations have better experience than recipient governments in managing the modern sector activities, with imported technology, which appear to constitute a major share of aid, and second, that the donors are less severely skill constrained, and can therefore equip the activities they support with more adequate management talent. If these two points weigh more importantly than the disadvantage of short-tenure experts with little experience from u-countries, the net outcome could well be more efficiently managed aid projects, on the average.

No attempt will be made to quantify the relative development productivity of Swedish aid in comparison with domestic resources. From the varied arguments it seems reasonable to conclude, however, that there is hardly ground for believing that the development productivity of Swedish aid should be much superior to that of locally generated development resources.

An alternative way of gauging the relative merits of Sweden's aid would be by comparing it with aid from other donors. A comparison in depth will not be undertaken, since it would presuppose a detailed analysis of other donors' aid, for which data are not easily accessible, and which falls somewhat outside the confines of our study. From the evidence that is readily available, it is not possible to derive any great contrasts between aid from Sweden

and from other major donors.[1] Assistance from DAC countries is given predominantly in the form of projects, usually acceptably integrated into the broad framework of Kenya's and Tanzania's development plans. In this respect, therefore, there is no difference from the Swedish practice. The financial terms of Sweden's aid are more beneficial than the average for aid from countries like UK, US and Germany. The personnel intensity in aid provided by Sweden, does not contrast remarkably from that of other DAC donors[2], with the exception of UK. England's more personnel intensive aid must be explained by its colonial history in East Africa, and constitutes a special case. The 2-3 year tenure of aid workers seems to have developed into something of an international practice, and, as we have seen, Sweden is not at a great variance from this average. U-country experience is likely to be more common with experts from countries like UK, with a long colonial background. But the question remains open whether the colonial experience possessed by British experts is always relevant, and makes them more valuable as aid workers than personnel from Sweden, or from, say, Canada. The degree of preference for capital-intensive technologies is quite probably about the same with other major donors, as that which we found in Sweden's aid, while genuinely innovative efforts seem to be quite sparse. It is not possible to find any crucial difference regarding sectoral allocations of aid from different donors. Infrastructural development, agriculture and education are given prominence in all the major donor programs, and Sweden is no exception. Looking at allocations within sectors one might possibly notice that Swedish aid for infrastructure is more oriented towards rural areas, and puts more emphasis on social development aspects than the average of aid endeavors. An advantage of Swedish aid, as seen from the recipient's point of view, might be the relative unimportance of self-interest involved, e.g. commercial, strategic, political etc. Where these self-interests weigh heavily in the donor policy, the recipient may find it necessary to cross-check every aid project proposal to ensure that he is not being trapped into accepting a venture, the gain from which will predominantly benefit the donor. The recipient will be relieved from this necessity to be cautious, and from the ensuing investigations, if he trusts that Swedish aid is given with the sole purpose of promoting his country's development. The relative absence of self-interest might also reasonably lead to a greater stability in the aid flow,

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1. Aid from China to Tanzania is not considered here, on account of unavailable information.
2. See footnote on p. 204.

obviating such ruptures as those of British and German aid, following various independent decisions in Tanzania regarding international aid and domestic policy.

It should be underlined again, that the comments offered here are not based on any detailed comparative analysis of the aid flows. Although they suggest that in some marginal respects, Sweden's aid might stand out in the positive, they fail to identify any substantial features which would significantly differentiate the development productivity of Swedish assistance from that of assistance from other sources.

A third way of evaluating the relative merits of Swedish aid is to compare the actual performance with what it could have been, if a concerted effort were undertaken to reformulate Sweden's assistance with the aim of maximizing its development contribution. The many critical points spelled out earlier in this section indicate the kinds of reorganization and change required. A comparison of the needs for assistance, derived from our analysis in chapter 6, and the actual contents of Sweden's aid, as brought out in the present section, suggests the types of reallocation in the flows likely to increase the development impact. We conclude by the contention that there is a considerable scope to increase the development impact of the overall Swedish aid flow.

M. Radetzki
March 1972

CHAPTER 8. SWEDISH AID TO EAST AFRICA: INDIVIDUAL PROJECT ASSESSMENTS

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March 1972

CHAPTER 8, SWEDISH AID TO EAST AFRICA: INDIVIDUAL PROJECT ASSESSMENTS

8. 1 Introduction

Both the methodological discussion in chapter 4, and the empirical analysis of chapter 7, point to the difficulty in determining the quality and development impact of an aid program by assessments concentrated to the macro-level only. This chapter is therefore devoted to micro-level scrutinies of a few projects supported by Sweden in East Africa. The purpose for undertaking the micro-studies, which follow, is threefold. First, they constitute an attempt to evaluate the purposefulness and development benefits of the projects actually scrutinized. Second, they are intended as a complement to the overall assessment, providing an additional angle, from which some of the general assertions made in the previous chapter, can be substantiated. And third, they constitute practical applications of the methodology, designed in chapter 4 for undertaking micro-scrutinies, and illustrate, I hope, the value of applying this methodology more widely in international assistance endeavors.

A word should be said on the manner in which the two projects were selected from among the diversified Swedish programs in Kenya and Tanzania. The grain storage venture caught my interest while I studied Swedish aid to East Africa in general, both because it appeared to be well-documented, and suitable for quantitative analysis, and because the explorations underlying its contents and characteristics, brought out assertions which I doubted, and was interested to test. The outcome of my study was not very flattering to SIDA, and when I subsequently suggested to investigate Sweden's co-operative support in Kenya, a subject in which I happen to have some practical experience, the response from SIDA was that I ought rather to choose a venture which had been more "successful", so as to obtain a somewhat more balanced, and therefore juster, picture of the micro-level aspects of Swedish aid in East Africa. So I followed SIDA's advice in selecting the artificial insemination project in Kenya as the second object of my micro-scrutinies.

Both studies have been discussed with representatives of SIDA, and re-written on the basis of the comments received. It hardly needs pointing out that even after this rewriting, there remain considerable differences of opinion between SIDA and myself on a number of the issues which are deliberated upon.

It is obvious that the following two micro-scrutinies cannot by themselves constitute the basis for an overall judgement of Sweden's aid to East Africa. But they complement, valuably, in my opinion, the findings of the last chapter. And they do represent between themselves a considerable variation of circumstances. Thus, for example, the age, size, and foreign personnel intensity are quite divergent between the two projects.

The evidence contained in the studies also supports many of the general assertions brought out in chapter 7, for instance the one that the precise areas for Swedish support are chosen mainly on the basis of available expertise in the donor country, and are sometimes based on an inadequate analysis of the recipient's requirements, that aid from Sweden has a tendency to settle upon excessively capital-intensive sectors or problem solutions, or that support in the form of short-contract assistance workers is inefficient, and leads occasionally to a concentration of efforts on less relevant issues. Above all, it provides an illustration of the weak basis, upon which decisions are often taken, to initiate or continue Swedish assistance ventures, and the uncertain results, which follow as a consequence.

8.2 Grain Storage in Tanzania

History and psychology

In 1965, SIDA received from Tanzania's Ministry of Commerce a rather vaguely formulated request for aid to develop the country's grain storage system:

> "In order that the donor country may be fully aware of our grain storage problems, this application covers two phases in the implementation of the project:
>
> 1. A team of consultants to come and examine the storage and pest problem on the ground, and to advise us on our requirements.
>
> 2. The actual implementation of this project on the basis of recommendations made by the team."[1]

In response to this request, an agronomist was sent out by SIDA in early 1966, to gather information on cultivation and storage of grains in Tanzania. His report, dated May 10, 1966[2], notes about grain handling and storage that very little labor saving machinery has been introduced, and that almost all

1. Loan application to SIDA, MINCOM 230, NAPB Grain Storage, December 1965.
2. Sven Gesslein, Uppgifter om odling och lagring av spannmål och oljeväxter i Tanzania.

operations are carried on manually. Not even in Arusha-Moshi, the country's most prosperous regions, with a considerable market surplus of wheat production from fairly large, mechanized farms, is bulk handling and storage seen other than a possibility for the distant future.

At this juncture, SIDA suggested to the Tanzanian government that a more detailed investigation would be required, and that SIDA might assist Tanzania in formulating the terms of reference, recruiting the consultants, and paying their costs for this Tanzanian investigation. The Tanzanian authorities agreed, and eventually a team of Swedish consultants was sent. The team's report, presented in early 1967[1], states at the outset that the purpose of the proposals put forward is to introduce a modern technique of grain handling in the country. After lengthy and not always very convincing arguments, the report concludes that what the country needs is modern silos at the three main production centres and at Dar es Salaam, and suggests an investment program of $ 4.2 million to establish the three inland units to begin with. The report also considers some earlier Tanzanian proposals with regard to warehouses at the collection points of local co-operatives. After a brief discussion, it concludes that the investment in local storage is probably not of primary importance, and that tarpauline covers and fences could serve the same purpose at much lower costs.

After several enquiries and some persuasion on the part of SIDA, the Tanzanian government presented, in September 1967, a formal request for assistance, to finance two of the three silos proposed in Agriconsult's report, wholly in accordance with the consultants' specifications. At this stage SIDA reacted by suggesting that the report had left out certain fields and was not a satisfactory document on which to base a project formulation. SIDA therefore recommended that the Tanzanians undertake another consultants' study, again with Swedish assistance in the formulation of terms of reference, recruitment of the consultants and payment of their fees. It is of special significance that the terms of reference which were eventually drawn up, specifically mention that modern silos may form part of the project.

The second consultant team's report was delivered in December 1968.[2] The project, eventually ratified in an agreement between the Swedish and Tanzanian governments in July 1970, was by and large based on this

1. Agriconsult's report, Survey on Storage and Handling of Foodgrains and Other Crops in Tanzania, dated January 24, 1967.
2. K-Konsult, Foodgrain Storage in Tanzania, December, 1968.

report. Before we continue describing the contents of the project, it is worthwhile to have a look at the psychology around and forces leading to its final formulation. This matter will be treated in somewhat greater detail, since its significance goes far beyond the project dealt with here, and is by no means limited to Swedish aid endeavors.

It should first be noted that the donor-recipient relationship is bound to be uneven. The inferiority felt by the recipient stems from both subjective reasons, like the fact that the recipient is the beneficiary from the relationship, or that the recipient's country is poor and dependent, and from objective reasons, for instance that the recipient's administration lacks sufficient skills and negotiating capacity, particularly in technical matters, to carry discussions with the donor at an even level. This feeling of real or imagined inferiority is bound to affect the donor-recipient relationship in a number of ways. It is likely, for instance, to create a tendency for the recipient to subjugate to the donor's wishes.

Thus, while SIDA saw itself merely as an assistant in recruiting consultants to a Tanzanian investigation, the Tanzanian ministries have quite probably tended to regard the consultants as some semi-official representatives of SIDA, whose advice had to be taken very seriously to avoid the risk of missing the benefit from the aid project altogether. The recipient's ability to influence the consultants into directions which it thought fit was very weak, primarily for two reasons. First, as noted above, the Tanzanian ministries involved had very few technical or economic experts to spare who could follow the consultants' work, comment on suggested solutions and give points of view regarding overall national considerations, easily overlooked by foreigners with limited underdeveloped country experience. Second, the report writing, perhaps the most important stage for adjusting and influencing the findings and conclusions of outside consultants, was carried out in Sweden, beyond the reach of the Tanzanians. While the Tanzanian authorities could not or were unwilling to interfere, SIDA did not want to interfere, because it considered the matter an internal Tanzanian affair. The result was an exceptional, perhaps even somewhat uncomfortable, freedom of action for the consultants involved.

Although the wording in the original Tanzanian assistance request would have called for an overall scrutiny of the social and economic implications of grain storage in Tanzania, the consultants were selected primarily on their merits in modern agricultural production and marketing and the

techniques used in these fields. None of the two firms involved had any wide and long-standing experience from work in u-countries, and the length of stay of the two groups in Tanzania was limited to weeks rather than months. Within the financial confines of the tenders on which they had agreed to undertake the investigations, the consultants felt obliged to present a report which could form a basis for Swedish aid. A negative report would have been contrary to the interests of Tanzania, their formal employer, and would most probably create disappointment with SIDA as well. SIDA's predisposition for capital- and foreign-exchange intensive ventures[1], along with the background of the consultants, gave a natural explanation of the first group's recommendations on modern automatic silos, seen as the nucleus of a modernized system of grain storage and marketing in the country.

One could have expected at this stage a somewhat more profound scrutiny by SIDA of the consultants' suggestions. Some of the reasons for the absence of such scrutiny have already been given, e. g. that SIDA regarded itself more or less as an outside party at this stage, and its general preference for capital- and exchange-intensive activities. An additional explanation is that SIDA, like so many other aid-giving administrations, tends to operate with an administrative under-capacity, caused by the savings-mindedness of parliaments. As a result, SIDA generally has to rely on outside consultants' findings, and cannot regularly have their reports thoroughly reexamined. In this case the result was that although the first consultants' report was not considered good enough to form the basis for a Swedish project, SIDA accepted its major conclusion, namely that modern centrally located silos might form the major part of the project. By stating this in the proposed terms of reference for the second consultant group, which was eventually called, alternative approaches to the Tanzanian grain storage problems were by and large pushed aside.

The account given so far is an attempt at interpreting the course of events as it appears in SIDA's files. But what if the interpretation is incorrect? It has for instance been claimed that from the very first discussions it was the Tanzanians who insisted on modern silos, but that this was not documented in writing. Even if the claim were correct, it is no justification for SIDA's outright acceptance of the consultants' conclusions. When assistance is tied

1. See section 7. 3 for a substantiation of this statement. The rationale stems from miss-conceived Chenery-analysis, in which capital and exchange are seen as the dominant development constraints.

to projects, the donor cannot escape the responsibility of a proper analysis of the problem which aid is intended to solve, and of providing advice to the recipient on the merits of alternative solutions.

The project

In its final formulation, the project, supported by a Swedish credit of $ 3.9 million and a technical assistance grant valued at $ 1 million, consists of the following items:[1]

4 silos, total capacity 47,000 tons	$ 3.3 million
Housing for silo personnel	$ 0.2 "
Technical assistance grant: foreign personnel and marketing reorganization study	$ 1.1 "
40 local warehouses, total storage capacity 16,000 tons	$ 0.5 "

The object of the project is to increase and modernize the country's capacity to store maize and wheat, two major staple foods; to decrease wastage and handling costs in the storage and transport process; and to provide facilities for long-term stores of maize, so that the marginal exports and imports in the commodity can be decreased.

The whole project is concentrated on the four regions of Tanzania, namely Iringa, Dodoma, Arusha and Moshi, where most of the country's marketable surpluses of maize and wheat originate and to Dar es Salaam, the import/export harbor and main consumption area for the marketed staple foods.

Most of the grain is first delivered by individual farmers to local co-operative societies and stored there, usually in open air or under tarpaulin cover, for a couple of months, before delivery to regional warehouses. The 40 local warehouses are intended for the use of such local cooperatives in the surplus regions.

The comparative advantage of silos over manually operated warehouses lies more in lower operating costs than in improved storage. Therefore, the primary function of the silos will be short-term storage, where operating costs weigh more heavily. The released regional warehouse capacity can then be used to establish the long-term grain buffer, intended to decrease the need to import and export. Some of the local warehouses will also be utilized for long-term storage.

1. Memorandum for SIDA's directorate (Insatspromemoria), dated 9.2.1970, entitled "Development Credit to Tanzania for Financing a Grain Storage Project." The contents of this document outline the project as it is actually being implemented.

The proposed silos will be the first of their kind in Tanzania. With no local experience available, foreign contractors will have to be employed during the construction stage, and expatriate supervision will be required. Once the silos are put into operation, the number of expatriates to run the project has been estimated at more than 10, both for the day-to-day responsibilities and for training the Tanzanians, who would eventually take over. Tanzanian grain marketing at the inter-regional and international level is the responsibility of the National Agricultural Products Board (NAPB), one of the country's many parastatal organizations. NAPB also administers the domestic grain prices at the inter-regional level. To improve the currently inefficient functioning of the NAPB, a reorganization study, to be undertaken by a further Swedish consultants team, also forms part of the project. All in all, the technical assistance requirements connected with the project have been calculated at above $ 1 million. The silo managers and their qualified assistants have to be provided with decent housing. This becomes a particularly urgent need in the case of expatriate personnel. Consequently, the construction of 11 residential houses, costing $ 213,000 has been included in the total project expenditure.

The economic justification of the project is based on a very crude rate of return analysis, undertaken in K-konsult's report, where the rate is obtained by comparing the investment costs of silos and local warehouses with the savings in operations incurred by shifting from the present to the proposed facilities. At this stage the effects of long-term storage are disregarded. The main savings are incurred through decreased losses in storage and handling. At the local level, the establishment of warehouses is expected to decrease wastage from the currently estimated 7% to about 2% of total produce handled. At the regional level, the silos will decrease grain losses from an estimated 3% in present regional warehouses to about 1%, or by 2 percentage points. Considerable savings are also expected in handling and transport, and in the use of sacks, which currently constitute a sizable cost item. When the project is in full operation, the additional expenditures and savings, excluding those resulting from long-term

storage, to which we return later, will appear as follows:[1]

	$ per year	
Maintenance	33,000	
Operation	64,000	
Total additional expenditure		97,000
Local decrease in wastage	312,000	
Regional decrease in wastage	122,000	
Decrease in transport and handling	100,000	
Decrease in bags and rebagging costs	206,000	
Total savings		740,000
Net yearly savings		643,000

Assuming that investments start in 1969 and that the project is fully operative by 1972, disregarding the ancillary investments in housing and training, and limiting the time horizon till the end of 1983, the consultants use the net present value method to calculate the internal rate of return at about 11%.[2] Neither the consultants nor SIDA try to present the internal rate of return of the local and regional parts of the project separately. This is surprising, because neither of the two parts is necessarily dependent on the other. Expansion of the local cooperatives' storage facilities is in fact an excellent substitute for additional storage capacity at the regional level. In the absence of local warehouses, grains have to reach the regional warehouses relatively soon after the harvest, with ensuing extreme seasonal variations at the regional level. With the establishment of local warehouses, deliveries at the regional level can be spread over the year, whereby regional storage capacity requirements will be smaller.

Accepting the consultants' figures and assumptions, the internal rate of return from the local warehouse part of the project can be estimated at about 28%, while that from the regional silos will be no higher than 6%. If the residential buildings and half the costs from the education program, spaced in time between 1969 and 1974, are added to the silo investment expenditure, and the remaining education program cost to the local

1. The calculations which follow are based on the project proposals in K-konsult's report. Two changes from these proposals have since been undertaken in the project which is now implemented. First, the proposed silo capacity of 37,000 tons, with an investment of $ 2.37 million, has been increased to 47,000 tons, requiring $ 3.3 million for investment. Second, the proposed number of local warehouses, 78, with a storage capacity of 26,000 tons has been decreased to 40 and 16,000 tons. The latter change is primarily due to the fact that the Tanzanians have themselves started constructing such local storage facilities in one of the involved regions. Overall, the project has thus become still more modern and silo-oriented than the K-konsult proposals scrutinized below.
2. The calculations to obtain this and the following rates of return, mentioned in this subsection, are presented in the appendix to this section.

warehouses[1], the internal rate of return of silos decreases to about 1%, that of local warehouses to about 17%.

These rate of return calculations have to be regarded with considerable caution. Aside from the uncertain data used as inputs, there are more principal problems to be cleared up. The method used to calculate the rate of return from local warehouses seems to be correct, since the alternative with which they are compared is storage in open air, e. g. no investment at all.

At the regional level, however, the matter is more complicated. To simplify, assume throughout that the longevity of both warehouses and silos extends beyond the time horizon covered by our calculations. We can distinguish between two items. The addition of 37,000 tons of regional storage is intended to increase short-term storage capacity by about 7,000 tons, and to release around 30,000 tons for long-term storage. Let us disregard the effects of long-term storage for a moment. With regard to the short-term storage capacity expansion, we are then interested in the rate of return from the additional investment in silos over and above the investment needed to erect a 7,000 ton warehouse. This can be obtained by comparing the difference in investment costs between silo and warehouse with the savings incurred in operations. With regard to the 30,000 ton replacement of warehouses by silos, we are interested in the rate of return on the net investment, e. g. the difference between the cost of investment in silos and the disposal value of the redundant warehouses. To obtain the rate of return, we can then compare this net investment with savings in operation costs incurred by the transfer from warehouses to silos.

In their calculations of the rate of return, the consultants have neither deducted the alternative new warehouse investment costs nor the disposal value of the redundant warehouses. They have not even provided any estimate of the amounts involved. To complete the calculations, let us guess the total value of 7,000 tons of new and 30,000 tons of secondhand warehouse capacity at $ 700,000. This will certainly not be an underestimate of what should be deducted, if we compare with a calculation in Agriconsult's Report of 1967, suggesting that a new regional warehouse with required machinery and capacity of 20,000 tons would cost no more than $ 260,000. When we then compare, on the one hand, the sum of silo investment,

1. K-konsult, on whose report this analysis is based, has not included the residential housing and education costs in the various investment computations undertaken. Therefore, the expenditure for these two purposes, and its spread in time, is taken from SIDA's "Insatspromemoria" of 9. 2. 1970, cited above.

residential housing costs, and 50% of the education program costs, minus $ 700,000 with, on the other hand, savings obtained through lower wastage and operation costs in silos up to 1983, we get a rate of return of somewhat above 4%. This low result for the regional part of the project should give cause to a serious reconsideration, or at least a specification, of the reasons why silos should be established in spite of the low rates of return.

All the above calculations are exclusive of long-term storage The justification for a long-term buffer stock is based on the originally Tanzanian idea that in the absence of such a stock, the country loses considerable amounts of money by being forced to export and import marginal quantities of maize at unfavourable prices. The consultants assume that the capacity expansion brought about by the project will release existing storage facilities, at no extra cost, sufficient to provide long-term space for about 30,000 tons of maize, which is required to even out year to year crop variations. The yearly costs for maintenance of such a stock are then estimated at 10% of its value, of which 7% is interest on the capital tied up and 3% for quality control and treatment, or a total of $ 186,000 per year. This is said to be much less than the losses from foreign trade in maize.

Neither the consultants nor SIDA have presented any proper analysis of the disadvantage to Tanzania from its foreign trade in maize. It is likely that lack of market intelligence, inadequate management resources and absence of short-term buffer stocks are the main responsible factors underlying the unfortunate outcome of NAPB's foreign operations. In 1964, for instance, this organization exported maize at $ 54 per ton, while some months later it had to import a quantity at $ 155 per ton. Savings on this type of losses could best be obtained by strengthening NAPB's foreign trade department, and by providing it with short-term buffer facilities, so that the organization could actively select the timing for its exports and imports during the year. The additional advantages from long-term storage, making the marginal foreign trade in maize superfluous, will in principle consist of a decrease in international shipping costs[1], and could hardly be overwhelmingly large.

The total costs of long-term storage, on the other hand, will certainly be higher than the 10% calculated above. It is wrong to assume that storage space will be provided free of charge, for certainly the released warehouses, intended for the purpose, could find alternative beneficial uses. Continuing

1. This disregards long-term price trends in maize.

our conjectures, let us cautiously assume that the 30,000 tons storage capacity has a market value of no more than $ 350,000. If rented at 10%, this alone will add $ 35,000 to the total long-term storage costs. Furthermore, seven per cent interest on the capital tied in stocks also seems very low in a country where capital is as scarce as in Tanzania.

A proper calculation of the costs and benefits from long-term maize storage, therefore, might suggest that such a scheme is not economically justified under present circumstances.

The Tanzanian wish to have a long-term buffer could well be based on misconceptions regarding losses incurred in foreign trade. It could alternatively be motivated by non-economic considerations, such as a desire to have a higher degree of internal autonomy in food supplies. Whatever the background, it would have been appropriate to present the full economic implications from this part of the project to the Tanzanian authorities before the implementation started.

In conclusion, the project appears to have been formulated on a very weak basis. To summarize, the appraisal has not included any overall assessment of the grain storage problem in Tanzania. The estimates of wastage in storage are highly uncertain, as they are mainly based on hearsay. A first-hand investigation of this important problem would in itself have constituted a highly valuable aid contribution, with effects reaching far beyond the actual project. Insufficient information is given for a proper calculation of the rate of return on silo investments. The rate of return calculations which have in fact been undertaken are not disaggregated to show the relative merits of the separable parts of the project. There is no satisfactory analysis of the costs and benefits from long-term storage. In consequence, the major share of the proposed storage capacity expansion remains without a justification of its economic rationale.

In the following we will disregard both the benefits and costs of long-term storage, and concentrate our analysis on the remaining parts of the project.

The development effects from the proposed venture

Let us use the methodology suggested in Section 4.4 and try to assess the effects of the project on the various development variables. In doing this we will continue to base our arguments on the proposals contained in

K-konsult's report.[1] The analysis is by necessity ex ante, and is in its entirety based on expectations rather than achieved facts.

An important positive development effect will be an increased output of consumable foodgrains, resulting from reduced wastage in storage and transport. Its yearly value at domestic prices has been estimated at $ 435,000, which corresponds to between 5 and 6,000 tons of grain, sufficient to feed more than 25,000 additional persons. It must be remembered that while this appears to be the main benefit from the project, the wastage percentages, from which it has been computed, are highly uncertain, since they are not based on any systematic field investigation. Available figures suggest that most of this benefit will accrue from the local warehouses. Apart from this immediate and continuous consumption gain, it is not likely that the project will have any significant indirect effects increasing potential future consumption. The establishment of local warehouses could perhaps facilitate agricultural extension by being used during off-harvest season for storage of fertilizers, pesticides and other inputs required to increase agricultural productivity. By bringing these commodities closer to the farm, it might be easier to have them accepted by the farmer, whereby the agricultural output increase could be speeded up.

The employment effects of the project have to be subdivided in time between the implementation and operation stages, and in space between the regional and local establishments. Two types of persons are likely to be employed in connection with the project: technical and managerial personnel, and unskilled or semiskilled laborers. Our interest will focus on the latter category. This is because there is a great scarcity of technical skills in Tanzania, and most of the positions requiring such skills are likely to be filled by expatriates to begin with. Even if Tanzanians would be employed, the benefits will be meagre, since with prevailing scarcities the same persons could certainly find alternative employment elsewhere at about the same wages. Unemployment or underemployment among manual laborers, on the other hand, is most probably a severe problem, and each employment opportunity that is created should therefore be considered beneficial and a contribution towards development.

An appreciation of employment creation during the construction stages can be obtained by studying the amount of local costs involved. A rough split-up

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1. With the exception of the costs for residential housing and education program. See footnote on p. 6.

between the local and foreign exchange costs of fixed investment renders the following amounts in dollars:

	local costs	foreign exchange costs
local warehouses	660,000	310,000
silos	900,000	1,890,000
housing for silo personnel	180,000	30,000
Total:	1,740,000	2,230,000

The higher the local cost content, the more local employment will be generated from each dollar of investment. From the employment point of view, therefore, local warehouse construction seems more development-promoting than the erection of silos. In the absence of better data, we will assume that half the local costs constitute remuneration to local labor. Taking an average unskilled wage level at $ 420 per year (Sh 250/month),[1] the project implementation would result in the employment of something like 1,000 persons during 2 years' time.

Once the project is in operation, the employment effects would by and large be negative. The cooperative societies, running the local warehouses, are not expected to need additional personnel. About 40 qualified technicians are required at different levels to operate the silos. For ten of these positions expatriates will be needed during a considerable time. The number of laborers employed will be no more than 100. The best way to estimate the decrease in employment opportunities is by studying the savings, other than from wastage, which result from the silos. The figures below give the estimated yearly operating cost reductions as calculated by the consultants, and my estimation of their labor content. Where labor content is uncertain, it has been assumed to be 50%.

	Total cost reduction	Labor content	
	$	%	$
Handling	52,300	100	52,300
Rebagging	23,100	100	23,100
Transport	11,800	50	5,900
Collection	16,400	50	8,200
Sacks[2]	183,500	50	91,700
Ships' waiting time	19,600	0	
Total:	306,700		181,200

With a yearly wage of $ 420, an overall of more than 400 laborers will be permanently put out of work as a result of the silo operations.

1. Agriconsult's Report specifies wages at 2 Sh/hour in Dar, and 1.25 in other parts of the country. Averaging this to 1.50 Sh/hour gives a monthly salary of about 250 Sh.
2. Jute fabrics are imported, while sacks are sown in Tanzania. See Agriconsult's Report of 1967, cited above.

It is tempting at this stage to introduce some shadow wage for labor, and to recalculate the silo rate of return on a somewhat more social usefulness basis. The full calculation will not be undertaken here. We will only illustrate how and with what effects on the project a shadow wage might be used. To derive the shadow wage level, we must ask how much it costs society to have laborers working in grain storage and handling. The main item in this social cost will be the loss in production from the laborers' alternative employment opportunities. In the circumstances considered here, this alternative is probably subsistence agriculture. The production lost to the society is therefore what could have been produced marginally in subsistence farming. Certainly, this cannot be more than a rather small fraction of the modern-sector wage levels. Some account must also be taken of the social costs from the increased consumption incurred by the laborers when they move from subsistence to wage employment.[1] Say that the addition of these two social cost items suggests that the shadow wage, e. g. social cost of using labor in Tanzania's grain storage, is only half of the actual wage, or $ 210 instead of the assumed $ 420. Recalculating the savings from silo operations on the basis of this shadow wage reduces the total by about $ 90,000, or more than 20% of the entire savings, including wastage. A recalculation of the silo part of the project based on this shadow wage renders a rate of return just below zero.

Arthur Lewis makes an interesting distinction between skill- and power-substituting capital equipment, and concludes that even in countries with abundant underemployed unskilled labor resources, it may be rational for society to promote capital-intensive production methods, provided that capital is used for tasks in which it cannot be replaced by unskilled labor.[2] But the increase in capital intensity implied in the substitution of silos for manual warehouses predominantly replaces labor power, and hardly at all labor skills. According to the consultants' investigations, pest treatment and quality control will decrease wastage in manual warehouses to levels approaching those expected in the silos. The consultants' suggestion that manual warehouses be used for long term storage reinforces the contention that the silos do not appreciably improve the quality of storage. Thus, Lewis' distinction further undermines the rationale for the introduction of capital intensive and skill requiring modern silos in Tanzania.

1. For an analysis of this rather complicated matter, see I Little - J Mirrlees, Manual of Industrial Project Analysis in Developing Countries, Vol. II, OECD, Paris 1969, chapter 13. Also see the discussion on shadow prices in section 4. 3
2. Arther Lewis, "Aspects of Tropical Trade", Wicksell Lectures 1969, Almqvist Wicksell, Stockholm, p. 31.

In conclusion, the employment effects of the project will be limited and positive during the construction stage, and directly negative thereafter.

There is not much to be said on the nutrition and health development effects of the project. Apart from the increased availability of grains for consumption, already discussed above, the main effect would be an improvement in the quality of traded foodgrains, resulting from more wide-spread use of cleaning and drying machines and from improved protection against damage caused by pests or insects.

The contributions of the grain storage project to Tanzania's educational development are also relatively easy to disentangle. The contracts for building the silos will be open for international bidding, and, in the absence of Tanzanian firms with a suitable background, will be awarded to foreign contracting companies. The experience gained by Tanzanians at this stage will be confined to participating sub-contractors. The responsibility for building the residential houses and local warehouses, on the other hand, will be entrusted to local contractors, who are likely to learn from the problems involved in the job. The education program, planned to be conducted during the first five years of the project's operations, will be a highly useful development contribution. In particular the training of local warehouse managers can be expected to have valuable spill-over effects through the close contacts between these managers and local farmers.

The analysis of what will happen to the conditions of the poor, and to the country's income distribution, is difficult and uncertain. On the reasonable assumption that the poorest population strata are to be found among the subsistence farming community, while the better-off groups are concentrated in urban areas, a notion supported by available geographical income distribution data[1], an argument could be developed along the following lines: the project is directed towards the country's marketable surplus grain production, constituting no more than about 15% of the total. This is produced by the somewhat better-off commercial or semi-commercial farmers, living not too far from roads and market places, and consumed predominantly in urban areas. It is consequently fairly safe to conclude that the poorest subsistence farmers will not at all be involved.

Income distribution will first of all be adversely affected by the combination of skilled employment at high salary levels and the unemployment created by the project.

1. See Tanzania 5 Year Plan 1969-74, Vol. III, Regional Perspectives.

Next, we must ask how the savings from grain storage operations will be allocated. It should be noted that if the project were commercially financed in its entirety, there would not be much surplus through which income distribution could be affected. It is somewhat questionable if the project in its present form would be able even to support itself if it had to pay commercial rates of interest on its capital. The surplus now expected is the result of the highly subsidized rates at which Swedish funds are made available.

A natural way to use the forthcoming surplus would be either to increase the prices at which the NAPB purchases foodgrains from the local societies, thereby benefitting the supplying farmers, or to lower its sales prices, so that the urban consumers gain. In both cases the advantages would accrue to better-off groups, and thus tend to increase rather than decrease inequality. Ceteris paribus, price increases to farmers are perhaps less likely, in view of the declared government policy to vary maize prices so as to maintain self-sufficiency in production. The NAPB is a public corporation, and the government could decide on a variety of ways to use the surplus from the grain storage project's operations. It might for instance be decided that the whole or part of the surplus should be used for agricultural extension activities directed towards the maize farmers who deliver their grain to the local warehouses, for investments in further grain storage activities or some other public undertaking. The distributional effects will then naturally depend on the nature of the investment.

Two reasonable conjectures could perhaps be made. First, the two groups directly affected through the project, namely the supplying farmers and the consumers, are likely to exert pressures on the NAPB, so that at least part of the benefit accrues to them. Second, it does not seem very likely that the back-country subsistence farmers, not at all involved in the project's preoccupations, will gain much, either directly or indirectly, from its operations.

With all probability, therefore, the project will not contribute to a more even income distribution in the country, and will not make any significant contribution towards the improvement of the living conditions among the poorest, subsistence farming population strata. On the contrary, there is a likelihood that inequality will be enhanced through the project's skill-intensive character, and from a tendency to allocate most of its benefits to the directly involved, better-off population groups.

In summary, then, although the venture deals with a nationally central and important problem, that of increasing the country's food supplies, and directs itself towards two crucial development constraints, those of capital and skill formation, its development effects do not appear to be overly impressive.

These unimpressive results are, in my opinion, primarily caused by two factors. First, strictly economically, the delineation of the venture is not altogether a happy one. The silo part, and its supporting housing-cum-training investments, accounting for more than three-fourths of the whole, are quite likely to be unable even to support themselves on commercial terms, still less to contribute a surplus over and above capital costs. The economic weakness of the project could of course have been counterbalanced by sizable social contributions. But the second weakness, confining the project's social benefits, is its concentration to the country's modern sector, and its limited repercussions on traditional agriculture, where a majority of the country's population finds its livelihood.

As pointed out by Hirschman[1], an important consideration when evaluating development projects is the extent of their linkage with the rest of the economy. The more numerous and intimate the linkages, the more secondary, indirect effects is the project likely to generate. In its present form the grain storage project by and large forms part of the small modern sector in Tanzania. As a result, its linkages with the rest of the economy tend to be limited. Its spinoffs, for instance in the form of demand for servicing facilities and spare parts, or through the supply of inputs, e. g. for bakeries, will predominantly benefit either foreign firms or the country's modern commercial sector. Even with this more dynamic Hirschmanian outlook, therefore, the overall development effects from the project on Tanzania will tend to be limited.

Could it be that there is in some sense an advantage per se in modernization, which motivates the present composition of the project, in spite of its low current economic and social return expectations? One might argue, for example, that the introduction of modern bulk handling techniques in grain storage and transport will in the long run become an indispensable necessity, and that, if storage capacity is to be expanded in any case, it is better to build according to future rather than current requirements. If some such idea has been used to motivate the contents and technology of the project,

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1. A Hirschman, Strategy of Economic Development, New Haven, 1958.

it ought to have been openly specified, with all its underlying economic and social merits. This has not been done in the consultants' report nor in the SIDA memorandum on which the decision about Swedish support was based. Besides, very strong reasons would be required to justify a policy to build ahead of current requirements in a capital scarce, underdeveloped country. A better policy would generally be to use available capital for investment in short-term, fast pay-off ventures, so as to keep it in efficient use, while anticipating a suitable timing for the long-term investment considered.

An alternative proposal

The original Tanzanian request did not specify at what stages in the production and marketing process Swedish grain storage support was wanted. Let us therefore start out once more from the findings of the two consultants' reports, and see if it is possible to suggest the outlines of an alternative grain storage venture within the same cost frame, but with larger economic and social development effects than the project which is now implemented.

Maize is Tanzania's main food crop. Yearly production amounts to about 600,000 tons. The following figures, based on statements in the consultants' reports, provide estimates of the quantities wasted in storage.

	local consumption	marketed
Production, 1000 tons	500	100
Estimated total storage losses, %	30-40	10
of which at primary cooperative society		7
regional level		3
Estimated total losses, 1000 tons	150-200	10

It is clear from the above figures that the main grain storage problem in Tanzania is related to that 80% of the harvest which never reaches the market. Consequently, my contention is that the $ 3.5 million, now intended for silo and residential housing construction, could advantageously be redirected to the subsistence maize sector. The computations which follow are based on informed guesses rather than factual material. The assumptions made are rather on the pessimistic side, in order not to overstate the advantages of what is being proposed. A careful field investigation would obviously have to be conducted to ascertain the appropriate facts and conditions.

Assume that the money released from the silos is spent for construction of improved storage facilities either for the individual subsistence farmer or

for small subsistence village communities.[1] I am not quite clear about the technical solution to be used. For villages, one could construct very small warehouses similar to those which are now being constructed for local cooperatives within the project. If individual farmer storage if preferable, one could consider simple cement pits covered with bitumen. Experiments were carried out in Tanzania with such pits in the 'fifties, with encouraging results. Grains were thus stored for about 5 years without sizable losses.[2] Alternatively, metal barrels could serve a similar purpose. Other possibilities could be considered, if none of the above is ideally suited for the purpose. Here is an excellent field for innovation aid. Whatever solution is adopted, it is most unlikely to cost more per unit of storage space than the local warehouses, e. g. about $ 30 per ton. The minimum space obtained would then amount to 120, 000 tons, sufficient to store roughly a quarter of all non-marketed maize. Suppose, again rather modestly, that the improved storage decreases yearly wastage from the prevailing 30-40% to 10-20%, or by 20% of the stored quantity. This would add about 24, 000 tons to consumable supplies, or, valued at the producer price of $ 42 per ton, about $ 1 million per year. With a 9-year time horizon, and the waste reduction starting one year after the completion of investment, the internal rate of return would be 20%. If a longer time horizon is assumed, the rate of return will be still higher.

What is more important than the rather uncertain rate of return figures, is that whatever benefits emerge will accrue directly to the subsistence farmers, consequently contributing to an improvement in the conditions of the impoverished farmers and evening out income distribution. The system proposed will not be labor replacing, and, as it will contain a very small, if any, foreign exchange component, its labor creation during the construction stage is likely to be much more significant than that from the construction of silos. As the local storage system will consist of simple devices, required in large numbers, it may easily give rise to simple local work-shop establishments. If the economic estimates presented above give a realistic picture, the demand for storage facilities of this type will not discontinue after the Swedish money has been spent. With the high return rates and short pay-off periods, it will be profitable for farmers who have

1. This is not a product of the author's imagination only. During the lengthy negotiations the Tanzanians have shown active interest in this type of storage. See the enquiry by Tanzania's Minister of Agriculture, as expressed in Rolf Beier's letter to SIDA, dated 8 August, 1967.
2. See report by SIDA consultant Sven Gesslein, "Uppgifter om odling och lagring av spannmål och oljeväxter i Tanzania, May 10, 1966, and D W Hall, "Report on Food Storage in East Africa", British Colonial Office, undated, ca 1952.

not been provided with the facility under the aid scheme to invest in it on their own. By then, ample experiences will be available to illustrate the profitability and absence of risk of the investment. This is one of several possible important indirect repercussions from the proposed scheme.

Another likely outcome is that part of the additional maize will be brought to the market, thus increasing the marketable surplus. This development, in turn, may necessitate expansion of warehousing facilities at the local cooperative and regional levels. It is a political decision whether this expansion should be subsidized by central government funds or by aid from abroad, or whether it should carry its own costs by increasing NAPB's operating margins. But it should be repeated once more to prospective foreign supporters of such a venture, that for a long time to come most of the benefits of such support are likely to be reaped by the more well-to-do population strata in the recipient country.

While Sweden has qualified technical expertise and manufacturing facilities in the field of modern silo construction, it has probably neither the skills nor the materials required for the proposed farm storage venture. Is this an important consideration for or against a Swedish decision on support? It has been assumed throughout our study that the objective of Sweden's aid should be to maximize development in the recipient country. If it is agreed that this is an appropriate approach, there is no reason to take account of Swedish resource use in aid project selection. When aid is provided for individual projects, the overriding selection criterion should be each project's development impact per unit of aid input.

Appendix: Rate of return calculations in grain storage

The following six statements provide the calculations through which some of the internal rates of return, cited in the text, have been obtained.

All the figures are in thousand Tanzania Shillings, and have been obtained from K-konsult's Report.

Statement 1. Silos and local warehouses as calculated by K-konsult

	(1) Investment costs	(2) Running costs	(3) Total Savings	(4) Net Savings	(5) Discounted at 11%	(6) Discounted at 13%
1969	- 9,455			- 9,455	- 9,460	- 9,460
1970	-10,180		+ 1,115	- 9,065	- 8,170	- 8,100
1971	- 7,200	- 286	+ 3,482	- 4,004	- 3,250	- 3,140
1972		- 694	+ 5,287	+ 4,587	+ 3,360	+ 3,180
1973		- 694	+ 5,287	+ 4,587	+ 3,030	+ 2,820
1974		- 694	+ 5,287	+ 4,587	+ 2,730	+ 2,500
1975		- 694	+ 5,287	+ 4,587	+ 2,460	+ 2,210
1976		- 694	+ 5,287	+ 4,587	+ 2,210	+ 1,960
1977		- 694	+ 5,287	+ 4,587	+ 2,000	+ 1,730
1978		- 694	+ 5,287	+ 4,587	+ 1,800	+ 1,540
1979		- 694	+ 5,287	+ 4,587	+ 1,620	+ 1,360
1980		- 694	+ 5,287	+ 4,587	+ 1,460	+ 1,200
1981		- 694	+ 5,287	+ 4,587	+ 1,320	+ 1,060
1982		- 694	+ 5,287	+ 4,587	+ 1,190	+ 950
1983		- 694	+ 5,287	+ 4,587	+ 1,070	+ 840
					+ 3,380	+ 650

Internal rate of return somewhat above 13%.

Note: K-Konsult presents in his report a statement of costs and savings for silos and local warehouses, from which the internal rate of return is calculated. In this statement, which is reproduced in rows 1-3 above, the maintenance costs for local warehouses, specified earlier in the report at Sh. 105,000 per year, have been overlooked. Without showing the actual calculations, K-Konsult's report concludes that the rate of return will be about 11%. Our above calculations show that this rate is rather somewhat above 13%.

Statement 2. Local warehouses

	(1) Investment costs	(2) Running costs	(3) Total Savings	(4) Net Savings	(5) Discounted at 28%
1969	- 3,355	- 50	- 0	- 3,405	- 3,405
1970	- 3,570	- 105	+ 1,115	- 2,560	- 2,000
1971		- 105	+ 2,230	+ 2,125	+ 1,290
1972		- 105	+ 2,230	+ 2,125	+ 1,010
1973		- 105	+ 2,230	+ 2,125	+ 790
1974		- 105	+ 2,230	+ 2,125	+ 630
1975		- 105	+ 2,230	+ 2,125	+ 480
1976		- 105	+ 2,230	+ 2,125	+ 380
1977		- 105	+ 2,230	+ 2,125	+ 290
1978		- 105	+ 2,230	+ 2,125	+ 230
1979		- 105	+ 2,230	+ 2,125	+ 180
1980		- 105	+ 2,230	+ 2,125	+ 140
1981		- 105	+ 2,230	+ 2,125	+ 110
1982		- 105	+ 2,230	+ 2,125	+ 90
1983		- 105	+ 2,230	+ 2,125	+ 70
					+ 285

Internal rate of return slightly above 28%.

Statement 3. Silos

	(1) Investment costs	(2) Running costs	(3) Total Savings	(4) Net Savings	(5) Discounted at 6%
1969	- 6,100			- 6,100	- 6,100
1970	- 6,600			- 6,600	- 6,230
1971	- 7,200	- 290	+ 1,250	- 6,240	- 5,560
1972		- 700	+ 3,060	+ 2,360	+ 1,980
1973		- 700	+ 3,060	+ 2,360	+ 1,870
1974		- 700	+ 3,060	+ 2,360	+ 1,760
1975		- 700	+ 3,060	+ 2,360	+ 1,660
1976		- 700	+ 3,060	+ 2,360	+ 1,570
1977		- 700	+ 3,060	+ 2,360	+ 1,480
1978		- 700	+ 3,060	+ 2,360	+ 1,400
1979		- 700	+ 3,060	+ 2,360	+ 1,310
1980		- 700	+ 3,060	+ 2,360	+ 1,240
1981		- 700	+ 3,060	+ 2,360	+ 1,170
1982		- 700	+ 3,060	+ 2,360	+ 1,100
1983		- 700	+ 3,060	+ 2,360	+ 1,040
					- 330

Internal rate of return slightly below 6%.

Statement 4. Local warehouses and 50% of education costs

	(1) Education costs	(2) Savings minus other costs (from statement 2, column 4)	(3) Net Savings	(4) Discounted at 17%
1969	- 140	- 3,405	- 3,405	- 3,545
1970	- 1,360	- 2,560	- 3,920	- 3,350
1971	- 1,070	+ 2,125	+ 1,055	+ 770
1972	- 1,360	+ 2,125	+ 765	+ 480
1973	- 1,070	+ 2,125	+ 1,055	+ 560
1974	- 360	+ 2,125	+ 1,775	+ 810
1975		+ 2,125	+ 2,125	+ 870
1976		+ 2,125	+ 2,125	+ 740
1977		+ 2,125	+ 2,125	+ 630
1978		+ 2,125	+ 2,125	+ 540
1979		+ 2,125	+ 2,125	+ 460
1980		+ 2,125	+ 2,125	+ 400
1981		+ 2,125	+ 2,125	+ 340
1982		+ 2,125	+ 2,125	+ 290
1983		+ 2,125	+ 2,125	+ 250
				+ 245

Internal rate of return about 17%.

Statement 5. Silos and residences and 50% of education costs

	(1) Education costs	(2) Residential costs	(3) Savings minus other costs (from statement 3, column 4)	(4) Net Savings	(5) Discounted at 1%
1969	- 140		- 6,100	- 6,240	- 6,240
1970	- 1,360		- 6,600	- 7,960	- 7,890
1971	- 1 070	- 714	- 6,240	- 8,020	- 7,870
1972	- 1,360	- 1,420	+ 2,360	- 420	- 410
1973	- 1,070		+ 2,360	+ 1,290	+ 1,240
1974	- 360		+ 2,360	+ 2,000	+ 1,900
1975			+ 2,360	+ 2,360	+ 2,240
1976			+ 2,360	+ 2,360	+ 2,210
1977			+ 2,360	+ 2,360	+ 2,190
1978			+ 2,360	+ 2,360	+ 2,170
1979			+ 2,360	+ 2,360	+ 2,150
1980			+ 2,360	+ 2,360	+ 2,130
1981			+ 2,360	+ 2,360	+ 2,110
1982			+ 2,360	+ 2,360	+ 2,090
1983			+ 2,360	+ 2,360	+ 2,070
				+ 1,890	+ 90

Internal rate of return 1%.

Statement 6. Silos and residences and 50% of education costs less warehouses, valued at Sh 5 million ($ 700,000), released and sold in three equal instalments in 1969, 1970 and 1971.

	(1) Net savings of silos minus residence costs and 50% of educational costs (from statement 5, column 4)	(2) Sales Proceeds	(3) Net Savings	(4) Discounted at 5%	(5) Discounted at 4%
1969	- 6,240	+ 1,650	- 4,590	- 4,590	- 4,590
1970	- 7,960	+ 1,650	- 6,310	- 6,010	- 6,080
1971	- 8,020	+ 1,650	- 6,370	- 5,760	- 5,880
1972	- 420		- 420	- 360	- 370
1973	+ 1,290		+ 1,290	+ 1,060	+ 1,100
1974	+ 2,000		+ 2,000	+ 1,570	+ 1,640
1975	+ 2,360		+ 2,360	+ 1,770	+ 1 860
1976	+ 2,360		+ 2,360	+ 1,690	+ 1,790
1977	+ 2,360		+ 2,360	+ 1,610	+ 1,720
1978	+ 2,360		+ 2,360	+ 1,530	+ 1,660
1979	+ 2,360		+ 2,360	+ 1,460	+ 1,590
1980	+ 2,360		+ 2,360	+ 1,390	+ 1,530
1981	+ 2,360		+ 2,360	+ 1,330	+ 1,470
1982	+ 2,360		+ 2,360	+ 1,260	+ 1,410
1983	+ 2,360		+ 2,360	+ 1,200	+ 1,360
				- 850	+ 210

Internal rate of return slightly above 4%.

8.3 Artificial insemination in Kenya[1]

A brief description of the venture

In 1964, at the time of independence, the total cattle population of Kenya was estimated at some 7.1 million, the overwhelming majority of which consisted of the indigenous Zebu stock, with extremely low productivity in terms of both milk and beef. Practically the whole milk surplus available for human consumption came from the grade herd, which consisted of both exotic (imported, high-yielding) breeds, and cows obtained through crossing Zebu females with exotic bulls. The grade herd was estimated at about 360,000 in 1964, down from about 425,000 in 1959.[2] This downward trend has two explanations. First, the British farmers, who held about 95% of the grade herd in 1959 started to slaughter their female grade calves, in view of the uncertain future prospects for European farming in the country. Second, in the years around independence, a considerable proportion of the grade stock was transferred to African farmers. As the Africans, by and large, lacked experience of efficient dairy farming, the mortality rates increased, the birth rates declined, while the quality inherent in the transferred herd, deteriorated as a result of the use of Zebu bulls for insemination of grade cows.

The primary reason for the request from Kenya for Swedish assistance in the field of artificial insemination (AI), was a wish to stop the hereditary deterioration of the grade herd, and to increase the number of grade cows, to ensure an increasing supply of milk for the growing population in an expanding economy. Some AI activities were operated in Kenya at the time of the application, but the country was said to "lack the economic and personnel resources to carry out a large scale AI program".[3]

In 1966, SIDA agreed to expand the limited assistance rendered up to then to Kenya's veterinary services, into a comprehensive Project aimed at developing the country's artificial insemination of dairy cattle and related services. The assistance agreement became operative in July 1966, and covered a 5-year period. A number of Swedish veterinarians and agronomists have been made available to the Project. The total Swedish financial

1. I wish to express my sincere gratitude to Messrs C A Hultnäs, G Oscarsson and L Wicknertz of SHS for the time and interest they devoted to providing me with information on this project, and to instructively commenting on the various drafts of this section.
2. Figures from East African Livestock Survey, Vol. II, p. 31 and 34, FAO/SF: 21 Reg, Rome, 1967.
3. SIDA's proposal to the Swedish Cabinet on aid to Kenya for livestock development, dated January 28, 1966, p. 2.

contribution to the Project for the 5-year period 1966-1971 amounted to $ 2.7 million.[1] No detailed accounts for the total cost of the venture are available, since it is difficult to draw clear lines between the Kenyan expenditures for the project supported by Sweden, and those for other closely related endeavors. However a rough estimate, including Kenyan expenditure, suggests a total of $ 3.3 million.[2]

The main tangible results of the 5 years of work consist of:

a) a substantially expanded and efficiently functioning semen production unit, with modern laboratories and stables, and a herd of high-quality bulls.

b) A highly improved system for distributing the semen to farmers, with a cadre of trained inseminators moving around in motor vehicles, a network of roadside crushes[3], obviating the difficulties to reach farms without motorable road access, and a consequent, continuously increasing productivity in terms both of inseminations per inseminator, and pregnancies per insemination.

c) a growing source of technical data from specially undertaken field studies, on which to base decisions about future developments of the AI program.

d) Table 1. Inseminations carried out and pregnancies achieved

	1966/67	67/68	68/69	69/70	70/71
Planned inseminations+	147,000	236,000	240,000	290,000	330,000
Inseminations carried out within the Project	129,000	151,000	188,000	227,000	270,000
Expected inseminations per pregnancy++	3.0	2.9	2.8	2.7	2.6
Expected number of pregnancies	43,000	52,000	67,000	84,000	104,000

+ Estimates were revised downwards in 1968. This revision is incorporated in the table's figures.

++ The Annual Report of the Project for 1970, Field Survey Kiambu contends that the number of inseminations required per pregnancy has in fact been somewhat lower than the figures given here.

Source: SIDA's Insatspromemoria, dated 9.7.1971, p. 4.

Already at the time of signing the first 5 year agreement, it was envisaged on the Swedish side that the support ought to continue for at least a 10-year period. In January 1971, the Kenyan government formulated a request to SIDA for an extension of Sweden's support for the 5 year period 1971/76. The request was accepted without substantial changes. In the 2nd 5 year period, the emphasis seems to have been somewhat shifted from the AI proper, which is by now fairly well established and developed, to a few key

1. SIDA's Insatspromemoria, dated 9.7.1971, p. 3.
2. Oscarsson's memo to SIDA of February 1969, p. 8.
3. Facilities for inseminating cows.

supporting services, which are essential prerequisites for reaping the final benefits of AI, that is increased milk and meat production. In the Project plan, the minimum number of pregnancies resulting from AI is expected to increase from 127,000 in 1971/72 to 235,000 in 1975/76. Efforts will be undertaken to design programs for the further expansion of cattle herds in the country, on the basis of technical data collection on herd characteristics and reproduction rates. Training of inseminators will continue. Better veterinary service facilities will be provided to farmers in some of the districts where AI is operated. Beef production is envisaged to assume a somewhat greater importance besides milk, as the end product of the planned endeavors. The main items and the costs for the 1971/76 period, appear as follows:[1]

Artificial insemination proper	4.6 $ million
Dairy extension	0.8
Animal health measures	0.6
Supporting measures, evaluation	0.2
Sum total	6.2 $ million
of which Swedish share	2.5 $ million

From the very beginning, the management responsibility for the Project has been contracted out by SIDA to the Association for Swedish Livestock Breeding and Production (in future referred to as SHS), which has a considerable technical competence and international repute in the fields of AI, breed and production improvement of livestock.

Some introductory considerations

Before we start our analysis of the development effects of the Project, there are several introductory matters, which need to be cleared up. These will be taken up one by one.

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1. Plan of Operation, draft dated June 18, 1971, issued by SIDA, appendix IV:3, Summary Table. In the Final Plan of Operation, which reached me after I had completed writing this section, the planned number of inseminations had been increased in view of the expected expansion of demand for AI, resulting from the insemination and milk price changes in June 1971 (discussed on p.269 in this chapter). Total costs for the period had consequently increased to $ 7.1 million, but the Swedish share remained at $ 2.5 million. The following analysis is based on the lower figures contained in the draft plan of operation just quoted.

1. The deficient data sources

In analyzing the effects of the Project, we have to rely on a very weak foundation of facts. Our data sources are specified in the Appendix to this section. Special mention should be made of the data collected by the Field Survey Teams within the Project. These data will be used very heavily in the following analysis, and the reader is referred to the appendix for some cautious remarks regarding the significance and reliability of this unique source of information.

2. The Project's operational efficiency

We will not devote any special attention to the efficiency in running the Project, and will accept the findings of the IDS Evaluation Study that "the AI service as now organized and run by the National Artificial Insemination Service forms a sound basis on which to continue and expand the service in the future".[1] Taking the operational efficiency to be at an acceptable level, we can devote our full attention to the crucial question how the final outputs of the Project contribute to Kenya's development.

3. The tradition of Kenyan farmers to keep cows

Keeping of cattle has deep traditional roots among Kenyan farmers. The cows are kept for reasons of prestige, and as an accepted store of value. In strictly economic terms, the rate of interest obtained on the capital kept in the form of low-productive cows in fertile areas, would probably be negative. This is because the grazing that a herd of these cows consumes, has an alternative value which is likely to exceed the value of its milk, meat and calf output. For traditional reasons it would be difficult to induce the farmers to discontinue keeping cows altogether. The significant point for the project under consideration is that the basic expenditure for keeping cows would have been incurred under all circumstances, and the additional costs to the farmer or to the nation for substituting a superior, high-productive breed for the traditional, low-yielding varieties will consequently be smaller than if high-yielding cows had to be implanted into a cow-less environment. This aspect is important when considering the suitability of cattle improvement in comparison with other development ventures.

1. IDS Evaluation Study, p. 20. See Appendix to this section for the full reference.

A possible additional long-term advantage of cattle development projects is that they may bring about a faster change in the traditional approach to cows. If keeping these animals becomes remunerative, it will probably be easier for the farmer to change his outlook, and to regard them as productive tools, which should be used so as to maximize his income. Such a change might help in decreasing the currently oversized herds on the majority of small farms.

4. Artificial versus natural insemination

The actual choice of artificial insemination in preference of natural insemination through suitably selected bulls, has a number of explanations. First of all, AI prevents the spread of venereal diseases, and thus limits the dispersion of sterility among cows, with a considerable saving to the farmer.

Second, when AI is carried out on a large-scale, and attains full coverage in the areas where it operates, it is likely to be considerably cheaper than NI. The IDS Evaluation Study contains a benefit/cost analysis of the AI effort within the Project, as compared with an alternative NI program.[1] It is assumed that the two alternative programs receive the same support of extension and veterinary services. The AI program is estimated to be more expensive, but is taken to improve the productivity of female offspring by 3% per generation, equivalent to about 0.75% per year, over that achievable by NI. It is then shown that this incremental benefit of AI over NI exceed the incremental costs of AI, when discounted at 15%, both in the 1966-71, and the 1971-76 period. A crucial assumption in this analysis is a relatively high alternative cost for keeping bulls for natural insemination, which disappears with the adoption of AI. So far, however, numerable bulls have remained in the areas of intensive AI efforts.[2] The keeping of bulls in districts served by AI could be explained by traditional habits, by a sense of uncertainty among farmers about the reliability of the artificial service, or by the fact that within a short time horizon, where hereditary effects are disregarded, natural insemination may appear to be cheaper than AI to the farmer. Whatever the reason, the keeping of bulls of doubtful quality does seriously affect the comparative cost conclusions of the IDS study, at least for the past period. Furthermore, the uncontrolled natural insemination which takes place, may seriously hamper the expected genetic change

1. IDS Evaluation Study, p. 47-60.
2. See the 1969 and 1970 Annual Reports of the Project.

benefits. This suggests that several years of introduction may regularly be needed for the benefit/cost advantages of AI to emerge.

One could thirdly contend that with the great number of uneducated small dairy farmers, the maintenance of hereditary standards of the country's grade herd, and the gradual expansion of this herd as envisaged in Kenyan planning, would not be practicable with natural insemination, since the procurement of the great number of high quality bulls required, would raise serious cost and exchange problems, while the maintenance of the bulls by the farmers would create intricate administrative and extension difficulties.[1] With the overall goals given, there would then hardly be any real choice between the two insemination methods.

A fourth advantage of AI is said to be psychological. The introduction of the artificial services is something so strikingly novel, and so out of the ordinary habit to most farmers, that it becomes much easier at the same time to convince them about the necessity to change other practices in dairy farming. Thus, the acceptance of veterinary measures, and the advice from the agricultural extension services is highly facilitated, when rendered in conjunction with the introduction of AI.

In a longer time perspective, the AI technique does appear to offer important advantages over the NI alternative. To reap these advantages, however, it is necessary that farmers are induced to discard the remaining NI bulls in the areas where AI is operated.

5. The integrated nature of the Project supported by Sweden

The genetic improvement in the dairy herd is one in a number of measures required to increase Kenya's milk and meat output in the long run. The additional prerequisites include an extension service to teach the farmer more efficient animal care, the provision of a reliable veterinary service for the more sensitive superior breeds, and the creation of a market, through which the farmer can dispose remuneratively of his surplus milk.

While the Project supported by Sweden, covers practically the whole effort undertaken in Kenya, to improve the country's dairy herd through AI, it contributes only marginally, but is highly dependent upon, the other services required in the national cattle development effort.[2]

1. This is the attitude taken by SHS. See their comments on the IDS Evaluation Study, dated September 6, 1971, p. 3.
2. Note however that the Swedish supported cooperative development project has been involved in improving the Kenyan milk marketing system.

To illustrate the interdependence between AI and the many indispensable supporting services, let us consider the following facts. The milking potential of an average Zebu cow is said to be 200-400 liters per year. Already in the first crossing (F_1), between a Zebu female and semen from a carefully selected bull, the milk potential increases to around 1 300 liters. In the following crossings, the milk potential can be increased further, but not at the spectacular rates of the first cross. Thus, surveys undertaken in the Kiambu District suggest an average production of about 2, 200 liters per year from grade cows of a predominantly exotic extraction[1].

However, the actual productivity is usually much below the figures quoted here. The reasons for this are manifold. First of all, the cows are frequently inadequately fed. This is commonly due to lack of knowledge and understanding among the African farmers on the inter-relations between an improved food composition and milking productivity, or perhaps to non-availability of essential feeding components in the local market. Other likely reasons for milk production below potential are late first pregnancies, and unnecessarily long calving intervals. This too is primarily the result of inefficient management. Inadequate feeding might in some instances be a rational farmer reaction on a feed/milk price relation which make improved feeding practices non-remunerative to him. The most extreme situation of this kind arises when no organized milk collection exists in an area, and it is difficult to dispose of the milk in the local market. In these circumstances, the farmer will tend consciously to limit the output exceeding his own household needs. With a functioning milk market, however, it should as a rule be economically advantageous for the farmer to raise production by improved feeding, since the incremental food requirements for a unit increase in milk yield are probably low.[2]

In the short run, therefore, an increase in the milk output is best achieved by inducing the farmer to utilize the existing potential more fully, first by organizing a market, and ensuring milk prices, which make commercial production pay its way, and second by intensifying the extension services, and teaching him more efficient animal handling methods. So long as these preconditions do not exist, little purpose will be served by introducing AI, since farmers will not have any inducement

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1. Information from interview at SHS.
2. See table 8. 5 later in this section.

for augmenting the production capacity of their already underutilized animals.

In a large-scale long run cattle development effort like the one undertaken in Kenya, however, genetic improvements brought about with the help of AI, appear to be an additional indispensable part of the overall program.

Three conclusions can be drawn from the argument presented here. First, we should note that an AI scheme was functioning in Kenya already at the time of the first Swedish involvement, and Sweden's assistance was used, in the main, to expand the ongoing effort, and to make it more efficient. In the absence of support from Sweden or other aid donors, there was nothing preventing the Kenyans from expanding the existing AI activities on their own, or with the help of commercially purchased expertise, in order to carry through their development goals in the cattle sector. In the main, therefore, the support from Sweden must be classified as bulk aid, as defined in earlier chapters of our study. This does not deny valuable innovational Swedish contributions in the technical and organizational execution of the program. Second, in view of the strong dependence of the Project on the many other components in the cattle development effort, the influence of the Swedish experts and advisors on the broader policies of the Project must be limited, and the overall delineation of the venture supported by Sweden will be, in the main, the result of Kenya's own overall livestock development decisions. A third consequence of the close integration of the Swedish venture into the overall program is that it will be difficult to clarify the benefits uniquely attributable to the Project as defined above. Our attempted measures of the Project's impact must therefore be regarded with great caution.

6. The centrally administered prices

The producer and consumer prices of milk in Kenya are centrally administered. So, too, are producer prices of beef, and the prices of many feed inputs, required in milk production. With a system of administered prices, we cannot rely much on the pricing mechanism to convey information about economically justified resource reallocations, We should remember, however, that the prices which emerge in unregulated markets of underdeveloped economies, are also highly deficient

indicators for rational resource allocation and production decisions. This was discussed at length in section 3.3.

In recent years there has not been any evidence of awkward milk surpluses or shortages in Kenya. The apparent equilibrium between supply and demand cannot be taken to mean that the administered milk price levels reflect the true social costs of milk production, in view of the many structural distortions likely to be present in Kenya. In the absence of better information, we will nevertheless use the administered prices in all the calculations which follow, and will work with the simplifying premise that they provide a fair reflexion of the shadow milk price level.

The effects of the Project on output

The production effects of the artificial insemination, the extension activities and the veterinary measures contained in the Project, can be sought in the main, through two interwoven changes. The first is the outcome of the hereditary improvement of AI offspring, while the second results, in the main, from decreased cattle mortality rates.

The number of AI offspring entering production can be calculated on the basis of available data regarding performed and planned inseminations, and estimates of calf mortality and sterility. The results are presented in rows 1 and 2 of table 2. The reader interested in the underlying data, assumptions and techniques through which the figures were derived, is referred to the Appendix at the end of this section.

We are on a much less certain ground when trying to assess the additional milk production which results from the hereditary improvement of this herd. Mainly for illustrative purposes we can make some reasonable assumptions, from which we can derive the likely orders of magnitude for the production increase. The assumptions can easily be adjusted to fit new empirical data, if and when such data become available. Assume then first a 5 % yearly mortality rate among all cows of productive age. Stipulate further that the average production of grade cows except F_1 is 2,000 liters per year that this will increase by 5 % per generation (1.25 % per year) as a result of the use of AI, but that in the absence of the project there will be a productivity deterioration of equal magnitude. The additional production of a grade cow due to AI will then amount to 10 % of 2,000 liters or 200 liters per year. Assume also that average production of F_1 cows, 1,300 liters,

exceeds by 1,000 liters that of their Zebu mothers.

This set of assumptions enables us to calculate the entire additional milk production due to the AI induced hereditary improvement. The figures are spelled out in rows 3, 4 and 5 of table 8.2. The reader interested in the references and arguments underlying our assumptions, is again referred to the Appendix.

Table 8.2. Hereditary effects of the Project

	1969/70	70/71	71/72	72/73	73/74	74/75	75/76
Heifers due to AI, entering production, thousand							
1. F_1	1	2	3	3	4	6	7
2. higher grades	12	14	18	23	28	29	37
Additional milk production due to AI, million liters							
3. F_1	1	3	6	8	12	17	23
4. higher grades	2	5	8	13	18	23	29
5. Total	3	8	14	21	30	40	52

Sources and assumptions: See Appendix to this section.

The illustrative production figures emerging from the table suggest that the total production increase due to the hereditary improvement from AI would amount to above 10 million liters in the two last years of the Project's initial 5 year period. During the second 5 year term, the additional production would be many times higher, perhaps around 150 million liters.

Our calculations also suggest that the relatively few F_1 cows, resulting from AI on the indigenous Zebu stock, amount for a very substantial share of the overall production increase. A further advantage of the F_1 cross not taken into account in table 8.2 is that while Zebu cows do not usually calve before 4 years of age[1], the F_1 cows, like other grade cows, can start producing more than one year earlier. This would augment somewhat further the additional F_1 production figures given in table 8.2. The impressive apparent outcome of the limited number of Zebu inseminations makes it worthwhile to probe somewhat deeper into the causes and consequences of the division of the AI effort between Zebu and grade cows.

1. Information from interview at SHS.

According to the original plans, as they were drawn up in 1966, the proportion of Zebu inseminations would increase from 27% in 1966/67 to 37% in 1970/71. The factual outcome was instead 8% and 14% respectively. In the plans for the 2nd 5 year period, the Zebu proportion is to be maintained at about 17% of all inseminations. Two explanations can be provided for the considerable shortfall in Zebu inseminations achieved during the first 5 year period, and their modest share in the plan for the second 5 year term.

First, although for a number of years there has been a difference in the AI fee charged to the farmer ($ 1.40 per grade, $ 0.70 per Zebu animal, for a maximum of 3 inseminations), the cost has constituted a much higher proportion of the limited milk yield obtained from Zebu cows. Zebu owners, being usually the more marginal farmers, would probably also have a less reliable access to AI, be less informed about rational cattle dairying, and have less resources to invest in a proper care of the improved breed. These conditions certainly provide one explanation to the claim from the Project's administrators, that demand for Zebu inseminations has been weak, difficult to arouse, and a key determinant to the small factual Zebu insemination achievements.

Second, it has been natural to confine the AI effort to a limited geographical area. We have suggested earlier that a complete and reliable coverage is a precondition for the genetic and economic success of AI. Furthermore, once a farmer group has made itself dependent on AI, by discarding its bulls, its pressures for an intensive and highly reliable service will be very strong. Such pressures, expressed politically or otherwise must certainly have added to the tendencies to consolidate the program before venturing into new areas. And finally, a wider geographical spread would imply considerable additional costs for the expanded network of all the necessary supporting facilities. The Kenyan government may have been hesitant to incur this additional expenditure. The final outcome of a number of years of concentrated and intensive insemination work within a limited area must be a complete extinction of Zebu cows. A small or decreasing proportion of actual Zebu inseminations could then simply reflect the limited remaining Zebu herd in the areas served by AI. [1]

Reasonable explanations can thus be provided for the preponderance of grade inseminations. But we noticed above that while the intergenerational productivity improvement of grade cows can be assumed at about 5%, or 1.25% per year, that of F_1 amounted to more than 300%, or some

1. As yet, the last thought reflects a future potentiality only. In Kiambu, one of the districts most intensively covered by AI, roughly 6% only of all artificial inseminations undertaken in 1968, 1969 and 1970, were on Zebu cows, according to the Project's reports. On the other hand, it is contended in the IDS Evaluation Study (p. 41), that in 1968 about 55% of the cows in Kiambu were still of the Zebu variety.

75% per year, when the generation is taken as the period between the mother's and daughter's entrance into milk production. This substantial difference certainly warrants an analysis of the possible production effects from a stronger emphasis on Zebu inseminations.

Suppose, for instance that while keeping the overall AI volume constant, the Zebu inseminations were doubled, as compared with the actually achieved figures during the first period, and the planned figures during the second. The changes in the number of different types of heifers, and in milk production, is then summarized in table 8.9 in the Appendix to this section. The cumulative total additional milk production would then amount to some 3 million litres in the first 5 year period, and to more than 50 million liters during the second 5 year term.

To make a judgement of the relative production merits of the present policy of the geographical and grade concentration, in comparison with a more dispersed and Zebu-intensive effort, we would need data on the investment and running costs of the additional subsidiary services required, as well as much firmer information on milk production of the two alternatives. Such data do not exist.

One might perhaps contend that the AI Project supported by Sweden need not at present concern itself with such issues, since they are automatically determined by the broader Kenyan decisions on cattle development, of which AI is an integral part. But this is clearly an unsatisfactory attitude. Our above discussion has brought out strong reasons in favor of undertaking, or initiating and financing the much broader field surveys required to clarify the problem, and thereby providing a firmer ground for the Kenyan decision makers on this important issue.

There is one other genetic effect to be noted. Although the AI bull selection has been aimed at maximizing milk yields, a simultaneous subsidiary hereditary change is an increase in the size of animals (again most pronounced in the F_1 cross), and a consequently increased yield in terms of meat from slaughter cows and surplus bulls. So far, however, the tangible advantage of higher slaughter weights has been insignificant. Thus, milking cows are kept up to a very high age, even if further pregnancies are improbable[1], and surplus bull calves are usually slaughtered soon after

1. See SHS Memo to SIDA, dated April 1968, (G. Oscarsson), p. 5.

birth, because their rearing is unprofitable to the dairy farmer.[1] Milk and beef are joint products, and both are positively affected by AI. The economy of the project must be adversely influenced by the present neglect of one of its potential benefits. It is likely that the deficient economy of male grade calves, is caused not only by faulty producer prices, but also by an insufficiently developed infrastructure required for their raising, e. g. the absence of a credit system for potential beef producers, an inadequate marketing system for the transfer of bulls from dairy farmers to beef cattle raisers, or by the habit of feeding calves with expensive whole milk, resulting from the non-availability of skimmed milk powder, or other cheap feed alternatives. Here, again, the relevant information is lacking. It might be that some relatively inexpensive measures to improve the conditions of beef production could considerably enhance the overall economy of the project. But since we do not know what measures would be required, and since there are no indications that the present situation would soon change, we choose to disregard this potentially beneficial aspect in our assessment of the various development effects.

So far, we have dealt with the genetic implications of the Project on production. But the second important production effect resulting from AI and the accompanying veterinary and extension facilities, is an apparent decrease in calf mortality. Our earlier calculations, as presented in table 8.2 above, assumed that out of 100 heifers born, only 65 would actually enter production. The same mortality and sterility rates were taken to hold both for the actual herd, derived through AI, and the hypothetical alternative NI herd, which would have existed in the absence of the Project. On the rough but reasonable guess that without the Project and its supporting veterinary services, calf mortality rates would in fact be higher, so that only 55% of heifers born would actually enter production, it is possible to estimate the additional herd, resulting from reduced mortality rates. This additional herd would not at all have existed in the

1. The unremunerative beef producer prices are discussed in Livestock Development in Kenya, which notes that as a result of the disadvantageous pricing levels, there has been a decrease of marketed production. The Kenya Meat Commission, for instance, which handles 20% of the country's beef output has had a decreasing turnover, from 202,000 tons in 1967, to 184,000 tons in 1969. The scarcity of quality beef for tourists on the other hand, is so severe that imports are being considered. On a micro level, the 1970 report from the Project, when discussing the dairy farm economy, reports that "the price fetched for bull calves is too low to cover the cost for rearing", and provides a factual instance of a bull calf of 3 months, sold for $ 8.40 (Sh. 60), while the milk it had consumed, would have fetched twice that amount if delivered to the dairy. Also the IDS Evaluation Study (p. 45), points to the waste of male calves, which occurs despite the purported beef shortage.

absence of AI, and therefore its entire production should be credited to the Project. In table 8.2 we have already considered that part of production from these surviving animals, which resulted from the AI-induced genetic change. Here we have to take account of their remaining production, which can be calculated at about 1,500 liters per year. Table 8.3 summarizes the effects on production from the reduction in calf mortality rates, assumed above. The Appendix to this section provides the detailed sources, assumptions and calculations underlying the figures contained in the table.

Table 8.3 Additional herd and milk production resulting from reduction in heifer calf mortality. Summary.

	1969/70	70/71	71/72	72/73	73/74	74/75	75/76
1. Additional heifer herd, thousand	2	4	7	10	15	19	25
2. Differential milk production, million liter	3	6	10	15	22	28	37

Sources and assumptions: See appendix to this section.

Our illustrative example suggests that the decreased calf mortality rates could augment production by some 9 million liters in the last two years of the Project's first 5 year period, and by as much as 110 million liters during the second 5 year period. The production effects resulting from decreased mortality could therefore well be of a magnitude fully comparable with the additional production due to the genetic improvements from AI.

We are now ready to summarize. The main tangible production effects of the Project result from a genetically induced productivity increase in cows, and from a lowered mortality, which expands the size of the grade herd. Our illustrations of these two effects, specified in tables 8.2 and 8.3, can now be added up in the first row of table 8.4 on the next page. The total milk production increases, rising from 6 million liters in 1969/70 to 89 million liters in 1975/76, can be compared with the estimated total milk production in Kenya in 1969, of some 730 million liters[1], out of which about 40% was marketed. The controlled prices paid to farmers

1. Kenya 2nd 5 year plan, p. 258.

Table 8.4. An attempted computation of the internal rate of return of the Project for the 1966/76 period

	1966/67	67/68	68/69	69/70	70/71	71/72	72/73	73/74	74/75	75/76
1. Total additional milk production due to the Project, million liter				6	14	24	36	52	68	89
2. Value of additional milk computed at the controlled farmer prices in 1970, $ 6.58/100 liters, $ thousand				+ 400	+ 920	+1,580	+2,360	+3,420	+4,470	+5,850
3. Factual and planned costs for running the Project, $ thousand	- 640	- 660	- 660	- 660	- 670	-1,320	-1,320	-1,290	-1,200	-1,250
4. Assumed additional farmer costs of production, 25% of additional revenue, as specified in row 2				- 100	- 230	- 400	- 590	- 860	-1,120	-1,460
5. Net revenue over costs	- 640	- 660	- 660	- 360	+ 20	- 140	+ 450	+1,270	+2,150	+3,140
6. 1966/67 value of net income, discounted at 17%, $ thousand	- 640	- 570	- 480	- 230	+ 10	- 60	+ 180	+ 420	+ 610	+ 770
7. Aggregate 1966/67 value of net revenue, discounted at 17%, $ thousand	+ 10									

Sources: See the text.

were $ 6.58 per 100 liters (Sh. 0.47/liter) in late 1970.[1] The value of tional production, computed at these prices, is given in row 2 of table 8.4. The cumulative total additional production from the beginning of the project up to the end of its second 5 year period would be around 290 million liters, worth some $ 19 million.

The suggested increases in milk production are not costless. The total costs for the Project itself for the two 5-year periods have been estimated above at $ 9.5 million. The spread of these costs over the ten years appears in row 3 of table 8.4.[2]

A second cost item consists of the additional labor and feeding requirements for the larger milk output. For the production increase resulting from improved genetics due to AI, the additional feeding costs are probably limited. Data collected from the Project's field surveys give the following interrelations between milk output and food consumption of grade cows:

Table 8.5. Estimate of nutrient requirements of cows at different milk production levels.

	Required Energy		Required Protein	
Milk yield liters/year	Starch equivalent, kg.	Marginal requirement, kg.	Digestible crude protein, kg.	Marginal requirement, kg.
1,000	1,480		190	
2,000	1,740	260	250	60
3,000	2,010	270	300	50

Source: Statistics for Model Farms, 1969, as reported by C.A. Hultnäs SHS, in paper to Lantbrukshögskolan, dated 29 October, 1969.

These data would suggest that the additional feeding requirements to increase production per cow are relatively limited. For the production increase resulting from lower calf mortality, and consequently a larger herd, the additional feeding inputs would be more substantial, since a production increase of 2,000 liters from one more surviving cow would require 1,740 more kilos of starch and 250 more kilos of protein, in comparison with about 520 and 120 kilos respectively, if the production increase is derived through a combination of genetic improvements and

1. Insatspromemoria, p. 27. We should observe that a minor share of the marketed milk is sold to neighbours at considerably higher prices than those obtained for dairy deliveries. We have no idea, however, of the average share of these local sales, nor of the price difference involved, and can therefore not take this trade into account when valuing the additional output, resulting from the project.
2. The sources to the yearly Project costs are Oscarsson's Memo to SIDA of February 1969, and Plan of Operation, Draft, dated June 18, 1971 both quoted earlier in the text.

better feed practices, without increasing the herd. A lower mortality will, on the other hand, decrease the unproductive expenditure involved in feeding heifers, which will die before attaining productive age. It is very difficult to impute values to the inputs. Most of the animal foodstuffs are grown by the farmer himself, and their value is seldom determined by market prices. With regard to additional labor, we do not even have any idea about its required quantity, much less still its unit value. With the uncertainty about the value of the additional farmer outlay, let us approach the problem from another angle, and assume, rather optimistically, that the marginal cost to the farmer, including his own labor, constitutes no more than 25 % of his additional gross revenue from increased milk production. This is specified in row 4 of table 8.4.

There are thirdly the further Kenyan expenses for veterinary and other extension facilities, as well as for the development of dairies and of a milk collection system, which are not embodied in the Project as presently defined. I have not been able to make a meaningful assessment of these costs[1], and they are therefore not accounted for in table 8.4.

For whatever it is worth, we can now use our guesstimate figures compiled so far in table 8.4, to calculate the internal rate of return of the Project for the 10-year period 1966-1976. This is done in rows 4, 6 and 7. When discounted to 1966/67 at 17 %, the estimated revenue exceeds the assumed costs by $ 10,000. The internal rate of return would then be just about 17 %.

We should immediately guard against putting any significance to this figure.

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1. Quite aside from the crux in determining which Kenyan expenditure items are directly related to milk production growth, one runs into complicated inter-temporal, and inter-district difficulties, when trying to disentangle this problem. Certain preconditions have to be met, before AI can at all be introduced in a district. Veterinary campaigns, for instance, from which AI will eventually benefit, might have to start many years before the insemination program itself. How do we take account of the costs incurred long ago for such matters, in the districts now served by AI, and of the current expenses for similar tasks in districts, where AI is not presently practised, but may or may not be introduced later ? We do not solve our problem by looking at the data of current Kenyan cattle development costs, and postulating that a given share, say 50% of these expenditures in districts presently served by AI, be regarded as costs for expanding milk output. These problems cannot be disregarded as minor ones, because it is probable that a very substantial share of the total public costs incurred to permit an increase in milk production, are spent outside the project supported by Sweden.

One of the major conclusions of this sub-section is in fact that data are lacking for making a proper economic assessment of the venture. Let us repeat in a summary form the main deficiencies underlying the tabulations of table 8.4. The points made are also suggestive of the kind of data required to enable an improved future evaluation of the Project.

1. Our estimates of additional milk production are based on extremely uncertain and narrow information regarding production and production change per cow, as well as on mortality of cows and calves.

2. The value of additional milk has been obtained on the basis of the administered price level at a particular time. Since this price level is liable to politically induced erratic changes, it would be preferable to try to derive an approximate shadow price level for milk, to be used in the rate of return calculations for the Project.

3. We have no information on which to assess the farmers' costs for additional milk production. Our guess of 25 % of gross additional revenue is likely to be an underestimate.

4. We have not been able to assess meaningfully the Kenyan costs outside the Project. The internal rate of return would naturally decrease, if these costs were included in the computations.

We should also note that a very significant feature of the venture under investigation is that its production effects take several years to mature, but that subsequently they grow very fast. It should be strongly underlined that our above calculations provide an undue underestimate of the production increase, because they have a cut-off point at the end of the Project's second 5-year term, while in reality the benefits from the investments undertaken will continue to flow long after 1976.

We could regard the Project as one, in which a very considerable capital formation takes place, both in the form of institutions for the dissemination of AI, for extension and veterinary services, and for the establishment of a milk collection and processing system, all of which require sizable initial investments in physical facilities and training, which can then serve the country for a considerable number of years. Similarly, the Project presupposes a substantial durable capital formation on the part of the farmers, who have to invest in maintaining feeding grounds, and enclosing them with fences, facilities for animal disinfection, cans for transporting the milk, and, most importantly, in obtaining a herd of grade cows. Since for reasons of tradition, farmers tend to keep cattle in any case, the

additional farmer expenditure required to make the cows productive, may not be so heavy, because the basic costs would have been incurred anyhow. An important effect of the Project is then, that it enables an improductive capital stock to be transformed into a high-valued productive capital asset. By providing the farmers with an easy opportunity to increase their income in this way, the upgrading of cattle is likely to make a substantial contribution towards inducing the dairy farmer group to increased long term real savings and investments.

The gradual ripening of these substantial long term investments resembles the classical economics examples of growing woods and ripening wine, and explains why, initially, the output effects will be small, and why their growth will be quite considerable over a longer period of time. In spite of the advantages with the farmer investments in an improved dairy herd, spelled out above, one may wonder whether in an economy as capital scarce as Kenya, it is appropriate to promote a type of capital formation which requires so long time before its full benefits are reaped. Lack of comparative information on alternative agricultural development endeavors prevents us from presenting even a tentative reply to this query.

The employment effects of the Project

The employment creation within the Project activity itself, e. g. the use of of inseminators, veterinarians, extension workers, etc., is not of primary interest in our context, first, because this employment is very small in number, and second, since it concerns, in the main, personnel with valuable practical qualifications, who would encounter few problems in obtaining employment elsewhere.

We may also quickly pass over the problem of a possible reduction of work among farmers, when insemination bulls kept by them are removed, and replaced by the artificial service. It is quite probable that a dairy farmer will add a cow to his herd, to use the grazing freed by substituting the bull for artificial insemination, and that his labor input in caring for this cow will be comparable to the work requirements to maintain the insemination bull. The remaining and significant question is what the effect on the farm employment will be from the effort to increase milk production and to improve the productivity of cows.

It is reasonable to argue that when insufficient capital and/or land are the cause to unemployment, a development policy concerned with employment creation should give emphasis to especially labor-intensive activities and techniques. The East African Livestock Survey notes that a -

> "major characteristic of efficient animal industries is that they are not labor-intensive, but are essentially land- and capital-intensive. That is, for a given quantum of value of production for animal products, the proportion of costs represented by labor is likely to be low, whilst that for capital and the use of land is likely to be relatively high. This contrasts with the situation for other rural products, many of which are labor intensive."[1]

I have not been able to find empirical evidence, proving or disproving this assertion, but the arguments of the previous sub-section would tend to support the views just quoted. The static implication of the contention that the capital/labor and land/labor ratios are relatively high in an activity like milk production, is that each unit of milk will require relatively high amounts of capital and land, and relatively little labor inputs. Our tentative conclusion on this count would therefore be that the capital and land resources devoted to dairy farming, cannot result in a particularly impressive employment generation.

The employment effects from a change in technique, which increases the cattle productivity, is a different matter. The analysis of these effects requires specific information on a number of issues. In the absence of empirical data, let us again construct our own assumptions, on which the analysis can be based. Assume then, for the sake of illustration, that the domestic milk market is competitive and that there are no foreign trade outlets for milk. Suppose, furthermore that the adoption of the new technology is restricted by the supply of the Project's services, and that the improved cattle breed, along with the other services provided by the Project, alter output conditions so that after the change in technique, a given quantity of milk can be produced with the same amount of capital as before, but with considerably smaller inputs of labor and land. Our assumptions are not likely to be drastically removed from reality. Milk and milk product can be sold outside East Africa only at rock bottom prices.[2]

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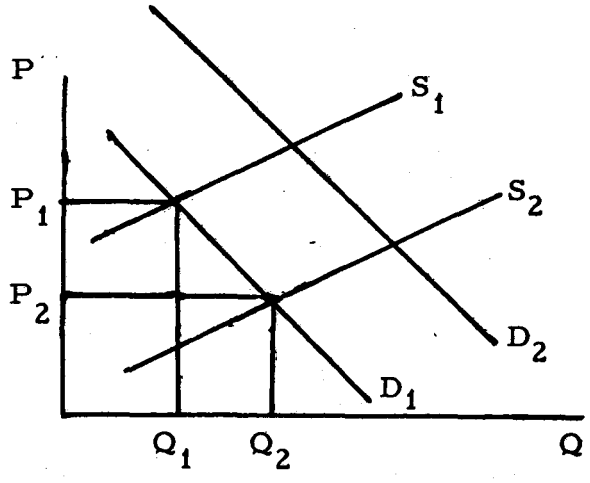
1. East Africa Livestock Survey, p. 11. The Survey also contends, more specifically, that milk production constitutes no exception to the high capital intensity characterizing animal industries. A similar assertion is made in Towards Full Employment, A Program for Colombia, ILO, Geneva 1970, p. 82.
2. IDS Evaluation Study, p. 9.

And the hereditary improvement in cows does imply savings in land and labor, while the capital value of the cow will grow with its productivity.

The result of the adoption of the new technology can be illustrated in figure 1 by a shift in the supply curve from S_1 to S_2. When D_1 is the demand

Figure 1.



schedule, the consequence of the supply shift will be a price fall from P_1 to P_2, and an output increase from Q_1 to Q_2. If the price elasticity for milk is high, e. g. the demand schedule is relatively flat, the expansion in demand could be equal with, or even larger than the average increase in labor productivity, with a resulting enhanced demand for labor. It is equally likely, however, that the effects of the milk production expansion from Q_1 to Q_2, following the productivity increase, could lead to smaller overall labor and land requirements, but an expanded use of capital. The question is now, whether we can count on some subsidiary effects from the assumed changes, which would help to reemploy the marginal dairy farmers, who might have to leave production.

The higher capital requirements of milk production would ordinarily exert a negative influence in this connection, since less capital would be available for employment creation elsewhere. In our case this influence is not likely to be strong. Part of the productive capital required is obtained by a transformation of improductive capital assets which could not have been used for anything else, while another part emerges from the additional farmer savings induced by the opportunities of the new technique, so that to some extent at least, the additional demand for capital arouses its own supply. The land released from milk production, will facilitate work creation for the redundant dairy farmers. Another positive change is the

increased real incomes among the farmers using the new technology, and among milk consumers, who gain from the lower milk prices. The increased purchasing power of these groups will add to the demand for other agricultural products, and thus to the employment opportunities of the earlier dairy farmers.

Finally, the expansion of milk transport and processing will also add marginally to employment expansion. If we sum up the various factors, however, it is fairly evident that a productivity change according to the illustrative assumptions outlined here, might well continue to have a negative overall effect on employment.

We have disregarded the time aspect in the above analysis. In real world conditions, a possible negative employment effect will be mitigated, because the introduction of the new technology is likely to be gradual, and meanwhile demand will expand, as a result of the growth in population and per capita incomes. Over the years during which AI is introduced, demand might shift from D_1 to D_2 in figure 1, and the future equilibrium would be at higher output levels than Q_2. Total employment in dairy farming could therefore well continue to grow over time, but this will then be despite, rather than because of the increase in productivity.

We have also been unable to include in our analysis the short and medium term employment effects of erratic, politically motivated changes in the prices of milk and milk production inputs. An illustration of the decisive role of the central pricing policy is provided by the political decision, taken in June 1971, to decrease all insemination fees to $ 0.14 per cow (from $ 1.40, and $ 0.70, respectively), and simultaneously to increase producer prices for milk from $ 6.58 per 100 liters, to $ 10.90, which in one single stroke brought about a drastic change in the economy of dairy farms.[1] A considerable producer subsidy is indubitably implied in these price changes, but it is difficult to speculate about its effects on employment or otherwise, since we do not know how long the subsidy will last, and by what it will be replaced.

It has been suggested that the fast migration to urban areas in u-countries is caused by the income differentials between the urban and rural pupulation groups.[2] The Project could then be seen as a measure to limit the Kenyan cities' unemployment problems, by providing higher income opportunities

1. SIDA's Insatspromemoria, p. 27.
2. D Turnham - I Jaeger: The employment problem in less developed countries, a review of evidence, OECD, Paris, 1971, p. 108.

as an inducement to the dairy farmers to stay in the countryside. It is quite probable that the farmers who actually benefit from the Project, will be less tempted to leave agriculture. But these farmers represent only a small fraction of the rural population, while the earnings of the overwhelming majority of rural people will not at all be affected.[1] It is therefore hard to see how the Project could have any significant effect on urban migration, unless the group of dairy farmers who benefit, were actually the ones on the verge to move. This sounds unlikely.

Our conclusion, then, briefly, is that with available information, the employment effects of the Project are impossible to quantify, but that they are not likely to be high in relation to the inputs required, and might even be negative.

Nutrition and health

The Project's most valuable contribution to better nutrition standards will consist of the animal proteins contained in the additional milk output. We will therefore concentrate our attention on this aspect of nutrition.

The Report from the Nutrition Survey 1964-68, gives the following animal protein requirements, in consideration of the local food habits in Kenya:

Table 8.6 Protein requirements in Kenya

Food type	Pure animal protein per person per day	Corresponding protein foods per person per day	Corresponding protein foods per person per year
Eggs	2.7 grams	0.5 piece	150 pieces
Milk	10 grams	280 grams	100 kg.
Meat	17 grams	56 grams	21 kg.

Source: Nutrition Survey 1964-68, p. 10.

For the majority of Kenya's population, nutrition standards in respect of animal proteins would then appear to be far from adequate. The Livestock Development in Kenya Report gives the following per capita consumption

1. See the sub-section discussing the Project's income distribution effects.

figures, based on aggregated herd and production data:

Table 8.7 Consumption of livestock products in Kenya in 1970.

Area	Population thousand	All meat, grams per person per day	Milk, grams per person per day	Eggs, pieces per person per day
High potential, small scale	7,558	31	97	0.1
Range, small scale	1,070	33	134	0.1
Pastoralist	870	98	660	-
High potential, large	604	44	370	0.1
Laikipia district	67	58	240	0.1
Nairobi/Mombasa	723	84	520	0.1

Source: Livestock Development in Kenya, Nairobi, January 1971, p. 6.

It appears from table 8.7 first that the inadequacy is concentrated to the small scale range and farm group, constituting the majority of total population, and second, that the pastoralists and city inhabitants have a fully sufficient average animal protein consumption.

The field studies undertaken by the Nutrition Survey, give a much more gloomy view of the animal protein nutrition standards in the country. The survey was undertaken in 1965, and concerned 7 small scale farming areas, thought to be representative for the small farmer conditions throughout the country, and one low-to-middle income-group African housing area in Nairobi. The large-farm and pastoralist population was disregarded. According to this survey, the daily per capita meat consumption in the 7 rural areas chosen varied between 0 and 24 grams, with an unweighted average of about 10 grams. Total daily milk intake varied between 11 and 103 grams, with an average of about 35 grams. In the Nairobi area, the consumption of meat was 58 grams per person per day, that of milk 120 grams.

The milk production increase brought about by the Project, should then be seen against the background of the animal protein requirements, and the reported conditions of inadequacy, as they emerge from the two reports quoted above. Taking our highly uncertain illustrative estimates from table 8.4 we note that the production increase resulting from the Project, would be about 6 million liters in 1969/70, increasing gradually to about 89 million liters in 1975/76. We will use two relationships to illustrate the importance of this added production for the national nutrition levels.

First, if divided among the entire population, the additional milk production would suffice to increase per capita daily consumption by about 1.5 grams in 1969/70. The consumption of the bigger population in 1975/76 could grow by 18 grams per day, if the larger production increase at that point of time were evenly distributed throughout the nation. In view of the conflicting evidence of current consumption, we cannot tell what percentage addition to present consumption levels these figures would constitute. A second way of gauging the importance of the Project's additional milk output is to estimate to what extent it could satisfy the requirements of the country's additional population. In 1969/70, the 6 million liters of milk would then have to be distributed among 360,000 persons, that year's population growth. Per person and day, the consumption would correspond to 46 grams of milk. In 1975/76, the additional production of 87 million liters would have to be divided among 2.4 million people, the additional population resulting from a cumulative growth by 3.3% over 6 years. This would give about 100 grams of milk per capita and day, higher than current consumption in small farmer areas, as estimated by the Livestock Development in Kenya Report, but still far from the Nutrition Survey's milk sufficiency standards of 280 grams per day.

The illustrative figures should have made it clear that although the Kenyan dairy production improvement program makes an important contribution towards raising protein nutrition standards, its effects will be far from adequate even to meet the nutritional milk requirements of the additional population. In spite of the aid-supported efforts, the nation's aggregate milk inadequacy will continue to grow.[1]

This raises the much wider problem whether with prevailing investment and production costs, it is at all realistic to assume, as the Nutrition Survey does, that one third of the population's animal protein requirements be supplied from milk. And if this assumption is not realistic, a very high priority ought to be attached to an intensive search for more feasible sources, from which to cover the present protein deficiency.

There is not much to be said on the Project's contribution to better health conditions in Kenya. The only effect will be the indirect one, resulting from the achievements in the field of nutrition.

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1. We have not calculated what might happen after 1975/76. It is possible that the momentum in the growth of milk output is so strong that it will suffice to narrow down the country's milk deficiency over a longer period of time.

The educational impact

The educational effects can also be dealt with very briefly. The purpose of the training programs contained in the Project can be seen as part of an institution building and Africanization process. A regular series of courses have been provided for the various staff categories working with artificial insemination and its related services. A significant fact is that the recruitment to these training activities has not been restricted to the employees in the Project. By inviting the participation of personnel from outside public and private organizations in related fields, the training has resulted in a net skill output in the specialized subjects dealt with in the training courses, over and above the internal requirements. In the second 5 year period, provisions have been made to send some of the staff members for advanced training abroad.

These training activities have first of all their effects on production, both directly, through higher efficiency in the execution of the Project's functions, and indirectly, through the influence that the better trained staff will exert on the animal husbandry practices of the dairy farmers. Both effects have already been taken into account in our illustrations of the likely milk production increases, resulting from the Project.

The more independent value of the education efforts is that they help in widening Kenya's skill constraint by endowing the country with a trained cadre of specialists in animal husbandry, a field which will long continue to be of central importance in the overall economy. The development of this cadre is also a planned prerequisite for the transfer of the entire responsibility for the Project into African hands.

Effects on income distribution

Last in our assessment of the Project's contribution to development, let us study its likely effects on income distribution. Changes in real income will take place in two ways. First, and most important, the farmers who are enabled to produce more, will derive an additional income from this production. Second, on the assumption that over longer periods, the controlled consumer milk prices will adjust to changing demand and supply conditions, so as to maintain market equilibrium,[1] the additional supply will, ceteris paribus, imply a lower milk price than the one which would exist in the absence of the project. This will benefit the consumers of milk by increasing the real purchasing power of their incomes.

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1. See discussion about the administered prices on p. 255-256.

We have no data from which to derive the income shares of various population groups in Kenya. We can conjecture, however, that the poorest population strata in the country are the ones living far away from the cities and off the thoroughfares, in areas which lack the infrastructure required for agricultural productivity improvement, that they rely to a high degree on subsistence farming, and have not been able or induced to modernize their productive capital equipment, including agricultural implements and livestock breeds.

These groups are not likely to be affected by the Project at all. They are not in a position to produce milk for sale to the dairy. Neither can they afford any consumption of the expensive milk marketed through dairies. For most of them even the cheaper milk, produced on the farm, is a luxury, hardly within reach for own consumption. Almost half of the rural households studied in the Nutrition Survey, did not have any regular consumption of milk. The insignificant quantities obtained from their odd Zebu cows, were often sold in the nearby market, to provide badly needed cash for current expenditures.[1]

We know on the other hand that the above description does not tally at all with the characteristics of a majority of the farmers, who benefit from the AI service. No more than 10-15% of all inseminations have been conducted on Zebu cows, whose owners might belong to the poorer farmer strata. Some 20% of all inseminations have recently been undertaken on large farms,[2] whose proprietors must certainly belong to the top income layers in the country. And the key characteristics of the remaining 30-40,000 farm households served by AI[3], would include land ownership in the fertile, central areas of the country, with reasonably well developed marketing facilities, including an organized dairy collection of milk, and the possession of a few high-yielding grade cows. With all likelihood, this type of households, although not belonging to the country's most prosperous deciles, would have had incomes well above the median national values already at the time before the Project started. This argument suggests that the Project's production effects increase the skewness in the national income distribution, since 80-90% of the AI and its related services help improving the household incomes of the more prosperous 50% of Kenya's population.

1. Nutrition Survey 1964-68, p. 113.
2. Insatspromemoria, p. 15.
3. This would correspond to about 2% of the country's population. The figure is a rough estimate based on information about no. of inseminations conducted on small farms, calving intervals, no. of inseminations per pregnancy, and herd sizes on small farms, found in the Project's Annual Reports, and diverse SIDA material on the subject.

It is true that the Project has been a crucial precondition for the successful transfer of about 50% of the country's entire milk production from departing white settlers to a large group of small farmers.[1] In comparison with the colonial times, this must quite obviously have narrowed down Kenya's income disparities. But this change in income distribution is an effect of the colonial departure rather than of the dairy production improvement program. In studying the impact of the Project, we must take the income distribution as it existed after the colonialists left, as our starting point. Then, the conclusions of the previous paragraph will undoubtedly hold.

We showed earlier that a larger Zebu proportion in the AI effort was likely to lead to a considerably higher milk output. We were not able to reach any conclusions regarding the overall relative production merits of the present versus a more Zebu intensive insemination policy. On the reasonable assumption that grade cow ownership is concentrated to the more prosperous small farmers[2], a higher concentration on Zebu inseminations would also imply a positive change in the Project's impact on income distribution. This should be kept in account when further data on production and costs enable us to make a full assessment of the overall merits of different insemination policies.

The second income distribution effect of the Project will emerge through the consumption benefits resulting from the incremental production. Figures from the "model farms" in Kiambu district in 1969, give the following percentage distribution of current milk production[3]:

1.	Fed to calves	13 %
2.	Consumed by family	8 %
3.	Sold to neighbours	5 %
4.	Sold to dairy	66 %
5.	Not accounted for	8 %

Even if the use of milk is bound to vary to some extent between various parts of the country, sales to the dairy would certainly be the major item throughout the relatively progressive small scale farming group, which is served by AI and has access to milk collection centres. The benefit from home consumption, accruing to the producer households, forms part of the additional income of these households, and has already been considered. The

1. The comments on the IDS Evaluation Study, by SHS, dated 6. 9. 1971, p. 2, claim that about 50% of commercial milk in Kenya was recently produced on small farms.
2. This contention is supported by the interview at SHS.
3. Statistics for Model Farms 1969, as reported by C A Hultnäs, SHS, in paper to Lantbrukshögskolan, dated 29 October, 1969.

quantity of milk sold to neighbours and given to calves is not likely to grow in proportion with the continued production expansion. Sales to the dairy will therefore probably expand faster than total output, and we can consequently concentrate our attention on the growing dairy supplies. Since the milk marketed through the dairies is intended for the urban market, the consumption benefits from the additional marketed supply, and its accompanying price dampening influence, will accrue to the urban consumers. But as the average urban income levels are far above the national average[1], it is fairly clear that the Project's consumption effects, like its production effects, will contribute to a more uneven income distribution.

One could go one step further, and suggest that with current urban milk prices (Sh 0.19 per liter in 1970), the average urban incomes do not permit any sizable milk consumption[2], and that therefore even in the prosperous urban areas of the country, marketed milk is a luxury good, with a high consumption concentration among the higher income brackets of the town and city population. These elite groups would then be the major beneficiaries of the Project's consumption effects.

In conclusion, it seems that for a long time to come, the incomes of the majority of the country's poor will not at all be affected by the Project, neither through consumption nor production. Instead, the gainers on both sides will belong to the country's better off population strata.

Summary and Conclusions

For reasons of history and tradition, the cattle sector is of central importance to the Kenyan economy. The considerable capital invested in the cattle herd, and the high costs to maintain it, are important reasons for promoting efforts to utilize its potential more fully. The dairy production improvement program, therefore, deals with a highly important matter in Kenya's overall national development effort.

1. An indirect evidence of the considerably higher urban income levels is provided by the statistics on earned employment. Average employment earnings in agriculture in 1969 were about Sh 100, in the non-agricultural sectors they were 4-5 times higher. (Source: Kenya Economic Survey, 1970, p. 136). Another indirect evidence of the comparative income levels is the substantially higher nutritive food consumption standards among low-to-middle-income-groups in Nairobi, as compared with the subsistence and semi-subsistence farmers in different parts of Kenya (See the Nutrition Survey 1964-68).
2. Take the average urban wage in 1969 at 5 times the agricultural wage, e.g. Sh 500. With 5 persons per family, this amounts to Sh 100 per person per year, or Sh 0.28 per day, which certainly does not provide scope for sizable milk consumption.

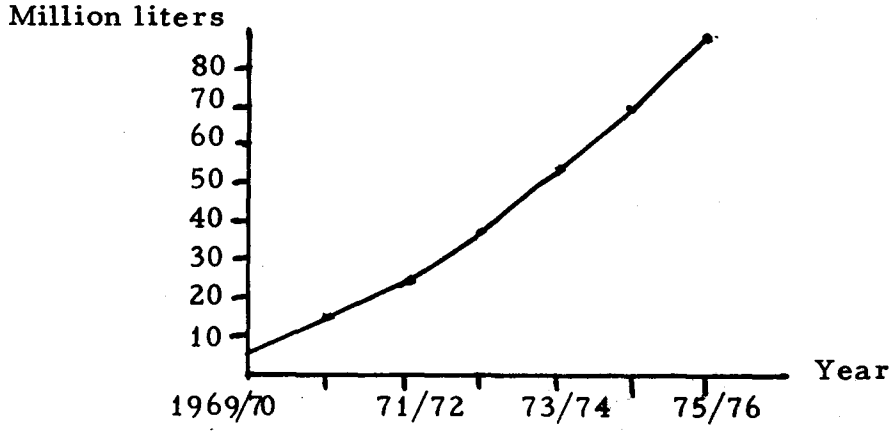
The artificial insemination, veterinary support and extension services, which constitute the Project supported by Sweden, are closely integrated into, and critically dependent upon, the much wider Kenyan endeavors to develop the country's meat and milk industries. From this dependence follows that the responsibility for the overall delineation of the venture rests in the hands of Kenyan planners. The integrated nature of the Project also makes it harder to derive and isolate its development impact. The development effects, which are summarized below, must therefore be viewed with consideration caution.

The uncertainty of our findings is reinforced by an extreme lack of data. The contention that for want of factual information, it is impossible to make a proper assessment of the Project's impact so far, or to delineate a rational policy for its future, is in fact a major conclusion of this study. The valuable information gathered in the field surveys during the Project's first years of operation, concerns mainly technical production conditions, and is based on narrow samples in limited geographical areas. Hence, generalizations on the basis of these data become highly uncertain. On account of the deficient data base, our analysis has frequently had to substitute reasonable guesses for hard facts. Most of our findings must therefore be regarded as illustrations of the likely course of events, rather than as definite statements of what has happened in the past, or will take place in future. More and better data are particularly needed regarding milk production for different types of cows, mortality of cows, the private and public expenditures for expanded milk production, which are not included in the Project's costs, and the overall social opportunity cost for producing milk.

The AI and the supporting services, of which the Project consists, will have a substantial effect on milk production. In view of the slow biological ripening process, this effect will have started only towards the end of the first 5 year period, but will grow very fast, to provide a significant contribution to the country's total consumable milk output at the end of the second 5-year period. Our additional production estimates are summarized in Figure 8.2 and can be compared with the country's total milk production in 1969, of some 730 million liters. The cut-off point throughout our analysis has been 1975/76, the terminal year of the Project's second 5 year period. But it is obvious that milk production would continue to expand for several years as a result of earlier efforts, even in the unlikely event that all AI activities were terminated in the cut-off year. The Project also increases

the potential meat output, but since preconditions for the utilization

Figure 8.2 Estimated yearly additional milk production, due to the Project.



Source: Tables 8.3 and 8.4 in this section.

of this potential are wanting, we have disregarded altogether this possible future benefit.

An important effect of the Project is that it has stopped the deterioration of the country's dairy herd. By providing the farmer with an easy opportunity to invest through gradual upgrading of his cattle, the Project has in all probability substantially increased the real savings of the small farmers served by AI. A limited but valuable development contribution lies in the training programs, which provide a skill output over and above the Project's own requirements, and which will ensure its efficient running, after the Swedish personnel retires.

The Project's impact on employment creation is not likely to be substantial, and might even be negative. In comparison with many other agricultural preoccupations, milk production is said to be capital- and land-intensive, so that relatively little employment is created per unit of input of other resources. Furthermore, the productivity increases in cows, resulting from AI, are likely to diminish the use of labor per unit of milk. With few possibilities to export milk products, the increase in labor productivity may imply a lower total use of labor, unless the price elasticity of milk, and the indirect employment effects of the Project are so high that they neutralize the impact of the labor productivity change.

While the higher milk production will constitute an important addition to the animal protein supplies available to Kenya's population, it is disquieting to

note that with the country's population increase, and with the per capita nutritional milk requirements, as estimated by WHO, the overall milk deficiency will continue to grow over the entire period considered.

Milk appears to be a luxury food in Kenya. This would be particularly true of the more expensive dairy processed variety, which is to be promoted by the Project. Nutrition data suggest that close to half of the country's rural population cannot even afford to consume the cheaper local milk, which has not passed through the dairy plant. The luxury nature of milk is an important reason why, within the foreseeable future, the repercussions of the Project on income distribution are likely to be negative. The gains will predominantly accrue to the more prosperous urban consumers, and to a small group of progressive dairy farmers, both belonging to the country's higher income strata.

In summary, then, the results of our assessments suggest an unevenness, or even a conflict, between the positive economic development effects, and the meagre, or negative social ones. With the diversity of development dimensions, expressed in the development concept defined in chapter 3, it would probably be difficult to find projects whose effects would be positive on all the scores. Is then the dairy production improvement program supported by Sweden, good enough to be continued, or should it be wound up, and replaced by some more worth-while venture? We have been unable to carry our analysis far enough to undertake a proper calculation of the Project's economic yield, or to make a meaningful qualitative weighing of the various development effects which emerge from it. The basis for our assessment has been far too uncertain to permit us now to put forth a qualified opinion on the overall usefulness and value of the Project in promoting development. In view of our uncertainty, of the commitments already undertaken, and the importance of cattle development in Kenya, a constructive suggestion might perhaps be to continue the activities as until now, while emphasizing much more the collection of information needed for an evaluation of the past, and for the formulation of future policies.

The conflict between the venture's economic and social effects might well be resolved by a different implementation policy. It is not unlikely that with more and better data it would be possible to indicate how the Project's doubtful social development performance could be improved without deteriorating its production impact. One of the illustrative calculations

undertaken in our analysis, suggests that a more Zebu-intensive insemination policy might bring a change in the effects of the Project along such desirable lines.

The tentative conclusions that Kenya's milk expansion program is insufficient even to keep the country's milk deficiency gap constant, and that in any case the poor population layers cannot afford any sizable consumption of milk, are disconcerting. The problems involved here certainly warrant further study. If it can be convincingly shown that for reasons of production constraints or costs, milk or milk products cannot become an important everyday food of the population majority within a reasonable time period, there is cause to reconsider the development value of the Project, and to start searching for nutritive alternatives, which can substitute for milk in this role.

We have pointed out before that the role of the Swedish experts on the broad policy decisions concerning the Project, is limited. Despite this, it should be clear that the donor cannot disclaim responsibility for the consequences of the activities supported by him. Even if the final choices rest with Kenyan decision makers, Swedish aid has a very important role to play in providing for a careful and critical scrutiny of the Project to be supported. Certainly it will be much easier for Kenya's planners to take better and more development promoting decisions, if the implications of the alternatives between which they must choose, have been better clarified.

Appendix

1. The deficient data sources

In analyzing the effects of the Project, we have to rely on a very weak foundation of facts. There are no serious difficulties in obtaining an adequate description of the Project activities. This can be found in the Annual Reports of the Project, in a number of planning documents exchanged between SIDA and the Kenyan Government, foremost perhaps the Plan of Operation (Draft) for the Dairy Production Programe 1971-76, prepared by SIDA in June 1971, SIDA's Insatspromemoria (Memorandum for SIDA's Directorate), and several memos to SIDA, most of which were prepared by SHS. Valuable information is also contained in the "Draft Report, An evaluation of the Kenya Artificial Insemination Service", carried out by the Institute of Development Studies of Nairobi University (IDS Evaluation Study), dated March 1971,

which examines critically the various aspects of the venture supported by Sweden.

General data relating to livestock and dairying can be found in documents like the East African Livestock Survey (FAO/SF: 21 REG, Rome 1967), the more recent Livestock Development in Kenya (Final Report of the Livestock and Meat Working Party, Ministry of Agriculture, Nairobi, January 1971), or the Nutrition Survey 1964-68 (Report to the Ministry of Health of Kenya on the WHO/FAO/UNICEF assisted Project, undated), or in the livestock section of Kenya's 2nd 5 year plan. These documents convey only very approximate, uncertain, sometimes even contradictory information on such important issues as production and consumption of livestock products, growth determinants for the national cattle herd, or the economy of dairy farming in relation to other farm activities.

The Project's field survey teams have been continuously collecting data on various technical aspects of the small farm dairy production, e. g. birth, calving and death rates, production achieved and use of the milk obtained. The fact that the field studies have been so preoccupied with technical production conditions, and have omitted data collection on such crucial matters as social and economic changes resulting from the Project, is perhaps indicative of the background of the Swedish experts. Their specialized professional skills, limited acquaintance with social conditions in u-countries and restricted contract period, would then explain the emphasis in the field surveys on subjects of their expertise, and disregard of conditions with which they are less well acquainted. The results of the survey work can be found in the Annual Reports of the Project. In two day-long interviews with representatives of SHS, possessing considerable experiences of milk production conditions in Kenya, I obtained much additional relevant information on and around the subjects covered by the field survey data. A major part of the information gathered in the Project's field work, concerns the Kiambu District, and in particular about 20 so called "model farms", selected for demonstration purposes by the field survey teams. The strength of these data is that they have been collected directly from the field, and are likely to reflect the factual conditions in the areas to which they refer. Their weakness is that there are too few of them, that they are onesided, and not comprehensive enough, and that we do not know to what extent they are representative of conditions in general in Kenya, or at least of the areas where intensive AI activities take place. In the absence of

alternative information on the subjects covered by the surveys, our analysis relies very heavily on this data source. In order to reach at least some illustrative conclusions, we tend occasionally to over-strain the significance of these figures, by making generalizations which in a strict sense would be statistically impermissible, with the narrow data base which is available.

2. An estimate of production effects from hereditary improvement

The number of live births, resulting from the AI effort, can be calculated for the 1966/71 period from the estimated number of AI pregnancies (see table 8.1 in the text), by deducting about 5 % for dead-born calves.[1] Live births for the 1971-76 period can be obtained from the planned number of artifically inseminated animals[2], after deducting for 10 % sterility, and again, 5 % dead births, out of the total number of pregnancies.[1] Concentrating on the female offspring (50 % of all births), we may note that birth takes place 9-10 months after conception, that the grade heifer is ordinarily inseminated at about 20 months of age, and that consequently its milk production starts at about 30 months of age.[3] Available data also suggest that out of 100 heifers born about 35 will either be sterile, or die before reaching calving age.[4]

Assuming for simplicity that birth takes place in the year after insemination, and that heifers calve and thus become productive in the third year after their mother's insemination, we can compile the following table. The heifers in production due to AI can be subdivided into two categories. The majority will be the result of AI on grade cows, while a smaller proportion consists of F_1, the first cross between Zebu cows and semen from exotic bulls. The estimated number of F_1 heifers entering production has been given in brackets in row 5 of table 8.8 on the next page.

It is not possible to make any reliable calculation of the additional milk production resulting from the project. This is primarily because we lack data on what happens to the milking productivity of a grade

1. Plan of Operation 1971/76, App II:1, p. 2 gives the sterility and dead - birth estimates.
2. Plan of Operation 1971/76, p. 4.
3. Annual Report, Field Survey Kiambu, 1970, p. 6.
4. Annual Report, Field Survey Kiambu, 1970, p. 2.

cow from further AI breed improvements. The IDS Evaluation Study bases its calculations of the benefits from AI on a 3 % productivity improvement per generation.[1] SHS, on the other hand, suggests that the productivity change might be considerably higher.[2] No empirical evidence is provided to support either view. To estimate the differential production which is made possible by the Project, we must

Table 8.8. Inseminations, births and heifers in production, resulting from AI.

Year	1966/7	67/8	68/9	69/70	70/1	71/2	72/3	73/4	74/5	75/6
								Thousand.		
1. No. of pregnancies resulting from AI+	43	52	67	84	104	114	144	170	184	212
2. of which Zebu++	(3)	(5)	(8)	(11)	(15)	(19)	(23)	(27)	(33)	(40)
3. Live births, heifers only (47.5% of pregnancies)		20	25	32	40	49	54	68	81	87
4. Heifers entering production (65% of heifers born, calving 2nd year after birth)				13	16	21	26	32	35	44
5. of which F_1				(1)	(2)	(3)	(3)	(4)	(6)	(7)

+ 1966-71 from table 1, page 26. 1971-76 from Plan of Operation, page 4, number of inseminated animals minus 10% sterility.

++Insatspromemoria, p. 4, and Plan of Operation p. 4 give the number of achieved and planned Zebu inseminations, from which rows 2 and 5 have been calculated.

See the text for other underlying assumptions.

also know what would happen to the production potential of the grade herd in the absence of AI. Most probably there would be an inter-generational productivity deterioration, if AI and its supporting services did not exist. The size of this productivity deterioration would depend on the quality of bulls used for NI. Even if many farmers remained anxious to use high quality bulls, the natural limits would restrict the supply of the services of such bulls. This could force perhaps the majority of farmers to inseminate their cows by grade bulls with questionable hereditary characteristics. Many farmers might

1. IDS Evaluation Study, p. 22.
2. Comments on the IDS Evaluation of Kenya National AI Service, SHS, September 6, 1971, p. 3.

also use Zebu bulls, due to lack of understanding of the hereditary interconnections, or simply to make a short term saving from their lower maintenance cost.

While we are uncertain about the Project's quantitative effects on production, we can make certain assumptions, to provide estimates for illustrative purposes. Let us assume then, more optimistically than the IDS Evaluation Study, that the AI Project will increase the productivity of the grade herd by 5 % per generation equivalent to about 1.25 per year, but that in the absence of the Project, there will instead be a deterioration of equal magnitude. Taking the average grade cow production at 2,000 liters per year[1], a 10 % differential would imply 200 liters per cow, and given a 5 % mortality among mature cows[2], we can easily calculate the additional production of the higher grade herd due to AI.

Somewhat better data are available for estimating the productivity effects from using AI on Zebu cows, to obtain the F_1 cross. We assume the same pregnancy and birth rates per insemination, and equal mortality rates for the F_1 heifers and F_1 mature cows as for the rest of the grade herd. Taking the yearly milk production of a Zebu cow to be 300 liters, that of F_1 cows 1,300 liters,[1] the productivity increase amounts to 1,000 liters. From these assumptions, the production of the F_1 cows due to AI can be calculated.

Table 8.2 presented earlier, in the text, provides a summary of the additional production effects due to the hereditary changes resulting from AI. It is entirely based on the arguments, assumptions and calculations made in this part of the appendix.

The assumptions undertaken also enable us to determine the production effects from doubling the Zebu insemination effort, while keeping the overall AI volume constant. Table 8.9 suggests that such a change might increase aggregate production by more than 50 million liters over the two 5-year periods considered.

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1. These are reasonable assumptions, according to the comments I received in the interviews at SHS.
2. The IDS Evaluation Study, p. 50, suggests mortality rates of 5-7% among dairy cows above one year of age.

Table 8.9. An illustration of the possible milk production increase, if the proportion of achieved and planned Zebu inseminations were doubled, while keeping constant the total number of inseminations.

	1969/70	70/1	71/2	72/3	73/4	74/5	75/6
1. Additional no. of F_1 heifers entering production (compare table 2 row 5), thousand	1	2	3	3	4	6	7
2. Additional milk production from these heifers, assuming 5% mortality, million liter	1	3	6	8	12	17	23
3. Reduced no. of other AI grade heifers, entering production (same as row 1), thousand	1	2	3	3	4	6	7
4. Reduced milk production (10% of 2,000 lit/year = 200 lit/year per cow), assuming 5% mortality, million liter	0	1	1	2	3	4	5
5. Net additional milk production, million liter	1	2	5	6	9	13	18

See text for the underlying assumptions.

3. A note on the production effects from decreased calf mortality

Our earlier calculations in this Appendix assumed that out of 100 heifers born, 10 would be sterile, and 25 would die before calving age (30 months), so that only 65% of heifers born would actually enter production. These assumptions are based on calf mortality studies in the Kiambu district, which indicate, among other things, that no more than 12-15% of heifer calves born, die before reaching 12 months of age.[1] Other evidence of calf mortality in Kenya suggests that the Kiambu figures are very low. Thus, a report to SIDA, preceding the initiation of the Project, states that calf mortality up to the age of 12 months is of the magnitude of 20-30% among grade cows, while in Zebu herds, calf mortality is occasionally as high as 70%.[2] Estimates contained in Livestock Development in Kenya, suggest that out of the 2 million calves born in the country in 1969, some 865,000, or more than 40%, died before reaching 12 months of age.[3] It is true that the figures just quoted contain considerable margins of error, and have to be taken with a grain of salt. But the explanation to the wide difference between the Kiambu figures and other mortality evidence must at least partly be sought in the provision of a better veterinary service, and an improved animal care in the areas served by the Project.

1. Annual Report 1970, Field Survey Kiambu, p. 2. It was contended in the interview at SHS, that these mortality figures would be fairly representative for the entire area intensively served by AI.
2. H J Hansen: Nötkreaturens hälsosituation i Kenya, Report to SIDA, dated December 8, 1965, p. 6.
3. Livestock Development in Kenya, January 1971, p. 7.

The genetically induced additional production calculations, derived from table 8.8 in this appendix, and table 8.2 in the text, are based on the low heifer mortality data, presented in the field surveys of the Project. In these calculations, the mortality rates were assumed to hold both for the actual herd, derived through AI, and the hypothetical alternative NI herd, which would have existed in the absence of the Project. The additional production was then obtained as the difference in the productivity per cow. But if, as is plausible, AI and its supporting activities actually decrease calf mortality, the hypothetical alternative NI herd would have been smaller than the AI herd. To derive the effects on production from lower calf mortality, we would first have to estimate the difference in the size of the herd. The contribution of the additional surviving heifers to the production increase would then be their entire production, not just the difference in productivity due to the genetic changes resulting from AI.

Table 8.10 Additional herd and milk production, resulting from reduction in heifer calf mortality.

Year	1969/70	70/1	71/2	72/3	73/4	74/5	75/6
1. Heifers entering production (65% of heifers born), from table thousand	13	16	21	26	32	35	44
2. Heifers entering production, when calf mortality rates are higher (55% of heifers) born, thousand	11	14	18	22	27	30	37
3. Difference, thousand	2	2	3	4	5	5	7
4. Additional herd, assuming 5% yearly mortality among cows in productive age, thousand	2	4	7	10	15	19	25
5. Differential milk production due to decreased calf mortality, 1,500 lit. per additional cow and year, million liters	3	6	10	15	22	28	37

See text for the underlying assumptions

The available calf mortality information, both within and outside the Project area, is too scattered and uncertain to form the basis for a firm analysis. Let us therefore again illustrate the possible effects simply by assuming that in the absence of the Project, 35% of heifers born, would die before calving age, instead of the 25% calf mortality, which we have used hitherto in our calculations. With sterility rates unchanged, the proportion of heifers born, which would enter production, would then decrease from 65% to 55%, and the growth of the

herd would be slowed down as a consequence.[1] The net addition to the herd, due to the assumed lower calf mortality brought about by the Project, can now be calculated, and is shown in rows 3 and 4 of table 8.10.

In the calculations of table 8.2 in the text we have already taken into account the additional production of these surviving animals, which is due to the genetic improvements resulting from AI, at 1,000 liters per F_1 cow, and 200 liters per grade cow. But as we now assume that in the absence of the Project, the size of the herd would be so much smaller, we have to regard the entire production of these animals as additional, and resulting from the Project. The contribution of decreased mortality will then be the total production of the animals after deducting for the increases due to genetic improvement, which have already been accounted for. For an F_1 cow, the production increase due to lower mortality will thus be 1,300 - 1,000 = 300 liters. For a grade cow, the corresponding figure will be 2,000 - 200 = 1,800 liters. For simplicity assume that 15% of the herd addition consists of the F_1 cross. Then, the average production to be credited to lower heifer mortality will be about 1,500 liters. On this basis, the effects on total production can be calculated in row 5 of table 8.10. Table 8.3 presented earlier in the text is a summary of the results just obtained.

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1. In the present calculations we do not consider any difference in the mortality of mature cows, with and without the Project.

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CHAPTER 9: A CASE FOR NEW DIRECTIONS IN SWEDISH AID?

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CHAPTER 9. A CASE FOR NEW DIRECTIONS IN SWEDISH AID?

1. At the very outset of this concluding chapter, it should be pointed out that the validity of what will be said is limited. The reader who has followed our discussions this far, should be fully aware of the complexities of the issues involved, and of the uncertainty which by necessity will surround any attempted policy conclusions. The points which are made in the following, therefore, ought to be regarded as highly tentative suggestions rather than as firm advice. It should also be underlined that our analysis has been limited in scope. First, we have assumed the supply of aid as given, and have not devoted any attention to the interrelations between the forms in which aid is provided, and the quantity which is supplied. Second, our study has focussed attention on Swedish aid to certain countries only. Thus, we have not studied, and have nothing to say about the sizable Swedish transfers to the multilateral organs. Neither have we discussed the circumstances surrounding the recent but fast growing Swedish aid involvements in Socialist countries like Cuba and North Vietnam. Our detailed analysis has centered upon the aid programs in Kenya and Tanzania, with a cursory complementary survey and discussion of the assistance flows to India presented in an appendix at the end of this book. Although our conclusions are entirely based on the investigations of Swedish aid practice in these countries, most of the findings would probably be applicable also on other recipient nations, similar to the ones with which we have dealt. And the conclusions we reach, ought to be of some relevance not only for Sweden, but for any smaller donor, whose primary concern is economic and social development of u-countries.

2. The surveys which we have undertaken, suggest that the contents of Sweden´s aid are, by and large, of the bulk variety. It has not been possible to discover any fundamental features distinguishing the Swedish aid contents and conditions from those of most other donor countries. With the exception of an early emphasis on family planning, the areas supported by aid from Sweden very much resemble the international picture. It is true that Sweden´s aid terms are, on the whole, more advantageous than those of most major i-countries, and that the concessional credits are distinguished by being formally untied by source of purchase. But otherwise, the practices used in the aid transfer have been quite resemblant to what is common in the international donor

community. Sweden has indeed been an early proponent of an increasing use of foreign aid to ameliorate social conditions, and diminish inequality in recipient countries. But while these goals have been prominent in official statements of policy, they are not clearly discernible in the factual aid endeavors. In many aspects of practical application, it seems as if Swedish aid is firmly tied to the prevailing international assistance fashions.

3. Judging from the material on East Africa and India, which we have studied, the almost universal tying of Sweden's assistance to specific uses does not appear to have been a purposeful measure to increase the development productivity of aid. The commodity support[1], as well as the choice of many projects, has frequently emerged on the basis of conditions in Sweden, rather than from the most pressing development requirements of recipient countries. Our investigations also suggest that the approaches chosen in project implementation have not always been particularly conducive towards helping recipient countries to overcome the resource constraints, which slow down their pace of progress. In many cases, therefore, the purpose-tying practices have led to various inefficiencies, with a decreased development impact of aid resources as a consequence. Our analysis should have demonstrated that a close integration of purpose-tied support within the recipient country's development plan, is no guarantee for an efficient use of aid, however good the plan appears to be. First, within the realms of the plan, the foreign venture can be carried out in many different ways, some of which may serve development better than others, and, as just pointed out, direct Swedish involvement has not always led to the adoption of particularly development-conducive approaches. Second, even those plans which, ex ante, seem consistent, realistic and geared towards development, are ordinarily incompletely implemented, with the result that ex post, the aid venture's outcome could appear to be unrelated to the recipient country's own development endeavors. The scepticism about purpose tying, expressed here, should not be taken to mean that all such ties ought to be discarded. Project tied assistance will probably continue to be the most suitable form of support to countries like Ethiopia, whose government's ability to formulate economic and social development policies, and to translate them into specific projects, is limited. The scepticism about Sweden's ability to promote development by purpose tying, is rather intended to suggest that such tying ought always to be

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1. Mainly to South Asia, See Appendix on aid to India.

put into question. Thus, to the extent that future Swedish aid is provided in the form of specific projects, it would seem to be appropriate to let each project undergo a periodic evaluation along the lines developed in chapter 4, and applied in the micro-scrutinies presented in chapter 8. The appropriateness of other purpose-ties ought also to be exposed to a close scrutiny and the ties be discontinued, unless of course such practices can be clearly shown to promote development in recipient countries.

4. We have pointed in our discussions to the disadvantages embodied in the practice of sending out aid workers for short periods of around 2 years only, on assignments in u-countries. Substantial performance improvements could probably be obtained if this practice were changed. In view of the difficulties for the aid agency to recruit qualified professionals for longer but temporary assignments, and for the expert to adapt himself to the conditions of u-countries, so long as his engagement is restricted to a short time period, it might perhaps be more fruitful to investigate the possibility of establishing a cadre of specialists in various fields, prepared to devote a major share of their active life to work with specific Swedish aid project assignments in u-countries. The establishment and maintenance of a large cadre of this type, would be an expensive, and administratively complicated task. But there is nothing to say that the Swedish personnel transfers have to be maintained at their present level. There is probably a good deal of dead wood in the current personnel assistance, and the qualitative improvement implied in the permanent corps proposal could be simplified by simultaneously cutting down the quantity of the total personnel flow. This would be fully in line with the efforts and increasing abilities of for instance the East African countries, in expanding their supply of national skills.

5. On the basis of our deliberations in earlier chapters, we have argued in the two preceding points that Sweden´s proficiency in selecting and implementing aid projects is questionable, and that the quality of its personnel assistance is somewhat uncertain. This, then, is the basis for our contention that the development impact of Sweden´s aid might be considerably enhanced if a substantial share of total resources were provided in the form of untied and unconditional program support. The ability of the South Asian countries to put untied financial aid into development-productive use, has long been recognized. The same ability is increasingly emerging in East Africa as well. A constructive approach in

Sweden's aid relationship with East Africa might be to transfer a major share of assistance in an untied and unconditional program form, while simultaneously expressing a preparedness, wherever need arises, to act as recruitment agent on behalf of the recipient countries, in engaging suitable individuals and organizations required for the execution of the additional development endeavors, financed by the program aid funds. It is possible that a sudden introduction of a sizable program assistance flow, might cause a temporarily decreased efficiency in the use of aid funds, resulting from the East African recipients being unaccustomed to the new aid procedure. Over time, however, there is a likelihood that considerable gains could be reaped from the better integration of the program aid resources into the national development effort, from the expanded opportunity for East Africans to face responsibility, and to acquire more of practical experiences in development work, and, not least, from savings in administrative resources, on both donor and recipient side, following the discontinuation of the intricate and cumbersome purpose tying practices.

6. It could be worth while to pursue one step further the idea of using the Swedish aid agency as an international recruiter of personnel to be employed by u-countries like Kenya and Tanzania. We noted in chapter 7 the problems which u-countries may face in their own international recruitment efforts. Part of the difficulty is probably explained by the insecurity which professionals feel vis-a-vis the u-country government as employer. One way to overcome this problem might be for the donor agency not only to search, on a global basis, for the personnel required, but in addition to provide the personnel found, with a guarantee that the employing u-country government will fulfill its part of the employment contract, on lines akin to the guarantees now extended by many donor governments to protect export credits rendered to, and investments undertaken in u-countries. It would be interesting to get this idea tested in practice by a Swedish pilot venture with the above objectives in view.

7. While a case can be made for considerable expansion of program assistance in Sweden's aid resource transfers, there is on the other hand, much attractiveness in the idea that a minor proportion of this country's assistance, say 10 - 20% of the total, be used for experimenting with untried, innovational approaches, to tackle various important u-country problems. It is true that such venturing into new fields would involve considerable risks for failure, but it would also carry the prospect of development benefits per unit of input, many times larger than what can be

reasonably expected in conventional problem solutions. In a global perspective, the decrease in bulk aid, involved in the present suggestion, is infinitesimal, and would hardly be observable by recipient countries. The risk, in my opinion, is therefore well worth taking. The nature of the innovational tasks, which I have in mind, has been spelled out in broad terms in section 4.5 above. Endeavors of that type are presently mainly pursued by non-government institutions, while governmental aid donors appear to be hesitant for various reasons, to engage themselves wholeheartedly in supporting such tasks. There are many reasons why Sweden would be a suitable country to initiate and carry on a few such innovational aid ventures. This country is relatively uninvolved in international political struggles, has few interests of its own to defend in u-countries, and the overriding objective of its aid is development of the recipient nations. It has an advanced and practically oriented general research tradition. Sweden´s compactness and homogeneity as a nation is also likely to facilitate a greater degree of flexibility, in aid, as well as in other matters. In the following paragraphs, a selection of more specific areas which might be suitable for Swedish innovational aid efforts will be suggested. The suggestions will be brief and incomplete. It would hardly be possible, in this concluding chapter, to provide a detailed exposition on how to handle each of the proposals in practice.

8. Far-reaching and highly valuable consequences might follow from an allocation of Swedish organizational and financial resources into research aimed at defining problems of crucial importance for Kenyan and Tanzanian development, and at suggesting suitable and feasible solutions for the issues defined. Some of the possible areas for such search could be formulated as follows:

a) Given the countries´ health and life expectancy situation, their population increase and the budget constraint on what can reasonably be spent on the provision of medical services, design a few reasonable approaches to the development of their health sectors. Clarify the types of medical personnel and capital equipment required, the concentration of the medical effort on different types of illnesses, the time sequence in attacking various problems, and the distributional aspects implied by the suggested approaches.

b) Design in a similar way an educational system which takes into account the social, economic and demographic situation of the country which it is proposed to serve, and of the need to make training functional, of immediate production benefit to large and highly illiterate

farming community, but also geared towards satisfying the professional requirements in the national development work. Specify the institutional and physical arrangements needed, while keeping in view the country's deficient skill and capital supplies.

c) Search and define the specific techniques required for efficient marketing of goods and services among illiterate or semi-literate subsistence farming groups in East Africa, with an aim at facilitating, for instance, the government's agricultural extension work, including the adoption of new agricultural inputs, or the spread and acceptance of birth control.

d) Both Kenya and Tanzania have considerable land areas which are too dry for regular farming, and therefore very sparsely utilized. A worthwhile endeavor would then be to study the circumstances, and propose some possible ways to intensify the utilization of this land, for instance by dry land cattle rearing[1], systematic exploitation of wild life, or introduction of new crops which can withstand the climate. The constricting considerations in such studies would include the availability of demand, internally or in export markets, for what would be produced, problems of ecology, and the condition that the productive employment opportunities be expanded with the help of relatively limited capital and skill inputs. The studies would also have to clarify as far as possible, the dynamic long term consequences of the proposals, including their linkages with the rest of society, and their likely social impact.

All the four ventures briefly outlined above, would have a number of features in common. To be of value and relevance, all of them would have to be aimed at solving the problems with no improper bias towards the solutions of related problems in i-countries. A key prerequisite of all the suggestions would be that the u-country for which they have been worked out, can replicate them on its own, without undue strain on its social and political balance, or capital and skill supplies. The intensive and widespread collection of facts, necessitated by the proposed studies, would bring about considerable positive external effects, and would thus contribute to removing the development constraint resulting from the absence of information. A single donor like Sweden is certainly far too small and specialized to provide all the diverse specialists needed to carry out the proposed research tasks. World-wide recruitment is a precondition for obtaining an adequately experienced

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1. Like the IDA-SIDA-financed scheme in Kenya. See chapter 7.

expert group to undertake any of the investigations. A very close collaboration would be required with the country to be studied, both in agreeing on the scope of the venture, in obtaining data, and in designing realistic problem solutions, in line with the needs and preferences of the inhabitants and their government. The research would probably take long to yield tangible results, ready for duplication on a wider scale. The work would have to include recurrent field tests on limited social or physical samples of the country under study. Assurance of personnel continuity is vital in this work. A venture of the kind considered here would hardly be served in a purposeful way by the types of short term expert assignments, commonly practiced in current technical assistance endeavors. In view of the experimental nature of the proposed endeavors, it is reasonable to argue that the involved aid agency cover the full costs, including the local expenditure, from the very beginning until the ideas brought out have been adequately tested, and found practicable. The International Rice Research Institute in the Philippines, financed by Rockefeller and Ford Foundations, and the ILO teams, searching for, and delineating economic development strategies aimed at providing more employment opportunities, in Colombia and Ceylon, carry a good deal of resemblance with the ventures discussed here. They also suggest that the applicability of solutions to one u-country's problems in a specific field, could be extended, with moderate alterations, also to numerous other u-countries, thus increasing the impact and usefulness of the work originally carried out.

9. A rather different innovational aid activity of great potential value to the Third World could be the setting up of a center for research about private foreign investments in u-countries, and for extension to u-countries of the services of experienced personnel for their negotiations with private firms about prospective investment proposals. The foreign-owned assets in u-countries are likely to become increasingly sensitive issues over the 70's, and the task of clarifying the effects of foreign investments, of encouraging suitable and discouraging unsuitable types and terms of investment will grow in importance as a consequence. To begin with, the proposed institution could concentrate its attention on a few u-countries. The activities could include studies of the socio-economic impact of existing foreign investment undertakings, on lines similar to our micro-scrunities of aid ventures, identification of investments with particularly beneficial effects on the development of the host country, and search for prospective forms which might undertake such types of investment. Further studies could devote attention not so much

to the contents of the investment venture, as to the terms of agreement between foreign investor and host country, and attempt to delineate terms which would bring more benefit to the host country, while still being acceptable to the investor. Another part of the institute could have a more immediately practical orientation. Thus a cadre of consultants, with a profound but diversified experience of business negotiations, could be attached to the institute, and their services provided to u-countries on request, to assist both in attracting foreign investments and in negotiating actual investment agreements. It is true that development banks and other investment promotion bodies already attend to these tasks at a national level in many u-countries. But a distinct advantage of the institution outlined here is that it would be able to reap considerable advantages of specialization and scale as a result of its multinational involvements. The proposed institute could be located anywhere in the world. Recruitment of personnel would again have to be on a world-wide basis. To provide scope for sufficient flexibility, expressiveness and innovative spirit, it would probably be necessary to make the institution relatively independent from governmental bureaucracies like SIDA or the UN specialized agencies.

10. Related to the above investment center proposal is the idea of foreign aid support for designing labor intensive technologies, counter to the self-propelled technological trend towards increasing capital intensities in production. One could be quite specific in this case, and start out by selecting an industrial branch, say ship-building and ship-repairing, activities, whose future in any case appears to lie, in the main, in countries with lower wage levels than Western Europe's. One could then finance a project, involving engineers and economists from the ship-building industry, along with development economists familiar with conditions of u-countries, to work through the problems, and try to design a production organization, which can compete with present i-country techniques, but which is based on the assumption that yearly labor wages are $ 600 rather than $ 6000, and that the main production of predicaments arise, not from fast increasing wage costs, and difficulties to recruit labor, but from a deficient social and economic infrastructure, and an exceedingly inexperienced labor force. It is not at all unlikely that with suitably experienced expertise, ample funds for experiments, and sufficient time for the work, the outcome of a study along the lines proposed here would suggest that ship-building could be carried on much more competitively for example in East Africa with a labor intensive technology, than what is possible in Europe, with the application of the currently available capital intensive production methods. The next step in

the proposed experiment would now depend. Possibly, by the time the theoretical results were available, the ship-building firms which had supplied the expertise to undertake the study, would themselves be prepared to test the findings in practice. In such event, they could be directed to the foreign investment center, dealt with under the preceding point. Alternatively, further supporting measures would be required by the aid donor in order to demonstrate in practical terms, that the labor-intensive ship-building method is practicable and competitive, when labor costs are low. This could for instance be through some kind of participation in the practical venture, by providing a subsidy for the investment required, or by insuring the potential private investors against certain types of losses. In view of the unpredictability of the venture, it would again be fair to shield the host country, on whose ground the activities take place, from the risks and disadvantages which might result, if the experiment does not prove successful. A one-time research effort, as described above, even if initially successful, would probably not remain viable on its own, without continued support for further technological adjustments of the industry to the social and economic environment of u-countries, until perhaps a few dozens of ship-building enterprises have been set up on the basis of this labor intensive technology, forming a large enough nucleus, to pursue on their own the continuing technological development work. The foreign support involvement might therefore have to go on for a very long period of time, in order to bring about permanent results. Ship-building is of course only one of a great many potential fields for the development of labor intensive techniques, as alternatives to the capital-intensive i-country production patterns. Car assembly, or printing could prove to be other worthwhile propositions.

11. Sweden is actively engaged in the promotion of u-countries´ exports through generous financial support of UNCTAD´s International Trade Center. In 1970, SIDA´s contribution covered almost a quarter of ITC´s entire budget. While this support is certainly both constructive and helpful, there is a scope for much more direct and innovative initiatives, in promoting exports from u-countries. It is not only in labor costs that East Africa has a tremendous comparative advantage over Northern Europe. Another such advantage arises from climate. Starting out from this difference, an entrepreneurial Danish gardener has found, upon carefully calculating the costs, that he could supply the Danish market with adiantum, imported on a year-round basis by air from Kenya, at prices considerably below the Danish hot-house production costs for the same product. He is now reported to be preparing the practical matters for

initiating large-scale imports, first for the Danish market, and eventually for the whole of North-Western Europe.[1] Many other profitable ventures, benefiting both the exporting and importing side, could certainly be found, but for various reasons, there seems to exist a considerable inertia in searching for and utilizing such opportunities. Apparently, the private initiative requires a supporting push. This could be provided by foreign aid, through identifying such new ventures, helping to initiate production in East Africa, and tying this production first with market outlets in donor country, later perhaps on a wider international basis. To outline briefly, a possible concrete case, say that SIDA undertakes a careful feasibility study which shows that it would be profitable to produce jam from perishable tropical fruit in East Africa, for exports to Sweden. On the basis of these findings, SIDA could then approach one of Sweden's nationwide retail organizations, and induce it, financially, or by other means, to invest in setting up a jam factory, on terms which could include the provision that the entire production of that factory be retailed by the investor in Sweden during the initial years, and that the ownership of the investment be gradually transferred to nationals of the host country.[2]

12. The above list of innovative aid ventures should obviously not be taken as a proposed outline of the future Swedish aid program contents. Bulk aid has also a valuable role to play in the development process, and we have not argued against its continued dominance in the Swedish assistance resource flows. Besides, it would probably be difficult for a small donor country to tackle more than one or, at the most, a few of our intricate proposals on innovation aid, at a time. The above list should rather be seen as suggestive of activities worthy of further investigation, from among which this country's aid decision makers might eventually decide to choose one or two, to be incorporated in Sweden's bilateral aid programs. This limitation naturally does not preclude that Sweden uses its international influence to induce other donor agencies to include more innovation activities in their programs, nor that she participates in multilaterally sponsored innovative aid ventures of the kind outlined here. It might even be that some of our proposals for innovation aid will prove to have so wide implications for the donor, that it would be preferable to handle them on a multilateral basis.

13. Several of the proposals brought out above, if undertaken by Sweden,

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1. Information from interview with Kjeld Philip, Chairman, Danish International Development Agency, October 1971.
2. In a different context I have worked out in somewhat greater detail the features which could characterize such an investment agreement. See M Radetzki: Technical assistance, a synthesis of aid and trade, Review of International Cooperation, No 6, November 1964.

would require considerable domestic adaptations. This country's government and parliamentarians would have to be taught that untied program support could be the most development-conducive form for a major part of Sweden's aid, and to accept that the only accounting which can be provided for such aid is a statement on the overall progress of the recipient country. Adaptations on the part of the Swedish economy, are also implied in the investment-, technology- and export promotion-suggestions, discussed above. New competition from aid supported production facilities, set up, for instance in East Africa, may hurt, or even kill, Swedish firms, and will therefore arouse opposition. Taking a longer time perspective, the antagonism involved in the above proposals between the economic interests of the donor and recipient countries respectively, ought to abate, since all the proposals aim at a division of work based on the comparative advantages existing in each country, and in the long run, such division would be of benefit to all.

14. In conclusion, then, we have emphasized two points in this final chapter of our study. First, there is likely to be a considerable advantage in liberating completely a large share of Sweden's aid resource transfer from donor formulated purpose ties. This is because our analysis of the current Swedish aid practice suggests that such ties frequently tend to diminish, rather than enhance, the development impact of the aid resources transferred. The second, and corollary point brought out is that the development effects of Sweden's aid could be improved further still if a minor but significant share of this country's aid resources were used, in the main, for clearly specified, highly research-intensive innovational aid projects. This is because there appear to be a number of crucial problems facing u-countries, which are by and large neglected in the development efforts of both aid donors and recipient countries, but whose solutions could help in speeding up the development process, and in increasing the development productivity of bulk aid. Several reasons why Sweden would be a suitable country to initiate and carry on this type of innovational aid ventures have been suggested above. But, as Myrdal has pointed out, Sweden has very weak background in development problems, and has made practically no original contribution to increasing the knowledge about u-countries and their problems.[1] This vacuum would have to be filled out, to enable Sweden to play the innovative role outlined above. The setting up of an institution in this country, for the investigation of, and practical work with various aspects of the development process, along

1. G Myrdal: The Challenge of World Poverty, Pantheon, New York 1970, p. 360.

lines similar to those pursued by the Institute of Development Studies at the University of Sussex, might be a purposeful way to fill out the existing lacunae. This, I believe, would provide the background, atmosphere and stimulus, required to go ahead with some of the challenging innovative ventures, which, although involving a risk of failure, also contain the prospect of abundant development benefits.

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Appendix: SWEDISH AID TO INDIA, THE DISTINGUISHING CIRCUMSTANCES

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Introduction

Writing in the mid-60's, J K Galbraith drew a distinction between the "Sub-Sahara Africa-", "South-Asia-", and "Latin America-types" of underdeveloped economies.[1] In Galbraith's opinion, some of the problems of particular relevance to the Sub-Sahara type of country are absence of a unifying cultural base, and lack of qualified administrators, with a consequent instability in government, and difficulties in formulating and executing national development plans. In contradistinction, the South Asia characteristics, include an ample cultural base, and a long, well-developed educational tradition. The main obstacle to development in the South Asia type of country appears to be the extremely low physical resource/population ratio.

From these arguments follows that the kinds of aid, most suitable for each type of countries will be different from each other. In Galbraith's opinion, capital assistance by itself, is not particularly purposeful for the Sub-Sahara type of country. Active participation in the formulation and implementation of development tasks is more useful than passive advice. Population control is not yet of primary importance. Training and education, on the other hand, ought to be key tasks in aid to such countries. Donors should also support the efforts to strengthen the unstable national entities, in order to avoid the risk of political disintegration which would hamper development. Aid which is suitable in the South Asia type of country, on the other hand, can place much more emphasis on the simple transfer of capital resources, but also on efforts to limit population growth, and on advice aimed at refining development planning, and its underlying resource allocation.

Although Galbraith's account is general, concerns very broad categories, and may be outdated in some respects with regard to the situation in the Sub-Sahara countries, it does bring into focus the very important distinction in aid requirements of the two types of countries. Our

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1. D Krivine, editor: Fiscal and monetary problems in developing countries, Praeger, New York 1967.

empirical studies in chapters 6, 7 and 8 have dealt with Sweden's aid to Sub-Sahara African countries only, and the conclusions to be drawn from this material cannot always be generalized to apply to other types of recipients.

The purpose of this Appendix is to point, very briefly, to the main features, which distinguish Sweden's aid relationship with a South Asia type country like India, from its relations with the smaller East African recipient nations, studied in earlier chapters.

What role for Sweden's aid?

Unlike the East African countries, India has not experienced any dearth of administrative skills during its time of independence. Neither has there been any lack of scientifically trained people.[1] Since the beginning of this century, the country has also developed an entrepreneurial tradition, with large-scale, family dominated industrial and commercial empires like the Birla's, Dalmia's and Tata's, as well as viable small scale enterprises, perhaps most easily observable in the Sikh community. Even if suitably skilled personnel has been lacking in a number of specializations, and the orientation of interests among, for instance, the leading administrative cadres, has not been much geared towards development[2], aid to India has been dominated by capital - as opposed to personnel - transfers.[3] This would partly be explained by an aversion among the Indian high-level administrators to foreign interference, implied by the presence of foreign aid experts, but, above all, by an apparent ability on the part of India, to plan and implement development activities above its capacity to generate domestic savings and foreign exchange.[4] The capital-exchange bottlenecks in Indian development were reinforced by the emphasis given to heavy industry and capital-intensive infra-

1. Witness the considerable brain drain of such personnel categories from India.
2. J Bhagwati and P Desai: India, Planning for Industrialization, Oxford University Press, London 1970, p. 130.
3. Personnel aid would ordinarily be included under the technical assistance heading. In 1962, India and Pakistan received about 19% of total bilateral official DAC disbursements, but only 4% of the technical assistance disbursements from the same source. In 1968, the figures were 18%, and 2.8% respectively. This would imply a very personnel extensive aid composition to the two countries. (Figures from DAC statistics).
4. It has even been suggested that the Indian plans were purposefully oversized, with the intention to evoke a foreign exchange crisis, thereby precipitating a larger foreign aid inflow, than would otherwise be forthcoming. See J Bhagwati-P Desai, op. cit., p. 119.

structure in the plans, and by the policies, which promoted industrial growth with the help of subsidized credit and capital imports.[1] The first important difference between India and East Africa, to be noted by a donor like Sweden, therefore, is that capital and exchange, rather than skills appear to be the effective development constraints.

As the following figures will show, Sweden's aid to India has been very small, whether measured in percent of the recipient country's GNP, or as a share of its total aid receipts. This contrasts with the emerging importance of Sweden as an aid donor in Kenya and Tanzania. Hitherto, the Swedish disbursements to India have been so small that they would proba bly not have sufficed even to play a significant complementary role, balancing, for instance the project- as opposed to program- emphasis of other donors' assistance, in case this country decided to design its aid with that objective in mind. The second important difference between East Africa and India, therefore, is the infinitesimal significance of Swedish aid to the latter country.

In view of the smallness of Swedish aid, and the well-established and determined Indian administration, there could hardly be any role for Sweden to play on India's planning, policies or preferences, unless, of course, some striking innovational features were embodied in this country's aid offer. This inability to exert influence can be noticed in Sweden's apparently futile effort to induce India to expand its family planning program, by providing generous commodity assistance to the birth control endeavors. The Indian government, being aware of Sweden's eagerness in this area, has been welcoming increasing support, while simultaneously the unutilized part of India's own budgeted allocations for birth control programs has grown.[2] A much higher degree of recipient self-assertion, and a marked unwillingness to be influenced, would then be the third significant feature of Sweden's aid relationship with India, as distinct from its assistance involvements in the East African countries.

The factual Swedish aid endeavor

Overall international official aid disbursements to India during the 60's have varied between 2.4 and 3.7% of that country's GNP.[3] Between 1967

1. See section 3.3 for a discussion of these policies.
2. Information from interview with SIDA's family planning department, December 1971.
3. J Bhagwati-P Desai, op. cit., p. 174.

and 1969, multilateral and DAC bilateral official net transfers have averaged a yearly $ 926 million, or about 2.4% of India's GNP. When the importance of these aid flows during the three years is thus measured in relation to GDP, India is ranked as number 50 among 92 u-countries. If, alternatively, aid flows are compared with recipient countries' imports, India comes out as number 12, among the same group of countries, with the foreign flows accounting for almost 40% of the import bill.[1] This high ranking when shares of imports are compared, is explained by the large size of India's economy, and the consequent relatively small foreign trade shares. Socialist country assistance has accounted for around 10% of the total aid flow in the late 60's.[2] This must then be added to the figures quoted above, to obtain India's overall aid position.

Quantitatively, Sweden's aid to India is not very impressive, in particular when disbursements rather than commitments are considered. The first assistance agreement was signed in 1963. Up to June 1968, the total disbursed amounts were less than $ 20 million. Disbursements in FY 1968/69 and 1969/70 were between $ 6 and $ 7 million per year. In 1970/71 they had grown to $ 13 million. This corresponds to about 1 % of India's overall aid receipts over these three years, less than 0.5% of the country's imports, and an infinitesimal share of its GNP.[3]

Of the disbursements undertaken up to and including FY 1969/70, $ 10 million, or about 30% of the total were loans, with 25 years' maturity, 10 years' grace, and 2% interest, provided for imports of capital equipment and raw materials required in Indian industry. Although the credits have been untied by source of purchase, part of them was reserved for the import-requirements of industrial enterprises in India with technical and/or financial collaboration with Swedish firms.[4] The grants have included finance for a vocational school in the field of paper technology, support to the Indian family planning program in the form of contraceptive supplies, finance for domestic contraceptives production, and transport and printing equipment to be used in the program's information campaigns, and support and equipment for carrying through development surveys in the field of grain storage and fishery. More than half of all disbursements, however, have consisted of commodity grants in the form of paper and fertilizer, at least partly

1. DAC 1970 Review p. 204-205.
2. J Bhagwati-P Desai, op. cit., p. 177.
3. Documentation from SIDA, and Sweden's Ministry of External Affairs.
4. This sort of tying has not been practiced in the loan agreements of recent years.

motivated by slack demand conditions for the Swedish industries producing these goods. It is quite likely that the value of these deliveries has been considerably exaggerated in Sweden's aid statistics.[1]

The commodity grants and family planning support will probably continue in forthcoming years. Disbursements of loans, as opposed to grants, are likely to account for a much larger share of the total than hitherto, since Sweden's loan commitments have grown fast during 1970 and 1971. The new commitments include $ 5 million for the expansion of grain storage facilities, and a new $ 25 million credit, for imports required by India's industry. Fast expansion is foreseen in overall disbursements. For FY 1974/75, SIDA expects the total payments to India to amount to more than $ 30 million, or five times as much as the amounts disbursed in the recent past.

Some critical observations

We concluded in chapter 7 that there were few innovational elements involved in Sweden's aid endeavors in Kenya and Tanzania. The same appears to hold for the assistance transfers to India as well. The technical assistance endeavors have been limited in volume. The largest technical assistance project included in the Swedish program of the late 60's, a vocational school to train paper technologists, has recently been discontinued. The activities of this school were not particularly successful. The project provides a rather typical example of the donor-centered attitude to choose assistance ventures on the basis of availability and experience in the donor country rather than of the needs of the recipient. The school was thus established without any proper analysis of demand and sources of supply for the type of labor that would be trained. As usual, most of the Swedish personnel spent relatively short contract periods with the project in India. As a result, the structure of training tended to copy the patterns which had worked well in Sweden, but was not much adapted to the quite different conditions and requirements in India.

There could hardly be much innovation involved in the remaining aid endeavors, since they consist in the main of simple transfers of financial resources, or commodities, freely available in international trade. This comprises the support provided in the family planning field.

1. The contention that the value of Sweden's fertilizer deliveries to India has been accounted for above world market prices, is supported by the arguments in F Kahnert: Aid tying and export of nitrogenous fertilizers from the Persian Gulf, OECD, Paris, 1971.

Given the fact that deficient capital and exchange constitute an important development constraint in India, that Swedish aid is of the bulk variety, and that its size and contents are hardly conducive towards rectifying the possible development hampering features of India's economic and social policies, one may wonder why Sweden has persisted in tying its aid contributions to specific purposes. We have already noted that Sweden's assistance to family planning is unlikely to expand the overall resources spent in India for that purpose. The import credit commitments specify not only that the money should be spent on industrial imports, but also the particular categories of goods, e. g. equipment for mining, heavy electricity generation, and the dairy industry, for which the Swedish finance is to be used. It should be fully clear that this type of purpose tying is not likely to have any effect neither on the share of total exchange allocated to India's industrial imports, nor on the development of the specific industrial branches, which have been singled out in the import credit agreement. Since Swedish aid is very small, the distortions implied in such purpose tying, can easily be rectified by marginal reallocations of India's own investment and exchange resources. The real effect of the tying practice, then, will merely be a cumbersome and resource consuming administrative nuisance to India. A similar criticism can be expressed about Sweden's commodity aid. Since the commodities are provided on a grant basis, and with no repayment obligation on the part of the recipient, the likely excess pricing implied in this tying cannot initself have any adverse effect on India, but would only result in an exaggeration in Swedish aid statistics, of the value of the commodities transferred. With cash in hand, India would in all probability be in a better position to satisfy its import requirements of fertilizer and paper, with regard to quantity, source of supply, quality and timing, than when given supplies are provided by Sweden. More serious, perhaps, is the well-known problem, inherent in commodity aid supplies, to discourage the emergence or expansion of domestic production. It has, for instance, been claimed that Swedish paper deliveries have caused difficulties to India's paper industry.[1]

One may then ask what reasons underlie this purpose-tying of aid, which, if anything, has a negative influence on the development impact of the resources which Sweden supplies. It is sometimes claimed by the Swedish aid bureaucracy that the delineation of Sweden's aid programs

1. K Markensten: Svensk u-landshjälp i dag, Almqvist & Wicksell, Stockholm, 1967, p. 115.

follows closely the Indian wishes, and that the Indian receiving organizations have themselves freely chosen the present contents and conditions of aid. This does not sound convincing. In the choice of equal amounts of convertible cash, and a mix of commodities and purpose-tied credits, there is no doubt that India would choose the latter. The fact that the import credits have been tied to equipment in which Swedish industry happens to be specializing, and that a major share of the sizable commodity grants consist of Swedish commodities with periodically depressed market conditions, strongly suggest that contrary to official declarations, the commercial interests of the Swedish economy have influenced the tying practices of Sweden's aid to India.

Under prevailing circumstances, e.g. with the severe exchange constraint in India, and the relative size and non-innovational character of Sweden's aid programs, the best role that this country's assistance could play in Indian development, would probably be through a maximum contribution to the recipient country's capital and exchange resources. With given Swedish budgetary appropriations for aid to India, this would be achieved much more efficiently through untied cash transfers of exchange than with the current purpose- and commodity-tying arrangements.

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